



Where do angels come from?

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ABSTRACT

Angel investing offers experienced entrepreneurs an opportunity to contribute to entrepreneurial ecosystems, with prior entrepreneurial experience believed to enhance an individual's ability to evaluate and nurture startups. This has led to expectations that angel investors with entrepreneurial backgrounds possess superior selection and treatment capabilities. However, our research challenges this assumption, documenting that angels with entrepreneurial backgrounds underperform relative to those with other upper echelon backgrounds, such as former venture capitalists. We explain these results through two key channels: the entrepreneurial learning channel, which suggests that former entrepreneurs may struggle to generalize their past experiences across different investment contexts, and the professional networks channel, which highlights the importance of syndication in venture capital.

1. Introduction

Angel investors play a crucial role in entrepreneurial ecosystems by providing nascent startups with financial backing, mentorship, and strategic counsel (e.g., Lerner et al., 2018; Hellmann and Thiele, 2019). These individual investors frequently emerge as the unsung champions behind the success stories of many fledgling businesses (Kerr et al., 2014). However, despite their significant influence, scholarly inquiry into the origins of angel investors remains underexplored. As informal investors, angel investors are distinct from traditional venture capitalists (VCs) and institutional investors, employing different investment criteria (Block et al., 2019). Typically high-net-worth individuals, angel investors invest personal funds into promising early-stage firms, often assuming an active role in nurturing these firms (e.g., Chemmanur and Chen, 2014; Hellmann and Thiele, 2015; Hellmann and Thiele, 2019; Lerner et al., 2018).

While prior studies have highlighted that angel investors tend to specialize in early-stage investments, a notable gap persists in the understanding of how their varied backgrounds and experiences influence their investment in terms of selection, treatment, and outcomes. By examining their backgrounds, this paper aims to fill this void by comprehensively analyzing the distinct experiences they

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bringing to entrepreneurial finance.

A central inquiry, engaging academics and practitioners, revolves around the influence of investors' human capital—their unique backgrounds and experiences—on the selection and performance of their investments. While prior studies have made significant progress in examining the relationship between investment decisions and investors' backgrounds, they analyze the collective background of individuals working within the firm, typically focusing on the “average” background within VC firms (e.g., Zarutskie, 2010). Indeed, in such entities, decision-making can hardly be attributed to a single (often not identifiable) individual. The singular decision-making authority inherent in angel investing distinguishes angel investors from traditional VCs. Here, a single decision-maker—the angel investor—invests their personal funds. This provides a unique opportunity to directly measure the impact of an individual's background on their investment decisions and, subsequently, the outcomes of their investments.

Angel investing is commonly perceived as a natural progression, wherein seasoned entrepreneurs leverage their knowledge and resources to support the next generation of entrepreneurs (Hellmann and Thiele, 2019). This transition allows them to pass on their expertise and contribute to the entrepreneurial community. Acquiring knowledge about the process of establishing a firm, particularly tacit knowledge or know-how, typically occurs through prior experiences in analogous endeavors. Prior entrepreneurial experience can enhance an individual's capacity to evaluate the quality of new venture ideas and foster their development. The underlying rationale is that entrepreneurial experience enhances informal investors' ability to guide entrepreneurs, thereby augmenting the value of such investments for both parties. This notion finds support in classical learning-by-doing models (Arrow, 1962) and their application to both entrepreneurs (e.g., Gompers et al., 2005; Howell, 2021) and individual investors (e.g., Seru et al., 2010; Huang et al., 2023). Consequently, the general expectation is that investors with an entrepreneurial background, having experienced both sides of the ecosystem, will demonstrate superior selection and treatment capabilities compared to their counterparts (e.g., Gompers and Mukharlyamov, 2022). This expectation is further substantiated by prominent examples of angel investors who achieved prior entrepreneurial success, such as Andy Bechtolsheim, co-founder of Sun Microsystems, providing initial funding for Google, and Peter Thiel, co-founder of PayPal, offering the initial investment for Facebook.

Our research findings reveal, instead, that despite substantial involvement in angel investing, individuals with prior entrepreneurial experience underperform compared to their counterparts with different backgrounds, such as prior VCs. We contend that this discrepancy stems from the unique nature of entrepreneurial experiences: Entrepreneurs often need an intense focus on their own business during the startup and growth phases. This intense, singular focus may restrict their exposure to a broader spectrum of business models, industries, and market conditions. Thus, generalizing their entrepreneurial experience to businesses with dissimilar needs and dynamics poses challenges. Their investment decisions may be influenced by the belief that replicating their own journey ensures success, a premise that may not hold for all early-stage firms.

Anecdotal evidence for these (self-)expectations of superior performance by angel investors with an entrepreneurial background can be found, for example, in a statement made by Paul Forster, an angel investor and former founder of Indeed. He says, “If you've been a founder yourself, you're able to empathize with founders, understand their perspective and have a chance of being a useful sounding board for them.” However, he also warns entrepreneurs who want to turn into angel investors: “Get experience under your belt as an investor, it'll help you avoid common mistakes like projecting what you'd do with an opportunity.”¹ The investment decisions of angel investors with entrepreneurial backgrounds may be influenced by their idiosyncratic experiences, potentially hindering the transferability and applicability to diverse firms operating in varying contexts. We label this explanation the “entrepreneurial learning channel.”

To further assess whether this entrepreneurial learning channel is at play, we conduct additional analyses that delve deeper into the entrepreneurial backgrounds of angel investors. First, we differentiate between one-time and serial entrepreneurs (Hsu, 2007; Nahata, 2019). While one-time entrepreneurs may encounter the limitations mentioned above in the transferability of the knowledge they had acquired during their prior entrepreneurial endeavors, serial entrepreneurs, with their track record of founding multiple ventures, might be better positioned to generalize the insights they acquired from their multiple entrepreneurial experiences. Empirical evidence corroborates the notion that serial entrepreneurs demonstrate superior performance levels compared to one-time entrepreneurs when engaging in angel investing. In particular, if, on average, entrepreneurs underperform vis-à-vis angel investors with a VC background, those who founded two or more firms (i.e., serial entrepreneurs) achieve a performance that is at par with that achieved by angel investors with a VC background.

Second, we examine whether former entrepreneurs perform better when investing in startups within the same industry as their former ventures. Angel investors who founded ventures in the same industry as the startup they support likely possess superior knowledge of the industry and maintain valuable networks, including customers, suppliers, and industry peers (Shane and Stuart, 2002). This implies that the knowledge they acquired during their prior entrepreneurial experience will be more easily transferred to the new context and that that knowledge and connections will be more likely to be useful when evaluating and nurturing the venture. Consequently, we investigate whether the impact of prior entrepreneurial experience varies depending on whether that experience was

¹ This quotation is extracted from an article Forbes dedicated to “founders-turned-funders” in 2022 (<https://www.forbes.com/sites/mirunagirtu/2022/10/04/from-founder-to-funder-insights-from-angel-investors-with-an-entrepreneurial-background/>). Offering additional perspectives, we cite angel investors Guillaume Bouchard, founder of Checkstep, who remarked, “It is easier for an exited entrepreneur to gauge the feasibility of a business plan, particularly the timeline,” and David Giampaolo, CEO of Pi Capital, who expressed, “You feel compelled to give other people a chance, an opportunity which someone afforded to you at one stage in your life. So I think we have a duty to contribute.” Moreover, angel investors often advertise their past entrepreneurial successes through their profile pages on LinkedIn, AngelList, and CrunchBase (Venugopal and Yerramilli, 2022).

acquired in related or unrelated industries. We find that former entrepreneurs achieve performance levels statistically comparable to those of former VCs when investing in firms within the same industry as their previous endeavors. Conversely, those who founded startups in different industries underperform relative to the latter.

Third, we examine the performance of angel investors' past entrepreneurial endeavors. Scholarly observations highlight the concept of performance persistence in entrepreneurship, wherein prior success correlates with future achievements (Gompers et al., 2010; Gompers and Mukharlyamov, 2022). The literature on the spillover effects of financial intermediaries (e.g., Lindsey, 2008; Li et al., 2023) shows that this pattern also extends to the supply side of early-stage finance. Lerner et al. (2023) find a positive entrepreneurial spillover from investing in VC funds. Previous investment experience enhances angel investors' perceived ability to evaluate entrepreneurial teams (Bernstein et al., 2017) and mitigates irrational tendencies in decision-making (Huang et al., 2023) so that "serial angels stand less apart from the VC community than casual angels" (Hellmann et al., 2021: p. 475). A critical question emerges concerning the extent to which entrepreneurial success translates into proficiency as an angel investor. Our research addresses this gap by demonstrating that previously successful entrepreneurs outperform their less successful counterparts, achieving levels of performance comparable to those of former VCs. Furthermore, while prior success augments the likelihood of success for both past entrepreneurs and past VCs, the former group benefits the most from prior success.

Taken together, this evidence provides support to the entrepreneurial learning channel. However, our results may be driven by different underlying explanations. One rationale for our findings of the superior performance of angel investors with a VC background relative to former entrepreneurs may lie in their superior network capacity, leading to an indirect impact. The professional network channel underscores the role of syndication in venture capital, where angel investors benefit from leveraging their prior professional connections. To disentangle the nature of this effect, our analysis unpacks whether angel investors with differing backgrounds exhibit distinct partnering patterns within investment syndicates (Ewens and Rhodes-Kropf, 2015). The findings reveal that angel investors with prior VC experience tend to syndicate both with a greater number of VC firms and with more reputable ones. However, the superior performance of former VCs can only partially be attributed to their affiliation with more reputable investors. Even after controlling for the identities of syndicate partners, former VCs consistently outperform angel investors with entrepreneurial backgrounds. While the superior performance of angel investors with VC backgrounds cannot be explained only by their connections with more reputable investors, we also show that professional ties with other investors benefit both former entrepreneurs and VCs. Our results suggest that former entrepreneurs perform significantly better when syndicating with investors who supported their prior ventures. Similarly, angel investors with a VC background significantly benefit from their ties with the VC firms they worked with. Indeed, their superior chances of achieving a successful exit are heightened when they syndicate with the VC firm they worked for. Overall, these findings suggest that professional networks play a relevant role in achieving superior performance as an angel investor.

We also test two alternative channels but found no supporting evidence for either. First, investors may, in addition to their professional networks, draw on connections from their alma mater to identify promising startups for investment (Garfinkel et al., 2021). To explore this alumni network channel, we examine whether former entrepreneurs rely more on their alma mater to access investment opportunities. Our findings suggest that, likely due to their less developed VC networks, former entrepreneurs are more likely than former VCs to turn to their alumni connections for these purposes. However, results indicate that they do not benefit more from investing in startups founded by individuals from their alma mater. Second, since angel investors with entrepreneurial experience are more likely to invest in early-stage startups, this could reflect a lower level of risk aversion compared to other types of investors. Accordingly, we investigate whether ventures backed by former entrepreneurs are more likely to fail but find no support for such a risk aversion channel.

