

风险投资 治理机制研究

——基本人力资本的视角

卓越 著

现有的国内外关于风险投资的研究，
缺乏一个统一的分析框架给风险投资的各种治理手段一个逻辑一致的解释。
本书抓住风险投资的核心要素——人力资本，
从风险资本家和创业者的人力资本特性出发，
展开对风险投资治理机制的研究，
这是一个重要的创新，
也是该书最大的特色。



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序

卓越博士的学位论文，稍作修改后将正式出版，这是一件令人高兴的事。论文出版之际，被邀作序，我借此机会就本书的内容谈一点自己的看法。

关于风险投资治理方面的理论考察和实证研究，西方学者已经做了大量工作，近些年来也已有不少关于这方面国外的著作和文献被介绍过来。同时，随着我国风险投资业的飞速发展，我国许多学者围绕这一问题，结合中国的实际也从多角度、多方面展开了较深入和系统的研究。纵观国内外现有的研究，正如本书导论所言，缺乏一个统一的分析框架给风险投资的各种治理手段一个逻辑一致的解释。卓越博士的这部著作抓住风险投资的核心要素——人力资本，从风险资本家和创业者的人力资本特性出发，展开对风险投资治理机制的研究，应当说这是一个重要的创新，也是该书最大的特色。

首先，这部著作从人力资本特性出发，结合不完全合约和非对称信息理论建立了一个完整的理论分析框架。该框架从人力资本价值的不确定性、不可分离性、专用性和专有性所内含的行为不确定性出发，结合风险投资本身的特点抽象出风险投资治理机制的特征，从而清晰地给出了这一研究的理论进程，使全书的逻辑主线跃然纸上。

其次，剩余索取权的配置是包括风险投资在内的各种治理机制的核心内容，国外关于风险投资治理的文献关于这方面的研究也很多。这些研究大都建立在逆向选择和道德风险的基础上，前者以 Gompers 和 Lerner 的信号传递模型为代表，后者以 Gibbons 和 Murphy 的学习模型代表。这些研究的缺点在于只能分别解释风险资本家和创业者报酬合约和报酬绩效敏感性变动规律。卓越博士的这部著作在间接定价理论的基础上通过引入间接定价理论所忽略的甄别作用，建立了激励—甄别模型，通过风险投资不同

阶段激励和甄别的权衡，成功地解释了风险投资中的剩余索取权安排，特别是报酬绩效敏感性的变化规律。

第三，合约理论大都强调资产专用性，为防止事后的机会主义行为，强调控制权的配置以解决专用性投资不足的问题。资产专用性这一概念后来被很多学者，特别是国内学者应用到人力资本，引申出人力资本专用性这一概念，成为劳动者应当拥有控制权或共同治理的理论基础。单纯应用人力资本专用性这一概念和相关理论无法对风险投资合约中控制权配置状态依存性给出合理解释，因为在绝大多数风险投资合约中，初创企业发展初期的控制权大都掌握在风险资本家手中，随着企业绩效的提高和企业的发展逐步向创业者转移。在这本著作中，卓越博士引入了由 Alchian 等 1987 年提出但长期被忽略的概念专有性，从企业发展过程中创业者人力资本专有性向专用性的转化及导致的双边道德风险出发，解释了控制权这一动态配置的特征，并利用这一框架从相互关系专用性投资这一角度分析了分阶段投资及与其配合的时间期权和非竞争条款的作用机理。这一部分研究内容不仅体现了作者对合约理论的熟练掌握和灵活运用，并将分析统一在人力资本特性的概念下，体现了研究的逻辑统一性和严密性。

第四，风险投资的各种治理机制并不是孤立的，而是通过嵌入风险投资各阶段而相互联系的，如果孤立的研究某一阶段的治理，往往导致理解的片面性，提出不切实际的政策建议。风险投资是以风险资本家为中介进行的，融资阶段的治理和基金组织形式的选择通过激励约束机制会影响到投资阶段的治理，而融资阶段和投资阶段的治理机制的效率又决定退出方式的选择。由于不同的退出方式收益率与控制权配置不同，因而通过信息反馈和隐性控制权激励又会对风险投资治理机制产生影响。不仅退出方式，而且退出本身的治理也会对风险投资治理机制产生影响。对融资阶段的治理而言，退出时治理机制的有效性决定了退出收益包含的信息的有效性，这是风险资本家“俱乐部效应”（声誉机制）发生作用的基础之一。因为信息的有效性关系到信号反馈的真实性和投资者关于风险资本家能力分布主观概率的调整，影响下一轮投资时合格风险资本家的挑选和治理机制的调整。卓越博士的著作通过一个非正式模型从风险投资机构的治理对风险企业治理和退出的影响，退出对再融资时的信号反馈、退出对投资阶段创业者的隐性控制权激励的角度研究了三个阶段治理机制的关系，指出各个阶段的治理是相互支持、互为依存的，有效的风险投资治理机制的建立

应从融资阶段治理、投资阶段治理和退出阶段治理同时入手，不能只局限于某一局部的改革，这为中国风险投资治理机制的完善提供了一个可能的方案，体现了作者对现实问题的敏感和学以致用的知识分子的责任感。

第五，对于中国风险投资治理机制的分析，这不仅涉及理论研究落后造成的改革的滞后，更有中国传统体制造成的特殊性问题。传统科研体制下衍生出来的风险投资机构和风险企业和风险投资市场化运作要求的矛盾构成了中国风险投资发展的主要矛盾。若回避这一矛盾，显然前面的分析会显得极为苍白，但要解释和解决这一矛盾，不仅需要足够的理论勇气和科学精神，而且更重要的是需要实践本身的深入和经济发展的证明与支持。卓越博士的这部著作，在这一点上体现出了足够的理论勇气和实事求是的科学精神，认真而深入地展开了探讨，并提出了中国风险投资治理机制的框架及实现这一框架的具体措施。这种探索即使所得出的某些判断和观点，被将来的历史实践证明是错误的，也是值得予以充分尊重的，因为这体现了作者勇于探索的精神。

卓越在攻读博士学位之前，一直从事合约理论的研究，长期的科研和教学培养了其扎实的理论素养和科研能力，这也是这部著作能有所创新的重要原因。卓越的博士论文在答辩过程中获得了专家们的一致好评。他们认为，这部作品结构安排合理，分析方法得当，阐述层次清晰，论证逻辑严密，掌握的文献丰富，行文十分流畅，是一部优秀的博士论文。现在，它能由中国社会科学出版社出版问世，这说明了一位青年学者对中国经济发展过程中的现实问题勇于探索、勤于思考的精神得到了进一步的肯定。为此，我乐为之序，并将其推荐给关心和思考这一问题的读者。

刘 东

2005 年 12 月于厦门

ABSTRACT

Venture capital, especially the governance mechanisms of it, has drawn a great attention of the economists just because it is of importance for the technology innovation and the development of the high technology industries. As we point out in the paper the present researches have ignored the importance of the human capital as the core of the venture capital and hence the influence of characteristics and transformation on the venture capital governance mechanisms, then it is difficult to explain the governance mechanisms of venture capital comprehensively and coincidentally. This dissertation is giving a theoretical analysis for the venture capital's governance mechanisms and the relationship among them in each developing stage from the point of the characteristics of human capital and giving some suggestion on constructing our venture capital governance mechanisms based on the analysis.

Firstly, the paper summarizes and explains the relationship between the characteristics of human capital and governance mechanisms in terms of theoretical history, combining the characteristics of human capital and uncertainty of venture capital and describing the four unique characteristics of governance mechanisms of venture capital, in this way, a theoretical frame has been built up. Although the present theories emphasize the heterogeneity of human capital, the difference of two factors, such as the specificity and exclusiveness of human capital which lead to the heterogeneity, has not been distinguished. As a matter of fact, the former, which would be up against the opportunism behavior, emphasizes the dependence of the value of human capital and the latter, which is exactly the opportunist, emphasizes that the value of human capital is depended. The owner of human capital gains different power and his position is differ-

ent in the stage of the venture capital. The transformation of specificity and exclusiveness of the human capital will lead to the change of ex post bargaining power. To avoid the opportunism behavior, the governance mechanisms need adjusting, which is the reason of the dynamic governance mechanisms. Agency problems are especially serious in venture capital because of the combination of the uncertainty of human capital and that of venture capital, which causes the different characteristics of governance mechanisms of venture capital, including double-function of recompense contracts, importance of reputation mechanism, dynamics of governance mechanisms and integration of governance mechanisms in every stage.

Secondly, as to the recompense mechanisms, the paper expands the theory of indirect pricing for human capital on the basis of the model of Lazear (1999) and a model for screening and encouragement is constructed in this dissertation on the basis of indirect pricing theory in order to solve the problems of adverse selection and moral hazard and we want to explain the allocation of residual claim rights in venture capital and the law of distribution and change of the sensitivity between recompense and performance by the balance between screening and encouragement. The paper overcomes the shortcoming of the signal delivering model and the studying model. The two models explain the recompense contracts of venture capitalists and the enterprisers and the sensitivity between recompense and performance respectively. On the basis of the screening factor which is neglected in human capital indirect pricing theory, this dissertation gives an overall and consistent explain to the recompense contracts of venture capitalists and the enterprisers and the sensitivity between recompense and performance by the balance between the encouragement and screening. Our analysis shows that the most serious agency problems in venture capital are capability hidden ex ante and the opportunism behavior of owner of human capital ex post in the case of asymmetric information, which must be solved in designing the recompense contracts. But when adverse selection and moral hazard are taken into accounting, there isn't any first-best contracts to satisfy screening and encouragement at the same time and the second-best indirect pricing is to balance between the screening and encouragement and makes the gross transaction cost

lowest. According to this principle, the more important and the more asymmetric of the ex-ante information, the more attention must be paid to screening in the indirect pricing of human capital and the lower of the sensitivity between recompense and performance; the more important of the agent effort and the more asymmetric of the ex-post information, the more important of encouragement in the indirect pricing of human capital and the higher of the sensitivity between recompense and performance.

Thirdly, as to the allocation of control rights, a dynamic allocation of control rights in venture capital is built up in this paper on the basis of Tirole's model (2000). We analyze the allocation of control rights between venture capitalists and entrepreneurs by the transformation from specificity to exclusiveness of entrepreneurial human capital and mutual moral hazard resulted from the transformation. This dissertation introduces the specificity and exclusiveness of human capital in Tirole's model to prove the contingency state of the control rights in venture capital excels the one-side control of the enterpriser and the venture capitalist. We point out that when the specificity is stronger and exclusiveness is weaker, the control rights are allocated to venture capitalist and when condition changes contrarily, the control rights are allocated to entrepreneurs step by step. The change of characteristics of human capital could be known by various kinds of financial or non-financial performance, on which the allocation and change of control rights in venture capital often depend. Based on the assuming that control rights are continuous variables, we conclude the optimum equilibrium of the control rights for the entrepreneurs to abandon in order to maximize their incomes, and analyze all kinds of factors influencing the equilibrium.

Fourthly, as to the staged financing, a model of investment and allocation is constructed to analyze the function mechanism of staged financing from double commitment problem that resulted from transforming from exclusiveness to specificity. According to the model, staged financing, time options and non-competition covenants in essence are mutual relationship-specific investment of Williamson (1985). Each party in the contract wants to get trust by investing mutual specific investment to solve the bilateral commitment problems. The function of time options and non-competition covenants is make the venture capitalist invest

before the entrepreneurs invest in their human capital. The analysis of the model shows the bargaining power of the enterpriser drops down and the risk of "hold-up" decreases as the sedimentation of the exclusiveness of enterpriser human capital and the strength of specificity. So the scale of investment of every stage increases gradually. Furthermore, the scale of every staged investment changes along with the prospect of the project and the change of the nature of assets. The better prospect of the project (the larger of the predicted pay-off) and the weaker specificity of non-human capital, the larger scale of every staged investment and vice versa.

Fifthly, on the basis of the expanding model of investment and allocation, the paper studies the staged financing in venture capital fund and point out that the inpouring of the promised capital in staged financing and "non-fault divorce" covenants are another style of extreme staged financing, the essence of which is to turn a one-time game into infinite repeated games. There exists an equilibrium route with positive investment. In order to guarantee profit from opportunism behavior less than losses resulted from the end of investment to alleviate moral hazard of the venture capitalist, the scale of every stage should descend. Furthermore, we demonstrate that the better the prospect of the project, the less efficiency loss of staged financing is. For those project with good prospect, the efficiency of staged financing is nearly Pareto Optimum.

Sixthly, as to the relationship of the three-staged governance, this dissertation compares the venture capital industries in the United States, Japan and Germany from the organization of venture capital funds, investment stage, industrial distribution of investment, governance tools of venture firms, the way of venture capital withdrawal and the scale and performance of venture capital, and points out that there is great difference in the governance of venture capital among them. In order to analyze this difference, an informal model of the relationship between the governance mechanism and the withdrawal of venture capital is set up. In this model, the governance mechanism of the venture capital affects withdrawal by two means: the first is that the governance structure of venture capital affects the offering resources by the function of the venture capitalist's investing behavior and decides the withdrawal ways of venture capital; the second is that

governance of venture capital affects the amount of offering resources and the choice of the withdrawal ways of venture capital by the means of the governance of venture firms. The governance mechanisms of venture capital decide the withdrawal of venture capital and on the contrary the withdrawal of venture capital affects the governance mechanisms. According to the model, the paper points out that the second tire is just the necessary condition of the development of venture investment, but not the sufficient one. The building and developing of the second tire lies in the effective governance mechanisms of venture investment. On the contrary, a flourishing and effective second tire give the true feedback of information for the optimization of the governance mechanisms of venture investment, meeting the needs of the dynamic governance of human capital. The mutual functions form a self-enforcing mechanism. The paper points out that the venture capital institution in the United States including limited partnership, intervene governance and withdrawal mainly through IPO accords with the model quite well. However, the venture capital institution in Japan and Germany with passive governance, single withdrawal style makes the governance of venture capital and the withdrawal isolated. This is the reason why venture capital markets in Japan and Germany sink into predicament or develop slowly.

Finally, in order to resolve the present problems in venture capital in our country, combining the theoretical research of the front chapters, the dissertation puts forward the overall frame of venture capital in our country on the basis of integrating all kinds of governance mechanisms. Then it puts forward some concrete measure and suggestion from three respects of venture capital institution, venture firms and the ways of withdrawal.

[**Key words**] Character of human capital; venture capital; governance mechanisms

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