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The patterns of venture capital  
investment in the UK bio-healthcare  
sector: on geography, co-evolution and  
the provision of added value

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# Motivation

- Venture capital:
  - Provision of finance and value adding support to entrepreneurial firms
  - Role in supporting the development of entrepreneurial regions or clusters – potential catalyst (Avnimelech and Teubal, 2006)
- Bio-Healthcare SME:
  - Pharma – biotech R&D and firms supports over 70,000 jobs in the UK
  - Economic and social benefits
  - Strong need for innovation – new treatments
  - Academic research and SME
  - High tech / regulatory risk
  - Strong demand for support (financial and business)
- Our objective is to illustrate and explain the evolution and locational dynamics of venture capital investment in the UK bio-healthcare sector



# Outline

- Venture Capital
  - Background literature
  - Regional organisation
  - Financial and non-financial contribution
- Bio-Healthcare
  - Quantitative analysis of the patterns of investment activity, and investor proximity
  - Qualitative analysis of two clusters – Cambridge and Scotland
  - Reflect on how regional hi-tech development and venture capital are related



## Early stage investment and location (static)

- Concentration of investment
  - Florida and Kenney (1988) Martin & Sunley (2003)
- Why and what places ?
- Location of opportunities/ finance/ resources
  - Mason and Harrison (2003)
- Investor proximity
  - Local networks – opportunity recognition/syndication
    - Florida and Smith (1990)
  - Facilitate oversight and monitoring
    - Gompers and Lerner (2001)
  - Ability to add value – know what & know how
    - Powell et al (2002), Zook (2002-04)

# Dynamics – VC and location

- Co-evolution of start ups and venture capital
  - Reinforcing patterns of development
  - Catalytic investor role
    - Avnimelech and Teubal (2006)
- Local networks grow with cluster
  - Cumulative learning process
  - Ability to add value is linked to network
    - Zook (2002-04)
- Emphasis on different types of investor and different roles as clusters/firms develop
  - Powell et al (2002)

