Venturekick: Early stage financing for cleantech

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Innovation is key to tackling climate change

There is broad agreement that more – and more radical – innovation is needed to fight climate change and it has been proven that startups provide a disproportionate amount of it compared to incumbent firms.

However, there is underinvestment in innovation…

Theory suggests that private investment in innovation (& in startups) is underprovided for mainly two reasons :

- Knowledge is a public good and private firm cannot fully capitalize on their innovation.
- Financial frictions cause underinvestment in early stage R&D and in startups:
    1. High failure rate of early-stage technologies and very skewed returns.
    2. Startups are constrained financially (f.ex: they do not yet have collateral).
    3. Asymmetry of information between inventors and investors regarding the viability of the unproven technology.

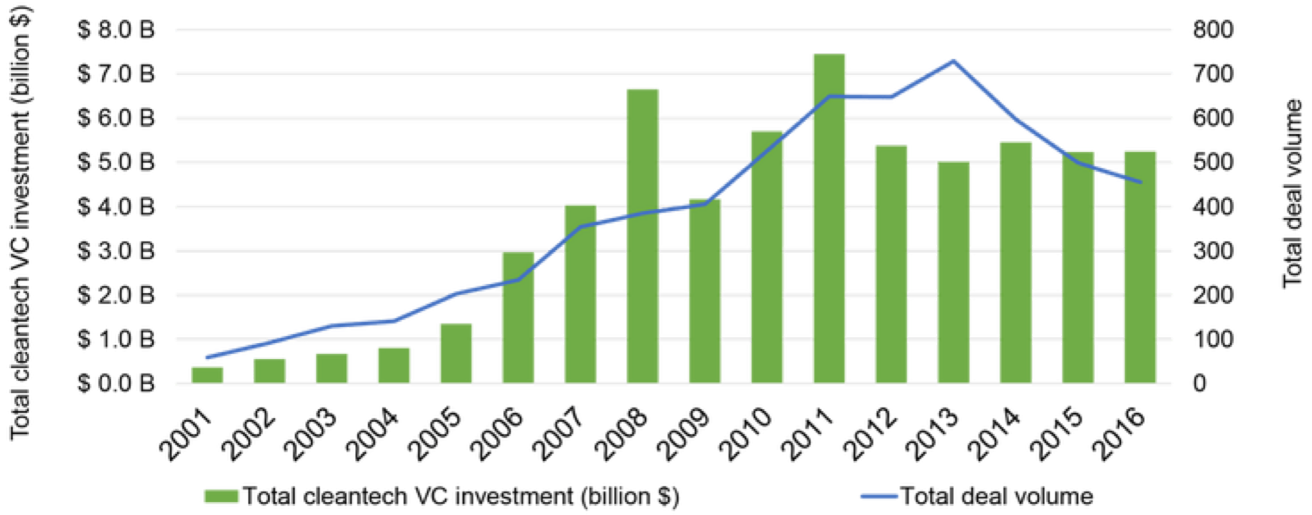
One concern is that funding for clean technologies is even harder to obtain because:

- Their positive effect on the environment and society are not fully priced.
- Profitability in cleantech often depend on public support, which introduces some policy risk.

… and a decline in venture capitalist's interest for cleantech

Figure 1: After years of growth, VC investment in cleantech companies has been on the decline

(Total investment and deal volume, 2001-2016)



Source: Brookings analysis of Cleantech Group's i3 Connect database.

Metropolitan Policy Program at BROOKINGS

Beyond the VC model for cleantech

These elements suggest that early-stage cleantech companies and entrepreneurs are facing challenges in accessing investment and VC dollars. This makes other sources of early-stage financing all the more important:

- Venture Competitions.
- Crowdfunding.
- Private or public “patient risk capital”.

But do these other financing tools work? And how?

- We look at a venture competition: VentureKick.

