HOW DO VENTURE CAPITALISTS RANK POTENTIAL INVESTMENTS? THE ROLE OF GOVERNMENT INCENTIVES

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Introduction

In the United States, economic development programs have been used and analyzed for more than 90 years (Rasmussen [20]). These programs have focused both upon urban and rural areas and have proliferated to the point that comprehensive periodic overviews and state by state guides to business incentives have been published (National Association of State Development Agencies [18]; United States Department of Commerce [30]). The result has been a competitive marketing effort to attract both new and existing business firms by every state in the union. These efforts focus on differentiating the state in the minds of investors and executives who may bring businesses, money, and jobs into the state.

There are many ways that a state can differentiate its business climate. All of these efforts are similar to adjustments business firms make in their marketing mix. In its efforts to meet the needs of target business firms, a state has to make strategic marketing decisions. It can concentrate on attracting corporations that currently are conducting their business in other states, assisting business firms currently operating in the state so such firms may continue to operate and expand employment, and encouraging the formation of new firms.

This paper will focus on the last two strategies, specifically those that involve fostering entrepreneurship. These strategies use marketing techniques to adjust the marketing mix of a state to attract venture capital for new and growing firms. Proponents of economic development frequently have stressed that entrepreneurship is one of the primary facets through which economic development can be achieved (Friedman [7]). Economic development and entrepreneurship have been found to be interrelated; more than two-thirds of all new jobs are created by small business firms (Wortman [33]). Small business and self-employed entrepreneurs provide 56 percent of the U.S. private jobs and proportionately more employment for women and minorities than larger businesses (Small Business Administration [27]). Small firms also have

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been found to be more likely than large firms to hire the unemployed and to create part-time jobs (Small Business Administration [26]).

Within the U.S., there is increasing programmatic activity by state governments to foster economic development, often actively encouraging entrepreneurship. This study focuses upon strategies used by states and the effects of these strategies on the market of venture capitalists. One useful approach to thinking about these strategies is with respect to their emphasis on the traditional four P's of marketing. State policy makers rarely may think of themselves as marketing their state to venture capitalists; nonetheless, they are doing so and have been since efforts to attract capital began.

The most obvious element of the marketing mix to emphasize is the distinguishing feature of *place*, which in the past was the usual approach. The place element is well defined by state boundary lines; in the past each state simply pointed out the desirability of their specific location as a site for the potential business firm. Industrial customers who were sophisticated and profit-motivated moved their businesses to naturally attractive, convenient, and economically appealing areas.

As competition for business firms began to heat up, states turned to *promotion* as the key element of the marketing mix. States (and even communities) began to spend increasingly larger amounts on promotional activities to lure a company from other states (or communities).

The states that did not rank high on place factors turned to the two remaining elements of the marketing mix (*product* and *price*) to become more competitive (Moes [13, 14]; Morgan and Hackbart [16]; Wolkoff [32]; Baum [3]). Price changes occurred mostly in the area of tax and financial incentives (Figure 1).

Differentiating the *product* for states also has taken many forms, as illustrated by the special incentive, issue-specific program, and nonfinancial assistance classifications of Figure 1. The product that each state has to offer commonly is called the state's *business climate* by economic development professionals. Kotler [12] defines the product as "anything that can be offered to a market for attention, acquisition, use, or consumption that might satisfy a want or need." Kotler recognizes that product consists of the bundle of benefits as well as more tangible features.

There are many ways to adjust the price and product variables of the marketing mix to make a state more attractive for economic development. Fortunately, experimental designs can be used to investigate the trade-offs that occur when businesspersons consider benefits offered by different combinations of the product and price elements made by a state. This article is the first empirical effort to

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assess the use of a state's marketing mix in economic development efforts.

Objective

The objective of this study is to assess the trade-off venture capitalists use in evaluating potential investment.

The five attributes or elements of a state's product/price marketing mix chosen for investigation were:

1. Firm management. Previous secondary research conducted by Dun & Bradstreet and the Small Business Administration indicated that the presence of competent management is critical to the success of a business.

2. Location. One of the major objectives of this study was to determine the relative influence of location, *ceteris paribus*, and what can be done to overcome the influence of location. The sponsors of this study were interested in Nebraska, in particular, so Nebraska was compared to other states in which investors usually do business. The selection of Nebraska as one of the levels of locations was nonetheless fortuitous, as Nebraska attracts little venture capital and has few new or high growth firms. For example, Nebraska was one of only five states receiving an F grade on the 1988 business vitality report card published by the Corporation for Enterprise Development. This index ranked Nebraska 37th on the basis of the competitiveness of existing businesses and 44th on entrepreneurial energy involved in starting new firms and engaged in high growth companies. The other location alternative was the usual state in which the subject invested. Thus, there should be a substantial difference between the two levels of location.

