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Convertible securities overcoming double moral hazard in venture capital

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Tiivistelmä-Referat-Abstract

The problem of double moral hazard is prevalent in venture capital financing. This problem refers to the fact that there are two agents who can affect the value of an entrepreneurial project. First, an entrepreneur's effort is needed. Second, also the outside advising or management support exerted by a specialized venture capitalist can contribute to the project value. Because either of these agents can make private choices and not to exert a socially efficient level of effort, we call the problem of moral hazard in this special case of venture capital as a double-sided one. There are common characteristics in venture capital, such as the active participation of outside venture capital investors in the management of the company and the use of convertible securities in venture capital contracting, on which we have a lot of empirical evidence, and which relate to the problem of douse-sided moral hazard.

The purpose of the study is to present two analytical models which discuss the problem of double-sided moral hazard and the remedies to overcome it. The key challenge is to mathematically present the problem of double-sided moral hazard, and to study how convertibles could implement efficient contracts in venture capital.

MODELS

The thesis introduces two different models in venture capital financing. Catherine Casamatta's model is introduced first. Casamatta's model assumes that the efforts are allocated simultaneously. Casamatta's model sets out to study how outside financing and advising arise endogenously in the model, and how optimal contracts can be implemented under certain conditions through the use of convertibles. Klaus Schmidt's model is introduced next. Schmidt's model takes a more focused look at the use of convertibles, assuming that the efforts are allocated sequentially.

RESULTS

Both models show how efficient contracts can be implemented through the use of convertibles. In Casamatta's model we reach optimal second-best outcomes assuming a simultaneous nature of allocating effort. Casamatta also shows that it is not efficient to include outside financers, if they cannot provide complementary effort which contributes to the project value. Also, convertible securities should only be used by investors who have significant financing roles (i.e. venture capitalists, not business angels). Schmidt shows that convertibles can induce first-best levels of effort, if we allow for sequential nature of allocating effort. The role of convertibles is important.

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