The Changing Landscape of Entrepreneurial Risk Capital: Origins and Implications

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Special thanks to Josh Lerner for his help with this presentation
Entrepreneurial Finance: Before the Great Recession

- Entrep's
- Venture Capital
- Exits
Strike #1: Demise of IPOs
Strike #2: Returns to VC and PE

Entrep’s → Venture Capital → Exits
US LBO performance: vintage year IRRs

LBO IRRs: capital-weighted average

US VC performance: vintage year IRRs

VC IRRs: capital weighted average

US LBO Vintage Year PMEs (simulated for VC, Preqin & CA)

Estimated average buyout PMEs from commercial datasets

US VC Vintage Year PMEs (simulated for VC, Prequin & CA)

Estimated average VC PMEs from commercial datasets

Wide return distribution
U.S. venture funds

Returns from inception to 12/31/12.
Source: Josh Lerner's analysis of Thomson/Reuters data.
U.S. buyout funds

Returns from inception to 12/31/12.
Source: Josh Lerner’s analysis of Thomson/Reuters data.
…European private equity funds

Returns from inception to 12/31/12.
Source: Josh Lerner's analysis of Thomson/Reuters data.
Inter-quartile ranges and medians for asset classes

Source: Josh Lerner, based on HBS Case study about Yale University Endowment Fund [2011] and Venture Economics.
Strike #3: Ent’ship Explosion
Entrepreneurship Explosion

- Falling cost of starting a business
  - Cloud-based computing
  - Outsourcing
- Lean Start-up Philosophy
  - Rise in social media
- Diminished corporate career prospects
- Changes in academic entrepreneurship
- Globalization of entrepreneurial efforts
The Brave New World of Entrepreneurial Finance

- Entrepreneurs
- Accelerators
- Crowdfunding
- Venture Capital
- Angels
- Exits
- Exits
Who are the New Kids in Town?

- Entrep’s
- Accelerators
- Crowdfunding
- Angels
- Venture Capital
- Exits
The Rise of Accelerators

![Accelerated Startup Funding vs Accelerator Growth by Year](chart.jpg)

<table>
<thead>
<tr>
<th>Year</th>
<th>Funded Accelerated Startups</th>
<th>Accelerators</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>138</td>
<td></td>
</tr>
<tr>
<td>2013 YTD</td>
<td>170</td>
<td></td>
</tr>
</tbody>
</table>

Source: CrunchBase
Where in the Gartner Hype Cycle?
Some Open Issues with Business Accelerators

- Separate Substance from Hype
- What business models suitable for accelerators?
- What accelerator model works best?
- What role for financing?
Crowdfunding

- Explosion of platforms
- Proliferation of non-equity platforms
- In Europe some equity platforms
- Fall 2013: SEC proposal on Crowdfunding
- Uncertain impact on financing landscape
- Keynote and Panel on Crowdfunding
- Case Study on Angellist
Biggest New Kids in Town

- Professional Angels
- Angel Networks
- Angel Funds
- Angel Syndicates
- and other…
Angel market as big as VC market

Table 2.2. Estimates of the angel market and comparisons with venture capital

<table>
<thead>
<tr>
<th>Country</th>
<th>“Visible” angel market size (share of total market) in 2009</th>
<th>Estimated size of angel market in 2009</th>
<th>Total VC* market in 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>469 (3%)</td>
<td>17,700</td>
<td>18,275</td>
</tr>
<tr>
<td>Europe</td>
<td>383 (7%)</td>
<td>5,557</td>
<td>5,309</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>74 (12%)</td>
<td>624</td>
<td>1,087</td>
</tr>
<tr>
<td>Canada</td>
<td>34 (9%)</td>
<td>388</td>
<td>393</td>
</tr>
</tbody>
</table>

*Note: VC market size includes VC investments in all stages: i) seed, ii) start-up, iii) early, iv) expansion, and v) later stage.

Source: OECD, 2011. Financing High-Growth Firms: The Role of Angel Investors
Angel Market appears to be stable

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Investment ($B)</td>
<td>$20.1</td>
<td>$22.5</td>
<td>$22.9</td>
</tr>
<tr>
<td>Number of Companies ('000)</td>
<td>62</td>
<td>66</td>
<td>67</td>
</tr>
<tr>
<td>Active Investors ('000)</td>
<td>265</td>
<td>318</td>
<td>268</td>
</tr>
<tr>
<td>Average Investment size ($K)</td>
<td>$76</td>
<td>$71</td>
<td>$85</td>
</tr>
</tbody>
</table>

Source: Center for Venture Research, University of New Hampshire
NACO Data on Canada

- 2012 saw more investments, but at smaller amounts.

Source: NACO 2012 Report on Angel Investing Activity in Canada
Returns to Angel Investing: Recent evidence from BC

AIRR means Annualized Internal Rate of Return

Returns by Type of Angel

Warning:
ALL Data on Angel Investing is Problematic. Especially Returns!

Source: Dan Vo, 2013, The Geography of Angel investment, PhD Thesis, University of Victoria
The Angel Data Challenge

• If you are not counted, you don’t count!
  o Particularly in public policy circles!

