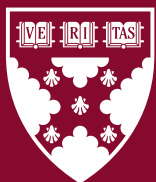


Working Paper 25-053

With a Little Help from My Family: Informal Startup Financing

Brian K. Baik
Johan Ludvig S. Karlsen
Katja Kisseleva



**Harvard
Business
School**

With a Little Help from My Family: Informal Startup Financing

Brian K. Baik

Harvard Business School, DA3 Institute

Johan Ludvig S. Karlsen

BI Norwegian Business School

Katja Kisseleva

Frankfurt School of Finance & Management

Working Paper 25-053

Copyright © 2025 by Brian K. Baik, Johan Ludvig S. Karlsen, and Katja Kisseleva.

Working papers are in draft form. This working paper is distributed for purposes of comment and discussion only. It may not be reproduced without permission of the copyright holder. Copies of working papers are available from the author.

Funding for this research was provided in part by Harvard Business School.

With a Little Help from My Family: Informal Startup Financing*

Brian K. Baik
Harvard Business School, D³ Institute

Johan Ludvig S. Karlsen
BI Norwegian Business School

Katja Kisseleva
Frankfurt School of Finance & Management

April 2025

Abstract

Using Norwegian administrative data, we identify family equity investments in startups and examine their effects on investor returns and firm behavior. Informal investors earn lower returns than external individuals, and the firms they back are less likely to secure institutional financing or achieve a successful exit. These startups also follow more conservative strategies. Instrumental variable estimates suggest that family members do not cause conservative behavior; rather, they select into firms that take fewer risks. Additional tests support altruism as the driving motive. Informal capital is thus a behaviorally distinct source of startup funding, shaped by relational and non-pecuniary objectives.

Keywords: early-stage financing, informal investment, entrepreneurship, household finance, risk taking.

JEL Codes: D14, G11, G32, G41, L26.

*We thank Shai Bernstein, Lauren Cohen, Bill Kerr, Tom Meling (discussant), Filippo Mezzanotti (discussant), Will Mullins, Krishna Palepu, David T. Robinson, Rick Townsend, Margarita Tsoutsoura, seminar participants at ESMT Berlin and Harvard Business School (A&M Unit, E&M Unit) and participants of Midwest Finance Association, the Workshop on Entrepreneurial Finance and Innovation (WEFI), and Workshop on Behavioral Perspectives on Family Firms for their helpful comments. We are grateful to Norwegian Tax Authorities for granting us data access. Author emails: bbaik@hbs.edu (Baik), johan.l.karlsen@bi.no (Karlsen), k.kisseleva@fs.de (Kisseleva)

1 Introduction

Entrepreneurial finance is often associated with sophisticated institutional investors—such as angel investors and venture capital (VC) firms. Yet the most common source of early-stage capital is informal investors—individuals with personal ties to founders, typically family or friends. Informal financing supports 3.8% of U.S. startups, far exceeding the 0.5% prevalence of VC funding (Cosgrove et al., 2023; Nanda and Phillips, 2023; Puri and Zarutskie, 2012). Robb and Robinson (2014) show that, among firms using family equity, the amount of informal capital is roughly equivalent to owner equity and far exceeds owner debt. Despite its prevalence, informal financing is largely absent from mainstream academic and policy discussions. This omission stems in part from its relational nature: informal investors operate outside institutional structures, rely on trust rather than formal contracts, and leave few data trails. These features render informal capital difficult to observe, though no less economically important.

Beyond their prevalence, theory suggests that informal investors operate under distinct behavioral and financial assumptions (e.g., Lee and Persson, 2016). Unlike institutional investors, they may accept lower expected returns, motivated by altruistic concerns (e.g., Becker, 1981). As SportsTradex founder Ben Lipson remarked in an interview with Forbes: “It is often quicker and easier than trying to attract angel investors or institutional money. Almost by definition, F&F [Family and Friends] investors trust the founders implicitly” (Forbes, 2015). Despite these benefits, many founders prefer institutional capital, which carries fewer relational complications in the event of failure and may better support aggressive growth strategies. This raises a key empirical question: does informal finance cause firms to take fewer risks, or do informal investors self-select into ventures that already take fewer risks?

Despite its prevalence and theoretical distinctiveness, informal capital remains empirically underexplored. Empirical evidence is limited on how family-held equity performs, how it influences firm behavior, and whether it causally leads to more conserva-

tive decision-making. A key obstacle is that informal investments are rarely disclosed in commercial datasets, making them difficult to observe, let alone link with investor characteristics, returns, or strategic outcomes. To our knowledge, this is the first study to comprehensively trace informal equity ownership across investment decisions, investor profiles, and firm-level outcomes.

We address this gap using a unique panel of Norwegian administrative data (2004–2018) that links every equity transaction in private limited-liability startups to rich shareholder profiles, including family relationships, personal wealth, and geographic location. This linkage enables us to (i) systematically identify informal investments made by family members, (ii) estimate realized and unrealized returns on those investments, and (iii) analyze how informal capital correlates with firm outcomes, such as innovation intensity, patenting, revenue growth, leverage, and exit behavior. Unlike commercial or U.S.-based datasets, which rarely record informal equity or familial connections, our data allow us to observe and trace informal financing with a level of granularity that is not otherwise possible.

A potential concern is that informal capital may be concentrated in traditional family businesses, which often pursue different growth trajectories and operate under different objectives than high-growth startups ([Bertrand and Schoar, 2006](#)). These firms may prioritize stability, succession, or family employment over innovation or scalability (e.g., [Bennedsen et al., 2007](#); [Burkart et al., 2003](#)), making it difficult to disentangle whether observed conservatism is due to investor behavior or firm type. To address this concern, we restrict our analysis to startups with high innovation potential at incorporation—firms that, based on observable characteristics at incorporation, are more likely to pursue scalable growth and attract early-stage institutional capital such as angel or venture financing. This restriction allows us to study informal financing in a context directly comparable to the broader entrepreneurial finance literature and ensures that our results are not driven by the dynamics of lifestyle businesses or multigenerational family firms.

We begin our analysis by quantifying the returns on informal capital and show that family equity underperforms: informal investors earn $0.764\times$ lower total value to paid-in capital (TVPI) and 11 percentage points lower internal rate of return (IRR) than comparable external investors. Consistent with this idea, informal startups are associated with a lower probability of receiving capital from institutional investors (i.e., VC, corporate, or foreign) or angel investors. In addition, these firms are associated with a lower likelihood of a positive exit event, such as being acquired through an M&A transaction or going public.

Next, we link family financing with firm-year-level risk-taking measures to investigate whether informally financed firms take fewer risks than externally financed ones. We employ innovation-related measures (intangibles, patent applications, R&D expenses) as well as operating-related variables (revenue growth, return on assets, salaries, bank loans) as dependent variables. Both types of measures are widely used as proxies for firm risk-taking (e.g., [Coles et al., 2006](#)). Startups backed solely by family capital exhibit systematically lower risk-taking behavior: 1.2 percentage points lower R&D expenses and 35.6% fewer patent applications. These effects hold after controlling for firm characteristics, and for industry and region fixed effects.

The baseline results, however, do not guarantee a causal interpretation, as they could reflect not only informal investor influence, but also differences in firm selection. To distinguish investor selection from active influence, we exploit geographic distance between founders and relatives at the time of incorporation as an instrument for informal financing and conduct instrumental variables (IV) regressions. Our identifying assumption is that geographic distance between founders and their family members affects firm-level risk-taking only through the informal financing channel. We find that the first-stage F-statistics average around 30, consistent with a strong first-stage relationship. Our IV regressions suggest that the apparent risk-related differences disappear, which we interpret as evidence that the baseline results are driven by the selection behavior of informal in-

vestors.

We provide two sets of robustness tests to further validate our IV strategy. First, to address the concern that founder–family distance may be correlated with unobserved determinants of firm risk-taking, we conduct a placebo test using a sample of purely externally financed firms. In this setting, we find that family proximity is largely unrelated to firm risk-taking, supporting the exclusion restriction. Second, we implement a difference-in-differences strategy that compares firm behavior before and after the entry of the first individual investor. The analysis reveals no meaningful shift in risk-taking following the arrival of an informal investor, further suggesting that family investors select into low-risk firms rather than causally inducing conservatism. Taken together, these results support a selection-based interpretation: informal investors do not steer founders toward safer strategies – they choose ventures that are already more conservative. While this may appear to contrast with the literature emphasizing the value of family ownership (e.g., [Anderson and Reeb, 2003](#); [Villalonga and Amit, 2006](#)), our findings are not incompatible. Rather, they highlight the selection criteria of family investors, who support firms that take fewer risks.

Next, we explore the mechanisms that could drive our results. On the one hand, family members may lack the experience or sophistication to evaluate high-risk ventures, leading to conservative selections. On the other hand, they may choose low-risk ventures because their investment is motivated less by financial gain and more by a desire to support the founder personally—that is, as a form of giving rooted in altruism. These two channels generate the same prediction (lower risk-taking) but stem from fundamentally different behavioral assumptions and imply distinct policy implications. Distinguishing between them is central to understanding how household behavior influences early-stage capital markets. Our cross-sectional tests provide evidence more suggestive of an altruism mechanism than of a lack of sophistication. The association between low risk-taking and informal capital weakens when informal and external investors co-invest, consistent

with the notion that conditional on informal investors investing in startups that align with external investors' criteria, firms continue to pursue risk-taking strategies. In addition, lower risk-taking persists among firms backed by more experienced and wealthier family investors and is strongest when emotional proximity between investor and founder is highest. These patterns are difficult to reconcile with inexperience or capital constraints, and instead support the altruism hypothesis.

We contribute to three streams of academic literature: entrepreneurial finance, family business, and household finance. First, we contribute to work on financing, startups, and innovation by providing empirical evidence on an important but understudied source of entrepreneurial capital (Kerr and Nanda, 2015, for a detailed review). Specifically, we examine the characteristics of *informal* financing sources (e.g., family members), distinct from angel investors (e.g., Bach et al., 2022; Hellmann et al., 2021; Hellmann and Thiele, 2015; Karlsen et al., 2024; Kerr et al., 2011; Lerner et al., 2018; Lindsey and Stein, 2020; Wong, 2002) or VC investors (e.g., Bernstein et al., 2016; Hellmann and Puri, 2002; Sorensen, 2007), who are typically more sophisticated. Our detailed administrative data allow us to document both the returns to informal capital and its firm-level implications. In doing so, we offer the first comprehensive empirical account of how household preferences shape entrepreneurial firm trajectories.

Second, we complement the literature on family ownership and family firms by shifting the focus to the very earliest stage of firm formation (e.g., Anderson and Reeb, 2003; Andreoni, 1989; Bertrand and Schoar, 2006; Lee and Persson, 2016; Villalonga and Amit, 2006). Whereas much of the family firm literature examines how family control affects governance, succession, or firm value in mature businesses, we examine the informal equity investments that influence which types of firms get funded at the outset, using detailed administrative data. We document that family members do not push founders to adopt conservative strategies; rather, they select into ventures that are already lower risk, driven not by financial incentives but by altruistic motives—a desire to protect the

entrepreneur from downside risk. This early-stage support reflects a form of relational or gift-based capital, which operates outside the logic of expected return and complements the “patient capital” narrative often associated with family-controlled firms. This perspective offers a new lens on how household preferences influence entrepreneurial trajectories long before firms evolve into the more commonly studied family business form.

Third, we contribute to the household finance literature by analyzing how families make high-stakes private investment decisions outside traditional financial markets. Specifically, the literature on individual and retail investors has long documented that non-institutional investors tend to underperform relative to professional asset managers (e.g., [Bach et al., 2020](#); [Barber et al., 2008](#); [Barber and Odean, 2000](#); [Calvet et al., 2009](#)). This literature largely focuses on retail behavior in public markets, where individuals trade liquid securities but have limited influence on firm strategy. By contrast, we examine a form of retail investment that is direct, illiquid, and relational—informal startup financing from family members. We show that this type of investment also yields significantly lower financial returns; however, unlike conventional retail underperformance, the mechanism is not excessive trading or poor public equity selection. Instead, we provide evidence that informal investors are driven by altruistic motives, treating capital provision more as a form of familial support or giving than as an asset allocation decision. Furthermore, by comparing informal investors to external individual investors—those without family ties to the founder—we uncover novel heterogeneity in returns and behavior within the retail investor population. Our results suggest that relational proximity—beyond sophistication or wealth—plays a critical role in shaping investment outcomes in private markets.

Finally, our findings have implications for entrepreneurship policy and household finance, as they shed new light on the economics of family financing. Informal equity is neither a subsidy for, nor a substitute to, professional capital—it is a self-selected, behaviorally distinct source of early-stage finance. Policymakers aiming to promote high-

growth entrepreneurship should recognize that informal financing is behaviorally distinct, and that founders relying on it may need additional support to pursue innovation, manage relational frictions, or access professional capital.

The paper proceeds as follows. Section 2 describes the data and sample construction. Section 3 documents returns to informal investments. Section 4 examines institutional financing and firm outcomes. Section 5 assesses risk-taking behavior in informal-financed firms. Section 6 explores the mechanisms at play, and Section 7 concludes.