Finally, our research documents additional stylized facts, which we briefly summarize here. Regarding the selection process, we find that angel investors with an entrepreneurial background specialize in early-stage investments compared to individuals from other backgrounds. Additionally, relative to former VCs, former entrepreneurs seem to care less about the education of the founders they back. Indeed, results suggest that they are relatively less likely to support founders who studied at elite universities, received an MBA, or studied STEM subjects. Interestingly, Miller et al. (2024) find that individual investors, compared to professionals, favor GPs with elite educational backgrounds. When examining how investors' backgrounds influence their post-investment behavior and interactions with the startups they invest in, we find that angel investors with an entrepreneurial background tend to adopt a more entrepreneur-friendly approach. This is evidenced by their lower likelihood of replacing the CEOs in the firms they support and sitting on their boards. Additionally, the entrepreneurs they finance are less inclined to hire lawyers when securing financing from these investors. Angel investors with both backgrounds are generally more aligned with those who have a VC background.

The remainder of this paper is organized as follows: Section 2 describes the data and methodology and provides descriptive statistics. Section 3 presents the results of the econometric analysis of angel investors' backgrounds, distinguishing the selection, treatment, and outcome. In Section 4, we test four alternative channels: the entrepreneurial learning channel, the professional network channel, the alumni network channel, and the risk aversion channel. Section 5 addresses robustness tests and limitations. Section 6 concludes the paper. The appendix provides the correlation matrix and reports on robustness checks.

2. Data

2.1. Sample and data sources

Information on the background of angel investors and the deals they completed comes from PitchBook, one of the most comprehensive databases in entrepreneurial finance, which is increasingly used by researchers in early-stage finance and by professional investors (e.g., Block et al., 2019; Yu, 2020; Gompers et al., 2021; Hong and Mella-Barral, 2024; Howell and Nanda, 2024).

PitchBook has two advantages relative to alternative data sources. First, it collects data on the private equity that funding firms receive during their entire life cycle, including very small deals, thus offering excellent coverage of smaller angel investments. Second, PitchBook reports information on investors, their backgrounds, and contact details, offering the most comprehensive coverage of private market investments (Yimfor and Garfinkel, 2023).

To construct our sample, we first select all investment rounds labeled by PitchBook as “Angel (individual),” “Seed Round,” “Early Stage VC,” and “Later Stage VC” completed by investors labeled by PitchBook as “Angel (individuals)” from January 2006 (the year PitchBook was founded) to December 2022. In our sample, no individual angel investor invested twice or more in the same firm, as we retain only the first investment completed when the angel investor invested twice or more in the same firm (Nahata, 2008). We then focus on deals completed by angel investors with prior meaningful professional experiences as former entrepreneurs or top managers. Hence, we identify and retain only those deals completed by angel investors with prior entrepreneurial or top management experience, as reported in PitchBook. The list of keywords used to identify top management and entrepreneurial roles are “Partner,” “GP,” “Head,” “President,” “VP,” “V.P.,” “Founder,” “Founding,” “Principal,” “Director,” “Executive,” “Chief,” “Chairman,” “Chairwoman,” “CEO,” “C.E.O.,” and “Board Member.”

This approach resulted in the identification of a dataset of 77,147 investment deals, contributed by 22,206 distinct angel investors. Notably, our sample comprises 50.7 % of the deals by angel investors documented in PitchBook. The remaining deals involved angel investors with top management experience reported in PitchBook with a missing start date (7.6 %) and angel investors having either no other positions or only lower-level positions reported in PitchBook (41.7 %).² Clearly, a discernible disparity exists between deals completed by these two groups of individuals. As shown in Table B1 in the appendix, the deals included in our sample, conducted by angel investors with prior entrepreneurial or top management experience, are \$1.7 million larger. They are also roughly 5 percentage points more likely to be successfully exited by their investors. Our focus only on top management positions ensures we compare individuals with upper echelon positions. In doing so, we make sure that the results are not driven by different levels of professional experiences but by different types of experiences (i.e., entrepreneurial, VC, and corporate experiences).

2.2. Descriptive evidence

Figure 1 presents the breakdown of the backgrounds of angel investors at the time of the deals under consideration. Angel investors reported as firms’ founders are categorized under the label “Entrepreneurial background.” Those who held prior top management team roles in VC firms are denoted as having a “VC TMT background.” Most of the angel investors in our dataset exhibited *solely* an entrepreneurial background (51.1 %), 15.8 % possessed a *sole* VC background, and 13.5 % of the angel investors displayed *both* backgrounds. The remaining portion of the sample (19.6 %) reported a top management team background in a non-VC firm (e.g., CFO of a corporation).

Table 1 provides definitions of the variables, while Table 2 shows the summary statistics. Table A1 reports the correlation between the variables used in the paper. Table 2 shows that 22.1 % of the deals were completed by serial entrepreneurs (i.e., angel investors who founded two or more startups) and 42.5 % by non-serial entrepreneurs (i.e., angel investors who founded only one startup). Additionally, 30.2 % of the deals were completed by non-successful entrepreneurs (i.e., founders of firms that did not achieve an IPO or an M&A), while successful entrepreneurs completed 34.4 % of the deals. We also check whether the deals completed by angel investors with prior entrepreneurial experience were aimed at supporting startups operating in the same industry as the firms they had previously founded. Table 2 shows that 22.6 % of the deals were completed by angel investors who had previously established a firm operating in the same industry as the focal firm and had received external financing. In contrast, 32.9 % of the deals involved angel investors who had previously established a firm that received external financing but operated in a different industry.³ Additionally, 17.2 % of the deals were completed by angel investors with prior entrepreneurial experience syndicating with investors in their prior startups, while 7.2 % of the investments were completed by angel investors with prior VC experience syndicating with their prior VC employer. In terms of educational accomplishments, Table 2 also shows that 23.4 % of the deals were completed by angel investors who pursued an MBA, while 37.1 % of them were completed by alumni of elite universities (i.e., institutions ranked within the top 30 universities as per the first version of the QS Ranking).

In Panel B of Table 2, the focus shifts from angel investors’ backgrounds to the types of investments they have completed. As shown, 55.4 % of the investments are early-stage investments (i.e., angel or seed rounds). The average size of the investments completed in our dataset is \$6.8 million (with a median of \$2.2 million). These figures are higher than those reported in prior papers. For instance, in a recent study by Xu (2023), the average (median) amount raised in deals completed by angel investors was \$2.4 (\$750,000) million. However, as mentioned above, the deals included in our dataset are not only pure angel rounds (6878 deals) but also other types of rounds, such as seed (35,855 deals), early-stage VC (24,065 deals), and late-stage VC rounds (10,319 deals). Conversely, the paper by Xu (2023) focuses exclusively on angel and seed rounds (which are typically of a smaller size). Our approach enables us to go beyond the constraints of specific investment rounds, including all financing rounds in which angel investors engage. Co-investment is indeed widespread in the angel investment market, even among seed-stage startups (Venugopal and Yerramilli, 2022). When retaining only

² For each professional experience, PitchBook typically reports the start and end date of that experience. The start date is considered equal to the founding date of the firm they founded. Only when the founding date is missing do we use the start date of the experience.

³ To ascertain the similarity of industries between the two firms, we utilize the PitchBook classification system, which delineates 42 distinct industry categories. Founders of firms that did not receive external financing (9.1 %) are not categorized, as industry-specific information is unavailable for these cases.

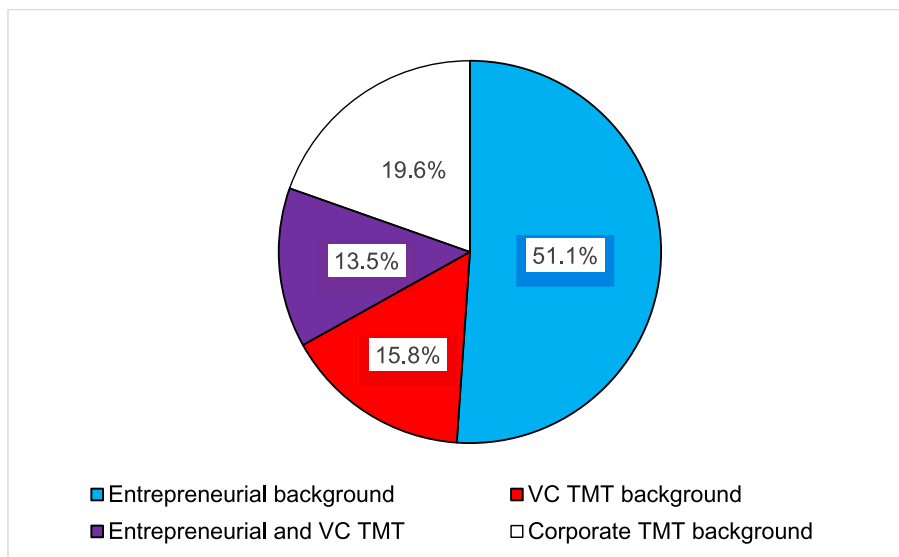


Fig. 1. Backgrounds of angel investors.

angel and seed rounds (i.e., when using the same sample used by Xu, 2023), the mean size reported in our dataset matches that reported by Xu (2023) (i.e., \$2.5 million). To test the robustness of our findings in Section 5.2, we exclude later-stage VC rounds, finding similar results. Additionally, Panel B reports summary statistics concerning the characteristics of the startups that received financing. As shown, 26 % of the deals supported a startup with at least one of the founders with a prior successful entrepreneurial experience (i.e., that established a startup before the focal one that received external financing). Roughly 36.2 % of the deals supported a startup with at least one of the founders who attended an elite university. Almost half of the deals supported a startup with founders with a STEM degree. The average number of founders is 2.6 people. The number of observations is slightly lower when considering the characteristics of the founding team, as such information is not always available in PitchBook records.

In Panel C, we report information regarding the intervention of angel investors in the firms they invest in. As shown, 4.1 % of the angel investors sit on the board of the startups they invested in, and 30.6 % of the firms sought support from a lawyer for the deal. In Panel D, in line with previous studies, we use IPOs and M&As to proxy successful exits. Panel D shows that angel investors exited successfully via IPO or M&A in 16.1 % of the cases. Finally, in Panel E, we consider the reputation and number of syndicate partners and, later on, investors. As shown, on average, a deal was syndicated with three VC firms, while four new VCs invested in the firm after the focal investment round.