• Venture Capital Bad Role Model
  o Underreporting at the bottom / at the top
  o Dysfunctional dynamics

• Transition from Bronze Age to Digital Age
  o Online data collection
  o Social Media
Transformation of VC

Entrep’s → Venture Capital → Exits

Entrep’s → Accelerators → Crowdfunding → Angels → Venture Capital → Exits
Trends in US VC Fundraising

Amounts Raised ($B)

Source: NVCA
Emerging Market Private Equity as % of Global Volume

Source: Josh Lerner, EMPEA
Changes in VC Landscape

• Rise of Micro-VC Funds and Angel Funds
  o Fireside chat about FFVC

• Reliance on Government Funding (outside US)
  o Second Day of PPF

• LPs looking for new structures
  o Panel on Institutional Investors’ View

• Changes in Fee Structure
  o GPs make various types of concessions
Recent Evidence on GP Compensation

• David Robinson and Berk Sensoy (2013)

• Examine relationship between fees, carried interest and fund performance

• No statistical relationship between fees and performance

• Statistical relationship between carried interest and performance
  o No significant correlation for VC
  o Positive significant correlation for Buyouts

• Authors interpretation: LPs-GPs market are functioning
Gaps in the system
The Three Gaps

- Sectorial Gap
- Refinancing Gap
- Patience Gap
Accelerator Companies
What sectors?

Investee Companies Industry Sectors

- 59% ICT
- 19% New Media
- 10% Clean Technology
- 9% Life Sciences
- 3% Diversified Industries

Source: NACO 2012 Report on Angel Investing Activity in Canada
Sectorial Gap

- Accelerators suitable for “Lean start-ups”
  - Market Validation Key
  - Use of Social Media
  - UN Conference Track 1

- What about science-based start-ups?
  - Significant technology development
  - Challenging market validation (B2B; B2G)
  - University Accelerators

- Alternative approaches in the life sciences
  - UNConference Track 2

- Other orphaned sectors / business models?
  - Clean Tech
  - Service business & Non-innovative (e.g. Roll-out, Roll-up)
  - ...but software also affects all sectors
The Refinancing Gap

Conventional View: Stepping Stone Logic

Entrep’s → Angels → Venture Capital → Exits
The Refinancing Gap

Alternative View: Parallel Universes

- Entrep’s
- Venture Capital
- Angel (Syndicates)
- Early Exits
- Venture Capital
- Early Exits
- Exits
Do Angels and VC mix?

Table shows the percent of companies that receive funding from different combinations of angels and VCs

Evidence on Angels & VCs: Financing Path

- Angel companies get more angel funding
- VC companies get more VC funding
- Few transitions from angel to VC
- Very few transitions from VC to angel
- Stronger separation for one-time angels
- Weaker separation for angel funds

Based on: Hellmann, Schure and Vo, 2013, “Angels and Venture Capitalists: Substitutes or Complements?” Working paper, University of British Columbia AND
Evidence on Angels & VCs: Performance

- Mixing angels and VCs associated with weaker performance
  - May not be causal!

- Conflict of interest at board level

- Evidence far from conclusive!

Hold-up problem between Angels & VCs

- Moderated by angel education
- Moderated by VC competition
- Moderated by angel co-investments
- Moderated by reputation / relationships
- Moderated by use of convertible note?

<table>
<thead>
<tr>
<th>VC Round</th>
<th>Valuation Preferences</th>
<th>Angels hold equity</th>
<th>Angels hold convertible note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Founders</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Angels</td>
<td>High</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>VCs</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

Based on: Hellmann and Thiele, 2013, “Friends or Foes? The Interrelationship between Angel and Venture Capital Markets?” Working paper, University of British Columbia
Avenues for cooperation

• Repeat relationships
  o Formal and informal

• Angels need deeper pockets
  o Syndication
  o Dynamic funding management

• VC funds buying out angels
  o Increasingly common for founders
  o Are LPs open?
The Patience Gap

• Two Models of Experimentation
  • Quick resolution
    o Many independent trials
    o Early signals informative
    o Quick termination of losers
    o Patience is a vice!
  • Slow resolution
    o Many sequential trials
    o Early signals uninformative / misleading
    o Tolerance for failure needed
    o Patience is a virtue!
Evidence from Life Science Research

- Howard Hughes Medical Institute (HHMI) Grants
  - Rewards long-term success
  - Tolerance for early failure

- National Institutes of Health Grants
  - Short review cycles
  - No tolerance for failure

- Effect on research performance
  - HHMI recipients have more publication “flops”
  - HHMI recipients have more publication “hits”
  - HHMI recipients generate more novel research

Path-breaking innovation requires long-term horizons & tolerance for failure!

Based on: Pierre Azoulay, Joshua Graff Zivin and Gustavo Manso, “Incentives and creativity: evidence from the academic life sciences” The Rand Journal of Economics42.3 (Fall 2011): 527-554.
Evidence from VC

- Financing risk: Availability of follow-on funding
  - Less financing risk in “hot” VC markets
- How does this affect VC deal selection?
- Evidence on hot market deals
  - Lower probability of IPO
  - Higher valuation in case of IPO
  - Successes are more innovative (more patents, more citations)
- Effects strongest for most experienced VCs

Reduction in financing risk encourages experimentation

Does the new market structure foster experimentation?

• New Kids In Town well-suited for “quick resolution” experimentation
• Traditional VC model (sometimes) well-suited for “slow resolution” experimentation
• New Kids In Town seems poorly suited for “slow resolution” experimentation
  o Funding of complex technologies
  o Funding of capital intensive projects
• Yet New Kids in Town give ample inspiration!
The Three Gaps

- Entrep's
- Accelerators
- Crowdfunding
- Angels
- Venture Capital
- Exits

Sectorial Gap

Refinancing Gap

Patience Gap

What role for government?
Welcome to the Brave New World of Entrepreneurial Finance!

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