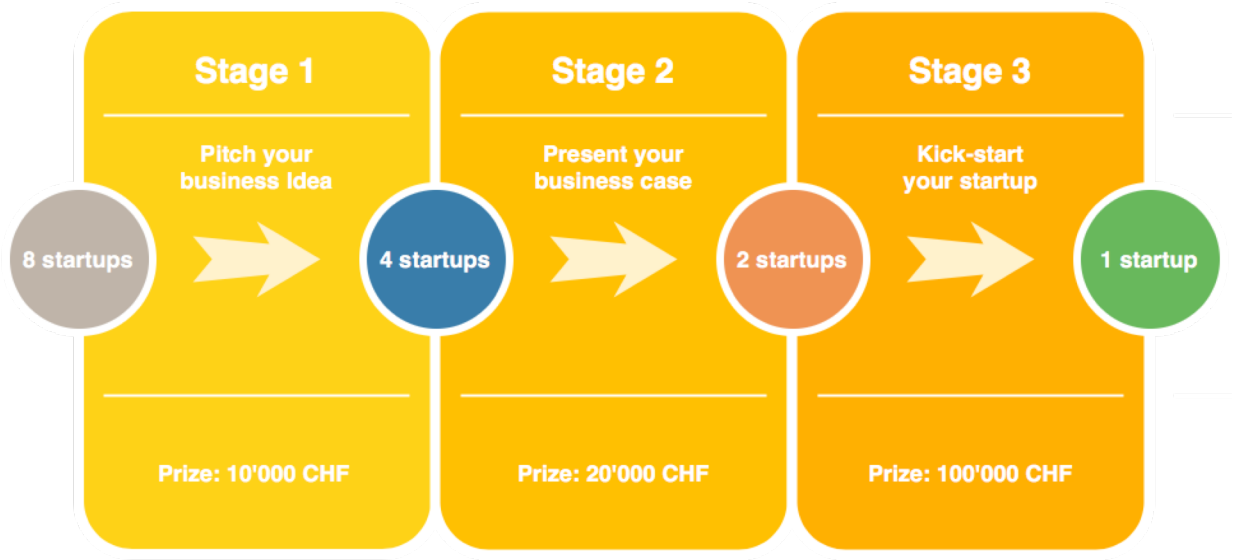
Do venture competitions help and how?

My project: We want to analyze the impact of winning a venture competition and securing early-stage funding on startups' performances.

- We want to estimate:
  1. If and how winning a competition improves startups' access to subsequent financing, employment and turnover.
  2. If cleantech startups benefit more than average from this type of financing, which could be an indication that they are particularly constrained financially.
  3. Through which channels winning a startup competition impacts performances (money or fame?)

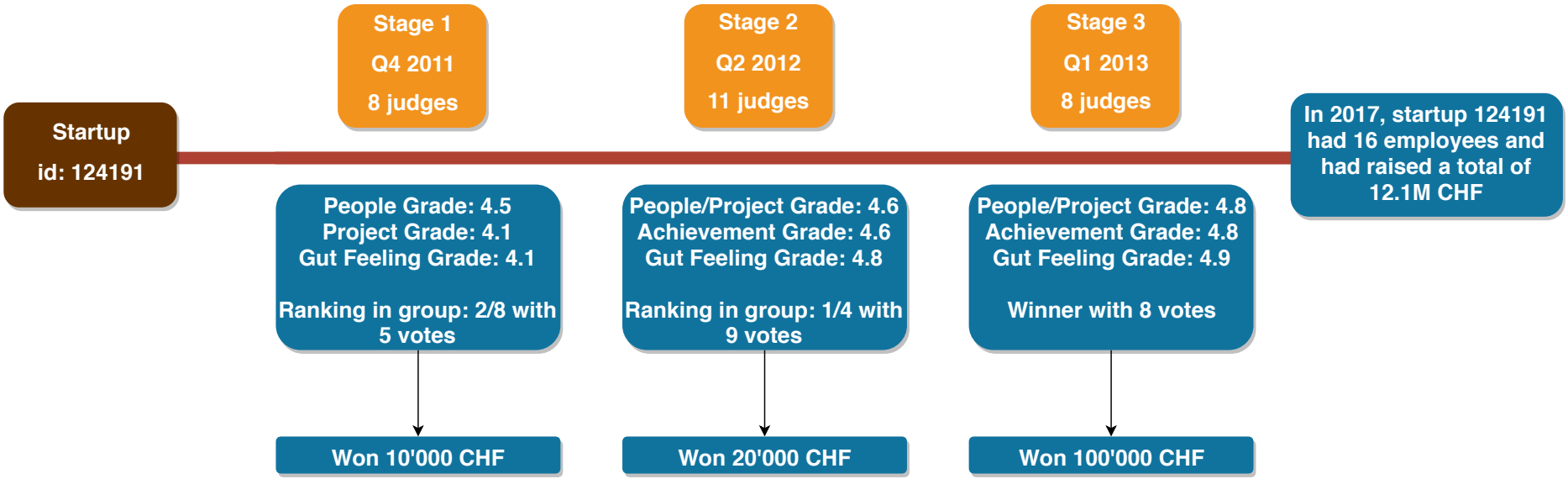
Our venture competition: VentureKick

We got access to some anonymized data provided by VentureKick, a venture competition present on the EPFL innovation park, whose judges are drawn from a pool of 150+ startup experts and investors.