3. Results

An important question that has drawn the attention of academics is how investors' human capital affects deals and firms' selection and performance outcomes (e.g., Bottazzi et al., 2008; Zarutskie, 2010; Acharya et al., 2013; Hegde and Tumlinson, 2014; Bengtsson and Hsu, 2015). Albeit insightful, these studies have tried to connect investment decisions and the investors' backgrounds by examining the average background of those working at the VC firm. To better assess how investors' backgrounds shape investment decisions and outcomes, we examine the investments completed by angel investors. Indeed, while there are multiple decision-makers in a VC firm, there is only one decision-maker when the investor is an angel investor. This enables us to directly connect the background of informal investors with their investment decisions and outcomes.

3.1. Deal selection

Venture capital is of primary importance for creating new firms and spurring economic growth (Samila and Sorenson, 2011). Nevertheless, as underscored by Gompers et al. (2020), only a minority subset of VCs, approximately 36 %, focus *exclusively* on seed or early-stage enterprises. Given that early-stage firms are particularly susceptible to underfunding challenges, it becomes paramount to discern the factors that motivate investors to engage in early-stage investments. Extant literature has primarily sought to unravel the origins of early-stage specialization by examining VC firms. This line of research has revealed that VC-specific characteristics can significantly influence VCs' propensity to invest in early-stage firms (Chemmanur et al., 2014). Relatedly, Bottazzi et al. (2016) show that individual investors' personal attributes and traits can shape their proclivity to engage in early-stage deals.

While prior studies have demonstrated that angel investors tend to specialize in early-stage investments, we argue that not all angel investors are equally likely to complete such high-risk investments. In this section, we explore how heterogeneous experiences lead different angel investors to invest in firms at different stages of development. Since former entrepreneurs are less risk averse (Hvide and Panos, 2014) and loss averse (Koudstaal et al., 2016) vis-à-vis other investors, we expect angel investors with an entrepreneurial

Table 1
Variable definition.

<i>Panel A. Angel Characteristics</i>	
Entrepreneurial background	Dummy with a value of 1 if the angel investor had at least a prior experience as a founder of a firm (and not in the top management team of a VC firm); 0 otherwise
VC TMT background	Dummy with a value of 1 if the angel investor had prior experience in the top management team of a VC firm (and not as a founder of a firm); 0 otherwise
Entrepreneurial and VC TMT	Dummy with a value of 1 if the angel investor had both prior experience as a founder of a firm <i>and</i> in the top management team of a VC firm; 0 otherwise
Corporate TMT background	Dummy with a value of 1 if the angel investor had prior experience in the top management team of a firm different from a VC firm; 0 otherwise
Non-Serial Entrepreneur	Dummy with a value of 1 if the angel investor had only one experience as a firm founder; 0 otherwise
Serial Entrepreneur	Dummy with a value of 1 if the angel investor had two or more experiences as a firm founder; 0 otherwise
Non-VC-Backed Entrepreneur	Dummy with a value of 1 if the angel investor founded at least one firm, and none of the firms received external financing
VC-Backed Entrepreneur Different Industry	Dummy with a value of 1 if the angel investor founded at least one firm that received external financing, and all of them operated in an industry different from that of the startup supported in the focal deal
VC-Backed Entrepreneur Same Industry	Dummy with a value of 1 if the angel investor founded at least one firm that received external financing and that operated in the same industry as the startup supported in the focal deal
Non-Successful Entrepreneur	Dummy with a value of 1 if the angel investor founded only unsuccessful firms (i.e., firms that did not go public or undergo an M&A)
Successful Entrepreneur	Dummy with a value of 1 if the angel investor founded at least one successful firm (i.e., firms that went public or underwent an M&A)
Non-Successful VC	Dummy with a value of 1 if the angel investor had prior experience in the top management team of VC firms and did not act as a lead partner for any successful investments completed by the VC firm (i.e., investments from which the VC firm eventually exited via IPO or M&A)
Successful VC	Dummy with a value of 1 if the angel investor had prior experience in the top management team of VC firms and acted as a lead partner for at least one successful investment completed by the VC firm (i.e., investments from which the VC firm eventually exited via IPO or M&A)
VC-Backed Entrepreneur Not Synd. Prior Investor	Dummy with a value of 1 if, before the deal, the angel investor founded a firm that received external financing, and the focal deal is not syndicated with an investor in that firm
VC-Backed Entrepreneur Synd. Prior Investor	Dummy with a value of 1 if, before the deal, the angel investor founded a firm that received external financing, and the focal deal is syndicated with an investor in that firm
Prior VC Not Synd with Prior VC	Dummy with a value of 1 if the angel investor had prior experience(s) in VC firm(s) and the focal deal is not syndicated with any of the VC firms for which he/she worked
Prior VC Synd with Prior VC	Dummy with a value of 1 if the angel investor had prior experience(s) in VC firm(s) and the focal deal is syndicated with at least one of the VC firms for which he/she worked
Prior Entrepreneurial Experience	Dummy with a value of 1 if the angel investor had at least a prior experience as a founder of a firm; 0 otherwise (note that, unlike the variable 'Entrepreneurial background', this also includes angel investors who <i>also</i> have prior experience in the top management team of a VC firm)
Prior VC Experience	Dummy with a value of 1 if the angel investor had prior experience in the top management team of a VC firm; 0 otherwise (note that, unlike the variable 'VC TMT background', this includes also angel investors who <i>also</i> have prior experience as founder of a firm)
Ln (Investors in Founded Firms)	The natural logarithm of the number of investors in the firms founded by the angel investor before the focal deal
Female	Dummy with a value of 1, the angel investor is female; 0 otherwise
MBA	Dummy with a value of 1 if the angel investor pursued an MBA; 0 otherwise
Elite University	Dummy with a value of 1 if the angel investor studied at a university ranked among the first 30 universities as per the QS Rankings; 0 otherwise
<i>Panel B. Deal Selection</i>	
Early-Stage Investment	Dummy with a value of 1 if the focal round is labeled as an angel or seed round; zero if the focal round is labeled as a VC round.
Amount Raised Before Deal	US\$ amount raised by the firm before the focal deal (in \$ millions). We imputed a value of zero when the information was missing
Deal Size	US\$ amount raised by the firm in the focal deal (in \$ millions). We imputed a value of zero when the information was missing
Founding Team Size	Number of startup founders
Successful Entrepreneur Founders	Dummy with a value of one if at least one of the founders founded another startup (before founding the focal one) that ultimately received external financing
Female Team Founders	Dummy with a value of one if at least 50 % of the founders are women
Elite University Founders	Dummy with a value of one if at least one of the founders studied at a university ranked among the first 30 universities as per the QS Rankings; 0 otherwise
MBA Founders	Dummy with a value of one if at least one of the founders pursued an MBA; 0 otherwise
STEM Founders	Dummy with a value of one if at least one of the founders studied a STEM subject; 0 otherwise. Subjects are considered as STEM if one of the following words appeared "biology", "biomedic", "chemistry", "comput", "chemical", "electronics", "engineering", "genetics", "information technology", "math", "molecular", "physics", "statistics"
Same University	Dummy with a value of 1 if the angel investor studied at the same higher education institution as at least one of the founders of the focal firm

Panel C. Treatment

(continued on next page)

Table 1 (continued)

Startup Founder Replaced as CEO	Dummy with a value of 1 if none of the founders is the current CEO of the firm; 0 otherwise. The variable is missing when the identity of the current CEO is missing in Pitchbook
Angel Investor Seats on Startup Board	Dummy with a value of 1 if the angel investor sits on the board of the startup; 0 otherwise
Startup Hired Lawyers	Dummy with a value of 1 if the firm hired lawyers for the focal deal; 0 otherwise
<i>Panel D. Outcome</i>	
Successful Exit	Dummy with a value of 1 if the investor exited via IPO or M&A from the investment in the startup; 0 otherwise
Failure	Dummy with a value of 1 if the focal deal's firm failed; 0 otherwise
<i>Panel E. Syndicate Partners</i>	
Reputation Syndicate Partners	Reputation of the most reputable syndicate partner in the deal (excluding the focal angel investor), measured as the natural log. of 1 plus the cumulative value of IPO exits (\$m) up to the year before the focal deal
N. VCs as Syndicate Partners	Number of VC firms as syndicate partners in the focal deal
N. New VCs Follow-up Rounds	Number of VC firms that did not invest in the focal round or before the focal round that invested in the venture after the focal deal
Syndication with prior VC employer or prior startup investor	Dummy with a value of one if the angel investor syndicated the investment with a prior investor in their startups or with an investor firm where they previously worked

background to specialize in early-stage deals.

To test this prediction, we run an OLS regression where the dependent variable is a dummy with a value of 1 if the focal round is labeled as an angel or seed round or 0 if the focal round is labeled as a VC round (Column 1, Table 3). To further corroborate the intuition, we test whether angel investors with entrepreneurial backgrounds are more likely to invest in firms that have raised less money before the deal. We test this by regressing the natural logarithm of 1 plus the dollar amount raised by the firm before the focal deal (we imputed a value of 0 when the information was missing; results are similar if we were to drop those deals) (Column 2). We also run the regression on the natural logarithm of 1 plus the dollar amount raised by the firm in the focal deal (we imputed a value of 0 when the information was missing; results are similar if we were to drop those deals) (Column 3). Smaller financing rounds are a common characteristic of early-stage investments, primarily targeted at nascent firms in the initial phases of their development. In all specifications, we control for characteristics of the angel investor that are likely to play a role, such as gender (Gompers et al., 2022; Howell and Nanda, 2024; Ewens and Townsend, 2020), as well as for the level (by including a dummy with a value of 1 if the investor obtained an MBA) and quality of their education (by including a dummy with a value of 1 if the investor studied at an elite university). We further control for the investment year, the country where the angel is based, and the industry where the firm operates. We cluster standard errors at the angel investor level.

