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WAVES OF INVESTING: INSTITUTIONAL DYNAMICS IN THE VENTURE CAPITAL SECTOR

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Abstract

This work provides an embedded explanation of the fragmented growth of investment activity in the United States venture capital industry by considering the emergence and persistence of co-existing institutional logics in the field. Our analysis demonstrates that changes in a field's institutional and resource environments influence and support the development of co-existing institutional logics. Using historical evidence, we identify three different logic types: ?investing to build?, ?investing for gain?, and ?hybrid?. Our findings show that all three logics persist over time and that no single logic emerges as dominant.

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ABSTRACT

This work provides an embedded explanation of the fragmented growth of investment activity in the United States venture capital industry by considering the emergence and persistence of co-existing institutional logics in the field. Our analysis demonstrates that changes in a field's institutional and resource environments influence and support the development of co-existing institutional logics. Using historical evidence, we identify three different logic types – “investing to build”, “investing for gain”, and “hybrid”. Our findings show that all three logics persist over time and that no single logic emerges as dominant.

Keywords: Venture Capital, Instituting Change, Institutional Logics, Entrepreneurship

Organizational theorists have, for some time, recognized that firms are imprinted at founding, and that this is critical for the firms' subsequent development. This work grows out of Stinchcombe's seminal article (1965) that showed that a firm develops and retains behaviors and routines that are matched to the environmental conditions present in the early part of its history. Firms align their practices with these conditions to improve their performance and viability through heightened legitimacy and reliability (Meyer & Rowan, 1977; North, 1990). Moreover, when these behaviors are central to a firm's functioning, they are likely to change slowly on average, typically lagging shifts in environmental opportunities and constraints (e.g., Hannan & Freeman, 1984; Hannan & Carroll, 1991; Madsen & Walker, 2003; Walker, Madsen & Carini, 2002

Various studies in strategy and organization theory examine the effects of imprinting on organizations from different angles (Stinchcombe, 1965, Burgelman, 1991 and Milanov and Fernhabe, 2009). Yet, this line of inquiry is conspicuously absent in work on entrepreneurship (with the exception of work by Baron, Burton and Hannan) and work on the evolution of organizational fields. These studies are part of a vast literature that examines numerous aspects of this phenomenon including the role of founders, environmental conditions and shared agreements. It has greatly influenced strategy and organization theory, but surprisingly are conspicuously absent in entrepreneurship. This body of research is directly relevant to understanding entrepreneurial activity, but surprisingly, scholars in entrepreneurship research have paid little attention to the role that imprinting plays.

Additionally, scholars to date have not identified the content of the imprinting beyond such general conceptualizations as "environmental conditions" or "founding effects". However, in a series of articles, Baron, Burton and Hannan (1996, 1996, 1999, 1999 and 2001) have begun

to identify some of the specific elements that are imprinted and their impact on such aspects of the organization as managerial or administrative intensity. This research suggested that what is imprinted is an “organizational blueprint” (Baron, Hannan and Burton, 1996) that directs firm behavior and that any subsequent change to the blueprint is disruptive to a firm’s operations. These “blueprints” are derived from “culturally accepted logics or blueprints for organizing” (2001). Their work demonstrates how imprinting occurs at the firm level, however whether it is the result of founder decisions or wider elements such as the social composition of the labor force deserves further and more detailed consideration.

In order to answer the question of what is being imprinted, we can turn to the work of neo-institutional scholars who have long discussed the importance of normative and cognitive agreements on firm behavior, including the role of institutional logics. This conceptualization of logics extends well beyond “culturally accepted”. Institutional theorists have defined logics as “...the underlying organizing principles of societal sectors, [that] influence organizational decision making. Any shift in institutional logics results in a shift in attention to alternative problems and solutions and in new determinants for organizational decisions.” (Thornton and Ocasio, 2008). Thus, they represent the array of material practices and symbolic constructions that underlie the organizing principles guiding activity within a field (Friedland & Alford, 1991).

Using this conceptualization, we seek to determine if logics are imprinted, and if so, which logics are imprinted if there is more than one logic in the industry? We suggest that the logic that is imprinted at founding depends on the competitive and institutional environment that exists within the field at the time. That environment may incorporate multiple logics and in such situations, a firm’s understanding of how best to interact with that environment to improve performance and viability (e.g., Meyer & Rowan, 1977; North, 1990) will affect its choice of

logic. Thus, our focus is upon the imprinting of shared systems of meaning among actors in a field at different points in time.

In order to analyze this relationship, we study the changes in the venture capital industry over time. We chose this industry because it has a wide range of actors and practices and the institutional environment has evolved dramatically over time. We examine the field level changes, specifically in the economic, social, and political environments that influenced the industry's evolution over the past three decades. Thus, we identify the drivers behind the "waves" of VC investing (Gompers and Lerner, 1998) in order to look at how changes in the institutional environment (i.e., via the entry of new actors, and changes in regulatory mechanisms – Scott, 1995), and not just the availability of resources and market demand, influence the institutional logics.

Our analysis is in three parts. First, we discuss the theoretical relationship between fields, logics and imprinting. Secondly, we document and analyze how these changes influence developments within the industry from 1969 to 1999. Third, we identify the logics that were operative during this time period and analyze how the multiple events and logics interacted over time. The findings from this qualitative analysis inform our subsequent quantitative analysis that is designed to identify the factors that influence a VC firm's choice of a specific investment logic or are "imprinted".

ORGANIZATIONAL FIELDS

Institutional perspectives increasingly acknowledge that organizational fields are often populated by multiple and competing models, logics, and organizational forms (Clemens & Cook, 1999; Friedland & Alford, 1991; Jepperson, 1991). Recent work describes organizational fields as centers of debate where interests compete around issues, not just products or markets

(Hoffman, 1999). Hence, a “field” is more encompassing than the traditional view of industry since it incorporates multiple types of actors (e.g. the VC field includes actors such as: VC firms, entrepreneurial firms, public policy makers, regulatory agencies, and investors) and levels of analysis (e.g. firm, intrafirm, interfirm, industry, community). In this paper, we view organizational fields as a community of organizations and actors that partake of a common meaning system (e.g. Friedland & Alford, 1991; Haveman & Rao, 1997; Hoffman, 1999; Holm, 1995; Scott, 1994)

Competition among ideologies and belief systems provides the basis for gradual shifts in social processes governing the field (Friedland & Alford, 1991; Haveman & Rao, 1997). For instance, changes in a firm’s behaviors and practices might motivate changes in other actors’ behaviors and in turn, trigger changes in the field’s established ideologies. Oliver (1992) suggests that such patterns of change can be best understood by examining the continuous re-creation of shared understandings of legitimate activity. This approach calls for analyzing the dissipation of institutions that occurs as new institutions gain ground and investigating how different institutional logics inform and influence each other. In this nested view, changes in one part of a system have repercussions for the system’s other parts and vice versa (Holm, 1995). Such dynamics play an important role in restructuring an organizational field (DiMaggio, 1991).

