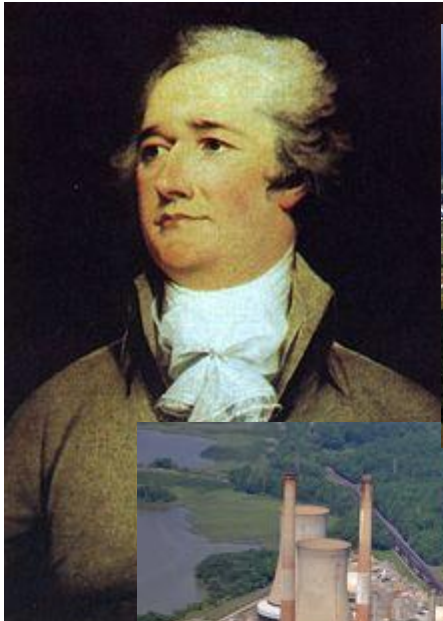


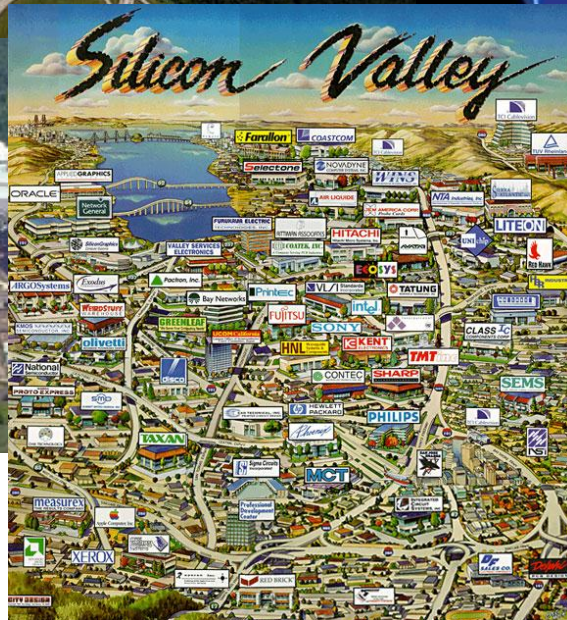
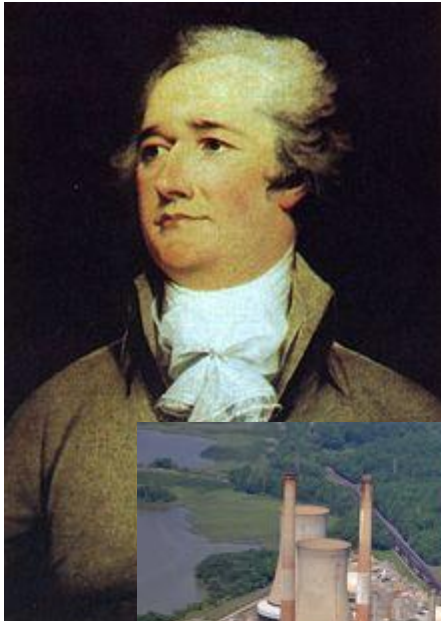
A Short Conversation with a Policy Maker

William Kerr

“Smokestack Chasing”



“Be the next Silicon Valley”