# Investment concentration

Data on UK investment activity in Bio-healthcare for UK regions

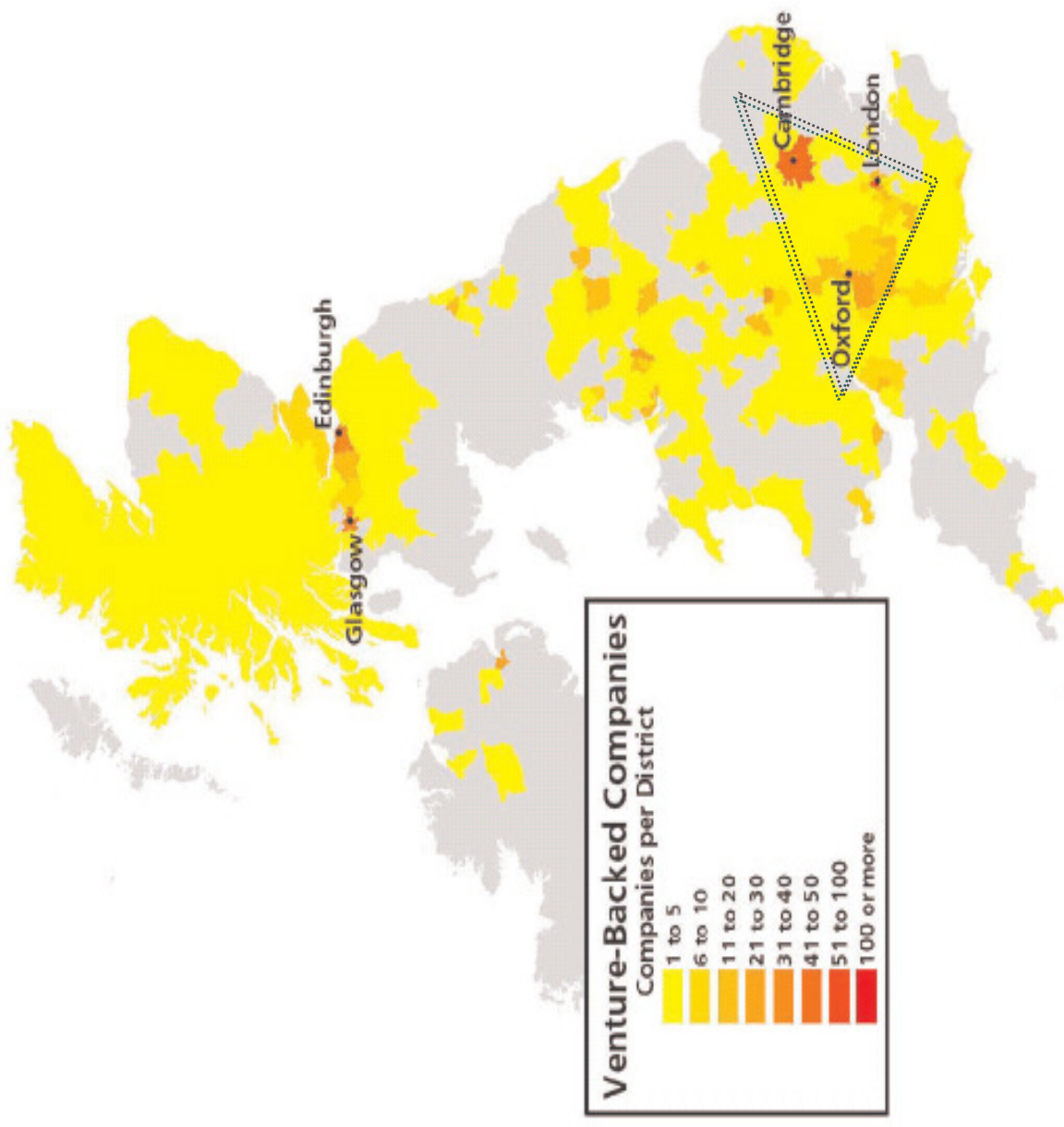


# VC Investment in Pharma-Biotech The UK and the Rest of Europe

VC Investment in 2004 (€ mill)				
	Healthcare	%	Biotechnology	%
UK	1,071	36	171	25
Germany	745	26	150	22
France	233	11	144	21
Netherlands	216	7	24	4
Sweden	95	5	64	9
Switzerland	24	1	17	3
EU Total	2,801		687	

