

# Staged Financing of Start-ups

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## **Abstract**

External equity investors in start-ups, e.g. business angels or venture capital firms, face huge risks. This is due to the information asymmetry between external providers of equity and entrepreneurs as well as different incentives of both parties that prevail despite the existence of a reasonably well-aligned objective to increase the start-up's market value (see Hellmann 1998). Taken together, information asymmetry and divergent interests create significant principal agent problems. First, start-up investors run the risk that entrepreneurs behave opportunistically, i.e. face a moral hazard risk (see Admati/Pfleiderer 1994). Second, they bear the risk to finance people with insufficient entrepreneurial capabilities. We will call this risk the capability risk. In addition, the future pay-offs from the equity stake to the external investors of a start-up are subject to a number of market, i.e. entrepreneur independent, risks. Examples are customer acceptance for innovative products, the development of substitution technology, or failure of new product development.

Staging, also termed staged investment, serves to reduce these risks for external equity investors. Staging means paying out the total equity investment in two or more stages at different points in time, either in the form of several, contractually separate rounds of equity financing or in the form of staged payments within one round of financing (see Gompers 1995 and Kaplan/Strömberg 2003). The core idea of staged financing is to tie the payment of additional amounts of equity investment to the fulfilment of pre-defined milestones, e.g. first sales, the finalization of a new product or the completion of the entrepreneurial team. If the start-ups fails to reach a milestone that was agreed upon in the financing contract, the investor is entitled to not pay out the next round or to only pay it out in exchange for a higher equity stake. Staging sets incentives for entrepreneurs not to behave opportunistically. Furthermore, it shifts some of the capability risks and market risks away from the external equity investors

onto the entrepreneurs. From a theoretical perspective, staging does not only protect equity investors. It can also be beneficial for entrepreneurs because it offers the opportunity to reduce the cost of equity. The positive effect of staging is that the risk premium demanded by external equity investors goes down with every milestone that the start-up meets and thus is lowered in each round of financing. The founders have to give less shares away to fund their start-up with the required amount of capital. The negative effect of staging for the start-up stems from additional transaction costs for new rounds of financing and the cost of entrepreneurs bearing a higher proportion of market risk.

From the theoretical part of our paper we derive six hypotheses about the relation between the amount of different risks and the level of transaction costs on the number and the duration of financing rounds. We test these hypotheses empirically using a new sample of German start-ups from different industries that all got staged equity financing, i.e. experienced several rounds of equity investments. The study is based on questionnaires that were sent out online and collected online and offline. The key informants of our study are mostly entrepreneurs in the sense of owner-managers (75 % of all returned questionnaires). We contacted members of the executive board who joined a start-up after its foundation in cases where none of the founders was in a managerial role any more (25 % of all returned questionnaires). From a uniquely collected data set of 836 German start-ups with staged equity financing we received 90 questionnaires (response rate of 10.8 %). There was no significant non-response bias. We tested our hypotheses with Poisson- and OLS regression analysis. The validity of the regression models turned out to be good.

The results of the empirical analysis are interesting because they only partly confirm the fairly common theoretical notions that underlie our hypotheses. We do find a negative and significant relation between the amount of transaction costs and the number of financing rounds as well as a significantly positive relation between the duration of a financing round and the amount of capital invested per round. But some of our hypotheses got no support, e.g. we find no significant relation between the degree of perceived moral hazard risk and the number of financing rounds.

## **References**

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