

Foreign investments and jobs: Evidence from US venture capital investments in Sweden

December 2017

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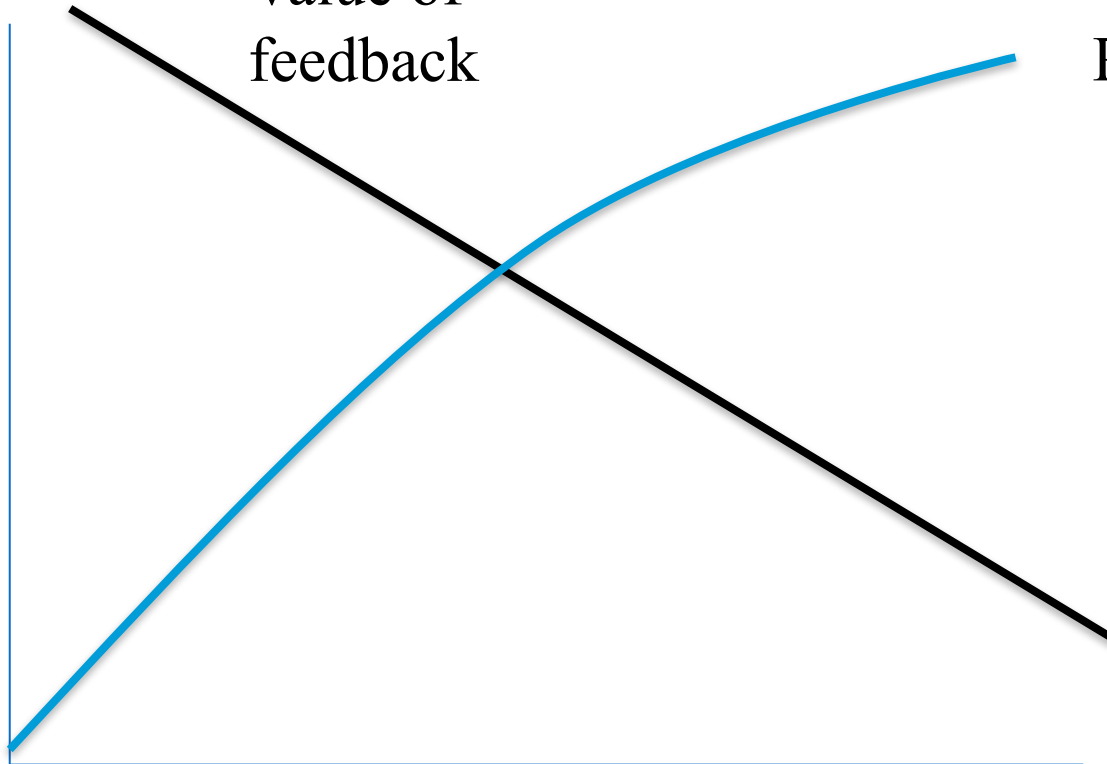
Research Institute of Industrial Economics (IFN)

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Current status

Value of
feedback

Paper quality



Time

I AM
HERE

The new nationalism



David Parkins

New economic nationalism

- US: President Elect Trump:
 - “Put America First”
- UK: FT, July 16th 2016
 - “Theresa May, the prime minister, took office last week vowing to protect British business from predatory foreign investors”
- FT, July 18th 2016
 - Spotify co-founders threaten to quit Sweden

Long-standing debate

What role of foreign VCs?

Should European countries imitate Silicon Valley?

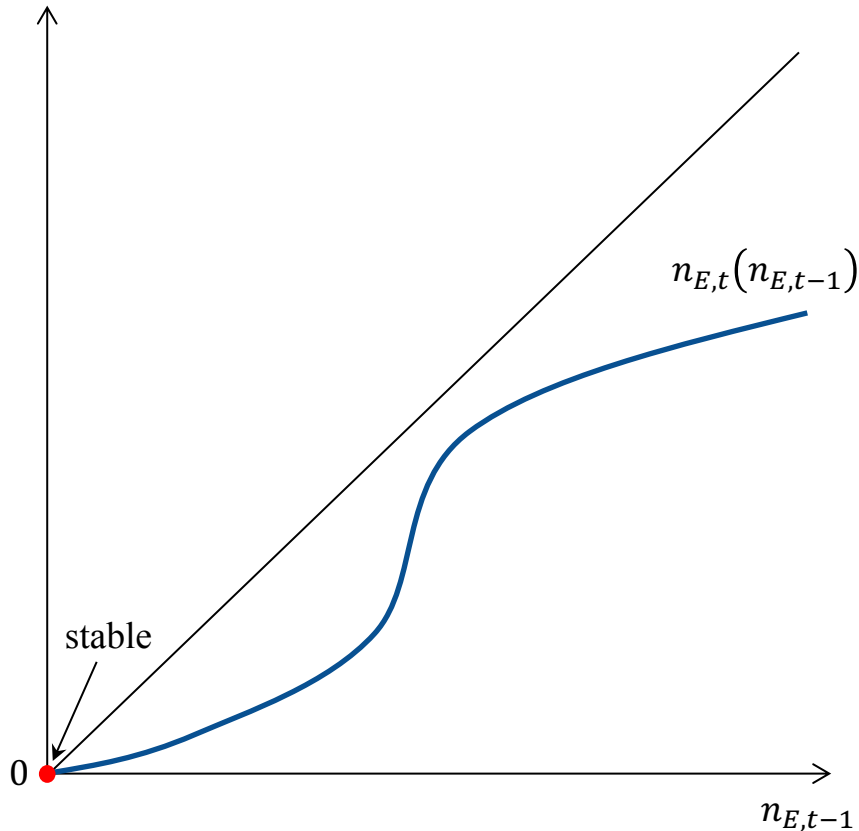
If so, do foreign VCs bring in direct benefits?

Are there any spill-overs?

