

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 (AoN) platforms, if they can reach their target funds within a prescribed time, a campaign is considered as successful and entrepreneurs are allowed to use these pledges, otherwise all pledges would be paid back to backers.

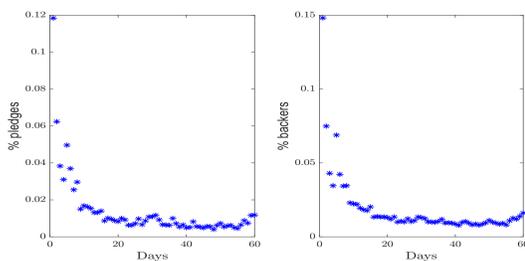


Figure 1: The average percentage of daily pledge amount, and of daily backers.

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 the cost of early pledging?

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 $v_i \sim U[0, \bar{v}]$ with $\bar{v} > 0$ 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,

$$\max_p 2pS(p, \bar{v}, u),$$

where $S(p, \bar{v}, u)$ is the likelihood of a project with \bar{v} 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 $\uparrow u \rightarrow \downarrow p$ 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 ($\downarrow t_{2,0}$), 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 quality of funded projects.

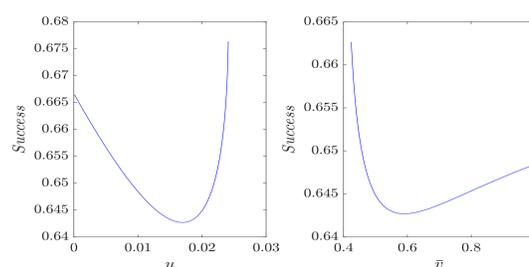


Figure 2: Project success rate with respect to the cost (left-panel), and the asset quality (right-panel).

Result 3: The cost of early pledging and project success rate have U-shaped relationship (left-panel in fig 2).

Intuition 3: When the cost is high (low) enough, the *pricing effect* (*direct effect*) dominates the other.

$$\frac{dS(p, \bar{v}, u)}{du} = \underbrace{\frac{\partial S(p, \bar{v}, u)}{\partial p} \frac{\partial p(\bar{v}, u)}{\partial u}}_{\text{pricing effect}(+)} + \underbrace{\frac{\partial S(p, \bar{v}, u)}{\partial u}}_{\text{direct effect}}.$$

Implication 3: The higher likelihood of early pledging can decrease project success rate. Formally, (i) $\uparrow u \rightarrow \uparrow t_1$ from result 2, (ii) $\uparrow u \rightarrow \uparrow S$ when the cost is high enough.

Result 4: The ex-ante project valuation and project success rate have U-shaped relationship (right-panel in fig 2).

Intuition 4: When the cost is low (high) enough, the *pricing effect* (*direct effect*) dominates the other.

$$\frac{dS(p, \bar{v}, u)}{d\bar{v}} = \underbrace{\frac{\partial S(p, \bar{v}, u)}{\partial p} \frac{\partial p(\bar{v}, u)}{\partial \bar{v}}}_{\text{pricing effect}(-)} + \underbrace{\frac{\partial S(p, \bar{v}, u)}{\partial \bar{v}}}_{\text{direct effect}}.$$

Implication 4: Projects with a higher ex-ante project valuation can have lower success rate.

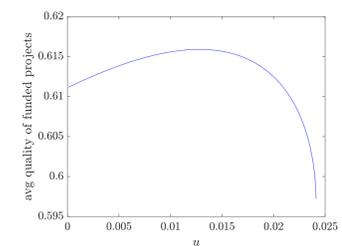


Figure 3: The average quality of funded projects with respect to the cost. The other parameter is $\bar{v} = 1$.

Result 5: The cost of early pledging and average quality of funded projects have hump-shaped relationship.

Intuition 5: The higher cost makes early backer more selective to pledge due to higher t_1 , which in turn increases the quality of funded projects (labeled as *early pledging effect*).

The higher cost makes non-early backer more lenient, which in turn decreases the quality of funded projects due to lower $t_{2,0}$ (labeled as *non-early pledging effect*).

$$\frac{dEQ(\bar{v}, t_1, t_{2,0})}{du} = \underbrace{\frac{\partial EQ}{\partial t_1} \frac{dt_1}{du}}_{\text{early pledging effect}(+)} + \underbrace{\frac{\partial EQ}{\partial t_{2,0}} \frac{dt_{2,0}}{du}}_{\text{non-early pledging effect}(-)}.$$

When the cost is low (high) enough, *early pledging effect* (*non-early pledging effect*) dominates the other.

Implication 5: Higher costs can improve the 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.