



# **Final Report to the Kauffman Foundation**

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## **ABSTRACT**

This paper studies repeated relationships between serial founders and Venture Capitalists. I explore a hand-collected dataset of 637 serial founders of U.S. venture-backed companies. Only 1 in 10 VC involvements lead to a repeated relationship, and two thirds of serial founders have no repeated relationship with any previous VC. I find that repeated relationships are motivated by a tradeoff between geographical preferences of VCs and the value of preserving information and relationship-specific investments. Finally I find strong evidence that repeated relationships affect how a startup company is financed. Founders with repeated relationships raise more money from a larger number of VCs.

## **EXECUTIVE SUMMARY**

### ***Introduction***

Many important financial transactions are characterized by strong relationship ties between lender and borrower. Small and medium-sized companies often repeatedly use a few banks for most of their financing needs and large private equity firms frequently secure debt financing from a small number of banks with which they have a previous transaction history. This paper provides a first look at financial relationship ties in different settings – the propensity of serial founders, i.e. individuals who have started more than one company, to form repeated relationships with Venture Capitalists (VCs).

The starting point of my analysis is that relationship ties between VCs and founders are an important part of venture capital investments in early stage companies. VCs are known to be active investors that take an active role in the company's Board of Directors and have frequent interactions with a company's management team and founders. The direct involvement creates valuable relationship-specific investments between the VC and a founder, and the intense monitoring leads to lower information problems. In economic terms, the active role taken by VCs lowers the costs of a repeated interaction between a founder and a given VC. When a founder starts his second company that needs VC financing, he could either build on this relationship tie, i.e. raise capital from the VC that financed his previous company, or find a new investor. This paper is an empirical study of this choice.

My empirical analysis is based on the following tradeoff of a repeated relationship. The cost of a repeated relationship is the suboptimal matching between VC and the founder's second company, which follows from the specialization of VCs in industries and geographical areas. A serial founder whose new company is substantially different from his first company should therefore be more likely to select a new VC over a repeated VC relationship. The benefits are the preservation of information and relationship-specific investments that were created as part of the VC's involvement in the founder's first company. A repeated relationship should therefore be more likely when the VC was more actively involved in the founder's first company.

I study the two major (observable) dimensions of VC matching – geography and industry. Previous studies have established that VCs prefer to invest in startups that are

closer to their own location. If the geographical distance to the target is short, investors have more access to information and could thereby make better investment decisions. Information access is particularly important for VCs because they engage in active due diligence and monitoring, and also provide services to portfolio companies. A serial founder whose second company is outside his previous VC's preferred geographical area is likely to find a better VC matching and consequently receive a more attractive financing offer from a another VC. From this follows the empirical prediction that such serial founders should be less likely to have repeated VC relationships.

As argued above, the main benefit of a repeated relationship is that information and relationship-specific investments could be preserved. Not all VCs are equally active and involved in a company. The stronger the previous involvement of a VC, the more information should be transmitted about the founder and the more relationship-specific investments should be created between the VC and the founder. Hence a VC that has previously been more involved with a founder should have a higher propensity to form a repeated relationship.

### ***Frequency of Repeated Relationships***

The data comes from a hand-collected sample of 9,385 founders of venture-backed U.S. companies; in this paper I study the 637 founders who have started more than one company. I first investigate how common repeated relationships between founders and VCs are on average. To do this, I create a set of dummy variables for each involvement pair that captures whether a VC has a repeated relationship with a founder. A repeated relationship is when the same VC invests both the first company involvement and the second company involvement. A given company could have many investment rounds, and repeated relationships could either be between first round VCs or between VCs that invested in any round. Thus, there are four different types of repeated relationships: (i) any round VC – any round VC, (ii) any round VC – first round VC, (iii) first round VC – any round VC, and (iv) first round VC – first round VC.

I first estimate the probability that a given VC has a repeated relationship. I find that 9% of VCs investing in any round of the first company involvement are also investors in any round of the second company involvement, and 7% investors in the first

round of the second company involvement. These results show that the majority of VCs do not have repeated relationships with founders. Restricting the sample to VCs that were investors in the first round (and possibly also in later rounds), repeated relationships are more common with 15% of all VCs also being investors in any round of the second company involvement and 12% investors in the first round of the second company involvement.

One potential reason for why repeated relationships are relatively uncommon is that first involvement VCs are not active investors at the time of the second company involvement. To investigate this potential explanation, I restrict my sample to VCs that are active at the time of the second company involvement. Because only around 11% of all VCs do not remain active, the average fraction of repeated relationship remains relatively small. Around 11% of first involvement any round VCs have a repeated relationship, and 8% of the first involvement first round VCs. From this I conclude that repeated relationships remain uncommon even for VCs that, by virtue of still being active investors, could have invested in the second company involvement.

