



The Role of Private Equity in Financing Innovation: Lessons from the Software Cluster in Ireland

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The Importance of Equity Financing

Equity financing is an important determinant of the comparative advantage of nations in the production of high-tech goods (Carpenter and Peterson, 2002)

Private Equity (Venture Capital and Private Investors) just as important as public equity to technology boom

High-tech IPOs are more likely to be funded by venture capitalists than banks prior to listing

The Importance of Equity Financing


Why is equity financing important to the rapid growth of young high-technology firms?

1. Lack of Access to debt

(a) Highly variable returns

(b) Asymmetric information and lack of collateral

2. Equity permits a large increase in size



Equity Gap and the Rationale for Intervention

Equity Gap

Absence of equity in parcels below the economic minimum of the specialised organisations.

- Cost of evaluation and monitoring tends to be fixed
Not viable for investment sums less than 1 million for institutional investors in Ireland
- New and small technology businesses tend to require equity in **discrete jumps**

The Venture Capital Industry in Ireland

Well developed in comparison with many EU countries

Major expansion in the last decade

Significant support from government through Enterprise Ireland

Higher proportion going to start-ups



What do we know about the financing of small high-technology companies?

Lack of empirical evidence on the financing of closely-held high-technology firms

No longitudinal analysis or tracking of firms

Matched by a lack of theory driven research on their choice of capital structure

What do we know about the financing of small high-technology companies?

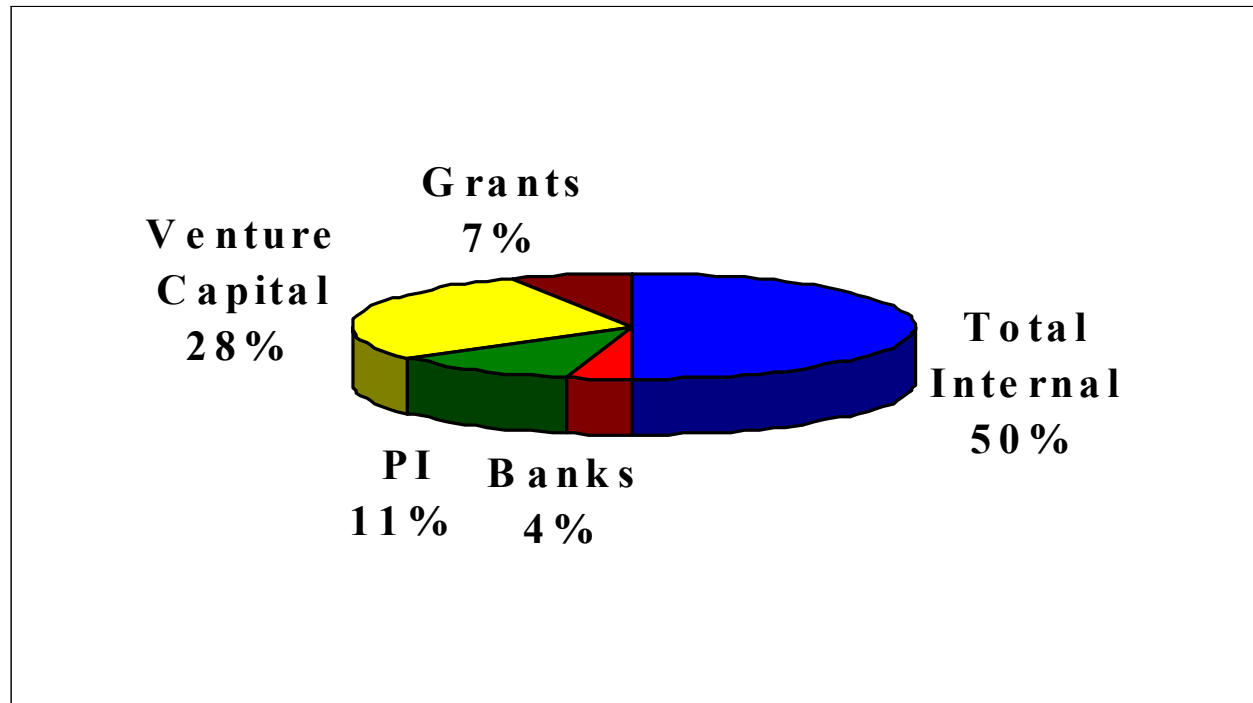
2002 Survey of entire population of software product firms in Ireland

