

汪 洋 / 著

THE RESEARCH
ABOUT STAGE CHOICE BEHAVIOR
OF VENTURE CAPITAL IN CHINA

中国风险投资 阶段选择行为研究



基于默会知识视角

BASED ON THE TACIT
KNOWLEDGE PERSPECTIVE



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——基于默会知识视角

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摘 要

自 20 世纪 80 年代开始，投资阶段分化成为美国风险投资机构异质化发展的重要特征之一。随后，阶段选择现象在不同国家风险投资发展过程中也都有所呈现。中国引入风险投资制度之后，偏好后期阶段项目投资的特征较为突出。已有研究表明，阶段选择会对被投资企业产生实质性影响。因此，理解阶段选择的形成机制和影响因素具有现实意义。针对阶段选择现象，理论界从微观和宏观两个层面进行了研究。但是，目前的相关研究存在设计缺陷和结论冲突问题。近年来有研究表明，默会知识可以为行为研究提供理论分析来源。结合目前研究现状，从默会知识的角度对风险投资阶段选择行为进行进一步的研究，便成为一个顺理成章的想法。

本书研究目标主要在于以下方面：①厘清在不确定环境中默会知识影响决策行为的作用机制；②在微观层面验证默会知识对风险投资阶段选择的影响；③在宏观层面验证影响默会知识的宏观因素对风险投资阶段选择的影响。

本书第一部分是默会知识影响风险投资阶段选择的机制研究。

该部分首先从经济环境与学术发展阶段、显著性特征以及对经济理论价值的影响三个角度，论证了本书采用主体异质性假设作为理论前提的合理性。

其次，以语境与视角为线索，对不确定性的现有研究结论进行分类分析，得出结论：本书谈及的不确定性是决策语境下全面视角的不确定性，它由主体内在异质性（内生不确定性）和外环境差异（外生不确定性）共同产生和决定。

再次，进行风险投资决策机制研究。理性程度是决定风险投资家（决策团队）内生不确定性的主要因素。理性程度高的风险投资家（决策团队）更可能选择完全理性模型，导致用以筛选项目的满意水平设置非常高（极值）；理性程度低的风险投资家（决策团队）更可能选择有限理性模型，导致用以筛选项目的满意水平设置较低（满意值）。但是，无论使用哪种决策模型，其决策的最终目的都是要在主体内在条件约束下获取最优投资回报。决策结果将是一个均衡解，即在项目阶段特征所决定的外生不确定性，与决策主体理性程度所决定的内生不确定性相匹配时，停止搜寻，产生决策结果。

最后，对默会知识及其影响路径进行研究。通过将默会知识与不确定性相联系，笔者对默会知识的度量体系进行了拓展，包括专业经历、结果反馈、背景文化相似性、背景文化开放性，以及先天理解能力。

默会知识的增加将提高决策主体的理性程度，进而引发所使用决策模型的更换，以至于决策主体会设定更高的满意水平。阶段越靠前，则风险投资家（决策团队）需要考虑花费更多搜寻成本的项目。一旦阶段更加靠前的项目成为拟投资的目标，则意

意味着外在不确定性增加。面对更高的不确定性，决策者需要更高的理性程度予以应对。只有当外在不确定性的增加，刚好与新的理性程度所决定的内在不确定性再次匹配时，搜寻结束，阶段选择行为完成，形成新的均衡解。

默会知识影响阶段选择的具体路径包括：微观层面，默会知识直接影响首次投资选择和整体投资策略，同时，默会知识也通过首次投资选择间接影响整体投资策略；宏观层面，宏观因素通过影响决策主体的专业经历和背景文化，影响区域风险投资的行为特征。

本书第二部分是关于风险投资阶段选择的现状描述，以及对阶段选择行为在我国是否产生实质性影响的检验。

通过定量分析可以看出：首先，我国风险投资存在明显的阶段选择分化现象，不同年份间阶段选择的总体偏好有波动，但没有出现特别显著的规律性；其次，我国不同地区间的阶段选择区别较大，各地区不同年份间的阶段选择的稳定性也有较大不同；再次，国外风险投资也存在明显的阶段选择分化，国内外风险投资阶段选择总体偏好的波动没有同步性；最后，2010~2013年，国外风险投资选择早期阶段项目的投资比例要高于国内。

实证检验结果表明，风险投资阶段选择行为对被投资企业会产生实质性的影响，具体表现为：①在有风险投资参与的子样本中，风险投资进入风险企业的时间越早，则越能促进风险企业进行更多的研发投入，显著提升风险企业的成长性，显著提升企业的获利能力；②在包括没有风险投资参与的全样本中，风险投资在企业后期阶段进入，企业的成长性比没有风险投资参与的企业更差，企业的获利能力与没有风险投资参与的企业相差无几；

③风险投资选择在风险企业后期阶段进入，导致助推作用下降，乃至产生一定的副作用，这降低了风险投资总体的助推经济的效果。

本书第三部分是在微观层面上检验默会知识对风险投资阶段选择的影响。

默会知识影响首次投资阶段选择的检验结果表明，决策团队进入风险投资机构之前形成的默会知识中：①创业经历越多，首次投资选择早期阶段项目或者早期阶段 A 轮项目的概率越大；②研发经历越多，异地投资时首次投资选择早期阶段项目或者早期阶段 A 轮项目的概率越小，而同城投资时首次投资选择早期阶段项目或者早期阶段 A 轮项目的概率越大；③海外发达地区工作经历越多，首次投资选择早期阶段项目或者早期阶段 A 轮项目的概率越大；④金融工作经历越多，首次投资选择早期阶段项目或者早期阶段 A 轮项目的概率越小；⑤同城投资与异地投资相比，首次投资选择早期阶段项目或者早期阶段 A 轮项目的概率更大；⑥默会知识比明述知识对首次投资阶段选择的影响更显著。

默会知识影响后续总体投资策略的检验结果表明：①首次投资选择对后续总体投资策略有显著影响；②首次投资成功公开募股将吸引投资机构投资阶段后期；③经过一定投资次数的积累，“干中学”形成的默会知识将有助于后续总体投资策略偏向早期阶段项目投资；④研发经历对后续总体投资中的早期阶段项目投资占比有显著的正面影响；⑤进入风险投资机构之前的专业经历对后续总体投资策略有影响，但显著性下降；⑥经管类教育背景对总体投资策略影响的显著性有所上升。

本书第四部分是在宏观层面检验默会知识对风险投资阶段选择的影响。

理论分析表明，区域产业结构会对其区域中的风险投资家或者潜在的风险投资家，进入机构之前和之后的默会知识形成产生影响；区域文化背景则会对特定默会知识扩散的难易程度产生影响。这两类宏观因素在现有研究中较少被提及，同时，它们也具有难以在区域间复制的特征。

静态模型检验结果显示：①工业企业获利能力越强、第二产业越发达或地位越重要，越不利于风险投资选择早期阶段项目；②人口流动性越强、风险规避程度越低，越有利于风险投资选择早期阶段项目；③各地之前的 IPO 数量越多，越能吸引风险投资机构选择后期阶段项目；④高税率会降低投资早期阶段项目的意愿。动态模型检验结果显示：①风险投资阶段选择行为受到自身发展规律的影响；②在控制了自身周期性发展规律的影响后，作为外生影响因素的产业结构与文化因素，依然表现出对风险投资阶段选择行为的影响。上述检验结果证明，默会知识在宏观层面也会影响风险投资阶段选择的特征。

本书的核心结论是：首先，风险投资的阶段选择行为的确会产生实质性的影响；其次，默会知识对风险投资阶段选择有显著影响；最后，产业结构与区域文化是影响风险投资阶段选择的宏观因素。