A company could have more than one VC investor, either because a first round is syndicated or because new VCs get invest in subsequent rounds. I calculate the probability that any VC that invested in the first company involvement has a repeated relationship. I find that one in three company involvements have a repeated relationship with any VC. The probability that any first involvement VC is also a first round investor in the second company involvement is 27%. Studying only first round VCs, I find that 18% of all founder involvements have the same VC investing in the first round of both company involvements.

The low fractions of repeated relationships could be due to incompleteness of the VentureEconomics data. To test this I hand-collect data on VC investments from CapitalIQ, Google searches, Lexis-Nexis, etc. Most of this hand-collected data is very incomplete and unreliable, because it is hard to identify the correct founder or company and it is not clear that a listed investor is indeed a Venture Capitalist. When I include the hand-collected data the probability that any first involvement VC is also a first round investor in the second company involvement is 35%.

Taken together, the above statistics show that the probability that a given VC has a repeated relationship is relatively low at 10%, even for VCs that are still active investors. On average only 12% of all first involvement VCs in a company has a repeated relationship. However, because each company has many VCs (average is 4.9 for first company involvement), the probability that a serial founder has a repeated relationship with any VC is 33%. Thus 9 out of 10 VC involvements does not lead to a repeated relationship and 2 out of 3 serial founders do not have a repeated relationship with any VC.

### ***Motivations Behind Repeated Relationships***

Having established that repeated relationships are on average relatively uncommon, I next test the motivations behind a repeated relationship between a VC and a founder. I run a set of cross-sectional probit regressions using the sample of 3,356 first company VC involvements where the VC was still active at the time of the second company involvement (89% of 3790). In order to control for specific market conditions, I include year, industry (3-level segment) and state controls in all specifications. Also, all specifications adjust standard errors for cross-correlation by clustering residuals by first involvement company.

I run a set of probit regressions where the dependent variable is a dummy that takes the value 1 if any first involvement VC also invests in any round of the second involvement (any-any). I also run a set of probit regressions where the dependent variable is a dummy that takes the value 1 if any first involvement VC also invests in the first round of the second involvement (any-first). The results are very similar for both sets of specifications.

### ***Industry Similarity***

The fact that VCs have some degree of industry specialization could be one motivation to why VC relationships with a serial founder are discontinued. If the founder's second company is in a different industry than his/her first company, then the previous VC may not be willing to provide finance, or not able to offer competitive

terms, to the founder's new venture. The coefficients on either "Same Industry 3-level" or "Same Industry 9-level" are not significantly different from zero.

### Geographical Similarity

I next test whether repeated relationships are driven by geographical similarity. As a contrast to the industry results, I find strong evidence that a founder whose first and second company involvements are in the same geographical area is significantly more likely to have repeated relationship. A serial founder whose two companies are in the "Same State" is about 5 percentage units more likely to have any repeated relationship. This corresponds to about half of the unconditional probability of a repeated relationship. If the two companies are in the "Same City" then the serial founder has a 7 percentage unit higher probability of any repeated relationship. Similarly, a doubling of the "Distance in Kilometers" between the founder's two company involvements lowers the probability of a repeated relationship with 1.5 percentage units. I then include an interaction of "Same State" and "Same Industry 3-level". This interaction is not significantly different from zero, which indicates that the effect of geographical similarity on repeated relationships is independent from industry similarity.

### Geographical Distance

I include two measures of geographical distance between the VC and the company – "VC Located in US" and "VC and Company in Same State". I find weak statistical evidence that U.S. VCs are more likely to have a repeated relationship but I find strong evidence that a VCs located in the same state as the founder's first company are more likely to have a repeated relationship. The magnitude is similar to that of "Same State" with a 5 percentage point increase in the probability of a repeated relationship.

I interact "VC and Company in Same State" and "Same State" and obtain a large negative and significant coefficient. When this interaction variable is included, the coefficient on "VC and Company in Same State" becomes insignificant. The interpretation of this result is as follows. A serial founder is overall more likely to receive financing from a VC that is geographically close to his first company. However, if the founder's second company is located in a different location than his/her first company,



then the proximity between VC and first company is irrelevant for the propensity of a repeated relationship.

### *Strength of Involvement*

Unfortunately, it is prohibitively difficult to directly observe the strength of a VC involvement with a founder. I therefore rely on a number of measurable proxies, each of which is likely to capture a different dimension of the involvement strength.