Many scholars have demonstrated the importance of historical conditions in shaping field-level dynamics and their subsequent effects on organizational forms and activities (e.g., Baum & Oliver, 1996; Dacin, 1997; Haveman & Rao, 1997; Leblebici, Salancik, Copay & King, 1991; Schneiberg & Clemens, 2003; Stinchcombe, 1965). Scholars have also identified the many forms that these conditions can take, including changes in political regimes, business cycles, legal and regulatory policies and societal values and norms. Importantly, such

institutional shifts occur along with political, ecological and economic dynamics, although they may provide evidence of institutionally defined resource effects beyond those described by standard resource-based arguments. For example, periods exist when institutional processes outweigh the effects of resource expansion (Powell, 1991; Scott & Meyer, 1991). These institutional processes can be identified through an analysis of the substance and structures of the logics in a given field, at a particular time.

Fields and Logics

Institutional logics comprise the material practices and symbolic constructions that underlie the organizing principles guiding activity within a field (Friedland & Alford, 1991) and have been concisely summarized as “the way a particular social world works’ (Thornton & Ocasio, 2008). Scholars working in this area seek to integrate the material and symbolic aspects of the macro-environment with institutions in order to better understand behavior. They use a systemic approach, arguing that structural, normative and cognitive elements are interrelated and, as such, that their influence can not be separated. For example, it is only through understanding the normative and cognitive elements within a field – its logics -- that regulatory (structural) changes can be explained. Logics differ from knowledge in the “practices, incentives, and strategies of action that they support and take for granted in the course of knowledge production (Murray, 2010, p.347). Examining the emergence and development of logics within a field, therefore, enables us to better explain firm behavior and strategy as well as an industry’s development.

In their important review of this topic, Thornton and Ocasio (2008) not only demonstrate the degree to which this approach has emerged as a popular line of inquiry in numerous settings

including publishing, health care, financial services, cuisines, and higher education but also clearly spell out its assumptions, strengths and weaknesses and future directions. In their words: “...the institutional logics approach offers precision in understanding how individual and organizational behavior is located in a social context and the social mechanisms that influence behavior.” They analyzed the large and growing literature dealing with logics and identified several common characteristics (embedded agency, society as an inter-institutional system, the material and cultural foundations of institutions, institutions at multiple levels and historical contingency), as well as the mechanisms through which logics shape action.

What this literature has yet to focus on is the relationship between logics, fields and imprinting. Some scholars have demonstrated the critical nature of imprinting, others the ways in which logics influence firm behavior. However, to date, little, if any, work has been done on the relationship between imprinting and logics even though, as noted above, research has shown that 1) “organizational blueprints” are imprinted and 2) institutional logics influence firm behavior.

Multiple Logics and Institutional Dynamics

In many cases organizational fields consist of numerous co-existing and contending models, logics and organizational forms (Clemens & Cook, 1999; Friedland & Alford, 1991; Jepperson, 1991) but the implications of such multiplicity is not well understood. Scott (1994) identifies several “field situations” including one where a single institutional logic dominates and organizes governance and activity and one where two or more logics compete to define activity in a field. This work suggests that multiple logics generate changes in a field’s situation, but that, eventually, a single logic achieves primacy.

Some recent work examines contexts where a single logic is not dominant (e.g., Scott, Ruef, Mendel & Caronna, 2000). For instance, two noteworthy studies deal with the issue of multiple logics (Dunn & Jones, 2010; Purdy & Gray, 2009). In their study of the emergence of alternative dispute resolution centers, Purdy and Gray (2009) identify five conditions that lead to the diffusion of multiple logics – field characteristics, multiple local contexts, presence of multiple resources pools, resistance from institutional logics and lack of professional frameworks. Dunn and Jones (2010) also examine the conditions that support the existence of multiple logics but they are particularly concerned with sources of change in logics. By examining the logics that guide the medical profession they demonstrate that the power relationships in the field are key determinants in change.

Even though research has demonstrated that logics coexist and that such factors as power are important determinants in the change that occurs, the issue of the significance of multiple logics for imprinting deserves further consideration. In other words, how does the existence of multiple logics influence the imprinting process? Accordingly we suggest that as industries evolve, an increasing number of firms are imprinted with different logics

However, multiple logics may not consist of just singular types of logic. Current research has demonstrated that two or more logics may coalesce to form a hybrid logic. This type of logic results from organizations and actors differentiating themselves and this differentiation creates a “productive tension” (Murray, 2010: 346). Thus, at various times during an industry’s development, one may find a situation where such logics coexist with single logics. Accordingly, when an industry is characterized by single and hybrid logics, firms will be imprinted with hybrid logics as well as single logics.

Such hybrid logics tend to be selective, comprising the most useful elements of the existing single logics. Research has demonstrated that firms seek to differentiate themselves but they do so in order to gain a competitive advantage. At first, firms can do so by adopting a new logic but overtime this strategy will no longer suffice. Accordingly, such firms are likely to go beyond simply adopting an existing logic and implement those elements that are most supported by power elements and thus create a hybrid logic in order to enhance their chances of success in the marketplace. As a result, we suggest that in later stages one will see an increased number of firms imprinted with a hybrid logic.

To understand these patterns, it is necessary to recognize that change across a field stems from a cumulative process of emergence, conflict, and erosion of institutionalized beliefs over time. In this nested view of multiple logics, changes in one part of a system (whether minor or major), have repercussions for the other parts of the system (Holm, 1995). While a “productive tension” may bring logics together, we identify a different process in the evolution of a field.

We will demonstrate that the co-existence of multiple institutional logics within a field over time (in alignment or in contradiction) actually drives the field’s evolution. As actors from related fields enter, they bring with them their logics, whether it be from a profession, epistemic community, or field. These new logics provide an alternative meaning system for the field.