Angel investors with entrepreneurial experience are more likely to invest in early-stage firms. As shown in Table 3, they are 3.8 percentage points more likely to engage in early-stage investment rounds relative to their counterparts with corporate experience. This different propensity becomes even more pronounced when we compare former entrepreneurs and VCs. Indeed, former entrepreneurs are 7 percentage points more inclined to participate in early-stage rounds than their VC counterparts. Furthermore, when examining the amount of capital raised by firms prior to the focal funding round, similar trends emerge. As shown in Column 2, firms backed by former VCs had secured 22.1 % more funding than those supported by former entrepreneurs before the focal deal. Lastly, in Column 3, it is evident that former entrepreneurs are involved in smaller funding rounds vis-à-vis former VCs and individuals with corporate backgrounds. Interestingly, angel investors with both VC and entrepreneurial experiences tend to behave similarly to pure VCs while displaying significant differences vis-à-vis pure entrepreneurs. A possible reason behind this result is that while entrepreneurs are less risk averse, prior VC experiences might equip them with more sophisticated risk assessment frameworks, which make them adopt a more calculated risk management approach. In Table B2 of the appendix, we also test the robustness of our results by running an ordered logit regression. In that specification, the dependent variable is a variable taking a value of 1 if the investment round is an angel round, 2 if it is a seed round, 3 if it is an early-stage VC round, and 4 if it is a late-stage round. Results are robust to this alternative specification.

We have demonstrated that former entrepreneurs are more likely to invest in early-stage firms. However, an important question remains: How do investors, influenced by their own backgrounds, select startups to support, particularly concerning the attributes of the founding team? Using a specification akin to the one previously introduced, we explore whether angel investors' backgrounds are associated with different characteristics of the founding teams of the startups they support in Table 4. We consider various features such as the size of the founding team (Column 1), the prior successful entrepreneurial experiences of the latter (Column 2), and its gender composition (Column 3). Additionally, we explore the quality (Column 4), level (Column 5), and type (Column 6) of education of the founding team. To account for the count nature of the dependent variable, Column 1 employs a Poisson model showing that angel investors with both entrepreneurial and venture capital backgrounds invest in larger founding teams relative to managers of traditional corporations. However, such an effect is particularly pronounced for angel investors with prior VC experience. Similarly, prior entrepreneurs and VCs particularly favor experienced teams relative to managers of traditional corporations, as testified by the estimated coefficients in Column 2. Such an effect is particularly strong for those angel investors with both entrepreneurial and VC experience, possibly owing to the superior connections with the investing and entrepreneurial communities stemming from their prior endeavors. Conversely, investor backgrounds do not act as predictors of the tendency to invest in female founders (as testified by the non-statistically significant coefficients estimated on the main covariates). The sole coefficient being strongly significant, from both a statistical and economic perspective, in Column 3 is the one estimated on the female variable, pointing to a substantial role played by

Table 2
Summary statistics.

	N	Mean	s.d.	Median
<i>Panel A. Angel Characteristics</i>				
Entrepreneurial background	77,147	0.511	0.500	1
VC TMT background	77,147	0.158	0.365	0
Entrepreneurial and VC TMT	77,147	0.135	0.342	0
Corporate TMT background	77,147	0.196	0.397	0
Non-Serial Entrepreneur	77,147	0.425	0.494	0
Serial Entrepreneur	77,147	0.221	0.415	0
Non-VC-Backed Entrepreneur	77,147	0.091	0.288	0
VC-Backed Entrepr. Diff. Industry	77,147	0.329	0.470	0
VC-Backed Entrepr. Same Industry	77,147	0.226	0.418	0
Non-Successful Entrepreneur	77,147	0.302	0.459	0
Successful Entrepreneur	77,147	0.344	0.475	0
Non-Successful VC	77,147	0.159	0.366	0
Successful VC	77,147	0.134	0.341	0
VC-Back. Ent. Not Synd. Pr. Investor	77,147	0.382	0.486	0
VC-Back. Ent. Synd. Pr. Investor	77,147	0.172	0.378	0
Prior VC Not Synd with Prior VC	77,147	0.221	0.415	0
Prior VC Synd with Prior VC	77,147	0.072	0.259	0
Prior Entrepreneurial Experience	77,147	0.646	0.478	1
Prior VC Experience	77,147	0.293	0.455	0
Ln (Investors in Founded Firms)	77,147	1.457	1.518	1.099
Female	77,147	0.067	0.249	0
MBA	77,147	0.234	0.424	0
Elite University	77,147	0.371	0.483	0
<i>Panel B. Deal Selection</i>				
Early-Stage Investment	77,147	0.554	0.497	1
Amount Raised Before Deal (\$m)	77,147	10.707	21.771	2.704
Deal Size (\$m)	77,147	6.846	12.306	2.160
Founding Team Size	75,951	2.582	1.216	2
Successful Entrepreneur Founders	75,951	0.260	0.438	0
Female Team Founders	75,929	0.133	0.340	0
Elite University Founders	75,951	0.362	0.480	0
MBA Founders	75,951	0.206	0.405	0
STEM Founders	75,951	0.490	0.500	0
Same University	77,147	0.084	0.277	0
<i>Panel C. Treatment</i>				
Startup Founder Replaced as CEO	53,341	0.086	0.280	0
Angel Investor Seats on Startup Board	77,147	0.041	0.198	0
Startup Hired Lawyers	77,147	0.306	0.461	0
<i>Panel D. Outcome</i>				
Successful Exit	77,147	0.161	0.367	0
Failure	77,147	0.079	0.270	0
<i>Panel E. Syndicate Partners</i>				
Reputation Syndicate Partners	77,147	3.334	3.662	0
N. VCs as Syndicate Partners	77,147	3.307	3.485	2
N. New VCs Follow-up Rounds	77,147	4.099	7.996	1
Syndication with prior VC employer or prior startup investor	77,147	0.227	0.419	0

This Table reports summary statistics regarding the main variables used in the regression analyses. The number of observations is lower for the variable *Startup Founder Replaced as CEO* because we retained only firms for which Pitchbook reports the identity of the current CEO. To deal with the skewness of the variables *Amount Raised Before Deal (\$m)* and *Deal Size (\$m)* have been winsorized at the 2.5 % level. The variables are described in [Table 1](#).

homophily in the context of angel investments, with female angel investors being particularly inclined to support female founders. Significant differences surface when considering the relationships between the investors' backgrounds and the education of startup founders. Angel investors with entrepreneurial backgrounds are less likely to invest in (relative to those with a venture capital background) founders who studied at an elite institution, pursued an MBA degree, or studied STEM subjects. This evidence suggests that former entrepreneurs may be less interested in the formal education of the founders they support.

Table 3
Deal selection.

Dependent variable:	Early-Stage Investment	Ln (Amount Raised Before Deal)	Ln (Deal Size)
	(1)	(2)	(3)
Entrepreneurial background (ENT)	0.038*** (0.006)	−0.097*** (0.018)	−0.051*** (0.016)
VC TMT background (VC)	−0.032*** (0.009)	0.124*** (0.028)	0.099*** (0.024)
Entrepreneurial and VC TMT (BOTH)	−0.015* (0.009)	0.103*** (0.030)	0.106*** (0.028)
Female	0.032*** (0.010)	−0.076*** (0.028)	−0.062** (0.025)
MBA	−0.019*** (0.006)	0.030 (0.021)	0.009 (0.019)
Elite University	−0.020*** (0.006)	0.150*** (0.019)	0.142*** (0.018)
Deal year FE	Yes	Yes	Yes
Firm country FE	Yes	Yes	Yes
Firm industry FE	Yes	Yes	Yes
Observations	77,147	77,147	77,147
Test diff. Coeffs (ENT vs. VC)	0.000***	0.000***	0.000***
Test diff. Coeffs (ENT vs. BOTH)	0.000***	0.000***	0.000***
Test diff. Coeffs (VC vs. BOTH)	0.121	0.575	0.835

This table presents the results of OLS regressions. Variables are described in Table 1. Standard errors are clustered at the angel investor level. The specification also includes the deal year, firm country, and industry fixed effects. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 4
Deal selection: characteristics of the founding team.

Dependent variable:	Founding Team Size	Successful Entrepreneur Founders	Female Team Founders	Elite University Founders	MBA Founders	STEM Founders
	(1)	(2)	(3)	(4)	(5)	(6)
Entrepreneurial background (ENT)	0.013*** (0.005)	0.036*** (0.005)	−0.004 (0.004)	−0.006 (0.005)	−0.023*** (0.004)	0.008 (0.005)
VC TMT background (VC)	0.025*** (0.006)	0.032*** (0.006)	−0.001 (0.005)	0.018** (0.007)	−0.002 (0.006)	0.037*** (0.007)
Entrepreneurial and VC TMT (BOTH)	0.021*** (0.007)	0.049*** (0.006)	−0.004 (0.005)	0.021*** (0.007)	−0.020*** (0.006)	0.017** (0.007)
Female	−0.024*** (0.008)	−0.021*** (0.007)	0.163*** (0.009)	0.011 (0.008)	0.006 (0.007)	−0.036*** (0.008)
MBA	−0.002 (0.004)	−0.006 (0.004)	0.003 (0.003)	−0.002 (0.005)	0.052*** (0.004)	−0.003 (0.005)
Elite University	0.010** (0.004)	0.020*** (0.004)	0.005* (0.003)	0.094*** (0.005)	0.014*** (0.004)	0.039*** (0.005)
Deal year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm country FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	75,951	75,951	75,929	75,951	75,951	75,951
Test diff. Coeffs (ENT vs. VC)	0.030**	0.493	0.470	0.000***	0.000***	0.000***
Test diff. Coeffs (ENT vs. BOTH)	0.195	0.009***	0.989	0.000***	0.542	0.157
Test diff. Coeffs (VC vs. BOTH)	0.566	0.006***	0.569	0.733	0.005***	0.010***

This table presents the results of Poisson (Column 1) and OLS (Columns 2–6) regressions. Variables are described in Table 1. Standard errors are clustered at the angel investor level. The specification also includes the deal year, firm country, and industry fixed effects. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

3.2. Treatment

Beyond providing financial backing, investors proactively contribute to the growth and professionalization of the firms in which they invest (Hellmann and Puri, 2002). Our objective is to ascertain whether individuals with prior entrepreneurial experience adopt a more entrepreneur-friendly approach and whether this perception is reciprocated by the entrepreneurs they fund. We investigate three

specific dimensions: (1) the propensity of angel investors with an entrepreneurial background to replace founders as CEOs, (2) their likelihood of sitting on the startup board, and (3) the probability of investee founders seeking legal counsel (i.e., hiring lawyers) for guidance during the investment round.

In Table 5, we employ three dependent variables: “Startup Founder Replaced as CEO” (a dichotomous variable indicating whether none of the founders are listed as the current CEO of the firm), “Angel Seats on Startup Board” (a dummy variable taking a value of 1 if the angel investor seats on the board of the startup), and “Startup Hired Lawyers” in Column 3 (a binary dummy indicating whether the firm hired lawyers to obtain support on the focal investment round). Building on the empirical specification presented in Table 3, we employ robust standard errors clustered at the angel level.

