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Balancing power: The role of independent directors on venture boards

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ABSTRACT

We develop a novel power-centric model that examines antecedents and boundary conditions for independent directors in venture boards. Using 989 U.S. biotech and pharmaceutical ventures from 2010 to 2020, we find that the structural power gap between inside directors and VC directors is negatively associated with venture board independence. We also find that VC directors' intra-group conflict through tenure variance would weaken the impact of VC directors' power over inside directors on venture board independence, while VC ownership power through investment would strengthen it. These results offer a deeper theoretical understanding of venture boards.

Executive summary: The role of independent directors on venture boards—privately owned, professionally funded firms—remains underexplored in academic literature. While independent directors in public firms are primarily tasked with monitoring executives and protecting shareholders, their role in ventures is less defined. In VC-backed ventures, CEOs are often aligned with the firm's goals, and major shareholders have direct representation on the board through venture capitalist (VC) directors. The traditional agency problem, which necessitates independent directors in public firms, is absent in this context. Yet, independent directors make up about 20 % of venture boards, prompting a key question: Why do VC-backed ventures include independent directors?

This paper develops a power-based theoretical model to explain the inclusion of independent directors on venture boards. Based on organizational power theory, board seats represent structural power, with inside directors (e.g., the CEO and key executives) and VC directors as the dominant groups. These groups often have divergent priorities—VC directors emphasize short-term financial returns, while inside directors focus on long-term growth and innovation. When power is imbalanced, the dominant group resists the addition of independent directors. However, when the power gap between the two groups is smaller, conflict and stalemates become more likely, creating a need for independent directors to mediate and restore board functionality.

The paper also identifies two critical contingencies that shape this dynamic. The first is the intra-group power dynamics among VC directors. High tenure variance within the VC group reduces cohesion and alignment, weakening their collective power. This diminished unity increases the likelihood of independent directors being added to balance competing interests. The second contingency is the external investors' influence: Greater VC investment aligns VC directors more

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closely with external investors, amplifying their collective power relative to inside directors. This increased power advantage reduces the perceived need for independent directors.
The study's findings, based on an analysis of 989 U.S. biotech and pharmaceutical ventures from 2010 to 2020, provide strong empirical support for this model. By highlighting the power-balancing role of independent directors, the paper offers a new political perspective on venture board composition. For practitioners, these insights underscore the strategic value of independent directors in fostering effective governance, especially in ventures where power dynamics between inside and VC directors are finely balanced. Entrepreneurs can proactively leverage independent directors to mitigate conflicts and improve board decision-making. For VCs, recognizing how intra-group dynamics and investment levels influence governance structures can help shape more effective board strategies. To conclude, by answering the question of why ventures include independent directors, this paper not only advances governance theory but also provides actionable guidance for practitioners navigating the complexities of venture boards.

1. Introduction

Independent directors on boards of ventures—i.e., privately owned, professionally-funded firms (Garg, 2013)—represent a puzzle. Prior literature has examined independent directors predominantly in the context of public-listed firms (Dalton et al., 2007), where the main role of independent directors is to monitor the CEO and protect shareholders' interests. However, in ventures, CEOs are generally well-aligned with the venture (Garg, 2013), and several main shareholders are directly represented on venture boards through venture capitalist (VC) directors. Thus, the classic agency problem is *not* a central concern in ventures (Garg and Furr, 2017; Li et al., 2020; Garg, 2020), and independent directors are not legally required in ventures in the US (our research context). Yet, on average, independent directors represent about 20 % of directors on venture boards (Amornsiripanitch et al., 2019; Yao and O'Neill, 2022). So, why would ventures want to include independent directors on boards?

The prior literature provides many insights into venture boards, which mainly comprise inside directors (e.g., the CEO and possibly other key employees) and outside directors (including VC directors who are investor directors and independent directors who are neither employees nor investors) (Garg and Furr, 2017). Specifically, research has made significant contributions to scholarly understanding of the *consequences* of "outside directors" as a collective (Garg and Eisenhardt, 2017; Uhlaner et al., 2021) and sometimes specifically of VC directors (e.g., Beckman et al., 2014; Wang and Song, 2016; Wasserman, 2003). These consequences include strategic orientation (Bruneel et al., 2022), strategy-making (Garg and Eisenhardt, 2017), information disclosure (Uhlaner et al., 2021), acquisitions (Graebner and Eisenhardt, 2004), innovation (Katila et al., 2017), exits (Yao and O'Neill, 2022), and overall nature of CEO-board relationship (Garg and Bingham, 2025) (see excellent reviews by Garg and Furr, 2017; Li et al., 2020; Uhlaner et al., 2007). Some work has also examined the consequences of the independence of venture boards in terms of IPO success (Bell et al., 2012) and reducing IPO underpricing (Certo et al., 2001; Filatotchev and Bishop, 2002).

Yet despite the many insights in this literature, little scholarly attention has been directed to the *antecedents* of independent directors in venture boards. This study examines an important research question: Why do ventures have independent directors? Given the state of theoretical insights in the scholarly literature for our research question, we also considered practitioners' views from the field. When asked about the biggest surprises about startup boards, a startup founder pointed out, "For private companies, there has always been the inherent conflict for board members who represent a particular investment firm in terms of how they make decisions. This is a classic case of conflict of interest." (Roberts, Sahlman, & Novakovich, 2008, p. 5). A founder and chairman of a venture board reflected on his experiences amidst these conflicts of interest on venture boards, "They [independent directors] provide a balance" (Roberts et al., 2008, p. 3)". Similarly, Rogers and Dame (2004, p. 4) also notes that most startups backed by venture capital seek independent directors to bring "balance" to the board of directors. These practitioner observations begin to provide some intuition into the under-explored balancing role that independent directors play on venture boards. Building upon these observations, we seek to propose and empirically test a new theoretical model to help explain the levels of board independence in ventures.[1]

In this paper, we develop a power-based model that explores antecedents and boundary conditions of independent directors on venture boards. Building on the power perspective in the organizational literature (Finkelstein, 1992; Pfeffer, 1981), we consider board seats to represent structural power. On the board of VC-backed ventures, inside directors and VC directors are the two dominant groups (Fried and Ganor, 2006; Garg and Furr, 2017).[2] Potential inter-group conflicts on the board exist in that VC directors seek short-term financial goals, whereas inside directors tend to be keen on long-term development and/or non-financial considerations (Arthurs and Johnson, 2008; Fried and Ganor, 2006; Garg and Eisenhardt, 2017). Thus, it is likely the more powerful group – be it inside directors or VC directors – will seek to retain its dominance and be less willing to add independent directors. However, when the structural power gap between inside directors and VC directors is smaller, this goal conflict may lead to stalemates (Rhee and Garg, 2025), and so we argue that ventures are more likely to invite independent directors to act as a balancing force that mitigates the

[1] Level of board independence is simply the ratio of independent directors to the total number of directors on the board. This is a common way to account for independent directors in the prior board literature (e.g., see Dalton et al., 2007).

[2] We clarify that "group" in this paper does not refer to the board as a whole, but these two groups of directors – VC directors and inside directors – within the venture board. We thank an anonymous reviewer and our action editor for this helpful suggestion.

conflicts and allows the venture to move forward. We explore two key contingencies: first, we explore intra-group power dynamics within the VC directors. Specifically, we consider VC directors' tenure variance on the board of the focal venture. We argue that a higher tenure variance represents lower mutual understanding and different financial interests and rights among the VC directors. This would suppress the ability of the VC directors to act in unison and draw on their structural power advantage over inside directors to influence the board structure. Second, we explore the supra-group influence by external investors. Directors and investors need to be aligned for some key decisions, such as new independent director appointments. We argue that a higher level of VC investment, which on average is likely to have greater alignment with VC directors than inside directors, will strengthen the effect of VC directors' power advantage over inside directors on board independence. Our empirical analysis of 989 U.S. biotech and pharmaceutical ventures from 2010 to 2020 is consistent with our arguments.