How this process evolves has implications for the growth of the field.

In sum, shifts in institutional logics governing a field influence organizational action and population dynamics which, in turn, may give rise to further changes in a field’s institutional logics. Contention among institutional logics is central to this line of reasoning largely because it triggers shifts in the institutional structures of fields, principles, and regimes.

Logics in the Venture Capital Field: Historical Roots

Although the emergence of the VC industry can be traced back to the 1920's, venture capital firms, as we think of them today, were founded after World War II. Formal or institutional venture capital began in 1946 with the creation of American Research and Development Organization (ARD). This company was the first VC organization structured as a publicly traded, closed end fund that was marketed to individuals and it focused on the pursuit of VC for building companies and benefiting society (Gupta, 2000; Schilit & Wallig, 1996). As more firms proliferated under this rubric, entrepreneurs who otherwise might not know about, or have access to, an individual's money now could gain access to that capital. At the time, the practice of venture capital was viewed as a "noble" business offering a chance to change the economic landscape (Gupta, 2000). The overarching logic of entrepreneurial investing behind this new type of VC form was one of helping entrepreneurs while also benefiting investors, what we identify as "invest to build". The fact that formal (institutional) venture capitalists today still subscribe to the initial "invest to build" logic demonstrates the persistence of this logic (Haveman & Rao, 1997). This is not to state that all new VC firms shared this perspective. In fact, the large profits that some firms were reaping were causing other actors to examine the potential of VCs as an alternative to traditional investment vehicles. As a result, actors began to enter the field with a different investment philosophy, one based on notions of investing for profit and return. We identify this logic as "investing to gain".

These logics were not mutually exclusive as was demonstrated by the proliferation of SBICs (federally guaranteed risk capital pools), in the 1960s. SBICs were an effort by the government to stimulate the growth of small business throughout the United States by providing

tax breaks to private investment companies so that they could leverage their resources by borrowing from the Small Business Administration (Schilit, 1991; Schilit & Willig, 1996). Interestingly, the impetus behind the government's involvement in establishing funding and licensing for SBICs was based on the principles of advancing entrepreneurship for societal gain ("investing to build") yet sanctions and limitations on the amount of risk allowable by funding associated with these SBICs forced such firms to operate under principles associated with a concern for profit/gain ("investing to gain"). The result was the emergence of a VC form that embodied both of the competing logics guiding entrepreneurial investing (i.e., a decoupling of regulatory initiative and actual activity). Although SBICs were a popular structure during the late sixties and early seventies, the field began to change as new incentives encouraged SBICs to assume greater risks than the government's guaranteed instruments would offer (Guerin, 1997). VC firms gradually began to devote more attention to return on investment and this focus began to diffuse across the entire entrepreneurial community, leading to the creation of a "hybrid" logic.

Additional changes in the VC field reinforced the logic of "investing to gain" with actors from investment banking, representing large pools of institutional assets, entering in increasing numbers. By the 1970s, limited partnerships were the dominant structure of formal VC firms; this organizational form advantaged institutional investors because they were exempt from paying capital gains taxes. At the same time more and more firms were moving from investing in later-stage companies in need of expansion financing to investing in undervalued public companies, all within the rhetoric of "reaping superior gains"(Guerin, 1997). Thus, by the 1970s, a firm-level logic to spread risk and seek profits was beginning to supersede the logic of

“investing to build” which viewed venture capital as primarily promoting entrepreneurial activity.

Subsequent regulatory changes also benefited the industry’s development, facilitating the entry of more actors from the financial services sector. This inflow served to further preference the logic of “investing to gain”. In 1979, the Employment Retirement Income Security Act (ERISA), was amended to allow pension managers to diversify their holdings thus enabling them to invest a percentage of their resources in additional investment vehicles including venture capital funds. This new source of funds was particularly attractive to venture capitalists because it was tax exempt and its required rate of return was lower than that of taxable investments. Since the pension managers’ approach to investing favored financial returns, they behaved in a manner consistent with the “investing to gain” logic. Their entry thereby challenged limited partners as dominant actors and influenced the logics within the VC field. Figure 1 illustrates how the distribution of actors in the industry changed from 1969 to 1999.

[Insert Figure 1 here]

In the 1980s, certain regulatory events stimulated fundraising opportunities and the industry discourse continued to reflect the logic associated with the professional investor -- the goal was to invest in potentially “hot” industries, i.e. high technology, and late stage markets and harvest the returns through taking a firm public (Gompers & Lerner, 1998). As such, the logic of “investing to gain” clearly became more dominant. In the late 1980s however, other field level events influenced the behavior of VC firms. For instance, the October 1987 stock market crash greatly diminished fundraising opportunities. In addition, by the late 1980s, market developments were less favorable than anticipated for these “hot” industries. Hence, notions about investing shifted toward more proven industries or toward companies in late stages of

development. This period was characterized as a “downsizing phase” (Guerin, 1997). Firms were under pressure to achieve stable profits and these short term goals further weakened the institutional logic that favored building early start-up businesses. For instance, Figure 2 shows an increase in investments in the non-tech and medical sectors during the 1980s.

[Insert Figure 2 here]

In the 1990s, the logic of “investing to build” experienced a resurgence due to a surging stock market, growth in the sources of capital funds and rapid growth in new markets based on emerging technologies. A decrease in the capital gains tax also played a role in increasing the amount of money available to the VC industry as individuals now had more money to invest. Given the development of new technologies, the focus on “investing to gain” shifted toward emerging industries and in turn, the early stage firm. Although VC firms were still concerned with financial gain (Gupta, 2000), they were increasingly motivated by the return on investment opportunities presented by Initial Public Offerings (IPOs) or by the acquisition of a start up by an established firm. Funding amounts became generally influenced by the perceived legitimacy of the prospective company’s industry (Aldrich, 1999). As a result, the focus of VCs returned to the classically defined purpose of venture capital investing: to create new businesses in high risk/high reward arenas that may not have access to more traditional methods of funding (Best & Mitras, 1997). The ARD legacy of investing in early stage, high-technology startups reflecting the logic of “investing to build” had once again come to be favored. Yet, this new era witnessed more than a return to previous practices. Firms could now engage in a substantially enhanced range of activities and draw upon new sources of funding.