The findings, as reported in Column 1, reveal differences between angel investors with entrepreneurial and VC backgrounds. Former entrepreneurs exhibit a 1.4 percentage point decrease in the likelihood of replacing founders as CEOs in the firms they back relative to former VCs, representing a 16 % lower likelihood, given a DV mean of 0.09. As shown in Column 2, former entrepreneurs have a more hands-off approach. Indeed, they are 3.8 percentage points less likely than former VCs to sit on the board of the early-stage ventures they invest in. Raw summary statistics further show that while only 2.4 % of angel investors with an entrepreneurial background hold board seats in startups, 7 % of those with a VC background do. Angel investors with both backgrounds fall in between, at 4.2 %. Intriguingly, our analysis also reveals an impact on entrepreneurs’ decision to hire lawyers (Column 3). When the investor is a former entrepreneur, portfolio firms are 4.9 percentage points less likely (i.e., 16 % less likely, given a DV mean of 0.31) to engage lawyers compared to when the investor is a former VC. Former entrepreneurs appear to adopt a more entrepreneur-friendly approach, displaying a lower likelihood of replacing founders and intervening in critical decisions. Conversely, former VCs are more proactive in employing typical VC strategies to add value to their portfolio firms. This finding is coherent with previous studies providing causal evidence that VCs also improve the performance of their portfolio firms by replacing founders (e.g., *Ewens and Marx, 2018*). Potential reasons for these findings could be linked to former entrepreneurs’ empathy for firm founders, owing to their shared experiences in launching and growing firms. Conversely, VCs might be more inclined to exert influence in alignment with traditional VC practices to enhance portfolio performance. Interestingly, when assessing how the angel investors’ backgrounds shape their intervention in portfolio companies, as well as the propensity of the latter to hire lawyers, we find that the estimated coefficient estimated on angel investors with both entrepreneurial and VC backgrounds is in between those estimated on pure entrepreneurs and pure VCs. This suggests that the combination of entrepreneurial and VC experience moderates their behavior, resulting in an intervention style that falls between the two extremes.

Given that these choices might be influenced by the startup’s stage at the time of the financing round, and noting from Table 3 that angel investors with an entrepreneurial background typically invest in early-stage startups, we further assess our findings’ robustness. In particular, in Table B3 in the appendix, we replicate Table 5 and additionally control for whether PitchBook designated the investment round as an early-stage investment round (i.e., angel or seed rounds). The results remain robust under this alternative specification.

3.3. Outcome

Since angel investors with different backgrounds make different investment decisions and intervene differently in the firms in which they invest, a natural question is: Do these differences lead to various performance outcomes? Consistent with prior research and perhaps unsurprisingly, we find that angel investors with prior entrepreneurial experience, with a background in the top management team (TMT) of VC firms or other types of firms, outperform those lacking such experience, thus confirming the importance of investors’ human capital (results reported in Table B4 in the appendix). Then, focusing only on our sample of 77,147 deals completed by angels with prior upper echelon experiences, we investigate which background is the most useful for an angel investor. Prior studies have indeed tried to explain how the background of VCs impacts performance (e.g., *Bottazzi et al., 2008; Zarutskie, 2010*). While insightful, these studies have attempted to establish connections between individual investments and investors’ backgrounds by examining the average background of those employed at the VC firm. However, these studies do not specifically observe the decision-making process of individual investors. Indeed, as mentioned above, if there are multiple decision-makers in a VC firm, there is only one decision-maker when the investor is an angel investor. This enables us to measure how different backgrounds are directly conducive to heterogeneous performance.

We assess whether angel investors’ backgrounds influence the outcomes of their investments. Following the prior VC literature (e.g., *Hochberg et al., 2007; Gompers et al., 2010; Ewens and Rhodes-Kropf, 2015; Cumming et al., 2017; Ozmel et al., 2019; Bubna et al., 2020; Ewens and Townsend, 2020; Nanda et al., 2020; Hellmann et al., 2021; Gu et al., 2022*), we consider an investment as successful if the investor exited via IPO or M&A. In Column 1 of Table 6, we use the same set of controls used in the prior tables. However, building on the observation reported in Table 3 that former entrepreneurs prefer investing in firms at an earlier stage of development and acknowledging the link between stage and exit likelihood, we include in Column 2 the three dependent variables used in Table 3 as explanatory variables.⁴ Additionally, as former entrepreneurs also target different founding teams (as shown in Table 4), in Column 3 of Table 6, we also include, as control variables, the dependent variables employed in Table 4.⁵

⁴ The seemingly counterintuitive negative sign for deal size reflects its collinearity with past fundraising. This high correlation, which is also shown in Table A1, arises because larger previous rounds often pave the way for larger subsequent investments. Excluding past funding from the model (Column 4) would reverse this sign, reflecting the positive association between larger deal sizes and the outcome of interest.

⁵ The sample size shrinks in Column 3, as information on the startups’ founding teams is not always available.

Table 5
Treatment.

Dependent variable:	Startup Founder Replaced as CEO	Angel Investor Seats on Startup Board	Startup Hired Lawyers
	(1)	(2)	(3)
Entrepreneurial background (ENT)	−0.010*** (0.003)	−0.021*** (0.002)	−0.005 (0.005)
VC TMT background (VC)	0.004 (0.005)	0.017*** (0.004)	0.044*** (0.008)
Entrepreneurial and VC TMT (BOTH)	−0.003 (0.004)	−0.006* (0.004)	0.038*** (0.008)
Female	−0.012*** (0.004)	−0.005 (0.004)	−0.003 (0.009)
MBA	0.012*** (0.003)	0.016*** (0.003)	0.000 (0.006)
Elite University	−0.005* (0.003)	−0.006*** (0.002)	0.042*** (0.005)
Deal year FE	Yes	Yes	Yes
Firm country FE	Yes	Yes	Yes
Firm industry FE	Yes	Yes	Yes
Observations	53,339	77,147	77,147
Test diff. Coeffs (ENT vs. VC)	0.001***	0.000***	0.000***
Test diff. Coeffs (ENT vs. BOTH)	0.075*	0.000***	0.000***
Test diff. Coeffs (VC vs. BOTH)	0.158	0.000***	0.569

This table presents the results of OLS regressions. Variables are described in Table 1. Standard errors are clustered at the angel investor level. The specification also includes the deal year, firm country, and industry fixed effects. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

The findings presented in Column 1 shed light on the performance of angel investors based on their prior experiences. Angel investors with prior entrepreneurial experiences demonstrate comparable performance to those who held TMT roles in firms distinct from VC entities (i.e., the corporate TMT background), which serves as the reference category. However, it is the angel investors with a VC background who exhibit superior performance. Specifically, angel investors with past TMT roles at VC firms display a 1.7 percentage point increase in the likelihood of experiencing a successful exit, corresponding to an 11 % higher likelihood given a DV mean of 0.16. An even better performance is achieved by angel investors combining entrepreneurial and VC experiences. However, although angel investors combining both entrepreneurial and VC experience achieve better performance (probably owing to the synergistic effect of combining the two experiences), their performance is not statistically different from angel investors having only a VC background. This evidence suggests that while the combination of VC and entrepreneurial experiences is beneficial, VC experience alone appears to be the most critical driver. Importantly, such results are robust to the inclusion of controls pertaining to the deals (Column 2) and founding team (Column 3).

To allay any concerns about censored data, we test the robustness of our findings using multiple complementary approaches. First, we used the Cox proportional hazards model in Appendix Table B5. This methodology is frequently used to deal with right-censored data (in our case, deals that were not successfully exited by their investors as of December 2022). In our model, the dependent variable is the logarithm of the time to a successful exit. The results presented in Table B5 further support the results presented in Table 6. Second, to account for the dichotomous nature of the dependent variable, in Table B6, we employ a probit model, obtaining similar results. Finally, to allow investors enough time to exit their investments, in Table B7, we limit our sample analysis to investments completed by December 2018. Through this approach, we give investors at least 4 years to exit their investments (Nahata, 2008). The findings displayed in Table B7 mirror those in Table 6.

4. Explaining the different performance

What factors explain the varying performance of angel investors with entrepreneurial experience compared to their counterparts from other professional backgrounds? Our results may be driven by different underlying explanations. Below, we test four alternative channels, namely the entrepreneurial learning channel, the professional network channel, the alumni network channel, and the risk aversion channel.

4.1. The entrepreneurial learning channel

While entrepreneurial experience is widely regarded as a key determinant of success in venture capital investing, our findings suggest that angel investors with entrepreneurial backgrounds underperform relative to those with other upper echelon backgrounds, such as former VCs. One possible explanation is that former entrepreneurs struggle to generalize their past experiences across different contexts. This challenge is particularly pronounced among angel investors with only a single entrepreneurial experience. In contrast, serial entrepreneurs, having encountered a broader range of challenges, may possess a more diverse skill set that enables them to apply lessons learned more effectively across various contexts and businesses.

Table 6

Outcome.

Dependent variable:	Successful Exit	Successful Exit	Successful Exit
	(1)	(2)	(3)
Entrepreneurial background (ENT)	0.003 (0.004)	0.005 (0.004)	0.004 (0.004)
VC TMT background (VC)	0.017*** (0.005)	0.016*** (0.005)	0.014*** (0.005)
Entrepreneurial and VC TMT (BOTH)	0.019*** (0.005)	0.019*** (0.005)	0.018*** (0.005)
Female	−0.010** (0.005)	−0.010* (0.005)	−0.007 (0.005)
MBA	0.002 (0.004)	0.002 (0.004)	0.002 (0.004)
Elite University	0.010*** (0.003)	0.009*** (0.003)	0.009** (0.003)
Early-Stage Investment		0.002 (0.003)	0.002 (0.003)
Ln (Amount Raised Before Deal)		0.021*** (0.003)	0.022*** (0.003)
Ln (Deal Size)		−0.016*** (0.003)	−0.018*** (0.003)
Successful Entrepr. Founders			0.009*** (0.003)
Female Team Founders			−0.018*** (0.004)
Elite University Founders			−0.003 (0.003)
MBA Founders			0.008** (0.004)
STEM Founders			0.010*** (0.003)
Deal year FE	Yes	Yes	Yes
Firm country FE	Yes	Yes	Yes
Firm industry FE	Yes	Yes	Yes
Founding Team Size FE	No	No	Yes
Observations	77,147	77,147	75,928
Test diff. Coeffs (ENT vs. VC)	0.004***	0.017**	0.020**
Test diff. Coeffs (ENT vs. BOTH)	0.001***	0.003***	0.002***
Test diff. Coeffs (VC vs. BOTH)	0.683	0.620	0.533

This table presents the results of OLS regressions. Variables are described in Table 1. Standard errors are clustered at the angel investor level. The specification also includes the deal year, firm country, and industry fixed effects. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

To test this “entrepreneurial learning channel,” we distinguish between angel investors who have founded multiple businesses (often termed serial entrepreneurs) and those with only a single entrepreneurial experience. The results in Columns 1 and 2 of Table 7 support our hypothesis, indicating that serial entrepreneurs perform (statistically) better than non-serial entrepreneurs and achieve performance levels that are not (statistically) different from that of VCs.