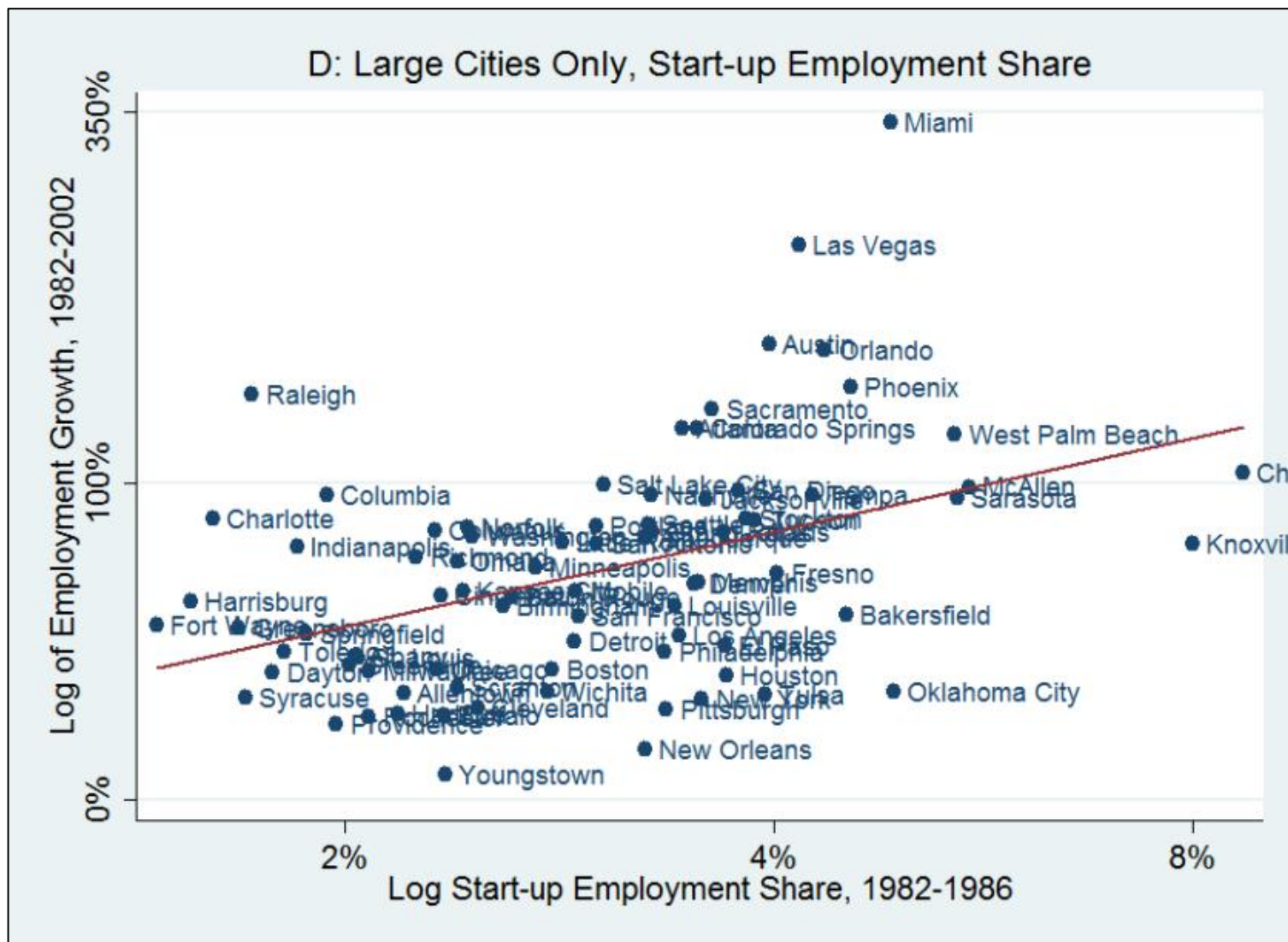


**BOSTON'S
INNOVATION
DISTRICT**

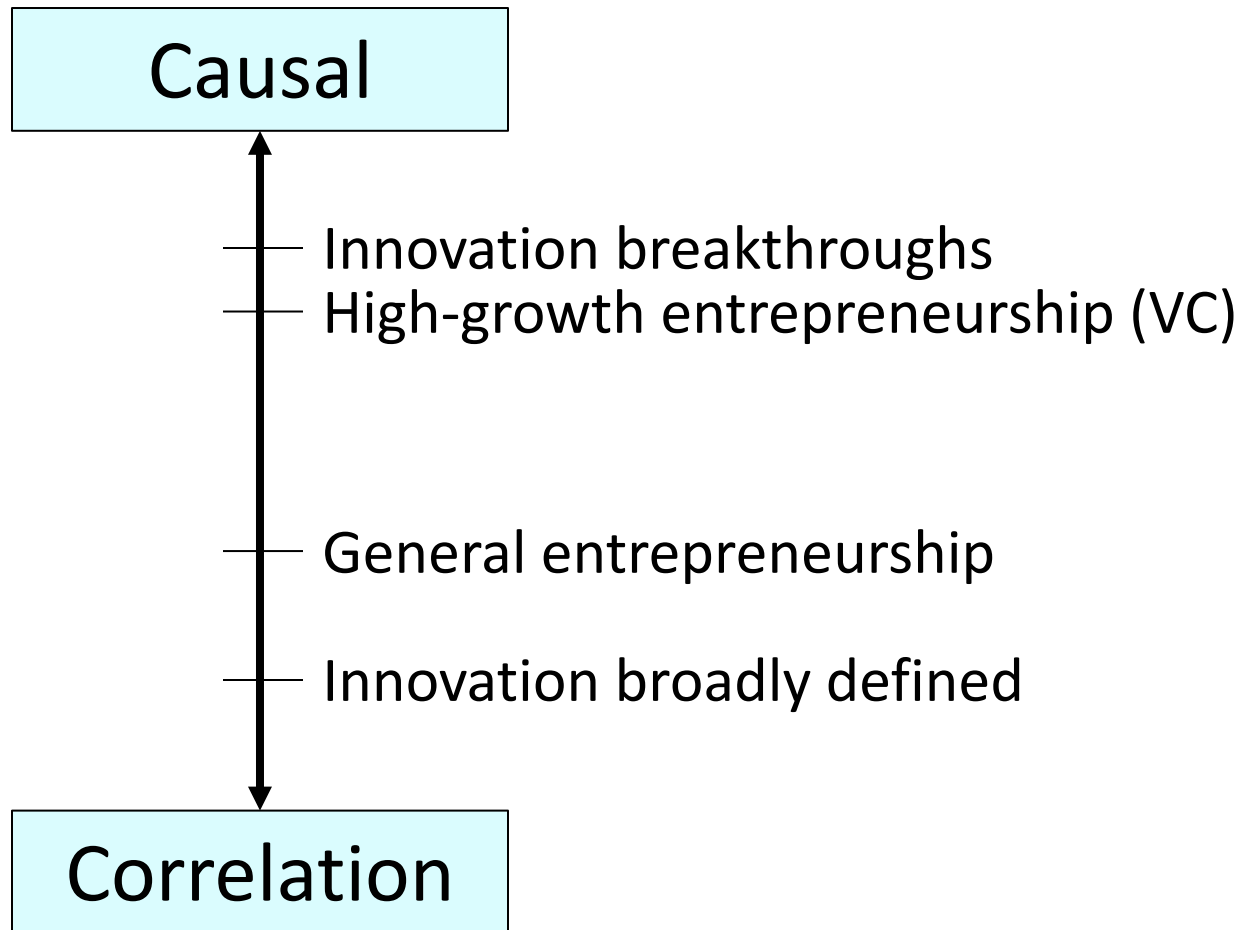
Agenda: 6 E's!

- Entrepreneurship -> growth (?)
- Experimentation
- Externalities matter
- Entrepreneurial clusters in 2 minutes
- Evidence on traits of places
- Effective policy?

Fig. 1: City employment growth and initial entrepreneurship
 Cross-sectional plots of urban growth 1982-2002 vs. initial traits



