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An ergodic theory of venture capital solicitation

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Abstract

The temporal series of financial commitments elicited from venture capitalists (VCs) are assumed to have the characteristics of random variables. It is shown that the aggregate capital commitment secured by an entrepreneur in a finite time has stochastic properties corresponding to those of a renewal process. The paper derives the limiting conditions on the probability that a project will be aborted because of the entrepreneur's inability to secure adequate funding commitments in a finite time. The collective attitude towards risk of the entrepreneurial group will determine the tradeoff between the expected aggregate capital commitment and the risk of abortion of the project.

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There would be few enterprises of great labor or hazard undertaken, if we had not the power of magnifying the advantages which we persuade ourselves to expect from them. Samuel Johnson, LLD. Rambler No. 2.

1. Prolegomenon

The germination of corporate vitality via venture capital is growing rapidly. By the end of Year 2001, companies financed with venture capital since the 1970s accounted for 5.9% of the jobs in the United States and 13.1% of U.S. gross domestic product in year 2000.[1]

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[1] National Venture Capital Association (2001).

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From 1980 to 2001, the aggregate venture capital commitments have grown exponentially at a compound annual rate of 15.1%! Fig. 1 in this paper displays a histogram that vividly illustrates the annual increases in commitments during that 19-year period.[2]

These statistics, as well as others that can be adduced, evidence the tremendous impact that venture capital has had on employment and revenue generation in the United States during the past 30 years. "Given that venture capital was less than one percent of U.S. investment activity during most of the period studied, its impact is remarkable."[3]

In view of the growing significance of the venture capital industry in the United States, it is odd that so little attention has been given to the development of a formal theory of entrepreneurial behavior in the venture capital solicitation process. There is a large body of literature describing the attitudes and the investment behavior of the venture capitalists (VCs).[4] There are empirical studies documenting the realized rates-of-return to the VCs employing different exit strategies.[5] There is an abundant supply of how-to-do-it books and articles dispensing practical guidance to entrepreneurs seeking financing.[6] There are books and articles describing the financial contracting process.[7] This author has not found any general theory purporting to analyze the properties of the funding solicitation events. The lacuna is confirmed by a very recently published paper, wherein the author commented "...though entrepreneurial firms are a pivotal source of new employment in Europe, the entrepreneur's perspective on capital acquisition is rarely discussed in the literature."[8] That author conducted a case study, consisting mainly of interviews with successful entrepreneurs. However, without a rigorous theory of the solicitation process, the statistics yielded by the data collected might "yield only a few banalities."[9]

This paper establishes a template for a theory of the venture capital funding by focusing attention on the activities of the entrepreneur at the incipiency of the investment process, namely, the solicitation event.

A "solicitation event" is a series of activities wherein the entrepreneur (or the entrepreneurial group) searches for a VC to solicit, proposes an investment to a VC, and elicits a financial commitment or, more frequently, a rejection. A series of such events constitutes the solicitation process. This way of describing a solicitation event makes it possible to characterize it as a binary-valued variable; that is, the entrepreneur either secures a financial commitment or he does not.

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[2] A referee has commented that the massive buildup in VC capital commitments illustrated in Fig. 1 may include leveraged buyouts. Examples of these are large public companies such as Safeway, RJR Nabisco, and Beatrice in the 1980s. An article by Prowse (1998) does not disaggregate the venture equity commitments from the buyouts, but he observes that public companies "often issue a combination of debt and private equity to finance their management or leveraged buyout." Prowse estimates that "between the mid and late 1980s such transactions absorbed most new nonventure private equity capital."

[3] Ibid.

[4] See, for example, Ehrlich, DeNoble, Moore, and Weaver (1994), Gorman and Sahlman (1989), Haar, Starr, and MacMillan (1988), and Mason and Harrison (1995). For a recently published description of venture capitalism, written by a well-informed participant in the supply side of the financing process, see Zider (1998).

[5] See Barry, Muscarella, Peavey, and Vetsuypens (1990).

[6] An especially well-known how-to-do-it book is Pratt (1993).

[7] A general recent survey is Hart (2001). A much more focused description of financial contracting in the venture capital industry is Sahlman (1988).

[8] See Saetre (2003).

[9] See Miles and Huberman (1995).