3. Availability of state coinvested funds. Coinvestment by states in venture capital projects is becoming a frequently used tool to attract capital.

4. Tax incentives. Tax reductions are frequently available for new and growing firms in the form of tax exclusions, tax credits, or tax forgiveness.

5. Management and supervisory time (what the venture capital firm must spend with the business it funds). This variable was selected because telephone and personal interviews with several active venture capitalists revealed that they were busy and disliked frequent traveling.

The relative influence of these factors, each of which is used or emphasized in varying degrees by states, was systematically investigated. A sample of venture capitalists was asked to rate a set of simulated proposals, each of which had various levels of the above five factors. In this way, the attractiveness of each factor to venture capitalists could be assessed.

States in general use factors three or four almost exclusively; thus, competition among states seems to center around price. This may be the ideal marketing strategy, but the other elements of the marketing mix have been ignored. Their effectiveness in attracting capital has not been tested. The relative value of such strategies is of particular interest to policy makers, venture capitalists, those with stakes in community development, and taxpayers.

Method

Two methods were used to investigate the importance of various factors in the decisions of venture capitalists: open-ended questions and conjoint analysis.

Conjoint Analysis

To ascertain the importance of various factors in the decisions of venture capitalists, conjoint analysis was used. This method has been researched and used in the marketing literature (Green and Srinivasan [9], Green, et al., [10], Catlin and Wittink [5]) as a means of estimating parameters associated with buyer decisions in consumer and industrial markets. A brief explanation of the technique is provided here because of its unfamiliarity in the context of economic development and public policy.

An experiment conducted as a conjoint analysis design presents each subject with a series of alternative products, concepts, or other options. Each alternative has been described in terms of a set of attributes. The task of the subject is to make choices among, or ratings of, the alternatives.

The alternatives have been designed to reflect various levels of the attributes. For example, if there are five attributes, each with two levels, a complete design would consist of 32 alternatives (2x2x2x2x2). Each subject would rate or rank all 32 alternatives for overall attractiveness. In practice, most designs are not complete; the number of alternatives to be rated would exhaust the patience or cognitive capacity of the subjects. Instead, some fraction of the complete design is assessed, usually with a fractional factorial design. To use a fractional factorial, one must be willing to assume the nonexistence of some of the interactions among attributes. If these assumptions are reasonable, estimates of the extent to which each attribute affects a subject's choice will be unbiased.

The results of a conjoint analysis are solutions to the equation:

$$x_{ij} = a_{i1} + a_{i2} + a_{i3} + a_{i4}, \ldots,$$

where x_{ij} represents the rating or ranking of alternative j by subject i or some monotonic transformation of the rating or ranking. The parameters labelled *a* are called part-worths or utilities of the levels of the attributes 1, 2, 3, 4, etc. chosen for alternative j. By convention, the sum of the utilities across levels of an attribute is set to zero (or some other constant) for individual i. The variance or range of these utilities across levels for a given attribute is the relative importance of that attribute to individual i.

In new product design (Urban and Hauser [29]), the alternatives would be potential new products. A sample of subjects from the population of potential buyers would rate some set of new products (usually conceptually produced descriptions), each with various levels of some set of attributes. Utilities would be solved for each level of each attribute for each subject.

Average utilities across subjects provide useful information regarding the importance of each attribute and suggest the sort of tradeoffs buyers make in the real marketplace. The utilities could be used to simulate a competitive marketplace, containing products already on the market as well as potential new products. New products that do well against competition in these simulations and are technically feasible are candidates for development.

Conjoint analysis has been used widely in such applications over the last two decades (Catlin and Wittink [5]). There are many variations in design approaches, data collection methods, and analysis algorithms (for example, Shocker and Srinivasan [23], Wittink and Catlin [31], Segal [22], Green [8]). There is evidence that conjoint analysis is superior to self-explicated ratings of importance (Akaah and Korgaonkaar [1]).

Conjoint analysis seems an appropriate choice to investigate the motivating qualities of various public policy actions and environmental conditions in the attraction of investment capital. First, because conjoint analysis constitutes an experimental design (within-subjects in this case), many threats to internal validity are controlled (Cook and Campbell [6]). That is, it is relatively sure that a given attribute is responsible to a given degree for an overall rating—more so than with a nonexperimental method that did not control the levels of the attributes.