2 Data and Sample Construction

2.1 The Norwegian Administrative Data

Norwegian administrative data are recognized for their quality and detail and have been used prominently in research in labor economics, finance and innovation (for recent examples, see [Fagereng et al., 2021](#); [Hvide and Jones, 2018](#); [Ring, 2023](#)). Our main data come from the annual tax declarations of the population of Norwegian public and private limited liability companies and their shareholders. These declarations have been digitally collected and stored in a data warehouse since 2004, and we obtain data through the end of calendar year 2018. The data identify firms' shareholders and their shareholdings, as well as all equity purchase, sale, and liquidation transactions. Each transaction includes dates, amounts, the number of shares transacted, and an indicator for whether the purchase is primary (issuance of new shares) or secondary (purchase from an existing investor). We process the transaction data such that an equity purchase is defined by a unique combination of investor, purchase date, firm, share class and purchase type (primary or secondary). This implies that, while the raw data may show two purchase transactions of the same type by the same investor on the same date in the same firm and share class, we aggregate these records into a single observation. Correspondingly, we process realization transactions such that an equity realization is defined by a unique

combination of investor, purchase date, realization date, firm, share class, purchase type (primary or secondary) and realization type (sale or liquidation). From the same data source, we obtain additional personal-level annual wealth information for the shareholders for the sample period 2011–2018.

The transaction records also include a unique national firm identification number (*organisasjonsnummer*), which is allocated to all firms registered in Norway and to foreign institutional shareholders of these firms. This firm identification number is consistently used across all registries and allows the data to be merged with other databases. Ultimately, we merge the tax declarations with financial statements, business registry data, incorporation documents and board data. We identify board members and executives among all individuals in the tax declarations using fuzzy matching on full names and exact matching on birth dates.

2.2 Sample Construction

To construct our sample of interest, we begin by identifying all newly established limited liability companies (analogous to C-corporations in the U.S.) that have been incorporated between 2004 and 2017. We remove financial services and real estate firms, newly formed subsidiaries of established companies, holding structures, and firms operating in non-innovative industries that are either heavily regulated, involve high public-sector ownership, or receive substantial tax support or subsidies.¹ It is unlikely that most of these firms have growth aspirations or intend to develop large-scale commercial innovation. As [Hurst and Pugsley \(2011\)](#) show, most small business owners (in the U.S.) have no desire to grow, operating their businesses primarily for lifestyle purposes.

¹We apply negative selection to rule out such industries. Excluded industries are: *agents/traders, agriculture, banks, brokers, cultural event producers, direct health services, education, fisheries, food production, gym/sports facilities, hotels, insurers, investment management, kindergartens, garages, mail-order, mining, museums, oil and gas production, physical shops, public services, publishing, real estate, restaurants, shipping companies, wholesale traders, direct services (e.g., hairdressers, for tourists, car rental, lawyers, maintenance, accountants, auditors, builders, plumbers, electricians, undertakers, taxis).*

To identify firms with high potential for innovation, we follow the spirit of the Startup Cartography Project ([Andrews et al., 2022](#); [Guzman and Stern, 2020](#); [Guzman and Stern, 2015](#)) and its application to the Norwegian business context in [Kisseleva et al. \(2025\)](#). We use a series of observable firm-level indicators to gauge a firm's likely innovation potential at the time it first appears in the tax registry data. The first flag is whether the firm has an English-language firm name. The idea behind this flag is that, because Norway has a population of only about five million, an English-language firm name increases international recognizability and is a natural choice for entrepreneurs with growth ambitions. The second flag is whether the firm is located in a regional innovation hub in Norway. The four innovation hubs in our data are Oslo, Bergen, Stavanger and Trondheim. These are the four largest cities in the country, and each hosts a major research university and has an associated technology cluster ([Hvide and Jones, 2018](#)). The third flag captures whether one of the company's nonexecutive board members resides in a geographically distant area from the city in which the firm operates. The idea is that selecting a geographically distant board member at the time of incorporation may indicate that the founders (or an investor) have recruited someone with technical or market expertise not readily available locally. To remain agnostic about the relative salience of each flag, we define a firm as high-innovation-potential (HIP) if at least one applies. This criterion yields a sample of 51,243 firms and contains 87% of all the firms that receive any VC funding in our data. The HIP sample selection process is presented in [Table A3](#).

Out of the entire pool of HIP firms, 5,152 have an informal investor who contributed at least NOK 10,000 (approximately 6.6 Norwegian kroner per U.S. dollar over the sample period) in equity, either in a financing round or through a secondary transaction. We define an informal investor as a family member of the entrepreneur, as identified through the relationship nodes information provided by the Norwegian Tax Authority, in the year of firm incorporation. All other individual investors are classified as external investors. 15,210 HIP firms have at least one external investor and no informal investors (external-

financed firms). Informal-financed, informal \times external-financed and external-financed firms represent our final sample.

Figure 1 shows the distribution of startup age at the time of informal financing. The figure shows that the most informal financing is provided at the very beginning of the firm's life. More than 70% of informal financing occurs in the year of the startup's business registration, which is consistent with the idea that informal investors are willing to provide capital at the earliest stages of the startup. Consistent with this idea, the mean startup age for informal investments is 0.95, which is lower than that of external financing (2.46) and (professional) angel investments from [Hellmann et al. \(2021\)](#), who report a mean firm age of 4.5 years.

Insert Figure 1 here.

Figure 2 provides an overview of the family members from whom an entrepreneurs receive informal financing. Panel A shows the distribution of different categories of family members and Panel B shows the average and median financing amounts for each group. In almost 40% of the cases, informal financing comes from the spouse/partner of the entrepreneur, followed by siblings (slightly more than 20%) and children and parents/grandparents (20%). Spouses and partners provide, on average, the lowest financing amounts, while siblings provide the highest. We do not observe any significant difference in financing amounts at the median.

Insert Figure 2 here.

Figure 3 plots the industry composition of firms that receive informal and external financing. We use the International Standard Industry Classification (ISIC) to classify industries. We divide the sample into firms with informal financing and those with external financing. In both panels, we observe similar industry distributions for startups with or without informal financing. The most common industry is research and development

and IT, which accounts for approximately 50% of our startup sample. This composition validates our startup filter to restrict firms to HIP firms.

Insert Figure 3 here.

2.3 Sample Description

Table 1 presents descriptive statistics for equity investments in our sample firms, partitioned by whether the investment was made by an informal or external investor. Several interesting characteristics emerge. First, there is substantial variation in terms of the returns across startup investments, both informal and external. For instance, the standard deviation of TVPI for external (informal) investments is 5.70 (4.95); the 99th percentile of external investments earns 40× of their investment. IRR shows a similar distribution, with the 99th percentile investor earning 1,908%. This is consistent with [Karlsen et al. \(2024\)](#), who report similar statistics analyzing a set of Norwegian angel investors. The IRRs are significantly lower than the reported IRRs in the literature; for instance, [Ljungqvist and Richardson \(2003\)](#) report a mean IRR of 19.8% for VC funds. This disconnect, however, may also reflect the high risk of very early-stage startup investments for individual investors, relative to VC investors who enter later in the startup life cycle.

Second, informal investments on average have lower realized returns (TVPI); specifically, mean TVPI of informal investments (external investments) is 1.42 (1.98). This is consistent with the prediction that informal investments have lower returns on average, as well as the findings from the retail investor literature that demonstrate underperformance compared to benchmarks (see [Barber and Odean, 2013](#), for a review.). This also applies to the internal rate of return (IRR), where informal investors on average record an IRR of -31.1%, which is lower than external investors' average of 4.6%. Consistent with this idea, the probability of an informal investment turning to zero (Total Loss) is higher (46.8%) than that of external investments (34.9%).

Third, in terms of investment characteristics, similar to Figure 1, we find informal financing is made at an earlier startup age (0.9 years old) than external financing (2.5 years old). In addition, informal investments take almost three times higher ownership stake (mean 31.2%) than external investments (mean 11.1%), and have approximately a 40-percentage-point higher probability of being assigned a board seat (mean 75.7% for informal investments vs. mean 36.9% for external investments).

Finally, there are also significant differences with respect to investor characteristics. Informal investors are, on average, a few years younger, significantly less likely to be male (primarily due to the prevalence of spouses as funders), less likely to be experienced angel or public equity investors, and less wealthy (i.e., 39% of informal investors have above-median wealth vs. 55.4% of external investors). Moreover, informal investors have less wealth and less investment experience, both in startups and in public equities.

Insert Table 1 here.

Table 2 describes our sample of firms. Founders, on average, have about six family members, and the mean family-founder distance for informal-financed firms is lower (77.2 km) than for external-financed firms (89.6 km). In terms of the overall firm trajectory, informal-financed firms show a higher likelihood of no exit event (68.8% vs. 61.7% for informal- and external-financed firms, respectively, and a lower probability of M&A/IPO (7.1%, compared to 13.9% for other types). These statistics are consistent with the notion that informal startups take less risk and therefore yield lower firm returns than external-financed ones.

In addition, we examine firm financials to understand the nature of our sample firms. External-financed firms are the largest among the three groups, with NOK 7.06 million (USD 1.07 million) in revenues and NOK 8.35 million (USD 1.27 million) in total assets.² Informal firms show the smallest size (NOK 2.65 million revenues and NOK 4.33 million

²Amounts in USD are based on an exchange rate of 6.6 NOK per USD, the average daily interbank market midquote rate reported by Norges Bank over our sample period.

total assets) and growth (72.3% revenue growth and 64% asset growth, compared to 107% revenue growth for external-financed firms). Conversely, informal-financed firms exhibit the highest ROA and lowest leverage, suggesting that they take the least risk among the three groups. Overall, the results are consistent with the notion that informal firms take less risk, while external-financed firms take more.

Insert Table 2 here.

3 Returns to Informal Investments

To test the prediction that informal investments yield lower returns than external financing, we construct two primary measures of investment-level performance. The first measure is total value to paid-in (TVPI), which simply calculates the cash distribution amount divided by the contribution:

$$TVPI_{i,j,t,s} = \frac{Distribution_{i,j,t,s}}{Contribution_{i,j,t,s}} \quad (1)$$

The second measure, internal rate of return (IRR), additionally takes into account the timing of the distributions. For investments with zero TVPI, IRR is set to -100%. Because our data link each share sale to the corresponding purchase, we do not need to calculate interim cash flows.

$$IRR_{i,j,t,s} = TVPI_{i,j,t,s}^{\frac{1}{T}} - 1 \quad (2)$$

Each of the two measures has both realized and unrealized components. The realized returns consider only actual distributions, whereas the unrealized returns use the price from the latest financing round. If no equity transactions occur in a given year, the price remains unchanged.

Using these returns, we estimate the following cross-sectional ordinary least squares

(OLS) regression model specification:

$$Return_{i,j,t,s} = \beta_1 Informal_j + \gamma X' + \alpha_{i,j,t} + \rho_{i,j,t} + \eta_i + \phi_i + \varepsilon_{i,j,t,s} \quad (3)$$

where $Return_{i,j,t,s}$ are the return proxies mentioned above; the main coefficient of interest $Informal_j$ denotes the investor that is a family member of firm i 's founder. $\gamma X'$ denotes a vector of control variables for investor- and investment-related characteristics, which are investor age, male dummy (one if the investor is male and zero otherwise), rrepeat-angel dummy (equal to one if the investor has invested in at least two HIP firms in our sample, zero otherwise), public stock dummy (one if the investor has made at least one investment in public stock prior to the investment, zero otherwise), ownership (natural logarithm of the ownership stake in firm i), holding period (number of days between the investment date t and realization date s), and board seat dummy (one if the investor sits on the board of firm i , zero otherwise). Specific variable definitions are stated in Table A3. $\alpha_{i,j,t}$, $\rho_{i,j,t}$, η_i and ϕ_i denote investment calendar year, firm age at the time of investment, industry, and region fixed effects, respectively. We cluster standard errors at the firm level.

Insert Table 3 here.

Table 3 reports the regression results of Equation 3. The first two columns use realized returns as the dependent variable, while the last two use unrealized returns. Consistent with the predictions, for realized returns we find a negative and significant coefficient for $Informal_j$, which suggests that informal investments yield lower realized returns compared to external investments. Economically, the realized TVPI is 76.4 percentage points lower than that of external investors. The results are consistent when we use annual realized IRR as the dependent variable, such that informal investment realize a 11 percentage points lower returns than external investments. This may reflect that, consistent with [Nadauld et al. \(2019\)](#), realized investments are often purchased at a discount due to sellers' liquidity constraints. Informal investors may suffer liquidity constraints more so than

external investors, and thus the realized price may be much lower. Furthermore, we expect the high write-off frequency to drive the lower returns. When unrealized returns are used as the dependent variable, we observe much weaker results, although the directions remain the same and magnitude of the coefficient increases.

The larger magnitude compared to retail investor returns in the public markets literature suggests the risk profiles of the startup investments. Because approximately half of the investments liquidate with a value of zero, the realized returns are substantially low. However, when unrealized returns are considered, the magnitude becomes smaller.

Overall, the results suggest that informal investments into startups are associated with lower returns than external financing. This aligns with the prediction from [Lee and Persson \(2016\)](#), who predict informal investors have lower required returns than external investors. Moreover, this finding is consistent with results from the retail investor literature, which documents lower returns compared to benchmarks.

4 Outcomes of Informal-Financed Startups

4.1 Institutional Financing

Next, we investigate whether startups that receive informal financing have different firm outcomes than those without. The underlying motivation for these tests is to validate and explore whether informal-financed startups show different probabilities of certain firm outcomes. We test this idea in two ways. First, we explore whether startups with informal financing have different probabilities of receiving different types of sophisticated financing, such as investments from angel, VC, corporate, or foreign investors, similar to [Kerr et al. \(2011\)](#). To do so, we estimate the following OLS regressions:

$$Financing_{i,t} = \beta_1 Informal_i + \gamma X'_{i,t} + \alpha_{i,t} + \rho_{i,t} + \phi_i + \varepsilon_{i,t} \quad (4)$$

The dependent variable $Financing_{i,t}$ is a dummy variable taking value of one if the firm receives an equity injection in year t from a repeat angel investor, venture capital (VC) investor, corporate investor or foreign investor, respectively. $Informal_i$ is a dummy variable taking the value of one if the firm has been financed by at least one informal investor. $\gamma X'_{i,t}$ denotes a vector of firm-year-level controls for firm-related characteristics. These include the natural logarithm of total assets, revenues, asset growth, return on assets, leverage, ownership, and concentration. $\alpha_{i,t}$, $\rho_{i,t}$, and ϕ_i denote industry \times year, industry \times firm age, and region fixed effects. We cluster standard errors at the firm level.