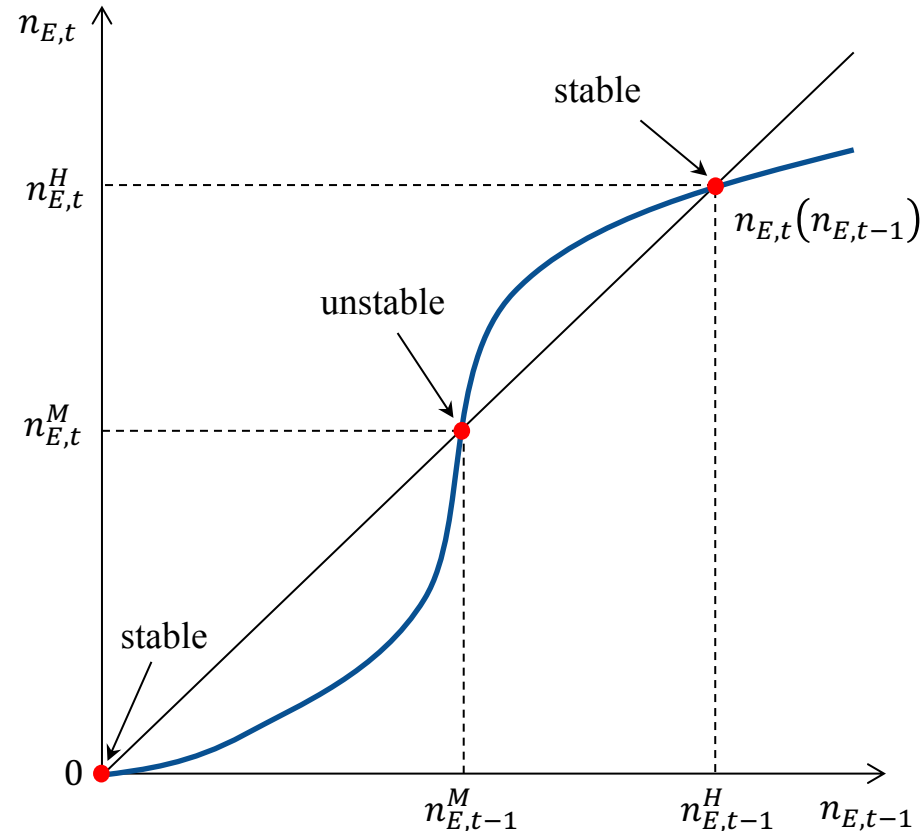
Is the Israeli success story replicable?