Next, we examine whether the skills acquired through prior entrepreneurial experiences vary in value depending on the industry relatedness between the entrepreneur’s prior venture and the startup receiving financing. Specifically, we hypothesize that the ability to generalize prior entrepreneurial experiences is enhanced when industry relatedness is present. As industry information is available only for firms that received external financing, in Columns 3 and 4 of Table 7, we classify former entrepreneurs into three categories: (1) founders of firms that did not receive external financing, (2) founders of firms that received external financing but operated in different industries, and (3) founders of firms that received external financing and operated in the same industry. Industry similarity is assessed using PitchBook’s classification system, which defines 42 distinct industries. As shown in Columns 3 and 4 of Table 7, we find that former entrepreneurs with limited success—those whose ventures did not receive external financing—are less likely to succeed as angel investors. More notably, former entrepreneurs who received external financing and operated in the same industry as the startup being financed exhibit stronger performance, achieving results statistically indistinguishable from those of former VCs.⁶

Existing research suggests performance persistence in entrepreneurship, where past success is positively correlated with future performance (Gompers et al., 2010). However, a critical question remains: Does entrepreneurial success also translate into superior performance as a VC investor?

⁶ To maintain consistency across analyses, we do not control for the characteristics of the startup’s founding team in our regression models. However, our results remain robust to the inclusion of these additional controls, which are available upon request.

Table 7

The entrepreneurial learning channel: serial entrepreneurs and industry affinity.

Dependent variable:	Successful Exit	Successful Exit	Successful Exit	Successful Exit
	(1)	(2)	(3)	(4)
Non-Serial Entrepreneur (NSE)	−0.001 (0.003)	0.000 (0.003)		
Serial Entrepreneur (SE)	0.010** (0.004)	0.011*** (0.004)		
Non-VC-Backed Entrepreneur (NVBE)			−0.014** (0.006)	−0.013** (0.006)
VC-Backed Entrepreneur Different Industry (VCBEDI)			0.005 (0.003)	0.005 (0.004)
VC-Backed Entrepreneur Same Industry (VCBESI)			0.008** (0.004)	0.009** (0.004)
Prior VC Experience (VCE)	0.016*** (0.003)	0.014*** (0.003)	0.016*** (0.003)	0.014*** (0.003)
Female	−0.009* (0.005)	−0.009* (0.005)	−0.009* (0.005)	−0.009* (0.005)
MBA	0.003 (0.004)	0.002 (0.004)	0.003 (0.004)	0.002 (0.004)
Elite University	0.010*** (0.003)	0.009** (0.003)	0.009*** (0.003)	0.008** (0.003)
Early-Stage Investment		0.002 (0.003)		0.001 (0.003)
Ln (Amount Raised Before Deal)		0.021*** (0.003)		0.022*** (0.003)
Ln (Deal Size)		−0.016*** (0.003)		−0.017*** (0.003)
Deal year FE	Yes	Yes	Yes	Yes
Firm country FE	Yes	Yes	Yes	Yes
Firm industry FE	Yes	Yes	Yes	Yes
Observations	77,147	77,147	77,147	77,147
Test diff. Coeffs (NSE vs. SE)	0.004***	0.005***		
Test diff. Coeffs (VCE vs. SE)	0.289	0.524		
Test diff. Coeffs (VCBEDI vs. VCE)			0.012**	0.046**
Test diff. Coeffs (VCBESI vs. VCE)			0.112	0.269

This table presents the results of OLS regressions. Variables are described in Table 1. Standard errors are clustered at the angel investor level. The specification also includes the deal year, firm country, and industry fixed effects. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Columns 1 and 2 of Table 8 distinguish between successful entrepreneurs (founders of startups that underwent an M&A or went public) and unsuccessful entrepreneurs (founders of startups that neither underwent an M&A nor went public). As shown in Table 8, successful entrepreneurs significantly outperform their unsuccessful counterparts, achieving performance levels comparable to those of former VCs. Furthermore, in Columns 3 and 4 of Table 8, we examine the role of prior success as an investor. The results suggest—perhaps unsurprisingly—that angel investors with prior VC experience who successfully led at least one deal that resulted in a successful exit outperform those who were unsuccessful in their previous investment endeavors.

To assess the robustness of our findings, we employ additional empirical tests. In Appendix Tables B8 and B9, we use the Cox proportional hazards model to validate the results reported in Tables 7 and 8, respectively. Additionally, in Tables B10 and B11, we re-examine the findings from Tables 7 and 8 using a probit model to account for the binary nature of the dependent variable. The results further support our main analyses.

4.2. The professional network channel

Given the significance of syndication in the VC industry (Tian, 2012), we examine with whom angel investors syndicate their investments and who participates in subsequent financing rounds of the firms they initially fund (Venugopal and Yerramilli, 2022), with a particular focus on investor reputation and identity.

Consistent with prior research (e.g., Nahata, 2008; Krishnan et al., 2011), we measure an investor's reputation using the cumulative value (in million dollars) of its IPO exits up to the year preceding the focal investment, applying a logarithmic transformation to address skewness. When a deal is not syndicated, the dependent variable in Column 1 of Table 9 takes a value of 0. As shown, former entrepreneurs syndicate their investments with partners who are 33 % more reputable than those chosen by the TMT of traditional firms. However, they syndicate with investors who are 27 % less reputable than those chosen by former VCs. In Columns 2 and 3, we shift our focus to investor identity. Specifically, we investigate whether an angel investor's background influences their likelihood of syndicating with independent VCs (Column 2)—that are arguably more sophisticated and informed investors—and their ability to attract such investors in subsequent financing rounds (Column 3). The dependent variable in Column 2 is the count of independent VCs participating as syndicate partners, while in Column 3, the dependent variable is the count of independent VCs investing in later

Table 8

The entrepreneurial learning channel: successful entrepreneurs and VCs.

Dependent variable:	Successful Exit	Successful Exit	Successful Exit	Successful Exit
	(1)	(2)	(3)	(4)
Non-Successful Entrepreneur (NSE)	−0.006 (0.004)	−0.004 (0.003)		
Successful Entrepreneur (SE)	0.011*** (0.004)	0.011*** (0.004)		
Non-Successful VC (NSVC)			0.009** (0.004)	0.008** (0.004)
Successful VC (SVC)			0.025*** (0.005)	0.023*** (0.005)
Prior VC Experience	0.016*** (0.003)	0.014*** (0.003)		
Prior Entrepreneurial Experience			0.003 (0.003)	0.004 (0.003)
Female	−0.009* (0.005)	−0.008* (0.005)	−0.009* (0.005)	−0.009* (0.005)
MBA	0.002 (0.004)	0.002 (0.004)	0.002 (0.004)	0.001 (0.004)
Elite University	0.009*** (0.003)	0.009** (0.003)	0.010*** (0.003)	0.009*** (0.003)
Early-Stage Investment		0.001 (0.003)		0.002 (0.003)
Ln (Amount Raised Before Deal)		0.021*** (0.003)		0.021*** (0.003)
Ln (Deal Size)		−0.017*** (0.003)		−0.016*** (0.003)
Deal year FE	Yes	Yes	Yes	Yes
Firm country FE	Yes	Yes	Yes	Yes
Firm industry FE	Yes	Yes	Yes	Yes
Observations	77,147	77,147	77,147	77,147
Test diff. Coeffs (NSE vs. SE)	0.000***	0.000***		
Test diff. Coeffs (NSVC vs. SVC)			0.005***	0.009***

This table presents the results of OLS regressions. Variables are described in [Table 1](#). Standard errors are clustered at the angel investor level. The specification also includes the deal year, firm country, and industry fixed effects. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

rounds that did not participate in the focal or prior rounds. Given the count nature of the dependent variables in Columns 2 and 3 of [Table 9](#), we employ a Poisson model rather than an OLS regression.

Our findings indicate that former VCs are more likely than former entrepreneurs to syndicate with VC firms. However, former VCs and former entrepreneurs exhibit similar success in attracting new VC firms in follow-up rounds. Across all specifications, angel investors combining VC and entrepreneurial experiences appear to be the most connected. Indeed, they are more likely to syndicate with reputable investors, form partnerships with the largest number of independent VCs, and attract the highest number of independent VCs in follow-on investments. This suggests that the blend of the two experiences provides such investors with an advantage in terms of network and access to deals. In Column 4, we employ as a dependent variable a dummy with a value of 1 if the angel investor syndicated the deal with the VC firm they worked for or with an investor in the startup they had founded before the deal. While the dependent variable, by construction, always takes a value of 0 for angel investors with a background as TMT professionals in traditional corporations, this specification can help us understand the extent to which former entrepreneurs and VCs rely on their prior professional networks to complete investments. As shown, former entrepreneurs and VCs are equally likely to leverage their professional networks. However, angel investors with both entrepreneurial and venture capital experience are the most likely to take advantage of their professional networks, possibly due to the broader and deeper relationships they have cultivated across both fields.

To address concerns that former VCs may be syndicating with more reputable investors and more VC firms, which tend to focus on later-stage investments, merely because they invest in later-stage startups (as indicated in [Table 3](#)), we replicate [Table 9](#) while controlling for the investment stage. As reported in Appendix Table B12, our results remain robust to this alternative specification. Additionally, to rule out the possibility that former VCs outperform former entrepreneurs solely due to their partnerships with more established investors, we replicate Column 3 of [Table 6](#) in Column 1 of Table B13. We then progressively introduce variables from [Table 9](#)—capturing partner reputation and investor identity—as explanatory variables in Columns 2–5. This analysis confirms that the performance advantage of former VCs persists even after accounting for their networks, suggesting that their success extends beyond merely having stronger connections.

Angel investors with prior entrepreneurial or VC experience may benefit from the professional ties established in their previous careers. These connections can influence their deal flow and ability to identify suitable syndicate partners. Former entrepreneurs, in particular, may be well positioned to leverage relationships with investors from their prior ventures. As shown in [Table 2](#), former entrepreneurs frequently capitalize on such ties. Specifically, 17.2 % of the deals in our dataset (or 31 % of deals completed by

Table 9

The professional network channel: syndicate partners.