Second, the venture capitalists are asked to evaluate a proposal globally, and the utilities they hold for each level of each attribute are decomposed from the global ratings. Global ratings of interest in proposals are tasks with which venture capitalists are intimately familiar. An alternative route to information about the relative influence of each attribute would be to ask the subjects for direct ratings of the importance of each attribute. In addition to the fact that such ratings

may be influenced by the social desirability of certain answers, the task of direct ratings lacks the context and concreteness of the real world task.

Design

The five attributes investigated are recapitulated in Table 1, along with the definitions provided to the subjects. A fractional factorial design was used to select a set of 16 conceptual proposals from among the 96 possible proposals (2x2x3x4x2). Five such sets of 16 proposals were generated by varying the modular arithmetic underlying fractional factorial designs. Each venture capital firm randomly was assigned one of the five sets of 16 conceptual proposals.

An example of a conceptual proposal would be a scenario involving a proposal from inexperienced management, in a state in which you usually do business, with no chance of state coinvestment, ten year tax forgiveness, and in which the principals wish your full assistance in running the business. The 16 proposals were presented to the subjects in tabular form, five attributes by 16 proposals. The subjects were instructed to assume that the industry in question in each proposal was one in which they wished to invest and that all other aspects of the proposal not mentioned were approximately equivalent to proposals in which they would be likely to invest.

An overall rating of the likelihood of seriously considering each of the 16 proposals was requested. The rating scale used five points, with the anchor for one being *not likely*, and the anchor for five being *very likely*. These ratings constituted the last task of a five page questionnaire covering a number of investment issues.

Sample

The survey instrument was mailed to all 905 venture capital firms listed in *Pratt's Guide to Venture Capital Sources* (Morris [17]). The *Pratt's Guide* is considered the standard for the venture capital industry and is the most comprehensive list of venture capital firms available. The 905 firms surveyed constitute virtually a population of American venture capital firms, rather than the statistical sample usually drawn for surveys.

One month after mailing, a second mailing was made to all nonrespondents. Three hundred forty-five surveys were returned from the first and second mailings, a 38 percent rate of return. This is a good rate of return for a voluntary survey of businesspersons. The group of firms that returned questionnaires was compared to the entire population of firms in *Pratt's Guide* with respect to their distribution by

the 40 states of the union from which the firms came. No significant difference was found (chi-square=19.8, d.f. = 39, p greater than .05), indicating that firms returning questionnaires were geographically similar to those not returning them.

Results

Conjoint Analysis

Table 1 shows the mean utilities for each level of each attribute. These values represent the average adjustment, positive or negative, from the mean value on the five point rating scale of likelihood of considering a proposal. This mean value was 2.48, or slightly toward the not likely end of the scale. Two proposals that were otherwise equal with the exception of managerial expertise, for example, usually would obtain different ratings. A proposal with proven management should be rated about 1.6 points higher (.809 + .809) on the five point scale than a proposal with inexperienced management.

Such a difference would be meaningful in terms of the choices made by a venture capitalist. The smaller utilities for coinvestment, tax incentives, services required, and location indicate lesser influence on preference. A good probability of coinvestment (for example 40 percent—high by competitive standards that exist in most states) has a utility of .533. This is the second most powerful influence on choice.

Attractive levels of tax incentives, however, have less influence. Ten year tax forgiveness, for example, has a utility of only .164. This is somewhat more attractive than the least attractive level of tax incentive, a one time exclusion (utility = -.139, or about .3 scale points lower than ten year forgiveness). A no-tax-incentives-at-all category was not included as a level of the tax incentives attribute in the conjoint design. Had it been, tax incentives may have appeared more influential. Given the relatively small advantage offered by a one time exclusion, however, it seems unlikely that tax incentives are more influential than the results indicate.

Requiring full services of a venture capitalist depresses attractiveness by .25 rating points (from .124 to -.124 on a five point scale) from the more likely level of *some services*. Requiring no services at all is rare. Finally, location appears to have some influence. Moving a proposal from a state with currently poor ratings for business climate and relatively far from major population, industrial, and recreation centers (Nebraska) to the usual state in which the venture capitalist does business raises the attractiveness of the proposal about .54 rating points.