Table 4 presents the results of Equation 4, examining how informal financing relates to the likelihood of receiving follow-on institutional capital. Panel A uses a binary indicator for whether a firm has received any informal financing. We find that informal-financed firms are significantly less likely to receive later-stage capital from institutional sources: the probability of receiving venture capital or corporate investment declines by 0.3 and 1.0 percentage points, respectively, relative to external-financed firms. These effects become economically stronger in Panel B, which uses the share of informal financing as a continuous independent variable. A one-percentage-point increase in informal investor share is associated with a 0.16, 0.02, 0.20, and 0.06 percentage-point lower probability of receiving capital from repeat angels, VCs, corporate investors, and foreign investors, respectively.

These findings indicate that firms more heavily reliant on informal financing are systematically less likely to attract follow-on institutional capital. This gap may reflect selection effects, wherein informal investors choose firms with inherently lower growth trajectories or limited external appeal. Alternatively, it may reflect behavioral effects, whereby the presence of informal capital influences founder preferences toward more conservative, lower-risk strategies that are less attractive to institutional investors.

Insert Table 4 here.

4.2 Ultimate Firm Outcomes

Next, we analyze the ultimate outcomes of the startup firms, following [Phalippou and Gottschalg \(2009\)](#). In particular, we investigate whether informal firms exhibit different paths from other types of firms. To do so, we estimate the following OLS regression model:

$$Firm\ outcome_{i,T} = \beta_1 Informal_i + \gamma X_{i,T} + \alpha_T + \eta_i + \phi_i + \varepsilon_{i,T} \quad (5)$$

The dependent variable $Firm\ outcome_i$ is a dummy variable taking the value of one if the firm is still operating independently and, thus, has had no exit event as of 2018, the firm has gone bankrupt, or the firm has experienced a successful exit, such as merger, acquisition or IPO during our sample period. $Informal_i$ is a dummy variable taking the value of one if the firm has been financed by at least one informal investor. $\gamma X'_{i,t}$ indicates a vector of control variables (defined in Section 4.1, measured at the year of the exit. α_T , η_i , and ϕ_i denote exit year, industry, and region fixed effects, respectively. Robust standard errors are employed.

Table 5 shows regression results from Equation 5, which examines the relationship between informal financing and firm exit outcomes. Panel A, Column (1) uses an indicator variable equal to one if the firm has not exited as of the most recent year in our sample (2018). The coefficient on $Informal$ in Column (2) indicates that firms backed by informal investors are associated with a 7.0 percentage point higher probability of remaining active. The remaining columns explore other exit types. Informal financing is associated with a lower likelihood of high-growth exits such as M&A and IPO, but it does not significantly affect the likelihood of bankruptcy or liquidation. Panel B replaces the binary informal indicator with the share of informal investors on the cap table. A higher share of informal investment is again associated with greater firm survival and a reduced probability of positive exit events, with little effect on failure outcomes. These findings are consistent with the notion that informal-backed firms are less likely to pursue aggres-

sive growth trajectories, either because they are inherently more conservative (selection) or because family capital influences the founder’s risk preferences (treatment). The patterns align with the broader theme of informal financing being associated with lower risk taking and more persistent, albeit less scalable, firm outcomes.

Insert Table 5 here.

5 Informal Financing and Firm Risk

5.1 Baseline Results

In this section, we further investigate whether informal-financed startups take less risk, by exploiting the financial statement information through the Norwegian administrative data. In particular, we estimate the following Poisson/OLS regression model:

$$Y_{i,t} = \beta_1 Informal_i + \gamma X'_{i,t} + \alpha_{i,t} + \rho_{i,t} + \phi_i + \varepsilon_{i,t} \quad (6)$$

The dependent variable $Y_{i,t}$ measures different proxies for firm’s risk taking in year t : return on assets (ROA), intangible assets scaled by total assets, number of total patent applications,³ and one-year revenue growth. All other variables follow the definitions provided in Section 4.1. We again add industry \times year, industry \times firm age and region fixed effects, and cluster standard errors at the firm level.

Table 6 reports OLS regression results from Equation 6, examining how informal financing relates to various proxies of firm risk taking. The results consistently point to more conservative firm behavior among startups backed by informal investors. Specifically, firms receiving informal financing exhibit significantly higher return on assets (ROA) (+7.3 percentage points), but lower intangible asset intensity (−2.9 percentage points),

³Because the dependent variable is a count variable, we follow suggestions from Cohn et al. 2022 and employ Poisson pseudo-likelihood regressions in this model throughout all tests except IV regressions.

fewer patent applications (−35.6%), and lower sales growth (−11.9 percentage points). The reduction in patenting is economically large: based on the Poisson coefficient estimate of −0.440 in Column (3), the expected count of patent applications is approximately 33.6% lower in informal-financed firms than in external-financed firms.⁴ Collectively, these results suggest that firms financed by informal investors are more profitable in the short term but invest less in innovation-related and growth-oriented activities—a pattern consistent with reduced risk taking behavior.

Insert Table 6 here.

5.2 Instrumental Variable Approach

The baseline results discussed above leave open the mechanisms behind the observed patterns. The reduced risk taking and lower probability of institutional financing could reflect the influence that informal investors exert on founders. Alternatively, the pattern may stem from altruistic motives or poor investment selection—i.e., informal investors may self-select into intrinsically low-risk firms.

To tease out selection vs. treatment, we utilize an instrument that exploits the rich and granular data we have on the startup founders. Specifically, we measure the geographical distance between the founder and her family members’ residential addresses, by using the zip codes with geographical coordinates as inputs, at the time of firm incorporation.⁵

The first stage is estimated using the following model:

$$\widehat{Informal}_i = \beta_1 \ln(Distance_{j,k,t}) + \gamma X'_{i,t} + \alpha_{i,t} + \rho_{i,t} + \phi_i + \varepsilon_{i,t} \quad (7a)$$

where $\widehat{Informal Financing}_i$ is the fitted values of informal financing indicator estimated through the first-stage regression; $\ln(Distance_i)$, our instrument, is the natural log of one

⁴Calculated as $e^{-0.440} = 0.644$, implying a 35.6% drop, or 64.4% of the baseline level.

⁵The data on all Norwegian zip code coordinates is publicly provided by Erik Bolstad: <https://www.erikbolstad.no/postnummer-koordinatar/?postnummer=0010>.

plus average distance between the founder’s residence and those of their family members, measured at the time of firm incorporation. Other variables follow the definitions provided in Section 5.1.

Columns (1)–(3) of Table 7 present the first-stage regressions. Panel A presents the results for the entire sample; Panel B reports results using a restricted sample of firms financed exclusively by either informal investors or external investors. We expect the instrument to have a strong first-stage relationship with informal financing. Intuitively, family members who live geographically closer to the entrepreneur are more likely to maintain frequent contact, share personal trust, and be better informed about the entrepreneur’s venture. In the subsequent columns, (4)–(7), both panels report the first-stage Kleibergen-Paap F-statistic, which ranges from 28.95–30.73. These numbers are comfortably above [Stock and Yogo \(2005\)](#)’s rule-of-thumb threshold of ten.

The second-stage equation replicates our Equation 6 using the fitted values of the informal financing indicator from the first stage. The dependent variables ($Y_{i,t}$) include all proxies for firm-year level risk taking defined in Section 5.1.

$$Y_{i,t} = \beta_1 \widehat{Informal}_i + \gamma X'_{i,t} + \alpha_{i,t} + \rho_{i,t} + \phi_i + \varepsilon_{i,t}, \quad (7b)$$

A key assumption underlying our IV strategy is the exclusion restriction: conditional on controls, the geographic distance between the founder and their family members affects startup outcomes only through its influence on the likelihood of receiving informal investment, and not through any direct channel. This assumption is plausible in our setting for several reasons. First, residential location of extended family is unlikely to be endogenously chosen by the founder with startup-specific financing in mind, especially in the early stages of firm formation. Second, we control for a rich set of observable firm characteristics and fixed effects, including founder region, industry, firm age, and

size, which helps account for correlated unobservables. Taken together, these factors lend credibility to the exclusion restriction and support the interpretation of our IV estimates as capturing a causal effect of informal financing among marginally treated firms.

Insert Table 7 here.

Columns (4)–(9) of Table 7 present the second-stage IV regression results. We continue to find statistically significant negative effects on intangibles and R&D expenses, suggesting that informal financing may exert a modest direct effect on firms’ innovation-related investments. However, for the remaining outcomes—including revenue growth, profitability, and leverage—the IV estimates are economically and statistically indistinguishable from zero. This pattern indicates that the broader conservative profile observed in OLS is largely attributable to selection into low-risk firms, though some treatment effects may persist in domains where risk is harder to diversify or justify, such as intangible capital.

Tables A4 and A5 present the IV estimates for financing and ultimate firm outcomes, respectively. The results show that once we control for selection using family distance, the previously observed negative associations between informal financing and later-stage outcomes mostly attenuate. While some channels—such as repeat angel or corporate funding—remain negatively associated with informal capital, the overall pattern suggests that these relationships are not robustly causal. Similarly, we find no compelling evidence that informal investment affects firm exit probabilities, reinforcing the interpretation that these differences reflect selection into informal financing rather than its behavioral consequences.

It is important to interpret our IV estimates through the lens of the Local Average Treatment Effect (LATE) (Angrist et al., 1996; Imbens and Angrist, 1994). Because our instrument relies on the average geographic distance between the founder and their family members at the time of incorporation, our effective sample includes only firm founders with at least one identifiable family tie in the administrative data. As such, the LATE we

estimate captures the causal effect of receiving informal investment among startups with family members, and more precisely, among those whose likelihood of receiving such financing is affected by geographic proximity. These “compliers” represent founders on the margin of seeking family capital – firms that are more likely to receive informal capital when relatives reside nearby. Our results therefore do not speak to firms whose founders lack family ties, nor to those who would always or never seek family financing regardless of distance. The attenuation of second-stage effects in this marginal group supports the interpretation that observed differences in risk taking and performance are primarily driven by selection into informal financing, rather than by a universal treatment effect of family capital.

To further validate our design and assess robustness, we perform two complementary tests. First, we estimate placebo regressions among firms that never receive informal capital. If our instrument satisfies the exclusion restriction, we would expect family distance to be uncorrelated with firm outcomes in this subsample. Table 8 shows that distance is largely uncorrelated with most outcomes, with a few weakly positive coefficients (columns (1) and (3)). This supports the exclusion restriction and confirms that distance does not proxy for omitted founder traits. We view the placebo results as further evidence that the observed risk attenuation in our main sample reflects financing effects, rather than spurious correlation. Tables A6–A7 further support these patterns across financing and exit outcomes.

Insert Table 8 here.

Second, we implement a difference-in-differences design around the arrival of the first individual investor. Although the vast majority of startups in our sample receive their first individual investment in year zero, a nontrivial subset obtains their first outside equity injection one or more years after incorporation. For this subsample, we observe firm-level outcomes and controls at least one year before and one year after the arrival

of any individual investor. Exploiting this timing variation, we estimate a difference-in-differences specification of the form:

$$Y_{i,t} = \beta_1 Informal_i + \beta_2 Informal_i \times Post_{i,t} + \gamma X'_{i,t} + \alpha_{i,t} + \rho_{i,t} + \phi_i + \varepsilon_{i,t}. \quad (8)$$

where $Post_{i,t}$ is a dummy variable taking value one from the first year firm i had an individual investor and is zero before that. For firms with both informal and external individual investors, this setup does not guarantee that the ‘first’ investor is an informal one, potentially resulting in a measurement error. To mitigate this concern, we present results in Panel B using firms financed exclusively by informal or external investors (but not both) and our interpretation is largely similar. All other variables are defined as in Equation 6. We cluster standard errors at the firm level. Table 9 confirms that informal investor entry does not shift firm behavior ex post.

Insert Table 9 here.

Taken together, the instrumental variable, placebo, and difference-in-differences results consistently indicate that informal investors do not influence firm behavior ex post, but rather self-select into startups that already exhibit conservative characteristics.

6 What Drives the Selection of Low-Risk Firms?

A key remaining question is why informal investors tend to select firms that pursue lower-risk strategies. It could be either that they are less sophisticated investors or that they have altruistic motives. We conduct a battery of tests exploiting sample heterogeneity to better understand the mechanisms.

6.1 External Investors in Informal-Financed Firms

First, we examine whether the low-risk behavior associated with informal financing is mitigated when startups also attract external individual investors. Table 10 reports regression results that incorporate an interaction term between the informal financing indicator and an external investor dummy in Equation 6. While the main effect of informal financing remains negative—consistent with lower risk taking—firms that receive both informal and external investment exhibit significantly higher levels of risk taking in multiple outcomes, including patenting, revenue growth, and intangible intensity. Conditional on informal investors selecting into higher-quality startups (as ex post validated by the eventual participation of external investors), firms take on levels of risk comparable to external-financed firms. This pattern suggests that the observed conservatism in informal-financed firms reflects heterogeneous selection, not an inherent aversion to risk by informal capital.

Insert Table 10 here.

This pattern aligns with altruistic motives driving low-risk selection. When higher-quality signals from professional investors are present, family members are more willing to back higher-risk firms, which they otherwise might avoid to protect the entrepreneur.