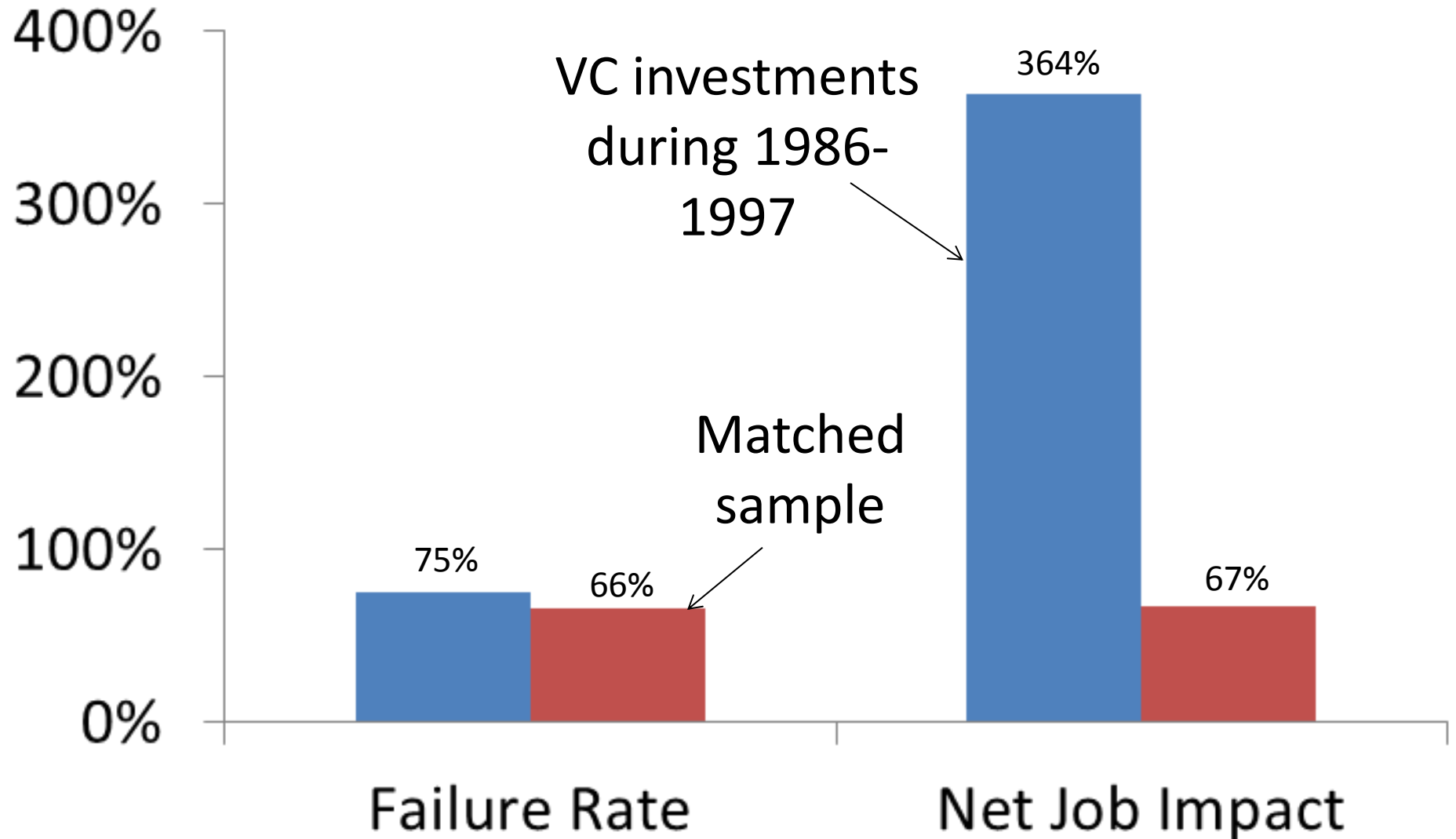
Driving City Growth?



Experimentation's Forms

- “Entrepreneurship as experimentation”
 - Darwinian view of markets
 - Sneaking away from Google
- Experimental notions
 - Knightian uncertainty vs. risk
 - You don't get to test everything!
 - Real options: expand the set of possible tests
 - VC economics and contractual structures

Making Omelets: View from 2007



Experimentation's Frictions

- Costs of running experiments
 - Financial barriers, lean start-up, etc.
 - Non-financial costs like stigma of failure
- Organizational frictions
 - “Throwing good money after bad”
 - Impartial decisions and length of commitments
- Continuation and financing risk
 - Stability of future financing availability
 - Markets for ideas