We contribute to the literature in several ways. First, our study enriches the scholarly understanding of venture board composition (Garg and Furr, 2017). We complement prior studies that have focused primarily on the consequences of venture board independence and composition more broadly (e.g., Bell et al., 2012) by adding new knowledge about the antecedents of independent directors in ventures. Second, in contrast to prior literature on independent directors in public-listed firms where monitoring is the key role (Dalton et al., 2007), we offer a novel power-balancing role of independent directors in ventures, reinforcing the idea that venture boards are a theoretically generative avenue for the governance literature (Garg, 2020). Third, we add to prior research on the power-based perspective on boards (e.g., Westphal and Zajac, 1995), which largely shows that the more powerful prevail by examining consequences when power differences are small, and stalemates are likely. More broadly, we also advance the scholarship on power dynamics in organizations by suggesting that the impact of inter-group power conflict is further shaped by intra-group characteristics and supra-group characteristics. Overall, by developing a new political view of venture board composition and putting a spotlight on independent directors, this paper answers the important call in this special issue of the *Journal of Business Venturing* to deepen our understanding of venture boards.

2. Theoretical background

2.1. Independent directors and the monitoring role

In public-listed firms where separation of ownership and control is common, agency problems occur since owners (principals) aim to maximize shareholders' returns, but managers (agents) seek to maximize their interests (Berle and Means, 1932; Jensen and Meckling, 1976). As owners are typically not involved in the daily operation of firms, they cannot directly observe managers' efforts; thus, information asymmetry exists between owners and managers, and owners cannot verify managers' self-serving actions (Eisenhardt, 1989). For example, managers can acquire perquisites, draw excessive compensation, or make investments that harm firm value (Berle and Means, 1932; Eisenhardt, 1989; Jensen and Meckling, 1976).

One widely advocated governance mechanism is the board of directors, which can monitor managers to protect shareholders' interests (Eisenhardt, 1989). Independent directors are a key governance mechanism that serves to reduce information asymmetry and monitor CEOs' self-serving behaviors on behalf of the owners (Dalton et al., 2007; Eisenhardt, 1989). Since independent directors are less likely to be beholden to the CEO, board independence is expected to increase the board's monitoring role and effectively solve agency problems (Fama and Jensen, 1983).

After financial scandals such as the 2001 collapse of Enron and regulations such as the 2002 Sarbanes–Oxley Act, there has been growing pressure for corporate governance reforms on boards. For example, for public firms, the majority of directors on the board are required to be independent directors. According to the U.S. Spencer Stuart Board Index, among S&P 500 firms, 86 % of directors were independent directors in 2022. Because of the strong push toward higher board independence, another extreme condition arises in which there is only one insider: the CEO, known as the "CEO-only" (Joseph et al., 2014) or "lone-insider" (Zorn et al., 2017) board structure. For example, S&P 1500 firms with lone-insider CEOs increased from 50 % in 2000 to 80 % in 2019.

However, research suggests that independent directors are fundamentally different in public firms and venture contexts (Garg, 2013; Garg, 2020; Garg and Furr, 2017) (see Table 1). While independent directors in public firms mainly monitor, independent directors on venture boards are less likely to engage in monitoring (Garg, 2013). In venture boards, as compared to inside directors or VC directors, independent directors typically have very little equity—typically <1 % (Bagley and Dauchy, 2008). Independent directors do not represent specific shareholders (the major investors are already directly represented), so they are unlikely to be appointed as monitors, per se (Garg, 2013).

In the context of public firms, resource dependence theory suggests that independent directors also serve as resource providers (Pfeffer, 1981). However, in venture boards, prior literature primarily considers VC directors as the main resource providers, including for financing, advice, and referrals (e.g., Feld and Ramsinghani, 2013; Garg and Furr, 2017). The prior literature on venture boards does not examine the specific conditions under which the appointment of independent directors may take place, which is the focus of this paper.[3] This gap raises a fundamental question: why do ventures appoint independent directors at all? If neither agency theory nor resource dependence theory fully explains their presence, what unique theoretical role do independent directors play in venture governance?

[3] We thank an anonymous reviewer for this observation.

3. Hypotheses development

3.1. A power perspective on venture boards

In this paper, drawing on the power perspective (Finkelstein, 1992; Pfeffer, 1981), we theorize that independent directors provide a balancing role on venture boards. Power refers to the ability to influence others' behavior (Pfeffer, 1981). "Power is central to understanding the conflicts that occur between managers and boards" (Finkelstein & D'Aveni, 1994, p. 1101). One of the most cited sources of power in organizations is formal structure and hierarchy (Finkelstein, 1992). In this paper, the proxy of structural power on the board that we employ is the number of seats on the venture board. Seats on the venture board are powerful positions for making the most important strategic decisions, such as the selection and dismissal of key executives, executive compensation, and evaluation of potential investors (Bagley and Dauchy, 2008; Boeker and Karichalil, 2002; Garg and Furr, 2017).

Venture boards mainly comprise inside directors who are executives in the venture, investor directors who are typically VC directors, and independent directors who are neither employees nor investors (Garg and Furr, 2017). In ventures, VCs are often major external actors who provide financial resources, networks, and other resources to startups in exchange for venture control (Drover et al., 2017). These financial and other resources from VCs are extremely important for resource-constrained ventures. For example, in the biotech and pharmaceutical industry (our research context), it costs, on average, US$2.6 billion to develop a new drug (DiMasi et al., 2016). However, a resource-power tradeoff exists on venture boards (Emerson, 1962; Garg and Eisenhardt, 2017; Pfeffer and Salancik, 1978; Uhlaner et al., 2021), in that when ventures receive VCs' financial investment, they have to relinquish power. Not all VCs obtain board seats; lead VCs tend to seek board seats to obtain direct, detailed information and ongoing influence over strategic decisions (Bagley and Dauchy, 2008). Thus, VCs can have formal power through board seats to influence a venture's trajectory by influencing key decisions and even changing CEOs (Drover et al., 2017; Wasserman, 2003).

3.2. Independent directors and the balancing role of power groups on the board

Despite limited agency problems in ventures, goal differences commonly exist between inside directors and VC directors (Fried and Ganor, 2006; Garg and Furr, 2017). Inside directors include the venture CEO and potentially other key venture executives who serve on the board. Inside directors tend to be psychologically committed and focus on the long-term development of ventures (Hoang and Gimeno, 2010). While they may have significant financial net worth tied to the ventures, they also seek to realize non-financial goals, such as peer approval, autonomy, and even broader social change (Higashide and Birley, 2002; Rindova et al., 2009). They may emphasize novelty to have a significant impact on the industry (Zuzul and Tripsas, 2020). By contrast, VCs see ventures as investments that need to produce financial returns for their limited partners within the fund life. Thus, they are focused on rapid growth and exits due to the limited life cycle of the funds (Yao and O'Neill, 2022). In this pursuit of self-interest, they may emphasize cost-cutting and commercialization over invention focus (Garg et al., 2025) and may even pre-emptively replace the founders (Wasserman, 2003). Due to time pressure, VC directors may push ventures toward short-term goals (Gompers, 1995; Wang and Song, 2016). They may pursue their financial interests, leading to conflict in the fund-raising process (Forbes et al., 2010). VC directors may also allow a higher level of IPO underpricing, which harms the venture, to please investment banks needed for future transactions (Arthurs and Johnson, 2008).

Given these goal differences between the two major groups on the venture board (i.e., inside directors and VC directors), power becomes important in pushing one's goals. Here, we explore the impact of the power gap between inside directors and VC directors on venture board independence. The power gap between inside directors and VC directors can be viewed as a directional one, where we specify which group has a more advantageous position.[4] When the power gap between inside directors and VC directors is large, the board has a clear and unambiguous power structure (Krause et al., 2015), where the more powerful party can realize its preferences. Previous literature has argued, for example, that powerful executives would strategically adopt board structures to promote their interests (Joseph et al., 2014). Similarly, empirical evidence shows that when CEOs are more powerful, they are less likely to appoint a lead director, who would manage all independent directors and constrain the CEOs' power (Krause et al., 2017).