本书的创新之处主要体现在如下方面：①不确定性研究的语境与视角的提出；②默会知识影响风险投资阶段选择的机制研究；③默会知识影响风险投资阶段选择的实证检验。

关键词：风险投资 阶段选择 默会知识 不确定性

Abstract

Since the 1980s, the stage selection differentiation becomes an important feature of US venture capital institutions heterogeneous development. Then, the stage selection phenomenon also has presented in different countries during the development of venture capital. After the introduction of venture capital system by Chinese, the preference for the investment of late stage project becomes prominent. Previous studies have indicated that the stage selection will have a great effect to the invested enterprise. Therefore, it is of practical significance to understand the formation mechanism and influencing factors of the stage selection. For stage selection phenomenon, theorists have studied from the micro and macro levels. However, there are some problems in the research of design flaws and conclusions. In recent years, research has shown that tacit knowledge can provide a theoretical analysis source for the study of behavior. Combined with the current status of research, from the perspective of tacit knowledge for further study of the venture capital stage selection behavior, it becomes a logical idea.

The goal of the article lies in the following aspects: ① clarifying the mechanism that the tacit knowledge affecting action of decision-

making behavior in the uncertain environment; ②testing that the tacit knowledge affecting venture capital stage choice on surface of the micro layer; ③verifying that macro factors of effecting (reflection) tacit knowledge affecting stage choice.

The first part of the paper is a research on the mechanism how tacit knowledge affects stage selection.

This part starts with justifying the adoption of agent heterogeneity hypothesis as the paper's theoretical premise from three dimensions—economic environment and academic development stage, significant features and the impacts on the value of economic theories.

Secondly, in light of the context and perspectives, the paper classifies and analyzes the existing research findings on uncertainty, and then draws the following conclusion: the uncertainty in this paper is one with a comprehensive angle and within the decision-making context, and is produced and determined by the joining of agent internal heterogeneity (endogenous uncertainty) and external environmental differentiation (exogenous uncertainty).

Thirdly, the paper studies the decision-making mechanism of venture investment. Rationality degree is the major factor in determining the degree of endogenous uncertainty borne by venture capitalists (decision-making teams). Highly rational venture capitalists (decision-making teams) are more likely to choose the entire rationality model, leading to an extremely high satisfactory level (extreme value) which is used to screen programs; venture capitalists (decision-making team) with a low degree of rationality are more likely to choose a bounded rationality model, leading to a low satisfactory level (satisfactory value) which is used to screen

programs. However, no matter which decision model is used, the ultimate aim of its decision-making is to get the best return on investment under the constraints of the agent's internal conditions. Decision results will be a balanced solution, which is when the exogenous uncertainty determined by the program's stage characteristics matches the endogenous uncertainty determined by the rationality degree of the decision-making body, the search will come to a stop and the decision results produced.

Finally, the paper probes into the tacit knowledge and its influence paths. By linking tacit knowledge with uncertainty, we expand the measurement system of tacit knowledge, including professional experience, feedback of results, similarities of cultural background, openness of background culture, and innate comprehension ability.

Increasing the tacit knowledge will improve the degree of rationality of the decision-making body, triggering a change in the adopted decision-making model. It further causes the decision-making body to set higher satisfaction levels; the programs that are at a more forward stage and need more searching costs must be factored into the consideration of venture investment. Once such programs become the proposed investment programs, it means an increase in exogenous uncertainty. In the face of higher uncertainty, decision-makers need a higher degree of rationality in response. Only when the increase of exogenous uncertainty matches again the endogenous uncertainty determined by the new rationality level, the search stops, stage selection is completed and a new equilibrium is formed

Tacit knowledge affects stage selection through such specific paths, including: on the micro level, it directly affects the initial

investment choices and overall investment strategy; at the same time, tacit knowledge affects the overall investment strategy indirectly through the initial investment choice; on the macro level, macroeconomic factors affect the behavior characteristics of regional venture investment by way of influencing the professional experience and background culture.

The second part of the article is about the status description of the venture capital stage choice, and if or not the choice behavior of the stage in our country has a substantive impact inspection.