Experimentation's Consequences

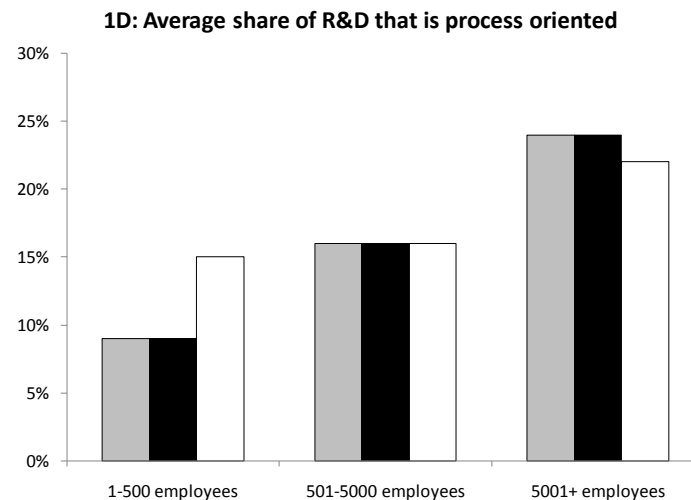
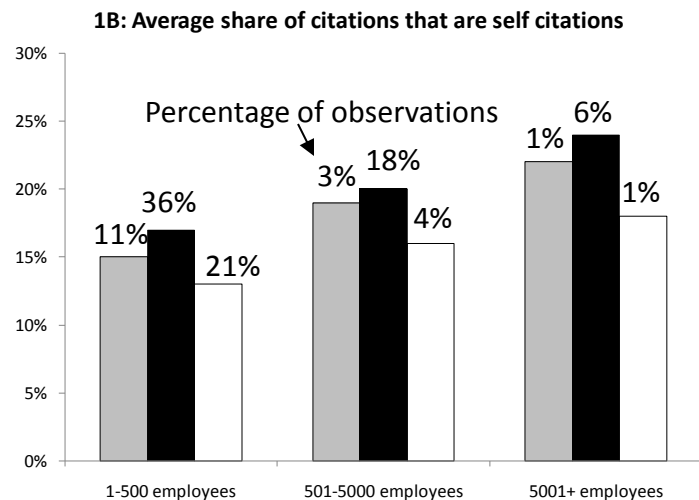
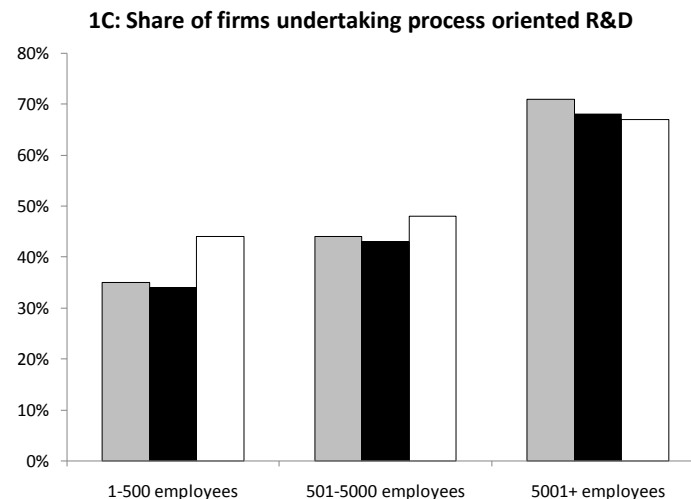
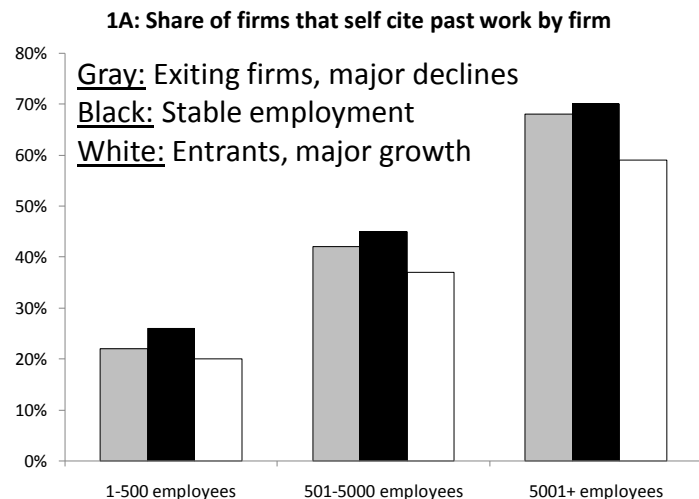
- Some good news for policy makers
 - Entry barriers and financing competition
 - Bankruptcy law and employment protection
 - {Not yet to justifying active policy!}
- Some worries for policy makers
 - Cowan avoided the garage...
 - The messy nature of “democratized” entry
 - Commitment can be hard but essential