In our context of venture boards, independent directors are neither employees who favor insiders nor investors who may be inclined to protect the interests of VCs (Bagley and Dauchy, 2008). Independent directors are the independent third group on the venture board, nominated by mutual agreement of VC directors and inside directors. When the structural power gap between inside directors and VC directors is larger, we expect the leading group – be it inside directors or VC directors – to be less willing to add independent directors. This is because independent directors may cause friction for the dominant power, which may otherwise be used to advance their interests.

By contrast, when VC directors and inside directors have more equal power distribution on the board, the power gap is smaller. In this case, because of the potential goal differences between these two key groups of directors, venture boards may have less productive discussions and greater difficulty reaching amicable conclusions on key business issues (He and Huang, 2011). Such board-level dysfunction can be particularly harmful to ventures, which often need to move quickly (Westphal and Garg, 2021). When there is a smaller power gap between inside directors and VC directors, independent directors can be useful third parties in ventures, providing impartial views, keeping the conversation going, and limiting the downsides of relatively balanced power between inside directors and VC directors. Independent directors can be the bridge to help resolve conflict and encourage collaborative behaviors in such stalemate

[4] We would like to thank anonymous reviewers for their suggestions on differentiating the direction of power gap.

situations that are more likely to have smaller power gaps (Feld and Ramsinghani, 2013). For example, the CEO of one startup said, "On my first board, I had [name of the independent director]. He was truly independent. When there was a dispute, he could step back and say, "Look guys …." (Roberts et al., 2008, p. 27). Another director on the board of a startup echoed, "You want board meetings to be balanced. I use …[independent] board members to balance the board dialog" (Roberts et al., 2008, p. 3). To conclude, independent directors are more likely to occur when the power gap between insiders and VC directors is smaller on the venture board. Thus, we propose the following hypotheses:

Hypothesis 1a. The structural power advantage of inside directors over VC directors is negatively related to the level of venture board independence.

Hypothesis 1b. The structural power advantage of VC directors over inside directors is negatively related to the level of venture board independence.[5]

In the hypotheses above, we have focused on the inter-group conflict, proxied by the structural power difference between the group of inside directors and the group of VC directors on the board. We further examine two important contingencies. First, we examine intra-group conflict among the VC directors. An important assumption thus far has been that VC directors act in unison. This suggests that factors that increase internal friction within the VC director group, such as tenure variance (Pelled et al., 1999), would weaken VC directors' relative power over inside directors. Second, we consider the supra-group in terms of venture investors. Specifically, we focus on coalition support by powerful shareholders (i.e., VC investors) because support from these actors is likely to be crucial in key decisions such as independent director appointments.

3.3. Intra-group boundary condition of VC directors' tenure variance[6]

Previous research shows that homogeneity fosters comfort and trust among similar individuals and thus plays an important role in group integration (Tuggle et al., 2010). For example, research suggests that demographic similarities create positive in-group feelings (Lau and Murnighan., 1998; Thatcher and Patel, 2012). Along this line, previous literature shows that tenure variance, i.e., lower similarity, can increase emotional conflict in groups (Pelled et al., 1999). Drawing upon these insights, we focus on the heterogeneity in VC directors' tenure on a board. A board's tenure variance captures the degree of tenure difference among directors (Tuggle et al., 2010).

Specifically, we suggest that VC directors' tenure variance will weaken the impact of VC directors' relative power advantage on board independence, for two reasons. First, a longer shared tenure of VC directors on a board suggests greater socialization and cohesion among VC directors, which facilitates understanding about each other (not about venture quality). By contrast, VC directors' tenure variance limits mutual understanding among VC directors on how they should navigate strategic dilemmas and trade-offs that appear along the way for the focal venture (Tuggle et al., 2010; Wiersema and Bantel, 1992). With a higher level of tenure variance, VC directors are less likely to be able to socially calibrate each other's comments in board meetings, support each other, and develop mutual cohesion. Second, when VCs join the board at different times (i.e. during different financing rounds), they often receive different contract terms, such as cash flow rights, liquidation preferences, and other ratification and veto rights (Bagley and Dauchy, 2008; Fried and Ganor, 2006). Thus, when VC directors' tenure variance is higher, they have different rights and potential financial returns, and overall they have less interest alignment with each other, which creates less unity among VC directors. In that case, VC directors are less likely to act in unison and so tenure variance reduces the influence of the structural power advantage of VC directors, thus benefitting inside directors. Based on these arguments, we suggest that VC directors' tenure variance further strengthens the previously hypothesized impact of the structural power advantage of inside directors on board independence. In contrast, VC directors' tenure variance weakens their previously hypothesized power influence on board independence. Hence, we propose:

Hypothesis 2a. VC directors' tenure variance strengthens the effect of structural power advantage of inside directors over VC directors, such that the main effect is more negatively related to the level of venture board independence when VC directors' tenure variance is higher.

Hypothesis 2b. VC directors' tenure variance weakens the effect of structural power advantage of VC directors over inside directors, such that the main effect is less negatively related to the level of venture board independence when VC directors' tenure variance is higher.

3.4. Supra-group boundary condition of VC investment[7]

We further explore how the support of powerful supra-board actors – VC investors – may influence the impact of structural power gaps on venture board independence. It should be recalled that not every VC sits on the board (Li et al., 2020; Park and Steensma, 2014). Thus, VC investors and VC directors are not the same (Amornsiripanitch et al., 2019; Garg and Eisenhardt, 2017). We focus on

[5] To foreshadow our Method section, we measure structural power advantage of inside directors vs VC directors (and vice versa) using a spline function that is commonly used in the organizational literature.

[6] We would like to thank anonymous reviewers for advising us to further look into the VC heterogeneity.

[7] We thank anonymous reviewers for encouraging us to further explore the tension between two power groups.

private ventures so detailed yearly ownership data on each shareholder are not publicly available. For this reason, to proxy VCs' ownership power, we focus on the total amount of VC investments in the focal venture, as disclosed in VC transactions. VCs invest in ventures in exchange for equity, and VC investment gives VCs formal ownership power over ventures as shareholders (Finkelstein, 1992; Ma et al., 2013). Furthermore, VCs own "preferred stock", which has more rights, such as liquidation preferences and the first right to sales proceeds from any exits, compared with "common stock" owned by founders and executives (Bagley and Dauchy, 2008; Kaplan and Strömberg, 2003). Thus, VC investors have a powerful influence on venture management and strategies, including the level of innovation (Park and Tzabbar, 2016). Furthermore, when VCs have higher investment stakes, they have greater power to change top management in ventures (Boeker and Wiltbank, 2005; Wasserman, 2003).

We propose that higher VC investment is likely to enhance VC directors' relative power advantage over inside directors. The decision-making process in firms is influenced by the coalition of powerful groups of shareholders and directors who cooperate (or not) in making and reinforcing specific decisions (Cyert and March, 1963; Greve & Zhang, 2017). Given the potential goal conflict between VCs and insiders, VC investors on average are likely to be less willing to be as cooperative with inside directors than with VC directors. With higher VC investment, the inside directors are likely to be more self-censoring, given the VC owners' influence on key management decisions including inside director's tenure as executives in ventures (Boeker and Wiltbank, 2005; Wasserman, 2003). By contrast, VC directors as direct representatives of VC investors are likely to be in a coalition with VC investors, and thus their direct effect may be amplified. Thus, we propose that:

Hypothesis 3a. VC investment weakens the effect of structural power advantage of inside directors over VC directors, such that the main effect is less negatively related to the level of venture board independence when VC investment is higher.

Hypothesis 3b. VC investment strengthens the effect of structural power advantage of VC directors over inside directors, such that the main effect is more negatively related to the level of venture board independence when VC investment is higher.

4. Method

4.1. Sample

The sample is from the U.S. biotech and pharmaceutical industry. This industry is an appropriate context for our study because it receives a large amount of VC investments (Baum and Silverman, 2004; Hoenen et al., 2014). We started with the U.S. ventures categorized as biotech or pharmaceutical companies in the Securities and Exchange Commission (SEC) filings Form D and Boardex databases, founded after 2000. Form D board data of ventures starts in 2010, so we keep U.S. ventures that received the first VC investment after 2010. We excluded ventures without board data or VC directors on their boards. We used the VentureXpert database to trace VC investment and ventures' exit events. Prior studies have extensively used the VentureXpert database to research entrepreneurial ventures and venture capital (e.g., Sorenson and Stuart, 2008). The VentureXpert database offers detailed information about the investment events of a comprehensive list of ventures, such as the date of each investment event, the names of investors involved, and ventures' exit events. Ventures can have multiple public offerings; thus, we drop venture years after the first IPO. After the venture is acquired, the venture will not operate independently, so we also drop the venture years after acquisitions. If the venture does not have IPOs or acquisitions, we track their years until 2020. To summarize, following procedures in the recent literature on U.S. firms (Yao and O'Neill, 2022), we tracked the board composition for each venture from the time of its first VC investment to the first venture exit event (if any) through 2020.

Next, we try to classify the types of directors for the sampled ventures. SEC Form D and Boardex databases have differentiated inside directors and outside directors. For all outside directors, we use directors' employment history to differentiate whether they are VC directors or independent directors. Specifically, we identify VC directors as those who are VC investors of the focal venture. We identify independent directors as those who are neither ever employed by the focal firm, nor are investor directors.[8]

For directors listed in the Boardex database, the database provides directors' employment history compiled from various public sources, including regulatory filings, annual reports, proxy statements, company websites, press, and regulatory news wires. For directors who cannot be found in the Boardex database, we hired research assistants to search online (e.g., Linked In, venture websites, venture announcements, personal websites, and news articles) to get directors' employment information.

Other types of outside directors include founders who are not executives as well as other types of investor directors, namely corporate venture capital directors and angel-investor directors (Garg, 2013). We find such occurrences are limited in our data. However, in line with our theoretical focus on VC directors and inside directors, we excluded venture years with founder-non-executive directors, CVC directors, or angel-investor directors. Finally, our sample comprises 989 U.S. biotech and pharmaceutical ventures and 4125 venture-years from 2010 to 2020.

[8] We thank an anonymous reviewer for pointing out that some independent directors may not be socially independent in that they may have family relationships with the management. Due to limitations of our archival data on the US ventures, we are unable to parse directors' family relationships with the management. By contrast, such data may be available for some European countries (Uhlaner et al., 2021).

4.2. Measures

4.2.1. Dependent variables

The dependent variable is the level of board independence. Following the common operationalization in the prior board literature (e.g., Bell et al., 2012; Westphal and Zajac, 2013; Dalton et al., 2007), *board independence* is measured as the number of independent directors divided by the total number of directors on the venture board at year t + 1. Independent directors are defined as directors who are neither inside directors (i.e., executives at the focal venture) nor VC directors (i.e., VC investors of the focal venture).

4.2.2. Independent variables

Structural power advantage is coded from the structural power difference between inside directors and VC directors on the venture board at year t. Following the previous literature (Finkelstein, 1992), we define the structural power by the number of seats on the venture board. Following previous literature (Krause et al., 2015), we use the difference between the percentage of insiders relative to the percentage of VC directors on the board. Then we further develop two measures to separate the directions of power advantage: structural power advantage of VC directors over inside directors (*VCs-above-insiders power*) and structural power advantage of inside directors over VC directors (*insiders-above-VCs power*).

To measure the directions of power advantage, we draw from the behavioral theory of the firm (BTOF) literature (Cyert and March, 1963). BTOF literature measures the positive and negative performance feedback as the difference between firms' actual ROA performance and aspiration levels by a spline function (Greve, 2003). Specifically, positive performance feedback is coded as the value of the difference when ROA is above aspiration levels and zero otherwise, and negative performance feedback is coded as the absolute value of the difference when ROA is below aspiration levels and zero otherwise (e.g., Mishina, Dykes, Block, & Pollock, 2010, p. 707). Following this spline approach including in governance scholarship (e.g., Garg et al., 2018; Garg et al., 2019), we define inside directors' power relative to VC directors' power (and vice-versa) as a spline function to isolate the directional effects (see Eqs. 1 & 2).

$$VCs-above-insiders\ power = \begin{cases} \dfrac{VCs–insiders}{VCs + insiders} \text{ if } VCs > insiders \\ 0 \text{ if } VC \leq insiders \end{cases} \quad (1)$$

$$Insiders-above-VCs\ power = \begin{cases} \dfrac{insiders - VCs}{VCs + insiders} \text{ if } VCs \leq insiders \\ 0 \text{ if } VCs > insiders \end{cases} \quad (2)$$

To help illustrate, let us imagine two conditions. In condition A, we have 3 VC directors and 2 inside directors. In condition B, we have 2 inside directors and 1 VC director. In condition A, *VCs-above-insiders* equals 0.2 (= (3 − 2) / (3 + 2)), and *insiders-above-VCs* equals 0. In condition B, *VCs-above-insiders* equals 0, and *insiders-above-VCs* equals 0.33 (= (2 − 1) / (2 + 1)). Through this measurement, we can capture which specific party possesses the power advantage, and the direction of the power gap between insiders and VC directors can be differentiated between condition B and condition A.

4.2.3. Moderating variables

4.2.3.1. VC directors' tenure variance. Since we collected panel data for venture boards, we have the starting year of VC directors on the board. Following previous literature (Tuggle et al., 2010), we measured *VC tenure variance by* the standard deviation of VC directors' tenure at year t.

4.2.3.2. VC amount (logged). First, we get the total amount of VC investments in the focal venture until the year t. Then we take its natural log because its distribution is skewed. VC investment data are from the VentureXpert database.

4.3. Control variables

Since the main focus of this paper is the venture board, we include several board-level controls. *Board size* is measured as the number of directors on the venture board. Previous studies have argued that board size may represent ventures' special resource needs or procurement patterns (Garg and Furr, 2017; Pfeffer and Salancik, 1978). *Board female* is coded as 1 if there is at least one female director on the board, and 0 otherwise.

Previous studies suggest that ventures may invite independent directors for the signaling role (Connelly et al., 2011; Spence, 1973). Related to the resource provisioning role of directors, firms with stronger signals have less need for resources from independent directors (Hillman et al., 2009). Thus, following previous literature (see reviews by Bafera and Kleinert, 2022; Colombo, 2020), we controlled for alternative venture signals that can influence the venture board composition. First, we controlled for the focal venture's signals in terms of technological resources (Baum and Silverman, 2004; Hsu and Ziedonis, 2013; Mann and Sager, 2007). Patent is the property right of the inventor to exclude others from making, using, offering for sale, or selling the invention. The invention must be new and useful to be granted a patent by the United States Patent and Trademark Office (USPTO). Time and effort are required to go through the USPTO's assessment process, and ventures have to cover all the associated costs, so patents are a strong signal of venture quality. *Venture patent* is the number of patents assigned to the focal venture at year t.

Second, we controlled for venture signals in terms of strategic alliances (Hoehn-Weiss and Karim, 2014; Stuart et al., 1999). Strategic alliances are voluntarily initiated cooperative agreements between firms involving the exchange, sharing, or co-development of products, technologies, or services (Gulati, 1998). Alliances are important to ventures because alliance partners can provide access to resources, improve access to information, and provide legitimacy to ventures (Stuart et al., 1999). Alliance data are from the SDC database, which is widely used in alliance research (Schilling, 2009). *Venture alliance* is coded as 1 if the focal venture has at least one alliance at year t, and 0 otherwise.

Third, we controlled for venture signals in terms of clinical trials (Girotra et al., 2007; Mc Namara and Baden-Fuller, 2007). Clinical trials are research studies in which human volunteers are assigned to interventions (for example, a medical product, behavior, or procedure) based on a protocol (or plan) and are then evaluated for effects on biomedical or health outcomes. Thus, clinical trials are an important stage of turning discoveries into products (Haeussler and Assmus, 2021). Data about clinical trials are from the ClinicalTrial database. The ClinicalTrial database is maintained by the National Library of Medicine (NLM) at the National Institutes of Health (NIH). Information on the ClinicalTrials database is provided and updated by the sponsor or principal investigator of the clinical study, and most of the records are clinical trials. We include studies where sampled ventures are sponsors. We include studies that use interventions of drugs and exclude studies that use other interventions, such as medical devices. Studies are generally submitted when they begin, and the information on the site is updated throughout the study. Thus, we include early phase 1, phase 1, phase 2, phase 3, and phase 4 studies. *Venture clinical trial* is coded as 1 if the focal venture has at least one clinical trial at year t, and 0 otherwise.

Finally, we also control the basic information about the financing rounds, venture age, and time effect. We control the *venture financing round* variable to account for the effect of prior VC financings (Baum and Silverman, 2004). Round information on VC deals is from the VentureXpert database. To account for the influence of general economic conditions, we include year fixed effects in all the models. To account for the influence of venture growth over the years, we include venture age fixed effects in all the models. Finally, given the potential concerns about unobserved venture heterogeneity, we include venture fixed effects in all the models.

4.4. Analytical procedures

The dependent variable of the level of board independence is continuous, and we use the linear regression model. To determine the appropriate estimation model, we first conducted Hausman's (1978) test to evaluate the influence of unobserved venture heterogeneity. The results show that the estimations with fixed and random effects are systematically different ($p < 0.001$ for the predictions for venture board independence), suggesting correlations between the regressors and the error terms. Therefore, we decided to apply a panel OLS regression model with venture fixed effect to control for the time-invariant attributes and between-venture heterogeneity (Wooldridge, 2010). All independent and control variables are winsorized at the 1 % level to minimize the influence of outlier data points.

5. Results

Table 2 provides descriptive statistics and correlations. In our data, on average, 5.35 directors sit on the venture board, about 51 % of directors on venture boards are VCs, and about 21 % of directors are independent directors. These statistics are similar to those reported in Yao and O'Neill (2022) study of U.S. surgical device ventures. Our sample shows variation in the number of independent directors: 35 % of venture years have zero independent directors, 30 % have one, 17 % have two, 11 % have three, and 7 % have four or five.[9] Tests reveal a mean-variance inflation factor (VIF) of 1.31, which is below the suggested threshold of 10 for the risk of multicollinearity (Vittinghoff et al., 2012).

Table 3 reports the results to test Hypotheses 1a and 1b, which suggest that ventures have a lower level of board independence when they have a larger power gap between inside directors and VC directors on the board. Model 1 in Table 3 includes all the control variables. Model 2 in Table 3 reports the results of the main effect of the VC-insider power gap. Hypotheses 1a and 1b differentiate the directional effect of power gaps. Hypothesis 1a (1b) suggests that when the structural power advantage of inside directors over VC directors (VC directors over inside directors) is larger, the focal venture has a lower level of board independence. Model 2 in Table 3 includes the two variables of power gap. In Model 2 in Table 3, we find that the effect of insiders-above-VCs power is negative and significant ($b = -0.250$, $p < 0.001$), and Hypothesis 1a is supported. As for the substantive effect, a one standard deviation increase in the structural power advantage of inside directors over VC directors would reduce the level of venture board independence by 2.5 %. In Model 2 of Table 3, we find that the effect of VCs-above-insiders power is also negative and significant ($b = -0.302$, $p < 0.001$), and Hypothesis 1b is supported. As for the substantive effect, a one standard deviation increase in the structural power advantage of VC directors over inside directors would reduce the level of venture board independence by 7.5 %.

Hypothesis 2a suggests that when VC directors' tenure variance is higher, the negative effect of the structural power advantage of inside directors over VC directors on venture board independence will be stronger (a negative interaction effect). Hypothesis 2b suggests that when VC directors' tenure variance is higher, the negative effect of the structural power advantage of VC directors over inside directors on the venture board independence will be weaker (a positive interaction effect). Model 3 in Table 3 includes the two

[9] Consistent with observations in the prior literature that not all VC investors get a board seat (e.g., Garg and Furr, 2017; Feld and Ramsinghani, 2013; Uhlaner et al., 2007; Li et al., 2020), we also find in our sample that on average across years, 53.65 % of VC investors in our sample ventures receive board seats. The percentage of VCs with board seats declines in later rounds, going from 54.27 % in the first round of financing to 51.66 % in the fourth or later round.

interaction terms of power gap and VC directors' tenure variance. In Model 3, we can see that the interaction term of insiders-above-VCs power and VC tenure variance is negative, as predicted, but not significant ($b = -0.113$, $p > 0.1$), so Hypothesis 2a is not supported. This suggests that when inside directors have a greater structural power advantage than VC directors on the board, VC directors' internal frictions (such as tenure variance) do not further change inside directors' already-high influence regarding board composition. In Model 3, we can see that the interaction term of VCs-above-insiders power and VC directors' tenure variance is significant and positive ($b = 0.057$, $p < 0.001$), so Hypothesis 2b is supported. That is, when VC directors' tenure variance is higher, the negative effect of the structural power advantage of VC directors over inside directors on the venture board independence is weaker. We also show the interaction effect in the graph by separating the groups with a high and low level of VC directors' tenure variance (see Fig. 1). The high group is two standard deviations above the mean, and the low group is two standard deviations below the mean. As Fig. 1 shows, the negative effect of the structural power advantage of VC directors over inside directors on venture board independence is more negative when VC directors' tenure variance is lower (i.e., in the dotted line).

Hypothesis 3a suggests that when VC investment is higher, the negative effect of the structural power advantage of inside directors over VC directors on venture board independence will be weaker (a positive interaction effect). Hypothesis 3b suggests that when VC investment is higher, the negative effect of the structural power advantage of VC directors over inside directors on venture board independence will be stronger (a negative interaction effect). Model 3 in Table 3 includes the two interaction terms of power gap and VC investment. In Model 3, we can see that the interaction term of insiders-above-VCs power and VC investment is positive but not significant ($b = 0.012$, $p > 0.1$), so Hypothesis 3a is not supported. Results show that when inside directors are more powerful than VC directors on the board, VCs' other power sources through ownership do not influence the impact of inside directors on board composition through the appointment of independent directors. In Model 3, we can see that the interaction term of VCs-above-insiders power and VC investment is significant and negative ($b = -0.044$, $p < 0.001$), so Hypothesis 3b is supported. We show the interaction effect graphically, too, by separating the groups with a high and low level of VC investment. The high group is two standard deviations above the mean, and the low group is two standard deviations below the mean. As Fig. 2 shows, the negative effect of the structural power advantage of VC directors over inside directors on venture board independence is more negative when VC investment is higher (i.e., in the solid line).

5.1. Supplementary analysis

5.1.1. Alternative measure of venture board independence

In the main analysis, we followed the corporate governance literature to measure the level of board independence as a ratio. In the supplementary analysis, we used the alternative count measure of the number of independent directors on the venture board. All results are robust (see Table A1).

5.1.2. Alternative measure of VC directors' tenure variance[10]

In the main analysis, we followed the previous literature to measure the tenure variance as a continuous variable. In the supplementary analysis, we used the alternative dummy measure of the VC directors' tenure variance, which is coded as 1 if the standard deviation is larger than 0, and 0 otherwise. All results are robust (see Table A2).