This historical analysis leads to several predictions about the industry’s development:

H1: Firms founded before 1970 will be more likely to follow a logic of “investing to build” over a “hybrid logic”.

H2: Firms founded during the 1970s and 1980s will be more likely to follow a logic of “investing to gain” or a “hybrid” logic over a logic of “investing to build”.

H3: Firms founded after 1989 will be more likely to follow a “hybrid” logic or an “investing to build” logic than an “investing to gain” logic.

DATA

Our analysis includes both qualitative and quantitative components. Using multiple data sources, we first developed an event history of the VC field from 1969 to 1999. We use Thomson Financial Securities Data Company’s VentureXpert to document general industry trends. This data is augmented with various historical accounts of the industry (e.g. Bygrave & Timmons, 1992), published industry guides (Pratt, 1987, 1990, 1995, 1998, 2001) and a variety of other secondary sources. Using this event history, we show how the various forces acting on the field co-evolved. This qualitative analysis informs our subsequent quantitative analysis where we validate the role that the multiple logics played in the field using data on the largest single area that venture capital firms operate in, Silicon Valley.

Multiple sources were used to develop the Silicon Valley VC firm database. We first used VentureXpert to construct a data set of all the Venture Capital firms operating in Silicon Valley in 2003 (N=580). These data include each firm’s founding date, average company investment, average round investment, maximum and minimum company investment, maximum and minimum round investment, total known investment amount, location, investment status, geographic and industry preference, preferred investment role and investment stage preference. The data also document information regarding a firm’s funds such as the type of each fund and each fund’s stage of focus. In our sample, 486 firms are actively seeking new investments, 8 are

making few investments and 5 are reducing their investment activity, 81 are inactive but were active in the prior year.

Our next step was to develop a historical profile for each firm. We began by collecting data from firms' websites. In instances where websites did not exist (approximately 35%), we used a variety of tools to collect data on a firm. First, we searched archive.org's archive of closed websites. We also examined published industry guides (Pratt's Guides, 1987-2001) for information on the firm. Next, we searched Greyhouse's industry guides and a Greyhouse database; the latter database includes information on the founders and partners of Venture Capital firms. We then searched the web using the names of a firm's founders and/or partners. These collective sources were used to define each firm's historical profile. This profile includes information on a firm's mission or philosophy, strategy, objectives/goals, general venture deal information, size, founding year, typical stage of investing, and industry and geographic preferences, and history. A firm's history includes information about a firm's relationship to other firms, such as information about whether the firm participated in a merger, acquisition or strategic alliance, and whether the firm is part of a larger corporate entity.

For this analysis, our focus is on venture capital firms; we thereby exclude corporate venture entities from our sample (Thomson's VentureXpert list of Silicon Valley firms included corporate venture entities). As discussed above, we tried to develop comprehensive histories for each firm however, in some instances, we lack sufficient data to define a firm's institutional logic. In addition, we use lag variables in our analysis; as such, firms were omitted from the sample in cases where data was only available for 1 year. As a result, our final sample includes complete historical profiles for 337 firms.

Dependent Variable

Based on interviews with industry executives, we identified keywords consistent with the different institutional logics governing the industry over time. Using these key words, we content analyzed each firm's historical profile to define the institutional logic(s) the firm followed. As mentioned above, three dominant approaches emerged from our interviews: "investing to gain", "investing to build" or a "hybrid" of both logics. Firms that are primarily concerned with ensuring a high return on investment or reaping profits superior to alternative investments are classified as "investing to gain". Firms predominately focused on assisting entrepreneurs in building their ventures are classified as "investing to build". Firms that mix the two logics by ensuring high return on investment while simultaneously focusing on aiding entrepreneurs are classified as following a "hybrid" logic. By definition, all firms are interested in reaping some form of profit from their venture capital activity. Nevertheless, based on interviews with industry executives and on our qualitative analysis, there is a distinction between firms that provide non-financial aid to organizations they are investing in and those that do not.

Independent and Control Variables

The main independent variables include dummy variables for the time period when a firm was founded (Founding Year: <1970, Founding year: 1970-1979, Founding Year: 1980-1989, and Founding Year: >1989). For instance, the dummy variable, *Founding Year: 1970-1979*, is set to 1 for firms founded from 1970 to 1979 and set to 0 other wise.

We also control for firm-specific heterogeneity using a variety of variables that might affect the institutional logic adopted by a firm. Firm *Investment Role Preference* is a categorical variable defined as: 1 = Deal Originator (DO), 2= Preferred DO but will invest in deals created by others, 3=Preferred role in deals created by others, and 4=Will function as DO or investor in

deals created by others. Firm *Investment Stage Preference* is defined as: 1 = First stage or Seed; 2= Second Stage, 3=Later Stage or Expansion, 4= Mezzanine, Management Buyouts, Leveraged Buyouts or Acquisitions, 5=Generalist, Balanced or No Stage Preference, 6=Other (e.g. public). Firm *Geographic Preference* is defined as: 1=North America - Northwest, 2=North America - Other, 3= Europe & the United Kingdom, 4=Asia (including Japan, China & India), 5=Global, 6=No Preference. Firm *Industry Preference* is set to 1 when a firm prefers to fund companies in technology based industries and set to 0 otherwise. The raw data define a firm's industry preference by SIC code; we used the SIC codes to generate the tech/nontech categorical variable. In our sample, 89% of the firms prefer to invest in technology-related industries. We also control for each firm's *Average Company Investment* defined as a VC firm's average dollar investment (\$000) across all the companies the firm funded in the prior year. We also include a variable for the *Number of Rounds* a VC firm participated in during the prior year. As a proxy for firm size, we include each firm's reported *Capital Under Management* (millions) in the prior year; we use a natural log transformation of this variable to reduce skewness in the distribution. Firm *Age* is operationalized as the natural log of a firm's age.