6.2 Informal Investor Sophistication

A natural alternative to the altruism-based explanation is that informal investors select low-risk firms because they are less financially sophisticated, rather than because they seek to protect the entrepreneur. Under this view, family members avoid high-risk ventures due to limited experience, evaluation skill, or comfort with uncertainty. To test this hypothesis, we examine whether the association between informal financing and conservative firm behavior attenuates among more sophisticated informal investors. Specifically, we define sophistication based on whether the informal investor is a repeat investor

in high-innovation-potential (HIP) startups—a proxy for angel-style investing experience. Prior research has shown that experienced angel investors are associated with better firm performance (Hellmann et al., 2021; Kerr et al., 2011), suggesting that experience should enable more informed risk taking.

Table 11 reports results from interacting the informal financing indicator with an indicator for repeat angels. If the conservative firm behavior we observe is primarily due to lack of sophistication, we would expect the negative effect to weaken or disappear among experienced informal investors. Instead, we find that the association between informal financing and reduced risk taking persists (and in some cases strengthens) among sophisticated informal investors. This pattern is inconsistent with the inexperience channel and supports the altruism mechanism, in which family members, regardless of financial sophistication, select into firms with lower downside risk. In untabulated results, we measure investor sophistication as public-stock experience. Results remain qualitatively unchanged.

Insert Table 11 here.

6.3 Informal Investor Wealth

Finally, we analyze the role of wealth when providing/receiving informal financing. Investor wealth could be another proxy for investor sophistication, as Bach et al. (2020) show that wealthy individuals earn higher investment returns and take greater risks. However, what differentiates investor wealth from investor experience is the greater capacity to absorb financial losses (Calvet et al., 2007; Calvet et al., 2009). Wealthy informal investors could have stronger altruistic motives, which could then be associated with lower risk taking for these startups. Consistent with this idea, Andreoni (1989) models that individuals gain by giving, and wealthier individuals have more capital to benefit from altruistic actions; Fagereng et al. (2020) show that wealthy families make deliberate choices to shape their children’s outcomes. We test this claim by interacting the High

Wealth indicator (which equals one if the investor has an above-median wealth and zero otherwise) with the informal indicator.⁶

Table 12 reports the results. We decompose our sample into pooled (Panel A) and informal-financed vs. external-financed firms (Panel B). Across both panels, we find that the interaction term between informal financing and investor wealth is consistently negative for key risk taking outcomes such as intangible investment, R&D intensity, and patenting activity. In some cases, the effect is even stronger among wealthy informal investors than among their less wealthy counterparts. These results are difficult to reconcile with a sophistication-based explanation: if wealthy investors are less constrained and more financially skilled, they should be more willing to back riskier ventures. Instead, the findings support an altruism-based mechanism, in which firms backed by wealthier family members are taking fewer risks, precisely because they are better positioned to prioritize the entrepreneur's welfare over financial return. Note that the main effect of wealth suggests that external wealthy investors are associated with stronger risk taking behavior. We interpret these results as evidence consistent with the argument that, while wealthy investors may be more sophisticated and select more risky investments (consistent with studies such as [Bach et al. \(2020\)](#) and [Calvet et al. \(2007\)](#)), they may exhibit stronger altruistic motives toward startups founded by their family members.

Insert Table 12 here.

6.4 Co-Residing Informal Investors

Finally, if the low risk taking behavior associated with informal financing is driven by altruistic motives, we would expect the effect to be strongest among emotionally close family members, i.e., those most inclined to prioritize the entrepreneur's well-being over financial returns. To test this, we exploit variation in emotional closeness by comparing

⁶Note that the wealth data only contains information from 2011. Hence the number of observations is lower than our main regressions.

informal investors who share the same household address with the entrepreneur (i.e., co-residing) to those who live separately. Sharing an address likely reflects close relational and emotional ties (e.g., spouses, parents, or children), which should amplify altruistic motivations.⁷ Table 13 shows that co-residing informal investors are associated with the strongest reductions in firm risk taking, including lower intangible investment, R&D spending, and patenting. These effects are consistently larger than those observed for non-co-residing informal investors. This pattern is difficult to reconcile with alternative explanations such as financial constraints or limited sophistication, but is highly consistent with an altruism-based mechanism in which close family members exhibit heightened risk aversion to protect the entrepreneur from failure.

Insert Table 13 here.

Taken together, the evidence from Tables 10 through 13 reveals a consistent pattern supporting altruism as the primary mechanism driving informal investors' selection into low-risk startups. Across four key dimensions—investor sophistication, external validation, financial capacity, and emotional proximity—we find that the conservative investment behavior associated with informal financing persists, and in some cases intensifies, precisely where alternative explanations such as inexperience or financial constraint would predict the opposite. These results point to a behavioral preference for ventures with limited downside risk, reflecting a desire to protect the entrepreneur rather than a lack of investment skill. Overall, the findings suggest that informal investors prioritize founder welfare and long-term survivability over financial return maximization, consistent with models of altruistic behavior in household finance.

⁷Note that the co-residing informal investors show variation only within informal firms, because external investors are not likely to co-reside with the entrepreneur.

7 Conclusion

This paper examines the role of informal capital in early-stage startups by quantifying the returns to family equity and linking informal financing to operating choices, such as R&D, patenting, revenue growth, and leverage. Consistent with theoretical predictions, informal capital underperforms external financing and is associated with more conservative firm behavior. However, our evidence suggests that this conservatism arises not from causal influence, but from selection: informal investors self-select into inherently lower-risk firms.

We show that this selection of low-risk firms is driven by altruism, not limited financial sophistication. Risk aversion diminishes in the presence of external validation, persists (and often strengthens) among more experienced and wealthier investors, and is most pronounced when family members are emotionally close to the entrepreneur. These patterns are difficult to reconcile with inexperience or financial constraint, but align closely with models of altruistic behavior in household finance.

Using detailed administrative data, we provide the first large-scale evidence linking informal startup equity to both investor motives and firm strategy. We uncover a distinct class of early-stage capital shaped not by return maximization, but by relational motives. These findings broaden the lens of entrepreneurial finance to include household dynamics and help explain why some firms prioritize survival and founder welfare over growth and scale.

More broadly, our results suggest that early-stage capital markets are influenced not only by information frictions and investor sophistication, but also by household preferences and social motives. Incorporating these behavioral foundations into models of startup finance may yield a richer understanding of how firms are selected, funded, and grown. While our setting is Norway, the underlying behavioral patterns are likely to generalize to other high-income economies with strong household ties and formal startup ecosystems. From a policy perspective, recognizing informal capital as behaviorally dis-

tinct points to the need for support programs that complement – rather than crowd out – family financing in entrepreneurship.

References

- Anderson, R. C., & Reeb, D. M. (2003). Founding-Family Ownership and Firm Performance: Evidence from the S&P 500. *The Journal of Finance*, 58(3), 1301–1328.
- Andreoni, J. (1989). Giving with Impure Altruism: Applications to Charity and Ricardian Equivalence. *Journal of Political Economy*, 97(6), 1447–1458.
- Andrews, R., Fazio, C., Guzman, J., Yupeng Liu, Y., & Stern, S. (2022). The Startup Cartography Project: Measuring and Mapping Entrepreneurial Ecosystems. *Research Policy*, 51(2), 104437.
- Angrist, J. D., Imbens, G. W., & Rubin, D. B. (1996). Identification of Causal Effects Using Instrumental Variables. *Journal of the American Statistical Association*, 91(434), 444–455.
- Bach, L., Baghai, R. P., Strömberg, P., & Warg, K. (2022). *Who Becomes a Business Angel* [Working paper].
- Bach, L., Calvet, L. E., & Sodini, P. (2020). Rich Pickings? Risk, Return, and Skill in Household Wealth. *American Economic Review*, 110(9), 2703–2747.
- Barber, B. M., Lee, Y.-T., Liu, Y.-J., & Odean, T. (2008). Just How Much Do Individual Investors Lose by Trading? *The Review of Financial Studies*, 22(2), 609–632.
- Barber, B. M., & Odean, T. (2013). The Behavior of Individual Investors. *Handbook of the Economics of Finance*, 2, 1533–1570.
- Barber, B. M., & Odean, T. (2000). Trading Is Hazardous to Your Wealth: The Common Stock Investment Performance of Individual Investors. *The Journal of Finance*, 55(2), 773–806.
- Becker, G. S. (1981). *A treatise on the family*. Harvard University Press.
- Bennedsen, M., Nielsen, K. M., Perez-Gonzalez, F., & Wolfenzon, D. (2007). Inside the Family Firm: The Role of Families in Succession Decisions and Performance. *The Quarterly Journal of Economics*, 122(2), 647–691.
- Bernstein, S., Giroud, X., & Townsend, R. R. (2016). The Impact of Venture Capital Monitoring. *The Journal of Finance*, 71(4), 1591–1622.
- Bertrand, M., & Schoar, A. (2006). The Role of Family in Family Firms. *Journal of Economic Perspectives*, 20(2), 73–96.
- Burkart, M., Panunzi, F., & Shleifer, A. (2003). Family Firms. *The Journal of Finance*, 58(5), 2167–2201.
- Calvet, L. E., Campbell, J. Y., & Sodini, P. (2007). Down or Out: Assessing the Welfare Costs of Household Investment Mistakes. *Journal of Political Economy*, 115(5), 707–747.
- Calvet, L. E., Campbell, J. Y., & Sodini, P. (2009). Measuring the Financial Sophistication of Households. *American Economic Review*, 99(2), 393–398.

- Coles, J. L., Daniel, N. D., & Naveen, L. (2006). Managerial incentives and risk-taking. *Journal of Financial Economics*, 79(2), 431–468.
- Cosgrove, B., Gaskin, P., Goff, T., Kenney, E., Milli, J., & Vassell, H. (2023). Access to Capital for Entrepreneurs: Removing Barriers: 2023 Update. *Ewing Marion Kauffman Foundation: Kansas City*.
- Fagereng, A., Guiso, L., Malacrino, D., & Pistaferri, L. (2020). Heterogeneity and Persistence in Returns to Wealth. *Econometrica*, 88(1), 115–170.
- Fagereng, A., Mogstad, M., & Rønning, M. (2021). Why Do Wealthy Parents Have Wealthy Children? *Journal of Political Economy*, 129(3), 703–756.
- Forbes. (2015). Friends, Family... Fools?: Who Will You Get to Fund Your Startup.
- Guzman, J., & Stern, S. (2020). The State of American Entrepreneurship: New Estimates of the Quantity and Quality of Entrepreneurship for 32 US States, 1988–2014. *American Economic Journal: Economic Policy*, 12(4), 212–43.
- Guzman, J., & Stern, S. (2015). Where is Silicon Valley? *Science*, 347(6222), 606–609.
- Hellmann, T., & Puri, M. (2002). Venture Capital and the Professionalization of Start-Up Firms: Empirical Evidence. *The Journal of Finance*, 57(1), 169–197.
- Hellmann, T., Schure, P., & Vo, D. H. (2021). Angels and Venture Capitalists: Substitutes or Complements? *Journal of Financial Economics*, 141(2), 454–478.
- Hellmann, T., & Thiele, V. (2015). Friends or Foes? The Interrelationship between Angel and Venture Capital markets. *Journal of Financial Economics*, 115(3), 639–653.
- Hurst, E., & Pugsley, B. W. (2011). What Do Small Businesses Do? *Brookings Papers on Economic Activity*, 42(2 (Fall)), 73–142.
- Hvide, H. K., & Jones, B. F. (2018). University Innovation and the Professor's Privilege. *American Economic Review*, 108(7), 1860–98.
- Imbens, G. W., & Angrist, J. D. (1994). Identification and Estimation of Local Average Treatment Effects. *Econometrica*, 62(2), 467–475.
- Karlsen, J., Kisseleva, K., Mjøs, A., & Robinson, D. T. (2024). Are Some Angels Better than Others? *NBER Working Paper Series*.
- Kerr, W. R., Lerner, J., & Schoar, A. (2011). The Consequences of Entrepreneurial Finance: Evidence from Angel Financings. *The Review of Financial Studies*, 27(1), 20–55.
- Kerr, W. R., & Nanda, R. (2015). Financing Innovation. *Annual Review of Financial Economics*, 7, 445–462.
- Kisseleva, K., Mjøs, A., & Robinson, D. T. (2025). *Evaluating Selection Bias in Early-Stage Investment Returns* [Working paper].
- Lee, S., & Persson, P. (2016). Financing from Family and Friends. *Review of Financial Studies*, 29(9), 2341–2386.