5.1.3. Alternative sample

To mitigate potential concerns about ventures' special motivations for independent directors at certain times, we altered the sample and re-ran the analyses. For example, ventures may add prestigious independent directors right before the IPO for window-dressing purposes (Chen et al., 2008). Ventures may start planning for IPOs well in advance. So, to exclude such concerns, we exclude two years before the venture's IPO (if any). All results are robust (see Table A3).

5.1.4. Performance implications of venture board independence

This study focuses on the *antecedents* of venture board independence. Yet, scholars may be curious about whether independent directors are consequential for ventures in our context. Following previous literature (e.g., Hoehn-Weiss and Karim, 2014), we operationalize successful venture outcomes through ventures' IPOs or acquisitions. Our additional analyses suggest that ventures with more independent directors are more likely to have successful outcomes through IPOs or acquisitions (see Table A4). This suggests that independent directors are potentially beneficial for certain venture outcomes.

6. Discussion

We contribute to prior literature in several ways. First, we offer an expanded view of venture board composition by incorporating independent directors and examining their antecedents. Prior studies have largely focused on the consequences of venture boards as a collective (e.g., Garg and Eisenhardt, 2017; Uhlaner et al., 2021) or VC directors in particular (e.g., Beckman et al., 2014). We contribute by focusing on the antecedents and key contingencies that are likely to shape the level of board independence in ventures. Specifically, we offer a novel power-based explanation suggesting that the primary role of independent directors is to create an

[10] We thank our editor for this suggestion.

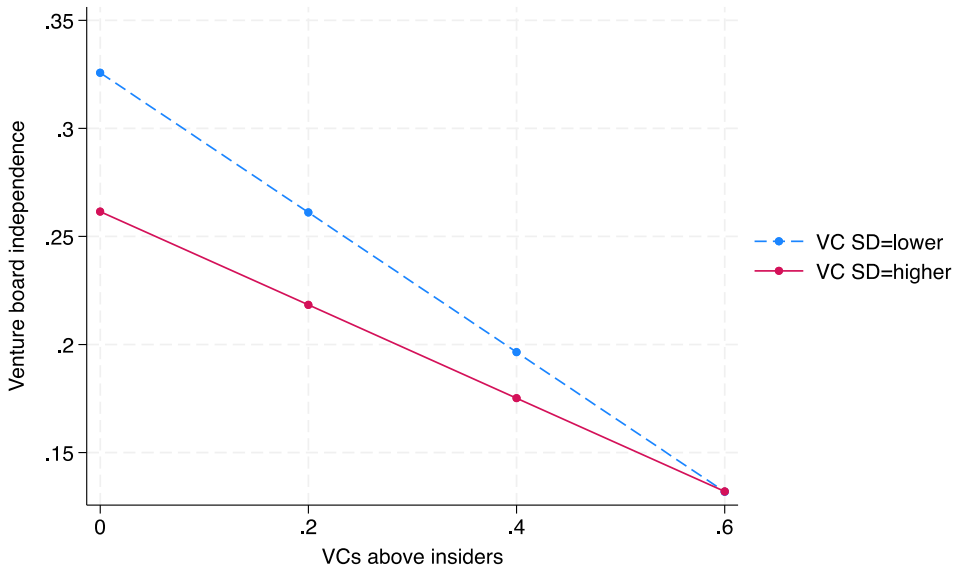

Fig. 1. Moderating effect of VC tenure variance on the effect of the power gap.

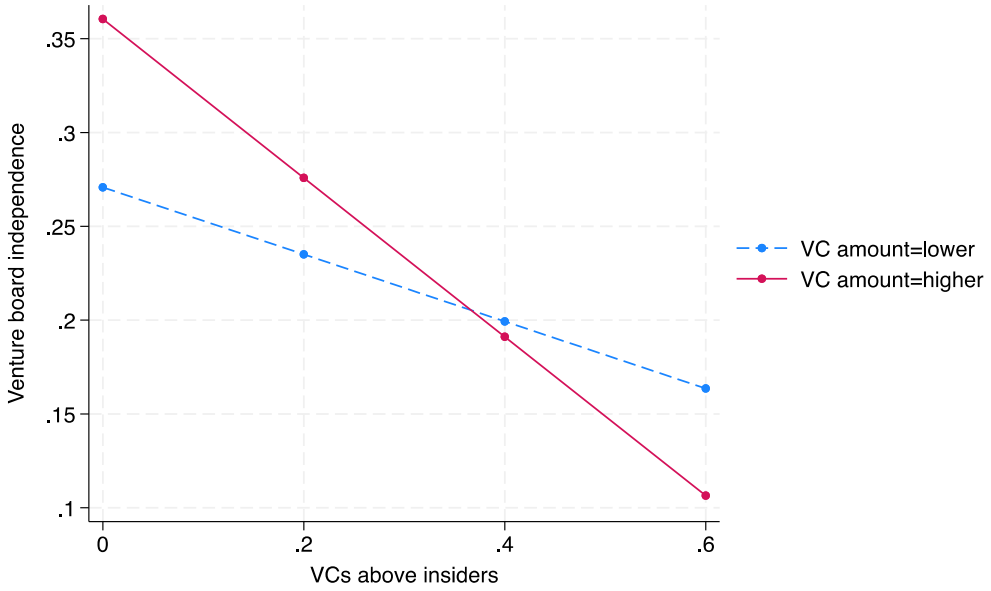

Fig. 2. Moderating effect of VC amount on the effect of the power gap.

environment where inside directors and VC directors can find compromises and avoid deadlocks. Thus, in examining independent directors, our results portray an under-explored political view of venture board composition where misaligned interests among inside directors and VC directors need to be managed effectively. Relatedly, we advance the nascent research on managing venture boards. This emerging literature has previously noted the importance of a CEO-led process for strategic decision-making (e.g., Garg and Eisenhardt, 2017) and a CEO-led effective information environment where directors can be more engaged (e.g., Uhlaner et al., 2021). Our findings suggest that independent directors can also be important for venture board effectiveness as they help mitigate power and politics on venture boards between inside directors and VC directors.

Relatedly, we connect the emerging scholarly literature on venture boards to venture investors (Garg and Furr, 2017; Deb et al., 2024) and add nuance by examining important intra-board characteristics. The entrepreneurship literature has often focused on venture investors, such as VCs, as a proxy for key tasks where venture boards are more closely involved (e.g., Drover et al., 2017). We contribute by linking VC directors with VC investments and showing that VC investment strengthens the effect of the structural power advantage of VC directors over inside directors such that its main effect is even more negatively related to venture board independence when VC investment is higher. Further, by also looking at intra-VC director group characteristics, our study begins to unpack the

Table A4
Event history analysis of ventures' successful venture outcome.

	M1	M2
Level of board independence	–	1.110***
		(0.314)
VC directors' tenure variance	−0.015	0.010
	(0.072)	(0.071)
Board size	0.218***	0.168***
	(0.034)	(0.037)
Board female	0.213	0.193
	(0.112)	(0.112)
Venture financing round	−0.097*	−0.085*
	(0.041)	(0.041)
VC amount (logged)	0.333***	0.346***
	(0.044)	(0.044)
Venture patent	0.341**	0.349**
	(0.115)	(0.115)
Venture clinical trial	0.004	−0.004
	(0.144)	(0.144)
Venture alliance	−0.132	−0.131
	(0.206)	(0.206)
Venture age	−0.027	−0.034
	(0.018)	(0.019)
N	4125	4125
Log-likelihood	−2144.40	−2138.21

Note: Robust standard errors are in parentheses.
* $p < 0.05$ (two-tailed t-test).
** $p < 0.01$ (two-tailed t-test).
*** $p < 0.001$ (two-tailed t-test).

Table 1
Independent directors: public firms vs. ventures.