Ecosystems with multiple equilibria

Panel A

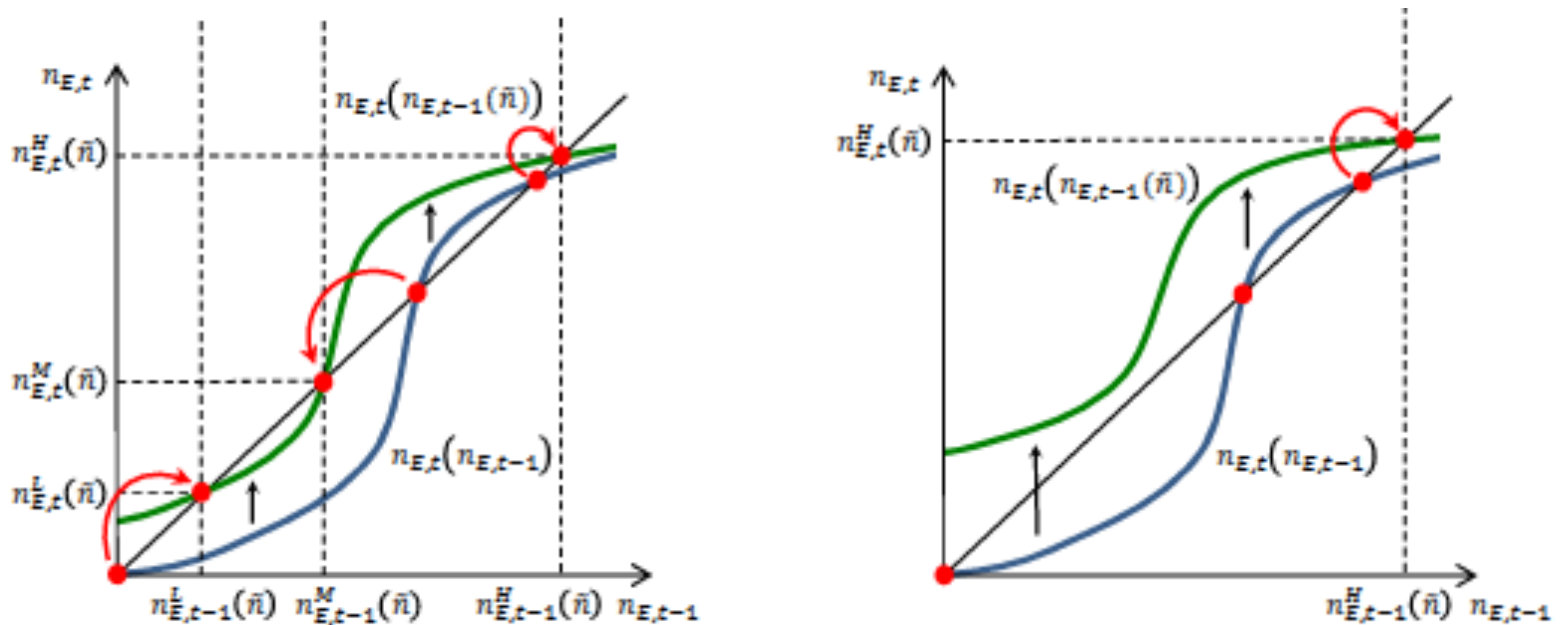


Panel B



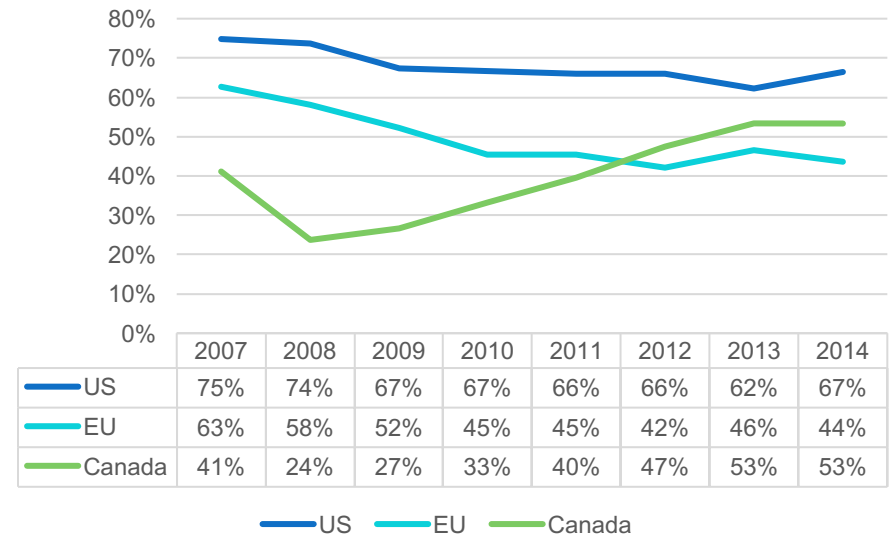
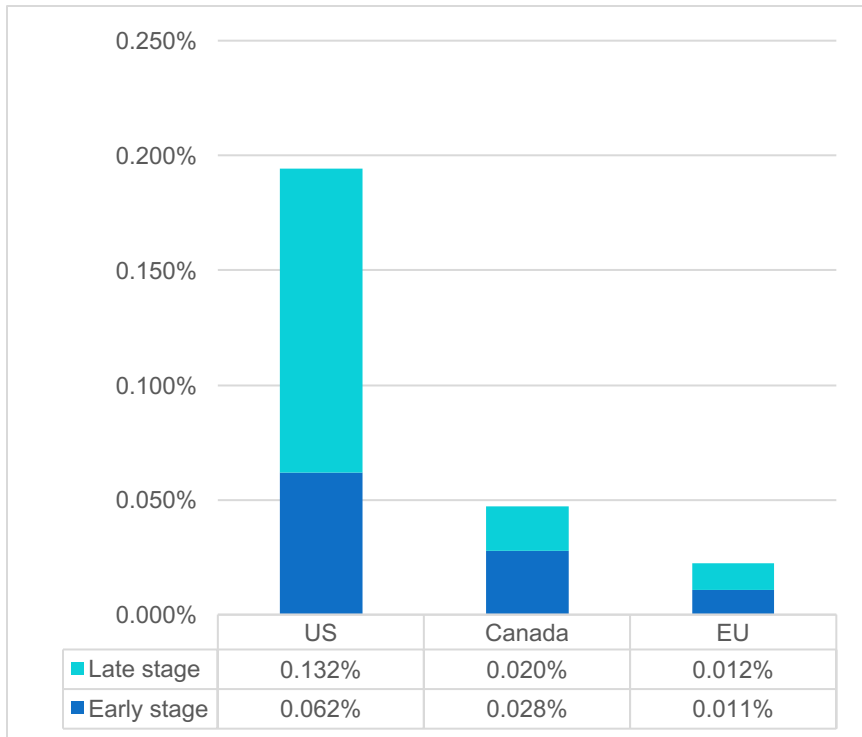
Fostering Entrepreneurship: Promoting Founding or Funding?
(Hellmann and Thiele 2017)

A role for foreign investors?



Foreign investors can help to escape low equilibrium trap
Over time, domestic investors grow in importance

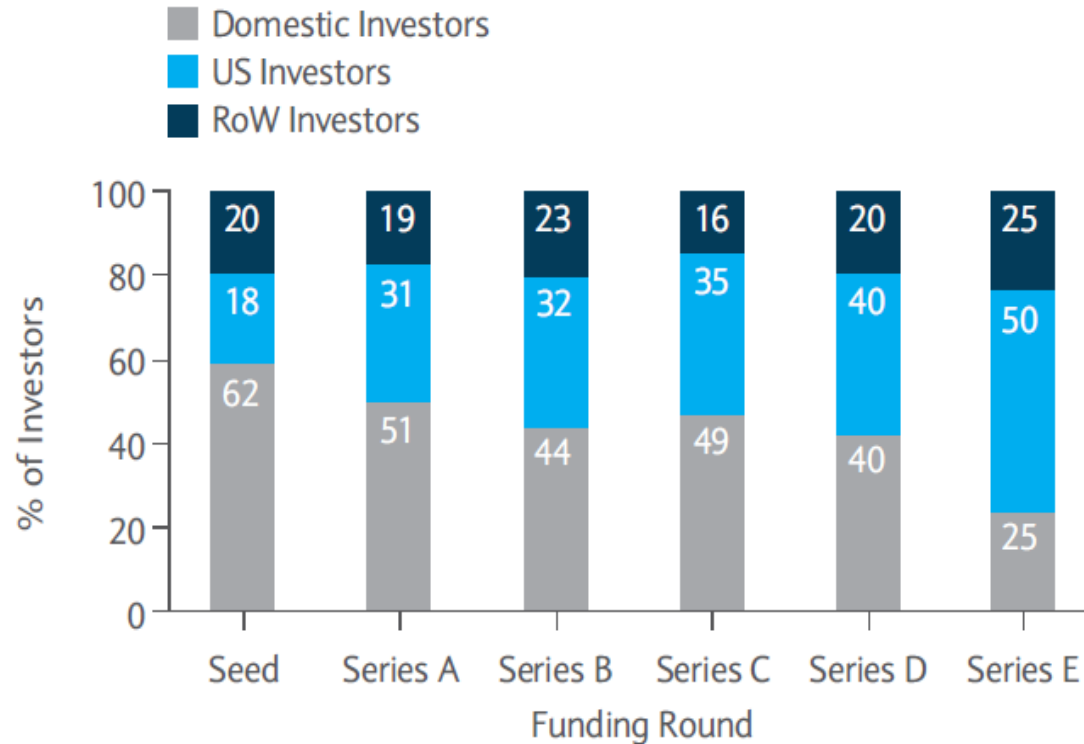
The Scale-up problem (Duruflé, Hellman, and Wilson, 2017)