MODEL SPECIFICATION & ESTIMATION

We use a multinomial logit model to test the hypotheses. The multinomial logit analysis examines the probability that a firm follows a particular logic given the alternative logics. The model is specified as:

$$P_{ij} = P(Y_i = j | X_i) = \frac{e^{\beta_j X_i}}{\sum_{j=1}^3 e^{\beta_j X_i}} \quad (1)$$

where P_{ij} = probability that firm i follows logic j where j = (gain, build, or hybrid) and β_j = a vector of coefficients of the marginal utilities of the X_i vector of independent and control

variables. This method allows us to investigate whether the determinants of the utilities differ for each logic. The coefficient vectors are estimated using the Newton-Raphson maximum likelihood approach (Greene, 1993). Hausman and McFadden's (1984) test for the independence of irrelevant alternatives (IIA), an important assumption for discrete choice models, indicates that our sample does not violate the IIA assumption. We test the hypotheses by evaluating the statistical significance of the coefficients associated with the independent variables and their effects relative to the three possible logics. For instance, for hypothesis 1, we specify the comparison case as "hybrid" and we are interested in the effects of Founding Year: < 1970 on the probability that a firm will follow a "build" logic. Thus, a positive and significant coefficient for Founding Year: < 1970 in a model predicting a "build" logic where the comparison logic is "hybrid", would provide support for Hypothesis 1.

Table 1 presents the correlation matrix, means and standard deviations for the variables. The matrix reports a correlation of (-0.41) between the ln(age) and Founding Year: >1989 and a correlation of 0.40 between Investment Stage Preference and Geographic Preference. All remaining correlations are less than 0.40. Higher levels of collinearity among the independent variables might give rise to less precise parameter estimates (generally indicated by higher standard errors) for the explanatory variables without necessarily harming them for the purposes of hypothesis testing (Belsley *et al.*, 1980: 115; Greene, 1993). Given the correlations, we examined the variation inflation factors for all the variables. The VIF values among the variables are less than 4.29 with the average equal to 2.56. These results suggest a lack of multicollinearity.

[Insert Table 1 about here]

RESULTS

Tables 2 and 3 present the results; Tables 4 and 5 provide the odds ratios associated with the results in Tables 2 and 3, respectively. In Table 2, the comparison case is “hybrid”. Models 1 and 2 present the effects of the control variables. Model 4 shows that the results are consistent with hypothesis 1. Firms founded before 1970 are more likely to follow a logic of “investing to build” over a “hybrid” logic. The coefficient associated with Founding Year: < 1970 is positive and significant. Inclusion of the Founding Year: < 1970 variable also enhances the explanatory power of the model specification relative to the specification with only the control variables, albeit marginally ($\chi^2 = 3.44$, $df = 1$, $p < .05$). The control variables provide some additional information. In models 1-4, firm size has a significant negative effect on the likelihood of a firm following a “gain” or “build” logic, suggesting that large firms may be more likely to follow a “hybrid” logic. The coefficients for investment role preference are also negative for models 1-4. One interpretation of this finding is that firms that will function as “deal originators or in deals created by others” may be more likely to follow a “hybrid” logic than a pure “gain” logic or “build” logic. In models 1 and 3 (“gain” models), the coefficient associated with a firm’s average company investment is positive and significant. These findings suggest that firms with large average company investments may be more likely to follow a “gain” logic than a “hybrid” logic. Models 1 and 3 also show that firm age has a positive and significant effect suggesting that older firms in our sample may be more likely to follow a “gain” logic over a “hybrid” logic. The remaining control variables are not significant.

Table 3 presents test results for hypotheses 2 and 3. The first set of models are used to test hypothesis 2 (models 5 & 6) and the comparison group is “build”. Hypothesis 2 predicted that firms founded during the 1970s and 1980s will be more likely to follow a “gain” logic or a

“hybrid” logic over a logic of “investing to build”. The results suggest that firms with founding years from 1970 to 1979 and from 1980 to 1989 are more likely to follow a “gain” logic over a “build” logic. The coefficients associated with Founding Year: 1970-1979 and Founding Year: 1980-1989 are positive and significant in model 5. However, the coefficients associated with these effects are negative and not significant in Model 6 (“hybrid” model). In combination, these findings provide partial support for hypothesis 2. As expected, model 6 (“hybrid”) shows a negative and significant coefficient on Founding Year: <1970. This finding is consistent with the results reported in model 4 (Table 2) and with hypothesis 1 – firms founded before 1970 are more likely to follow a “build” logic over a “hybrid” logic. Regarding the control variables, in model 5, the coefficient for firm size is negative and significant suggesting that large firms are more likely to adopt a “build” logic over a “gain” logic. The size results from Table 2 suggested that large firms would be more likely to follow a “hybrid” logic over a “build” logic (models 2 and 4). These effects are dampened when the additional founding year effects are incorporated in model 6; the coefficient associated with firm size is positive as expected but not significant. As expected, the coefficient associated with investment role preference is positive and significant in model 6; firms that “will function as deal originators or in deals created by others” may be more likely to follow a “hybrid” logic than a “build” logic. Last, the introduction of the additional founding year variables improves the fit of the model relative to models 1 and 2 ($\chi^2 = 15.78$, $df = 3$, $p < .01$) and models 3 and 4 ($\chi^2 = 12.34$, $df = 2$, $p < .01$).

Hypothesis 3 predicted that firms founded during the 1990s would be more likely to follow a “hybrid” logic or a “build” logic than a “gain” logic. The results in models 7 and 8 are consistent with this prediction; the comparison group for these models is “gain”. Both models show a positive and significant coefficient for Founding Year: >1989. Note that models 7 and 8

omit the variable “Founding Year: <1970” to avoid overspecification. Regarding the control variables, the coefficient associated with firm size is positive and significant. Consistent with our previous findings, large firms are more likely to follow a “hybrid” logic over a “gain” logic or a “build” logic over a “gain” logic. In model 8, the coefficient associated with average company investment is negative and significant; this is consistent with the results reported in models 1 and 3: firms with large average company investments may be more likely to follow a “gain” logic over a “hybrid” logic. Comparing the fit of the last two sets of models, the model set 5 & 6 enhances the explanatory power of the model relative to model set 7 and 8 ($\chi^2 = 7.66, p < .01$).