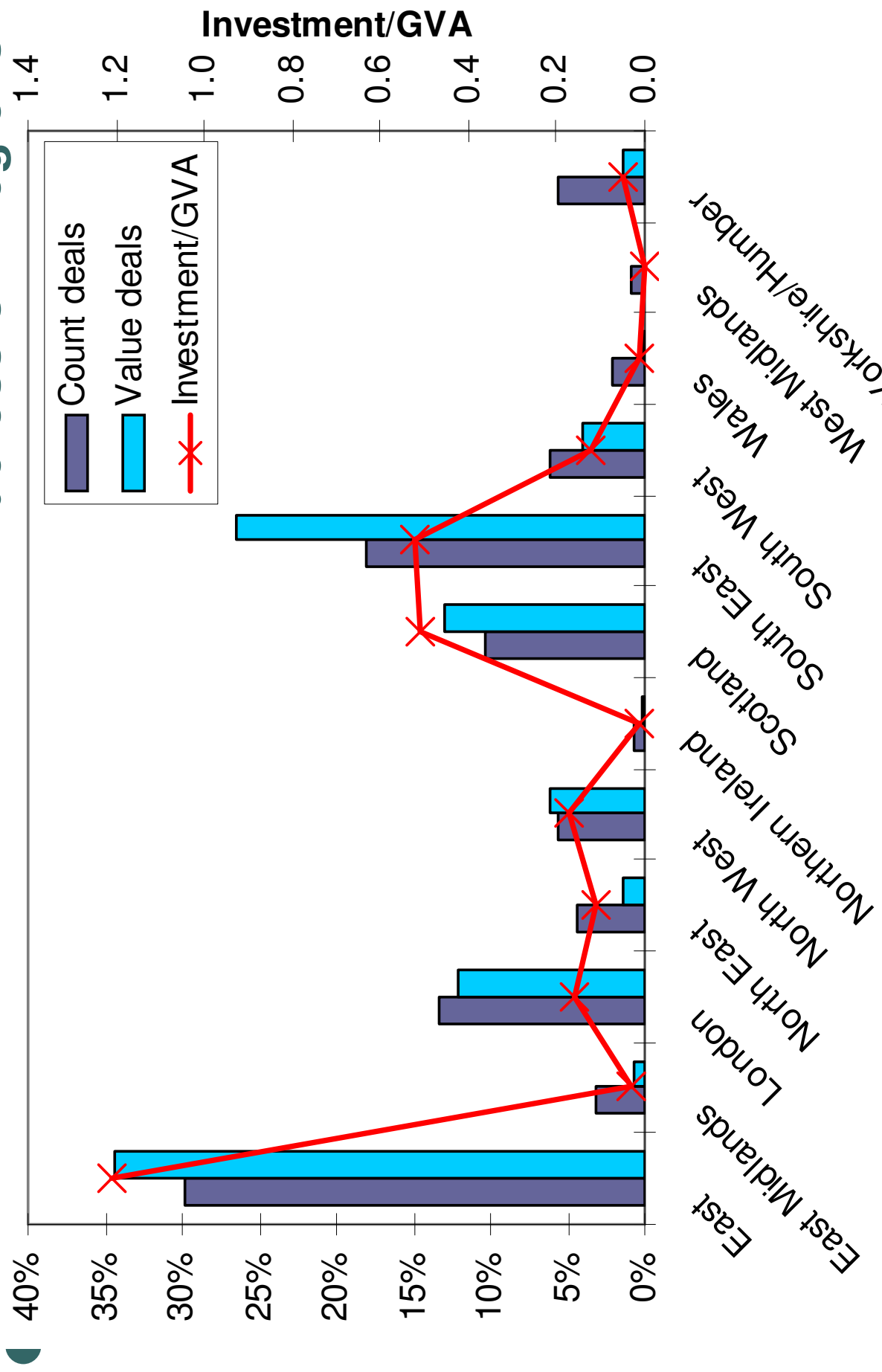
# General VC Investment in the UK

Distribution of Venture-Backed Companies by District



- o Library House “The Super Cluster Question” 2006

# Distribution of Bio-Healthcare VC across UK Regions



# Explaining the concentration: Investor proximity to portfolio firm



## Preliminary conclusions

- Investment in UK Bio-Healthcare SME is:
  - In line with the literature – investment concentrated into key locations
  - Concentration of investors in one place, but....
- Suggestive that investor proximity important to majority of deals...
  - And need to explore what drives proximity
- But there are other factors:
  - Historical location of opportunities/capital
  - Proximity to London – access to networks
  - Role of individual angel investors -Scotland

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Qualitative analysis: interview-based  
study involving private VCs and  
Biotechnology firms in Cambridge and  
Scotland



# UK'S 1<sup>ST</sup> AND 3<sup>RD</sup> CLUSTERS



- **Cambridge**
  - Half of the UK's top 15 LSE quoted biotech companies
  - £1bn of VC funds available from companies located in the region
  - 25,000 people employed in life sciences by private sector alone
  - Amgen, Genzyme, Gilead Sciences have operations in the region
  - Companies like GSK and MSD have major research establishments in the region
- **Scotland**
  - Strong involvement of Scottish Enterprise (£40m+)
  - Approx 550 Scottish organisations employing 26,000 involved in life sciences (public and private)
  - Overall, Scottish biotechnology-related businesses represent 15% of the UK's total (estimate)
  - Companies like Organon and Wyeth have major research establishments in the country