EU & Canada lags US especially at later stages

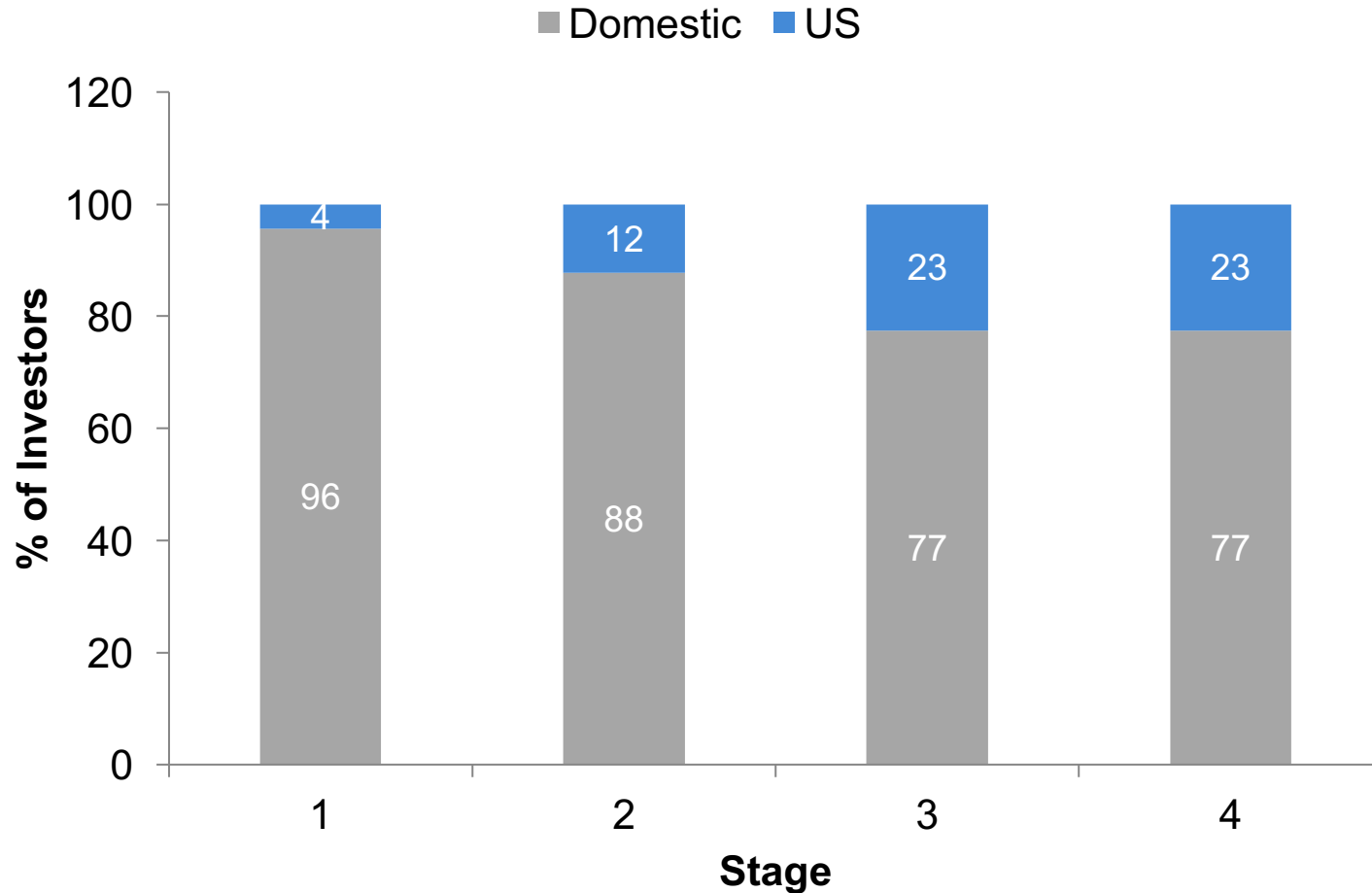
Foreign vs. Domestic Investors in UK VC Deals

Figure 5: Foreign vs. Domestic Investors in UK VC Deals



Foreign investors fill scale-up financing gap

Same story in Sweden



Research questions

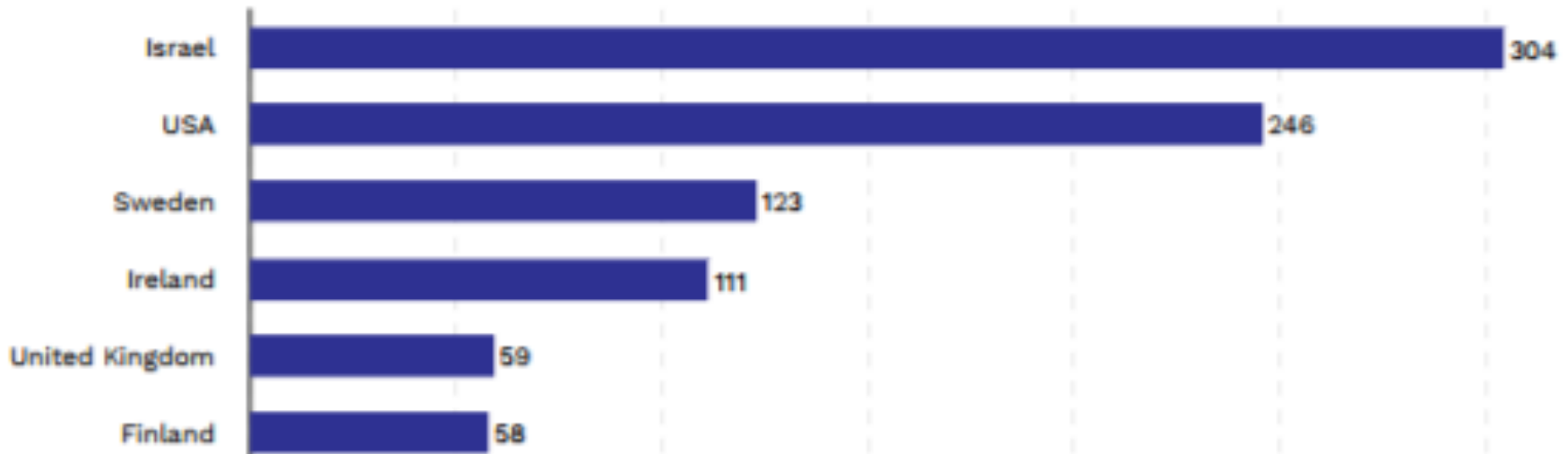
- 1. Do US VC investments generate more or less employment in Sweden as domestic VC investments?**
- 2. Are the effects causal or based on selection?**
- 3. Is the quality of jobs affected by foreign investors?**

Is Sweden interesting?