Let's follow one startup through it's VentureKick journey

The journey of a hypothetical startup:



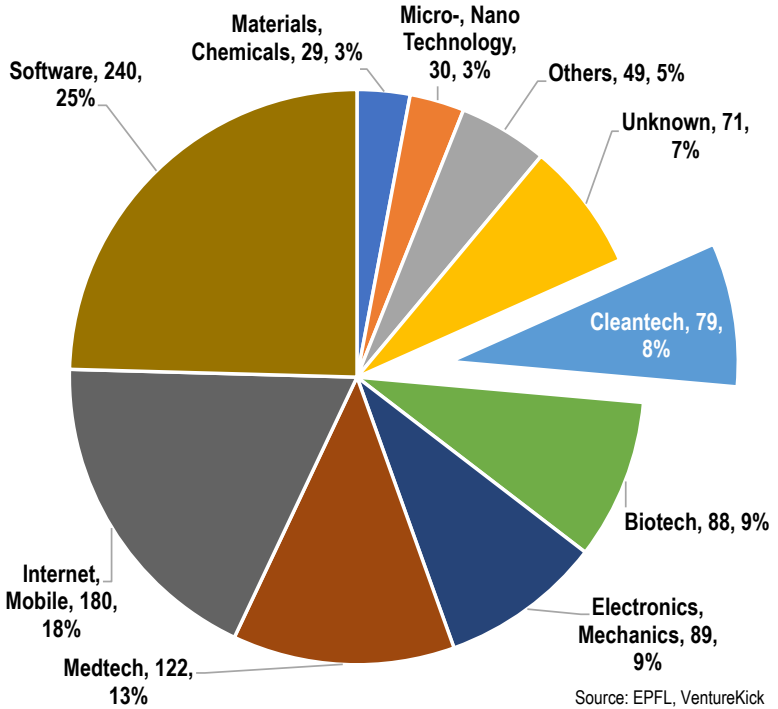
Our data

We have data on detailed grading/votes during the competition, turnover, employment and subsequent financing for 542 startups that managed to go through Stage 1.

For 435 startups that failed during Stage 1, we have data on grades and survival status.

The data cover the years 2008 to 2018.

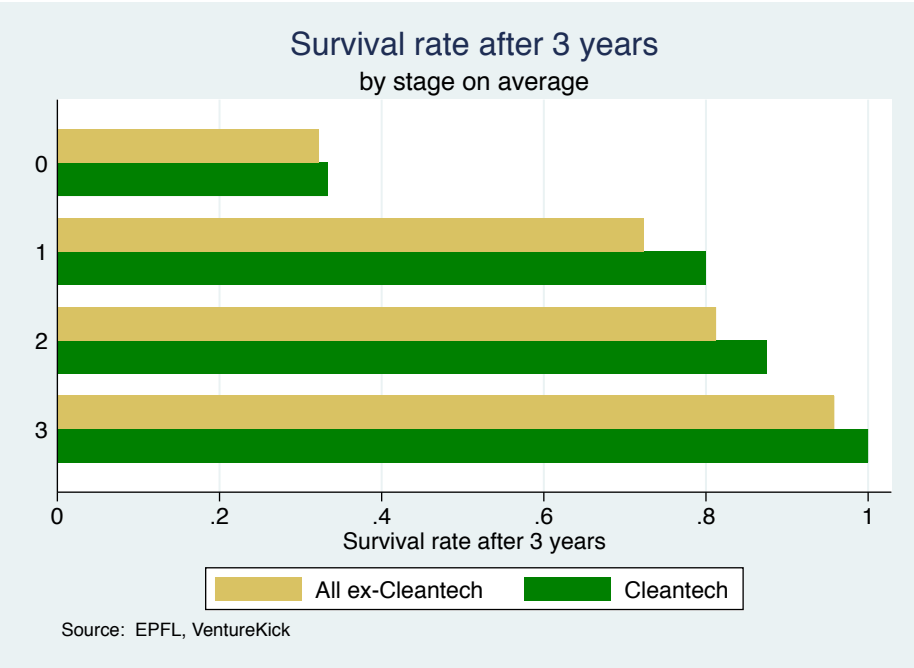
My sample of startups by category (number and share)