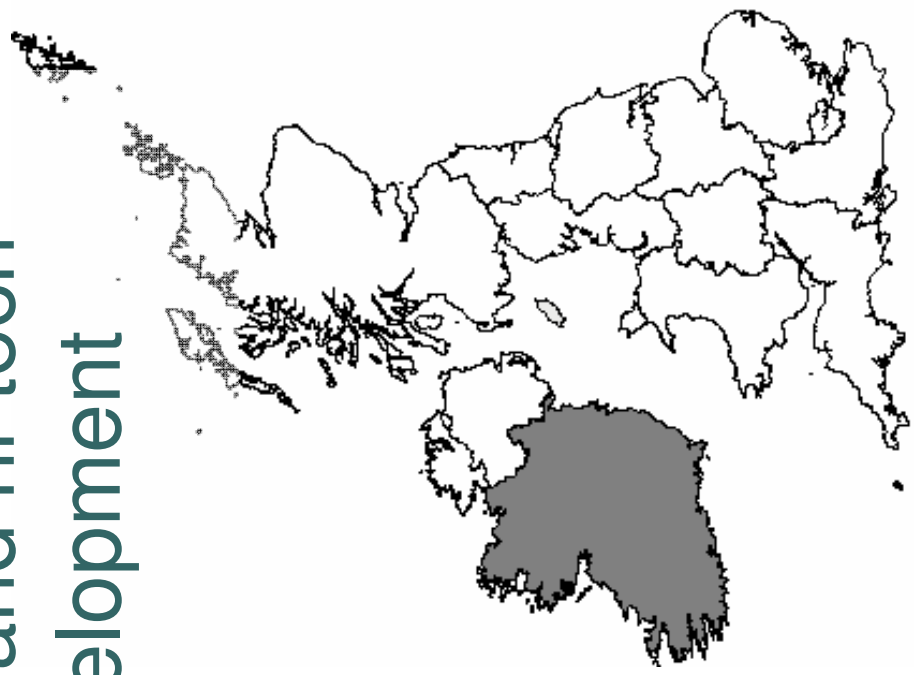
# Main Findings: A Static Perspective

## Cambridge and Scotland

- **Adding-value » reducing risk & uncertainty**
  - Mentorship (early stage): setup/review strategy (divergent views)
  - Provide links: further rounds, access
  - Change/add to management team
  - Specialist VCs have idiosyncratic knowledge and contacts
    - Understand risk involved – can give advice
- **Reduction of information asymmetries & transaction costs**
  - Through (local) networks to scout, select and monitor
    - Compel firms to deliver
  - Specialization, experimentation, cumulative learning and networking
- **Subtracted value?**
  - Typical VC: based in London with financial background
    - higher risk-aversion than in the US
    - very tight control and pressure to deliver (added value?)
    - “post-crisis” involvement



# Reflections on the dynamics of venture capital and hi-tech regional development





# Main Findings: A Dynamic Perspective

- **Solid starting point – pre-emergence:**
  - Science Base
  - Competent intermediaries and small investors (networks)
  - Formal VCs nearby (City of London)
  - R&D activity (large firm)
  - Experienced CEOs
- **Success breeds success**
  - Entrepreneurial culture
  - Attracts further investment
  - Generates pool of specialized knowledge & managerial talent
  - Networking for additional learning
  - Lead to development of a “competent” VC sector
- **VCS’ catalytic role – emergence:**
  - Drawn by investor-ready opportunities & returns;
  - Role changes - with needs of the cluster
  - VC functions with other parts of the system (intermediary-  
,networker’)