Is Sweden interesting?

Capital invested (\$) per capita by country



Why should investor origin matter?

1. **POSITIVE:** US VCs have greater expertise and deeper networks, which encourages domestic growth

“Lay all your jobs on me”

2. **NEGATIVE:** US VCs primarily specialize in expansion abroad and has no interest in local job creation, more willing to downsize

“So long, see you honey”

Preview of core results

Relative to **domestic VC investments**, do **US VC investments in Sweden** generate more or less employment in Swedish companies?

- Evidence suggests higher employment for US venture capital investments.

Are the effects causal?

- Based on an instrument using shocks to US fundraising environment, the employment effects appear to be causal.

Some literature

Foreign vs domestic investments

Chemmanur et al. (2016), Dai et al. (2012) , Nahata et al. (2014) Bottazzi et al. (2016), Humphrey-Jenner and Suchard (2013), Bena et. al. (2016).

Venture capital and jobs

Puri and Zarutskie (2011) , Davis et al (2011),

Our contribution

1. Job creation by investor origin
2. Job creation around exits – work in progress
3. Job quality at individual level – work in progress

Swedish data

Thomson ONE (1995-2015)

- All investments and exits in Swedish firms.
- Deal data on investment amount, dates, stage, syndicate members, location of VC headquarters

Swedish Companies Registration Office (1998-2012)

- Annual accounts for population of LLCs (private & listed)
- Event data: bankruptcies, liquidations, M&As.
- Group structures: track subsidiaries (domestic & foreign).

Main Sample

- Company level
- Annual panel data (1998-2012)
- Track companies from 1st VC investment to exit

Descriptive statistics

Variable	N	Sample average	Average For USVC=0	Average For USVC=1	P value mean difference
Employees (log)	5,784	2.331	2.236	2.956	0.000
Net job creation	5,621	1.566	1.368	2.875	0.135
Employment growth	5,621	0.221	0.196	0.382	0.054
Average wages	4,951	432,257	429,238	451,584	0.208
New round	5,784	0.225	0.217	0.281	0.000
Foreign new round	5,784	0.029	0.000	0.216	0.000
Round amount (log)	865	1.404	1.113	2.561	0.000
Exit	5,306	0.040	0.036	0.065	0.003
Failure	5,306	0.006	0.006	0.003	0.165
New round or exit	5,413	0.276	0.263	0.358	0.000
US fundraising	5,784	24.623	24.329	26.549	0.003

Main empirical model

$$\text{Outcome}_{t+1} = \text{USVC}_t + X_t + \varepsilon_t$$

Outcomes (X_{t+1}):

- Employment
- Employment growth
- Net job creation
- Next round
- Foreign round
- Round amount
- Exit
- Failure

Controls (X_t):

- Age at first investment clock
- Industry dummies
- County dummies
- Round and stage controls
- OMX30
- GDP growth