The strong influence of managerial expertise is clear. As an example, consider two proposals, both from the state in which the venture capitalist usually does business. One proposal, from experienced management, but with all other attributes at their worst levels (no chance of state coinvestment, only a one year tax exclusion, and full services required) has a sum of utilities equal to .503. This first proposal will be more attractive than a proposal from inexperienced management with all other attributes at their best levels (sum of utilities = 0.281).

The results do not indicate that attributes other than managerial expertise play no role. The differences between competing proposals may be small with respect to management and other factors. In such a case, state coinvestment, in particular, could compensate somewhat for mediocre management.

Other Results

Further results from the study broadly corroborate the results of the conjoint analysis. Table 2 shows responses to a three part question in the questionnaire concerning the relative values of various incentives to invest. In response to the first part of the question, 45.4 percent of the respondents stated that the presence of state economic incentives would cause them to consider investing in a place they otherwise would not. This question should be interpreted as a location/incentive trade-off. The result is not inconsistent with the results from the conjoint analysis; a good package of coinvestment or tax incentives easily could overwhelm a less desirable location for many venture capitalists, all other things equal.

The third part of the question is open-ended and was asked only of venture capitalists who were unresponsive to state economic incentives. Among these 54.6 percent, the responses falling under the develop-and-attract-entrepreneurs-and-top-managers category are more numerous than any other. This category includes primarily comments on education of entrepreneurs and close interaction with educational resources, mainly university resources.

Although this category is not identical to the managerial expertise attribute in the conjoint analysis, it nonetheless refers in spirit to the importance of people resources. The way the third part of the question was asked, the natural frame for the answer would have been to respond with actions states are historically likely to take—infrastructure improvements, for example. The fact that so many of the subjects responded with a less traditional answer—developing people—is noteworthy.

Many open-ended responses referred to the importance of managerial expertise. Among the responses was this: "Decisions on investment are not made based on the state the venture is in. They are made first on the skills of the management team, second on the market opportunity, third on the price, and fourth on the technology."

Limitations

One possible limitation to the generalizability of this study is the way in which the levels of the attributes were chosen and expressed. This is a common threat to studies employing conjoint analysis. Stating the managerial expertise attribute levels as extreme cases (inexperienced versus proven) may have caused subjects to pay more attention to this attribute than other attributes in making overall ratings. Other attributes, however, also had levels stated in the extreme. In particular, the tax incentive attribute had the ten year tax forgiveness level, chosen to represent an extreme case.

Nonetheless, it must be admitted that the construction of the attribute levels in the conjoint analysis may have given the management attribute more apparent utility than it deserves. An intermediate level of managerial expertise (such as a somewhat experienced category) could have been used, reflecting a likely characteristic of many proposals. If so, the utility difference between this intermediate level and the proven management level still might have been at least as much as the differences between the lowest and highest levels of some of the government incentive attributes. Were this to have occurred, it would have indicated that managerial experience was important, but insufficient to overwhelm government incentives.

As discussed before, other responses in the survey lend credence to the notion that managerial expertise is a factor of importance at least equal to typical ranges of government incentives to venture capitalists. For example, assume the mean utility of an intermediate level of managerial expertise was 0.0—halfway between inexperienced and proven. This would make the importance of the usual range of managerial expertise about .809 [proven (.809) minus intermediate (0)]. Now, the usual range of government incentive variables—likelihood of state coinvestment and tax incentives—is covered by the levels of the two attributes represented in Table 1. Their importances—utility of the most desired level minus the utility of the least desired level—are .845 and .303, respectively. Including an intermediate level of managerial expertise probably would not have changed the conclusions much— managerial expertise is at least as important as government incentives, possibly more important.

Discussion

The results indicate that financial incentives commonly employed by states are less powerful than proven management in attracting venture capital. Both tax incentives (the easiest form of financial incentives to implement) and state coinvestment count less than the quality of management. Yet tax incentives (and, to some extent, state coinvestment) constitute the primary tools used for competitive advantage by state governments.

All 50 states use some form of direct financial incentive to encourage economic development. Thirteen states and the District of Columbia have begun to use coinvestment in the form of state-funded or chartered equity/venture capital corporations. These states are Connecticut, Indiana, Iowa, Kansas, Louisiana, Maine, Maryland, Massachusetts, Montana, Nebraska, New Mexico, New York, and Wisconsin. Although all states have some form of tax incentives, only three (Massachusetts, Montana, and Kansas) are using tax incentives for venture capital firms. Management assistance programs have focused on small business development centers which usually are funded by the Small Business Administration. Thus, the individual states concentrate on tax incentives and direct financial incentives to encourage economic development. Most of these incentives have been designed to entice an out-of-state firm to relocate. This strategy of development (often called *smokestack chasing*) can be traced to Mississippi which in 1936 passed legislation to lure industry to the state via direct financial inducements and state and local tax incentives.