[Insert Tables 2 to 5 about here]

DISCUSSION

Taken together, our findings clearly show that VC firms operate under dual notions about entrepreneurial investing -- to both build companies in emerging industries as well as to make a profit. The results indicate that the institutional environment at the time of a firm’s entry into the VC industry plays an important role its approach to the industry -- firms founded during the early stages of the industry’s evolution are more likely to invest non-financial resources to help build entrepreneurial companies whereas firms founded in the 1970s and 1980s are less likely to follow a “build” logic. However, the “build” approach resurges in the post 1990 era. Importantly, our findings show that, post 1990, “build” and “hybrid” logics coexist and are preferred relative to a pure “gain” approach. Where this study differs from prior work on logics is that the alternative logics did not battle for dominance regarding what was an acceptable logic for the field. Instead, multiple logics consistently coexisted. Indeed, the magnitude of the coefficients associated with Founding Year: >1989 in models 7 & 8 are almost equal,

underscoring the logics' coexistence rather than their contention. Since the institutional logics did not develop in an exclusive manner, firms and actors were continually influenced by the two singular logics of "gain" or "build"; and could act within each or as a "hybrid" of the two ideologies. Thus, as the industry grew in available capital, resources and demand, new actors and forms emerged, differentiation increased, and the entire industry proliferated at an increasing rate.

How might this work inform work on strategy and entrepreneurship? For one, heterogeneity in logics may contribute to heterogeneity in the VC industry's development, such as variation in geographic patterns of development. For instance, firms utilizing "investing to build" logics may develop more localized operations – more localized to areas where entrepreneurial organizations operate. In contrast, firms using an "investing to gain" logic may be able to operate in a less localized way. These differences may affect the locating specific founding rates of new VC firms and of emerging entrepreneurial firms. Heterogeneity in logics might also generate variance in VC firms' performance. One question is whether logics would explain more of the variance in performance among VC firms as compared to factors such as industry preference, geographic preference, or the human capital of the VC firm.

Our findings also suggest implications that can be extended beyond this particular sector. Throughout the field's modern history, notions about the best philosophy for VC firms to operate under consistently have been debated by various actors in the field. It is apparent that the influx of actors and the re-distribution of "legitimate" professionals involved in raising and disbursing venture capital contributed to the development of multiple, strong institutional logics about appropriate investment strategies. We argue that these multiple institutional logics operate in a state of co-existence, shifting over time in dominance and in the practices and forms that operate

within them. It is evident that field participants have not settled on one particular strategy or overarching logic. Instead, they operate within a multiplicity of logics. As the competing logics of “investing to gain” and “investing to build” negotiate over time, our findings suggest that the field also expands in terms of legitimate forms, practices, and actors. This research represents a first step in understanding the role that institutional conditions play in a field’s development.

It is worth noting some of the limitations of this work. For one, while our quantitative analysis uses two years, a longer time span would provide more robust support for the hypotheses. Our qualitative analysis buffers this to some extent but a future direction is to expand the quantitative portion of the analysis to at least ten years, pending data availability. This approach would allow us to incorporate time-varying industry specific and field specific characteristics and allow for us to control for these dynamics more precisely. A second, and larger challenge is creating a time-varying measure of a firm’s logic. Interviews with VC firms’ founding members and partners may assist this effort however, these members keep very tight reins on information sharing and this approach might yield a retrospective bias. An alternative approach might involve identifying the funds associated with each VC firm and conducting a content analysis of each fund’s prospectus over time. Third, while we worked with industry executives to ensure that our coding for the dependent variable was legitimate, one might question the legitimacy of the logics. Our qualitative assessment and interviews with industry actors suppress this concern. Nonetheless, it might be desirable to explore alternative measures to validate our analysis, such as the prospectus approach mentioned above or examining syndicate behaviors to determine if firms that consistently co-invest are utilizing similar logics. To address the latter notion, we identified firms in our sample that were co-investors in ventures and randomly selected a subset of these firms. Our initial analysis revealed that co-investing

firms utilized similar logics, providing some validity for our logic measure. Subsequent work will explore this avenue in greater detail. Further work along these lines should help validate the findings of this study.

Moreover, understanding the logics that exist within a field has important practical implications. Whether there is a single dominant logic or multiple coexisting logics or battling logics, the logics that exist will shape the type of businesses that are likely to be funded. This may provide insights into how industries associated with a field of activity might develop and be organized over time. For instance, an entrepreneurial firm may direct their efforts at identifying VC firms with logics that most effectively fit the entrepreneurial firm's needs or may structure their activities to increase their chances of acquiring funding. Many studies on venture capitalists discuss entrepreneurs as having bad experiences with VC firms. Perhaps part of the problem is a misalignment between the logic used by the VC firm and the entrepreneur's needs. For instance, finding a VC who utilizes an "investing to gain" logic when in reality the entrepreneur would be better served with a VC firms that employs an "investing to build" logic.

In conclusion, this paper attempts to bridge work on institutional logics, organizational fields, entrepreneurship and strategy by examining how macro-environmental conditions shape the logic underlying a firm's strategy and its persistence. Expanding our understanding of logics within a context that captures multiple types of actors (e.g. VC firms, entrepreneurial firms, institutional actors (such as regulatory organizations), etc.) highlights the important role that the interactions of these actors plays in shaping firm, industry and field behavior over time. The shared systems of meaning that emerge within a field are integral to this understanding.

The extent to which each of these characteristics are relevant to the case of venture capital may vary but they all affect the industry to some degree. When we identify the

institutional logics, their evolution over time, and the ways in which they influence growth and change in the industry, the role that each plays becomes evident.

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FIGURE 1
Yearly Count of Actors in the VC Field (Investor Types), 1969-