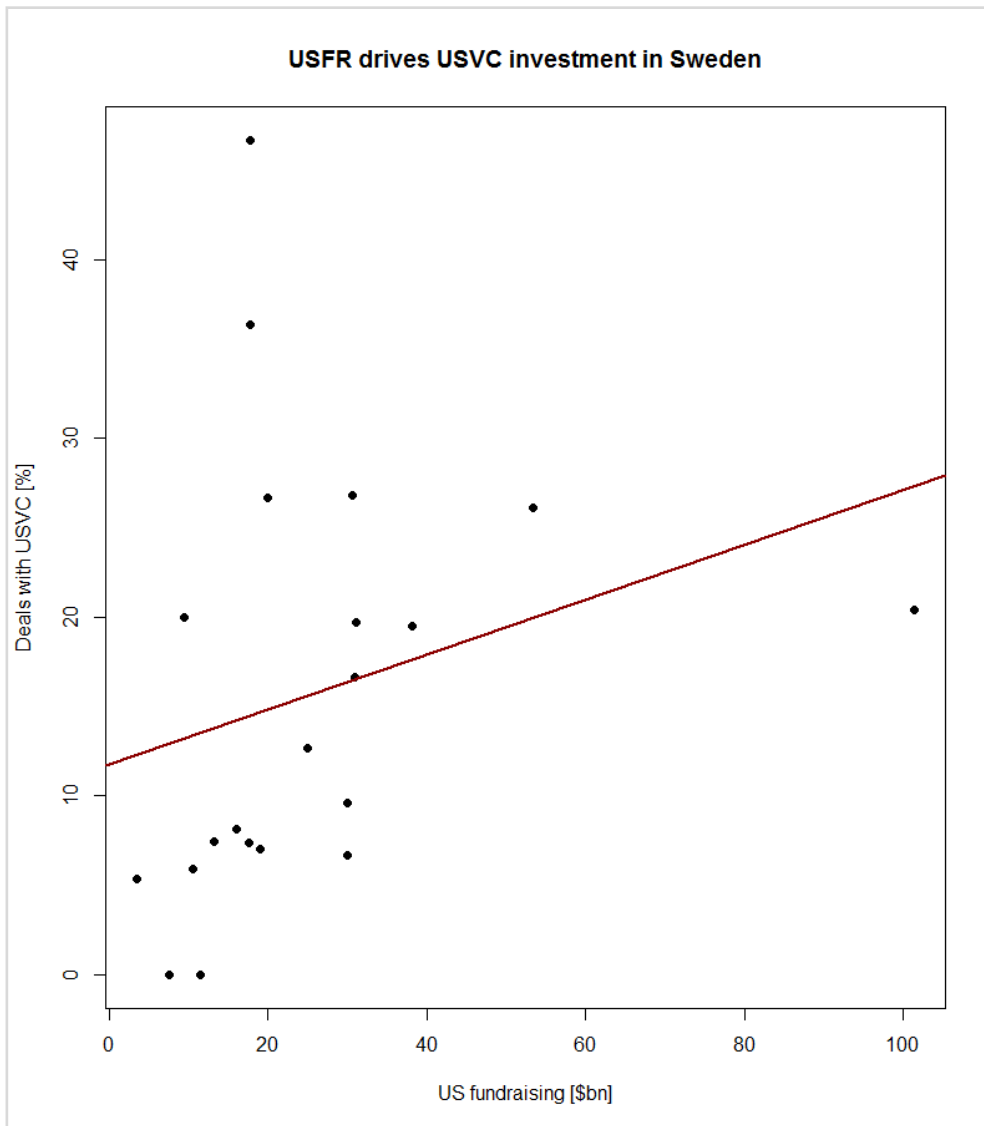
ε_t : cluster by company

USVC_t: endogenous!

OLS: Effect of USVC

Dependent variable	USVC coefficient	P value
Employees (log)	0.571	0.000
Net job creation	2.008	0.016
Employment growth	0.145	0.087
New round	0.034	0.058
Foreign new round	0.060	0.000
Round amount (log)	0.778	0.001
Exit	0.020	0.058
Failure	-0.004	0.124

Instrumental variable: US VC fundraising



Informative in 1st stage:

Should US VC fundraising affect US investments in Sweden?

YES

Exclusion for 2nd stage:

Does US VC fundraising directly create jobs in Sweden?

NO

IV Results

1st stage:

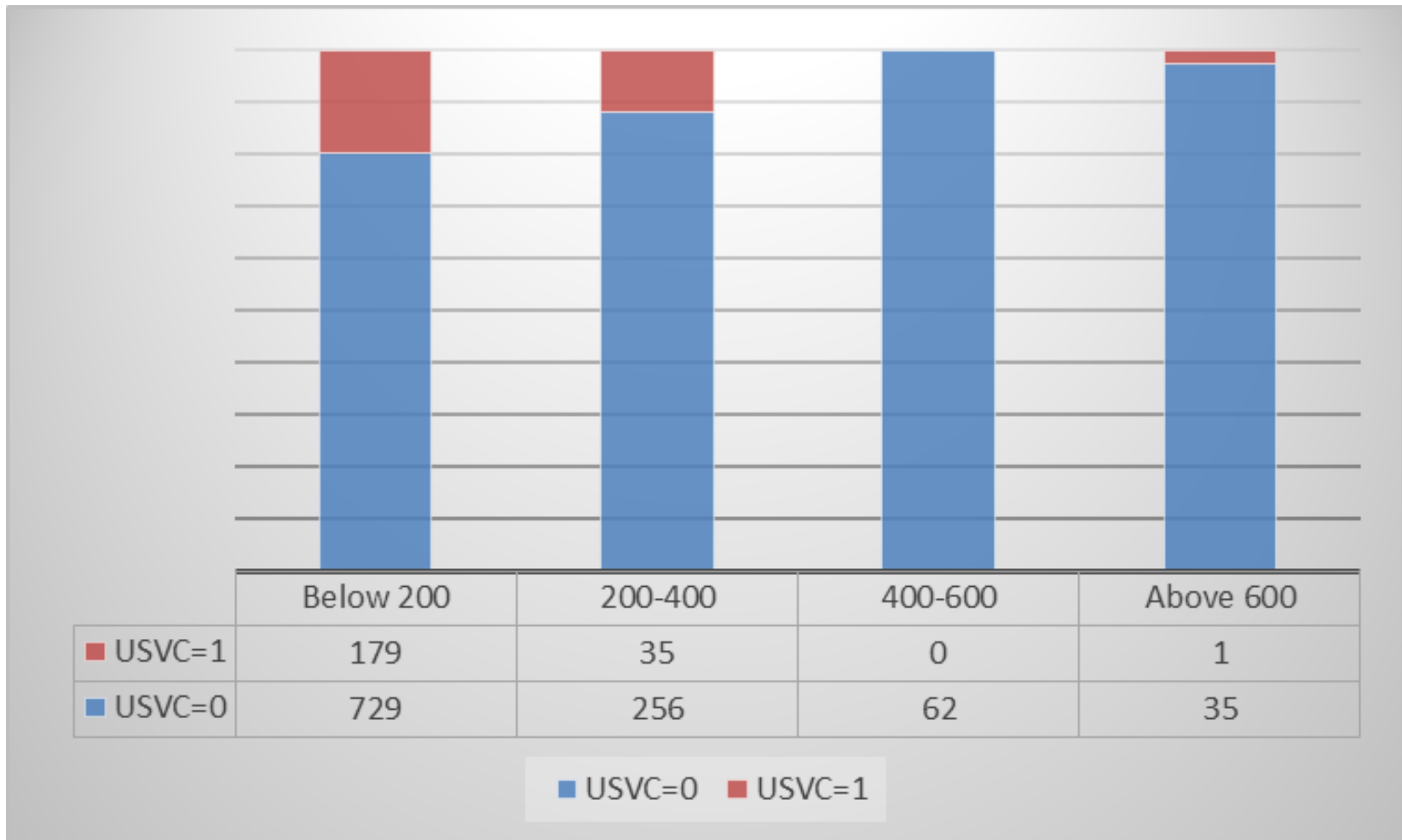
Instrument	T statistic
USFR	3.080
R-squared	0.111
F statistic	9.507

IV valid

2nd stage:

Dependent variable	USVC coefficient	P value
Employees (log)	8.260	0.002
Net job creation	39.241	0.026
Employment growth	4.800	0.024
New round	0.662	0.031
Foreign new round	0.386	0.022
Round amount (log)	-3.153	0.853
Exit	0.560	0.009
Failure	0.035	0.271

An additional IV: Interaction with distance to airport



More IV Results

1st stage:

Instrument	T statistic
USFR	3.24
Interaction	-2.16

R-squared 0.112

F statistic 8.544

2nd stage:

Dependent variable	USVC coefficient	P value
Employees (log)	7.146	0.002
Net job creation	44.506	0.017
Employment growth	4.218	0.032
New round	0.655	0.026
Foreign new round	0.361	0.021
Round amount (log)	3.749	0.406
Exit	0.552	0.008
Failure	0.043	0.184

The effect of exit on jobs

OLS: Effect of Exit

Dependent variable	Exit	P value	Foreign exit	P value
Employees (log)	0.140	0.316	-0.111	0.632
Net job creation	0.749	0.836	-5.919	0.160
Employment growth	-0.064	0.438	-0.162	0.098

Employment growth slows down after exit,
especially after foreign exit

Only correlation, not causation!