- Lerner, J., Schoar, A., Sokolinski, S., & Wilson, K. (2018). The Globalization of Angel Investments: Evidence across Countries. *Journal of Financial Economics*, 127(1), 1–20.
- Lindsey, L. A., & Stein, L. S. (2020). *Angels, Entrepreneurship, and Employment Dynamics: Evidence from Investor Accreditation Rules* [Working paper].
- Ljungqvist, A., & Richardson, M. (2003). The Cash Flow, Return and Risk Characteristics of Private Equity. *NBER Working Paper Series*.
- Nadauld, T. D., Sensoy, B. A., Vorkink, K., & Weisbach, M. S. (2019). The Liquidity Cost of Private Equity Investments: Evidence from Secondary Market Transactions. *Journal of Financial Economics*, 132(3), 158–181.
- Nanda, R., & Phillips, G. (2023). *Small Firm Financing: Sources, Frictions, and Policy Implications* (1st ed., Vol. 1). Elsevier B.V.
- Phalippou, L., & Gottschalg, O. (2009). The Performance of Private Equity Funds. *Review of Financial Studies*, 22(4), 1747–1776.
- Puri, M., & Zarutskie, R. (2012). On the Life Cycle Dynamics of Venture-Capital- and Non-Venture-Capital-Financed Firms. *The Journal of Finance*, 67(6), 2247–2293.
- Ring, M. A. K. (2023). Entrepreneurial Wealth and Employment: Tracing Out the Effects of a Stock Market Crash. *The Journal of Finance*, 78(6), 3343–3386.
- Robb, A. M., & Robinson, D. T. (2014). The Capital Structure Decisions of New Firms. *Review of Financial Studies*, 27(1), 153–179.
- Sorensen, M. (2007). How Smart Is Smart Money? A Two-Sided Matching Model of Venture Capital. *The Journal of Finance*, 62(6), 2725–2762.
- Stock, J. H., & Yogo, M. (2005). Testing for Weak Instruments in Linear IV Regression. In D. W. K. Andrews & J. H. Stock (Eds.), *Identification and inference for econometric models: Essays in honor of thomas rothenberg* (pp. 80–108). Cambridge University Press.
- Villalonga, B., & Amit, R. (2006). How do Family Ownership, Control and Management Affect Firm Value? *Journal of Financial Economics*, 80(2), 385–417.
- Wong, A. (2002). *Angel Finance: The Other Venture Capital* [Working paper].

Figure 1: **Timing of the Investments**

Figure 1 displays the distribution of firm age at the time investments are made by informal and external investors. An informal investor is defined as an individual who has a family relationship with the firm's founder. All other individual investors are classified as external.

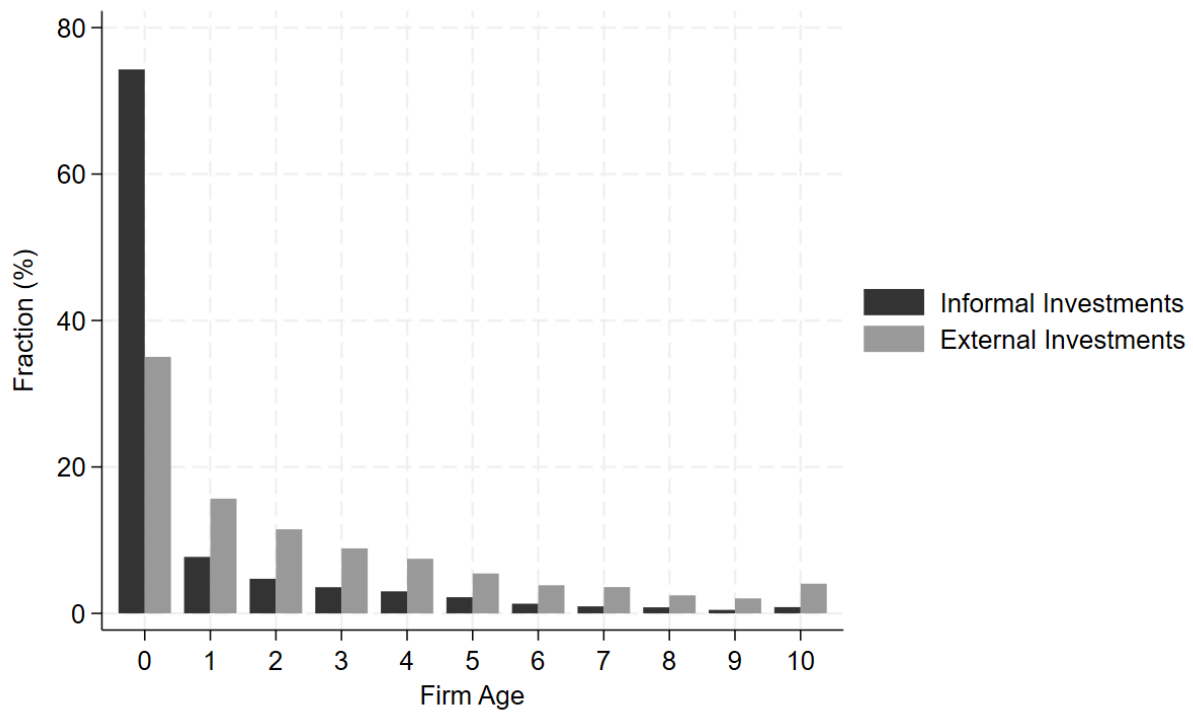


Figure 2: Who Provides Informal Financing?

Figure 2 shows the distribution of family member categories among informal investors (Panel A) and the financing amounts provided by each category (Panel B).

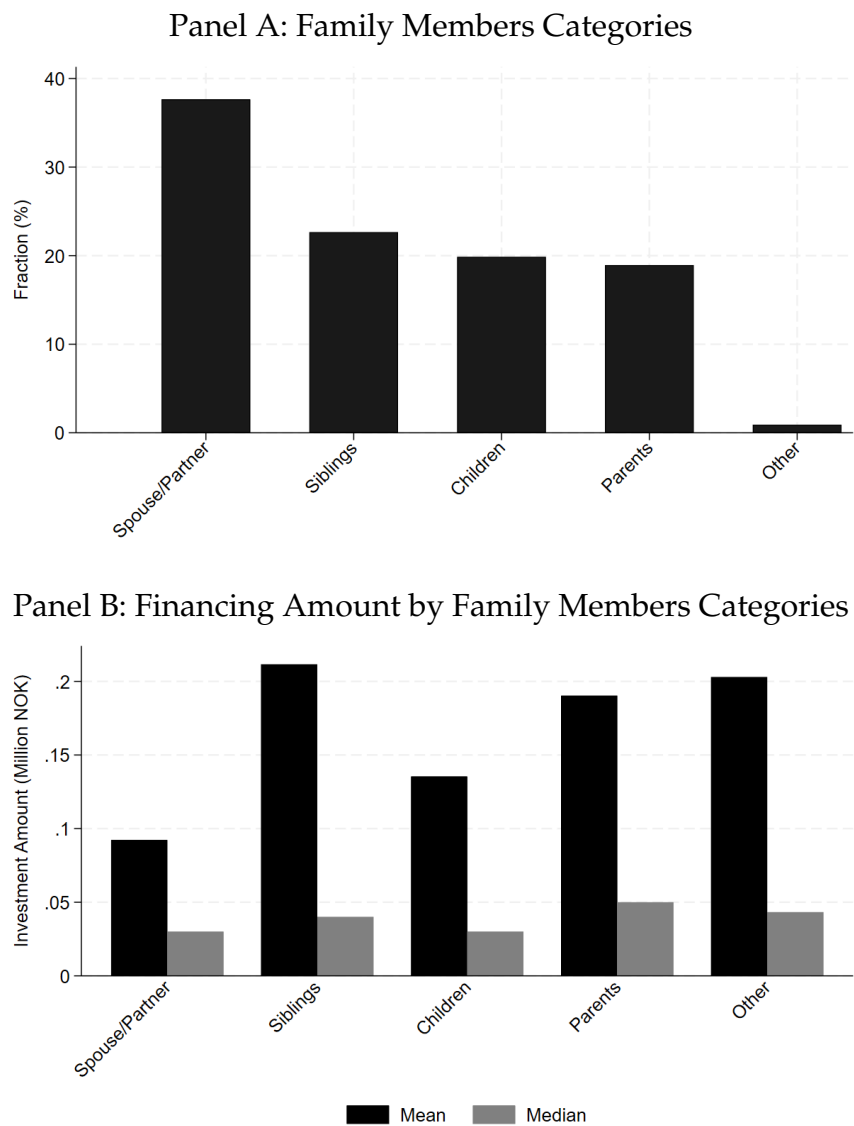


Figure 3: Distribution of Operating Industries

Figure 3 shows the distribution of operating industries for firms with informal individual investors (informal firms) and firms with only external individual investors (external firms). Informal investor is defined as an individual investor who has a family relation to the founder of the firm. Other individual investors are classified as external investors. Industries as classified based on the International Standard Industrial Classification (ISIC).

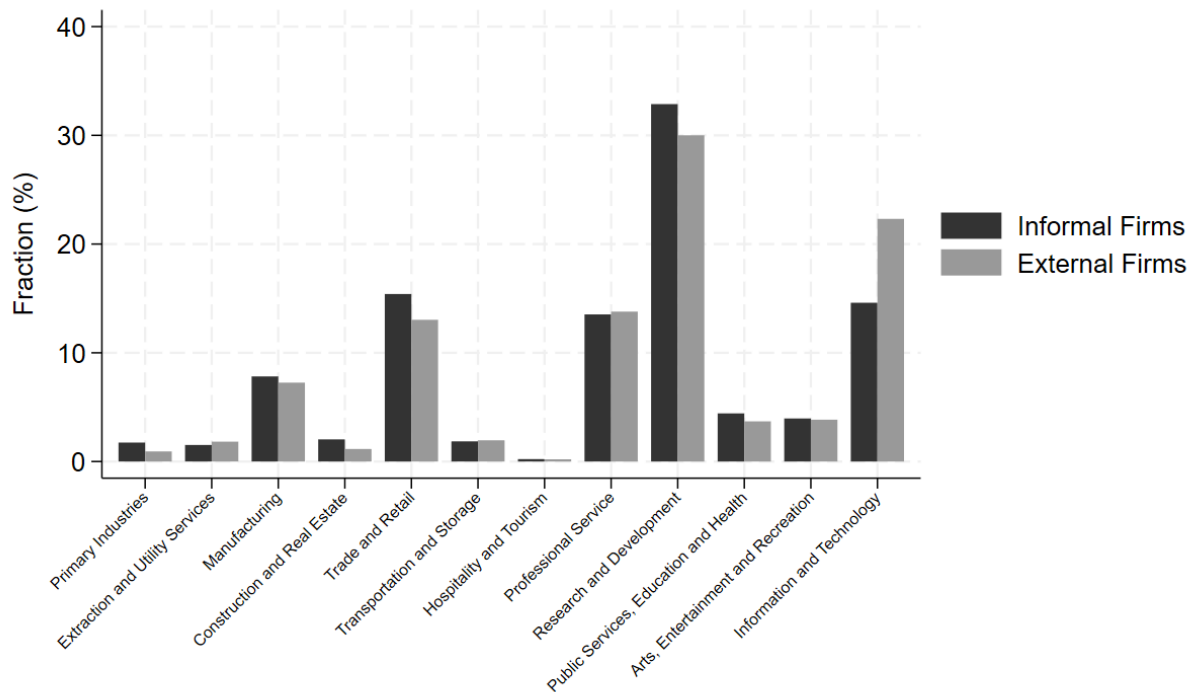


Table 1: Description of Equity Investments

Table 1 summarizes equity investments by external and informal individual investors during 2004–2018. Informal investors are defined as individuals with a family relationship to the founder; all others are classified as external. *TVPI* (Total Value to Paid-In Capital) is the realized amount (or latest available purchase transaction price multiplied by the number of shares purchased) divided by the purchase amount of realized (untraded) shares. *Annual IRR* is calculated as $TVPI^{(365/\text{holding period in days})} - 1$. Both measures are winsorized at the 1st and 99th percentiles. Firm- and investor-level characteristics include firm age, ownership stake, board seat, holding period, investor age, gender, prior public equity investment, repeat angel investment, and above-median wealth. Wealth data are available from 2011 onward. For full variable definitions, see Table A1.

	External Investments							Informal Investments						
	N	Mean	SD	p25	p50	p75	p99	N	Mean	SD	p25	p50	p75	p99
Realized returns														
Total value paid in (TVPI)	40,260	1.98	5.70	0.00	0.33	1.17	40.40	3,010	1.42	4.95	0.00	0.00	1.00	32.73
Annual internal rate of return (IRR)	40,260	4.6%	244.7%	-100.0%	-35.4%	7.9%	1,908.0%	3,010	-31.1%	196.2%	-100.0%	-95.1%	0.0%	743.7%
Total Loss	40,260	34.9%						3,010	46.8%					
Unrealized returns														
Total value paid in (TVPI)	37,043	3.98	14.28	0.57	1.00	1.78	115.00	1,246	6.45	19.96	0.84	1.00	2.10	119.90
Annual internal rate of return (IRR)	37,043	276.9%	2,008.0%	-20.8%	0.0%	25.9%	16,550.0%	1,246	410.5%	2,474.0%	-7.0%	0.0%	27.4%	18,290.0%
Investment characteristics														
Firm age	87,030	2.5	3.0	0.0	1.0	4.0	12.0	7,463	0.9	1.9	0.0	0.0	1.0	9.0
Ownership stake	87,030	11.1%	18.0%	0.2%	1.5%	15.0%	81.7%	7,463	31.2%	23.1%	10.0%	30.0%	50.0%	100.0%
Board seat (1/0)	87,030	37.0%						7,463	75.7%					
Holding period (years)	40,260	3.5	2.8	1.4	2.8	4.9	12.0	3,010	4.6	3.3	2.1	3.7	6.1	14.4
Investor characteristics														
Investor age	87,030	45.8	12.5	36.0	45.0	54.0	76.0	7,463	44.1	14.3	33.0	43.0	55.0	77.0
Male	87,030	85.7%						7,463	56.3%					
Public stock investor	87,030	39.4%						7,463	17.4%					
Repeat angel investor	87,030	19.6%						7,463	6.9%					
Above median wealth	59,314	55.4%						4,352	39.0%					

Table 2: Description of Sample Firms

Table 2 summarizes firm characteristics for startups backed by external and informal individual investors. *Founder's Family Members* refers to tax-authority-identified family ties at firm incorporation; distance is computed using zip code coordinates. *Firm Outcomes* capture the firm's first exit event, while *Firm Financing* aggregates equity raised by investor type. *Ownership concentration* is the Herfindahl-Hirschman Index (HHI) across shareholders. *Fundamentals* cover all firm-years from inception to first exit and are reported in million NOK (exchange rate: 6.6 NOK/USD). Financial ratios are winsorized at the 1st and 99th percentiles. *Innovation Output* proxies long-run innovation. For detailed variable definitions, see Table A1.