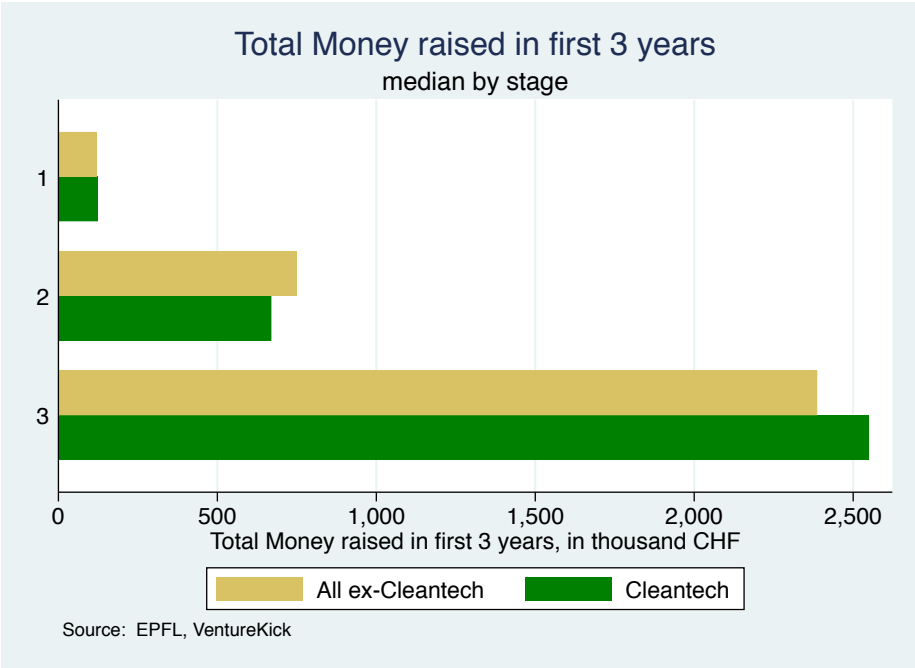


Source: EPFL, VentureKick

Our data

Without making any causal claim, we can see that:

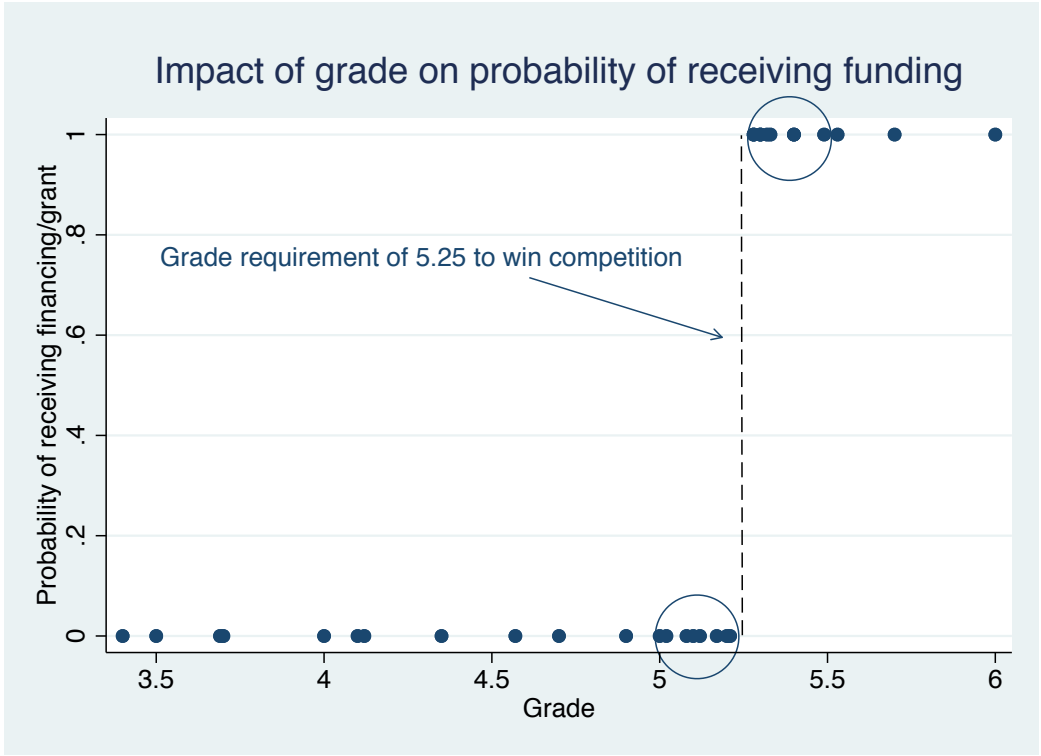




Using a Regression Discontinuity Design

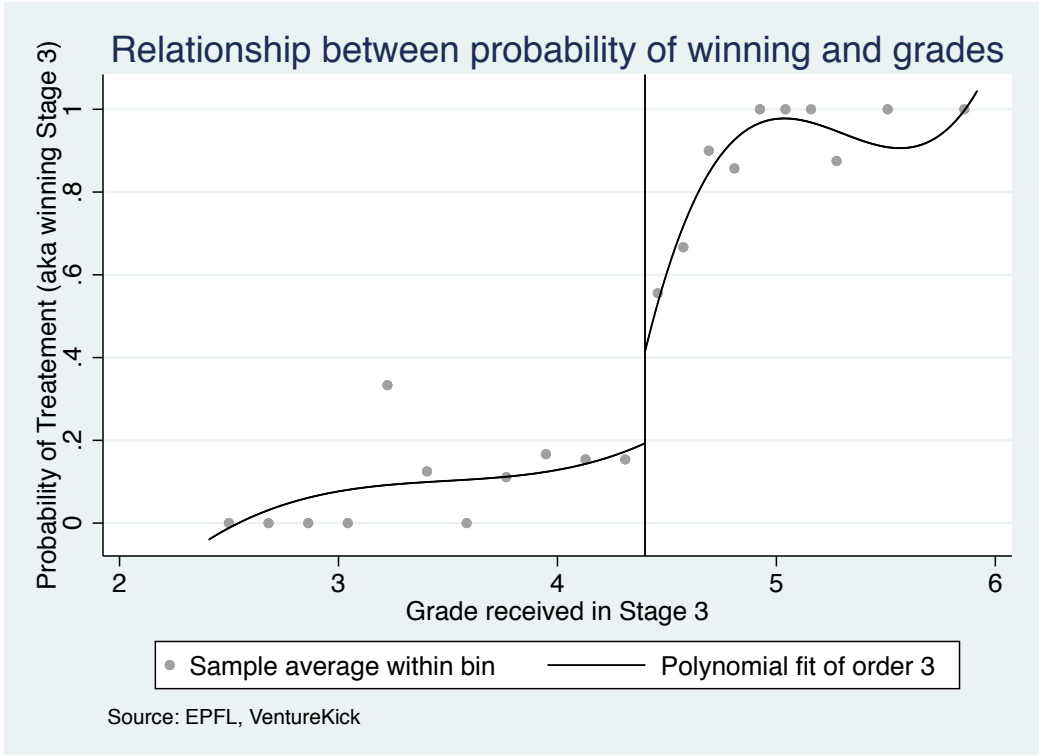
The problem is that we cannot simply compare Stage 2 and Stage 3 startups to estimate the impact of winning VentureKick on performances, because Stage 2 and Stage 3 startups are different to begin with.

Our solution: using a Regression Discontinuity Design.



Using a RDD in the context of VentureKick

The implementation will prove a bit more complex…



Current state of the study and next steps

Current State :

- Pre-regression analysis of the data (f.ex: analysis of grade and voting behavior).
- Search for the discontinuity.
- Consolidation and verification of the dataset.

Next steps :

- Implementation of our research design and analysis of the impact of participating in and winning a competition like VentureKick

I am very interested in your opinion

Theory tells us that cleantech startups should be particularly constrained financially and should thus benefit more from early stage financing than startups in other sectors:

- Have you seen this in practice? From your experience, is Switzerland different in this regard than other countries?

Do you believe Venture Competitions to be an adequate financing tools to finance early-stage startups? If not, why?

Do you see evidence of a “warm glow” effect with investors? Are investors willing to accept lower returns in order to invest in technologies beneficial to society.

Do you know of any other related research question that you think would deserve looking into?

The End

Thank you for your attention !