Response

Survey population	257
Valid Returns	117
Response Rate	45.5%

Capital Structure of Software Product Firms in Ireland

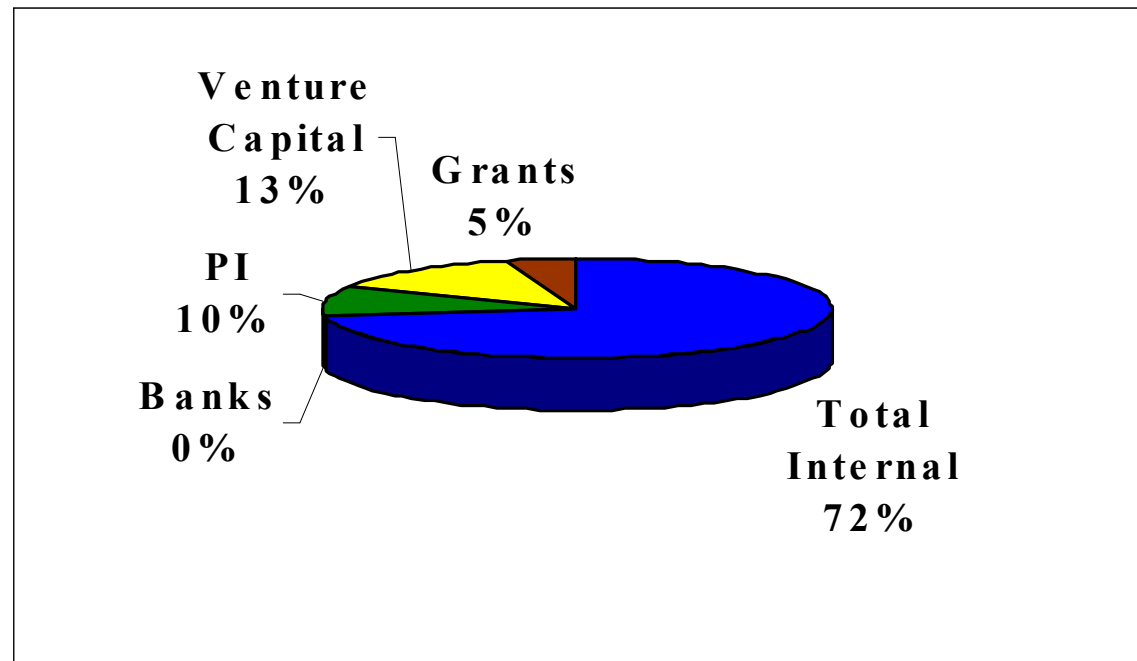
Sources of External Finance



Hogan and Hutson 2005: Data based on 96 firms

Capital Structure of Software Product Firms in Ireland

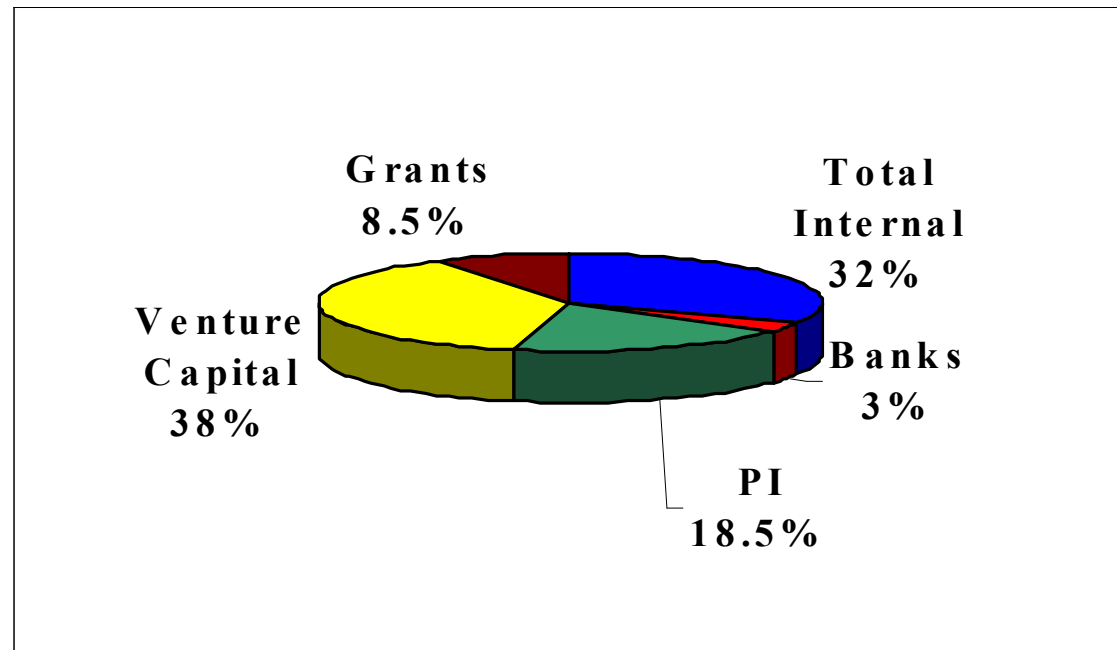
Sources of External Finance at Start-up#



#Firms Less than 2 years old

Capital Structure of Software Product Firms in Ireland

Source of Financing at Commercialisation Stage#