	External-Financed Firms				Informal-Financed Firms				
	N	Mean	SD	p50	N	Mean	SD	p50	
Founder's Family Members									
Number of family members	15,210	5.6	2.6	6.0	5,152	6.2	2.7	6.0	
Average distance (in km) to family members	14,452	89.6	144.8	34.0	5,092	77.2	128.6	25.9	
Firm Outcomes									
No exit event	15,210	61.7%			5,152	68.8%			
Bankruptcy	15,210	24.5%			5,152	24.2%			
Merger/Acquisition/IPO	15,210	13.9%			5,152	7.1%			
Firm Financing (in Mio NOK)									
Total equity injection	15,210	34.37	1,390.00	0.11	5,152	4.23	47.03	0.11	
Equity injection from		%N				%N			
<i>Entrepreneur</i>		76.8%	0.35	3.26	0.05	87.7%	0.48	4.89	0.05
<i>Informal investor</i>						91.4%	0.70	14.34	0.05
<i>External investor</i>		89.3%	11.61	891.70	0.06	25.3%	1.93	7.31	0.10
<i>Repeat investor</i>		19.0%	6.13	151.80	0.11	12.5%	1.82	6.54	0.10
<i>First time investor</i>		81.3%	11.30	931.20	0.06	90.6%	0.99	13.69	0.05
<i>Venture Capital investor</i>		2.9%	44.04	121.20	6.01	1.1%	27.54	54.96	3.33
<i>Corporate investor</i>		37.2%	40.85	1,360.00	0.25	16.8%	11.82	72.25	0.41
<i>Foreign investor</i>		6.4%	113.30	2,267.00	0.55	3.8%	10.55	57.14	0.46
Ownership concentration	75,012	49.7%	24.6%	50.0%	28,476	52.0%	22.9%	50.0%	
Fundamentals (Amounts in Mio NOK)									
Revenues	75,750	7.06	22.83	0.68	28,719	3.78	15.81	0.40	
Revenue growth	46,164	106.8%	419.8%	9.0%	17,539	83.3%	370.9%	4.7%	
Total assets	75,750	8.35	31.19	0.88	28,719	5.39	22.91	0.77	
Asset growth	60,108	88.4%	381.1%	3.6%	23,428	70.7%	335.1%	2.0%	
Return on assets	75,750	-41.7%	190.9%	0.0%	28,719	-30.6%	169.2%	0.4%	
Leverage	75,750	143.9%	420.9%	69.9%	28,719	124.3%	382.5%	60.3%	
Bank Loans / total assets	75,750	7.4%	20.7%	0.0%	28,719	7.0%	20.1%	0.0%	
Salaries / total assets	75,750	62.3%	99.7%	16.6%	28,719	52.0%	93.6%	6.7%	
Innovation Output									
Intangibles / total assets	75,750	6.5%	17.5%	0.0%	28,719	4.7%	14.9%	0.0%	
Total patent applications	75,750	0.05	0.47	0.00	28,719	0.03	0.33	0.00	
R&D expenses / total assets	75,750	4.4%	20.5%	0.0%	28,719	2.7%	16.0%	0.0%	

Table 3: Do Informal Investors Realize Lower Returns?

Table 3 reports OLS estimates from Equation 3, comparing realized and unrealized returns across investor types. The dependent variable is *TVPI* in Columns (1) and (3), and *Annual IRR* in Columns (2) and (4), all winsorized at the 1st and 99th percentiles. *Informal investor* (1/0) is a dummy equal to one if the investment is made by a family-related individual. Standard errors are clustered at the firm level and shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels.

	Realized Returns		Unrealized Returns	
	TVPI (1)	Annual IRR (2)	TVPI (3)	Annual IRR (4)
Informal investor (1/0)	-0.764*** (0.139)	-0.110** (0.049)	-0.824 (0.699)	-0.497 (0.833)
<i>Investor characteristics</i>				
Ln (Investor age)	-0.544*** (0.149)	-0.115 (0.075)	-2.347*** (0.439)	-2.426*** (0.583)
Male (1/0)	0.148 (0.129)	0.029 (0.034)	0.436* (0.238)	0.864*** (0.305)
Repeat investor (1/0)	0.374** (0.163)	0.090 (0.060)	-0.188 (0.243)	-0.056 (0.392)
Public investor (1/0)	-0.227** (0.106)	-0.139*** (0.052)	-0.701*** (0.199)	-0.896*** (0.313)
<i>Investment characteristics</i>				
Ln (Ownership stake)	0.064 (0.041)	0.021 (0.018)	0.976*** (0.101)	0.766*** (0.118)
Ln (Holding period)	-0.065 (0.099)	-1.325*** (0.136)	0.719** (0.328)	-4.477*** (1.580)
Board seat (1/0)	0.079 (0.130)	-0.013 (0.044)	2.019*** (0.367)	0.981** (0.463)
Observations	43,269	43,269	38,289	38,289
Adjusted R-squared	4.9%	16.2%	9.1%	6.0%
Calendar year FE	Yes	Yes	Yes	Yes
Investment firm age FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes

Table 4: Do Firms Receive Different Types of Financing?

Table 4 presents OLS estimates from Equation 4. The dependent variable is a dummy equal to one if the firm receives equity funding in year t from a repeat angel (Column 1), venture capital (VC) investor (Column 2), corporate investor (Column 3), or foreign investor (Column 4). Panel A includes all firm-years; Panel B restricts the sample to firms that have raised any financing from informal investors. *Informal* is a dummy equal to one if the firm has at least one informal investor in year t . *Share of informal finance* denotes the share of total equity raised through year t from informal investors. All regressions control for $\ln(1 + \text{Revenues})$, $\ln(\text{Total assets})$, *Asset growth*, *Return on assets*, *Leverage*, and *Ownership concentration*, all measured in year t . Standard errors are clustered at the firm level and shown in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Extensive Margin With Informal Investor Dummy				
	Financing Source:			
	Repeat Angel	Venture Capital	Corporate Investor	Foreign Investor
	(1)	(2)	(3)	(4)
Informal (1/0)	-0.000 (0.002)	-0.003** (0.001)	-0.010*** (0.003)	-0.001 (0.001)
Observations	68,131	68,131	68,131	68,131
Adjusted R-squared	9.6%	4.9%	13.3%	5.3%
Controls	Yes	Yes	Yes	Yes
Calendar Year \times Industry FE	Yes	Yes	Yes	Yes
Firm Age \times Industry FE	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes
Panel B: Intensive Margin With Share of Informal Finance				
	Financing Source:			
	Repeat Angel	Venture Capital	Corporate Investor	Foreign Investor
	(1)	(2)	(3)	(4)
Share of informal finance	-0.116*** (0.009)	-0.024*** (0.006)	-0.201*** (0.012)	-0.056*** (0.006)
Observations	18,274	18,274	18,274	18,274
Adjusted R-squared	12.8%	3.0%	18.0%	7.1%
Controls	Yes	Yes	Yes	Yes
Calendar Year \times Industry FE	Yes	Yes	Yes	Yes
Firm Age \times Industry FE	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes

Table 5: Difference in Firms' Pathways

Table 5 presents OLS estimates from Equation 5. The dependent variables are dummies for the firm's first exit event: no exit as of 2018 (Column 1), bankruptcy (Column 2), and merger/acquisition/IPO (Column 4). Conditional on exit, Columns (3) and (5) report the firm's age at the time of exit. Panel A includes all firm-years; Panel B restricts the sample to firms that have raised any financing from informal investors. *Informal* is a dummy equal to one if the firm has at least one informal investor. *Share of informal finance* denotes the share of total equity raised from informal investors. Control variables measured in the last pre-exit year (2018 for surviving firms) include: $\ln(1 + \text{Revenues})$, $\ln(\text{Total assets})$, *Asset growth*, *Return on assets*, *Leverage*, and *Ownership concentration*, all defined in Table A1. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Extensive Margin With Informal Investor Dummy					
	No Exit Event (1/0) (1)	Bankruptcy (1/0) (2)	Exit Age (3)	Merger/Acquisition/IPO (1/0) (4)	Exit Age (5)
Informal (1/0)	0.070*** (0.007)	-0.008 (0.007)	0.444*** (0.166)	-0.062*** (0.005)	0.718*** (0.236)
Observations	17,281	17,281	3,282	17,281	1,987
Adjusted R-squared	19.2%	13.1%	23.8%	10.1%	22.8%
Controls	Yes	Yes	Yes	Yes	Yes
Founding Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes
Panel B: Intensive Margin With Share of Informal Finance					
	No Exit Event (1/0) (1)	Bankruptcy (1/0) (2)	Exit Age (3)	Merger/Acquisition/IPO (1/0) (4)	Exit Age (5)
Share of informal finance	0.109*** (0.030)	-0.038 (0.027)	-0.147 (0.452)	-0.071*** (0.020)	-0.877 (0.848)
Observations	4,070	4,070	794	4,070	239
Adjusted R-squared	18.9%	14.6%	23.0%	7.7%	17.0%
Controls	Yes	Yes	Yes	Yes	Yes
Founding Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes

Table 6: Informal Financing and Firm Risk

Table 6 presents Poisson and OLS estimates from Equation 6. The dependent variables are firm-year risk proxies: intangibles/total assets (Column 1), patent applications (Column 2), R&D/total assets (Column 3), revenue growth (Column 4), net income/total assets (Column 5), salary/total assets (Column 6), and bank loans/total assets (Column 7)—all defined in Table A1. Panel A includes all firm-years; Panel B restricts the sample to firms that have raised any financing from informal investors. *Informal* is a dummy equal to one if the firm has at least one informal investor in year t . *Share of informal finance* is the cumulative share of equity raised from informal investors by year t . Controls (all measured in year t) include $\ln(1 + \text{Revenues})$, $\ln(\text{Total assets})$, *Asset growth*, *Leverage*, and *Ownership concentration*. All columns except (5) additionally control for *Return on assets*. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels.

Panel A: Extensive Margin With Informal Investor Dummy							
	Intangibles / Total Assets (1)	Total Patent Applications (2)	R&D expenses / Total Assets (3)	1-yr Revenue Growth (4)	Return on Assets (5)	Salaries / Total Assets (6)	Bank Loans / Total Assets (7)
Informal (1/0)	-0.015*** (0.003)	-0.440** (0.201)	-0.012*** (0.003)	-0.027 (0.037)	0.073*** (0.014)	-0.047*** (0.014)	-0.005 (0.004)
Observations	68,131	61,947	68,131	51,731	68,131	68,131	68,131
Pseudo/Adjusted R-squared	5.4%	26.1%	6.9%	17.9%	44.8%	23.1%	12.1%
Mean of dependent variable	0.06	0.060	0.05	1.04	-0.36	0.63	0.08
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Calendar Year \times Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Age \times Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel B: Intensive Margin With Share of Informal Finance							
	Intangibles / Total Assets (1)	Total Patent Applications (2)	R&D expenses / Total Assets (3)	1-yr Revenue Growth (4)	Return on Assets (5)	Salaries / Total Assets (6)	Bank Loans / Total Assets (7)
Share of informal finance	-0.089*** (0.011)	-2.149* (1.182)	-0.086*** (0.011)	-0.671*** (0.135)	0.449*** (0.061)	0.038 (0.053)	-0.025* (0.015)
Observations	18,274	11,180	18,274	13,594	18,274	18,274	18,274
Pseudo/Adjusted R-squared	7.4%	36.6%	9.7%	15.1%	46.4%	24.4%	12.2%
Mean of dependent variable	0.04	0.055	0.02	0.79	-0.28	0.52	0.07
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Calendar Year \times Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Age \times Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 7: Instrumenting Informal Financing

Table 7, Panels A and B, presents instrumental variable (IV) estimates from the regressions defined in Equations 7 (first stage) and 7 (second stage). The dependent variable in Columns 1 to 3 is *Informal* (1/0), a dummy equal to one if the firm has at least one informal investor in year t . This variable is instrumented using $\ln(1 + \text{Family distance})$, defined as the natural logarithm of one plus the average distance (in kilometers) between the founder and her family members at firm incorporation, based on residential zip codes. First-stage estimates in Column 1 correspond to second-stage estimates in Columns 4 to 6 and 9 to 10; Column 2 corresponds to Column 7, and Column 3 to Column 8. The dependent variables in Columns 4 to 10 are the same as in Table 6. Panel A includes all firm-years; Panel B restricts the sample to firms backed exclusively by either informal or external investors. Control variables, measured in year t , include $\ln(1 + \text{Revenues})$, $\ln(\text{Total assets})$, *Asset growth*, *Leverage*, and *Ownership concentration*. All columns except Columns 3 and 8 also control for *Return on assets*. All specifications include calendar year-by-industry, firm age-by-industry, and region fixed effects. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Pooled estimations										
	First-Stage Estimates			Second-Stage Estimates						
	(1)	(2)	(3)	Intangibles/ Total Assets (4)	Total Patent Applications (5)	R&D Expenses / Total Assets (6)	1-yr Revenue Growth (7)	Return on Assets (8)	Salaries / Total Assets (9)	Bank Loans / Total Assets (10)
Informal (1/0)				-0.129** (0.059)	0.051 (0.250)	-0.182*** (0.067)	-0.622 (0.645)	0.009 (0.270)	0.240 (0.279)	0.063 (0.066)
$\ln(1 + \text{Family distance})$	-0.014*** (0.003)	-0.015*** (0.003)	-0.014*** (0.003)							
Observations	65,895	49,999	65,895	65,895	65,895	65,895	49,999	65,895	65,895	65,895
R-squared	7.7%	8.5%	7.7%							
F-statistic				30.36	30.36	30.36	29.42	30.34	30.36	30.36
Mean of dependent variable				0.06	0.06	0.05	1.03	-0.36	0.63	0.08
Controls and fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel B: Informal-financed only vs. external-financed only firms										
	First-Stage Estimates			Second-Stage Estimates						
	(1)	(2)	(3)	Intangibles/ Total Assets (4)	Total Patent Applications (5)	R&D Expenses / Total Assets (6)	1-yr Revenue Growth (7)	Return on Assets (8)	Salaries / Total Assets (9)	Bank Loans / Total Assets (10)
Informal (1/0)				-0.142** (0.060)	-0.108 (0.262)	-0.195*** (0.068)	-0.512 (0.687)	-0.091 (0.281)	0.250 (0.294)	0.046 (0.068)
$\ln(1 + \text{Family distance})$	-0.014*** (0.002)	-0.015*** (0.003)	-0.014*** (0.002)							
Observations	61,871	46,885	61,871	61,871	61,871	61,871	46,885	61,871	61,871	61,871
R-squared	11.9%	12.6%	11.7%							
F-statistic				30.73	30.73	30.73	28.95	30.61	30.73	30.73
Mean of dependent variable				0.06	0.05	0.04	1.02	-0.34	0.63	0.08
Controls and fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 8: Placebo Test: Family Distance in External-Financed Firms

