Endogenous Timing in Equity Crowdfunding

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Introduction

Entrepreneurs create a campaign in equity crowdfunding platforms to collect funds from backers in exchange for shares of a company. In all-or-nothing (AaN) platforms, if they can reach their target funds within a prescribed time, a campaign is considered successful and entrepreneurs are allowed to use these pledges, otherwise all pledges would be paid back to backers.

Given that (i) asset prices are constant during the prescribed time, (ii) the campaign’s success is determined once there is a sufficient amount of pledges, and (iii) backers who wait for later periods can also learn from others, why would backers pledge in earlier periods in the presence of daily backers.

The campaign data from one of Germany’s leading portals in equity crowdfunding, Companisto, show that on average, more than 10% of total pledges made in the first day, and pledges are concentrated more in the earlier period (Fig. 1).

Research Question

What is the benefit of being an early backer? How do the types of early backers and the cost of early pledging affect project success rate and the average quality of funded projects?

Model

Asset: The liquidation value of assets has an additive pay-off structure as follows:

\[ v = \frac{v_{A} + v_{B}}{2} \]

where \( v_{i} \sim U[0, v] \) with \( v > 0 \) and \( \{v_{A}, v_{B}\} \) are mutually independent.

Backers: There are 2 risk-neutral backers, A and B, who can pledge in period 1 or period 2—labeled as early backers and non-early backers, respectively. Each backer can be thought of as a group of investors who share similar information, and hence privately observes only one component of the asset value before the pledging starts.

Early backers are subject to the cost of early pledging, \( u \), since their pledges stay on the portal account for a longer period.

Each backer decides optimal timing of pledging given their private valuations and asset price.

Entrepreneur: needs the participation of all backers to collect funds, and each pledge is equal to the share price, \( p \)

She determines asset prices by considering the following trade-off: higher prices increase her profit, but hurt project success rate. Formally,

\[ \max_{\nu_{2}}, pS(\nu_{2}, u) \]

where \( S(\nu_{2}, u) \) is the likelihood of a project with \( \nu_{2} \) to succeed when asset price is \( p \) and the cost is \( u \).

Main Results

Result 1: When \( u \) is sufficiently low, the higher cost of early pledging decreases asset prices.

Intuition 1: Early pledging promotes the project to backers with lower valuations. When it is costly to pledge early, entrepreneur herself promotes her campaign by decreasing asset prices.

Implication 1: The effect of the cost and asset prices have opposite impacts on backers decision.

As an example, \( \uparrow u \) yields to less likelihood of early pledging—the direct effect, whereas \( \downarrow u \rightarrow \downarrow p \) yields to more likelihood of early pledging—the pricing effect.

Result 2: Suppose \( u \) is sufficiently low. Higher costs (i) increase the valuation of marginal early backer (\( \uparrow t_{1} \)), who is indifferent between pledging in period 1 and 2, (ii) decrease the valuation of non-early backer (\( \downarrow t_{2} \)), who is indifferent between pledging in period 2 or abstaining from pledging in period 2.

In other words, higher costs make marginal early backer (non-early backer) more (less) extreme in his valuation.

Intuition 2: As the cost becomes higher, marginal early backer needs to have a higher private valuation to bear the cost. Since early backers become more extreme and the asset value is an average of private valuations of backers, non-early backers can be more lenient to pledge.

Implication 2: The types of marginal backers have implications on both project success rate and average quality of funded projects.

Conclusion

This poster presents novel benefits of higher costs of early pledging on both project success rate and average quality of funded projects.

I also show that there is a non-monotonic relationship between project valuation and its success rate, which raises caution for those who use proxies to capture project valuation in order to predict their success rate. Moreover, the benefit of early pledging can be an increase in success rate or improvement in average quality of funded projects depending on the cost of early pledging.