The first proxy is “VC Fraction of All Investments in Company”. This variable is a proxy for involvement strength because a VC that is a large investor in a company is also more actively involved in the company’s Board and interacts more frequently with the founders. I find strong evidence that a VC that was a large investor in the founder’s first company is more likely to have a repeated relationship. As a robustness test, I replace “VC Fraction of All Investments in Company” with “Number of VCs in Round” and find similar results. Interestingly, one specification shows that the interaction of “Same State” and “VC Fraction of All Investments in Company” has a positive coefficient. Thus, the involvement strength is more important for repeated relationships when the founder’s two companies are in the same U.S. state. The interaction between “VC and Company in Same State” and “VC Fraction of All Investments in Company” is not significant.

The second proxy is “Early Stage” which captures the stage of the founder’s first company at the time of the VC’s first investment. A VC is more likely to be more involved in early stage companies because the need for monitoring is larger in such companies (and probably also the need for value-add from VC investors). I find that founders whose first company received financing at an early stage are 3 percentage points more likely to have a repeated VC relationship. I obtain similar results if I replace “Early Stage” with the round number of the VC’s first investment in the company. When I interact “Same State” and “Early Stage” I find no significant results.

The third proxy for involvement strength is “VC Private Partnership” which is a dummy capturing whether the VC is not a financial, corporate or government-backed VC. I find that VC organized as a private partnership is 3 percentage points more likely to have a repeated relationship. While private partnership VCs are likely to be more

involved in a company, this result could also be explained by such VCs having a more broadly defined target investment group. I do not find any evidence that more experienced VCs, measured by “VC Number of Investments Total”, are more likely to have repeated relationships.<sup>1</sup>

The fourth and final proxy is “Years Between Involvements”. While the above variables capture the frequency of interactions between VC and founder, this variable captures that both information and relationship-specific investments decay over time. A more recent should therefore lead to a higher propensity of a repeated relationship. Consistent with this prediction I find that repeated relationships are significantly more likely for founders, whose first and second companies are fewer years apart. When I interact “Same State” and “Years Between Involvements” I find no significant results.

Overall, my results show that repeated relationships are more likely when VCs have a stronger and more recent involvement with a serial founder.

### ***Repeated Relationships and Financing Structure***

The above analysis of the motivations behind repeated relationships does not reveal whether such repeated relationships are beneficial to a serial founder. In this section I test how the financing structure of the first round of a serial entrepreneur’s second company is affected by repeated relationships.

#### ***Financing Amount***

First I test whether serial founders who have repeated VC relationships raise more money. The first set of regressions have the dependent variable being the logged dollar amount raised by the company in the first financing round. The unit of observation is one founder-company involvement. The main measure of repeated relationships is “Number of VCs Repeating in First Round”, which is the count of first round VCs also were investors in the founder’s first company involvement. The first round financing amount is increasing in the number of repeating VCs. As a robustness check, I use “Any VC Repeating in First Round”, which is a dummy that takes the value of 1 if any first round VC also was investors in the founder’s first company involvement, and find similar

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<sup>1</sup> Similar results are obtained if I instead use “VC Age” or “First Fund” as proxy for VC experience.

results. The result holds when controlling for other variables. Notably, a founder whose first company had a merger/acquisition raises significantly more financing for his/her second company, whereas there is no difference for a founder whose first company had an IPO.

### *Number of Round Investors*

Next I test whether serial founders who have repeated VC relationships receive financing from a larger number of investors. I show that the number of VCs participating in the second company's first round increases with "Number of VCs Repeating in First Round". Similarly, the number of VCs is higher if "Any VC Repeating in First Round" equals 1. I include an interaction of "Number of VCs Repeating in First Round" and "Same State". I obtain a positive coefficient on this interaction and note that "Number of VCs Repeating in First Round" becomes insignificant.

One way to interpret these results is that repeated VC relationships do not fully replace new VC involvements. Thus founders seemingly do not discontinue VC relationships because they need to "make room" for new investors. This holds however only for serial founders whose two company involvements are in different U.S. states.

### *Concluding Discussion*

The findings of this paper show that VCs, despite being active and involved investors, frequently discontinue relationships with serial founders. This choice could be made by the founder or by the VC, and could have many different motivations. I test and find supportive evidence of two separate VC motivations. The first is geographical considerations related to VC specialization. Because a typical VC focuses its investments in specific geographical areas, it is unwilling to finance a serial founder who moves away. The second motivation behind a discontinued relationship is that the VC's previous involvement with the founder was not very strong. A weak involvement does not significantly lower information asymmetries and creates only small relationship-specific investments with the founder. The value of a repeated relationship is therefore limited for such founders.