## Final points

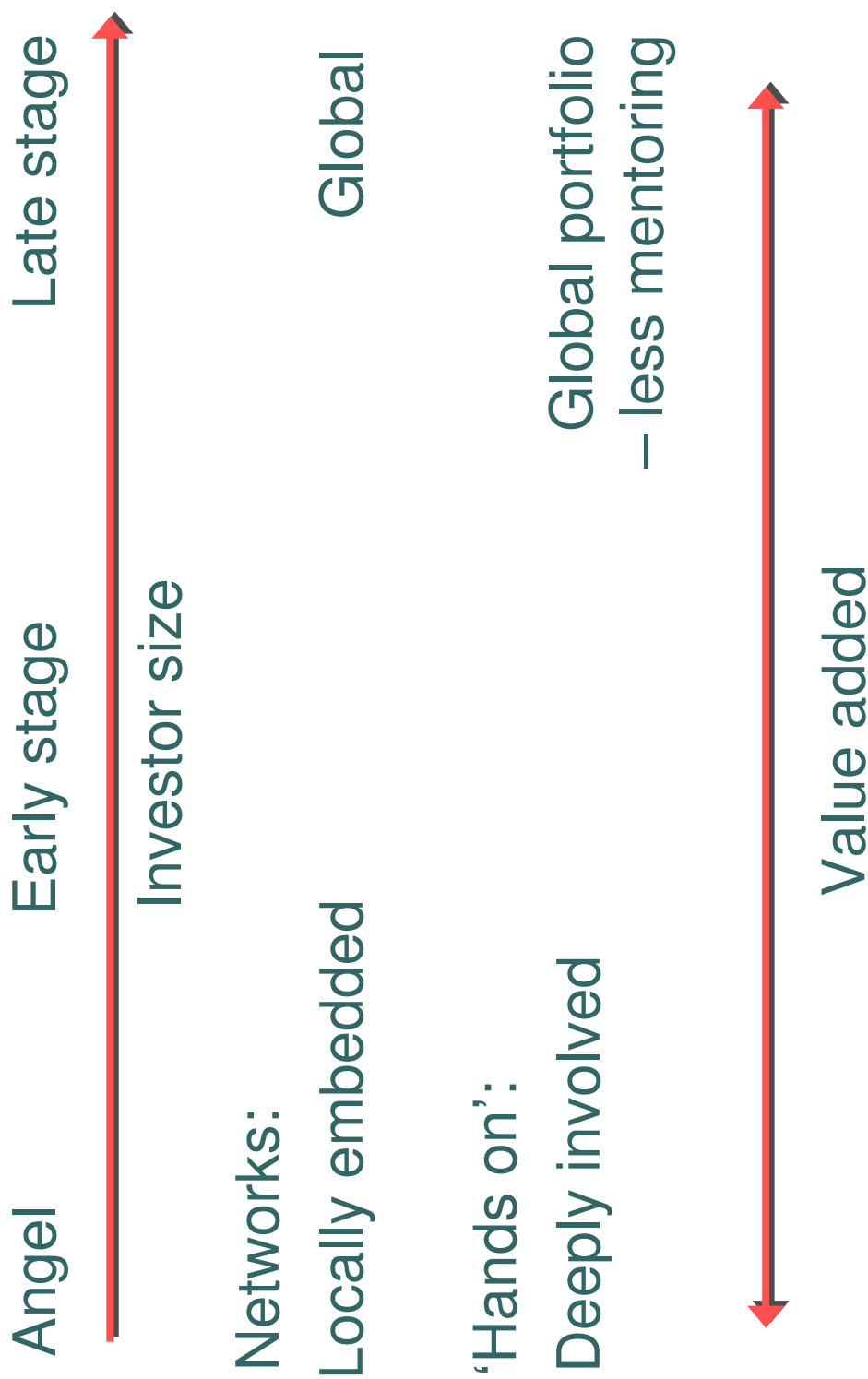
- A fully emerged VC market the result of a co-evolutionary and time/context dependent process
- Case of Scotland – emerging cluster:
  - Increasing VC concentration (post 2000)...
  - Emergence of local Angels Group and VC firms in Life Sciences
  - Missing factors?
- Not simply about increasing VC supply to trigger clustering



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○ Any Questions?

# Findings: Dynamic and adaptive investor-firm behaviour



# Added-Value: what it is?

- Use of networks/contacts to act as knowledge reservoirs (Zook, 2004):
  - Links with suppliers, customers, other investors
  - Access/recruit skilled managers, advisors and non-execs
- Add credibility to the firm (Hsu, 2004):
  - Access best investors/ business advisors/ underwriters
- Coaching: Provide strategic advice (Hellmann and Puri, 2002)
  - Sit in the board of directors
  - Develop business plan, strategy and implement it
- Oversight and monitoring (information asymmetry):
  - Best possible use of financial resources
  - Keep business to agreed plan