Active Policy Rationale

- Externalities
 - Build local tax base
 - Real externalities over firms
- Redistribution
 - Fighting concentrated poverty (w/ focus on place)
- Credit constraints
 - Credit market imperfections that limit start-ups

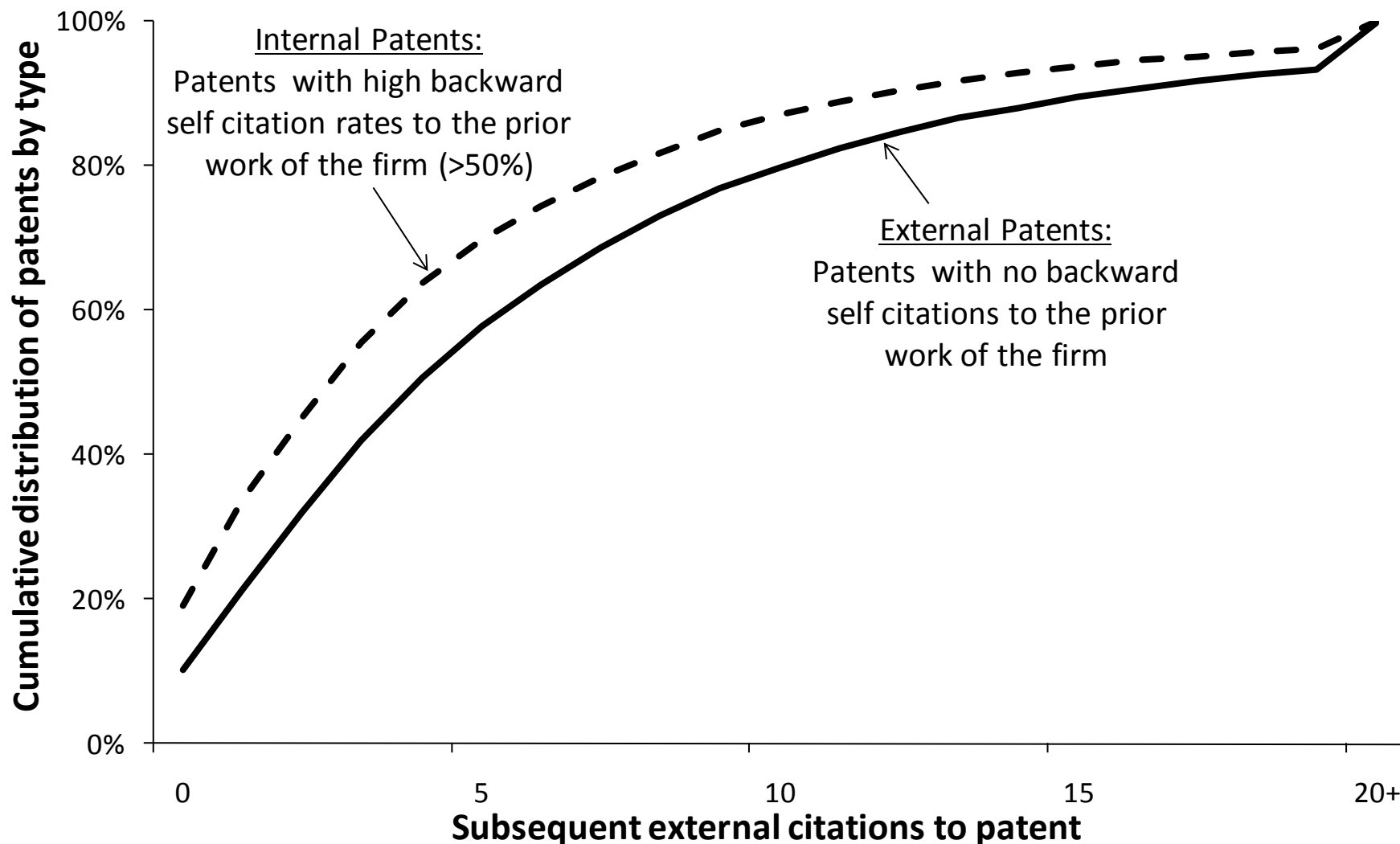
Fig. 1: Exploitation R&D behavior among US firms