Lowering prices through financial and tax incentives to business firms may stimulate a price war among states. This is what has occurred among the states; tax incentives and state coinvestment programs have been used to draw business and capital. Yet, price cutting as an overall strategy easily is imitated and confers no long-term advantage without sustainable cost advantages (Porter [19]). It is doubtful that the states have cost advantages that were not taken into account by the tax structure before competition among the states developed. Differentiation along some lines other than price may be desirable for states.

The focus of new development efforts is shifting from luring manufacturing plants to cultivating in-state entrepreneurs and businesses. The findings of this study indicate that the process should include activities that will enhance the skills and experience of management and labor. This may be accomplished by improving education, more retraining, stimulating entrepreneurship, and creating a more favorable environment that will attract experienced management to the state. An essential subsequent step would be program

evaluation, focussed on whether the pool of experienced management has grown and drawn more venture capital. Using this strategy, state governments should see large, long-run returns from investing in research and development efforts, technical transfer programs that emphasize the commercial use of scientific research, education and retraining programs, increased access to capital, improvements in the infrastructure, and a healthy and attractive environment. Such an approach encourages innovation and entrepreneurship. It also should give the American economy a better standing in the dynamic and competitive global marketplace.

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Table 1
Mean Utilities for Attributes

Attribute		Levels	Mean Utility	p > .05
Manager	a.	Proven	0.809	
Expertise	b.	Inexperienced	-0.809	
State	c.	No chance	-0.312	
Coinvestment	d.	20 percent chance	-0.221	
	e.	40 percent chance	0.533	m
State	f.	Nebraska	-0.269	
	g.	Your usual state	0.269	
Services	h.	Some	0.124	
Required	i.	Full	-0.124	
Tax	j.	one time tax exclusion	-0.139	
Incentives	k.	ten year unsalable credit	-0.047	
	l.	ten year salable credit	0.022	m
	m.	ten year tax forgiveness	0.164	e, l

* The last column of the table indicates attribute levels that were not significantly different from the level in the row indicated at the .05 level of significance. For example, the mean utility for 50 percent chance of state coinvestment is not significantly different from the mean utility for ten year tax forgiveness. Unless noted in this column, all other means are significantly different at the .05 level. It should be noted that almost 30 percent of the population of venture capital firms is represented here; statistical tests such as these that assume infinite populations are conservative.

Table 2

Responses to the question: "Many states and cities are offering programs designed to invigorate their business climates and to promote growth. Would the existence of such economic incentives be enough to encourage your firm to invest in a location you would not otherwise consider, presuming the existence of otherwise comparable investment proposals?"

YES: 45.4 percent   NO: 54.6 percent   (n=324)

"If "NO," what should the states be doing to create an atmosphere conducive to venture capital participation?" (multiple responses possible)

(n=177)	Frequency	Percent
Develop and attract entrepreneurs and top managers	80	45
Make infrastructure improvements	79	45
State coinvestment of some sort	65	37
Establish business incubators	57	32
Establish money incubators for venture firms	55	31
Recruit businesses to strengthen economy	29	16
Advertise strengths and successes	28	16
Target best avenues of development	19	11
Technology transfer with university	14	8

If "YES," which economic incentives are most important? (multiple responses possible).

(n=147)	Frequency	Percent
Tax policy incentives	123	84
SBIR grants	81	55
SBA loan guarantees	74	50
Fiscal policy incentives	70	48
Various government guarantees	63	43
Other	63	43

Figure 1
Alternative Incentives to Achieve Economic Development

I. Financial Incentives
   A. Direct State Loans
   B. Loan Guarantees
   C. Industrial Development Bonds
   D. Grants
   E. Venture Capital
   F. State Coinvestment

II. Tax Incentives
   A. Exemptions
   B. Deductions
   C. Tax Credits
   D. Abatement

III. Special Incentives
   A. Enterprise Zones
   B. Development Credit Corporations
   C. Employment and Training

IV. Issue-Specific Programs
   A. Export Promotion
   B. Small Business Development
   C. High Technology Development
   D. Other Development

V. Nonfinancial Assistance
   A. Business Consulting
   B. Licensing, Regulation, and Permitting
   C. Research and Development
   D. Specialty Services
   E. Business Councils and Economic Development Corporations