Table 8 presents Poisson and OLS regression estimates using the same dependent variables as in Table 6. This placebo analysis excludes all firm-years with informal investors and examines whether founder-family distance predicts firm outcomes among firms backed exclusively by external individual investors. The key regressor, $\ln(1 + \text{Family distance})$, is the natural logarithm of one plus the average distance (in kilometers) between the founder and her family members at firm incorporation, based on residential zip code coordinates. Control variables, measured in year t , include $\ln(1 + \text{Revenues})$, $\ln(\text{Total assets})$, Asset growth , Leverage , and $\text{Ownership concentration}$. All columns except Column 5 additionally include Return on assets . Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Intangibles / Total Assets (1)	Total Patent Applications (2)	R&D expenses / Total Assets (3)	1-yr Revenue Growth (4)	Return on Assets (5)	Salaries / Total Assets (6)	Bank Loans / Total Assets (7)
Ln (1 + Family distance)	0.002* (0.001)	-0.005 (0.070)	0.003** (0.001)	0.001 (0.012)	0.000 (0.005)	-0.003 (0.005)	-0.001 (0.001)
Observations	46,695	41,756	46,695	35,676	46,695	46,695	46,695
Pseudo/Adjusted R-squared	5.8%	27.6%	6.8%	18.5%	44.6%	22.6%	14.0%
Mean of dependent variable	0.07	0.07	0.05	1.12	-0.39	0.67	0.08
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Calendar Year \times Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Age \times Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 9: Difference-in-Difference Estimation

Table 9 presents Poisson and OLS estimates from the regressions defined in Equation 8. The dependent variables are the same as in Table 6. The analysis compares outcomes in the year before and after a firm receives its first individual equity investor, requiring full data availability for both periods. Panel A includes all firm-years; Panel B restricts the sample to firms backed exclusively by either informal or external investors. *Informal firm* (1/0) is a dummy equal to one for firms backed by informal investors. *Post* (1/0) equals one from the year the first individual investor appears and zero the year prior. Control variables, measured in year t , include $\ln(1 + \text{Revenues})$, $\ln(\text{Total assets})$, *Asset growth*, *Leverage*, and *Ownership concentration*. All columns except Column (5) also control for *Return on assets*. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Pooled estimations							
	Intangibles / Total Assets (1)	Total Patent Applications (2)	R&D expenses / Total Assets (3)	1-yr Revenue Growth (4)	Return on Assets (5)	Salaries / Total Assets (6)	Bank Loans / Total Assets (7)
Informal firm (1/0)	-0.014 (0.012)	-0.436 (0.453)	-0.010 (0.015)	0.141 (0.216)	0.000 (0.000)	-0.047 (0.045)	0.012 (0.011)
Post (1/0)	-0.022** (0.010)	0.077 (0.223)	0.001 (0.012)	-0.055 (0.162)	0.000 (0.000)	0.019 (0.039)	0.013 (0.010)
Informal × Post (1/0)	0.007 (0.011)	0.167 (0.270)	-0.012 (0.014)	0.122 (0.258)	-0.000 (0.000)	-0.039 (0.044)	-0.005 (0.011)
Observations	6,934	4,799	6,934	5,323	6,934	6,934	6,934
Pseudo/Adjusted R-squared	9.5%	32.5%	11.2%	10.2%	100.0%	23.2%	15.1%
Mean of dependent variable	0.09	0.143	0.10	1.04	-0.31	0.63	0.08
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Calendar Year × Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Age × Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel B: Informal-financed only vs. External-financed only firms							
	Intangibles / Total Assets (1)	Total Patent Applications (2)	R&D expenses / Total Assets (3)	1-yr Revenue Growth (4)	Return on Assets (5)	Salaries / Total Assets (6)	Bank Loans / Total Assets (7)
Informal firm (1/0)	-0.050*** (0.013)		-0.054*** (0.015)	0.304 (0.303)	-0.000 (0.000)	0.007 (0.071)	-0.005 (0.014)
Post (1/0)	-0.017* (0.010)	0.173 (0.245)	0.005 (0.013)	-0.008 (0.169)	0.000 (0.000)	0.034 (0.042)	0.009 (0.010)
Informal × Post (1/0)	-0.013 (0.012)		-0.027** (0.013)	0.025 (0.357)	0.000 (0.000)	-0.056 (0.067)	-0.006 (0.014)
Observations	5,673	3,258	5,673	4,333	5,673	5,673	5,673
Adjusted R-squared	10.3%	35.2%	11.3%	12.0%	100.0%	23.9%	16.9%
Mean of dependent variable	0.08	0.161	0.09	1.05	-0.29	0.65	0.08
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Calendar Year × Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Age × Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 10: Presence of External Investors

Table 10 presents Poisson and OLS regression estimates. The dependent variables are the same as in Table 6. *Informal* (1/0) equals one if the firm has at least one informal investor in year t ; *External* (1/0) equals one if the firm has at least one external investor. Control variables, measured in year t , include $\ln(1 + \text{Revenues})$, $\ln(\text{Total assets})$, *Asset growth*, *Leverage*, and *Ownership concentration*. All columns except Column (5) additionally control for *Return on assets*. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Intangibles / Total Assets (1)	Total Patent Applications (2)	R&D expenses / Total Assets (3)	1-yr Revenue Growth (4)	Return on Assets (5)	Salaries / Total Assets (6)	Bank Loans / Total Assets (7)
Informal (1/0)	-0.029*** (0.003)	-1.557*** (0.353)	-0.025*** (0.002)	-0.119*** (0.037)	0.126*** (0.014)	-0.046*** (0.016)	-0.010** (0.004)
Informal \times External (1/0)	0.062*** (0.008)	1.959*** (0.376)	0.055*** (0.008)	0.387*** (0.085)	-0.230*** (0.033)	-0.004 (0.027)	0.018** (0.008)
Observations	68,131	61,947	68,131	51,731	68,131	68,131	68,131
Adjusted R-squared	6.0%	27.6%	7.3%	17.9%	44.9%	23.1%	12.1%
Mean of dependent variable	0.06	0.060	0.05	1.04	-0.36	0.63	0.08
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Calendar Year \times Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Age \times Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 11: Investor Sophistication: Angel Experience

Table 11 presents Poisson and OLS regression estimates. The dependent variables are the same as in Table 6. *Informal* (1/0) equals one if the firm has at least one informal investor in year t . *Repeat HIP investor* (1/0) equals one if at least one of the firm's individual investors – prior to investing in the focal startup – had previously backed another high-innovation-potential (HIP) startup. For firm-years with both informal and external investors, this variable is constructed based solely on informal investors. Control variables, measured in year t , include $\ln(1 + \text{Revenues})$, $\ln(\text{Total assets})$, *Asset growth*, *Leverage*, and *Ownership concentration*. All columns except Column (5) also control for *Return on assets*. Calendar year-by-industry, firm age-by-industry, and region fixed effects are included. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Pooled estimations							
	Intangibles / Total Assets (1)	R&D expenses / Total Assets (2)	Total Patent Applications (3)	1-yr Revenue Growth (4)	Return on Assets (5)	Salaries / Total Assets (6)	Bank Loans / Total Assets (7)
Informal (1/0)	-0.008*** (0.003)	-0.006** (0.003)	-0.299 (0.219)	0.025 (0.038)	0.029** (0.014)	-0.056*** (0.015)	-0.006 (0.004)
Repeat angel (1/0)	0.047*** (0.005)	0.048*** (0.006)	0.503*** (0.189)	0.322*** (0.063)	-0.309*** (0.024)	-0.066*** (0.017)	-0.008* (0.004)
Informal × Repeat angel (1/0)	-0.028** (0.012)	-0.010 (0.014)	-0.055 (0.463)	-0.377*** (0.137)	0.160*** (0.055)	0.024 (0.045)	-0.012 (0.010)
Observations	68,131	68,131	61,947	51,731	68,131	68,131	68,131
Pseudo/Adjusted R-squared	6.2%	7.5%	26.6%	17.9%	45.1%	23.2%	12.1%
Mean of dependent variable	0.06	0.05	0.06	1.04	-0.36	0.63	0.08
Controls and fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel B: Informal-financed only vs. external-financed only firms							
	Intangibles / Total Assets (1)	R&D expenses / Total Assets (2)	Total Patent Applications (3)	1-yr Revenue Growth (4)	Return on Assets (5)	Salaries / Total Assets (6)	Bank Loans / Total Assets (7)
Informal (1/0)	-0.023*** (0.003)	-0.018*** (0.002)	-1.424*** (0.383)	-0.079** (0.038)	0.087*** (0.014)	-0.052*** (0.016)	-0.010** (0.004)
Repeat angel (1/0)	0.052*** (0.005)	0.052*** (0.006)	0.577*** (0.187)	0.359*** (0.063)	-0.325*** (0.024)	-0.065*** (0.017)	-0.007* (0.004)
Informal × Repeat angel (1/0)	-0.044*** (0.012)	-0.048*** (0.010)	0.102 (0.795)	-0.487*** (0.147)	0.239*** (0.049)	0.013 (0.055)	-0.009 (0.012)
Observations	64,067	64,067	57,151	48,586	64,067	64,067	64,067
Pseudo/Adjusted R-squared	6.3%	7.5%	28.6%	18.3%	45.1%	23.1%	12.4%
Mean of dependent variable	0.06	0.04	0.06	1.03	-0.35	0.64	0.08
Controls and fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 12: Investor Sophistication: Wealth Effects

Table 12 presents Poisson and OLS regression estimates. The dependent variables are the same as in Table 6. *Informal* (1/0) equals one if the firm has at least one informal investor in year t . *High wealth investor* (1/0) equals one if at least one of the firm's individual investors has gross wealth above the median for all individual investors in year t . For firm-years with both informal and external investors, this variable is based only on informal investors. Control variables, measured in year t , include $\ln(1 + \text{Revenues})$, $\ln(\text{Total assets})$, *Asset growth*, *Leverage*, and *Ownership concentration*. All columns except Column (5) also control for *Return on assets*. Calendar year-by-industry, firm age-by-industry, and region fixed effects are included. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Pooled estimations							
	Intangibles / Total Assets (1)	R&D expenses / Total Assets (2)	Total Patent Applications (3)	1-yr Revenue Growth (4)	Return on Assets (5)	Salaries / Total Assets (6)	Bank Loans / Total Assets (7)
Informal (1/0)	0.001 (0.005)	-0.002 (0.004)	0.652* (0.334)	-0.064 (0.091)	0.017 (0.027)	-0.003 (0.031)	-0.005 (0.005)
High wealth investor (1/0)	0.020*** (0.004)	0.018*** (0.005)	0.575*** (0.200)	0.063 (0.081)	-0.173*** (0.025)	-0.162*** (0.021)	-0.007* (0.004)
Informal \times High wealth (1/0)	-0.029*** (0.007)	-0.017** (0.007)	-1.125*** (0.404)	-0.110 (0.134)	0.101** (0.041)	0.058 (0.039)	-0.002 (0.007)
Observations	27,438	27,438	22,279	19,466	27,438	27,438	27,438
Pseudo/Adjusted R-squared	6.3%	7.5%	30.3%	19.5%	48.7%	22.7%	9.7%
Mean of dependent variable	0.07	0.05	0.04	1.43	-0.45	0.62	0.06
Controls and fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel B: Informal-financed only vs. external-financed only firms							
	Intangibles / Total Assets (1)	R&D expenses / Total Assets (2)	Total Patent Applications (3)	1-yr Revenue Growth (4)	Return on Assets (5)	Salaries / Total Assets (6)	Bank Loans / Total Assets (7)
Informal (1/0)	-0.011** (0.005)	-0.011*** (0.003)	-1.496*** (0.535)	-0.196** (0.089)	0.085*** (0.027)	0.025 (0.034)	-0.010** (0.005)
High wealth investor (1/0)	0.024*** (0.004)	0.022*** (0.005)	0.782*** (0.185)	0.103 (0.081)	-0.188*** (0.025)	-0.164*** (0.021)	-0.006 (0.004)
Informal \times High wealth (1/0)	-0.034*** (0.007)	-0.029*** (0.006)	-0.421 (0.670)	-0.124 (0.136)	0.107** (0.042)	0.030 (0.044)	-0.001 (0.007)
Observations	25,985	25,985	20,739	18,455	25,985	25,985	25,985
Pseudo/Adjusted R-squared	6.1%	7.3%	31.9%	19.6%	49.0%	22.6%	9.7%
Mean of dependent variable	0.06	0.04	0.04	1.41	-0.44	0.62	0.06
Controls and fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 13: Co-residing Informal Investors and Firm Risk