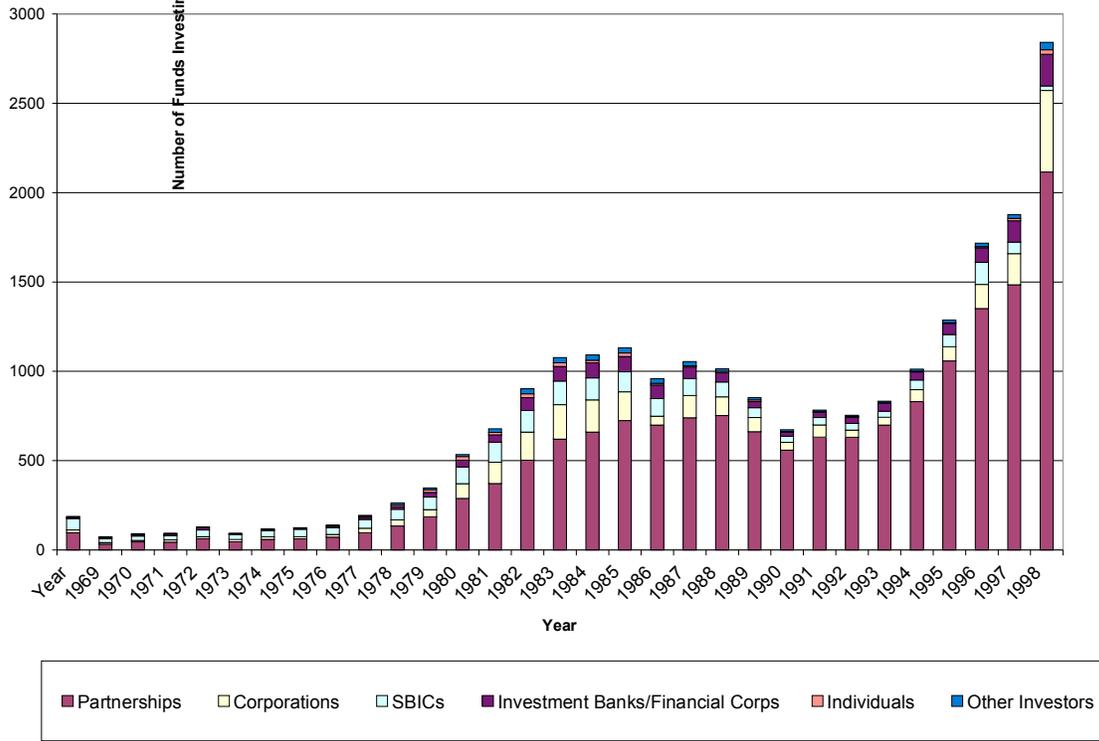


FIGURE 2
Number of investments by sector, 1969-1999

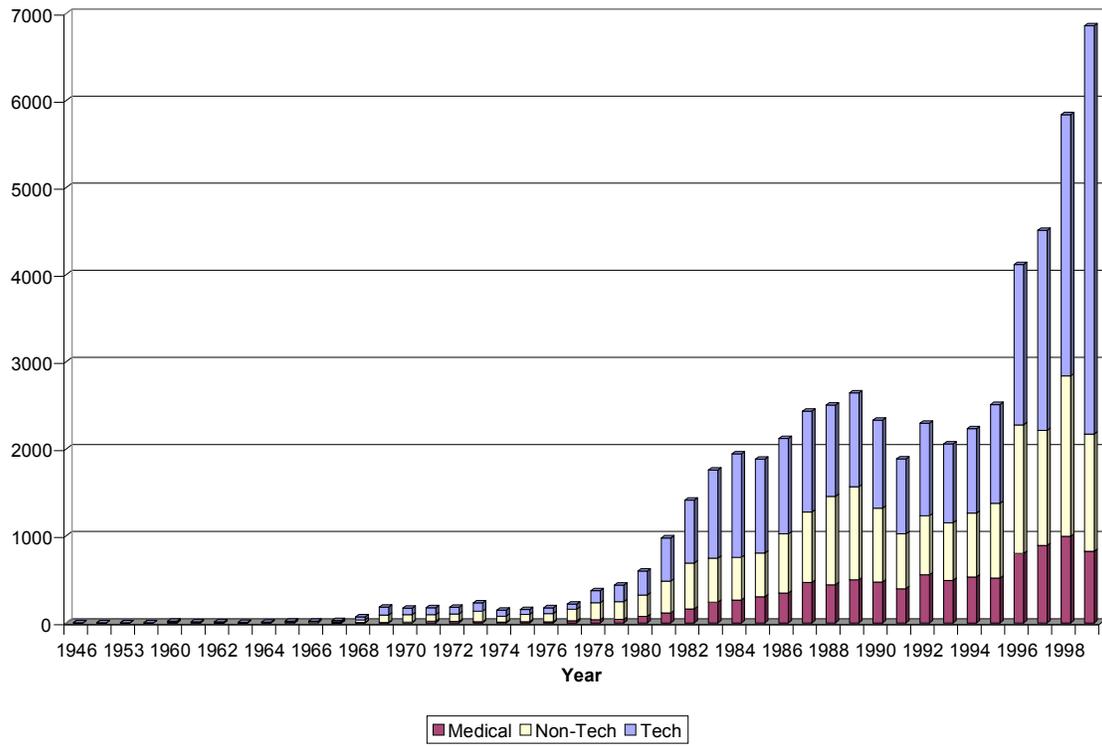


TABLE 1
Means, Standard Deviations and Correlations

	Mean	Std. Dev.	1	2	3	4	5	6
1 Logic	2.42	.78	1.0					
2 Founding Year: <1970	.02	.14	-.12	1.0				
3 Founding Year: 1970-1979	.04	.20	-.03	-.03	1.0			
4 Founding Year: 1980-1989	.23	.42	-.19	-.08	-.11	1.0		
5 Founding Year: >1989	.68	.46	.21	-.21	-.30	-.30	1.0	
6 Industry Preference: Tech/NonTech	.89	.31	-.01	.06	.03	-.03	-.02	1.0
7 Geographic Preference	3.56	2.14	-.02	-.02	.03	-.03	.03	.04
8 Investment Stage Preference	3.38	2.51	.03	-.03	-.01	-.04	.05	.002
9 Investment Role Preference	3.34	1.01	.08	-.10	-.08	-.13	.20	-.02
10 Average Company Investment (000s)	4338.62	10004.96	-.05	-.01	-.01	-.08	.08	-.07
11 # Rounds Participated In	67.69	159.68	.08	.22	.24	.15	-.33	.11
12 Ln(Size)	4.65	1.35	.22	.08	.05	.04	-.08	.01
13 Ln(Age)	2.08	.81	-.16	.31	.33	.35	-.41	.04

	7	8	9	10	11	12
7 Geographic Preference	1.0					
8 Investment Stage Preference	.40	1.0				
9 Investment Role Preference	.11	.07	1.0			
10 Average Company Investment (000s)	-.01	-.04	.0004	1.0		
11 # Rounds Participated In	.004	-.01	-.24	.01	1.0	
12 Ln(Size)	.03	.03	-.14	.24	.40	1.0
13 Ln(Age)	-.09	-.06	-.25	-.06	.37	.12

