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<p>Tiivistelmä-Referat-Abstract</p> <p>Venture capital is in general terms an outside investment to a start-up business that has strong growth opportunities but no access to capital markets. We study the rational valuation of such investments by constructing a model where a venture project is in a traditional fashion implemented as a cooperation between two complementary parties. The investor, or the venture capitalist, keeps the project running by supplying equity capital, while the entrepreneur collaborates by supplying unique human capital. The key factor in the model is that the infusion of capital is staged, so that the venture capitalist in the capacity of an inside investor exercises strategic discretion to periodically rescreen the current state of the project along with the future prospects. If the project turns out a failure, the venture capitalist exits immediately with a zero scrap value. His primary objective is however to find the optimal timing for an initial public offering (IPO), where the accumulated equity stake is sold in the market. It follows that the rational valuation emerges as an optimal stopping problem, which is approached by means of real options. Drawing on the optimality principle of dynamic programming and the general stopping theory, the rational value and the optimal stopping rule are derived in detail. The concepts of regularity and an excessive majorant are introduced as elemental building blocks in the analysis. It is in fact shown that the rational value conforms to a specific smallest excessive majorant that incorporates in a simple way the time-to-build element created by the staging of capital infusion. As a novelty in the venture-financing literature, we also introduce the concept of a near-optimal stopping rule in conjunction with the optimal rule. Near-optimality simply means that a rule may call for stopping even if the time-to-build element implicit in the venture project is larger in value than the gain obtainable by immediate stopping. Both the optimal rule and near optimal rules are made use of to study some absorbing aspects of venture financing. We for example establish the effect of entrepreneurial exit options on the optimal stopping behaviour of the venture capitalist, and on the rational real-option value. Equipped with the optimal rule, the study lastly derives sufficient conditions under which stopping, and an IPO in particular, is not optimal to the venture capitalist.</p> <p>The starting point for the study is provided by the following references. Shirayev, A. N. (1978): Optimal Stopping Rules. Springer-Verlag. Harrison, J.M., and Kreps, D.M. (1979): Martingales and Arbitrage in Multiperiod Securities Markets. Journal of Economic Theory, vol. 20, pp. 381-408.</p> <p>Trigeorgis, Lenos (1996): Real Options: Managerial Flexibility and Strategy in Resource Allocation. The MIT Press.</p>			
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