OLS: Effect of Exit and USVC

Dependent variable	Exit	P value	Foreign exit	P value	USVC	P value
Employees (log)	0.112	0.413	-0.164	0.469	0.587	0.000
Net job creation	0.639	0.859	-6.131	0.144	2.358	0.016
Employment growth	-0.072	0.386	-0.176	0.072	0.159	0.109

Same results if we also control for USVC investments

Data on individuals

Properties of sample data

Effect of foreign VC on prior employees!

- Prior = hired before 1st VC
- Foreign = US & RoW

Individual annual panel

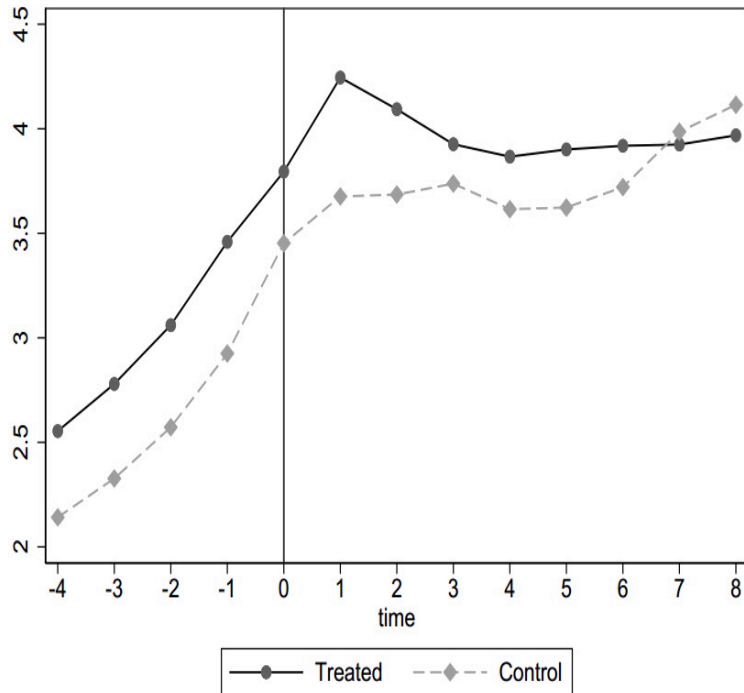
- Subset of company data
- 511 companies (37% with foreign investor)
- 13829 employee-year observations