TABLE 2
Multinomial Logit Model of Investing Logic

	Control Variables <i>(Comparison=Hybrid)</i>		With Founding Years <i>(Comparison=Hybrid)</i>	
	Gain (1)	Build (2)	Gain (3)	Build (4)
Founding Year: <1970 (H1)			.98 (.93)	1.47* (.83)
Founding Year: 1970-1979				
Founding Year: 1980-1989				
Founding Year: >1990				
Industry Preference: Tech/NonTech	.06 (.45)	.13 (.42)	.06 (.45)	.14 (.42)
Geographic Preference	.04 (.08)	.07 (.07)	.04 (.08)	.07 (.07)
Investment Stage Preference	.002 (.07)	-.08 (.07)	.002 (.07)	-.08 (.07)
Investment Role Preference	-.22* (.12)	-.23** (.10)	-.21* (.12)	-.20* (.10)
Average Company Investment	.00003* * (.00001)	-1.10E-06 06 (.00002)	.00003* * (.00001)	-1.83E-06 06 (.00002)
#Rounds Participated In	-.001 (.001)	-.00005 (.0008)	-.001 (.001)	-.0004 (.001)
Ln(Size)	-.57**** (.11)	-.20** (.10)	-.55**** (.11)	-.17* (.10)
Ln(Age)	.83**** (.19)	.25 (.18)	.77*** (.19)	.16 (.19)
Pseudo R	.20		.21	
Chi Square	153.80****		157.23****	
Log Likelihood	-293.33		-291.61	
N	337		337	

*p<.1; **p<.05; ***p<.01; ****p<.0001 standard errors are in parentheses

TABLE 3
Multinomial Logit Model of Investing Logic

	<u>With Founding</u> <u>Years</u>		<u>With Founding</u> <u>Years</u>	
	<i>(Comparison=Build</i>		<i>(Comparison=Gain</i>	
	Gain	Hybrid	Build	Hybrid
	(5)	(6)	(7)	(8)
Founding Year: <1970	1.66 (1.22)	-1.79* (.98)		
Founding Year: 1970-1979 (H2: Model 5 & 6)	1.71* (1.01)	-.38 (.93)	-.56 (1.06)	-.23 (.96)
Founding Year: 1980-1989 (H2: Model 5 & 6)	1.77** (.70)	-.30 (.50)	-.66 (.67)	-.50 (.61)
Founding Year: >1989 (H3: Models 7 & 8)			.77** (.37)	.78** (.36)
Industry Preference: Tech/NonTech	.28 (.57)	-.18 (.43)	-.35 (.60)	-.44 (.51)
Geographic Preference	-.03 (.09)	-.07 (.07)	.03 (.09)	-.04 (.08)
Investment Stage Preference	.11 (.09)	.08 (.07)	-.11 (.09)	-.03 (.07)
Investment Role Preference	.08 (.15)	.19* (.11)	-.12 (.16)	.10 (.15)
Average Company Investment	.00003 (.00002)	2.23E- 06 (.00002)	-.00003 (.00003)	-.00003* (.00001)
#Rounds Participated In	-.002 (.001)	.0004 (.001)	.002 (.001)	.002 (.001)
Ln(Size)	-.27** (.13)	.16 (.11)	.25* (.15)	.45*** (.13)
Ln(Age)	-.20 (.39)	-.03 (.28)	-.08 (.29)	-.38 (.26)
Pseudo R	.23		.22	
Chi Square	169.58****		161.92****	
Log Likelihood	-285.44		-289.27	
N	337		337	

*p<.1; **p<.05; ***p<.01; ****p<.0001; standard errors are in parentheses

TABLE 4
Odds Ratios for TABLE 2

	Control Variables <i>(Comparison=Hybrid)</i>		With Founding Years <i>(Comparison=Hybrid)</i>	
	Gain (1)	Build (2)	Gain (3)	Build (4)
Founding Year: <1970 (H1)			2.66	4.35
			166.45	334.92
Founding Year: 1970-1979				
Founding Year: 1980-1989				
Founding Year: >1990				
Industry Preference: Tech/NonTech	1.06	1.14	2.89	1.15
	6.18	13.88	188.64	15.03
Geographic Preference	1.04	1.07	1.04	1.07
	4.08	7.25	4.08	7.25
Investment Stage Preference	1.00	.92	1.00	.92
	.20	-7.69	.20	-7.69
Investment Role Preference	1.25	.79	1.23	.82
	24.61	-20.55	23.37	-18.13
Average Company Investment	1.00	-1.10E-	1.00	-1.83E-
	0.00	06	0.00	06
		(.00002)		(.00002)
#Rounds Participated In	1.00	1.00	1.00	1.00
	-.10	-0.00	-.10	.04
Ln(Size)	.57	1.22	.58	.84
	-43.45	22.14	-42.31	-15.63
Ln(Age)	2.29	1.28	2.16	1.17
	129.33	28.40	115.98	17.35

TABLE 5
Odds Ratios for Table 3

	<u>With Founding</u> <u>Years</u> (Comparison=Build)		<u>With Founding</u> <u>Years</u> (Comparison=Gain)	
	Gain (5)	Hybrid (6)	Build (7)	Hybrid (8)
Founding Year: <1970	5.26 425	.17 -83.3		
Founding Year: 1970-1979 (H2: Model 5 & 6)	5.53 453	.68 31.61	.57 -208.23	.79 20.55
Founding Year: 1980-1989 (H2: Model 5 & 6)	5.87 487.07	1.35 34.99	.52 -48.31	.61 -39.35
Founding Year: >1989 (H3: Models 7 & 8)			2.16 115.98	2.18 118.15
Industry Preference: Tech/NonTech	3.74 274.34	.84 -16.47	.70 -29.53	.64 -35.60
Geographic Preference	.97 -3.00	.93 -6.76	1.03 3.05	.96 -3.92
Investment Stage Preference	1.12 11.63	1.08 8.33	.9 -10.42	.97 -2.96
Investment Role Preference	1.08 8.33	1.21 20.92	.89 -11.31	1.11 10.52
Average Company Investment	1.0 0.00	2.23E- 06	1.0 -0.00	1.0 -0.00
		(.00002)		
#Rounds Participated In	1.00 -.20	1.00 .04	1.00 .20	1.00 .20
Ln(Size)	1.31 31.00	1.17 17.35	1.28 28.40	1.57 56.83
Ln(Age)	.82 -18.13	.97 -2.96	.92 -7.69	.68 -31.61