Firms Aged 2-4 years

What Factors Influence VC Investment?

1. Team size
2. Education Degree
3. Education Postgraduate
4. Prior start-up experience
5. Product Lead Time
6. Prior Software Management Experience
7. Start-up costs
8. Preference to maintain control

Variables: 3, 7 and 8 significant

What Factors Influence VC Investment?

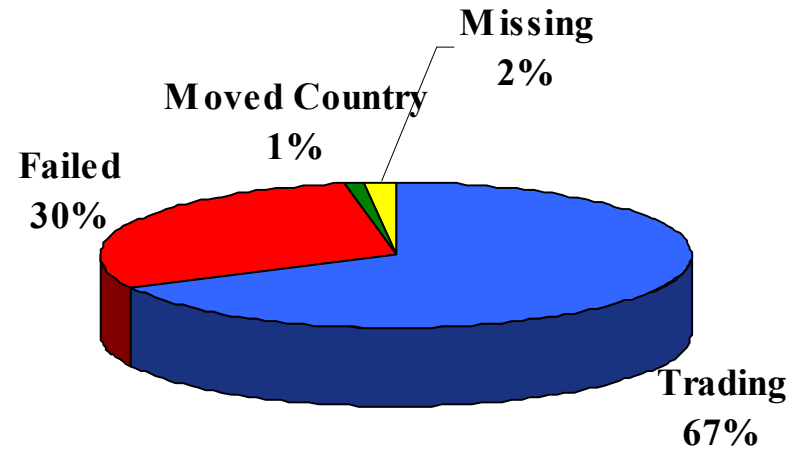
Size Matters:

- VC-Backed firms have higher start-up costs
- VC-backed firms are larger

Product lead times less significant in software:

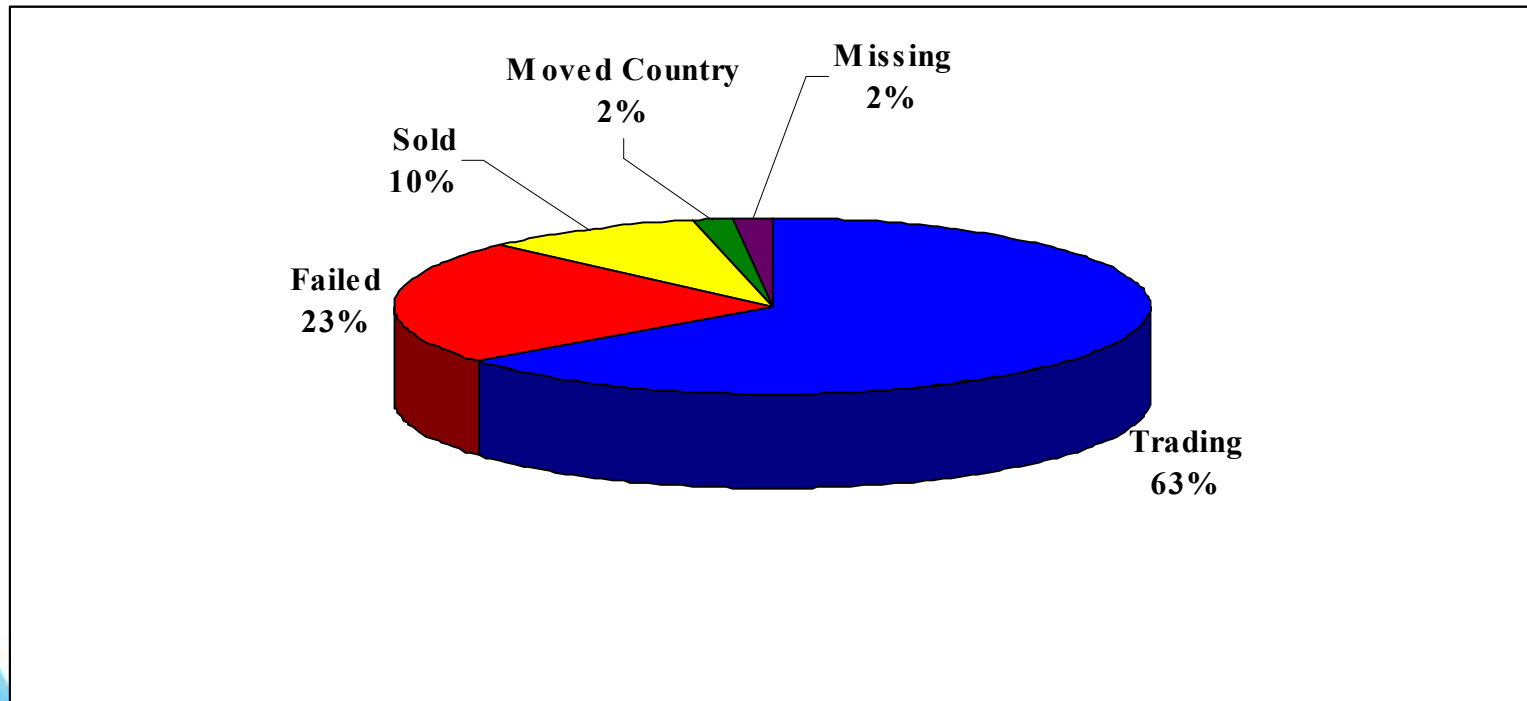
- Product lead times short in software
- Median of 12 months to develop first beta
- Less impact on finance than in other sectors

Where are they now? Tracking exercise 2009



Population = 257

Results for the Survey Participants



Data for 115

Performance of VC-Backed Firms

	VC Backed	Non-VC Backed	Total
Failed	12	12	24
Trading	33	39	72
Sold	7	3	10
Moved Abroad	1	1	2
Total	53	55	108

Role of Finance in Failure

CASE STUDY EVIDENCE

Company X founded in 1996

Raised €25 million

Employed over 80 people

Receivership 2004 - ran out of money

Technology sold for €1.35 million

Still trading and serving existing clients

Questions to Answer/Future Research

Is it ‘Trade Sale or Bust’ for the high growth entrepreneur?

How many of the 257 companies listed?

Is the lack of a well developed market for funds (beyond typical VC 2nd/3rd round funding of €20-€25 million) preventing development?

The background features a blue gradient with a globe and various currency symbols (Euro, Dollar, Pound, Yen) arranged in a grid-like pattern. The globe is positioned on the left side, and the currency symbols are scattered across the background.

The Role of Private Equity- Conclusions

Insignificance of bank funding

Importance of PI and VC – 39% of total Funding

Size Matters in VC funding

VC funding not enough for scaling up

IPOs important for scale

Need for integrated markets to fund innovation