	Public firms	Ventures
Type of directors	Insiders, independent directors	Insiders, independent directors, VC directors
Percentage of independent directors	Majority, required by the law (at least in the US)	Minority, no legal requirement (at least in the US)
Monitoring role of independent directors	More dominant	Less dominant

common assumption that VC directors are aligned with each other. Our results suggest that VC directors' tenure heterogeneity on the board can create misalignment among VC directors, thereby reducing the effect of VC directors' relative power over inside directors. This presents a significant opportunity for scholars to start considering within-category differences among venture directors (e.g., VC directors vs. VC directors), which largely remains neglected in the literature.

Second, we offer a novel view of the role of independent directors in firms. Prior literature on independent directors has largely been set in public-listed firms where monitoring is the key role that these directors play (Dalton et al., 2007). By extending the inquiry of independent directors into the novel context of venture boards, we propose a novel power-balancing role of independent directors. In this role, independent directors mitigate the power-related stalemates between inside directors and VC directors. This triadic view of boards – comprising inside directors, investor directors, and independent directors – is a useful extension of the corporate governance literature on public-listed firms and reinforces the notion that venture boards are a theoretically generative avenue for the corporate governance literature (Garg, 2020).

Third, we advance the power perspective on boards.[11] Prior research, often in the context of public boards, suggests that whichever faction (CEO or independent directors) has more power can realize its interests (see the excellent review by Westphal and Zajac, 2013). For example, if the CEO has more power, they can limit independent directors' efforts to curb CEO compensation, and new directors are likely to be demographically similar to the CEO (e.g., Li, 2025; Westphal and Zajac, 1995). Consistent with prior research, we also find that when VC directors have more power over inside directors (and vice versa), they tend to seek to retain power, leading to fewer new independent directors being appointed. This is similar to the finding by Uhlaner et al. (2021) that private firm CEOs retain their power over outside directors by not sharing information. We contribute to this power perspective on boards by examining the consequences when the power position of two factions on the board is *similar*, leading to potential stalemates. Specifically, we contribute to an emerging stream of research that highlights alternative configurations of power differences within boards (e.g., Garg and Eisenhardt, 2017, who focus on inside directors' *low power* and the mitigating role of the board process). We find that on average, when power is similar between VC directors and inside directors, board independence is higher, suggesting a mediating role of independent

[11] We thank our editor for encouraging us to develop this insight.

Table 2
Descriptive statistics and correlations.

		Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1)	Insiders-above-VCs power	0.03	0.10	1.00											
(2)	VCs-above-insiders power	0.32	0.25	−0.394*	1.000										
(3)	VC directors' tenure variance	0.36	0.75	−0.141*	0.262*	1.000									
(4)	Board size	5.28	1.86	−0.160*	0.523*	0.303*	1.000								
(5)	Board female	0.43	0.50	−0.101*	0.189*	0.097*	0.271*	1.000							
(6)	Board independence	0.21	0.19	−0.048*	−0.095*	0.054*	0.459*	0.108*	1.000						
(7)	Venture financing round	2.64	1.63	−0.150*	0.281*	0.378*	0.308*	0.111*	0.105*	1.000					
(8)	VC amount (logged)	3.71	1.84	−0.250*	0.446*	0.275*	0.515*	0.224*	0.128*	0.414*	1.000				
(9)	Venture patent	0.24	0.43	−0.068*	0.147*	0.177*	0.240*	0.065*	0.098*	0.224*	0.229*	1.000			
(10)	Venture clinical trial	0.11	0.31	−0.058*	0.118*	0.096*	0.176*	0.065*	0.073*	0.111*	0.154*	0.186*	1.000		
(11)	Venture alliance	0.05	0.22	−0.036*	0.076*	0.066*	0.151*	0.041*	0.039*	0.049*	0.103*	0.069*	0.046*	1.000	
(12)	Venture age	8.28	4.26	−0.027	0.023	0.191*	0.132*	−0.006	0.146*	0.400*	−0.055*	0.185*	0.041*	−0.006	1.00

N = 4125 venture-years.
* $p < 0.05$.

Table 3
OLS regression on the level of board independence.

	M1	M2	M3
Insiders-above-VCs power	–	−0.250***	−0.271***
		(0.027)	(0.046)
VCs-above-insiders power	–	−0.302***	−0.179***
		(0.013)	(0.026)
Insiders-above-VCs power × VC directors' tenure variance	–	–	−0.113
			(0.082)
VCs-above-insiders power × VC directors' tenure variance	–	–	0.057***
			(0.010)
Insiders-above-VCs power × VC amount (logged)	–	–	0.012
			(0.013)
VCs-above-insiders power × VC amount (logged)	–	–	−0.044***
			(0.006)
VC directors' tenure variance	−0.019***	−0.011***	−0.031***
	(0.003)	(0.003)	(0.004)
Board size	0.039***	0.050***	0.053***
	(0.002)	(0.002)	(0.002)
Board female	0.028***	0.026***	0.027***
	(0.006)	(0.005)	(0.005)
Venture financing round	0.008**	0.007**	0.006*
	(0.003)	(0.003)	(0.003)
VC amount (logged)	−0.004	0.001	0.015***
	(0.003)	(0.003)	(0.004)
Venture patent	0.002	0.004	0.004
	(0.004)	(0.004)	(0.004)
Venture clinical trial	0.015**	0.012*	0.012*
	(0.005)	(0.005)	(0.005)
Venture alliance	−0.015*	−0.011	−0.009
	(0.007)	(0.007)	(0.007)
Venture FE	Yes	Yes	Yes
Venture age FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Constant	−0.064***	−0.029*	−0.076***
	(0.016)	(0.014)	(0.017)
N	4125	4125	4125
R square	0.209	0.338	0.354

Note: Robust standard errors are in parentheses.
* $p < 0.05$ (two-tailed *t*-test).
** $p < 0.01$ (two-tailed *t*-test).
*** $p < 0.001$ (two-tailed *t*-test).

directors on the board. Thus, we advance the extant conversation on power within boards, which suggests that powerful factions tend to prevail and preserve power, by examining the consequences when the factional power is similar.

More broadly, we add new insights to the power literature (e.g., Finkelstein, 1992; Pfeffer, 1981) to further advance the view of power dynamics within and between organizations. Prior literature often tends to examine power differences just between the two actors — e.g., two individuals, groups, and organizations. We focus on the inter-group power gap between two groups (i.e., VC directors and inside directors), and show that the influence of inter-group power difference is further shaped by intra-group characteristics (VC directors' tenure heterogeneity) and supra-group characteristics (VC ownership). Overall, this interplay of power dynamics beyond two focal actors has the potential to reveal richer power issues and can be explored further in future studies of power in organizations. Scholars could further explore why powerful factions do not always win by incorporating intra-faction and supra-faction dynamics.[12] For example, when scholars examine the power conflict between two groups (such as female executives vs. male executives) in diversity initiatives, intra-group conflict within one group can curb that group's power advantage. Similarly, supra-group alignment (such as institutional shareholders, or donors in a non-profit) can provide the coalitional support that strengthens the influence of one group vs. another in diversity initiatives.

6.1. *Limitations and future research directions*

It is important to acknowledge some limitations of this study. First, we do not directly observe and measure the negotiation process of independent director appointments on venture boards. It is difficult to trace this information from the public archival data, especially on ventures and in our empirical context. Future studies, especially with rich qualitative data on board meetings and proprietary data on contract terms, can further explore how independent directors are selected in ventures in the US. Future research may also

[12] We thank an anonymous reviewer for encouraging us to develop these suggestions.

investigate the appointment of independent directors in other empirical contexts. While VC-backed firms in the US do not have legal obligations to appoint independent directors, other countries may have different dynamics and regulations that lead to the appointment (or not) of independent directors on the board. There remain a lot of future research opportunities to explore boundary conditions such as those related to institutional factors and market dynamics.