Dependent variable:	Reputation Syndicate Partners	N. VCs as Syndicate Partners	N. New VCs Follow-up Rounds	Syndication with prior VC employer or prior startup investor
	(1)	(2)	(3)	(4)
Entrepreneurial background (ENT)	0.328*** (0.050)	0.176*** (0.016)	0.184*** (0.027)	0.244*** (0.007)
VC TMT background (VC)	0.598*** (0.070)	0.256*** (0.020)	0.180*** (0.033)	0.243*** (0.012)
Entrepreneurial and VC TMT (BOTH)	0.659*** (0.075)	0.306*** (0.021)	0.275*** (0.031)	0.420*** (0.017)
Female	0.056 (0.098)	0.024 (0.022)	−0.102*** (0.037)	−0.031* (0.017)
MBA	−0.079 (0.056)	−0.036** (0.017)	−0.045* (0.026)	−0.028** (0.012)
Elite University	0.594*** (0.053)	0.106*** (0.014)	0.143*** (0.023)	0.017 (0.012)
Deal year FE	Yes	Yes	Yes	Yes
Firm country FE	Yes	Yes	Yes	Yes
Firm industry FE	Yes	Yes	Yes	Yes
Observations	77,147	77,141	77,116	77,147
Test diff. Coeffs (ENT vs. VC)	0.000***	0.000***	0.892	0.925
Test diff. Coeffs (ENT vs. BOTH)	0.000***	0.000***	0.001***	0.000***
Test diff. Coeffs (VC vs. BOTH)	0.469	0.022**	0.006***	0.000***

This table presents the results of OLS (Column 1) and Poisson (Columns 2 and 3) regressions. Variables are described in Table 1. Standard errors are clustered at the angel investor level. The specification also includes the deal year, firm country, and industry fixed effects. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

entrepreneurs who previously received external financing) involve entrepreneurs syndicating with their former investors. Columns 1 and 2 of Table 10 highlight the value of these connections: entrepreneurs who syndicate with their prior investors outperform other successful entrepreneurs who do not leverage such relationships, as well as former VCs—although the performance difference between the latter two groups is not statistically significant.

A potential concern with the analyses in Columns 1 and 2 is that former entrepreneurs who secured external financing from multiple investors—and were, therefore, more successful—may be more likely to succeed as angel investors (given the performance persistence documented in Table 8) and to syndicate with former investors (due to their extensive investor networks). To address this concern, in Columns 5 and 6 of Table 10, we restrict the sample to former entrepreneurs who secured external financing and include a control for the natural logarithm of the number of investors in their previous startups. For serial founders, we consider the total number of investors across all their ventures. As expected, the estimated coefficient for this control variable is positive, confirming that the more successful an entrepreneur was, the higher their likelihood of success as an angel investor (consistent with Table 8). More importantly, even after accounting for the number of prior investors, entrepreneurs who syndicate with their former investors continue to outperform those who do not. This finding underscores the importance of professional connections and confirms that the results in Columns 1 and 2 are not merely driven by prior entrepreneurial success.

Professional ties with investors are not exclusive to former entrepreneurs; former VCs may also leverage their prior networks by syndicating with the VC firms they worked for. In Columns 3 and 4 of Table 10, we introduce two dummy variables: the first equals 1 if the angel investor has a VC background and syndicates with a former employer, while the second equals 1 if the investor has a VC background but does not syndicate with a former employer. The results indicate that former VCs outperform both former entrepreneurs and executives from traditional corporations, regardless of whether they syndicate with their prior VC firms. However, their performance is particularly strong when they do so.

As a robustness check, we re-estimate the models using a survival analysis (Table B14) and a probit model (Table B15), obtaining results consistent with those in Table 10. Collectively, these findings highlight the importance of professional networks in venture capital, demonstrating that one key channel through which angel investors achieve superior performance is by leveraging connections from their prior careers.

4.3. The alumni network channel

Investors may, in addition to their professional networks, draw on connections with individuals from their alma mater to identify promising startups for investment (Fuchs et al., 2021; Garfinkel et al., 2021). Table B16 provides evidence of the share of deals completed by angel investors based on their alma mater. As shown, nearly a quarter of the investments made by angel investors in our dataset involved alumni from the top five U.S. universities. We then examine whether angel investors' tendency to rely on the alumni

Table 10

The professional network channel: syndication with prior investors.

Dependent variable:	Successful Exit	Successful Exit	Successful Exit	Successful Exit	Successful Exit	Successful Exit
	(1)	(2)	(3)	(4)	(5)	(6)
Non-VC-Backed Entrepreneur (NVBE)	−0.014** (0.006)	−0.013** (0.006)				
VC-Backed Ent. Not Synd Prior Investor (VCBENS)	0.001 (0.003)	0.002 (0.003)				
VC-Backed Ent. Synd Prior Investor (VCBESP)	0.017*** (0.004)	0.018*** (0.004)			0.010*** (0.004)	0.010*** (0.004)
Prior VC Not Synd with Prior VC (VCNS)			0.012*** (0.004)	0.011*** (0.004)		
Prior VC Synd with Prior VC (VCS)			0.028*** (0.007)	0.027*** (0.007)		
Prior VC Experience	0.015*** (0.003)	0.014*** (0.003)			0.012** (0.005)	0.010** (0.005)
Prior Entrepreneurial Experience			0.003 (0.003)	0.004 (0.003)		
Female	−0.009* (0.005)	−0.008* (0.005)	−0.010** (0.005)	−0.010* (0.005)	−0.001 (0.007)	−0.000 (0.007)
MBA	0.003 (0.004)	0.002 (0.004)	0.002 (0.004)	0.002 (0.004)	0.002 (0.005)	0.001 (0.005)
Elite University	0.009*** (0.003)	0.008** (0.003)	0.010*** (0.003)	0.009*** (0.003)	0.008* (0.004)	0.008* (0.004)
Early-Stage Investment		0.001 (0.003)		0.002 (0.003)		0.003 (0.004)
Ln (Amount Raised Before Deal)		0.022*** (0.003)		0.022*** (0.003)		0.027*** (0.004)
Ln (Deal Size)		−0.017*** (0.003)		−0.017*** (0.003)		−0.024*** (0.004)
Ln (Investors in Founded Startups)					0.007*** (0.002)	0.007*** (0.002)
Deal year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm country FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	77,147	77,147	77,147	77,147	42,189	42,189
Test diff. Coeffs (VCBENS vs. VCBESP)	0.017**	0.013**				
Test diff. Coeffs (VCNS vs. VCS)			0.000***	0.000***		

This table presents the results of OLS regressions. “*Ln (Investors in Founded Startups)*” is the natural logarithm of the number of investors in the startups founded by the angel investor before the focal deal. All other variables are described in Table 1. Standard errors are clustered at the angel investor level. The specification also includes the deal year, firm country, and industry fixed effects. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

channel is influenced by their prior experiences (Columns 1–3 of Table 11) and whether their background affects the extent to which they benefit from using this channel (Columns 4–6 of Table 11). In Columns 1–3, the dependent variable is a binary indicator, set to 1 if the investment supported a startup founded by at least one individual who studied at the same institution as the angel investor, and 0 otherwise. When information on the education of either the angel investor or the founding team is missing, we impute a value of 0. Missing information could be due to two reasons: either the angel investor or startup founders do not hold a university degree or their educational background is not available in PitchBook records. Consequently, determining whether to set the dependent variable to 0 or exclude such observations is challenging. To address this issue, we present several specifications. In Column 1, we consider the full sample; in Column 2, we restrict the sample to deals involving angel investors with available educational information; in Column 3, we further restrict the sample to deals involving angel investors and at least one startup founder with available educational information. When considering the full sample, 8.4 % of the investments targeted startups founded by individuals who attended the same university as the angel investor. When restricting the sample to deals where both the angel investor and at least one founder’s educational information is available, this figure rises to 14.2 %.

As shown in Column 3 of Table 11, former entrepreneurs are significantly more likely to support founders from their alma mater. Given that the mean value of the dependent variable in Column 3 is 0.142, we conclude that former entrepreneurs are 34.5 % more likely than former VCs to invest in startups founded by individuals who attended the same institution. This evidence suggests that, due to more limited networks in venture capital, former entrepreneurs may rely more on alumni ties to identify investment opportunities. However, this is likely just one of the mechanisms at play, as angel investors with both entrepreneurial and venture capital backgrounds also appear to invest more in founders from their alma mater, albeit less so than those with purely entrepreneurial experience. Another possible explanation is that entrepreneurs may feel a stronger personal connection to their alma mater, viewing investments in their alumni as a way to give back and mentor founders who share their background. In contrast, former VCs may focus more on the financial potential of the deal, being less influenced by emotional factors in their investment decisions. Finally, we explore the performance outcomes of such investments to determine whether certain angel investors benefit more from investing in startups founded

Table 11

The alumni network channel.

Dependent variable:	Same University	Same University	Same University	Successful Exit	Successful Exit	Successful Exit
	(1)	(2)	(3)	(1)	(2)	(3)
Entrepreneurial background (ENT)	0.019*** (0.004)	0.028*** (0.005)	0.037*** (0.006)	0.003 (0.004)	0.005 (0.004)	0.003 (0.006)
VC TMT background (VC)	−0.007 (0.005)	−0.009 (0.006)	−0.012 (0.008)	0.016*** (0.005)	0.018*** (0.006)	0.012* (0.007)
Entrepreneurial and VC TMT (BOTH)	0.012** (0.006)	0.016** (0.007)	0.019** (0.009)	0.017*** (0.006)	0.020*** (0.006)	0.017** (0.007)
Same University				−0.005 (0.012)	−0.005 (0.012)	−0.010 (0.012)
ENT*Same University				0.006 (0.014)	0.003 (0.014)	0.006 (0.014)
VC*Same University				0.012 (0.017)	0.010 (0.017)	0.015 (0.018)
BOTH*Same University				0.019 (0.017)	0.016 (0.017)	0.019 (0.017)
Female	−0.001 (0.006)	0.004 (0.008)	0.006 (0.010)	−0.010** (0.005)	−0.010* (0.006)	−0.011 (0.007)
MBA	0.039*** (0.005)	0.035*** (0.005)	0.044*** (0.007)	0.002 (0.004)	0.001 (0.004)	0.003 (0.005)
Elite University	0.091*** (0.004)	0.075*** (0.005)	0.092*** (0.006)	0.010*** (0.003)	0.008** (0.004)	0.011** (0.004)
Deal year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm country FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	77,147	60,348	45,755	77,147	60,348	45,755
Test diff. Coeffs (ENT vs. VC)	0.000***	0.000***	0.000***			
Test diff. Coeffs (ENT vs. BOTH)	0.196	0.067*	0.033**			
Test diff. Coeffs (VC vs. BOTH)	0.003***	0.002***	0.001***			

This table presents the results of OLS regressions. Variables are described in Table 1. Standard errors are clustered at the angel investor level. The specification also includes the deal year, firm country, and industry fixed effects. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

by alumni of their institution, depending on their background. However, as shown in Columns 4–6 of Table 11, we find no statistically significant effects.