Attrition

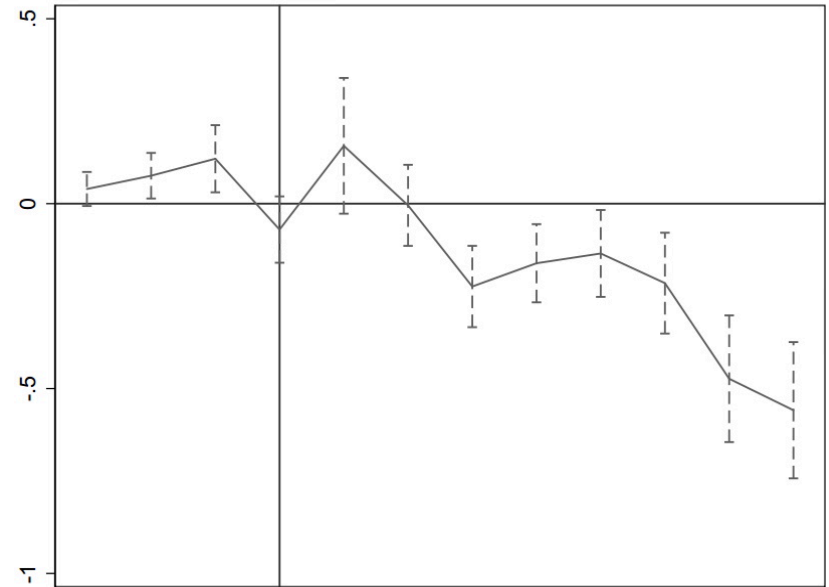
- < 10% for period -4 years to +4 years

Trends in labour income

Raw evolution



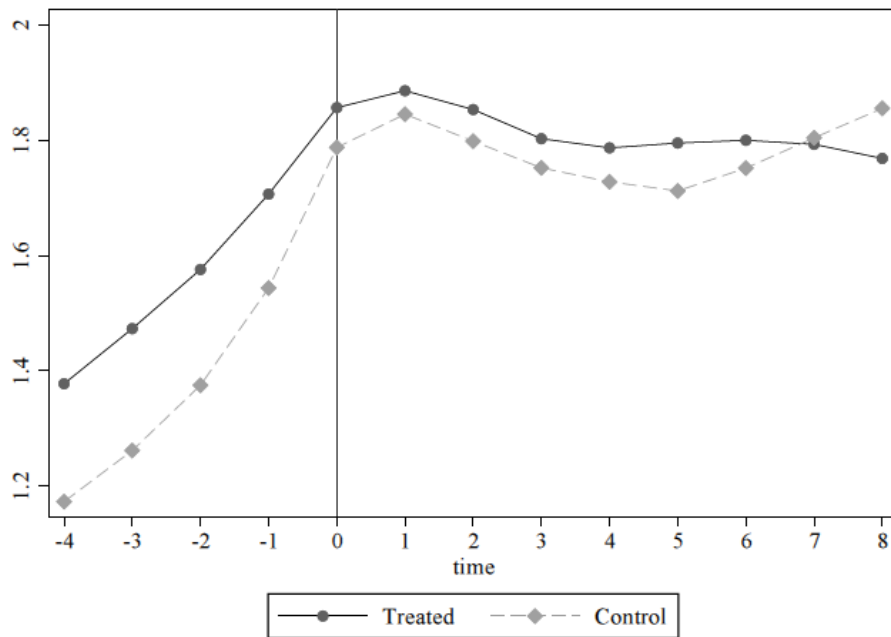
Differential trends



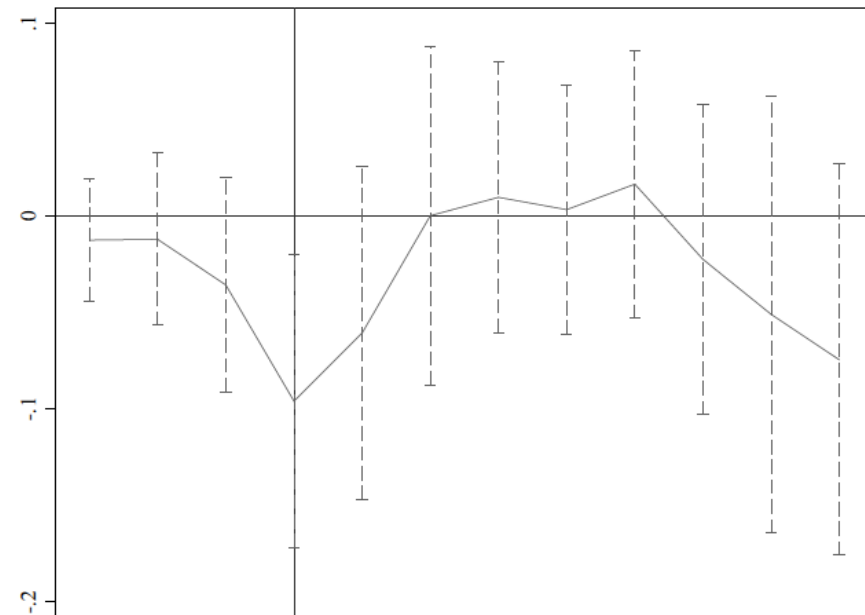
Wage income with foreign VC higher
but growing more slowly

Trends in total income (labour and capital returns)

Raw evolution



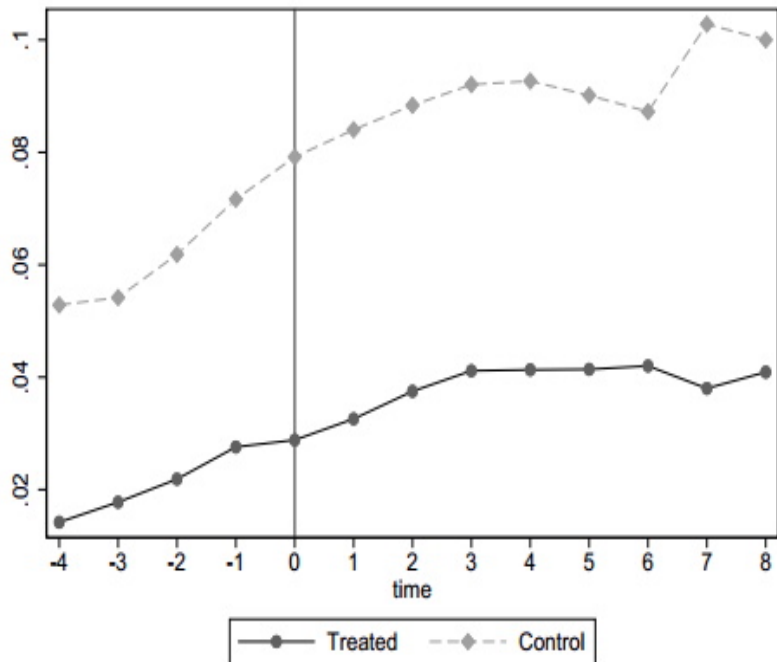
Differential trends



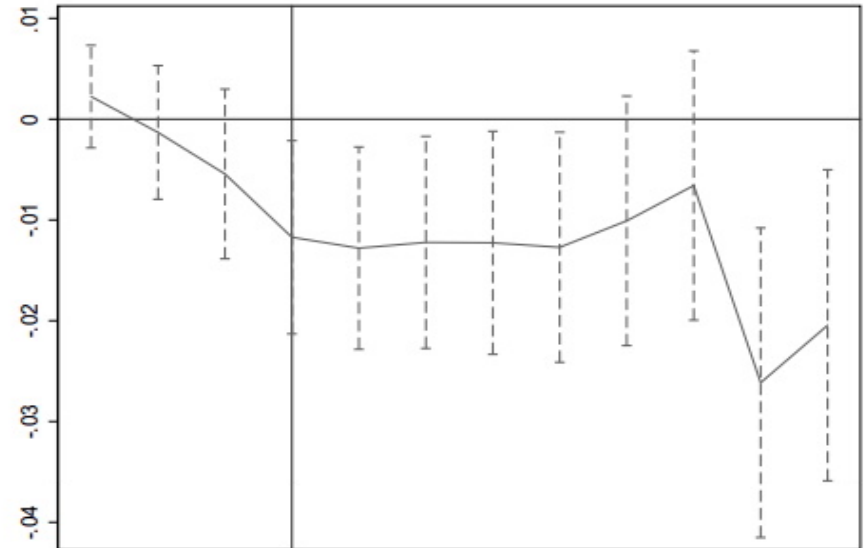
Effect on total income (incl. capital income) all insignificant

Trends in rate of becoming entrepreneur

Raw evolution



Differential trends



**Fewer employees in USVC backed companies
become entrepreneurs**

Conclusion

- US investors have positive effect on
 - Employment
 - Fundraising
 - Exit
- Effects appear to be causal
- Mixed evidence on
 - differential job destruction after exit
 - on individual careers
- More research to be done