Second, we are unable to examine how venture boards emerge in the first place. Garg & Furr (2017, p. 2) note: "Often at the behest of their professional investors, these ventures typically form a formal board of directors." While we expect there may be institutional requirements that provide the context of these decisions, new behavioral underpinnings about power-resource trade-offs (e.g., Garg and Eisenhardt, 2017; Uhlaner et al., 2021) can be fruitfully explored by examining the decisions about the emergence of boards and the selection of directors. While we focus on the under-examined antecedents of independent directors in venture boards, there is a significant opportunity for focused studies on various performance outcomes of independent directors with comprehensive theoretical development and empirical analyses.

Third, we want to acknowledge the data constraints in measuring power and conflict in the venture context. For example, one potential proxy of structural power is CEO duality (e.g., Finkelstein, 1992). However, as prior research notes, board chair data are less available in our research setting (the United States): "Unlike public firms, which are required in many institutional contexts to have board committees and a board chair, venture boards usually have a very limited formal structure and often have no committees or even overall board chairs" (Garg and Furr, 2017, p. 4; Garg, 2014). Future survey studies could potentially gather primary data and use alternative power measures. Similarly, we proxy intra-group conflict by VC directors' tenure variance given our archival data availability. However, it would be valuable for future studies to explore other proxies such as VC characteristics of fund age, or use surveys to capture intra-group conflict more directly.

7. Conclusion

This paper explores the puzzle of why and when we see independent directors on venture boards. We theorize and empirically find that when the structural power gap is smaller between inside directors and VC directors, ventures are more likely to invite independent directors to potentially avoid deadlocks on the board. Furthermore, VC directors' intra-group power conflict (i.e., tenure variance) weakens while VC ownership power (i.e., the total amount of VC investment) strengthens the effect of structural power advantage of VC directors over inside directors on venture board independence. Overall, these results offer a new power perspective for scholars seeking to deepen their understanding of venture board composition and the emergence of independent directors in the venture context.

CRediT authorship contribution statement

Yajing Li: Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **Sam Garg:** Writing – review & editing, Supervision, Conceptualization.

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Appendix A

Table A1
Alternative measure of venture board independence.

	M1	M2	M3
Insiders-above-VCs power	–	−1.338***	−1.192***
		(0.163)	(0.278)
VCs-above-insiders power	–	−1.855***	−0.754***
		(0.077)	(0.161)
Insiders-above-VCs power × VC directors' tenure variance	–	–	−1.106*
			(0.499)
VCs-above-insiders power × VC directors' tenure variance	–	–	0.230***
			(0.060)
Insiders-above-VCs power × VC amount (logged)	–	–	−0.022
			(0.082)
VCs-above-insiders power × VC amount (logged)	–	–	−0.313***

(*continued on next page*)

Table A1 (*continued*)

	M1	M2	M3
			(0.037)
VC directors' tenure variance	−0.088***	−0.044**	−0.122***
	(0.016)	(0.015)	(0.026)
Board size	0.478***	0.550***	0.566***
	(0.012)	(0.011)	(0.011)
Board female	0.171***	0.158***	0.167***
	(0.035)	(0.032)	(0.032)
Venture financing round	0.110***	0.088***	0.085***
	(0.015)	(0.014)	(0.014)
VC amount (logged)	−0.050**	−0.015	0.088***
	(0.018)	(0.017)	(0.021)
Venture patent	−0.000	0.017	0.016
	(0.025)	(0.023)	(0.022)
Venture clinical trial	0.079*	0.059*	0.060*
	(0.031)	(0.029)	(0.028)
Venture alliance	−0.109*	−0.072	−0.060
	(0.044)	(0.040)	(0.040)
Venture FE	Yes	Yes	Yes
Venture age FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Constant	−1.394***	−1.219***	−1.614***
	(0.064)	(0.059)	(0.079)
N	4125	4125	4125
R square	0.451	0.540	0.552

Note: Robust standard errors are in parentheses.
* $p < 0.05$ (two-tailed *t*-test).
** $p < 0.01$ (two-tailed *t*-test).
*** $p < 0.001$ (two-tailed *t*-test).

Table A2
Alternative measure of VC directors' tenure variance.

	M1	M2	M3
Insiders-above-VCs power	–	−0.253***	−0.300***
		(0.027)	(0.046)
VCs-above-insiders power	–	−0.291***	−0.152***
		(0.013)	(0.027)
Insiders-above-VCs power × VC directors' tenure variance	–	–	−0.295*
			(0.139)
VCs-above-insiders power × VC directors' tenure variance	–	–	0.111***
			(0.020)
Insiders-above-VCs power × VC amount (logged)	–	–	0.014
			(0.013)
VCs-above-insiders power × VC amount (logged)	–	–	−0.044***
			(0.006)
VC directors' tenure variance	−0.053***	−0.025***	−0.067***
	(0.005)	(0.005)	(0.009)
Board size	0.042***	0.051***	0.053***
	(0.002)	(0.002)	(0.002)
Board female	0.028***	0.026***	0.026***
	(0.006)	(0.005)	(0.005)
Venture financing round	0.008**	0.006*	0.007*
	(0.003)	(0.003)	(0.003)
VC amount (logged)	−0.002	0.002	0.000
	(0.003)	(0.003)	(.)
Venture patent	0.003	0.004	0.004
	(0.004)	(0.004)	(0.004)
Venture clinical trial	0.013**	0.011*	0.012*
	(0.005)	(0.005)	(0.005)
Venture alliance	−0.014	−0.010	−0.008
	(0.007)	(0.007)	(0.007)
Venture FE	Yes	Yes	Yes
Venture age FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Constant	−0.090***	−0.038**	−0.082***
	(0.016)	(0.015)	(0.017)
N	4125	4125	4125
R square	0.224	0.339	0.355

Note: Robust standard errors are in parentheses.

* $p < 0.05$ (two-tailed *t*-test).
** $p < 0.01$ (two-tailed *t*-test).
*** $p < 0.001$ (two-tailed *t*-test).

Table A3
Alternative sample.

	M1	M2	M3
Insiders-above-VCs power	–	−0.267***	−0.263***
		(0.026)	(0.045)
VCs-above-insiders power	–	−0.275***	−0.155***
		(0.013)	(0.028)
Insiders-above-VCs power × VC directors' tenure variance	–	–	−0.072
			(0.077)
VCs-above-insiders power × VC directors' tenure variance	–	–	0.065***
			(0.010)
Insiders-above-VCs power × VC amount (logged)	–	–	−0.005
			(0.015)
VCs-above-insiders power × VC amount (logged)	–	–	−0.043***
			(0.007)
VC directors' tenure variance	−0.017***	−0.012***	−0.033***
	(0.003)	(0.003)	(0.004)
Board size	0.038***	0.048***	0.051***
	(0.002)	(0.002)	(0.002)
Board female	0.019**	0.016*	0.016**
	(0.007)	(0.006)	(0.006)
Venture financing round	0.004	0.004	0.003
	(0.003)	(0.003)	(0.003)
VC amount (logged)	−0.004	0.000	0.013
	(0.003)	(0.003)	(0.003)
Venture patent	−0.000	0.003	0.003
	(0.004)	(0.004)	(0.004)
Venture clinical trial	0.020***	0.016**	0.016**
	(0.005)	(0.005)	(0.005)
Venture alliance	−0.011	−0.005	−0.004
	(0.008)	(0.007)	(0.007)
Venture FE	Yes	Yes	Yes
Venture age FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Constant	−0.051**	−0.017	−0.057***
	(0.017)	(0.015)	(0.017)
N	3496	3496	3496
R square	0.167	0.294	0.312

Note: Robust standard errors are in parentheses.
* $p < 0.05$ (two-tailed *t*-test).
** $p < 0.01$ (two-tailed *t*-test).
*** $p < 0.001$ (two-tailed *t*-test).

Data availability

The authors do not have permission to share data.

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