4.4. The risk aversion channel

We explore the potential role of risk aversion in shaping the investment behavior of angel investors with different backgrounds. As shown in Table 3, angel investors with entrepreneurial experience are more likely to invest in early-stage startups, which could be indicative of a lower level of risk aversion compared to other types of investors. However, we aim to test whether this lower risk aversion leads to higher startup failure rates or greater success in terms of IPO outcomes.

To test the risk aversion hypothesis, we construct a dependent variable called “Failure,” which is a binary indicator set to 1 if the angel investor’s exit is classified as “Out of Business,” “Bankruptcy: Admin/Reorg,” or “Bankruptcy: Liquidation,” and 0 otherwise. This allows us to assess whether angel investors with entrepreneurial backgrounds are more likely to invest in ventures that ultimately fail. Our findings, presented in Table 12, show that the likelihood of failure is not significantly influenced by the angel investor’s background. This suggests that angel investors with entrepreneurial experience do not appear to be investing in riskier ventures that would be more prone to failure.

This lack of a significant relationship between investor background and failure rates challenges the notion that entrepreneurial angel investors are more inclined to take higher risks in their investments, at least in terms of business failure. Our results imply that the higher risk-taking observed in early-stage investments does not necessarily translate into a higher probability of startup failure. In other words, while entrepreneurial angels may invest in earlier stages, their decisions do not appear to lead to a higher likelihood of failure compared to other types of angel investors. This finding does not support the risk aversion channel.

5. Robustness tests and limitations

5.1. Matching analysis

Contrary to general expectations, our research finds that angel investors with entrepreneurial backgrounds underperform relative to those with alternative upper echelon backgrounds, such as former VCs. To explain this finding, we provide evidence supporting both the entrepreneurial learning channel and the professional network channel. However, it is also possible that angel investors with VC experience benefit from a deal flow advantage, gaining access to higher-quality ventures through their established connections in the

Table 12
Risk-aversion channel.

Dependent variable:	Failure (1)	Failure (2)
Entrepreneurial background (ENT)	−0.000 (0.003)	−0.002 (0.003)
VC TMT background (VC)	−0.002 (0.004)	0.001 (0.004)
Entrepreneurial and VC TMT (BOTH)	−0.004 (0.004)	−0.001 (0.004)
Female	0.001 (0.004)	−0.001 (0.004)
MBA	−0.003 (0.003)	−0.002 (0.003)
Elite University	−0.005** (0.002)	−0.002 (0.002)
Early-Stage Investment		0.006*** (0.002)
Ln (Amount Raised Before Deal)		−0.010*** (0.002)
Ln (Deal Size)		−0.010*** (0.002)
Deal year FE	Yes	Yes
Firm country FE	Yes	Yes
Firm industry FE	Yes	Yes
Observations	77,147	77,147
Test diff. Coeffs (ENT vs. VC)	0.668	0.467
Test diff. Coeffs (ENT vs. BOTH)	0.311	0.911
Test diff. Coeffs (VC vs. BOTH)	0.678	0.626

This table presents the results of OLS regressions. Variables are described in Table 1. Standard errors are clustered at the angel investor level. The specification also includes the deal year, firm country, and industry fixed effects. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

venture capital ecosystem. This, in turn, could explain their higher likelihood of achieving successful exits. We attempt to address this concern by showing that differences in deal selection and founding team composition do not fully account for the performance disparities.⁷ However, we acknowledge that, since our observational data reflect a matching equilibrium shaped by both deal access and investors' selection strategies, we cannot establish causality.

Our findings (Section 3.3) suggest that even after accounting for visible characteristics of the deals joined by angel investors and the ventures they invest in, those with a venture capital background outperform those with an entrepreneurial background. As illustrated in Table 4, former VCs tend to target more educated founders, particularly those from STEM disciplines. Conversely, both former entrepreneurs and VCs exhibit a preference for investing in experienced, successful founders relative to the TMTs of traditional corporations. However, our analysis reveals that differences in the selection of deals (Table 3) and the composition of the founding team (Table 4) do not fully account for the performance disparities observed in Table 6. Even when we control for selection characteristics related to the investment round (Column 2) and the founding team (Column 3), the observed differences in performance remain largely unchanged.

To further address concerns regarding the differential selection of deals and startups, we implement a matching procedure. In this approach, each deal completed by a former entrepreneur is matched with the most similar deal completed by a former VC. To ensure comparability, we exclude deals completed by former TMT members and those involving individuals with both entrepreneurial and venture capital backgrounds. This methodology enables us to isolate the performance differences between angel investors with entrepreneurial versus venture capital backgrounds while controlling for their distinct investment choices, as detailed in Tables 3 and 4. The results, presented in Panel A of Table B17, confirm that former entrepreneurs continue to underperform relative to former VCs even after the matching procedure is applied. Moreover, Panel B of Table B17 demonstrates that the matching process effectively balances covariates, with only two remaining unbalanced.

While this approach accounts for observable founder- and deal-specific characteristics, unobservable factors may still introduce systematic selection effects. Given the two-sided matching mechanism of startup financing, where both startups and investors select

⁷ Although we do not identify valid instruments in our context, we build on Hebert et al. (2024) to explore a plausibly exogenous determinant of startup success: local capital supply. Specifically, we seek an exogenous variable that differentially affects angel investors based on their backgrounds. Since angel investors use their own capital, we lack a direct measure of capital supply. However, VC funding from limited partners (LPs) may influence angel investors with a VC background more than those with an entrepreneurial background. To capture this, we measure Funding Supply as the number of VC funds raised from LPs (Bellavitis et al., 2023). However, we find no statistical support for local capital supply being positively associated with successful exits.

each other, high-quality startup founders may prefer angel investors with VC backgrounds, aiming to establish valuable relational networks with prominent VCs. Empirical evidence supports this proposition. Hsu (2004) demonstrates that entrepreneurs are willing to accept investment offers from reputable VCs at a discounted valuation, highlighting the value they place on such affiliations. Similarly, Chemmanur et al. (2021) provide empirical evidence showing that VCs contribute more value to startups than angel investors, leading to better future outcomes for startups. In additional untabulated analyses, we extend this approach to compare the performance of former entrepreneurs with that of TMT members from traditional corporations. Here, we exclude all deals completed by former VCs, including those with both entrepreneurial and venture capital backgrounds. Even after implementing the matching procedure, we do not observe significant performance differences between former entrepreneurs and TMT members from traditional corporations. While we acknowledge that controlling for observable characteristics and applying a matching approach does not completely resolve the selection-versus-treatment dilemma, these analyses help mitigate concerns regarding differential selection effects and reinforce the robustness of our findings.

5.2. Replication with only seed and angel rounds

Our main analysis included not only angel and seed rounds but also VC rounds. This inclusion explains why the average deal size in our dataset exceeds that reported in previous studies. Table 3 demonstrates that angel investors with entrepreneurial backgrounds are more likely to invest in early-stage deals (angel and seed rounds). If we had restricted the sample to angel and seed rounds, we would have been unable to link the background of the angel investors with their preferences regarding the development stage of the startups. Furthermore, we believe that to comprehensively study the investment behavior of a certain category of investors (angel investors in this case), it would be inappropriate to focus arbitrarily on a specific type of investment rounds (early-stage investments in this case).

However, to ensure that our results hold when considering only the deals typically associated with angel investors, in this section, we replicate our analyses by including only investment rounds classified as angel or seed rounds by PitchBook. After excluding VC rounds, the average deal size completed by the angel investors in our dataset aligns with those reported in previous studies, such as Xu (2023). As shown in Tables B18 and B19, even when considering only angel and seed rounds, the majority of our findings regarding the selection of founding teams and treatment of startups remain robust. The only exceptions are represented by the estimated coefficients on the propensity to invest in larger founding teams and the probability of replacing the founder as the CEO, which become insignificant. Similarly, the results about performance and syndication, presented in Tables B20 and B21, respectively, remain robust when limited to early-stage deals.⁸

6. Conclusions

Despite the growing importance of angel investments, there remains a limited understanding of this phenomenon. Existing literature has predominantly treated angel investors as a homogeneous group, overlooking the diversity of their professional backgrounds. In this paper, we document the professional origins of angel investors and explore how different backgrounds shape investment strategies and performance. By leveraging their unique position as individual decision-makers who invest personal funds, we investigate the impact of diverse professional experiences on angel investing outcomes.

Our findings reveal that angel investors with entrepreneurial backgrounds tend to underperform relative to those with a venture capital background. This challenges the prevailing belief that entrepreneurial experience is inherently critical for enhancing selection and treatment capabilities in angel investing. We explain these results through two primary channels: the entrepreneurial learning channel and the professional network channel.

First, the entrepreneurial learning channel suggests that former entrepreneurs who act as angel investors are more likely to succeed when they can generalize their prior experiences to the specific investment opportunity. Consistent with this expectation, we show that serial entrepreneurs and entrepreneurs investing in industries related to their prior ventures are more likely to succeed when acting as angel investors. Additionally, our results suggest that those entrepreneurs who were successful in their entrepreneurial endeavors are more likely to be successful as angel investors. Collectively, these findings highlight the importance of the quantity, affinity, and quality of prior entrepreneurial experience—rather than merely the presence of such experience—as key determinants of success in angel investing.

Second, our findings on the professional network channel highlight the significance of prior professional networks in venture investing. Angel investors with extensive networks can forge powerful connections with other investors, enabling them to secure better deal flow and identify potential syndicate partners for more promising investments.

Finally, we find no support for alternative channels such as the alumni network channel or the risk aversion channel. Overall, this paper contributes to the literature by revealing how angel investors' professional backgrounds shape their investment decisions and outcomes, offering insights into the heterogeneous nature of this significant investor group.

During the preparation of this work, the author(s) used GPT and Grammarly to improve the readability and language of the paper. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

⁸ By restricting the sample to early-stage deals, we do not replicate Table 3, which aimed to demonstrate that former entrepreneurs are more likely to invest in early-stage deals.

CRediT authorship contribution statement

Valerio Pelucco: Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Silvio Vismara:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

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Data availability

The authors do not have permission to share data.

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