Through quantitative analysis we can see that venture capital in China has obvious stage choice differentiation phenomenon firstly. The overall preference of the different years of the choice of the total preference has fluctuated, but there is no obvious regularity of the deposit. Secondly, the foreign venture capital also has the obvious stage choice differentiation, the domestic and foreign venture investment stage choice overall preference fluctuation does not have the synchronization. Lastly, from 2010 to 2013, foreign venture capital investment in the early stage of the project investment ratio is higher than the domestic.

Empirical test results show that the stage selection behavior of venture capital will have a substantial impact to Invested enterprise. The results show: ① In a sub sample of venture capital, when VCs invest firm in early stage, it can promote more R&D investment than in later stage, boosting the growth of firm significantly, and enhancing the firm's profit ability significantly; ② In the full sample including no venture capital investment, VCs investing firm at later stage are worse than not enter, because they get

negative effects on firm's growth. There is no significant impact on firm's profit ability when VCs invest firm at later stage; ③ Venture capital enter the enterprise in the late stage, resulting in a decline in the role of the boost, and even have a certain side effects, reducing the overall risk of investment in the economy to boost the economy.

The third part of the article is testing the influence of the tacit knowledge to venture capital stage choice on the micro level.

Tacit knowledge influences the stage of investment for the first time to choose the test results show that the decision-making team before entering the organization form of tacit knowledge in ① the more entrepreneurial experience, the greater probability venture capital chooses early stage project in the first time; ② The more research and development experience, the smaller probability venture capital choose early stage project in the first investment project in long distance, and the more research and development experience, the greater probability venture capital choose early stage project in the first investment project in short distance; ③ the more developed areas overseas work experience, the greater probability venture capital chooses early stage project in the first time; ④ the more financial work experience, the smaller probability venture capital chooses early stage project in the first time; ⑤ compared with the long distance investment, venture capital has more probability choosing early stage project in the first time investment when the distance is short; ⑥ Tacit knowledge is more significant influence on investment stage of choice for the first time than clear knowledge.

The test about tacit knowledge influencing subsequent overall investment strategy shows that: ① the first time investment chose has

remarkable effect on the subsequent overall investment strategy; ② the first time investment successful IPO will attract venture capital choosing late stage; ③ the more investment, the more venture capital preferences late stage project in subsequent overall investment strategy; ④ research and development experience has a significant positive impact for the probability of early stage project in the subsequent overall investment strategy; ⑤ professional experience before entering the institutions have an impact on subsequent overall investment strategy, but significantly decreased; ⑥ education background of administration has significantly increasing affection to overall investment strategy.

The fourth part is to test that tacit knowledge affect phase selection at the macro level.

Theoretical analysis showed that the regional industrial structure affects the tacit knowledge of venture capitalists before and after entering institutions. Regional culture influences the degree of the spread of the tacit knowledge.

The results of static model show that; ① the stronger the industrial enterprise profit ability and the second industry more developed or position more important, the more unfavorable to early stages venture capital investment; ② The results also show that the stronger the population mobility and the lower degree of risk aversion, the more favorable to early stage venture capital investment; ③ The more IPO numbers in history in region, the more venture capital chose later stage item; ④ Personal income tax rate have a negative impact for venture capital choosing early stage item. The results of dynamic model show that: ① venture capital stage choice behavior

was affected by its own law of development; ② After control the impact mentioned, as the exogenous influence factors, industrial structure and culture still show the expected influence. This chapter test proved that the tacit knowledge in the macro level may also affect venture capital stage choice.

Core conclusion is: Firstly, stage selection of venture capital will indeed have a substantial impact; Secondly, tacit knowledge has a significant impact on the venture capital stage selection; and finally, the macro factors of industrial structure and regional culture affect stage selection.

The innovation of this article is mainly manifested in the following aspects: ① The article first proposed to analyze uncertainty from context and perspective; ② The article analyzes the mechanism of tacit knowledge affecting stage selection; ③ The article testes that tacit knowledge has affection to venture capital stage selection.

Keywords: Venture Capital; Stage Selection; Tacit Knowledge; Uncertainty

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