Distributions of firm size and growth



Notes: Figure shows basic regularities on firm R&D and patenting for innovative firms that conduct R&D or file patents. Data are taken from US Census Bureau and NBER Patent Database. The three groups of columns per chart separate firms by employment size. Within each triplet, firms are further separated by contemporaneous employment growth. Panels 1A and 1B document the extent to which firms self cite their prior work. Panels 1C and 1D consider the extent to which firms undertake process-oriented R&D. Greater self citations or process-oriented R&D represent exploitation R&D behavior. Exploitation is increasing in firm size, but is approximately invariant to contemporaneous firm growth rates conditional on firm size.

Fig. 2: Spillovers from external versus internal patents
1975-1984 US domestic patents



Notes: Figure plots cumulative distribution of citation counts by patent type. We group patents by the share of citations that they make at the time of the patent to prior work by the same assignee. The distribution of citations overall is highly skewed. Patents building mostly on prior work of the same firm have a lower external impact. This is evident in that the cumulative density for external patents is lower than for internal patents. External patents represent exploration innovation, while internal patents represent exploitation. Our sample includes all domestic USPTO patents to industrial firms from 1975-1985. Citations are calculated over 1975-1999.

Clusters Abound

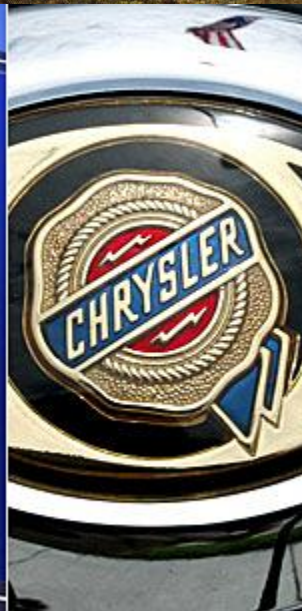
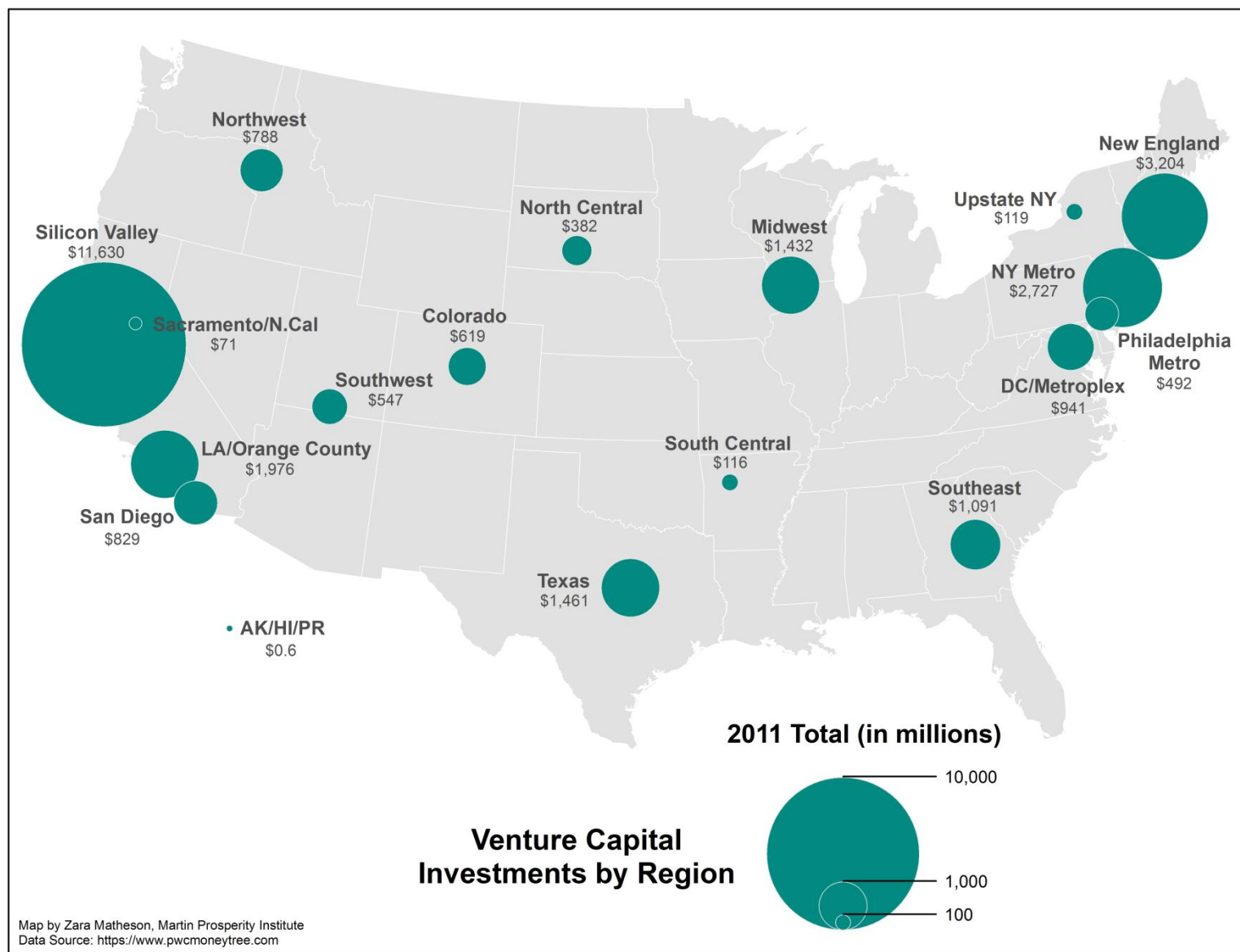


Fig. 4: Spatial concentration of venture capital investments, 2011



Notes: Taken from Martin Prosperity Institute's Zara Matheson and based upon PWC MoneyTree data.

Issues on Clusters



Uneven Entrepreneurship

What do entrepreneurial places possess?

- Education + age structure + “supply”
 - Physical infrastructure likely important too
- Strong link to industrial structure of city
- Role for high-skilled immigrants in US
- Appears that local spillovers are quite confined by distance, demographics, and similar...

Agenda: 6 E's!

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Fig. 2: Dimensions of government policy

		Degree of specificity towards industries and firms		
		General	Industries/sectors	Firms
Degree of specificity towards locations	National and state			
	City and county			
	Neighborhood			

Policy Types

- Increase “local supply”
- Direct subsidies and assistance
- Lowering the costs of starting/failing
- Regional cluster initiatives
- Local innovation clusters
- Don't kill dynamics!



Wrapping Up

- Policy roles for entrepreneurship
 - Nuanced economic theory, unknown parameters
 - Accumulating empirical perspective
- Policy advice is very early-stage
 - Don't forget the basics! Clear role...
 - For the rest, we need lots of experiments
 - Proper design and evaluation critical