Table 13 presents Poisson and OLS regression estimates. The dependent variables are the same as in Table 6. *Informal* (1/0) equals one if the firm has at least one informal investor in year t . *Co-residing informal investor* (1/0) equals one if at least one informal investor shares a residential address with the entrepreneur in the year of investment. Panel A includes all firm-years; Panel B restricts the sample to firms backed exclusively by either informal or external investors. Control variables, measured in year t , include $\ln(1 + \text{Revenues})$, $\ln(\text{Total assets})$, *Asset growth*, *Leverage*, and *Ownership concentration*. All columns except Column (5) also control for *Return on assets*. Calendar year-by-industry, firm age-by-industry, and region fixed effects are included. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Pooled estimations							
	Intangibles / Total Assets (1)	R&D expenses / Total Assets (2)	Total Patent Applications (3)	1-yr Revenue Growth (4)	Return on Assets (5)	Salaries / Total Assets (6)	Bank Loans / Total Assets (7)
Informal (1/0)	-0.003 (0.004)	-0.001 (0.004)	-0.070 (0.220)	0.041 (0.050)	0.033* (0.020)	-0.063*** (0.018)	0.002 (0.005)
Co-residing \times Informal (1/0)	-0.021*** (0.005)	-0.020*** (0.004)	-1.107*** (0.365)	-0.124** (0.058)	0.072*** (0.022)	0.029 (0.023)	-0.013** (0.006)
Observations	68,131	68,131	61,947	51,731	68,131	68,131	68,131
Pseudo/Adjusted R-squared	5.5%	7.0%	26.6%	17.9%	44.8%	23.1%	12.1%
Mean of dependent variable	0.06	0.05	0.06	1.04	-0.36	0.63	0.08
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Calendar Year*Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Age \times Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel B: Informal-financed only vs. external-financed only firms							
	Intangibles / Total Assets (1)	R&D expenses / Total Assets (2)	Total Patent Applications (3)	1-yr Revenue Growth (4)	Return on Assets (5)	Salaries / Total Assets (6)	Bank Loans / Total Assets (7)
Informal (1/0)	-0.027*** (0.004)	-0.022*** (0.003)	-1.072** (0.460)	-0.129** (0.050)	0.117*** (0.021)	-0.063*** (0.022)	-0.003 (0.006)
Co-residing \times Informal (1/0)	-0.005 (0.004)	-0.005** (0.003)	-1.051* (0.564)	0.001 (0.060)	0.024 (0.023)	0.028 (0.027)	-0.010 (0.007)
Observations	64,067	64,067	57,151	48,586	64,067	64,067	64,067
Pseudo/Adjusted R-squared	5.3%	6.8%	28.1%	18.2%	44.7%	23.1%	12.4%
Mean of dependent variable	0.06	0.04	0.06	1.03	-0.35	0.64	0.08
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Calendar Year*Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Age \times Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Appendix for:

With a Little Help from My Family: Informal Startup
Financing

Table A1: Variable Descriptions

Variable	Description
Investor Type	
Informal (1/0)	Dummy equal to one if at least one of the firm's shareholders is an informal investor, defined as an individual with a family relationship to the founder.
Share of informal finance	Share of total financing raised in primary equity rounds that is provided by informal investors.
Co-residing informal investor (1/0)	Dummy equal to one if an informal investor shares a residential address with the founder.
External (1/0)	Dummy equal to one if at least one of the firm's shareholders is an external investor (not a family member).
Investment Returns	
Total value to paid-in capital (TVPI)	Realized amount divided by purchase amount for realized shares. Unrealized returns use the latest available purchase transaction price.
Internal rate of return (IRR)	Computed as $TVPI^{(365/\text{holding period in days})} - 1$.
Total Loss	Dummy equal to one if the investment results in a total loss (TVPI = 0).
Investment / Investor Characteristics	
Firm age	Years since incorporation at the time of investment.
Ownership stake	Percentage ownership acquired by the investor.
Board seat (1/0)	Dummy equal to one if the investor obtains a board seat at the time of investment.
Holding period	Duration between investment and realization (in days).
Investor age	Investor's age at the time of investment.
Male	Dummy equal to one for male investors.
Public stock investor	Dummy equal to one if the investor previously held publicly listed equities on Oslo Børs.
Repeat angel investor	Dummy equal to one if the investor previously backed another HIP startup.
Above median wealth	Dummy equal to one if the investor's wealth exceeds the sample median in the investment year (available 2011–2018).
Founder's Family Members	
Number of family members	Number of family members linked to the founder in the year of incorporation, as reported by the Norwegian Tax Authorities.
Average distance to family members	Average distance (km) between founder and relatives based on zip code coordinates. Coordinates sourced from: https://www.erikbolstad.no/postnummer-koordinatar/?postnummer=0010
Firm Outcomes	
No exit event	Dummy equal to one if the firm remains independently operating as of 2018.
Bankruptcy	Dummy equal to one if the firm's first exit was a bankruptcy.
Merger/Acquisition/IPO	Dummy equal to one if the firm's first exit was a merger, acquisition, or IPO.
Exit age	Age of the firm at the time of its first exit.
Firm Financing	
Equity injection	Total capital raised through equity financing rounds (excludes secondary share transfers).

(continued on next page)

Variable	Description
Ownership concentration	Shareholder concentration measured using the Herfindahl-Hirschman Index (HHI).
Fundamentals	
Revenues	Firm's annual operating revenue.
Revenue growth	Year-over-year revenue growth from $t-1$ to t .
Total assets	Book value of the firm's assets.
Asset growth	Year-over-year asset growth from $t-1$ to t .
Return on assets	Net income scaled by total assets.
Leverage	Total liabilities (short- and long-term debt) divided by total assets.
Innovation Output	
Intangibles / total assets	Book value of intangible assets scaled by total assets.
R&D expenses / total assets	SkatteFUNN-eligible R&D expenses divided by total assets. SkatteFUNN is a national R&D tax credit scheme administered by the Research Council of Norway and the Norwegian Tax Administration.
Total patent applications	Total number of patent filings submitted by the firm.

Table A3: Selection of Firms with High Innovation Potential (HIP)

Table A3 describes the sample selection process for identifying firms with high innovation potential. Panel A starts with all firms newly founded in Norway between 2004 and 2017, from which we exclude financial services and real estate firms, newly formed subsidiaries of established companies, holding company structures, and firms operating in non-innovative industries. Panel B outlines the procedure for identifying a sub-sample of firms with a high propensity to engage in innovation, based on ex ante observable characteristics. Specifically, we flag firms based on three alternative indicators measured at year-end of their founding year: (i) having an English-language name, (ii) being located in one of the country's four innovation hubs, and (iii) having at least one board member who resides far from the city in which the company is located.

Panel A: Full Sample	Firms	% of (A)
Firms (C-corps) founded in 2004–2017	321,548	
- Financial services and real estate firms	-143,496	
- Subsidiaries of established companies	-19,499	
- Holding structures	-6,275	
- Transaction data not matched	-27,930	
- Non-innovative industry	-45,152	
Newly established firms in potentially innovative industries: (A)	79,196	100.00%
Panel B: Ex Ante Innovation Flags	Firms	% of (A)
English name	26,452	33.40%
Located in an innovation hub (Oslo, Bergen, Stavanger, Trondheim)	23,887	30.16%
At least one board member who lives far from the firm	14,148	17.86%
At least one ex ante innovation flag:	46,121	58.24%

Table A4: Instrumenting Informal Financing: Firm Financing Outcomes

Table A4, Panels A–B, presents first- and second-stage IV estimates from the regressions defined in Equations 7 and 7, complementing the OLS results in Table 4. The dependent variable in Column (1) is *Informal* (1/0), instrumented using $\text{Ln}(\text{Family distance})$ – the natural logarithm of one plus the average distance (in kilometers) between the founder and her family members at firm incorporation, based on zip code coordinates. The dependent variables in Columns (2)–(5) are dummies for receiving equity investment in year t from different investor types. Control variables follow Table 4, and all specifications include fixed effects for firm age, calendar year, industry, and region. A constant is estimated but not reported. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Pooled estimations					
	First-Stage Estimate	Second-Stage Estimates			
	(1)	Repeat Angel (2)	Venture Capital (3)	Corporate Investor (4)	Foreign Investor (5)
Informal (1/0)		-0.084*	-0.018	-0.189***	0.018
		(0.044)	(0.029)	(0.062)	(0.028)
Ln (1 + Family distance)	-0.014*** (0.003)				
Observations	65,905	65,905	65,905	65,905	65,905
R-squared	7.4%	4.3%	2.7%	1.2%	4.0%
F-statistic		30.62	30.62	30.62	30.62
Mean of dependent variable		0.04	0.01	0.06	0.02
Panel B: Informal-financed only vs. external-financed only firms					
	First-Stage Estimate	Second-Stage Estimates			
	(1)	Repeat Angel (2)	Venture Capital (3)	Corporate Investor (4)	Foreign Investor (5)
Informal (1/0)		-0.095**	-0.022	-0.202***	0.011
		(0.043)	(0.028)	(0.061)	(0.028)
Ln (1 + Family distance)	-0.014*** (0.002)				
Observations	61,879	61,879	61,879	61,879	61,879
R-squared	11.7%	4.4%	2.6%	2.3%	3.7%
F-statistic		31.15	31.15	31.15	31.15
Mean of dependent variable		0.03	0.01	0.06	0.01

Table A5: Instrumenting Informal Financing: Firm Ultimate Outcomes

Table A5, Panels A–B, presents first- and second-stage IV estimates from the regressions defined in Equations 7 and 7, complementing the OLS results in Table 5. The dependent variable in Column (1) is *Informal* (1/0), instrumented using $\ln(\text{Family distance})$ – the natural logarithm of one plus the average distance (in kilometers) between the founder and her family members at firm incorporation, based on zip code coordinates. The dependent variables in Columns (2)–(4) are dummies for alternative firm exit outcomes. Control variables follow Table 5, and all specifications include fixed effects for founding year, industry, and region. A constant is estimated but not reported. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Pooled estimations				
	First-Stage Estimate	Second-Stage Estimates		
	(1)	No exit event (2)	Bankruptcy (3)	Merger/ Acquisition/IPO (4)
Informal (1/0)		0.021 (0.145)	0.140 (0.131)	-0.161 (0.102)
Ln (1 + Family distance)	-0.013*** (0.002)			
Observations	16,647	16,647	16,647	16,647
R-squared	4.3%	2.8%	2.3%	1.2%
F-statistic		42.45	42.45	42.45
Mean of dependent variable		0.69	0.19	0.12

Panel B: Informal-financed only vs. external-financed only firms				
	First-Stage Estimate	Second-Stage Estimates		
	(1)	No exit event (2)	Bankruptcy (3)	Merger/ Acquisition/IPO (4)
Informal (1/0)		0.005 (0.151)	0.184 (0.137)	-0.189* (0.107)
Ln (1 + Family distance)	-0.013*** (0.002)			
Observations	15,403	15,403	15,403	15,403
R-squared	6.7%	2.5%	1.3%	1.0%
F-statistic		46.13	46.13	46.13
Mean of dependent variable		0.7	0.19	0.12

Table A6: Placebo Test: Institutional Financing in External-Financed Firms

Table A6 presents placebo OLS regression estimates, complementing the OLS results in Table 4. This analysis excludes all firm-years with informal investors and tests whether the founder's distance to family members predicts financing outcomes among firms backed exclusively by external individual investors. $\ln(1 + \text{Family distance})$ is the natural logarithm of one plus the average distance (in kilometers) between the founder and her family members in the year of firm incorporation, based on zip code coordinates. Control variables follow Table 4, and all specifications include fixed effects for firm age, calendar year, industry, and region. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Financing Source:			
	Repeat Angel (1)	Venture Capital (2)	Corporate Investor (3)	Foreign Investor (4)
$\ln(1 + \text{Family distance})$	0.001 (0.001)	0.000 (0.001)	0.003*** (0.001)	-0.000 (0.001)
Observations	46,695	46,695	46,695	46,695
Adjusted R-squared	10.0%	5.4%	13.6%	5.4%
Controls	Yes	Yes	Yes	Yes
Calendar Year \times Industry FE	Yes	Yes	Yes	Yes
Firm Age \times Industry FE	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes

Table A7: Placebo Test: Firm Outcomes in External-Financed Firms

Table A7 presents placebo OLS regression estimates, complementing the OLS results in Table 5. This analysis excludes all firm-years with informal investors and tests whether the founder's distance to family members predicts exit outcomes among firms backed exclusively by external individual investors. $\ln(1 + \text{Family distance})$ is the natural logarithm of one plus the average distance (in kilometers) between the founder and her family members in the year of firm incorporation, based on zip code coordinates. Control variables follow Table 5, and all specifications include fixed effects for founding year, industry, and region. Standard errors are clustered at the firm level and reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	No Exit Event (1/0) (1)	Bankruptcy (1/0) (2)	Exit Age (3)	Merger/Acquisition/IPO (1/0) (4)	Exit Age (5)
$\ln(1 + \text{Family distance})$	0.002 (0.002)	-0.003 (0.002)	0.028 (0.027)	0.001 (0.002)	-0.033 (0.038)
Observations	12,212	12,212	2,282	12,212	1,656
Adjusted R-squared	19.9%	13.0%	24.4%	10.3%	21.9%
Controls	Yes	Yes	Yes	Yes	Yes
Founding Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes