

ANGELS AND IPOS: POLICIES  
FOR SUSTAINABLE EQUITY FINANCING  
OF IRISH SMALL BUSINESSES

# Studies in Public Policy

The series *Studies in Public Policy* is published by the Policy Institute at Trinity College. It aims to bridge the gap between the academic and professional policy communities and make a real difference to public policy debate in Ireland. Each *Study* takes a practical policy problem and analyses it in a way that is academically rigorous yet accessible for all that.

## Current Titles

- 1 Michael Gallagher, Michael Laver, Michael Marsh, Robert Singh and Ben Tonra (1995), *Electing the President of the European Commission*
- 2 Michael Laver (1998), *A New Electoral System for Ireland*
- 3 John Fingleton, John Evans and Oliver Hogan (1998), *The Dublin Taxi Market: Re-regulate or Stay Queuing?*
- 4 Elizabeth Meehan (2000), *Free Movement between Ireland and the UK: from the "common travel area" to The Common Travel Area*
- 5 Orlaigh Quinn (2000), *A Review of the Free Schemes Operated by the Department of Social, Community and Family Affairs*
- 6 Greg Heylin (2001), *Evaluating Prisons, Prisoners and Others*
- 7 Brigid Laffan (2001), *Organising for a Changing Europe: Irish Central Government and the European Union.*
- 8 Simon Brooke (2001), *Social housing for the future: Can Housing Associations Meet the Challenge?*
- 9 Nóirín Hayes (2002), *Children Rights – Whose Right? A Review of Child Policy Development in Ireland*
- 10 Jonathan Westrup (2002), *Financial Services Regulation in Ireland – the Accountability Dimension*
- 11 Pat Cooke (2003), *The Containment of Heritage: Setting Limits to the Growth of Heritage in Ireland*
- 12 Jonathan Healy (2003), *Fuel Poverty and Policy in Ireland and the European Union*
- 13 Raj S. Chari (2004), *State Aids in the Airline Sector: a comparative review of Iberia and Aer Lingus*
- 14 Declan Purcell (2004), *Competition and Regulation in the Retail Pharmacy Market*
- 15 Anne-Marie McGauran (2005), *Plus ça change...? Gender Mainstreaming of the Irish National Development Plan*
- 16 Diane Mulcahy (2005), *Angels and IPOs: policies for sustainable equity financing of Irish small businesses*

# ANGELS AND IPOS: POLICIES FOR SUSTAINABLE EQUITY FINANCING OF IRISH SMALL BUSINESSES

Diane Mulcahy

Studies in Public Policy: 16



2005

First published 2005  
by The Policy Institute  
Trinity College, Dublin 2, Ireland  
[www.policyinstitute.tcd.ie](http://www.policyinstitute.tcd.ie)

© 2005 The Policy Institute

All rights reserved. No part of this publication may be reproduced in any form or by any means, electronic or mechanical, or by any information storage or retrieval system, without prior permission in writing from the publisher.

A catalogue record is available for this book from  
the British Library

ISBN 1-902585-15-1

Cover design by Ed Miliano, Dublin  
Origination by Carole Lynch, Sligo  
Printed by ColourBooks Limited, Dublin

# Contents

|   |      |
|---|------|
| LIST OF FIGURES AND TABLES                              | viii |
| ABBREVIATIONS   | ix   |
| EXECUTIVE SUMMARY                                       | xi   |
| ACKNOWLEDGEMENTS  | xvii |
| 1 INTRODUCTION  | 1    |
| 1.1 The equity financing cycle                          |      |
| 1.2 Research methodology                                |      |
| 1.3 Paper structure                                     |      |
| 2 EQUITY FINANCING IN IRELAND                           | 8    |
| 2.1 Sources of venture capital                          |      |
| 2.1.1 Sources of Irish venture capital                  |      |
| 2.1.2 Irish pension fund investments in venture capital |      |
| 2.2 Venture capital funds raised                        |      |
| 2.3 Venture capital funds invested                      |      |
| 2.3.1 VC funds invested: by company stage               |      |
| 2.3.2 VC funds invested: by company sector              |      |
| 2.3.3 VC funds invested: by company geography           |      |
| 2.4 Venture capital returns and valuations              |      |
| 2.5 Irish venture capitalists                           |      |
| 2.6 The exit gap  |      |
| 2.6.1 Why are IPOs important?                           |      |
| 2.6.2 The Irish Stock Exchange: a brief overview        |      |
| 2.6.3 The DCM and ITEQ                                  |      |
| 2.7 Angel Financing                                     |      |
| 2.7.1 Importance of angel financing                     |      |
| 2.7.2 Angel financing policy                            |      |
| 2.8 Conclusion  |      |

|       |   |    |
|-------|---|----|
| 3     | WHY IS THE IRISH GOVERNMENT A VENTURE CAPITALIST?   | 35 |
| 3.1   | Rationale 1: close the 'equity gap'   |    |
| 3.1.1 | Is there proof of an 'equity gap'?  |    |
| 3.1.2 | Can the 'equity gap' be measured?   |    |
| 3.1.3 | Is there an 'equity gap' due to a shortage of capital?  |    |
| 3.1.4 | Evidence that the 'equity gap' is closed  |    |
| 3.2   | Rationale 2: create a domestic venture capital industry   |    |
| 3.2.1 | VCs overcome information asymmetries  |    |
| 3.2.2 | VCs reduce principal-agent problems   |    |
| 3.2.3 | Can banks be good VCs?  |    |
| 3.2.4 | Is there evidence of a successful Irish VC industry?  |    |
| 3.3   | Rationale 3: smooth the cycles of the venture capital industry  |    |
| 3.4   | Rationale 4: foster economic development  |    |
| 3.5   | Rationale 5: compete internationally  |    |
| 3.6   | Conclusion  |    |
| 4     | ENTERPRISE IRELAND AS AN IRISH VENTURE CAPITALIST   | 55 |
| 4.1   | Enterprise Ireland as a public venture capitalist   |    |
| 4.1.1 | EI investments in venture funds   |    |
| 4.1.2 | EI investments in companies   |    |
| 4.2   | EI investment processes   |    |
| 4.2.1 | EI as an investor   |    |
| 4.2.2 | EI shareholdings  |    |
| 4.2.3 | EI exit policy  |    |
| 4.3   | EI portfolio valuation policy   |    |
| 4.4   | Do EI investments distort the private market?   |    |
| 4.5   | Conclusion  |    |
| 5     | BEYOND VENTURE CAPITAL: POLICY RECOMMENDATIONS FOR SUSTAINABLE EQUITY FINANCING OF IRISH SMALL BUSINESSES | 68 |
| 5.1   | Developing a stable source of institutional capital   |    |
| 5.1.1 | Policy Option 1: Invest National Pensions Reserve Fund assets in private equity                           |    |

- 5.1.2 Policy Option 2: Extract a second funding commitment from domestic pension funds
- 5.2 Closing the Equity Gap
  - 5.2.1 Policy Option 1: Actively facilitate IPOs on foreign exchanges
  - 5.2.2 Policy Option 2: Demutualise the Irish Stock Exchange
- 5.3 Increasing the supply of angel capital
  - 5.3.1 Policy Option 1: 'Join-up' fiscal and industrial policy
  - 5.3.2 Policy Option 2: Fund the matchmakers
- 5.4 Implementing exemplary public venture capital processes
  - 5.4.1 Policy Option 1: Implement an industry standard valuation policy
  - 5.4.2 Policy Option 2: Implement a transparent and disciplined exit strategy
- 5.5 Conclusion

|                              |    |
|------------------------------|----|
| CONCLUSION AND SUMMARY       | 88 |
| APPENDIX 1                   | 91 |
| Note on venture capital data |    |
| BIBLIOGRAPHY                 | 92 |

## List of figures and tables

|           |   |    |
|-----------|---|----|
| Figure 1: | The equity financing cycle  | 2  |
| Figure 2: | Amazon.com equity financing history   | 4  |
| Figure 3: | Irish pension fund investments in the domestic VC industry, 1997-2003                                   | 12 |
| Figure 4: | Venture capital investments by stage of company: average percentage of number of investments, 1998-2002 | 17 |
| Figure 5: | Private equity investments by sector: percentage of amount invested, 1998-2002                          | 18 |
| Figure 6: | Percentage of domestic versus international private equity funds raised, 1997-2003                      | 48 |
| Figure 7: | Percentage of number of private equity deals internationally syndicated, 1997-2003                      | 49 |
| Figure 8: | EI equity investments in companies (€ m), 1998-2003   | 58 |
| Table 1:  | Sources of capital raised in Ireland and Europe: average percentage of capital raised, 1998-2003        | 10 |
| Table 2:  | Venture capital funds raised, 1997-2003   | 14 |
| Table 3:  | Venture capital funds invested, 1997-2003   | 16 |
| Table 4:  | Analysis of the economic impact of EI equity-financed companies   | 53 |
| Table 5:  | Pension fund asset allocation in Ireland and the US, 2002   | 69 |
| Table 6:  | The trend of stock exchange demutualisations, 1993-2002   | 76 |
| Table 7:  | Possible advantages of stock exchange demutualisation   | 77 |
| Table 8:  | Comparison of current Irish property and equity share fiscal incentives                                 | 81 |



## Abbreviations

|      |  |
|------|--|
| ADR  | American Depository Receipt                                |
| AIM  | Alternative Investment Market of the London Stock Exchange |
| BES  | Business Expansion Scheme                                  |
| BVCA | British Venture Capital Association                        |
| DA   | Development Advisor  |
| DCM  | Developing Companies Market of the Irish Stock Exchange    |
| DD   | Due diligence  |
| DETE | Department of Enterprise, Trade and Employment             |
| DIRT | Deposit Interest Retention Tax                             |
| EBAN | European Business Angel Network                            |
| EBS  | European Business Survey                                   |
| EI   | Enterprise Ireland   |
| ESG  | Enterprise Strategy Group                                  |
| ESRI | The Economic and Social Research Institute                 |
| EU   | European Union   |
| EVCA | European Venture Capital Association                       |
| FDI  | Foreign Direct Investment                                  |
| FESE | Federation of European Securities Exchanges                |
| GDP  | Gross Domestic Product                                     |
| GEM  | Global Entrepreneurship Monitor                            |
| GP   | General Partner  |
| IAPF | Irish Association of Pension Funds                         |
| IP   | Intellectual Property                                      |
| IPO  | Initial Public Offering                                    |
| IPRC | Investment Portfolio Review Committee                      |
| IRR  | Internal Rate of Return                                    |
| ISE  | Irish Stock Exchange                                       |
| ITEQ | Irish Technology market of the Irish Stock Exchange        |
| IVCA | Irish Venture Capital Association                          |
| LP   | Limited Partner  |
| LSE  | London Stock Exchange                                      |
| NBER | National Bureau of Economic Research                       |
| NPRF | National Pension Reserve Fund                              |
| NTMA | National Treasury Management Agency                        |
| NVCA | National Venture Capital Association                       |

|        |  |
|--------|--|
| NYSE   | New York Stock Exchange                                  |
| OECD   | Organisation for Economic Cooperation and<br>Development |
| OFEX   | Off Exchange market                                      |
| PE     | Private Equity   |
| PWC    | PriceWaterhouseCoopers                                   |
| SBA    | Small Business Association                               |
| SBIR   | Small Business Innovation Research programme             |
| SCS    | Seed Capital Scheme                                      |
| SEC US | Securities and Exchange Commission                       |
| SME    | Small and Medium Enterprise                              |
| UCD    | University College Dublin                                |
| VC     | Venture capital  |
| VCs    | Venture capitalists                                      |

# Executive summary

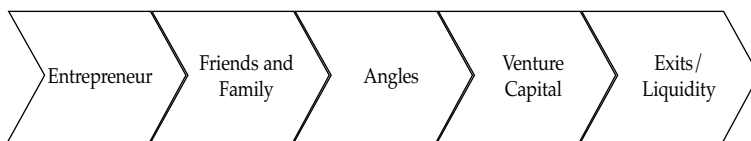
## Overview

This paper examines the Irish government's equity financing of indigenous businesses, and makes policy recommendations for developing a long-term sustainable system of equity financing in Ireland.

The recently released Enterprise Strategy Group (ESG) report, *Ahead of the Curve*, was commissioned by the Minister for Enterprise, Trade and Employment to review Ireland's industrial policy and strategies for the next decade. Yet the report includes only a cursory discussion about the financing of indigenous small companies, a critical component of enterprise growth and industrial strategy. The aim of this paper is to complement the ESG report and contribute to the discussion of Ireland's enterprise development policy by providing recommendations for the sustainable financing of indigenous small businesses in the context of the equity financing cycle.

The equity financing cycle of a company can be illustrated as follows:

*Figure 1: The equity financing cycle*



The financing cycle illustrates that start-up companies often raise small amounts of capital initially from informal investors such as the entrepreneur or friends and family. To finance further growth they may seek financing from business angels or professional venture capitalists, and then ultimately seek an exit through an IPO or trade sale.

To date, the Irish government has targeted its equity financing policies almost exclusively to the venture capital (VC) phase of the cycle. Since the inception of Enterprise Ireland (EI) in 1998, the Irish

government has made equity investments of over €300 million into domestic companies and venture funds, making it one of the largest equity investors in Ireland. This paper argues that a long-term sustainable policy for equity financing requires a policy focus beyond venture capital to other key phases of the equity financing cycle: angel financing and exits.

### **Equity financing in Ireland**

Equity financing has become an increasingly common way to finance small company growth in Ireland. The Irish venture capital industry has grown tremendously since the mid-1990s in terms of both funds raised and invested. This growth can be partly credited to the financial support of Enterprise Ireland in seeding and investing in domestic venture capital funds.

Compared to Europe and America, Irish venture capitalists rely heavily on the public sector as a source of capital. Irish VCs raise relatively more capital from government sources, such as EI, and much less capital from private pension funds. This reliance on public sector capital exposes the domestic VC industry to the political vagaries of budget allocations, introduces economic development objectives to the equity financing process, and could negatively affect the credibility of the VC industry (as it is seen as unable to competitively raise only private capital). Pension funds in the USA and Europe provide a substantial and stable source of capital to VC funds. In Ireland, pension funds remain an untapped source of institutional capital. This paper recommends that, in order to increase pension fund investments into VC, the assets of the National Pension Reserve Fund be invested into private equity, including domestic venture capital, as an asset class, or that the Department of Finance consider extracting a second investment commitment to invest in venture capital from domestic pension funds.

Irish venture capital investments are concentrated in early-stage, high-technology firms in Dublin. This paper suggests that sector and stage diversification of venture capital investments would benefit the industry by allowing it to smooth returns and improve the ability to weather market downturns. A brief review of Irish venture capitalists reveals that, as investors, they have relatively limited experience in business and industry, and in the global markets in which most Irish companies operate. Recruiting

additional investors with industry experience, particularly internationally, would add depth and credibility to the industry. Credibility would also be enhanced through the publication of standard industry performance metrics, such as aggregate annual fund returns and median company valuations, which are regularly disseminated in the USA and Europe, but are not currently publicly available in Ireland.

An examination of the exits of equity-financed companies in Ireland indicates a very low rate of IPOs relative to the USA and the rest of Europe, and provides evidence of an exit gap. IPOs are critical to the equity financing of young companies because they generate the highest average returns, increase the supply of risk capital and put upward pressure on trade sale prices. The poor performance of the Irish Stock Exchange in raising public equity for Irish companies contributes to the existing exit gap. There is also some evidence that Irish companies do not expect and adequately plan for public offerings, and mistakenly perceive that they are too small to go public. Instead, most Irish exits are trade sales. The paper concludes that facilitating IPOs on foreign exchanges and considering the demutualisation of the Irish Stock Exchange would begin to close the exit gap that exists in Ireland.

An analysis of business angels reveals that angel financing is globally a much more common source of small amounts of early-stage equity financing than venture capital, and is an important bridge between informal and professional investors. In Ireland, however, government policies have largely ignored angel financing and instead have attempted to encourage VCs to fill this role. Irish fiscal policies are also structured to disproportionately reward individual investments in property assets, relative to investments in economically productive assets such as indigenous enterprises. Irish fiscal and industrial policies are not consistently structured to achieve similar goals and reinforce common objectives. The result is that individual investors respond to government fiscal incentives and allocate their investible capital to tax-incentived property investments rather than to indigenous enterprise. The paper concludes that 'joining-up' Irish fiscal and industrial policy, and providing funding for sophisticated business angel matchmaking services would increase the supply of angel capital in Ireland.

## **Enterprise Ireland**

Enterprise Ireland (EI) is one of the largest sources of equity financing in Ireland. Because its primary objective is to act as a development agency, EI outsources to private sector VCs most traditional investor responsibilities such as due diligence, deal structuring and pricing, and portfolio management and oversight. The paper discusses this outsourcing approach, and concludes that this design is best suited for catalysing development of the private sector and that it minimises, but does not eliminate, distortions to the private sector equity financing market. Nonetheless, the heavy reliance on the private sector introduces the risks that EI's development goals are subordinated by the private sector's return maximisation objectives and that EI relies heavily on a relatively young and inexperienced VC industry to structure and manage its equity investments.

As a public sector organisation and an investor of taxpayer money, EI has a strong obligation to always seek to improve its investment processes in ways that increase transparency, accountability and discipline, as well as performance. The paper describes EI's irregular portfolio valuation policy and its ad-hoc exit strategy and concludes that implementing an industry standard valuation policy would further the attainment of those objectives, as would a defined and consistently implemented exit policy.

## **Rationale for Irish government intervention in equity financing**

This paper explores five rationales for Irish government participation in equity financing of indigenous businesses, and evaluates whether or not there is a strong argument for continued government intervention in the future. Enterprise Ireland originally began acting like a venture capitalist to both fill the 'equity gap' of early-stage risk capital and to create a domestic venture capital industry that would provide an adequate supply of equity financing for indigenous companies.

The paper concludes that the 'equity gap' is closed and that Ireland has succeeded in developing a vibrant and robust venture capital industry. These successes render EI's continued intervention in the VC industry unnecessary at historic levels and make a strong case for considerably reducing, and ultimately discontinuing, government intervention in the venture capital industry. The paper

also examined whether continued state intervention was justified based on goals of smoothing the cycles of the VC industry, economic development, or ‘levelling the playing field’ with other nations. It concludes that, based on the evidence, there is not a compelling case for continued intervention at current levels.

### **Policy recommendations**

Developing a sustainable system for equity financing of indigenous companies requires that both the public and private sectors go beyond venture capital and develop other phases of the equity financing cycle.

The key requirements for developing a sustainable system of equity financing and policy options are summarised below.

---

| <i>Requirement for sustainable equity financing</i>             | <i>Policy options</i>   |
|---|---|
| Develop a stable source of private sector institutional capital | <ul style="list-style-type: none"> <li>• Invest the NPRF assets into domestic and international PE/VC as an asset class</li> <li>• Extract another investment commitment from domestic pension funds</li> </ul> |
| Close the exit gap  | <ul style="list-style-type: none"> <li>• Actively facilitate Irish company IPOs on foreign exchanges</li> <li>• Demutualise the ISE and assess strategic options such as alliances</li> </ul>                   |
| Increase the supply of angel financing                          | <ul style="list-style-type: none"> <li>• ‘Join-up’ Irish fiscal and industrial policy</li> <li>• Fund the matchmakers</li> </ul>  |
| Implement exemplary public venture capital processes            | <ul style="list-style-type: none"> <li>• Develop and implement a disciplined exit strategy</li> <li>• Implement an industry standard valuation policy for EI equity portfolio</li> </ul>                        |

---

The goal of the Enterprise Strategy Group report was to make recommendations on policy options for generating growth in the Irish economy. A dynamic indigenous small business sector is a proven and critical contributor to economic growth that must be considered in any comprehensive discussion of industrial policy. This paper recommends policy options for a sustainable system of equity financing that will continue to create and build a vibrant small business sector in Ireland. Such a system, along with recommendations from the Enterprise Strategy Group, has the potential to truly drive enterprise development in Ireland 'Ahead of the Curve.'



## Acknowledgements

I would like to thank The Policy Institute and its Director Bob Holton for offering me a Visiting Fellowship, and providing the time, space and resources to undertake this project. Special thanks go to Professor Frances Ruane, who provided a wealth of excellent advice, insights and assistance throughout this project, and gave very generously of her time to do so. Many thanks also go to Sinead Riordan, Research Co-ordinator at the Policy Institute, for her exceptional editing skills, and for providing social diversion in the form of Policy Institute coffee mornings.

I am particularly grateful to the industry and academic reviewers of this paper for their detailed reading of an earlier draft, and their very thoughtful and insightful comments. I also offer thanks to the many people who agreed to provide information and be interviewed as part of this project, and to those who attended the seminar presentation of this paper.

Finally, go raibh maith agat to my husband Kevin for his enthusiastic support and his feigned interest in detailed discussions of Irish industrial policy.

The views expressed are my own, as is the responsibility for any errors.

Diane Mulcahy



## Introduction

The purpose of this paper is to examine the Irish government's current equity financing policies for indigenous businesses and to make policy recommendations for a long-term sustainable system of equity financing in Ireland within the context of the equity financing cycle.

At the behest of An Tánaiste Mary Harney, the Enterprise Strategy Group (ESG) was formed in 2003 and commissioned to review Ireland's industrial policy and strategies for the next decade. The ESG's report *Ahead of the Curve* devoted fewer than two pages to the issue of financing indigenous small companies (ESG, 2004). The aim of this paper is to complement the ESG report and contribute to the discussion of Ireland's enterprise development and policy by providing a review of and recommendations for the sustainable financing of indigenous small businesses.

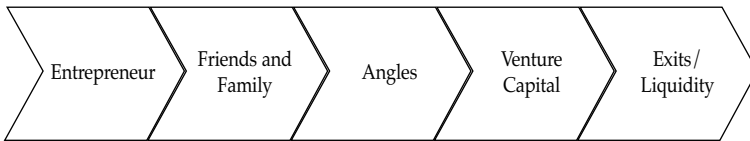
Ireland's economy was transformed during the 1990s and became one of the fastest growing in Europe. The high-tech sector boomed and contributed to the phenomenal growth of the Celtic Tiger. Ireland's economic successes prior to this period were largely dominated by foreign direct investment (FDI) and multinational corporations that located domestically. Its favourable corporate tax structure, well-educated English-speaking population, and location relative to both continental Europe and the US were all attractive factors that helped lure overseas corporations to set up business in Ireland. The Telesis Report, published in 1982, was a seminal work that shifted industrial public policy objectives in Ireland from FDI towards the development of indigenous enterprises and entrepreneurship. A decade later, the Culliton Report (1992) reinforced the importance of indigenous companies to the economy and emphasised the need to move away from a grants system of government supports that encouraged firms to pursue 'rent seeking' behaviour. Initially, the Irish government responded to the report's recommendations by seeking repayment of its financial support to young companies. Later this approach evolved to include equity investments that involved sharing risk.

In 1998, the government consolidated Forbairt and An Bord Tráchtála (the Irish Trade Board) to form Enterprise Ireland (EI), an organisation whose mission is to foster the development of Irish companies through the provision of financial and other supports. As of the end of 2003, Enterprise Ireland has made equity investments of over €300 million in indigenous companies and domestic venture capital funds, making it one of the largest equity investors in Ireland.

### 1.1 The equity financing cycle

The equity financing of small companies can best be understood and discussed within the framework of the equity financing cycle.

*Figure 1: The equity financing cycle*



Starting at the left, the figure illustrates that equity financing of a small business often begins with the entrepreneur. Many entrepreneurs will invest personal capital into their business, although some contribute only the ‘sweat equity’ of their own time and effort. To finance additional growth, the entrepreneur might then seek additional capital from ‘friends and family,’ who, as a group, will invest relatively small amounts of capital (typically less than €100,000). The investment decisions of friends and family tend to be personally motivated and relationship-based with a secondary emphasis on returns. Larger amounts of capital might then be obtained from business angels. Business angels are wealthy individuals, many of whom were successful entrepreneurs and are interested in working with and investing in young companies. Angels invest alone or as part of a network, and generally invest less than €500,000.

A very small percentage of companies reach the stage where they have the potential to achieve the growth rates and returns sought by venture capitalists.<sup>1</sup> Venture capitalists (VCs) are investors who seek

<sup>1</sup> Venture capital refers to equity investments made by professional investors in early-stage, fast-growing and high-potential private companies.

to generate high levels of returns by investing in high-risk, early-stage companies. VCs are intermediaries. They invest capital from institutional investors such as pension funds, endowments, banks and foundations, into young companies seeking to finance growth. Institutional investors find VC attractive as an asset class because it allows them to diversify their portfolio into high-risk, high-return investments, which offer the opportunity for super-normal returns.

VCs generally seek to invest amounts greater than €1 million. Therefore only companies seeking to raise substantial amounts of capital to finance very rapid growth are appropriate for venture capital. VCs attempt to mitigate some of the risks inherent in these investments by seeking companies with specific characteristics, including

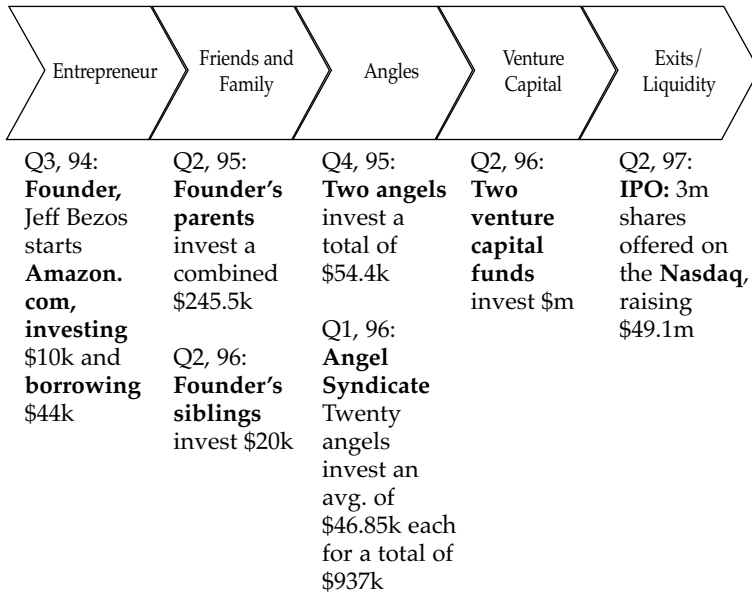
- excellent management teams (preferably with prior experience)
- large and innovative markets (preferably with momentum)
- a compelling and commercially viable technology, product or service.

The venture capital investment process itself is well-defined, and generally consists of several sequential steps:

- generating and sustaining 'deal flow' of investible high-growth companies seeking funding
- identifying companies with strong investment potential
- conducting due diligence
- deal structuring and negotiation
- investment
- ongoing management and oversight
- exit.

The last phase in the equity financing cycle is the exit event, so-called because it allows the investors (and oftentimes the entrepreneur) to exit the investment and receive financial proceeds and returns. Possible exits include public offerings (IPOs) for the best companies, a trade sale or management buyout, repayment of debt instruments, or in the worst case, the company goes out of business and the investors take a write-off. A familiar example will illustrate a company's progress through the equity financing cycle.

Figure 2: Amazon.com equity financing history



Source: EBAN ([www.eban.org](http://www.eban.org)), modified by the author.

The Amazon experience emphasises how important the *entire* financing cycle is. Amazon raised six rounds of equity financing from a variety of sources before it was ready to conduct its IPO. Particularly notable are the four rounds of pre-VC financing the company raised, which allowed it to fund critical growth necessary to attain the momentum and size that would interest venture capitalists. Without such financing at the company's critical early stages, it might never have survived to attract the significant capital of professional investors.

The Amazon.com example reveals an important policy insight, namely that focusing on just one phase of the financing cycle is insufficient. Governments interested in supporting sustainable equity financing of indigenous companies must implement policy initiatives in the context of the entire financing cycle. In Ireland, the government has focused its activities to date almost exclusively on venture capital. This paper argues that a long-term sustainable policy for equity financing requires future policy attention to other key phases of the equity financing cycle: angel financing and exits.

## 1.2 Research methodology

The research for this paper included data analysis of statistics on equity financing in Ireland and abroad, a review of Irish government reports and documents related to industrial policy, interviews with key participants active in the equity financing of small businesses in Ireland, and a review of the academic literature. Each is described in further detail below.

- 1) *Data analysis*: The data and statistics on VC fundraising, investments and performance were primarily sourced from the European Venture Capital Association (EVCA) and the National Venture Capital Association (NVCA). Both the EVCA and the NVCA obtain their raw data through surveys of venture capital firms, conducted and analysed with Thomson Financial, Venture Economics and PriceWaterhouseCoopers (PWC). Statistics were also obtained from the British Venture Capital Association (BVCA), the Irish Venture Capital Association (IVCA) and the Irish Global Entrepreneurship Monitor (GEM) reports. Data from other associations and industry groups, such as the European Business Angel Network (EBAN), the Federation of European Securities Exchanges (FESE), the Irish Association of Pension Funds (IAPF), provided data on angel financing, capital market performance, and pension fund investments. Private sector reports by Accenture, Grant Thornton, VentureOne and Ernst & Young provided additional information on exits, valuations, and returns.
- 2) *Documents review*: A detailed examination of Irish government industrial policy documents, reports, financial statements, and programme evaluation results was conducted. This included Enterprise Ireland annual reports and financial statements since 1998, internal business plans, enabling legislation, presentations, valuation policies, and sample term sheets. Several Forfás reports, IVCA and PWC presentations, press releases and reports, and Department of Enterprise, Trade and Employment (DETE) surveys and annual reports were also reviewed in detail.
- 3) *Interviews*: A wide range of government officials, venture capitalists, companies, angel investors and

academics were interviewed by the author. Interviewees were chosen based on their current or past positions within organisations active in equity financing, or based on their expertise in industrial policy, public venture capital programmes, or equity financing. The goals of the interviews were: to understand the status of equity financing in Ireland; gather a variety of perspectives on current policies and ideas for future policies; validate information from government documents and the literature; and discuss the feasibility of specific policy recommendations. Over forty individuals were interviewed, and the author met with several interviewees more than once.

The author interviewed a broad selection of management and staff at Enterprise Ireland, including the former chief executive officer (CEO), former and current members of the Board, division heads, managers, and 'front line' development advisors. Venture capitalists from the largest VC funds in Ireland, as well as from small seed funds, were interviewed, as were the Presidents of the IVCA from 2003 and 2004. Academics at University College Dublin, Trinity College Dublin, and from the US and the UK who specialise in venture capital, entrepreneurship and finance were consulted, as were the CEOs of several start-up companies in Ireland, pension fund investors, and Irish Stock Exchange (ISE) personnel.

- 4) *Literature Review*: The academic literature from both the US and Europe on entrepreneurship, venture capital financing, equity financing, public venture capital programmes, company growth, stock market performance, and angel investing was reviewed and considered for this paper.

### 1.3 Paper structure

The paper is organised as follows:

- Chapter 2 provides an overview of equity financing in Ireland, including a discussion of the Irish venture capital industry, a review of angel financing in Ireland, and the Irish capital markets.



- Chapter 3 considers five rationales for Irish government participation in equity financing of indigenous businesses, and evaluates whether or not there is a strong argument for continued government intervention in the future.
- Chapter 4 examines the role and activities of Enterprise Ireland as a public sector venture capitalist, including its investments, investment processes, valuation methodologies and exit strategy. It also explores to what extent EI activities distort the private equity financing market.
- Chapter 5 reviews, in the context of the equity financing cycle, what is needed to sustain equity financing in Ireland and offers several policy recommendations.
- Chapter 6 summarises the conclusions of the paper.

## Equity financing in Ireland

*In the past, we were known as the island of saints and scholars.  
In the future we want to be known as the island of innovators.*

An Tánaiste Mary Harney, opening remarks at the EI office in Palo Alto, CA, 2002. Quoted by Chris Gaither, *Boston Globe*

This chapter examines current equity financing of Irish small businesses. To date, the Irish government has targeted its equity financing policies to the venture capital industry, making equity investments of over €300 million into domestic companies and venture funds. This chapter therefore first reviews the characteristics and performance of the domestic venture capital industry, including a review of sources of venture capital, funds raised and invested, a discussion of the types of companies that receive venture capital, and a brief characterisation of Irish VCs. The chapter then provides a discussion of the exit options for indigenous companies, including a review Ireland's capital markets, and concludes with an overview of business angel financing.

### 2.1 Sources of venture capital

Venture capitalists enjoy the privilege of investing other people's money. VCs source most of their capital from institutional investors, which include pension funds, university endowments, foundations and life insurance companies, and invest it on their behalf. Institutional capital is an excellent source of venture capital since it is characterised by long-term time horizons, disciplined and objective investment strategies, and a consistency in investment approach that is generally lacking in individual retail investors (Gompers and Lerner, 2002). Institutions tend to have predictable and limited needs for liquidity, and the sophistication to manage and tolerate higher risk investments.

Raising capital from institutions is an efficient process. VCs only raise funds every few years and are able to do so by approaching no more than a handful of large institutions to raise the capital and

obtain commitments for investment over several years (Jeng and Wells, 2000). Similarly, institutions select a small number of VC funds and make large, long-term capital commitments. In this way, transaction costs, as well as the time spent in the selection, negotiation and closing, are limited for both investing institutions and VC firms (Lerner, 1996). At each fundraising, the VC firm raises sufficient capital to form a fund that will allow them to make a number of investments for the next three to four years. As the VC exits from each company investment (either through an IPO, a trade sale, a management buyout or a write-off), any proceeds are distributed back to the financial institutions that originally invested in the fund. Over time, good VCs build a track record and reputation for generating strong returns, from which they are able to attract other investors and raise larger funds in subsequent rounds of fundraising.

The source of capital for VC funds is a determinant of the size and critical to the stability of the venture capital industry. In the US, pension funds are by far the largest and most consistent supplier of capital to the VC industry and account for approximately two-thirds of funds raised (Megginson, 2001; Botazzi, 2002). US pension funds consistently allocate a small percentage (generally less than five per cent) of their assets under management to venture capital investments, which provides a steady and sizeable supply of capital to the industry. In addition to pension funds, American VCs also raise capital from university endowments and private foundations.

European sources of venture capital differ markedly. European VCs raise considerably lower amounts of capital from pension funds than their American colleagues. For example, during 1998 to 2002, pension funds represented an average of 22 per cent of private equity raised, compared to more than 60 per cent in the US (EVCA, 2003a). In addition to low levels of pension fund participation, European VCs are unable to rely on university endowments, because most third level education is state funded and therefore without endowments to invest. A culture of private foundation creation and investment is lacking among Europe's private investors, as are the tax-deductible benefits of charitable giving that encourage such vehicles, so foundation assets are not a viable source of fundraising for European VCs. Instead, the main sources of European venture capital funds are financial institutions such as banks and, to a lesser extent, insurance companies, as Table 1

illustrates. Significantly more capital is also raised from government sources in Europe, unlike the US where government participation in the VC industry is negligible, accounting for less than one per cent of funds raised (Megginson, 2001; Lerner, 1996).

*Table 1: Sources of capital raised in Ireland and Europe: average percentage of capital raised, 1998-2003*

|                            | <i>Europe</i> | <i>Ireland</i> |
|----------------------------|---------------|----------------|
| Banks                      | 26%           | 20%            |
| <b>Government Agencies</b> | <b>7%</b>     | <b>17%</b>     |
| Fund of Funds              | 7%            | 17%            |
| Corporate Investors        | 9%            | 17%            |
| <b>Pension Funds</b>       | <b>22%</b>    | <b>11%</b>     |
| Insurance Companies        | 12%           | 6%             |
| Private Individuals        | 7%            | 4%             |
| Academic Institutions      | 1%            | 1%             |
| Capital Markets            | 0%            | 0%             |
| Other                      | <u>9%</u>     | <u>7%</u>      |
| TOTAL                      | 100%          | 100%           |

*Source:* Author's calculations from IVCA Annual Reports on Venture Capital Activity, 1999 and 2001; EVCA 1999-2004 Yearbooks.

### *2.1.1 Sources of Irish venture capital*

Ireland's sources of venture capital differ from those of both Europe and the US, but are more similar to Europe. Ireland depends for most of its venture capital on the banking sector and raises far more capital from government sources than either Europe or the US. While government funds have contributed to the successful seeding of Ireland's domestic venture capital industry, continued reliance on the government as a significant source of venture capital could threaten the long-term growth and success of the industry for the following reasons:

- Government funds are dependent on political allocations and support that can erode quickly or disappear entirely in the face of, for example, a change in political party or ministers, short-term returns

- volatility, investment failures, or a bear market.<sup>2</sup>
- Governments are not generally return-driven investors. This means that government funding introduces the burden and distraction of non-return objectives, such as economic development or regional investment.
  - Government funding does little to foster the long-term credibility of the VC industry, carrying with it the implicit suggestion that venture funds could not competitively attract and raise private capital.

### *2.1.2 Irish pension fund investments in venture capital*

Ireland's venture capital industry receives a far lower level of investment by pension funds relative to other European countries and the US. The lack of pension fund participation in the Irish VC industry was the subject of the 1993 Murray-Walsh Report, commissioned by Bertie Ahern, the then Minister for Finance, which reviewed Irish pension fund investment in venture capital (EVCA, 1998; Gompers and Lerner, 2002). It confirmed that Irish pension funds were investing very little in venture capital, particularly when compared to US and UK pension funds. Following the report, the Irish government extracted a commitment from the Irish pension fund industry to invest IRE100 million (approximately €126 million) in domestic venture capital (EVCA, 1999). This commitment was met, but since then, pension funds have essentially ceased investing in the Irish venture capital industry, as Figure 3 illustrates (IVCA, 2002; EVCA, 2004).

According to the Irish Association of Pension Funds (IAPF), reasons for the lack of pension fund investments in private equity include:

- the absence of decision-making at the strategic asset allocation<sup>3</sup> level to invest in private equity
- a dearth of trustee experience with and knowledge of private equity investments

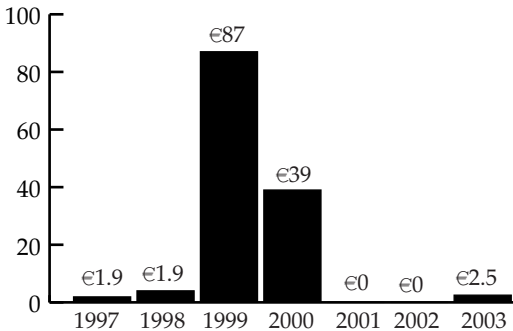
---

<sup>2</sup> A bear market refers to a general decline in stock price values; a bull market refers to a general increase.

<sup>3</sup>Asset allocation refers to the investment technique of diversifying portfolio investments and risk across different types of assets including: stocks, bonds, cash, commodities, real estate and alternative investments such as private equity and hedge funds.

- the lack of tradition of investing in private equity
- a cautious investment culture that resists the shorter-term volatility of private equity as an asset class.

*Figure 3: Irish pension fund investments in the domestic VC industry, 1997-2003 (millions)*



Source: EVCA 1998-2003 Yearbooks.

Some of these barriers could be tackled by the IVCA by, for example, educating trustees about private equity as an investment class, disseminating aggregate performance results of VC funds and issuing a standard valuation policy to provide transparency to potential investors.

A report on pension fund investments in private equity in the UK reached similar conclusions (Myners, 2001). It recommended that a greater focus on strategic asset allocation decisions and more knowledgeable trustees would facilitate UK pension fund investment in private equity. It also suggested an active role for the BVCA in educating trustees about private equity investments, performance and valuation.

A key challenge facing the Irish venture capital industry is to develop a stable source of private sector institutional capital to fund and sustain the industry's growth. As this section indicates, the most viable source of untapped institutional capital currently available in Ireland is domestic pension funds. The policy options for increasing pension fund participation in the domestic venture capital industry are explored in detail in Section 5.1.

## 2.2 Venture capital funds raised

Size matters in venture capital. VC partners, institutional investors and companies alike prefer large-sized funds with capital well in excess of €100 million. There are currently only two venture funds in Ireland with just over €100 million of funds under management. VC firm partners enjoy significant compensation benefits from large funds,<sup>4</sup> because their management fee is calculated as a percentage of committed capital, and carried interest is a fixed percentage of realised gains. Institutional investors prefer to save time, due diligence, and transaction costs and invest more capital in fewer funds, which large funds allow them to do. Companies also benefit from the security of large funds because their 'deep pockets' of investible capital provide capacity for follow-on investments.

Smaller funds, on the other hand, are not able to realise the benefits of economies of scale in venture investing (Lerner, 1996, *Economic Innovation*, 1998). If funds are undersized, venture capitalists are pressured to do small deals that are inefficient in terms of the fixed transaction costs, as well as oversight and monitoring requirements. A small fund size also makes it difficult to diversify across a number of investments, or provide ongoing follow-on financing for existing portfolio companies. Ultimately, a small fund size can make it challenging to raise additional capital from private sector institutional investors who prefer to put large amounts of capital to work with fewer investment relationships. In the worst case, small sized venture funds will fail to become economically viable and self-sustaining because they are unable to achieve a critical mass of capital and reap the benefits of economies of scale.

As a result of its Seed and Venture Capital Programme, EI has seeded about thirty venture capital funds in Ireland. A risk of this continued seeding lies in the possibility that too many small funds are created (Fitzpatrick, 2001). Before seeding additional funds, it is

---

<sup>4</sup> Most venture funds are organised as partnerships with a lifespan of ten years. Limited partners (LPs) invest capital into the venture fund. General partners (GPs) are the VCs and they invest the venture fund capital into companies on behalf of the LPs. GPs receive an annual management fee of usually two to three per cent of the fund's total committed capital. The management fee is used to pay salaries and run the firm's office. The GPs also receive 'carried interest' (also called 'carry') on their investments. Carried interest is generally around 20 per cent of the gains from successful investments. Larger funds can make large investments, which offer the potential for larger absolute gains.

important for EI to ensure that the existing funds are sustainable and generating the competitive returns that will allow them to attract the private sector funds necessary to their survival.

Total VC funds raised in Ireland have increased tremendously over the past five years. Funds raised in 1997 totalled less than €20 million. By 2000, funds raised annually peaked at €228 million and have since levelled off at slightly less than €200 million during 2001-2002 before dipping again in 2003.

*Table 2: Venture capital funds raised, 1997-2003*

|       | <i>Ireland (€m)</i> | <i>Europe (€bn)</i> | <i>US (€bn)</i> |
|-------|---------------------|---------------------|-----------------|
| 1997  | € 16                | € 8                 | € 15            |
| 1998  | € 48                | € 8                 | € 25            |
| 1999  | € 216               | € 14                | € 50            |
| 2000  | € 228               | € 24                | € 87            |
| 2001  | € 196               | € 17                | € 34            |
| 2002  | € 183               | € 9                 | € 6             |
| 2003  | € 54                | € 7                 | € 9             |
| TOTAL | € 941               | € 87                | € 226           |

*Source:* Author's calculations from EVCA 1997-2004 Yearbooks; PriceWaterhouseCoopers/Thomson Venture Economics/National Venture Capital Association MoneyTree Survey, 2002-2004; IVCA Reports on Venture Capital Activity, 1999 and 2002. Conversion rates from US\$ to Euro at [www.xe.com](http://www.xe.com).

Similarly in Europe, the amount of funds raised has been increasing. During the technology boom in the late 1990s, the amount of venture capital funds raised nearly tripled from about €8 billion in 1997 to a high of almost €24 billion in 2000 (EVCA, 2003a). The US saw the most dramatic increase in venture capital funds raised, from €15 billion per year in 1997 to a peak of €87 billion in 2000, but this has since fallen dramatically and is currently just below the €10 billion level.

Interestingly, Ireland appears to have weathered the fundraising storm better than its European and American counterparts. Since the end of the technology market boom, both Europe and the US have suffered significantly greater percentage declines in funds raised than Ireland. Funds raised in Europe declined over 60 per



cent from 2000 to 2002 and a precipitous 93 per cent in the US. In Ireland, funds raised have fallen a modest 20 per cent. Since most Irish VC firms raised funds during the 2000-2001 time period, the next significant fundraising will take place around 2005-2006. This will be an important indicator of the fund size that domestic VCs are able to raise in more normal market conditions. Increasing fund sizes will provide a positive signal for industry growth and competitiveness, while decreasing fund sizes will offer far less encouraging signs for the future vibrancy of the industry.

### **2.3 Venture capital funds invested**

Ireland is in the fortunate position of having an abundance of equity capital available for new investments. Of the nearly €1 billion in private equity raised by the Irish VC industry, over €650 million has been invested in more than 500 indigenous companies. There is nearly €350 million in capital as an 'overhang' amount available for future investment. At Ireland's historical average investment rate of over €100 million per year, the current 'overhang' figure represents the equivalent of about three years of venture capital available to invest; a figure that does not include the amounts VCs continue to raise annually.

Venture capital investments have burgeoned in the past five years, peaking in 2000 at the height of the boom, and declining thereafter, as demonstrated in Table 3.

This decline is an expected phenomenon that is affecting many countries, not only Ireland. Declines in VC investing activity are correlated with market cycles and do not necessarily signal a deeper problem with the industry or its performance. Investments tend to decrease during down cycles in the market because VCs are spending significantly more time providing strategic and financial assistance to portfolio companies, which leaves them less time to evaluate new investments. The reduced number of exit opportunities common in bear markets also means that the average VC portfolio is bottlenecked. Without a steady stream of exits, companies remain in the portfolio longer, thereby lowering the capacity of VCs to take on new investments.

Table 3: *Venture capital funds invested, 1997-2003*

|       | <i>Ireland (€m)</i> | <i>Europe (€bn)</i> | <i>US (€bn)</i> |
|-------|---------------------|---------------------|-----------------|
| 1997  | € 32                | N/A                 | € 12            |
| 1998  | € 35                | € 7                 | € 18            |
| 1999  | € 83                | € 12                | € 46            |
| 2000  | € 194               | € 21                | € 88            |
| 2001  | € 107               | € 13                | € 34            |
| 2002  | € 105               | € 11                | € 18            |
| 2003  | € 255               | € 29                | € 14            |
| TOTAL | € 811               | € 93                | € 230           |

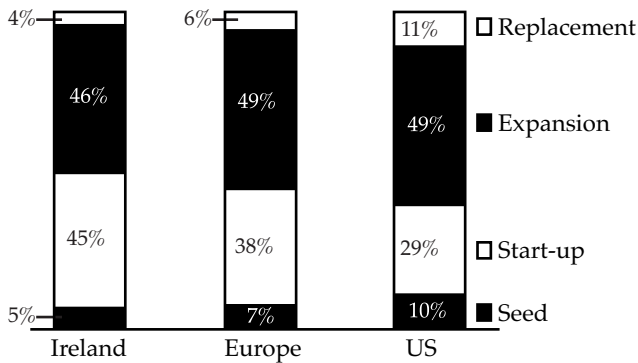
*Source:* Author's calculations from EVCA 1997-2004 Yearbooks; [www.nvca.org](http://www.nvca.org); PricewaterhouseCoopers/Thomson Venture Economics/National Venture Capital Association MoneyTree Survey, 2002-2004; IVCA Reports on Venture Capital Activity, 1999 and 2002. Conversion rates from US\$ to Euro at [www.xe.com](http://www.xe.com)

### 2.3.1 *VC funds invested: by company stage*

VCS are in the business of investing in high-risk early-stage companies. Data indicate that Irish venture capitalists in particular invest in the earliest-stage companies at higher rates than their US and European counterparts. Irish VCs invest an average of half their capital in seed and early-stage companies, compared to VCs in Europe (45 per cent) and in the US (39 per cent), as shown in Figure 4.

It is interesting to note that when the figures for early-stage investments are broken into the very earliest seed-stage companies versus start-up companies, an average of only five per cent of Irish venture capital investments are made in seed-stage companies, compared to seven per cent in Europe and ten per cent in the US. Since seed-stage companies are the very earliest and riskiest investments, this difference could be due to a lower level of risk-taking among Irish VCs, relative inexperience in evaluating seed-stage deals for investment, or perhaps because fewer seed-stage companies in Ireland seek financing from venture capitalists.

Figure 4: Venture capital investments by stage of company: average percentage of number of investments, 1998-2002



Source: Author's calculations from EVCA 1997-2003 Yearbooks; PricewaterhouseCoopers/Thomson Venture Economics/National Venture Capital Association MoneyTree Survey, 2002-2003; IVCA Reports on Venture Capital Activity, 1999 and 2002.

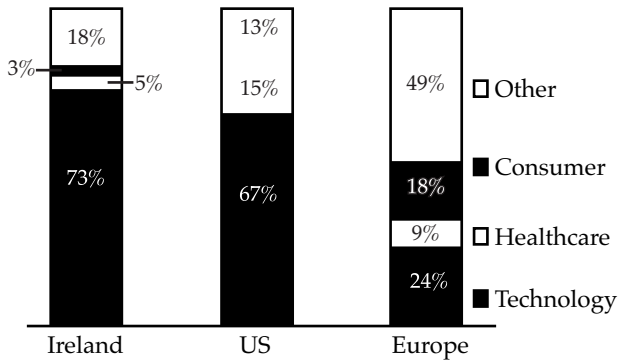
Note: Due to rounding, figures may not add to exactly 100%.

It is probable that over time, the percentage of Irish total investments in start-up and early-stage companies will decline, reflecting the increasing maturity of the VC industry. VCs will have more portfolio companies and will make later-stage follow-on investments in them and these follow-on investments will be reflected in industry statistics as a higher rate of later-stage investments (Gompers, 1995).

### 2.3.2 VC funds invested: by company sector

Irish VCs love the technology sector. As Figure 6 illustrates, on average over 70 per cent of venture capital investments in Ireland are made in high-tech companies. This level of investment is similar to the US, where 67 per cent of investments are in this sector, but significantly higher than the European average of 30 per cent. In 2000, nearly 90 per cent of Irish venture capital investments were made in the technology sector – the highest level in Europe (Murphy, 2001).

Figure 5: Private equity investments by sector: percentage of amount invested, 1998-2002



Source: Author's calculations of EVCA 1998-2003 Yearbook data and PWC/TVE/NVCA MoneyTree Survey, 1999-2002 data.

As the Irish venture capital industry matures, it is reasonable to expect sector diversification of investments to occur, lowering the percentage of investments in technology firms over time. For example, venture capitalists in the US invest heavily in both technology and healthcare sectors, because healthcare investments tend to have lower but more stable returns that offset some of the volatility of high-tech investment performance. Similar to any investment portfolio, diversification smooths returns through cyclical markets as well as broader economic booms and busts. There are already signs that some sector diversification is beginning to occur among Irish VC investments. Healthcare investments have increased significantly in 2002 and two of the largest VC funds have begun to invest in healthcare (IVCA, 2003).

### 2.3.3 VC funds invested: by company geography

Venture capital is an industry of proximity, which manifests itself in small geographic areas of concentrated activity. This skewed allocation of VC activity is a common characteristic of all venture capital markets. In the US, for example, California, New York and Massachusetts receive 55 per cent of all venture capital investments and, even within those states, investments are clustered in Silicon Valley, New York City and the Boston metropolitan areas (PWC,

2004). In Europe, the UK reports the highest levels of VC activity, with investments clustered around greater London. Ireland is no exception to this trend, with nearly 70 per cent of VC investments concentrated geographically in the Dublin metropolitan area (IVCA, 2002).

It is a theoretical question as to whether this asymmetric allocation of investments reflects a market imperfection that requires intervention, or is efficient. If there is a market imperfection, investing in geographic areas with little VC activity could yield superior returns because there are attractive investment opportunities that have been ignored by VCs concentrating in more popular geographic areas. Empirical research does not endorse the idea that the market is imperfect and that intervention will improve performance in areas that receive less VC funding. Lerner (1996) found that the US Small Business Innovation Research programme (SBIR) awards had a positive impact on sales and employment only for those firms located in geographic areas with a critical mass of venture capital activity. Awards given to firms in geographic areas with little VC activity did not generate significant increases in sales or employment. Similarly, a review of state-sponsored venture capital initiatives in rural US states noted that government imposed geographic restrictions on investments can reduce venture fund rate of return. This finding refutes the idea that superior returns are available in geographic areas with little VC activity (Barkley et al, 2001).

On the other hand, if the market is efficient, the geographic concentration of VC investments should accurately reflect the distribution of good investment opportunities. Empirical research supports this phenomenon of geographic 'clustering', in which high-technology companies in particular group regionally and attract specialised labour and expertise such as engineers, software experts, VCs, lawyers and accountants (Porter, 1990; O'Gorman, 2001).

These findings suggest that it is most efficient to support and encourage the development of concentrated areas of VC investment. Such a conclusion has important implications for EI's Seed and Venture Capital Programme. In particular, the results suggest that Seed and Venture Capital Programme funds investing in the midland and western regions of Ireland (where there is currently less VC activity) will not realise superior investment returns, nor will they have a significant impact on sales and employment growth for firms in those areas.

## 2.4 Venture capital returns and valuations

VC returns have traditionally been shrouded in secrecy. VC firms report quarterly or annual returns to their investors, but this performance data is not published or distributed. The best statistics available, therefore, are country-level aggregate returns in the form of pooled internal rates of return (IRRs). For example, ten-year venture capital rates of return in Europe average 12 per cent, about half the reported US return of 26 per cent (EVCA, 2002; NVCA, 2003). Fund performance data remains undisclosed in Ireland and, unusually, there are no aggregate returns data published by the IVCA that would serve to provide country-level performance information.

In the US, pressure for greater disclosure of VC firm returns is increasing as a result of a suit brought by the *Mercury News* newspaper in California against the state pension fund Calpers<sup>5</sup> to force it to release information on its venture capital investments and returns. Calpers released the performance information, instigating a heated debate among pension funds, taxpayers, and the venture capital community about the public reporting of returns (Marshall, 2003). While this disclosure trend has not yet migrated to Europe, increased concerns about pension oversight make it an issue likely to emerge in Europe.

The IVCA also fails to publish aggregate data on median valuations of venture-backed companies in Ireland. Available data from the US and Europe indicates that valuations for venture-backed companies vary quite significantly, from an average over the past three years of \$16 million (about €12.6m) in the US, to €6 million in Europe (VentureOne, 2003a, 2003b). As a result, US institutional investors have become increasingly active investors in European VC funds, mainly because it has been possible to find lower relative valuations in Europe for similar quality companies (Gompers and Lerner, 2002). Lower valuations are attractive to VCs because they require a relatively lower exit price to generate a strong return.

Valuation levels are an important indicator of market conditions, because they fluctuate due to the

---

<sup>5</sup> California Public Employees Retirement System (CALPERS).

- level of competition in a venture capital market
- supply of venture capital
- average quality and number of companies seeking VC financing
- relative availability of high return exits, such as IPOs.

For example, during the technology boom in the US, the massive increase in the supply of venture capital fuelled competition for investment opportunities, which drove valuations higher.

Given the importance of returns data and valuation levels in attracting co-investors, and signalling performance and market conditions within the industry, these are important statistics for the IVCA to measure and track in future in order to benchmark the performance of Irish VCs against their European and American colleagues.

## **2.5 Irish venture capitalists**

The Irish venture capital industry is young. The majority of VC firms were founded in the mid-1990s and, compared to the UK and the US in particular, many of the investors have relatively little investing experience.

A significant percentage of Irish VCs have strong financial backgrounds, holding chartered accountant degrees and having worked in accounting firms. Most VC firms have at least one partner with prior venture investing experience but partners with industry experience remain in the minority amongst Irish VCs, even at the largest funds. This is typical of the European venture capital industry as a whole, where VCs are often drawn from accountancy, management consultancy and investment banking backgrounds rather than from an entrepreneurial or industry background (Campbell, 2003). In contrast, American VCs often come from industry from positions such as engineering, business development and technical or executive management positions at high-tech companies (Meggison, 2001).

A young VC industry with minimal business and technology industry experience among investors can affect growth in a number of ways. Most importantly, inexperienced investors with abbreviated track records can seriously inhibit fundraising. Pension funds have legal and fiduciary responsibilities to protect the value of their investments by making prudent investments, and it can be

challenging to make a strong case for investing in relatively inexperienced fund managers with a limited returns history (Gompers and Lerner, 2002). The relative inexperience of VC fund managers compared to the US is an issue frequently noted by US institutional investors seeking VC investment opportunities in Europe (Gompers, 1998).

This lack of experienced investors can also have a negative impact on returns. Comparatively lower returns can then make it difficult to attract future investors to grow the industry. For example, identifying, evaluating and valuing technology companies requires a detailed and extremely current understanding about the technology and the global market. A relative lack of experience among investors in a young VC industry can lead to funding the 'wrong' companies or sectors, with the corresponding deleterious impact on returns. A recent review of venture capital fundraising in sixteen European countries concluded that the high percentage of write-offs in European VC portfolios during the 1990s was affected by the many first-time fund managers climbing the seven to ten year 'experience curve' of managing investments through an entire venture capital fund cycle of fundraising, investing and exiting (Schertler, 2001). Investors who are not seasoned at executing successful trade sale and IPO exits or weathering a downturn in the market can also negatively impact returns.

Many Irish VCs have some international professional experience, but remarkably few have had significant investment or business experience in the key markets of relevance to most Irish companies. Young companies in Ireland are export-oriented because the small size of the domestic market means most growth opportunities are found abroad (DETE, n.d.). There is a clear need, then, for VC investors that offer global networks, experience and contacts. The recruitment of experienced investors with technical and industry backgrounds as well as international expertise could add significant depth and credibility to Irish VC firms, and increase the attractiveness of Irish funds to institutional investors at home and abroad.

## 2.6 The exit gap

Trade sales dominate Irish exits, representing on average one-third of all venture capital divestments. IPOs are the most profitable exit for venture capitalists but only five per cent of venture-backed



companies in Ireland go public, compared to the European average of 20 per cent. This dearth of public offerings represents a serious exit gap for Irish companies.

It is not possible to definitively determine why the rates of IPOs in Ireland are low because there is little empirical research exploring the issue of exits among indigenous small businesses. The annual European Business Survey (EBS) of small and medium enterprises (SMEs) in all EU member states provides some insight into comparative exit rates across Europe (Grant Thornton, 2002). The survey results indicate that 51 per cent of Irish SMEs expect that a change of ownership will take place through a trade sale, versus 11 per cent that expect it to occur as a result of a public flotation. Therefore one reason that IPO rates in Ireland are so low could be that Irish companies do not plan and position for a flotation by, for example, recruiting a Board or investors with IPO experience, or building an 'IPO-ready' management team that has worked at senior levels in public companies or previously taken a company public. Because the companies don't expect to go public, they don't prepare for it and consequently it does not happen.

Another reason for the low rates of IPOs in Ireland could be that Irish companies are too small in size to go public successfully. The Grant Thornton survey supports the idea that Irish companies certainly *perceive* that they are too small for a public offering. When asked to identify perceived barriers to flotation, the top issue identified by 38 per cent of Irish SME respondents was size of the company. Irish SMEs also hold a disproportionate perception of the level of company valuations required to go public. Thirty seven percent of Irish SME respondents indicated that a company's valuation needed to be €50 million or higher in order to go public. Nineteen percent believed that firms must reach a valuation of more than €100 million before undertaking an IPO. These findings are surprising given that many markets easily accessible to Irish companies, such as the AIM, OFEX and the Nasdaq Small Cap, have very small to no minimum capitalisation requirements for listing. The survey findings suggest that the perception of the importance of company size is not fully in line with the reality of its necessity for flotations. It also suggests the need for education among Irish SMEs about actual listing requirements among different public markets.

### 2.6.1 *Why are IPOs important?*

IPOs are critical to generating strong returns on private equity investments. As indicated previously, strong returns are the lifeblood of the VC industry because they attract institutional capital and assure the long-term stability and desirability of the industry. Gompers (1995) found that IPO exits generated an average 60 per cent annual return on investment compared to the 15 per cent return obtained in a trade sale. VC investments in companies that go public realise a 195 per cent average return over a four year holding period compared to a 40 per cent average return over a similar holding period in companies that are acquired (NVCA, 1999). A 2003 study found that from 1985 to 2002, annual returns on US VC investments were strongly correlated with the amount raised from VC-backed company IPOs, again emphasising the link between public offerings and VC fund returns (Bygrave, 2003a). The 2003 GEM report found that following the dot com bust in 2000 it was increasingly difficult for European venture-backed companies to go public and, as a result, returns among European VCs fell.

IPOs are uniquely important in a relatively young VC market like Ireland where venture fund returns history and reputations of fund managers are not fully established. In place of those common measures, the number of IPOs within a venture fund's portfolio can serve as a signal of overall fund performance. Because only the best companies can avail of a public offering, the number of IPOs in a fund can indicate liquidity and strong returns (Marti and Balboa, 2001). IPOs also have a disproportionate effect on overall fund returns since VC portfolio performance is extremely sensitive to top performers. An analysis of a US portfolio of 794 VC investments over thirty years found that if the top nine per cent performing investments were removed, it transformed a 19 per cent gross rate of return into a negative return (Lerner, 2002a). This suggests that in the absence of IPOs to generate top performance, Irish VCs will have a challenging time achieving competitive portfolio return targets.

The academic literature strongly supports the conclusion that a robust and liquid IPO market is a critical driver of equity financing activity (Bygrave and Timmons, 1992; Isaksson and Cornelius, 1998; Megginson, 2001). Jeng and Wells (2000) conducted an empirical study to model the supply and demand of venture capital funds across twenty-one OECD countries over a ten year time period. A variety of factors that could influence venture capital fundraising

were tested including IPOs, labour market rigidities, financial reporting standards, private pension funds, GDP growth, market capitalisation growth, government programmes, and other factors. The study found that IPOs are the most important factor in determining venture capital funding.

Black and Gilson (1998) examined the financing methods for SMEs across Japan, Germany and the US and concluded that an active and robust IPO market is a key determinant of VC activity. The authors also confirmed a correlation between the number of VC-backed IPOs in one year and the level of new VC capital commitments the following year, concluding that there is a 'critical link' between the stock and venture capital markets. Leachman et al (2002) examined the determinants of private equity activity in eight European countries (including Ireland) and the US during 1986-1999 and found that profitable exit options are key to the growth of private equity. Hellmann (2000) similarly found that the most frequently mentioned obstacle to developing a VC industry is the lack of a strong public market and the IPO exits it provides.

The empirical and academic literature, then, is clear about the strong impact of IPOs on returns, on the growth of venture capital and as a driver of equity financing. From a policy perspective it is clear that IPOs are critical to the sustainable financing of young companies for a number of reasons as follows.

- *IPOs generate the highest returns:* As discussed earlier, IPOs represent the most profitable returns to venture capitalists and other equity investors in small companies and have a very significant effect on overall VC fund returns (Leachman et al, 2002; Marti and Balboa, 2001). While return results for Irish VCs are not made public, it is reasonable to speculate that, given the very low rate of IPOs, they fall below competitive international rates of return.
- *IPOs increase the supply of risk capital:* High returns from IPOs attract equity capital to start-up companies (Marti and Balboa, 2001). Pension funds, business angels and VCs are all driven to provide equity financing to start-up companies based on their anticipated returns (Gompers and Lerner, 1999a). If investors are unable to determine a profitable and clear path to exit, they are unlikely to provide equity financing to the company.

This will result in a decline in the available supply of risk capital and a corresponding increase in the difficulty companies have obtaining equity financing.

A recent study on angel investing in Europe found that the possibility of an IPO was an 'essential incentive' to encourage angel investments in start-up companies (EU Enterprise Directorate-General, 2002). Gompers (1998) similarly noted that changes in the market value of venture-backed IPOs are strongly correlated with venture capital funds raised: as the value of the IPOs increased, more investors pursued venture capital investments.

- *IPOs recycle equity capital:* IPOs are an important source of recycled equity capital (Megginson, 2001). Investors that exit through a public offering realise returns in cash, which can then be reinvested in new companies (Black and Gilson, 1998; Gompers and Lerner, 2002). Trade sales, on the other hand, are often structured as stock deals so the sale price is realised partly or wholly in shares of the acquiring company, which are generally 'locked up' for a negotiated period of time. The recycling of investible cash takes longer under a predominantly trade sale exit model, and, due to the lower multiples from trade sales, results in less capital available for recycling.
- *IPOs put upward pressure on trade sale prices:* A strong public market positively influences the price and returns of trade sale exits (Gompers and Lerner, 2002). It does so by providing a viable alternative to exit (and therefore negotiating leverage) if the trade sale price is insufficient. From the perspective of the acquirer of the firm, the availability of a viable option to take the firm public after acquisition makes it more attractive, and improves its trade sale price.
- *IPOs return ownership and control to the entrepreneur:* IPOs give entrepreneurs the opportunity to regain control of their company (Marti and Balboa, 2001). An IPO requires VCs to convert their position to common stock, which terminates their preferred rights and privileges that gave them control over company decisions (Black and Gilson, 1998). It also dilutes the VC's ownership in

the company, and after a standard lock-up of about 180 days, allows the VCs to exit completely by selling their shares on the public market. A trade sale, on the other hand, cedes control of the company to the acquiring firm, not the entrepreneur (Jeng, 2000).

To date no empirical analysis has been conducted in Ireland about the specific impacts the low rate of IPOs has on equity financing. It is likely that the most significant impact would be on lower overall rates of return of Irish venture capital funds relative to other markets with higher rates of public offerings, but this information is not publicly available. Institutional investors make larger capital commitments to established firms with strong returns, and select fund managers based on returns (Black and Gilson, 1998; Marti and Balboa, 2001). To compete for the capital of institutional investors, Irish venture funds must provide returns that are competitive with international VC firms that have strong IPO records. To ensure the long-term attractiveness and sustainability of the domestic venture capital industry, a focus on IPO exits is required.

### *2.6.2 The Irish Stock Exchange: a brief overview*

A discussion of IPO exits must naturally include a review of the domestic stock exchange. The dominant view among government officials and industry players in Ireland is that the ISE is currently inconsequential to indigenous small businesses. Forfás's 1996 report on industrial policy concluded that, while in theory the Irish stock market should be a source of public equity to indigenous firms, in practice it is largely 'irrelevant'.<sup>6</sup> It also recommended seeking new ways for the Irish capital markets to play a more relevant role in financing small companies. The Enterprise 2010 report offered the specific recommendation that 'the development agencies should work together to support and further develop a buoyant capital market' (Forfás, 2000: 59) and noted that the Irish capital markets must be improved in order to enhance the access to capital by young companies.

The ISE is a member-owned exchange with fifteen members. Exchanges structured like the ISE are referred to as 'mutualised'

---

<sup>6</sup> The 1996 Forfás report specifically states 'At present the equity market is irrelevant to the financing needs of the vast majority of businesses', at <http://www.forfas.ie/publications/archive/reportsof.htm>, Chapter 4, section 4.32.

exchanges in that they are owned and controlled by members of the exchange. While the ISE's governance structure includes five independent directors on its board of directors, the seven member directors make up the majority vote. For more than a decade, the number of stockbroking firms in Ireland has remained steady at about a dozen firms.<sup>7</sup>

The ISE ended 2003 with a market capitalisation of nearly €70 billion, which places it ahead of only the Luxembourg Stock Exchange and the Wiener Borse in Western Europe (FESE, 2004). Investment in the ISE is dominated by domestic pension funds and life assurance companies that prefer high liquidity stocks of large, established companies. There is limited retail participation in the Irish stock market. With only sixty-six companies traded on the ISE, the turnover of shares was €77.5 billion for 2003 (ISE, 2003). Turnover is also relatively concentrated with the five largest stocks<sup>8</sup> accounting for more than 70 per cent of exchange trading in 2003 (ISE, 2003).

The performance of the ISE as a source of equity for Irish firms is poor. The level of listing activity on the Official List during the 1990s was low, with only nine companies.<sup>9</sup> From 2000 to 2003, only four companies were listed, and no new listings have been added in the past two years.<sup>10</sup> Instead, forty-one companies have delisted from the ISE since 2000, an enormous net emigration of companies from the exchange. Unlike several smaller exchanges on the continent, such as Austria, Stockholm and Borsa Italiana, that attract and list international companies, the ISE is a provincial exchange, with no cross-border listings of foreign stocks (PWC, 2004).

It is also interesting to note that the listed companies on the ISE do not reflect the sector mix of the Irish economy. Although Ireland

---

<sup>7</sup> It is interesting to note the close relationships among members of the ISE and the most heavily traded securities. Davy and Goodbody are dominant in equity trading and are members of the exchange. Each of these firms has been acquired by retail banks. Goodbody Stockbrokers was acquired by Allied Irish Banks (AIB) and Davy's by Bank of Ireland (BoI). AIB and BoI are two of the largest capitalisation and most heavily traded stocks on the ISE.

<sup>8</sup> The five largest stocks are: Anglo Irish Bank, Allied Irish Bank, Bank of Ireland, CRH, and Irish Life and Permanent.

<sup>9</sup> Companies listed from 1990 to 1999 include: Golden Vale, Irish Life, DCC, Irish Permanent, Ryanair, Marlborough, Donegal Creameries, Iona Technologies, Athlone Extrusions and Viridian (at [www.ise.ie](http://www.ise.ie)).

<sup>10</sup> In 2000, Riverdeep, Datalex and Power Leisure Plc listed; in 2001, Conduit (there was also an additional listing granted to a company with its primary listing in the UK) listed. There were no listings in 2002 and 2003 (at [www.ise.ie](http://www.ise.ie)).

is the largest exporter of software in the world, and many global software companies have their European bases in Ireland, the ISE has been able to attract very few of them to list. Instead, Irish technology companies regularly seek to list on other exchanges where they will find higher values, more liquidity and greater knowledge about and demand for technology companies. Irish companies have successfully listed on the Nasdaq in the US, Easdaq in Europe, the AIM in London and the Neuer Markt in Germany.

### 2.6.3 *The DCM and ITEQ*

The ISE has established domestic markets that cater to small company equity needs, but these efforts have met with little success. The Developing Companies Market (DCM) was created in 1997 to focus on the equity needs of smaller indigenous companies, but has failed to become an important source of capital. Since its inception, the DCM has had a maximum of five companies listed at any one time and has raised less than €80 million (ISE 2004, 2003 and 2002). A dearth of institutional investor interest in small capitalisation companies and little retail participation means that companies on the DCM are very thinly traded.

The dismal performance of the DCM is in stark contrast to the success of the London Exchange's Alternative Investment Market (AIM) for small companies. Since the AIM began trading in 1995, it has listed over 1,200 companies and raised over €11 billion. Reflecting the small size of the companies that list, the average amount raised per firm is around €5 million, and nearly half (46 per cent) of the companies have a market value of less than €15 million. In an effort to compete more successfully with the AIM, the ISE recently announced the creation of another exchange, not yet named, to be launched by the end of 2004 (Quinn, 2004). The exchange will be non-regulated, which will reduce the regulatory costs to young companies listing on it.

In a tragedy of timing the ISE launched ITEQ, an exchange focused on high-growth technology companies, in September 2000 during the technology market bust. ITEQ was designed to be attractive to technology companies because the ADRs of ITEQ listed companies were exempt from the one per cent stamp duty on traded stocks and ITEQ listed companies were not required to obtain shareholder approval for a takeover. Unfortunately, these features have not proven to be as compelling as was envisioned. The

market was established with six listed companies, and its first IPO occurred on October 26, 2000 when Datalex listed on both ITEQ and the main exchange. Since that time, a maximum of eight companies have listed at any one time, but by the end of 2003 only five firms remained. While this performance compares negatively to the Athens New Market, which lists nine companies, or the SiTech on the Warsaw Exchange with twenty-eight firms, the overall performance of the DCM and ITEQ is similar to other small European 'new markets.'

Despite the importance and profitability of IPOs as an exit, there has been little discussion or review of the IPO market in Ireland. A 1999 report on the strategic development options of Ireland's capital markets concluded that the Irish exchange needed to ensure that it was 'alliance compatible' (Bacon, 1999). Without referring directly to the idea of demutualisation, the report raises the general question of whether the current ownership structure of the exchange 'can be considered optimal in terms of promoting future development' (ibid, 99).

This paper argues that there is currently an exit gap for indigenous small companies that manifests itself in a very low rate of IPOs among Irish firms. Closing this gap is crucial to generate competitive returns and ensure the success and sustainability of equity financing in Ireland. A detailed discussion of policy recommendations for closing the exit gap and increasing the rate of IPOs for Irish companies can be found in Section 5.2.

## 2.7 Angel financing

Business angels are a large and critical source of pre-VC financing and provide an important bridge between non-professional (for example friends and family) and professional investors (Bygrave, 2003a). Angels are generally characterised by three key features:

- angels are wealthy individuals, often ex-entrepreneurs, interested in working with and investing in young companies
- they offer both capital and expertise and are frequently referred to as 'smart money' in acknowledgement of the experience and assistance they bring to young firms
- angels traditionally invest small amounts of risk capital (usually less than €500,000) into seed and early-stage companies.



As discussed earlier, the Irish government has historically focused on increasing the level of small equity financings in early-stage companies primarily through Enterprise Ireland initiatives targeted at the VC industry. That policy ignores the evidence, reviewed below, that angel investors are the best and most common source of small amounts of risk capital.

### *2.7.1 Importance of angel financing*

Angel capital represents a more important, earlier-stage source of capital for young companies than venture capital (Megginson, 2001). In the US, angels finance about twenty times more companies than venture capitalists and invest about five times more capital overall (Zacharakis et al, 2002). There are about 400,000 angels in the US, providing equity investments totalling \$30 to \$40 billion (€24 to €31 billion) per year in over 50,000 companies (Sohl and Sommer, 2002; Mason and Harrison, 1993). Angels in Europe invest twice the amount of seed capital in young companies than venture capitalists (EBAN, n.d.). While data on this notoriously private and restricted sector is difficult to gather and verify, a recent study of eleven EU countries estimated that the UK, which has the most developed informal investor market in Europe, has 18,000 angels investing €800 million in 3,500 companies. Germany and France have a strong and active, although not as large, angel investing industry. The study also found that companies seeking pre-VC financing were most likely to obtain investments from business angels. In particular, it noted that for companies raising less than €400,000, which is below the threshold that most venture capitalists will invest, business angels represented the most likely source of equity capital.

Studies indicate that business angel investments in Europe range in size from between €40,000 up to €750,000 (EU Enterprise Directorate-General, 2002). The results in the US are similar. A study of New England technology firms found that financings of less than \$250,000 (about €200,000) came primarily from private investors (84 per cent) relative to VCs (13 per cent). A later study reported that 82 per cent of angel financing rounds were less than \$500,000 (€390,000) compared to the average venture capital round of financing which averages more than \$1 million, or €785,000 (Freear, 1995). This early-stage financing is particularly critical to fostering small company growth. Only two per cent of CEOs on the Inc.

magazine 500 list of the fastest-growing companies in the US in 2002 received VC seed investments, compared to over one-third that raised startup capital from informal investors (Reynolds et al, 2003).

A glance back to the Amazon.com financing example in Chapter 1 provides a real world example of the importance of angel financing. Amazon raised two rounds and nearly \$1 million (about €785,000) of angel capital before it was ready to approach venture capitalists. Without those critical rounds of financing, it is unlikely that the company would have been able to finance the growth required to become a credible candidate for VC funding.

The Irish government's decision to address the supply of small amounts (less than €500,000) of equity financing through policy initiatives and financial support aimed at the venture capital market is at odds with the evidence on investing patterns of angels and VCs. To the extent that the Irish state is concerned with small investments in early-stage companies, the evidence outlined above presents a convincing case for focusing policy attention on increasing the availability and supply of angel financing.

### *2.7.2 Angel financing policy*

In several previous reports on European and Irish venture capital, the notion of focusing policy on angel investing has been put forth. An EU Green paper on entrepreneurship suggested that the potential of informal investments from friends and family and from business angels 'should be further explored' (Commission of the European Community, 2003). A BVCA (2003a) report exploring the issue of improving the availability of finance for young companies suggested that 'the EU should encourage the activity of Business Angels'.

In Ireland, recommendations for encouraging and improving the angel investing environment domestically have been put forth for the past decade, although few specific policy actions have been taken. The 1996 Forfás report on industrial policy noted that 'the range of incentives for individuals investing in business must be urgently reassessed' (Forfas, 1996: 35). They should offer a 'better potential return for those putting money into young businesses where the risks are higher' (ibid, 35). The last three Irish GEM reports (Fitzsimons et al, 2003, 2002 and 2001) have suggested that the government should consider fiscal measures to increase the attractiveness of start-up and very early-stage investments to business angels.

The 1992 Equity Capital Survey conducted by the DETE asked respondents to identify what initiatives would improve the climate for raising equity. The highest percentage of respondents (22 per cent) identified 'Incentives to increase the attractiveness of investing in manufacturing industry/remove incentives such as DIRT accounts, property incentives, etc.' (DETE, 1992: 15). This compares to only nine per cent of respondents who recommended establishing a state VC fund. A review of the verbatim comments from companies included in the appendix of the survey findings similarly revealed a strong agreement among respondents about the need to make seed investing in young companies more attractive to the individual investor.

Prior recommendations have been broadly supportive of the idea of increasing the attractiveness and availability of angel financing. Yet little action has been taken.<sup>11</sup> This paper argues that angel financing is critical to the growth of young companies and that policy attention should be paid to increasing the supply of angel capital. Specific policy options to increase the availability of angel financing, such as funding angel financing 'matchmakers' and equalising government fiscal incentives to encourage equity investments, are discussed in detail in Section 5.3.

## 2.8 Conclusion

This chapter reviewed the current equity financing of Irish small businesses and concludes that long-term sustainability and success of equity financing in Ireland most critically requires:

- a stable source of private sector institutional capital to fund the venture capital industry (discussed further in Section 5.1)

---

<sup>11</sup> The Business Expansion Scheme (BES) is often identified as a significant government initiative to increase the availability of angel financing. Yet the data on BES investments indicates that even during the technology boom from 1997 to 2001, 67.8 per cent of capital investments and over 55 per cent of invested capital from the BES were made in small manufacturing companies, not companies from traditionally equity-financed sectors (DETE, 2003b). Many BES investments are also marketed to regular investors seeking income tax relief, rather than traditional angel investors. In 2004, the BES scheme was suspended due to state aid regulations of the EU. The Seed Capital Scheme (SCS) does not address the issue of angel financing, but rather provides entrepreneurs the opportunity to reclaim previously paid taxes in order to start-up a new business. The SCS scheme was also suspended in 2004.

- closing the exit gap (discussed further in Section 5.2)
- increasing the supply of business angel financing (discussed further in Section 5.3).

This chapter demonstrated that over the past several years the Irish VC industry has grown tremendously in terms of both funds raised and invested. This is partly due to the financial support of Enterprise Ireland in seeding and investing in domestic venture capital funds. Relative to Europe and the US, Irish venture capitalists raise less capital from private pension funds and more from government sources. A key challenge currently facing the Irish VC industry is to reduce its reliance on government funding and to develop a stable private sector capital funding source.

Analysis of the Irish venture capital industry showed that VC investments are concentrated in early-stage, high-technology firms in Dublin. Sector and stage diversification would benefit the industry by allowing it to smooth returns and improve its ability to weather market downturns. Irish VCs have relatively limited experience in business and industry, or in the global markets in which most Irish companies operate. Recruiting additional investors with industry and business experience, particularly internationally, would add depth and credibility to the industry. Credibility would also be enhanced through the publication of standard industry performance metrics, such as aggregate annual fund returns and median company valuations.

A review of the exits of equity financed companies in Ireland indicated a very low rate of IPOs and evidence of an exit gap that is likely to harm the returns from VC investments. The poor performance of the ISE in raising public equity for Irish companies contributes to this gap. There is also some evidence that Irish companies do not expect and plan for public offerings, and mistakenly perceive that they are too small to go public.

A discussion of angel financing established that angel financing is globally a much more common source of risky early-stage equity financing than venture capital, but Irish government policies have attempted to encourage VCs to fill this role. There have been ongoing policy discussion and recommendations about increasing the supply of angel capital, but few specific policy proposals have been put forth, and little action has been taken to date.

## Why is the Irish government a venture capitalist?

*There are also market failures in the provision of risk capital to start-ups.*

*Enterprise Strategy Group Report, July 2004, 35*

*Tackling the Equity Gap: Enterprise Ireland is committed to continuing to support the overall development of venture capital funding within Ireland and seeking to bridge the gap which currently exists in the availability of early stage seed capital funding.*

*Enterprise Ireland Annual Report and Accounts 2003, 37*

The Irish government, through Enterprise Ireland, has targeted its equity financing policies to the venture capital phase of the financing cycle. It has done so primarily to fill the perceived 'equity gap' of small amounts of risk capital for early-stage companies, as well as to create and cultivate a domestic venture capital industry. This chapter reviews five possible rationales for the Irish government's participation in the venture capital industry, namely to:

- 1 close the equity gap
- 2 create a domestic venture capital industry
- 3 smooth the cycles of venture capital investing
- 4 foster economic development
- 5 compete with other nations.

The first two rationales, those of closing the 'equity gap' and creating a domestic venture capital industry, are the Irish government's stated reasons for intervening in the VC industry; therefore particularly detailed attention is paid to them in this discussion. The remaining possible justifications for intervention and their applicability to Ireland are also considered. The chapter concludes by commenting on whether the reasons for intervention discussed justify continuing state intervention in the VC industry.

### 3.1 Rationale 1: close the 'equity gap'

The principal rationale for the Irish government's participation in the VC industry is to close the 'equity gap' for early-stage capital in Ireland. This 'market failure'<sup>12</sup> of an insufficient supply of early-stage capital is referenced frequently in government documents, and presented as the central rationale for government involvement in the financing of small businesses.

In its original policy statement at the time it was created, Enterprise Ireland noted that 'a key market failure is in the provision of affordable equity and working capital to small and fast growth firms...' (DETE, n.d, 4). In a recent presentation to the IVCA, Enterprise Ireland similarly re-iterated a 'need for [the] state to address market failure to support the development of new start-ups' (EI, 2003c, 8). Part of the rationale for Enterprise Ireland's Seed and Venture Capital Programme 1994–1999 was 'to develop the venture capital market to provide SMEs in Ireland with much needed equity capital – filling an existing equity gap' (EI, 2001b, 3). As recently as the launch of its 2003 Annual Report, EI re-iterated that 'Support for start-ups tackled a number of areas such as bridging the gap which currently exists in the availability of early-stage seed capital funding' (EI, 2004d). Ireland is not alone in its quest to close this gap. The primary justification for government intervention in the venture capital markets worldwide is the existence of an 'equity gap' that limits young companies' ability to successfully raise seed-stage capital (Manigart, 2002; Lerner, 1996).

#### 3.1.1 *Is there proof of an 'equity gap'?*

The most commonly cited and arguably the most troublesome data to support the existence of an 'equity gap' in Ireland is the Capital Equity Survey carried out in 1992, 1995 and 2002 by the DETE to examine the funding needs of small Irish firms. Nearly 1,000 companies (982 in 2002) drawn from the Forfás database are surveyed, with an approximately 50 per cent response rate in each survey round. The DETE concluded from the survey results 'that a market failure continues to persist in the provision of early-stage risk capital to SMEs' (DETE, 2003b, 4-5). There are several notable

---

<sup>12</sup> A market failure is defined as an imperfection in the market mechanism that prevents optimal outcomes. Market failures occur in the case of public goods; externalities; and imperfect market structures (e.g. monopolies, oligopolies), (Schiller and Bradley, 2002).

problems in using this survey data to support the idea of an 'equity gap'.

- *the majority of respondents to the survey are not early-stage businesses.* Most respondents to the DETE surveys (69 per cent in 2002) are manufacturing companies, 41 per cent of which have a turnover greater than €2 million per year. These companies principally use the finance raised to purchase equipment, maintain cash flow and finance the purchase of land or buildings. Only seven per cent of companies responding to the 2002 survey are classified as 'early stage,' and only seven per cent are pre-revenue or have an annual turnover of less than €250,000. Companies with three to nine employees represent only 22 per cent of respondents. It is therefore problematic to generalise about the financing difficulties of small, fast-growing businesses raising early-stage financing from venture capitalists if the majority of respondents are manufacturing companies with an annual turnover in excess of €1 million and significant numbers of employees.
- *the key 'equity gap' statistic is incorrectly calculated.* The most commonly cited equity gap statistic is drawn from the results of the 2002 survey and states that '64% of companies reported that they required equity of €750,000 and 98% said it would be difficult to raise' (Clark, 2003; SEBIC, 2003). There are two errors in this statement. First, it incorrectly reflects the 64 per cent figure by using the wrong denominator. EI reports the figure as if 64 per cent, or 297 of the 464 respondents, require equity of €750,000. The actual survey results indicate that of the 464 respondents, 233 report that they require equity in the next three years. *Of those 233, 148 companies (which is 64 per cent of 233), indicate that they need less than €750,000.* Stated correctly, only 32 per cent of total respondents (148 of the 464) require equity of €750,000.

Second, it fails to report accurately the 98 per cent figure, again by incorrectly reporting the denominator. The survey asked 116 companies that had indicated a requirement for equity 'Now' if raising the equity would

be difficult. Some 98 per cent of the 116 who reported an immediate need for equity responded that it would be difficult to raise, not the 98 per cent of the 464 respondents that the EI statement implies. With the correct denominators, the actual number of companies with an immediate need for equity who reported that it would be difficult to raise is 114 (98 per cent of the 116), not the 455 (98 per cent of 464) implied in the EI statement.

A final problem with this statistic is that the 'equity gap' is anecdotally defined for companies raising equity of less than €500,000. These survey results are reported for companies seeking €750,000, which is outside the range of the 'equity gap.'

- *the data reported from the survey is taken out of the larger context of other positive results about the fundraising environment in Ireland.* Several results of the DETE survey indicate a generally positive equity raising environment in Ireland. For example, in each of the three surveys, an average of 70 per cent of the total respondents indicated that they did not experience any shortage of equity capital. Similarly, the survey also asks firms if they have attempted to raise equity in prior years, and if those attempts were successful. In 1992 and 1995, the percentage of firms that tried to raise equity and were successful was 82 per cent and 87 per cent respectively. The 2002 survey reports that a full 100 per cent of firms that attempted to raise equity in the prior four years were successful, which does not suggest the existence of an 'equity gap' in Ireland.

The DETE surveys were not constructed, administered or analysed to accurately assess the existence of an 'equity gap.' More specifically, the surveys do not:

- draw their sample from the small technology firms that are most likely to raise equity finance
- construct their questions to quantitatively measure and track the size and scope of an 'equity gap, or
- control for other 'non-equity gap' variables (such as economic conditions, stock market performance, etc) that could affect the ability of firms to raise equity finance.



The results of the surveys, therefore, do not provide compelling evidence of an 'equity gap' in Ireland.

### 3.1.2 *Can the 'equity gap' be measured?*

It is an ultimately futile exercise to concretely define and quantify the 'equity gap' in Ireland. The *conceptual* idea of an 'equity gap' in Ireland has been advanced by more than ten years of anecdotes and survey results gathered from Irish companies who reported difficulties in raising small amounts of early-stage equity. The notion of an 'equity gap' began in 1992 with the publication of the Culliton Report, which highlighted the 'undersupply of equity capital at the small scale' in Ireland (Culliton, 1992: 72). Following this, the 1996 Forfás report identified several factors that led to the emergence of the concept of an 'equity gap' in Ireland for companies raising up to IRE300,000. The report recommended increasing the supply of seed and early-stage capital as 'the most pressing strategic issue to be addressed' (Forfás, 1996: 212). The Enterprise 2010 report also asserted that for young, fast-growing companies 'the shortage of seed and early-stage equity capital is a critical issue' (Forfás, 2000, section 6.3).

Goodbody Economic Consultants, in a 2002 study commissioned by EI, Forfás and DETE, identified a 'funding gap' characterised by 'a dearth of risk capital in Ireland' for early-stage companies raising small amounts of capital (Goodbody, 2002: vi). Finally, the Global Entrepreneurship Reports (GEM) from 2000 to 2002 present survey and interview results from entrepreneurs noting that it is very challenging to raise early-stage capital. The 2002 report supplies anecdotal evidence of difficulties experienced by companies raising amounts from €50,000 to €500,000.

There are considerable problems associated with the self-reported nature of these results. Historically, an average of only one per cent of companies that submit business plans to VCs obtain venture capital financing, which means that any survey of companies seeking VC financing will undoubtedly reflect high numbers of failures and difficulties obtaining capital (Lerner, 1996 and 2002; Bannock, 2001). Therefore, survey data will confirm that many companies have trouble raising or simply fail to raise capital. But, given the overall low success rates of all firms raising financing, the results tell us little about the existence or size of a particular gap in the local capital market.

It is also a concern that the results are presented in isolation, without reference to other similar countries. There is no sense of relative position: for instance, do Ireland's early-stage companies have more or fewer difficulties raising capital than other early-stage firms elsewhere? A comparative sense of Ireland's situation would allow policymakers to put into context the information received from indigenous companies.

Even more problems arise from the qualitative nature of the 'equity gap' data. From a policy perspective, it is challenging at best to address a perceived market failure that cannot be quantified, measured or defined (Fitzpatrick, 2001). It is a complex task indeed to measure progress towards closing the 'equity gap,' if the size, scale and scope of the gap cannot be determined *a priori*. Policymakers are therefore placed in the awkward position of being asked to evaluate the effectiveness of their interventions, which have been designed to solve a problem they cannot clearly define or measure. The lack of empirical data to prove the existence of an 'equity gap' presents a serious obstacle to detecting its elimination.

### 3.1.3 *Is there an 'equity gap' due to a shortage of capital?*

There are additional issues related to the lack of clarity about the causes of the alleged 'equity gap'. While the Irish government has clearly taken the stance that inadequate supply of risk capital causes difficulties for young firms in raising early-stage financing, it is quite possible that other factors may be at work, which do not reflect a market failure. For instance, in Europe, access to equity capital by young companies is hindered by (Marti and Balboa, 2001):

- a risk-averse investment culture
- lack of investor confidence in start-up firms
- inexperience of investors in evaluating early-stage firms for investment potential
- inadequate capital markets.

The 'equity gap' could also be a demand side issue, arising from companies that are inappropriate for, or not ready to raise, equity finance. Companies that are not prepared to accept the dilution of an equity investment, or are averse to defining and planning an attractive exit strategy are not suitable for venture capital.

Supporting this theory, a 2002 Goodbody report found that many Irish companies interviewed were reluctant to experience the dilution in ownership from an equity financing, and often unwilling to plan and implement an exit. Similarly, VCs look for companies that have compelling business plans, a credible management team, aggressive projections and operate in a large and growing market. Many companies that approach VCs do not fit these criteria and are therefore inappropriate for venture financing. None of the surveys and reports cited by EI about the 'equity gap' control for these demand side variables before reaching their conclusion that a 'market failure' exists.

But, what is most puzzling about the 'equity gap' in Ireland is how persistent it appears to be despite the massive growth in the venture capital industry and the significant Irish government measures designed to improve the supply and availability of early-stage risk capital. It raises the question as to whether the 'equity gap' is a persistent phenomenon (and one that is not measurable) that provides a perpetual reason for government intervention in the VC industry (Bannock, 2001). If the massive increases in funding of and investment in early-stage companies in Ireland in the past five years has not reduced or eliminated this perceived 'equity gap,' a question for the Irish government and EI is: what will?<sup>13</sup>

### *3.1.4 Evidence that the 'equity gap' is closed*

This paper asserts that anecdotal information and the problematic Equity Capital Survey do not provide compelling evidence for the

---

<sup>13</sup> Similar confusion can be found in the UK, where the lack of compelling evidence of an 'equity gap' is also a source of debate. While the UK government has implemented a variety of programmes to close the 'equity gap' it perceives in its own market, the British Venture Capital Association has indicated that there is no consensus among its members that an 'equity gap' exists (BVCA, 2003b). The BVCA asserts that there is a deficiency of compelling evidence to demonstrate the existence of a market failure in the VC market and contends that the real problem is not a lack of capital, but a lack of 'investor ready' companies appropriate for venture capital (BVCA, 2003a). Further refuting the idea of an 'equity gap,' an analysis in the 2003 GEM Report of UK companies found that, of the total number of companies attempting to raise equity finance, two-thirds were successful. The authors noted that venture capitalists generally finance only 1 to 2 per cent of the firms they review, so the 66 per cent success rate among UK companies analysed in the report that attempted to raise finance, and the overall 4 per cent success rate among all UK GEM respondents was considered evidence of a high success rate.

existence of an 'equity gap' in Ireland. Although EI asserts that there is an 'equity gap' market failure that affects early-stage companies' ability to raise small amounts of capital, there is no rigorous or quantitative evidence for this claim. Instead, there are five quantifiable indicators that the 'equity gap' does not exist in Ireland:

- the private sector co-invests with Enterprise Ireland
- the supply of venture capital in Ireland has increased tremendously
- early-stage companies successfully raise small amounts of capital
- the highest number of Irish VC investments are in early-stage companies
- Irish VCs have the highest rate of investment in high-tech companies in Europe.

Below is a review of the evidence that would argue that the 'equity gap,' if it ever existed, is now demonstrably closed.

- *the private sector co-invests with EI*: By far the most compelling argument against the existence of an 'equity gap' is the side-by-side participation by the private sector in co-funding early-stage companies and venture funds with Enterprise Ireland. The very idea of an 'equity gap' specifically refers to a market failure which results in the inability of young companies to raise early and seed-stage capital from the private equity markets at a price and in quantities acceptable to both sides. The private sector's participation in most Enterprise Ireland financings clearly contradicts this. Such high levels of participation from the private equity markets, indicates, *ipso facto*, that there is a functioning private sector market for early-stage financing of young companies.
- *the supply of venture capital has increased tremendously*: The enormous increases in the supply of venture capital available to early-stage companies in the past half decade provides further evidence in support of the argument that the equity gap is closed (refer to Chapter 2 for detailed statistics and figures). These statistics are particularly relevant since the Irish government's approach to closing the equity gap has been to implement initiatives to increase the supply of venture

capital, specifically through EI investments in companies and venture capital funds. Even Enterprise Ireland itself has confirmed in a recent brochure that there is 'a good supply of venture capital in Ireland' (EI, n.d.a.: 9). While both VC fundraising and investing has slowed since the peaks of the 1999-2000 market, it is still at historically high levels. This substantial growth in the amount of funds raised, in addition to the current sizeable overhang of VC funds, disputes the assertion from EI that there is a shortage of risk capital for Irish small businesses.

- *companies successfully raise small amounts of capital:* The Forfás (1996) and GEM (2002) studies anecdotally report that early-stage companies in Ireland have difficulty raising small amounts of capital, specifically in the 'gap' of €500,000 or less. Yet, Ireland has one of the smallest deal sizes compared to Europe or the US (IVCA, 2002; EVCA, 2004a, 2003a; Bannock, 2001). The average size of investment in Ireland is approximately €750,000, which is significantly smaller than the EU average of €2.5 million and the US average of close to €10 million (PWC, 2002b). During 1998-2001, more than 60 per cent of Irish venture capital financing transactions were for amounts less than €635,000 and more than 40 per cent of those were for the smallest investment amounts of €317,000 or less (IVCA, 2002). Relative to other markets then, Irish companies are very successful at raising small amounts of risk capital from VCs.
- *the highest number of Irish VC investments are in early-stage companies:* EI asserts that the 'equity gap' exists for early-stage companies. However, IVCA and EVCA data indicates that Ireland's rate of investment in early-stage companies is high relative to both Europe and the US. During 1998-2002, an average of 50 per cent of Irish venture capital investments were made in seed and early-stage companies, compared to 45 per cent in Europe and 39 per cent in the US (see also Figure 5). Even in 2002, when the market was still not fully recovered from the 2000 bust, 44 per cent of Irish VC investments were in seed and early-stage companies.

This is above the 1998 levels of 38 per cent, and indicates an overall upward trend of such investments.

- *Irish VCs have the highest rate of investment in high-tech companies in Europe:* Theoretically, the 'equity gap' will be higher for high-technology companies, since business risk is high, information asymmetries are significant, and industry expertise is required to accurately assess the value of such firms. Irish data contradicts this expectation, because Ireland has the highest rate of investment in high-tech companies in Europe. Since 1998, Irish VCs have invested an average of 64 per cent of total capital into high-tech companies, reaching a peak of 88 per cent in 2002. These rates are much higher than the average 65 per cent of total capital invested by US venture capitalists in high-technology companies or the European average of 30 per cent.

Enterprise Ireland and DETE maintain that the 'equity gap' in Ireland affects the ability of early-stage companies to raise small amounts of capital. This assertion is based on anecdotal information drawn from interviews and surveys; however there is no empirical quantitative data to support the existence of a measurable equity gap. In fact, the quantitative data based on VC financing transactions over the past several years in Ireland indicates that Irish venture capitalists frequently invest small amounts of capital in predominantly early-stage companies at rates that are higher than their American and European colleagues. Furthermore, the amount of total risk capital available to young companies seeking financing in Ireland is at historically high levels. Consequently, this paper concludes that there is no compelling and quantitative evidence that an 'equity gap' exists and that it is not an issue worthy of policy intervention.

### **3.2 Rationale 2: create a domestic venture capital industry**

EI staff frequently reference the goal of creating a venture capital industry in Ireland in interviews and publications by the company.<sup>14</sup> This objective raises the question of why Ireland needs a venture

---

<sup>14</sup> 'The creation of these funds is not simply about making more capital available to start-up and early-stage companies. It is about developing a venture capital culture.' Denis Marnane, Enterprise Ireland Investment Services, at [www.euireland.ie](http://www.euireland.ie)

capital industry to invest in early-stage companies? For instance, why not just give banks the money and let them invest it? What do VCs really bring to the table?

The academic literature consistently argues that, in addition to providing capital, the unique issues involved in the financing of young companies require the specialised expertise of venture capitalists (Hellman, 2000; Leachman et al, 2002; Kaplan and Stromberg, 2001). The case for government intervention in the creation of a venture capital industry rests on the efficiency gains of sponsoring expert financial intermediaries (that is, venture capitalists) to concentrate on financing early-stage high technology companies. VC's knowledge and expertise can mitigate the information asymmetries, moral hazard and adverse selection inherent in financing early-stage companies.

### *3.2.1 VCs overcome information asymmetries*

Gompers (1995) found that venture capitalists concentrate their investment activity in areas where information asymmetries are high. Information asymmetries occur when participants in a market transaction each have different and incomplete information (Amit et al, 2000). For example, the CEO of an early-stage company will have more and better information about his own intentions and motivations for running the firm, as well as the company's business, customers and prospects, than a bank manager trying to assess the firm for a loan. The danger of information asymmetries is that they can deter investment, because investors either reject the opportunity to invest in a company whose business they perceive they cannot accurately understand and evaluate, or they discount the opportunity very heavily to compensate for the lack of information and offer a price far below the potential value of the company.

Early-stage companies present particular information problems since they have little to no business history, high levels of business risk, few assets, and are valued based primarily on their future potential. Venture capitalists bring specialised industry expertise, networks of business and financing contacts, and the detailed technical and financial knowledge to accurately understand the potential value of the firm, which allows them to mitigate the large information asymmetries inherent in early-stage, high-technology companies (Lerner, 1995; Gompers, 1995; Leachman et al, 2002; Amit et al, 2000).

### 3.2.2 VCs reduce principal-agent problems

'Principle-agent' problems such as moral hazard and adverse selection are similarly present in early-stage companies and are well documented in the academic literature (Lerner, 1998; Gompers, 1995; Leachman et al, 2002; Lerner, 2002a; Kaplan and Stromberg, 2001; Schafer, n.d.; Amit et al, 2000). In the case of venture capital investments, the principal (VC) cannot determine for certain what the motivations, intent or information is of the agent (entrepreneur). Entrepreneurs may use external financing to support a company or strategy that has high personal benefits (such as a CEO title) but low or negative rewards to investors. Similarly, once the company is financed, entrepreneurs could make decisions that bring them personal benefits (prestige, media coverage, trips to exotic locations) but which are contrary to shareholder interests. VCs overcome these problems in the following ways:

- prior to investing, venture capitalists conduct extensive and detailed due diligence with the company, industry experts, customers, and other references to minimise adverse selection
- as part of the financing, venture capitalists negotiate certain rights and privileges that allow them to assume control of key company decisions (for example the company budget, the ability to take out loans, the option to be acquired) or even control of the entire company in certain circumstances (Kaplan and Stromberg, 2001; 2003)
- after investing, venture capitalists reduce moral hazard by assuming a very active monitoring and oversight role. Most VCs sit on the company's Board of Directors and participate actively in key management, financial, personnel and strategic decisions (Leachman et al, 2002).

### 3.2.3 Can banks be good VCs?

As discussed in Section 2.1, banks have traditionally been a significant source of venture capital to European VC firms, but should banks lead the financing of young firms? There are compelling reasons why banks are not suitable candidates for this role. Most banks are relatively risk averse and reluctant or unwilling to become suppliers of risk capital (Donckels, 2000). To the extent



that banks consider or make venture capital investments they do so for strategic reasons with companies they consider future loan candidates (Hellman, 2003). Ultimately, banks use their venture-based relationships to strengthen their loan business, not to identify and support the most high-potential, high-growth companies (ibid). The overall mission, focus and expertise of banks, therefore, make them unattractive suppliers of risk capital.

### 3.2.4 *Is there evidence of a successful Irish VC industry?*

There is little debate that the Irish government's goal to create a domestic venture capital industry has been accomplished. The VC industry in Ireland has experienced tremendous growth and early success. Four key measures support these assertions:

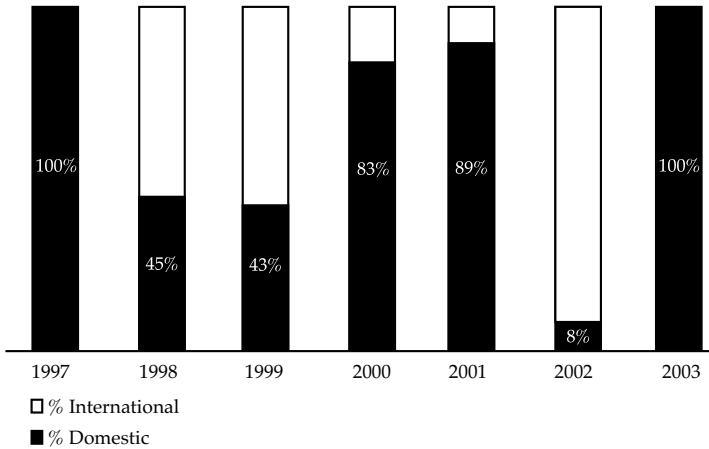
- Ireland has developed a 'world class' venture capital industry
- the Irish VC industry survived the technology market bust
- the supply of venture capital is at historically high levels
- the Irish Venture Capital Association has grown tremendously.

The evidence, as detailed below, is compelling:

- *Ireland has developed a 'world class' venture capital industry:* The presence of international investors as co-investors in Irish VC funds and portfolio companies provides credible evidence of the strength of the Irish VC industry. As Figure 6 illustrates, Ireland has raised significant private equity from foreign investors. International investors benefit the domestic industry in several ways. First, they allow Irish VCs to diversify their sources of institutional capital. Second, they represent sizeable amounts of capital and the potential for substantial future investments. Finally, they bring their own co-investors, contacts, and other networks from their local markets, which can help expand the scope of Irish VC networks internationally. As Figure 6 clearly indicates, the participation of international investors has not stabilised year over year, but again the next significant fundraising of venture capital in 2005-

2006, and the participation of overseas investors in it, will serve as an important indicator about the ongoing international attractiveness of the Irish VC industry.

*Figure 6: Percentage of domestic versus international private equity funds raised, 1997-2003*

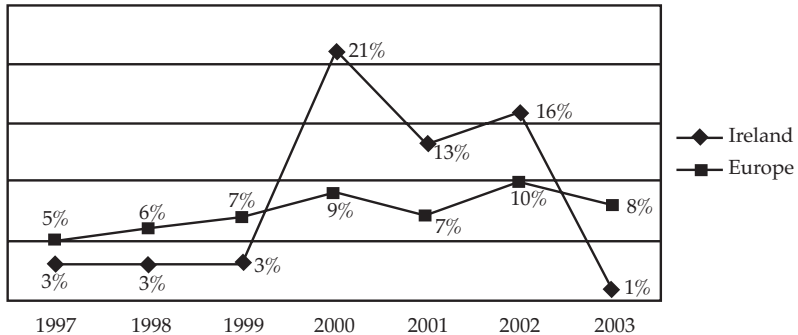


Source: EVCA 1998-2004 Yearbooks

The percentage of deals syndicated by Irish VCs with foreign investors provides additional evidence of Ireland's 'world-class' VC industry.<sup>15</sup> In the mid-1990s, nearly all Irish private equity deals were done domestically – less than three per cent involved foreign co-investors (see Figure 6). By 2002, the percentage of transnational syndicated deals had increased to 16 per cent in comparison to the overall European rate of only ten per cent. It is too early to say whether the decline in internationally syndicated deals in 2003 is an indicator of deterioration in the attractiveness of Irish deals, or a decrease in the international syndication activities of European and US VCs.

<sup>15</sup> Syndication is the investment in a company by more than one venture capitalist. Syndication is generally attractive to both VCs and companies because it allows a sharing of risk, and increases the availability of money, expertise and networks to assist the development of the company.

Figure 7: Percentage of number of private equity deals internationally syndicated, 1997-2003



Source: EVCA 1998-2004 Yearbooks

Note: This figure does not reflect investments made in Ireland by foreign private equity firms. Such investments increased from €50m in 2002 to €293m in 2003.

- The Irish VC industry survived the technology market bust:* The Irish VC industry's ability to weather one of the worst market declines in the public and private equity markets is remarkable, particularly given the relative youth of the industry. In the throes of the technology market bust after 2000, Irish VCs still succeeded in raising funds of €196 million in 2001 and €183 million in 2002, only a slight decline from the peak of €228 million in 2000. Furthermore, during 2001-2003, over 70 per cent of investments made each year were follow-on financings, which reflects the ongoing financial support provided by domestic VCs to existing portfolio companies through the market downturn.
- The supply of venture capital is at historically high levels:* As reviewed in Section 2.2, the supply of venture capital in Ireland has increased tremendously since 1997. By 2003, Irish VCs had raised €941 million in venture capital funds and there is currently nearly €400 million in 'overhang' funds available to invest (IVCA, 2002; EVCA,

2004a). At no other time in Ireland's history has the domestic venture capital supply reached such heights.

- *The IVCA has grown tremendously:* The establishment and growth of the Irish Venture Capital Association provides further evidence of the existence of a vibrant domestic VC industry. In 2003, the IVCA had 17 full members and 26 Associate and Affiliate members, up from only 3 members in 1995 (Cowley, 2003; IVCA, 2002). The IVCA is also linked to and integrated with the activities of the European Venture Capital Association.

It would be disingenuous to argue a case that entirely credits government intervention for the successful development of the Irish VC industry. There is no question that the combined dot com and stock market boom during the late 1990s buoyed and fuelled the growth of the Irish VC market (Fitzpatrick, 2001). It does appear, however, that a case for partial credit to the government is well supported. Many of the initial venture capital funds raised their first funds and a significant percent of their total capital from Enterprise Ireland. It is clear that EI capital contributed to the VC industry's ability to reach critical mass and take hold domestically. With a lower supply of capital to fund itself, it is not at all certain the industry would have had the capacity or credibility to participate in and profit from the boom as significantly as it did.

The policy question that remains is whether there is a convincing rationale for continued government funding of the venture capital industry at current levels. Given the evidence that a robust venture capital industry has been created and is developing strongly, this section demonstrates that there is little compelling evidence and no convincing rationale to support continued government participation.

### **3.3 Rationale 3: smooth the cycles of the venture capital industry**

Cyclicality is a fundamental feature of the venture capital industry. Booms, busts and bubbles have characterised the US VC industry over the past several decades. The 1970s and early 1980s represented a boom cycle, which saw industry rates of return averaging greater than 20 per cent, followed by a bust from 1984 to 1996 in which rates of return fell well below this. Returns returned to industry levels in 1995 and 1996, and then reached extreme

heights during the 1998-2000 Internet bubble. Most recently, returns fell following the dot com bust in 2000 and have remained broadly negative to slightly positive since (Megginson, 2001).

Although not a currently stated objective of the Irish government, one argument for government participation in the venture capital industry is to 'smooth out' the normal private equity cycles of investment (Manigart and Beuselinck, 2001). When markets are down and private sector investments are low, the government would increase its level of participation and investments. Similarly, when markets are booming, and private sector investments are high, the government would retrench. EI has not followed this pattern of behaviour in terms of its year-over-year investments. Instead, EI investments mirror rather than complement private sector investment trends, and may exacerbate volatility by adding capital during the up cycles, and reducing it during the down cycles. This behaviour is common, because public sector VC programmes globally tend to be most active during the same time periods, and in the same sectors as private sector VCs (Gompers and Lerner, 2001). Such behaviour contributes to, rather than mitigates, the cyclicity of the industry.

Justification for government intervention based on the 'smoothing the cycle' argument would require evidence of contrarian investing behaviour from the state that would increase public sector support during busts and decrease it during booms. There is no evidence that the Irish government has assumed such an investing strategy, suggesting that there is no case for ongoing intervention in the VC industry based on this rationale.

### **3.4 Rationale 4: foster economic development**

Intuitively, it appears hard to justify a government intervention in the VC industry for economic development reasons. After all, venture capital investments are appropriate for only the small number of companies that meet the rigorous growth and revenue potential that VCs require. In the US, historically only one per cent of business plans submitted to VCs successfully obtain funding. For example, during the peak of the technology boom, only 2,200 companies of the estimated one million business start-ups received venture capital funding. This raises the question: Why should government policy focus on such a small part of the overall business market?

The answer lies in the enormous impact that venture-backed companies have on economic growth. Venture-backed firms have higher rates of growth in revenues, sales and employment than non venture-backed companies. They are also focused on large markets with enormous growth potential, and create high quality jobs (Economic Innovation, 1998; Stevenson and Anders, 2001a; Rubel and Palladino, 2000). From an economic development perspective, venture-backed companies are among the fastest growing firms and generate an enormous economic impact. It is therefore theoretically justifiable for governments to support a venture capital industry that identifies and finances the growth of such economically significant companies (Bannock, 2001).

The positive economic development impact of venture-backed companies is empirically well documented. European venture-backed companies increased revenues each year from 1991-1995 by 35 per cent on average; more than twice the rate of non-venture backed firms (EVCA, 1998). VC-backed firms also experienced a 15 per cent annual rise in employment; seven times greater than leading non-VC backed European companies. A similar 1997 study of the same time period found that VC-backed companies in the US increased the number of their employees by 34 per cent per year in contrast with Fortune 500 companies who reported an average annual reduction of four per cent (Jeng and Wells, 2000).

There is no information available on the aggregate contribution to the Irish economy of VC-backed companies in general, and EI venture-backed companies in particular. Although Enterprise Ireland tracks the sales, exports and employment growth of all its client companies and reports these statistics in its Annual Report, the statistics are difficult to interpret in a meaningful way. First, the economic performance data of companies that, as a separately defined group, have received equity investments from Enterprise Ireland is not publicly analysed and reported. Second, there is no comparison group of non-EI funded companies. It is therefore not possible to separate, for example, the impact of EI-funding from other external influences (such as a technology market boom or other equity financing) on economic performance. To overcome these deficits, analysis that specifically attempts to assess the economic impact of EI equity-funded companies could be conducted as outlined in Table 4.

*Table 4: Analysis of the economic impact of EI equity-financed companies*

|                           | <i>EI Group</i>              |    | <i>Comparison Group</i>          |
|---------------------------|------------------------------|----|----------------------------------|
| Current analysis          | EI client companies          | vs | None                             |
| Suggested future analysis | EI equity-financed companies | vs | Non-EI equity-financed companies |
|                           | EI equity-financed companies | vs | Non-venture-backed companies     |

For the Irish government to justify continued equity investments in indigenous young companies on economic development grounds, data on the economic performance of EI-backed companies, compared with traditional venture-backed companies, as well as with companies that received no equity financing, would need to be collected and analysed and present a compelling case for the out-performance of EI-backed or venture-backed companies. Until that time, a strong argument for continued government intervention in the VC industry based on economic development objectives is lacking.

### **3.5 Rationale 5: compete internationally**

There may be compelling pragmatic reasons for the Irish government to participate in the financing of indigenous small firms. Nearly all governments in the EU, the OECD, as well as the US, Canada, Australia and New Zealand, have implemented direct government policies to create and grow their domestic venture capital industries (Forfás, 2000; Isaakson, 1998). Governments that do not intervene are therefore likely to put themselves at a competitive disadvantage with regards to the financing and growth of young companies (Isaakson, 1998). Countries that implement policies of positive discrimination towards small firms will disproportionately capture the greater economic benefits created by small businesses. Theoretically, to 'level the playing field,' Ireland should seek to implement its own programmes to capture the benefits of small firm innovation and growth.

From a purely competitive perspective then, it is possible to argue that Ireland should be devoting relatively equal levels of support (compared to the countries with which it competes) to

sponsoring small business financing, growth and innovation. However, there is not a convincing case that such government support must include financially underwriting the domestic venture capital industry. Positive discrimination can be directed to small firms through a variety of different initiatives and creative approaches. Therefore, this rationale alone would not support continued government intervention in the domestic VC industry.

### **3.6 Conclusion**

The Irish government, through Enterprise Ireland, began to act like a venture capitalist both to fill the 'equity gap' and to create a venture capital industry that would provide an adequate supply of risk capital for indigenous companies.

This chapter reviewed five different rationales for government intervention in the VC industry. It concludes, based on a review of the evidence, that the 'equity gap' is closed and that Ireland has succeeded in developing a vibrant and robust venture capital industry. These successes render EI's continued intervention in the VC industry difficult to justify based on the evidence, and make a strong case for discontinuing government funding of the industry. The chapter also examined whether continued state intervention was warranted based on goals of smoothing the cycles of the VC industry, economic development, or 'levelling the playing field' with other nations. It concludes that there is not a compelling case for intervention based on any rationale.

This chapter finds that, given the tremendous growth and success of VC in Ireland, there is little theoretical or empirical justification for EI to continue to support the VC industry at historic levels. Instead, EI resources and support could be re-directed to initiatives that foster the development of the angel financing market, work to close the exit gap, and address other important national policy objectives.



## Enterprise Ireland as an Irish venture capitalist

*Why one would want to encourage public officials instead of specialized financial intermediaries (venture capital organisations) as a source of capital in [early-stage investments] is not immediately obvious.*

Josh Lerner, 'When bureaucrats meet entrepreneurs: The design of effective "public venture capital" programmes', *The Economic Journal*, February 2002, p. F74.

In 1998, the Irish government consolidated Forbairt and the Irish Trade Board to form Enterprise Ireland. Created as an economic development agency, it has become one of the largest domestic venture capital investors in Irish technology firms. From 1998 to 2003, EI has invested over €200 million into domestic venture capital funds through its Seed and Venture Capital Programmes and over €100 million directly into indigenous small companies. This chapter examines Enterprise Ireland's role as a public venture capitalist and reviews key investment activities relative to the standards of private sector venture capitalists, and in the context of the new climate of public sector reform with its corresponding focus on improving accountability, discipline and transparency in government financial activities.

### 4.1 Enterprise Ireland as a public venture capitalist

Public venture capital refers to government supported venture capital activity, usually with a specific economic development agenda. Public venture capital programmes, unlike private sector VC, are not solely focused on returns maximisation but rather strive to accomplish other social and economic development objectives. Even so, positive returns remain important to maintaining political and public support for public VC programmes. Public venture

capital programmes must therefore constantly balance the fundamental choice between: 1) funding less attractive companies for economic development reasons at the expense of strong returns, and 2) investing in companies that are expected to generate competitive returns in lieu of maximising economic development objectives (Barkley et al, 1999). Public sector VCs must be explicit about the relative weighting of each objective. Most critically, the public VCs must be clear about what their targets and metrics are. Prospective portfolio companies also need to understand the objectives of their investors and how those aims may impact upon future decisions, such as follow-on investments or exits. Potential co-investors must be aware of the intent of the public VC investor and balance that purpose against their own. Finally, the taxpayers that finance public venture capital activities increasingly demand transparency about investment goals and objectives.

Enterprise Ireland is a development agency that makes investments as a public venture capitalist. Its stated focus is to advance industrial policy and development in Ireland, and help companies grow (DETE, n.d.). Yet, because the agency is active as a venture capitalist, it must also concentrate on achieving economic returns. The tension between these competing objectives manifests itself through:

- investments in VC funds with explicit regional investment objectives
- an opaque valuation policy that mitigates the political risk of lower returns
- an ad-hoc exit policy that neither maximises returns nor prioritises economic development.

As EI continues to invest additional capital in venture capital funds and indigenous companies, there is the need and the opportunity to reflect more thoughtfully on and articulate more clearly about the competitive tension between its economic development mission and investment return targets.

#### *4.1.1 EI investments in venture funds*

EI has invested over €200 million in venture capital funds through its Seed and Venture Capital Programmes. In the context of these programmes, EI assumes the role of Limited Partner (LP) or investor in venture capital funds. EI supplies the capital, provided

it is at least matched (e.g. a 50:50 split) with private sector investments, and then outsources the investment and management functions to private sector managers.

Under the 1994-1999 Seed and Venture Capital Programme, EI funded 15 new venture capital funds that invested €117 million of private and public sector capital into 344 Irish companies (EI, 2003d). The primary objective of this programme was to establish VC funds in Ireland in order to provide early-stage funding to high growth companies. The design of the Programme is validated by a review of public sector venture capital initiatives in several US states, which found that public investments made along with private investors focused on return maximisation allowed the state to diversify risk across several funds, incurred minimal costs to the state, and generally resulted in the successful development of a local venture capital industry (Heard and Sibert, 2000). EI next committed more than €95 million to 15 additional funds as part of the 2000-2006 Seed and Venture Capital Programme. The goals of the 2000-2006 Programme differ from the previous Programme in that many of the venture funds have specific and explicit regional and sector investment targets that are driven by an economic development agenda. The funds are specifically focused on investing in regions outside Dublin, and in sectors other than technology that have not been traditionally financed by VCs (EI, 2003d). As noted in Section 2.3.3, empirical evidence does not support these regional development objectives of the 2000-2006 Programme. Instead, the research suggests that investments in regional areas with low levels of VC activity will be unsuccessful in terms of fostering sales and employment growth or generating investment returns relative to investments in regions where such activity is 'clustered' (Lerner, 1996; Barkley et al, 2001; O'Gorman, 2001). From a policy perspective, this evidence suggests that the regional funds will not be successful in achieving either their economic development or returns objectives. It also suggests that government regional economic development goals may be best achieved through other policy initiatives. There is no evidence that venture capital is the best weapon for fighting the regional development battle.

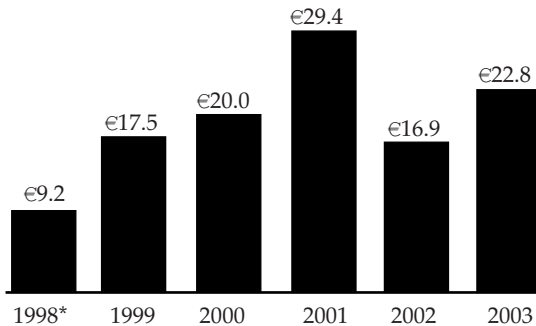
It is interesting to note that at the end of 2003, the 2000-2006 Programme had invested €93.8 million into 141 companies. Of these investments, more than 67 per cent were concentrated in the Dublin

geographical area, and 70.7 per cent were in the software and communications sectors, suggesting that the stated Programme objectives of sector and geographic diversification are not yet being met. Instead, Irish VCs continue to invest in areas of 'clustered' activity (EI, 2004a).

#### 4.1.2 EI investments in companies

Since 1997, EI has made direct equity investments of over €100 million directly into Irish small businesses. EI direct investments in companies are not included in the aggregate IVCA statistics, so this amount is in addition to the €650 million invested by the private sector venture capitalists. EI direct investments into companies have mirrored the trends of the private sector venture capital industry, with increasing investments through the dot com boom years (1999-2001) followed by a decline from 2002 onwards.

Figure 8: EI equity investments in companies (€m): 1998-2003



Source: EI Financial Statements, 1999-2003

Note: \* 23 July 1998 to 31 December 1998

EI seeks to invest in indigenous early-stage Irish companies that employ 10-250 people and operate in manufacturing or internationally traded sectors. Its particular preference is for high potential start-ups that show promise for rapid sales and revenue growth. A review of firms in which EI has invested shows a significant number of technology companies (particularly in the High Potential Start-Up programme), but a range of other sectors is

also represented. For example, EI holds investments in companies that manufacture or sell mushrooms, horse blankets, and dairy products, as well as electronic components, internet banking software, and medical instruments. There is little transparency around EI investments in companies. EI does not publish descriptive statistical data on its direct investments, even at the aggregated level, nor was this information made available after several written requests; therefore it is not possible to determine what sectors, stages and geographic areas are represented by EI portfolio companies.

## **4.2 EI investment processes**

As EI is one of the largest venture capital investors in Ireland, and an investor of taxpayer capital, it is appropriate to consider its investment processes within the framework of private sector VC practices. As this paper will review, EI's general approach to investing is to outsource significant parts of the investment process to the private sector. While this approach is supported in the policy and empirical literature as the most successful in creating a vibrant venture capital industry and supporting indigenous company growth, it carries with it significant risk of over-reliance on a young and relatively inexperienced private venture capital industry.

### *4.2.1 EI as an investor*

Enterprise Ireland was not created and structured to take on a significant investment mandate. When EI was created, it was required by legislation to take on existing staff in the government departments from which it was formed. It lacked the freedom to bring in leaders and staff from the private sector with demonstrated success in growing companies, investing, and building businesses in the global industries in which most Irish companies operate. It is an unusual choice indeed that the Oireachtas and the Minister for Enterprise formed an organisation focused on the development of young companies, and then did not insist on the recruitment of an executive team with specific entrepreneurial, business and industry expertise to run it. Given the severe constraints on staff selection at the time of EI's formation, and the general dearth of EI staff with significant private industry investment experience, EI has structured its investment activities in a way that outsources this

expertise to the private sector. EI invests in venture capital funds managed by private-sector investors whose goal is to maximise returns. The EVCA generally supports this policy approach, recommending specifically that 'to avoid market distortion and ensure the maintenance of sound professional and commercial principles, public funds should only be deployed alongside professional, private sector venture capital or private equity' (EVCA 2001b: 16). It further recommends that public sector venture capital programmes invest on the same commercial terms as private VCs and, to the extent possible, leverage the skills and experience of VCs in all parts of the investment process (EVCA, 2003b). Nonetheless, considerable risks and conflicts can be identified in EI's outsourcing approach.

The challenge in Ireland is that EI, which itself lacks staff with investing expertise, is investing in venture capital funds managed by relatively inexperienced venture capitalists. Outsourcing to a relatively young and developing VC industry can lead to simple mistakes, errors in judgment and unsophisticated deal-making that can unnecessarily harm returns. When EI invests directly in companies, it similarly requires private sector participation in the form of matched co-investments. In other words, EI, as a general rule, won't invest in companies on its own. While this approach assures that EI is investing in companies that are deemed commercially viable and promising by the private sector, it also introduces the risk that EI invests in companies that don't really require public sector support. If the private sector is already willing to invest in the company, which is a condition of EI's investment, is public sector capital really required? If not, the marginal contribution of the public sector investment is low, and the opportunity cost of such capital is high, as it could potentially be put to better public use elsewhere. Such heavy reliance on the private VC sector also introduces conflicts of interest to EI. For example, following the dot com bust in 2000, many companies required additional financing to ensure their survival. Venture capitalists, noting the new environment, were willing to do such financings, but often at dramatically lower valuations (called a 'down round') and on aggressive terms. This approach is wholly justifiable for a private VC whose role is to protect the value of an investment and maximise returns. EI, however, is a development agency as well as an investor, which introduces conflicts about

supporting a financing with onerous terms that offers financial protection and maximum returns to investors, but could limit or harm company growth. In such a situation, EI must make the difficult decision about whether to advocate primarily for its own investment or for the company's economic development, as it has an interest in both.

The final risk of EI's investment approach is that because EI invests in both venture funds and companies, it frequently finds itself on both sides of the same table. For example, it frequently occurs that a VC fund in which EI has invested contemplates an investment in a company in which EI is also investing. During the negotiation of deal terms and structure, EI's interests are on the side of the VC fund, which is negotiating to get the lowest price and most favourable terms for investors, *and also* on the side of the company, which is attempting to get the highest price and most favourable terms for the company's growth and management team. EI deals with this conflict by outsourcing negotiations to the private sector to such an extent that EI staff are generally removed from actual negotiations, yet the conflicting distribution of EI's interests point once again to the fundamental tension between investment returns and economic development that characterise public VCs.

#### 4.2.2 *EI shareholdings*

EI's annual reports show that it holds significant shareholdings in ordinary shares. In contrast, private sector venture capitalists prefer to invest in preference shares. Ordinary shares (called common stock in the US) are the simplest and riskiest class of shares to hold because they rank behind every other financial instrument, such as preference shares (also known as preferred stock) and debt, in a payout situation such as a liquidation, trade sale, or even dividend payments. The management team and informal investors such as friends and family and most business angels usually hold ordinary shares. Professional investors generally seek preference shares because they rank ahead of ordinary shares and because they can be uniquely structured to include any of a variety of rights, privileges and protections (e.g. liquidation rights, special voting privileges, anti-dilution protections). In the US, the standard security used in venture capital investments is convertible preferred stock. Convertible preferred stock is preferred stock that can be converted (at a negotiated ratio) into common stock upon certain events, such

as an IPO or the issuance of new shares. Convertible preferred shares also carry voting rights on an 'as converted' basis. Convertible preferred securities are used because they offer flexibility in allocating rights, privileges and ownership. In cases where the firm is performing poorly, the VC maintains significant control and can obtain additional Board, voting, liquidation or other rights (such as the right to replace management). In the best case scenario of an IPO exit, the convertible preferred shares convert to common shares and the VC loses most of its control, liquidation and preferred voting rights, but maintains attractive rights to the cash proceeds of the exit (and has already exercised the registration rights prior to the IPO).

The academic literature on financial contracting between entrepreneurs and investors supports the use of convertible securities as the optimal form of security for professional investors (Bascha and Walz, 2001; Lerner, 1996; Megginson, 2001). In a comparative study of US and European venture firms, Hege et al (2003) found that US VC firms outperformed their European colleagues, in terms of both type of exit and rate of return, in part because US VCs use convertible securities to transfer control to the investor in cases of poor performance. The performance difference was also partially explained by the finding that US VCs more frequently exercise the control rights. Kaplan and Stromberg (2003) conducted a study of 213 equity investments by 14 US VC firms during 1996-1999 and found that 80 per cent of the financings used convertible preferred stock as the security.

Given the practical and empirical evidence of the widespread use and benefits of convertible preferred securities, Enterprise Ireland should review its securities in greater depth and consider the benefits of reducing its future holdings in ordinary shares and increasing its investment holdings in preference shares.

#### *4.2.3 EI exit policy*

The last phase of the investment process is the exit. The policy followed by EI in reaching its exit decisions from publicly traded companies is to make ad-hoc case-by-case decisions about each exit. This lack of a disciplined approach to investment exits has not escaped the notice of the Oireachtas. EI's lack of a defined exit strategy was raised by the Comptroller and Auditor General, during a discussion with the then EI CEO about EI's audited



accounts on 27 January 2000 (House of the Oireachtas, 2000), yet a disciplined policy was never subsequently implemented.

The Investment Portfolio Review Committee (IPRC), a five-person committee including the EI CEO and head of Investment Services and three non-executive directors, makes EI exit decisions. There is no requirement that this Committee include the expertise of investors, or individuals with portfolio management experience.

The IPRC currently makes exit decisions bearing in mind at least three common guidelines.

- 1 Enterprise Ireland, as a development agency, does not seek to continue as a long-term ordinary shareholder in public companies. The guideline exists primarily because a strong case for development assistance can rarely be made for publicly quoted firms. It follows then that EI's policy as a development agency would be to exit public companies as soon as possible. Yet, there is evidence that this guideline is not followed very closely, because there are several examples of publicly quoted stock that EI has held for multiple years. Perhaps one of the most significant examples is Iona, which went public in 1997, but in which EI continues to hold a significant shareholding (estimated at tens of thousands of shares, although, even upon request, the actual number is not publicly available). The policy rationale for the length of these holdings has not been articulated by EI.
- 2 EI does not make its exit decisions solely in order to maximise returns. The purpose of this guideline is to allow EI to consider other factors, such as economic or regional development, in its exit decisions. One of EI's goals as an organisation, however, is to achieve a minimum annual return from its equity portfolio. This return target is agreed each year with DE TE taking into account the total value of EI's public investment portfolio and the general buoyancy of the stock market. This return target is not published publicly, which renders EI's exit behavior opaque and unpredictable to the companies in which it is invested, its co-investors, and the taxpayers whose capital is invested.
- 3 EI considers the impact of a sale of stock on the company's share price. In an approach that risks

creating the perception that it engages in insider trading, EI will enter into discussions with the management of the companies in which it is considering exiting, and discuss the possible impact of the timing and amount of sale on the share price.

Further discussion about EI's exit policy and a recommendation to implement a disciplined and transparent policy are outlined in section 5.4.

### 4.3 EI portfolio valuation policy

European venture funds, including *EI's own Seed and Venture Capital Funds*, report their quarterly and annual portfolio valuations using a standard valuation methodology created by industry experts and advocated by the EVCA<sup>16</sup> (EI, 2001c, pp 5, 23; EI 2004c). These guidelines are widely disseminated and used and are publicly available on the EVCA website ([www.evca.com](http://www.evca.com)). Venture funds in the US report their performance using a nearly identical policy disseminated and endorsed by the NVCA. The IVCA has not publicly published official valuation guidelines but endorses and promotes the use of the EVCA guidelines among its members.

The methods used by EI to value its own portfolio deviates drastically from these Association standards. In particular, EI has adopted a very conservative cost-based methodology to value its portfolio. An example will illustrate the irregular nature of this policy. Assume an original investment of €100,000 in Company X. A few years later, Company X has gone public and the value of the invested shares has increased tremendously to €10 million based on its publicly traded share price. The EVCA valuation methodology would value the investment at approximately €10 million (there may be some slight discounts for liquidity constraints, or a lock up, or for very volatile share prices over the valuation period) based on the mid-market price on the last day of the valuation period. Consistent with that policy, EI requires the venture funds in which it invests to report the market value of publicly traded securities based on the mid-market trading price on the day the value is

---

<sup>16</sup> With regard to its Seed and Venture Capital Funds, Enterprise Ireland states in the Financial Statements to its Annual Reports that 'The guidelines followed by the Fund Managers in arriving at the valuations are in accordance with the valuation principles of the European and Irish Venture Capital Associations'. (EI Annual Report 2003: 70).

determined. In stark contrast, Enterprise Ireland would value this publicly traded position in its own portfolio at its original cost basis of €100,000, despite the fact that the public market price at which the shares currently trade is significantly higher.

Specifically, EI's official valuation policy is to value the companies in which it invests *at the lesser of* net cost or realisable value (EI, 2004c, 2003a, 2002 and 2001a). This policy essentially requires that every single company held in the EI portfolio be valued at cost, unless it has declined in value or is a write-off. There are no means under this policy to reflect any increases in value – even if the shares are publicly traded every day – unless the share is sold (and therefore no longer part of the investment portfolio). This official valuation policy underscores the risk averse nature of EI. This approach suggests that EI is explicitly willing to sacrifice the upside of reporting interim positive returns on its investments in order to avoid the downside of revealing investments that have declined in value. This policy is also unusual in that the Notes to the annual EI financial statements contain a separately published 'market value' of its quoted portfolio. Therefore, EI reports two valuations of the same stocks.

It is reasonable to question why EI would require one valuation policy from its Seed and Venture Capital Funds, and implement another very different and highly irregular policy for its own portfolio of companies. The answer emerging from the interviews conducted for this paper suggests that the reasons are largely political. In particular, EI would prefer not to reflect large swings in its portfolio valuation. Large swings in valuation could result in increased government and media scrutiny and questions, and public discussion about the rationale and performance of the investment portfolio, as well as the use of taxpayer capital to finance small businesses. While these political considerations may seem compelling to EI, there is no evidence supporting the use of this policy that justifies subordinating the need for accuracy and transparency in its accounting policies.

It is also concerning to note that the Enterprise Ireland Chairman and CEO have consistently signed off on this irregular and conservative valuation policy. The Chairman and CEO both have an explicit responsibility to select 'suitable' accounting policies and 'make judgments and estimates that are reasonable' about the state of EI's affairs (EI, 2004c: 68). It is challenging to create a case to

support the use of a cost-based valuation methodology as 'suitable' when the US, European and British venture capital association guidelines all consistently recommend a very different methodology than that used by EI. It is harder still to justify when EI requires the use of market price valuations for the venture funds in which it invests, including its own Seed and Venture Capital Programme. The Irish Comptroller and Auditor General has also signed off on this policy. The Comptroller's role is to conduct an audit of EI that includes an 'assessment of the significant estimates and judgments made [by EI] in the preparation of the financial statements, and of whether the accounting policies are appropriate to the Agency's circumstances...' (EI, 2004c: 67). Despite the obvious and significant understatements in value inherent in a cost-based valuation methodology, and the deviation of this methodology from widely-accepted industry standards, the Comptroller has nonetheless consistently opined that the EI financial statements 'give a true and fair view' of the agency's state of affairs (ibid: 67). The facts upon which the Comptroller relies to make this assertion are not immediately obvious. Unless a strong case is put forth for continuing the use of a cost-based valuation policy, a requirement for accuracy, transparency and accountability in public financial reporting must mandate the change to a standard industry valuation policy. A further discussion about the EI valuation policy, and a recommendation to implement an industry standard methodology can be found in Section 5.4.

#### **4.4 Do EI investments distort the private market?**

Any public sector intervention in a private market will in some way distort or alter the functioning of the private market. By increasing the supply of equity capital through the use of government funds, it is likely that EI distorts the price of venture capital deals. There is evidence from the US that increased supply of equity capital can result in investor competition that drives up valuations (Gompers, 1998). This effect was evident during the late 1990s dot com boom, when the amount of venture capital funds raised were at historically high levels (which meant large increases in the supply of equity capital), and valuations reached similarly historic heights. While little information exists on valuations in Ireland relative to Europe or the US, it would be worth examining if government involvement in the domestic venture capital markets (which results

in an increased supply of capital) has the unintended effect of driving up deal prices. In general, however, EI's approach of combining public sector financial support with private sector investment expertise and discipline is structured to minimise distortions to the venture capital market (Economic Innovation, 1998; Commission of the EC, 2003a).

#### **4.5 Conclusion**

As a public venture capitalist, EI is a significant participant in Ireland's equity financing industry. This chapter examined EI's equity financing activities relative to private sector investors, and in the context of public sector accountability and transparency to taxpaying citizens. EI's primary objective is to act as a development agency, so it outsources to private sector VCs the many traditional investor responsibilities such as due diligence and deal structuring. This approach minimises, but does not eliminate, distortions to the private sector equity financing market. It introduces conflicts within EI as well as the risk that EI overly relies on a relatively young and inexperienced venture capital industry, and that its development goals are subordinated to the private sector's return maximisation objectives.

The chapter concludes that, as a public sector organisation and an investor of taxpayer money, EI has a strong obligation to always seek to improve its investment processes in ways that increase their transparency, accountability and discipline as well as performance. The use of more sophisticated and flexible securities, and the implementation of an industry standard valuation policy would further the attainment of those objectives, as would a defined and consistently implemented exit policy.

## **Beyond venture capital: policy recommendations for sustainable equity financing of Irish small businesses**

This paper outlined how the Irish government has targeted its equity financing policies within the venture capital industry. The success of these policies is evident by the tremendous increase in the supply of capital available for equity financing, the absence of an 'equity gap' and the strong domestic VC industry. The policy challenge that remains is how to sustain this young and successful VC industry. This chapter asserts that developing a *sustainable* system for equity financing of indigenous companies requires going beyond VC and focusing policy initiatives on other phases of the equity financing cycle. In particular, the sustainable equity financing of small companies requires:

- a stable source of institutional capital
- closing the exit gap
- increasing the supply of angel financing
- exemplary public venture capital processes.

A further discussion of each of these factors and accompanying policy options to achieve the desired outcome is presented below.

### **5.1 Developing a stable source of institutional capital**

A stable source of institutional capital is critical to the long-term financing and sustainability of the Irish venture capital industry. As discussed in Chapter 2, the largest untapped source of institutional capital in Ireland at present is pension funds. This section identifies two possible approaches to further engage domestic pension funds in venture capital.

Ireland has a significantly sized pension industry compared to other European countries. Looking at pension fund assets as a percentage of gross domestic product (GDP), Ireland has the fifth highest level of assets at 59 per cent of GDP. Only Switzerland

(158%), the Netherlands (115%), the UK (106%) and the US (86%) have higher levels (England, 2001). Within the EU, most European nations' pension fund assets are less than 20 per cent of GDP and even the large economies of France, Spain Italy and Germany have pension fund assets that are less than seven per cent of GDP. In many of these countries pension funds do not manage significant assets since pay-as-you-go systems dominate and do not result in the accumulation of large pools of capital (Marti and Balboa, 2001).

Despite the large size of Irish domestic pension funds, there have been very few allocations of assets to private equity as an asset class (IAPF, 2003). As Table 5 illustrates, the average asset allocation of Irish versus US pensions differ significantly on this class of investments.

*Table 5: Pension fund asset allocation in Ireland and the US, 2002*

|                       | <i>Ireland</i> | <i>US</i> |
|-----------------------|----------------|-----------|
| Equities              | 58%            | 56%       |
| Bonds                 | 27%            | 35%       |
| <b>Private Equity</b> | <b>0%</b>      | <b>5%</b> |
| Property              | 10%            | 4%        |
| Cash                  | 4%             | 0%        |
| Other                 | <u>1%</u>      | <u>0%</u> |
| TOTAL                 | 100%           | 100%      |

*Source:* Irish Association of Pension Funds; Wilshire Associates

The IVCA has remained silent on the issue of domestic pension fund investments in VC, but the Enterprise 2010 report recommended 'encouraging' Irish pension funds to invest domestically in order to help sponsor a 'conducive fiscal environment' for financing of innovation and entrepreneurship (Forfás, 2000: xii). The EVCA has published several policy recommendations on the subject. In its *White Paper on Policy Priorities for Private Equity*, the EVCA recommends encouraging pension fund investments as a way to increase the private equity funds available to be raised and invested in young companies (EVCA, 2001b). Similarly, the EVCA's comments on the *EU Green Paper on Entrepreneurship* re-iterate its position that pension funds should be encouraged to invest in small

and medium enterprises through venture capital funds (EVCA, 2003b). Finally, the EVCA supported the recent EU Pension Fund Directive, which recommends the removal of quantitative restrictions on pension fund investments in private equity. The EVCA supported the directive in part because it is expected to enhance the viability of pension funds as a crucial source of capital for the European private equity industry. The academic literature is consistent in noting that globally the level of pension fund investment in venture capital is critical to the size, stability and viability of the VC industry (Megginson, 2001; Jeng, 2000; Gompers and Lerner, 1999a). Although, as noted earlier, pension funds allocate less than five per cent of their assets to private equity investments, the size of the funds are such that even a small allocation is significant to the supply of capital in the VC industry.

An example from the US illustrates the importance of pension funds to the VC industry. In 1979, an amendment to the 'prudent man' rule governing pension fund investments was made and is credited with being one of the most important factors in the creation and development of the VC industry (Gompers and Lerner, 1999a). The amendment removed the US Department of Labor restrictions preventing pension funds from investing significant amounts of money in venture capital and other higher risk asset classes. It allowed pension funds to both maintain their 'prudent man' status and invest in private equity. This rule change led to dramatic growth in the supply of venture capital from pension funds (Lerner, 1996). The amount of money invested in new funds went from \$481 million to \$5 billion, with pension funds accounting for nearly half of all new contributions (Gompers and Lerner, 1999b). In the US today, pension fund assets are the primary source of venture capital, and generally represent between 30 and 50 per cent of venture capital funds raised (Megginson, 2001; NVCA, 2004).

The EVCA indicates that, in recent years, pension funds have overtaken banks as the largest source of capital to European VC funds, and comprise between 20-30 per cent of capital raised. With no significant endowments or foundations, and with banks already investing in the VC industry at high levels, pension funds represent the remaining viable and untapped source of financing for the Irish VC industry. Two policy options to increase pension fund investments in VC are discussed below.



### 5.1.1 Policy Option 1: Invest National Pensions Reserve Fund assets in private equity

The Irish government could lead the domestic pension funds by example and invest in the venture capital industry through its own pension fund assets, such as the National Pensions Reserve Fund (NPRF)<sup>17</sup> or semi-state bodies (e.g. Bord Gáis). Ireland would not be the first country to pursue a strategy of investing public sector pension fund capital in private equity. In Sweden, pension and superannuation funds under the control of the government were directed to invest in venture capital. The policy was successful, and pension funds now account for about 20 per cent of venture capital funds raised in Sweden, compared to zero per cent in 1996 (Isaksson and Cornelius, 1998). In the US in 2002, the \$32 billion Los Angeles County Employees Retirement Association tripled its private equity investments by \$600 million in order to boost long-term returns. Similarly, the California State Teachers' Retirement System announced its plan to double the size of its private equity portfolio over the next five years to \$8.7 billion. Investing state pension fund assets in the VC industry would send a strong signal to the private market about the government's confidence in the quality of Irish VC firms and venture-backed companies, and would provide a much needed long-term supply of capital to the venture capital industry.

There are two arguments to substantiate this position. First, standard asset allocation theory<sup>18</sup> justifies the addition of private equity (both domestic and foreign) as an asset class for investment. Investment research suggests that asset allocation is the most significant determinant of returns over the long term and that pension fund and other institutional portfolios globally generally

---

<sup>17</sup> The National Pensions Reserve Fund is a €10 billion (as of March 2003) fund established in 2000 to fund social welfare and public service pensions from 2025 to at least 2055. The National Pensions Reserve Fund Commission, a body of seven commissioners appointed by the Minister for Finance, has full discretion to control, manage and invest the assets of the Fund (NTMA, Annual Report 2002). The fund was held in cash in 2001 and began 'averaging in' to the market in 2002.

<sup>18</sup> Asset allocation theory is based on considering asset risk over: 1) a long time horizon, 2) a normal distribution of asset returns, and 3) consistent investing through market cycles. It is best suited for use with portfolios that have long investment horizons and disciplined investment strategies, such as pension fund and other defined benefit portfolios.

contain small allocations to high-risk asset class. As the NTMA asserts, 90 per cent of a portfolio's long-term performance is attributable to asset allocation decisions (NTMA, 2003). Second, portfolio diversification argues for the inclusion of private equity investments that offer pension funds the opportunity to diversify into a higher-risk higher-return asset class, while still satisfying the prudent person principle.

The NPRF does not currently invest in private equity as an asset class, although the 2003 Review indicates it has started 'working on business plans' for such investments (NPRF, 2004: 6). If it were to invest a small allocation in private equity, increasing over time to a target percentage of assets, this investment could be split between domestic and international private equity opportunities, and managed by either a professional private equity manager or fund that would advise the pension fund on its investment strategy and screen its opportunities. Both of these options are common in the pension fund industry, and there are many choices among managers and funds to manage the investments.

#### *5.1.2 Policy Option 2: Extract a second funding commitment from domestic pension funds*

The Department of Finance could repeat the successful exercise of 1995 (discussed in Section 2.1) and either extract a second commitment from domestic pension funds, or implement a tax or levy on them to increase investments in domestic private equity. This is a less appealing option than attracting pension funds naturally through strong returns, but Section 2.1 revealed that there are several other barriers to investment among domestic pension funds that this option would help to address.

Increased investments by Irish pension funds would have a significant impact on the domestic venture capital industry. For example, if Irish pension funds invested 2.5 per cent (half the rate of the US) of their €50 billion of assets into private equity, €1.25 billion would be available to invest. Of that, assume a 15 per cent allocation to venture capital, and, of that, a 25 per cent allocation to domestic VC (an amount only half of the 50 per cent normally allocated to domestic equity securities; IAPF, 2002). This modest level of investment would bring nearly €50 million of capital into the Irish VC industry annually, which would represent a meaningful addition to the nearly €200 million recently raised per year.

Therefore, even a very conservative asset allocation case is compelling in terms of its impact on the Irish VC industry.

The private sector could provide some assistance in terms of considering the creation of a 'fund of funds'<sup>19</sup> structure that would allow a pension fund's private equity manager to more easily allocate assets to the domestic VC industry. A fund of funds would provide a dedicated structure to focus on raising institutional capital, recruiting other venture firms to Ireland, and making it administratively and logistically easy for pension funds and other investors to invest in the Irish venture capital industry.

## 5.2 Closing the Equity Gap

The exit is the last phase of the equity financing cycle, but it is by far the most critical to the sustainability of the equity financing cycle, and the venture capital industry. Returns drive every aspect of the financing cycle. They impact the entrepreneur's decision to take the risk of starting a new business, rather than staying in a more secure and predictable employee position. Returns attract angel investors and venture capital to invest in high-risk and unproven young companies and are the principal reason why pension funds and other institutional investors seek to invest in venture firms. Without strong returns on equity financing, investors will seek alternative opportunities for their capital.

Ireland's very low rate of IPO offerings relative to the rest of Europe indicates an exit gap for Irish companies. As a result, Ireland forgoes the many benefits, reviewed earlier in section 2.6, associated with strong capital markets and the availability of IPO exits. The dire state of Ireland's capital markets for young companies is somewhat mitigated by the fact that a number of the strongest Irish firms have listed successfully on foreign exchanges. The most immediate and simplest solution to closing the exit gap is to focus more attention and resources on identifying and helping promising indigenous companies prepare to float on the most appropriate foreign exchange. There are, however, additional significant obstacles that must be overcome before a firm can list on a foreign exchange.

---

<sup>19</sup> A fund of funds is generally organised and capitalised by a pension fund or an investment bank. It invests in a portfolio of venture capital funds, rather than directly into companies.

### 5.2.1 Policy Option 1: Actively facilitate IPOs on foreign exchanges

The public offering market should be company-driven, in the sense that any good and qualified firm should be able to list on any exchange. While that is somewhat true today – witness the international listings on the Nasdaq, for example – there are additional obstacles to listing on a foreign exchange that, in reality, act to considerably constrain the number of companies that list on foreign exchanges. These include the different regulations, disclosure requirements, accounting standards, time zones and currencies of foreign exchanges, as well as the further challenges of developing the contacts and networks of providers (e.g. lawyers, investment bankers, buy-side institutions, accounting firms) needed to go public (EVCA, 2004b). There are also the costs of an overseas listing, which can be meaningfully higher than listing on the ISE, and the additional fees associated with listing both overseas and domestically. Finally, the ultimate challenge of listing on a foreign market is generating strong buyer interest in a company that can be relatively unknown. In addition to the normal requirements and preparation for a public flotation, these matters can be quite a challenge for a young company to successfully negotiate, and can act to limit all but the very best companies from listing abroad.

Both the private and public sectors can help more Irish companies successfully achieve foreign listing. Venture capitalists can help identify at an early stage companies for which a public offering could be a viable exit, and work with those companies to plan and prepare for a flotation. VCs can also leverage their contacts with international venture capitalists and investment banks in markets with strong exchanges, to facilitate introductions and relationships with their most promising portfolio companies. This could include facilitating and sponsoring ‘road show’ visits from international exchanges to help portfolio companies gain exposure to a variety of international IPO options and learn more about the exchanges on which they might float. Even if companies are not yet ready (or might never be ready) for full listings on one of the top exchanges, liquidity options such as the AIM, the OFEX or the Nasdaq Small Cap market can be appropriate. While trading volumes can be thin for some companies, others have had good success on these smaller exchanges in terms of raising capital, obtaining liquidity for investors and employees, or gathering the experience and trading record to move to a larger exchange.

Enterprise Ireland could also play a key role in facilitating IPOs of Irish companies on international exchanges. EI has a strong international network of offices and personnel located in key overseas markets with strong stock exchanges including New York, London, Tokyo, Sydney, and Frankfurt. Many VC-backed Irish companies maintain significant business operations in these countries, and may therefore be appropriate candidates for an IPO on the local exchange. There is an opportunity for in-country EI staff to begin actively cultivating relationships with investment banks, stock exchange personnel, and local VCs who may be able to provide advice and assistance to Irish companies on going public. A focus on IPO exits, as well as a purposeful cultivation of overseas relationships to facilitate them are well within the EI mandate and capabilities, and could provide tremendous and profitable assistance to Irish companies to achieve a public flotation. EI could also integrate and prioritise exit planning as part of its services to client companies, and provide information on the variety of exchanges, the listing rules, and contacts at each exchange.

### 5.2.2 Policy Option 2: Demutualise the Irish Stock Exchange

As noted earlier, the ISE is a 'mutualised' exchange of fifteen members. A mutualised exchange is one that is owned by broker-dealer members who have 'seats' and the right to trade on the exchange. Historically, exchange members operated under a comfortable cartel-like arrangement and generated profits for themselves by intermediating trades on the exchange for non-members (Chung, 1999). Members maximised their profits by price fixing commissions, which led to higher trading costs for investors (Steil, 2001; 2002a).<sup>20</sup> The trend towards demutualisation began in Europe, with the Stockholm Stock Exchange in 1993. This option has become a strong trend among exchanges worldwide and is a viable strategic option for the ISE.

---

<sup>20</sup> The original agreement made to form what would later become the NYSE illustrates: 'WE the Subscribers, Brokers for the Purchase and Sale of Public Stock, do hereby solemnly promise and pledge ourselves to each other, that we will not buy or sell from this day for any person whatsoever any kind of Public Stock, at a less rate than one quarter percent Commission on the Specie value of, and that we will give a preference to each other in our Negotiation'. Quote from the Buttonwood Agreement signed in 1792 by twenty-four brokers to form the New York Stock and Exchange Board, at: 'Where are the customers' yachts', *The Economist*, 23 September, 2003.

Demutualisation refers to the process of converting an exchange from a member-owned organisation to a for-profit shareholder-owned corporation (Aagwarl, 2002). The fundamental characteristic of a demutualised exchange is the separation of membership and ownership, and it is commonly pursued in order to transfer control over decision-making from members to shareholders (Steil, 2002b). Demutualisation transforms the objectives of the exchange. Rather than focus on the interests and revenues of a small group of members, demutualised exchanges are run by professional management with a competitive focus on maximising efficiency, profits, and value to shareholders, just like any other business enterprise.

*Table 6: The trend of stock exchange demutualisations, 1993-2002*

| <i>Stock Exchange</i>       | <i>Year of Demutualisation</i> |
|-----------------------------|--------------------------------|
| Stockholm Stock Exchange    | 1993                           |
| Helsinki Stock Exchange     | 1995                           |
| Copenhagen Stock Exchange   | 1996                           |
| Amsterdam Exchanges         | 1997                           |
| Borsa Italiana              | 1997                           |
| Australian Stock Exchange   | 1998                           |
| Iceland Stock Exchange      | 1999                           |
| Athens Stock Exchange       | 1999                           |
| Stock Exchange of Singapore | 1999                           |
| Nasdaq                      | 2000                           |
| Toronto Stock Exchange      | 2000                           |
| London Stock Exchange       | 2000                           |
| Deutsche Börse              | 2001                           |
| Oslo Exchanges              | 2001                           |
| Euronext                    | 2001                           |
| Hong Kong Stock Exchange    | 2002                           |
| Tokyo Stock Exchange        | 2002                           |
| New Zealand Stock Exchange  | 2002                           |
| Budapest Stock Exchange     | 2002                           |

*Source:* Steil (2001: 257-278); and author's research.

The competition among stock markets for investors, company listings, and trading volume is increasing and requires increased

efficiencies from exchanges. A demutualised structure can offer a more competitive focus and flexibility to respond to the market. As exchanges become increasingly electronic, demutualisation can further provide a broad base of capital and the funding required to invest in new technology. The wider benefits of demutualisation can be considerable and include increased accountability (to shareholders), improved transparency in governance and decision-making, and additional capital to finance technology and operational improvements.<sup>21</sup> Since the 1990s, most major exchanges have demutualised (see Table 6).

The Boston Consulting Group prepared a summary of the benefits of demutualisation, outlined in Table 7.

*Table 7: Possible advantages of stock exchange demutualisation*

| <i>Issues facing mutualised exchanges</i>       | <i>Benefits of demutualisation</i>  |
|---|---|
| Inefficiencies of the mutualised structure      | <ul style="list-style-type: none"> <li>• For-profit structure provides incentive to strive for competitive advantage and operational efficiency</li> <li>• For-profit structure provides an incentive to focus on service to exchange customers</li> <li>• More efficient and flexible funding available from domestic and international markets</li> </ul> |
| Conflict of interest in current decision making | <ul style="list-style-type: none"> <li>• Owner, manager and direct user interests no longer combined</li> </ul>   |

<sup>21</sup> While beyond the scope of this paper, it is worth noting that after demutualisation, there are several options for regulating the new entity, including: 1) self-regulation (Sweden pursued this option); 2) forming a separate regulatory entity (Nasdaq created the NASDR); 3) outsourcing to an independent third party (the National Futures Association performs this function in the US). The stock exchange can either remain private or go public. Each of Europe's primary exchanges – Deutsche Börse, Euronext and the London Stock Exchange (LSE) – chose to go public after demutualisation.

|  |   |
|--|---|
| Limited growth and cooperation opportunities                   | <ul style="list-style-type: none"> <li>• Increase accountability and transparency to shareholders</li> <li>• Broader access to capital</li> <li>• Better organisational structure for mergers, joint ventures and alliances</li> </ul>            |
| Increased competition from other exchanges and trading systems | <ul style="list-style-type: none"> <li>• Flexibility to respond to competitive pressures from new players (e.g. ECNs, Alternative Trading Systems)</li> <li>• Structurally ready and fitting for global integration of capital markets</li> </ul> |
| Limited funds for technology investment and development        | <ul style="list-style-type: none"> <li>• Broader access to capital</li> <li>• Flexibility in decisions</li> </ul>   |

---

*Source:* Adapted from The Boston Consulting Group, 'Key Learnings Related to the Demutualization of Stock Exchanges,' 10 April 2003.

Demutualisation also results in a more attractive structure for pursuing joint ventures and alliances (Steil, 2001). Stock exchange alliances are showing early signs of success and present a further strategic opportunity for the Irish Stock Exchange. While the ISE, through its use of Deutsche Borse's Xetra trading platform, and CREST settlement, has made some moves towards positioning for a European alliance, it has not yet implemented any new relationship agreements with other exchanges.<sup>22</sup> Most current stock market alliances focus on facilitating cross-border listings and trading among alliance members, as well as implementing single trading, settlement and clearing platforms. Alliances are attractive because they offer small national exchanges the benefits of increased size, liquidity and trading volume that can not be achieved

---

<sup>22</sup> Given its long history with the London Stock Exchange (the ISE officially separated from the LSE only in 1995), it is interesting to note the ISE has engaged in an initial relationship with the Deutsche Borse, and not the LSE. The thinking behind that decision remains a mystery since the ISE has adopted a 'no comment' policy and indicated that the rationale for its decision is not public information.



independently, but without the loss of independence, identity and strategic control that a merger would entail.

Euronext, which formed at the end of 2000 from the merger of the Paris, Amsterdam and Brussels exchanges, has become a major exchange in Europe. Euronext is based on a single trading platform, common trading rules, and single clearing system among its exchanges. Euronext is now one of the primary European exchanges in terms of market share and trading volume.<sup>23</sup> While London remains Europe's largest exchange, with more than 2,800 listed companies and a market value of nearly €2 trillion, Euronext is a close second at €1.5 trillion. Both of these exchanges have seen dramatic increases in their combined market share from 58 per cent in 2001 to 85 per cent in 2003. The Norex alliance of the Stockholm Börs, Oslo Børs, Copenhagen and Iceland exchanges began forming in 1997 based on a common trading system and harmonised rules for trading and membership, and now has a market value of about €500 billion. In 2003, the HEX Integrated Markets, which include the Helsinki, Tallinn (Estonia) and Riga (Latvia) Stock Exchanges, agreed to join the Norex alliance. After the HEX integration is completed, the Norex alliance will include seven exchanges integrating the entire Nordic region and two-thirds of the Baltic markets.

The trend towards alliances highlights the increasing movement of liquidity and activity away from small national exchanges and towards the increased scale available among several markets.

The obstacles to a pan-European exchange are numerous and significant and include harmonising trading technology, settlement and clearing, regulatory and disclosure requirements, and governance structures. In the meantime, the inevitable trend to consolidation manifests itself in the increased number of alliances formed.

### 5.3 Increasing the supply of angel capital

To reach the stage where they are 'investor-ready' and venture capital funding is appropriate, most companies will have received prior financing from 'friends and family' or business angels. Pre-VC financing is critical to foster the early growth of companies.

---

<sup>23</sup> Euronext merged with the Lisbon exchange and signed a cross-border agreement with the Warsaw Exchange in 2002.

### 5.3.1 Policy Option 1: 'Join-up' fiscal and industrial policy

There is no shortage of investible capital in Ireland. Nor is there a shortage of wealthy individuals. The fundamental issue to be addressed is not the supply of angel capital, but rather its allocation to equity financing. The vast majority of individual investors in Ireland choose to invest in economically non-productive assets that do not foster Ireland's position in the global economy, increase exports, create high quality employment or develop new industries. Irish investors invest in property at phenomenally high levels, and this investment occurs at the expense of economy-enhancing, growth-producing, job-creating, export-generating investments in economically productive assets such as companies. This 'property problem' diverts potential investments away from young companies, and constrains the growth and development of Ireland's indigenous base of small businesses. It is the central and underlying issue that must be addressed to improve and sustain the equity financing of young companies.

A recent Irish study found that Irish citizens own three and half times more property than equity investments (Brady, 2004). There are a number of reasons why investors focus on economically non-productive assets such as property. Although Irish industrial policy is focused on creating and fostering a strong indigenous industry of high growth companies, the state's fiscal policies do not support those goals. Rather, Irish fiscal policy provides numerous schemes, tax incentives, tax reliefs and subsidies to property investors, with no similar benefits accruing to investors in equity shares. Table 8 illustrates this extremely skewed allocation of schemes. Investors evaluate opportunities relative to one another. Tax incentives that improve the returns of property relative to other assets can be expected to and do increase the capital available for property investments (Gompers and Lerner, 2002).

*Table 8: Comparison of current Irish property and equity share fiscal incentives*

| <i>Property Schemes</i>   | <i>Share Schemes</i>  |
|---|---|
| Rural Renewal   | Business Expansion Scheme<br>(suspended during most of 2004)  |
| Town Renewal  | Seed Capital Scheme (suspended<br>during most of 2004)  |
| Urban Renewal   |   |
| Child Care Facilities   |   |
| Custom House Docks  |   |
| Enterprise Area Reliefs   |   |
| Living over the Shop  |   |
| Multi-storey car parks  |   |
| Park and Ride facilities and<br>related development                             |   |
| Registered holiday cottages   |   |
| Rent a room scheme  |   |
| Seaside Resorts   |   |
| Student accommodation   |   |
| Temple Bar construction and<br>refurbishment                                    |   |
| <i>Property Tax Reliefs</i>   | <i>Share Tax Reliefs</i>  |
| Mortgage interest relief on<br>investment properties                            | Income tax relief for shares<br>purchased in an Approved<br>Profit Sharing Scheme                           |
| Interest relief on money<br>borrowed to purchase, repair<br>or improve property | Shares purchased under<br>Approved Share Option Schemes<br>charged CGT instead of income<br>tax on disposal |
| Mortgage interest relief on<br>private residence                                |   |
| Mortgage interest relief on<br>commercial properties                            |   |

CGT exemption on gains from  
 sale of principal private residence  
 with cost basis indexed for  
 inflation through 12/02  
 Stamp duty relief for first time  
 buyers / owner-occupiers of  
 new homes

---

*Source:* The Irish Revenue (at [www.revenue.ie](http://www.revenue.ie)); Philip O'Reilly and Co Ltd Property Partners; Ernst & Young (at [www.ey.ie](http://www.ey.ie))

As Table 8 illustrates, there is a striking imbalance between property and share incentives in the Irish tax system. Irish fiscal policy has clearly been designed to encourage and reward investments in property, which is at odds with the industrial policy objectives of fostering the growth and development of small businesses. A system that focused more on industrial policy goals would remove distortions that favour property investments, and, at a minimum, equalise the treatment of equity investments in unquoted companies.

From a policy perspective, improving the angel investing environment in Ireland requires a 'joining-up' of industrial and fiscal policy in a way that encourages private investments in economically productive assets relative to non-productive ones. Successful national industrial policy requires a consistency with national fiscal policy. Re-aligning fiscal and industrial policies to coherently foster the growth of small businesses is an enormous and extraordinarily politically challenging task, but one that is required if Ireland is to make any meaningful progress towards accomplishing its long-term industrial policy objectives.

### *5.3.2 Policy Option 2: Fund the matchmakers*

The private and relationship-based nature of the angel market can make it difficult for entrepreneurs seeking equity finance to make contact with business angels. Angels can have similar difficulties identifying investment opportunities that match their expertise and funding abilities (Harrison and Mason, 1996). One response to this difficulty is the creation of business angel networks (BANs) services that seek to 'match' entrepreneurs and businesses because

well-resourced, well-marketed and proactive educational matching services can increase the supply of angels (Freear, 1994). About half of all European business angel networks (EBANs) receive public support from local, regional or national state bodies (EU, 2002). They most often obtain public support during their initial years of operation. The average budget for a business angel network is €250,000 per year, a modest level of public support. Once a critical mass of investors and companies is established, and the network is well-run and well-known, it can entirely or mostly support itself by charging fees,<sup>24</sup> or taking equity stakes in the companies in which it invests.

Horsepower Funding is an example of a private sector Irish angel network, and the only one that is a formal member of the EBAN. Run by a credible team with investing experience, Horsepower saw 120 deals in 2002, and 81 in 2003. In 2003 it completed 18 deals that raised capital amounts as small as €100,000 and as large as €2 million. Horsepower's matching service is technologically sophisticated and highly automated, and is run over a virtual private network. This model is attractive to angels who frequently prefer the privacy and discretion of a technologically sophisticated network. Companies are listed on the network with a summary of key characteristics, and potential investors can download business plans for more detailed information. There are about 200 investors on the Horsepower network, each of whom indicates the type of company and funding size in which he/she is interested. Companies that meet the criteria are then 'pushed' to the investor via an email alert with a link to the Horsepower site. Horsepower primarily supported itself from a six per cent success fee levied on companies that raised financing through the network but, given its start-up stage, the fees were insufficient to sustain the organisation. Unable to secure any public support from Enterprise Ireland or other Irish government sources, Horsepower officially closed in March 2004.

For extremely modest amounts of public support, there is an opportunity to finance for a limited time a select number of credible and technologically sophisticated business angel networks in Ireland to improve the ease, scale and success rate of angel investments.

---

<sup>24</sup> Examples of fees are: an annual membership fee for one year (they vary from €50 to more than €500); success fees upon deal closing (generally in the range of 1 to 5 percent of deal size); event registration fees; and bulletin subscription fees.

#### **5.4 Implementing exemplary public venture capital processes**

Enterprise Ireland is an active participant in Ireland's venture capital industry. It invests significant capital directly in small companies, and is a co-investor with most of the domestic VC firms as well as being an investor in most Irish VC funds. With such deep involvement in the industry, EI's processes, policies and governance as a venture capitalist impact directly on the credibility, integrity and reputation of the entire domestic VC industry. To the extent that any hint of impropriety were to be attributed to EI's investing activities, it would likely spill over into the private VC industry as well. Therefore, the longer-term success of the industry depends in part on EI's stretching itself to the highest process and performance standards as a public venture capitalist and investor of taxpayer capital.

##### *5.4.1 Policy Option 1: Implement an industry standard valuation policy*

After several recent financial reporting scandals, there is increasing attention and importance paid to financial transparency and accountability in corporations and public bodies alike. EI accounting policies currently incorporate a conservative cost-based valuation methodology primarily designed to minimise politically sensitive volatility of reported gains and losses in its equity portfolio. It does so by obscuring the true valuation of its portfolio. This conservative valuation model is not consistent with the standard valuation policy approved by all the major venture capital associations.

A recent conference demonstrates the explicit support of the international accounting and venture capital industry for a standard valuation policy that accurately represents the value of a portfolio. In 2003, nearly fifty top private equity practitioners, leaders of the European, US and British Venture Capital Associations, and several major accounting firms convened to discuss the issues of valuation policy (Center for Private Equity and Entrepreneurship, 2003). The participants discussed the deliberate use of 'conservatism', which they defined in an accounting context to mean the 'deliberate and consistent understatement of assets or income or both'. The group explicitly debated the use of: 1) conservative valuations that use a cost-based valuation method and are designed to 'avoid unpleasant surprises' and 2) realistic valuations that use a fair value approach and depict a true picture of the investment performance, but are likely to be more volatile. This group of international industry

practitioners and experts endorsed the 'realistic' methodology as the more accurate and unbiased valuation policy and explicitly rejected the 'conservative' methodology that EI currently uses.

There is an opportunity for EI to adopt an industry standard valuation policy to replace the 'conservatism' policy it currently uses. An industry standard policy would be consistent with the valuation policy that EI currently requires venture funds in which it invests to implement, and would allow for a more accurate and transparent valuation of its investment portfolio.

#### *5.4.2 Policy Option 2: Implement a transparent and disciplined exit strategy*

While an overly prescriptive approach to exits can bring about its own problems, EI's current ad-hoc approach to exits lacks a clear policy rationale and is characterised by a lack of discipline and transparency. An increasingly systematic and disciplined policy towards exits could benefit EI, Irish taxpayers (who fund EI's investments), and portfolio companies by setting clear expectations. All parties would benefit from a transparent and objective exit policy that is free from potential conflicts, insider information, or manipulation. It is also arguable that the current ad-hoc policy has resulted in lower overall returns from the EI public portfolio than a disciplined and systematic exit strategy.

Rather than the current system of delegating exit decisions to a committee for ad-hoc decision-making, EI could adopt general guidelines on maximum holding periods for public securities. These guidelines would allow EI to recycle funds for new investments, and provide the company with clear and explicit expectations that EI will focus on exiting the company once its economic development needs have been clearly met. Furthermore, a pre-arranged sale schedule that takes into account liquidity of the stock (guidelines similar to SEC Rule 144 trading volume<sup>25</sup> criteria in the US could be used) would allow EI to 'dollar cost average' out of the

---

<sup>25</sup> The SEC's Rule 144 trading volume guideline states that after a one-year holding period, the number of shares the investor may sell during any three-month period cannot exceed the greater of one percent of the outstanding shares of the same class being sold, or if the class is listed on a stock exchange or quoted on the Nasdaq, the greater of one percent or the average reported weekly trading volume during the four weeks preceding the filing a notice of the sale on Form 144 (at <http://www.sec.gov/investor/pubs/rule144.htm>).

stock over time, and minimise the impact of such sales on the price volatility of the stock. Pre-arranged sales at defined intervals or based on pre-set limit orders allow EI to exit without signaling a negative event to the market, without ‘consulting’ with management and risking perceptions of trading on insider information, and without being perceived as ‘dumping’ the stock.

Unless EI advocates establishing a committee of professional equity managers to make trading decisions on its public portfolio in order to maximise returns, a disciplined and transparent exit strategy that focuses foremost on the ongoing development objectives of the organisation and transparency to the taxpayers offers the most well-reasoned and well-supported policy option.

### 5.5 Conclusion

This chapter presents key policy recommendations and options for developing a sustainable equity financing system in Ireland. A summary of the recommendations and options are outlined below.

| <i>Requirement for sustainable equity financing</i>             | <i>Policy options</i>  |
|---|--|
| Develop a stable source of private sector institutional capital | <ul style="list-style-type: none"> <li>• Invest the NPRF assets into domestic and international PE/VC as an asset class</li> <li>• Extract a second investment commitment from domestic pension funds</li> </ul> |
| Close the exit gap  | <ul style="list-style-type: none"> <li>• Actively facilitate Irish company IPOs on foreign exchanges</li> <li>• Demutualise the ISE and assess strategic options such as alliances</li> </ul>                    |
| Increase the supply of angel financing                          | <ul style="list-style-type: none"> <li>• ‘Join-up’ Irish fiscal and industrial policy</li> <li>• Fund the matchmakers</li> </ul>   |



Implement exemplary public  
venture capital processes

- Develop and implement a disciplined exit strategy
  - Implement an industry standard valuation policy for the EI equity portfolio
-

## Conclusion and summary

This paper reviewed the Irish government's equity financing policies for indigenous small businesses. Through Enterprise Ireland, the Irish government has directed its policy intervention and capital investments to the venture capital industry and has become one of the largest domestic equity investors in young companies. EI has invested over €300 million in Irish small companies and venture funds. The review of the domestic venture capital industry confirmed that the tremendous growth in Irish VC since the mid-1990s is partly attributable to the financial support of EI. At the same time, the successful development of a robust and vibrant VC industry suggests the lack of a compelling case for continued state intervention in the VC market.

This paper argues that Irish policy should focus on other parts of the equity financing cycle in order to preserve the achievements of the venture capital industry and develop a *sustainable* equity financing system for Irish small business. There is not convincing evidence to support the continued participation of the Irish government in the VC industry. The paper outlines a number of policy recommendations for the future development of Irish equity financing for small businesses including:

- *develop a stable source of private sector institutional capital to fund the venture capital industry.* Most venture capital in Ireland is raised from banks and from government sources. Over-reliance on government funding exposes the venture capital industry to the vagaries of the political budget allocation process, compromises a strict focus on returns by introducing the competing objective of economic development, and could limit the credibility the VC industry can achieve, because its reliance on government funding signals an inability to raise private sector funding.

The reliance of Irish VCs on government sources of funding is unusual when compared with Europe and

the US, where pension funds are significant institutional investors in VC funds. In Ireland, pension funds have not historically invested in private equity. Policy options for increasing Irish pension fund investment in venture capital include investing NPRF assets in private equity as an asset class, or extracting a second commitment from the domestic pension fund industry to allocate assets to venture capital.

- *close the exit gap in Ireland.* Irish company exits are dominated by trade sales, with a very low rate of IPOs compared to both Europe and the US. IPOs are critical both for companies and the VC industry because they generate the highest returns, recycle capital for additional equity financings, and provide large quantities of capital for company growth. There is little empirical evidence to indicate why IPO rates in Ireland are so low, but it is clear that the poor equity raising performance of the Irish Stock Exchange contributes to this, as does the lack of planning and preparation for public offerings within Irish small businesses.

To increase the rate of IPOs in future, VCs and EI can leverage their positions on company Boards, their international contacts and staff, and their financial expertise to help Irish companies plan and execute exits on foreign exchanges. The Irish Stock Exchange can play a role in improving exit options for indigenous companies by considering demutualisation and more aggressively pursuing alliances in order to improve its liquidity, trading volumes, and size. Closing the exit gap is critical for Irish companies and investors to realise internationally competitive and high rates of return that are fundamental to any successful equity financing system.

- *increase the supply of angel financing.* Angel financing is a large and critical source of early-stage equity financing for young companies. While many European and Irish studies have advocated increasing the supply of angel financing available to young companies, few specific policy recommendations have been suggested, and little action taken to date. Successfully increasing the supply

of angel capital in Ireland would require the DETE and the Department of Finance to address the fundamental inconsistencies between Irish industrial and fiscal policy. Current Irish fiscal policy is extremely biased towards supporting and providing incentives for investments in property. The bias manifests itself most visibly in the inequality of tax relief and other government subsidies awarded to investors in property relative to share equity. 'Joining-up' fiscal and industrial policy in such a way as to more equally treat equity investments would help the development of a more conducive environment for angel investing in small companies. Providing modest amounts of public support for angel matchmaking services is a second low-cost and high-impact option for increasing angel financing activity.

- *ensure Enterprise Ireland investing processes are disciplined, accountable and transparent.* As a public venture capitalist that invests taxpayer capital and partners with private industry, EI is under significant pressure to adopt the highest standards of investor behaviour. EI's participation in the domestic capital industry requires that it positively contributes to the industry's integrity and reputation. There are a number of areas in which EI could improve the transparency and discipline of its processes, including implementing an industry standard valuation policy and developing a transparent and consistent exit policy.

The goal of the Enterprise Strategy Group report was to present policy options for encouraging and generating growth in the Irish economy. The creation and growth of indigenous small businesses is one of the most proven and critical contributors to economic growth globally. The ability to seed and finance the growth of young companies is a fundamental element of any national industrial policy. This paper recommends policy options for a sustainable system of equity financing that will continue to create and build a vibrant small business sector in Ireland. Such a system, along with recommendations from the Enterprise Strategy Group, offers the opportunity to drive enterprise development in Ireland 'Ahead of the Curve.'

## Appendix 1

### Note on venture capital data

The figures and tables presented in this paper are drawn from the data and statistics published annually by the European Private Equity and Venture Capital Association (EVCA) for European data, and by the National Venture Capital Association (NVCA) for US data. These data are derived from annual surveys of venture capital firms in each country. The EVCA works with PricewaterhouseCoopers to conduct the survey on all European private equity firms. The US data is obtained from surveys conducted by the NVCA and PricewaterhouseCoopers using the VentureXpert database, which contains data on over 5,000 VC firms, excluding about 200-250 smaller venture funds that are not members of the NVCA. Business angels are excluded from both US and European data. Irish data from the Irish Venture Capital Association is based on an annual survey of full IVCA members only and, consistent with European data, includes private equity data such as buyouts.

European and US data are not directly comparable since the European data includes all private equity transactions, including buyouts and recapitalisations, whereas the US data reflects venture capital investments only, excluding private equity transactions. Where possible, for the purposes of this paper, all figures calculated and reported refer to venture capital only data. For instance, for the funds raised and invested annually in Europe, the amount intended to be invested or actually invested in buyouts has been subtracted, which leaves funds raised and invested for venture capital only. In some cases, due to the nature of the data reported, these calculations are not possible, so private equity data is reported. Throughout this paper, private equity and venture capital are specifically used to refer to the different types of investing; the terms are not used interchangeably.

When the term 'Europe' is used, it refers to Europe as defined by the EVCA data. The EVCA collects its data on the following European countries: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland and the UK.

## Bibliography

- Accenture (2001), 'Leaving Safe Havens: The Accelerating Evolution of the European Exchange Landscape', at [www.accenture.at/static.pdf/borse.pdf](http://www.accenture.at/static.pdf/borse.pdf).
- Aggarwal, R. (2002), 'Demutualization and Corporate Governance of Stock Exchanges', *Journal of Applied Corporate Finance*, Spring 2002, vol. 15, no. 1, pp 105-113.
- Amit, R., J. Brander and C. Zott (2000), 'Venture Capital Financing of Entrepreneurship: Theory, Empirical Evidence and a Research Agenda', in D.L. Sexton, H. Landstrom (eds), *The Blackwell Handbook of Entrepreneurship*, Oxford, UK: Blackwell Publishers, Ltd.
- Bacon, P. and Associates (1999), *Final Report: Strategic Development Options for Ireland's Capital Markets in a Competitive Context*, Dublin: Bacon Associates.
- Bannock Consulting (2001), *Final Report: Innovative Instruments for Raising Equity for SMEs in Europe*, Study Contract ETD/00/503116, Prepared for DG Enterprise of the European Commission, Brussels: European Commission.
- Barkley, D.L., D.M. Markley and J.S. Rubin (1999), *Public involvement in venture capital funds: Lessons from three program alternatives*, A Policy Brief prepared for the Rural Policy Research Institute, Columbia, MO: RUPRI.
- Barkley, D.L., D.M. Markley, D. Freshwater, J. Sass Rubin and R. Shaffer (2001), *Establishing Non-traditional venture capital institutions: Lessons learned*, Part 1 of 4 of the Final Report, RUPRI Rural Equity Capital Initiative of Non-traditional Venture Capital Institutions, Columbia, MO: RUPRI.
- Bascha, A. and U. Walz (2001), 'Convertible securities and optimal exit decisions in venture capital finance', *Journal of Corporate Finance*, vol. 7, no. 3, September 2001, pp 285-306.
- Berwin, S. (ed.) (2003), *Private Equity and Venture Capital Incentives in Europe: An EVCA tax and legal committee paper*, Belgium: European Venture Capital Association.
- Black, B.S. and R.J. Gilson (1998), 'Venture capital and the structure of capital markets: banks versus stock markets', *Journal of Financial Economics*, 1998, vol. 47, no. 3, pp 243-277.

- Bottazzi, L. and M. Da Rin (2002), 'Venture Capital in Europe and the financing of innovative companies', *Economic Policy*, April 2002, vol. 34, no. 1, pp 229-69.
- Brady, N. (2004), 'Where exactly is all the money in Ireland?', *Sunday Tribune*, 9 May 2004, p. B9.
- British Venture Capital Association (2003a), *BVCA Response to European Commission Green Paper on Entrepreneurship*, Available at [www.bvca.co.uk/publications/ec\\_entrepreneur.html](http://www.bvca.co.uk/publications/ec_entrepreneur.html)
- British Venture Capital Association (2003b), *Bridging the Finance Gap*, Letter to the Investment and SME Finance Directorate of the Small Business Service, HM Treasury, 2 July 2003.
- Bushrod, L. (2002a), 'Irish government pumps €95m into VC', *European Venture Capital Journal*, London, 1 March 2002.
- Bushrod, L. (2002b), 'Enterprise Ireland reports progress', *European Venture Capital Journal*, London, 1 October 2002.
- Bygrave, W. (1987), 'Syndicated investments by venture capital firms: A networking perspective', *Journal of Business Venturing*, Spring 1987, vol. 2, no. 2, pp 139-154.
- Bygrave, W. and J.A. Timmons (1992), *Venture Capital at the Crossroads*, Boston: Harvard Business School Press.
- Bygrave, W. (2003a), 'Financing Entrepreneurs and their Ventures', in *Global Entrepreneurship Monitor*, Kansas City, MO: Kauffman Foundation.
- Bygrave, W., M. Hay, E. Ng and P. Reynolds (2003b), 'Study of informal investing in 29 nations composing the Global Entrepreneurship Monitor', Waltham, MA: Babson College.
- Campbell, K. (2003), *Smarter Ventures: A Survivor's Guide to Venture Capital*, London: Financial Times, Prentice Hall.
- Center for Private Equity and Entrepreneurship (2003), 'Private Equity Valuation and Reporting Conference Proceedings', June 18-19, 2003, Hanover, NH: Tuck School of Business at Dartmouth College, at [http://mba.tuck.dartmouth.edu/pecenter/research/pdfs/conference\\_proceedings.pdf](http://mba.tuck.dartmouth.edu/pecenter/research/pdfs/conference_proceedings.pdf).
- Chung, Y. (1999), 'Hot soup and sympathy: Can small brokers rise to the challenge?', *Asia Week*, 13 August 1999.
- Clark, M. (2003), 'EI says it's closing the "Equity Gap"', *Electronic Network News*, 15 July 2003.
- Commission of the European Communities (2001), *Commission Staff Working Paper: Enterprises' access to finance*, 19 October 2001, Brussels: European Commission

- Commission of the European Communities (2003a), *Green Paper: Entrepreneurship in Europe*, Brussels: European Commission.
- Commission of the European Communities (2003b), *Commission Staff Working Paper: Benchmarking Enterprise Policy: Results from the 2003 Scoreboard*, Brussels: European Commission.
- Cowley, L. (2003), 'Irish venture: a winning formula?', *European Venture Capital Journal*, London, 1 September 2003.
- Culliton, J. (1992), *A Time for Change: Industrial Policy for the 1990s, Report of the Industrial Policy Review Group*, Dublin: The Stationary Office.
- Department of Enterprise, Trade and Employment (n.d.), 'Enterprise Ireland: Policy Statement'.
- Department of Enterprise Trade and Employment (1992), *1992 Equity Capital Survey of Irish Indigenous Industry*, Dublin: DETE Consultancy Unit.
- Department of Enterprise Trade and Employment (1996), *1995 Equity Capital Survey*, Dublin: DETE Consultancy Unit.
- Department of Enterprise Trade and Employment (1999), *Annual Report on Small Business in Ireland: January 1998 to September 1999*, Dublin: The Stationery Office.
- Department of Enterprise Trade and Employment (2002), *2002 Equity Capital Survey*, Dublin: DETE Consultancy Unit.
- Department of Enterprise, Trade and Employment (2003a), *Review of Industrial Performance and Policy 2003*, Dublin: The Stationery Office.
- Department of Enterprise, Trade and Employment (2003b), *The Department of Enterprise, Trade and Employment submission to the 2003 Review of the Business Expansion Scheme (BES) and Seed Capital Scheme (SCS)*.
- Department of Industry and Commerce (1990), 'Review of Industrial Performance', Dublin: The Stationery Office.
- Donckels, R. (2000), 'Financing Growth: Recent Developments in the European Scene', in D.L. Sexton, H. Landstrom (eds), *The Blackwell Handbook of Entrepreneurship, 2000*, Oxford, UK: Blackwell Publishers Ltd.
- European Business Angel Network, 'Business Angel Networks in Europe: Their role and rationale', available at [www.eban.org](http://www.eban.org).
- Economic Innovation International, Inc. (1998), *Best Practices of State Sponsored Seed and Venture Capital Programs and Alternatives to Direct State Funding*, Topeka, KS: Kansas Inc.



- England, R.S. (2001), *Hard Landings: A White Paper on Financial Markets Impact of Population Aging*, Washington, DC: Center for Strategic and International Studies.
- Enterprise Ireland (n.d.), 'Helping Irish companies to grow profitably in world markets', Dublin: Enterprise Ireland.
- Enterprise Ireland (n.d.b), *Interim 2 Ordinary Shareholders Agreement*.
- Enterprise Ireland (1998), *Business Plan 1999-2001*.
- Enterprise Ireland (1999), *1998 Report: Seed and Venture Capital Measure of the Operational Programme, 1994-1999*, Dublin: Enterprise Ireland.
- Enterprise Ireland (2000), *Enterprise Ireland Annual Report and Accounts, 1999*, Dublin: Enterprise Ireland.
- Enterprise Ireland (2001a), *Enterprise Ireland Annual Report and Accounts, 2000*, Dublin: Enterprise Ireland.
- Enterprise Ireland (2001b), *2001 Report: Seed and Venture Capital Measure of the Operational Programme, 1994-1999*, Dublin: Enterprise Ireland.
- Enterprise Ireland (2001c), EI Draft Limited Partner Agreement, 2001.
- Enterprise Ireland (2002), *Enterprise Ireland Annual Report and Accounts, 2001*, Dublin: Enterprise Ireland.
- Enterprise Ireland (2003a), *Enterprise Ireland Annual Report and Accounts, 2002*, Dublin: Enterprise Ireland.
- Enterprise Ireland (2003b), *New Financial Guidelines*, Presentation to the IVCA, 27 November 2003.
- Enterprise Ireland (2003c), Presentation on Enterprise Ireland Financial Supports.
- Enterprise Ireland (2003d), *2002 Report: Seed and Venture Capital Programme, 2000-2006*, Dublin: Enterprise Ireland.
- Enterprise Ireland (2004a), *2003 Report: Seed and Venture Capital Programme Report, 2000-2006*, Dublin: Enterprise Ireland.
- Enterprise Ireland (2004b), 'Business Expansion Scheme Crucial', at [www.enterprise-ireland.com/pressrelease/default.asp?pageID=5158](http://www.enterprise-ireland.com/pressrelease/default.asp?pageID=5158), 5 April 2004.
- Enterprise Ireland (2004c), *Enterprise Ireland Annual Report and Accounts, 2003*, Dublin: Enterprise Ireland.
- Enterprise Ireland (2004d), 'Enterprise Ireland Annual Report and Accounts 2003', press release, 24 June 2004, at [www.enterpriseireland.com/PressRelease/](http://www.enterpriseireland.com/PressRelease/).
- Enterprise Strategy Group (2004), *Ahead of the Curve: Ireland's Place in the Global Economy*, Dublin: Forfás.

- EU Enterprise Directorate-General (2002), *Benchmarking Business Angels: Final Report*, 4 November 2002, Brussels: European Commission.
- European Commission Innovation Directorate of the Enterprise Directorate-General (2003), *Entrepreneurial innovation in Europe: A review of 11 studies of innovation policy and practice in today's Europe*, Luxembourg: Office for Official Publications of the European Communities, 2003.
- European Commission (1998): *Risk Capital: A key to job creation in the European Union*, Brussels: Commission of the European Communities.
- European Venture Capital Association (1998), *EVCA Annual Yearbook, 1997*, Belgium: European Venture Capital Association.
- European Venture Capital Association (1999), *EVCA Annual Yearbook, 1998*, Belgium: European Venture Capital Association.
- European Venture Capital Association (2000a), *EVCA Annual Yearbook, 1999*, Belgium: European Venture Capital Association.
- European Venture Capital Association (2000b), *Research Paper: Survey of the Economic and Social Impact of Venture Capital in Europe*, June 2002, Belgium: European Venture Capital Association.
- European Venture Capital Association (2001a), *EVCA Annual Yearbook, 2000*, Belgium: European Venture Capital Association.
- European Venture Capital Association (2001b), *EVCA White Paper: Policy Priorities for Private Equity*, September 2001, Belgium: European Venture Capital Association.
- European Venture Capital Association (2002), *EVCA Annual Yearbook, 2001*, Belgium: European Venture Capital Association.
- European Venture Capital Association (2003a), *EVCA Annual Yearbook, 2002*, Belgium: European Venture Capital Association.
- European Venture Capital Association (2003b), *EVCA's comments to the European Commission Green Paper on Entrepreneurship*, 31 July 2003, Belgium: European Venture Capital Association.
- European Venture Capital Association (2003c), *Pan-European Survey of Performance from Inception to 31 December 2002*, Belgium: European Venture Capital Association.
- European Venture Capital Association (2004a), *EVCA Annual Yearbook, 2003*, Belgium: European Venture Capital Association.
- European Venture Capital Association (2004b), *European Stock Market Financing for High-Growth Companies: An Analysis of the*

- European 'New Markets' Experience, Belgium: European Venture Capital Association.*
- Fitzpatrick, J. (2001), *Building Sustainable Competitive Advantage in Irish Industry*, Fitzpatrick Associates, Discussion Paper presented at Peer Review Ireland, October 25-26, 2001.
- Fitzsimons, P., C. O'Gorman and F. Roche (2001), *How Entrepreneurial is Ireland? The Global Entrepreneurship Monitor 2000: The Irish Report*, Dublin: The Ryan Academy of Entrepreneurship.
- Fitzsimons, P., C. O'Gorman and F. Roche (2002), *How Entrepreneurial is Ireland?, The Global Entrepreneurship Monitor 2001: The Irish Report*, Dublin: Department of Business Administration, University College Dublin.
- Fitzsimons, P., C. O'Gorman and F. Roche (2003), *How Entrepreneurial is Ireland?, The Global Entrepreneurship Monitor 2002: The Irish Report*, Dublin: Enterprise Ireland.
- Fitzsimons, P., C. O'Gorman, M. Hart and E. McGloin (2004), *Entrepreneurship on the Island of Ireland: Based on the research findings of the Global Entrepreneurship Monitor 2003*, Dublin: InterTradeIreland.
- Forfás (1996), *Shaping our Future: A Strategy for Enterprise in Ireland in the 21st Century*, Dublin: Forfás.
- Forfás (2000), *Enterprise 2010*, Dublin: Forfás.
- Freear, J. and W. Wetzel (1990), 'Who bankrolls high-tech entrepreneurs?', *Journal of Business Venturing*, vol. 5, no. 2, March 1990, pp 77-89.
- Freear, J., J.E. Sohl and W. Wetzel (1995), 'Angels: Personal investors in the venture capital market', *Entrepreneurship and Regional Development*, 1995, Vol. 7. pp 85-94.
- Freshwater, D., D.L. Barkley, D.M. Markley, J.S. Rubin and R. Shaffer (2001), *Traditional Venture Capital Institutions: Filling a Financial Market Gap*, Part 2 of 4 of the Final Report, RUPRI Rural Equity Capital Initiative, Study of Nontraditional Venture Capital Institutions, 2001, Colombia, MO: Rural Policy Institute.
- Gaither, C., 'Irish companies seeking green – and help – from Valley firms', *The Boston Globe*, 18 November 2002, p. C3.
- Gilson, R.J. and B.S. Black (1997), *Venture capital and the structure of capital markets – banks versus stock markets*, Social Science Research Network, Working Paper Series.
- Gompers, P.A. (1995), 'Optimal investment, monitoring and staging

- of venture capital', *The Journal of Finance*, December 1995, vol. 50, no. 5, pp 1461-1489.
- Gompers, P. and J. Lerner (1997a), 'Venture Capital and the Creation of Public Companies: Do Venture Capitalists Really Bring More than Money?', *Journal of Private Equity*, Fall 1997, vol. 1, pp 15-32.
- Gompers, P. and J. Lerner (1997b), 'Risk and Reward in Private Equity Investments: The Challenge of Performance Assessment', *Journal of Private Equity*, 1997, vol. 1, no. 2, pp 5-12.
- Gompers, P.A. (1998) 'Venture capital growing pains: Should the market diet?', *Journal of Banking and Finance*, vol. 22, 1998, pp 1089-1104.
- Gompers, P.A. and J. Lerner (1999a), *What Drives Venture Capital Fundraising?* NBER Working Paper W6906, Cambridge: National Bureau of Economic Research.
- Gompers, P.A. and J. Lerner (1999b), *The Venture Capital Cycle*, Cambridge: MIT Press.
- Gompers, P.A. and J. Lerner (2000), 'Money chasing deals? The impact of fund inflows on private equity valuations', *Journal of Financial Economics*, January 2000, vol. 55, no. 2, pp 281-325.
- Gompers, P.A. and J. Lerner (2002), *The Opportunity in European Equity*, Harvard Business School and Citigroup, New York: Citigroup Alternative Investments.
- Goodbody Economic Consultants (2002), *Entrepreneurship in Ireland*, Dublin: Goodbody Consultants.
- Grant Thornton (2002), *European New Markets Guide*, London: Grant Thornton.
- Hale and Door, LLP (2004), *2003 IPO Report*, Boston: Hale and Dorr.
- Harding, R., M. Cowling and G. Murray (2003), 'Assessing the scale of the "equity gap" in the UK economy, Report to H.M. Treasury and Small Business Services'.
- Harrison, R. and C. Mason (1996), 'Developments in the promotion of informal venture capital in the UK', *International Journal of Entrepreneurial Behavior and Research*, 1996, vol. 2, no. 2, pp 6-19.
- Heard, R.G. and J. Sibert (2000), *Growing new businesses with seed and venture capital: State experiences and options*, Washington DC: National Governors' Association.
- Hege, U., P. Frederic and S. Armin (2003), 'Determinants of Venture Capital Performance: Europe and the United States', RICAPE Working Paper No. 1, January 2003.

- Hellmann, T. (2000), *Developing a Venture Capital Industry*, Comments prepared for the World Development Report Study Conference, Villa Boersig, Berlin.
- Hellmann, T., L. Lindsey and M. Puri (2003), *Building Relationships Early: Banks in Venture Capital*, Working Paper, Stanford, CA: Graduate School of Business, Stanford University.
- House of the Oireachtas (2000), Parliament of Ireland, Committee of Public Accounts, 27 January 2000.
- Hubbard, G.R. (1998), 'Capital-market imperfections and investment', *Journal of Economic Literature*, March 1998, vol. 36, no. 1, pp 193-225.
- Inc. (2000), 'The Inc. 500: America's fastest-growing private companies', *Inc.*, 17 October 2000, p. 65.
- Irish Association of Pension Funds (2003), 'IAPF Asset Allocation Survey 2002', September 2003, Dublin: Irish Association of Pension Funds.
- Irish Stock Exchange (2002), *Annual Statistical Review, 2001*, available at [www.ise.ie](http://www.ise.ie).
- Irish Stock Exchange (2003), *Annual Statistical Review, 2002*, available at [www.ise.ie](http://www.ise.ie).
- Irish Stock Exchange (2004), *Annual Statistical Review, 2003*, available at [www.ise.ie](http://www.ise.ie).
- Irish Stock Exchange (2004), 'Irish Stock Exchange Posts Strong Growth for 2003', Press Release, 13 January 2004, available at [www.ise.ie](http://www.ise.ie).
- Irish Venture Capital Association (2000), *Report on Venture Capital Investment Activity*, Dublin: Matheson Ormsby Prentice.
- Irish Venture Capital Association (2002), *The Irish Venture Capital Association Report on Venture Capital Activity 2001*, Dublin: Matheson Ormsby Prentice.
- Irish Venture Capital Association (2004), 'Irish VC investing recovers to €255m in 2003', IVCA press release, 21 June 2004.
- Isaksson, A. and B. Cornelius (1998), 'Venture Capital Incentives: A Two Country Comparison', Paper presented at the 10th Nordic Conference on Small Business Research, Växjö University, Sweden, June 14-16, 1998.
- Jeng, L.A. and P.C. Wells (2000), 'The determinants of venture capital funding: Evidence across countries', *Journal of Corporate Finance*, September 2000, vol. 6, no. 3, pp 241-289.

- Kaplan, S.N. and P. Stromberg (2001), 'Venture capitalists as principals: Contracting, screening and monitoring', *The American Economic Review*, vol. 91, no. 2, May 2001, pp 426-431.
- Kaplan, S.N. and P. Stromberg (2003), 'Financial Contracting Theory Meets the Real World: An Empirical Analysis of Venture Capital Contracts', *Review of Economic Studies*, vol. 70, no. 243, April 2003, pp 281-315.
- Karsai, J. (2002), 'Closing the 'equity gap,' The funding of venture capital in Hungary: Issues for Public Policy', Paper prepared for the international conference on Evolution of Institutions and the Knowledge Economy, October 3-5, 2002, Debrecen, Hungary.
- Keane, C. (2000), 'Tech stocks sell off earns a good return for investor group', *Irish Examiner*, 13 April 2000, p. 10.
- Keogh, O. (2003), 'Angels can be answer to prayers', *The Sunday Times*, Enterprise Network, 21 December 2003.
- Koppel, J. (1999), 'The challenge of administration by regulation: Preliminary findings regarding the US government's venture capital funds', *Journal of Public Administration Research and Theory*, vol. 9, no. 4, October 1999, pp 641-666.
- Kortum, S. and J. Lerner (2000), 'Assessing the contribution of venture capital to innovation', *RAND Journal of Economics*, 2000, vol. 31, pp 674-692.
- Leachman, L., V. Kumar and S. Orleck (2002), 'Explaining Variations in Private Equity: A Panel Approach', 2002, Working Paper No. 02-14, Durham, NC: Duke University, Department of Economics.
- Leleux, B. and B. Surlemont (2003), 'Public versus private venture capital: seeding or crowding out? A pan-European analysis', *Journal of Business Venturing*, January 2003, vol. 18, no. 1, pp 81-104.
- Lerner, J. (1995), 'Venture Capitalists and the Oversight of Private Firms', *The Journal of Finance*, March 1995, vol. 50, no. 1, pp 301-318.
- Lerner, J. (1996), *The government as venture capitalist: the long-run impact of the SBIR program*, National Bureau of Economic Research Working Paper 5753, Cambridge, MA: NBER.
- Lerner, J. (1998), "'Angel" financing and public policy: An overview', *Journal of Banking and Finance*, vol. 22, no. 6-8, August 1998, pp 773-783.
- Lerner, J. and P. Gompers (1999), 'Business and management: Whales and minnows', *The Economist: The World in 2000*, London: The Economist Group.

- Lerner, J. (2002a), 'When bureaucrats meet entrepreneurs: The design of effective "public venture capital" programmes', *The Economic Journal*, vol. 112, no. 477, February 2002, pp F73-F84.
- Lerner, J. (2002b), 'Boom and Bust in the Venture Capital Industry and the Impact on Innovation', *Economic Review – Federal Reserve Bank of Atlanta*, Fourth Quarter 2002, vol. 87, no. 4, pp 25-39.
- Levine, R. and S. Zervos (1998), 'Stock Markets, Banks and Economic Growth', *The American Economic Review*, vol. 88, no. 3, June 1998, pp 537-558.
- Manigart, S. and C. Beuselinck (2001), *Supply of Venture Capital by European Governments*, Working Paper Series, Universiteit Gent.
- Manigart, S., K. De Waele, M. Wright, K. Robbie, P. Desbrieres, H.J. Sapienza and A. Beekman (2002), 'Determinants of required return in venture capital investments: a five-country study', *Journal of Business Venturing*, July 2002, vol. 17, no. 7, pp 291-312.
- Markley, D., D. Barkley, D. Freshwater, R. Shaffer and J. Rubin (1999), *Rural equity market innovation: A national snapshot*, Columbia, MO: Rural Policy Research Institute.
- Marshall, M. (2003), 'State pension fund's investment losses weigh on taxpayer', *Mercury News*, 16 February 2003.
- Marti, J. and M. Balboa (2001), *Determinants of Private Equity Fundraising in Western Europe*, Paper presented at the 2001 Financial Management Association European Conference, 10 October 2001, Lugano, Switzerland.
- Mason, C.M. and R.T. Harrison (1993), 'Strategies for expanding the informal venture capital market', *International Small Business Journal*, vol. 11, no. 4, July-September 1993, pp 23-39.
- Mason, C.M. and R.T. Harrison (2002), 'Is it worth it? The rates of return from informal venture capital investments', *Journal of Business Venturing*, May 2002, vol. 17, no. 3, pp 211-236.
- McNeill, M. and R. Fullenbaum (1995), *Pension Funds and Small Firm Financing*, Washington, DC: US Small Business Administration.
- McParland, T. *Ireland: Sources of finance*, Available at [www.eban.org/pays/eire.html](http://www.eban.org/pays/eire.html).
- Meggison, W.L. (2001), *Towards a global model of venture capital?*, University of Oklahoma, Draft Paper, 31 December 2001.
- Murphy, M. (2001), 'Still smiling: The Irish venture capital market continues to enjoy growth on the back of strong fundamentals and a strong entrepreneurial culture', *European Venture Capital Journal*, September 1, 2001.

- Myners, P. (2001), 'Institutional investment in the United Kingdom: A Review', submitted to the Rt. Hon. Gordon Brown, HM Treasury, 6 March 2001.
- National Pensions Reserve Fund Commission (2003), *Annual Report 2002*, Dublin: NTMA.
- National Pensions Reserve Fund Commission (2004), *Review 2003*, Dublin: NTMA.
- National Treasury Management Agency (2002), National Pension Reserve Fund Press Release, 25 January 2002, available at [www.ntma.ie](http://www.ntma.ie).
- National Treasury Management Agency (2003), *Report and Financial Statements for the Year ended 31 December 2002*, Dublin: Treasury Building, 2003.
- National Venture Capital Association (1999), *NVCA 1998 Yearbook*, Washington, DC: National Venture Capital Association.
- National Venture Capital Association (2003), 'Private Equity Returns Continue to be Impacted by Falling Valuations and Limited Exit Opportunities', 14 January 2003, at [www.nvca.org](http://www.nvca.org).
- National Venture Capital Association (2004), 'VC finishes at a solid \$18 billion for 2003', 27 January 2004, at [www.nvca.org](http://www.nvca.org).
- O'Donnellan, N. (2003), *SME Development – The Irish Experience*, Enterprise Ireland presentation to Bucharest, Sarajevo, Zagreb and Belgrade, 13 February 2003.
- O'Gorman, C. (2001), 'Role of public policy in "seeding" new high-tech enterprises in Dublin', presented at the European Small Business Seminar, Dublin, Ireland, 12-14 September 2001.
- Porter, M. (1990), *The Competitive Advantage of Nations*, New York: The Free Press.
- PricewaterhouseCoopers (1999), *Money for Growth: The European Technology Investment Report 1998*, London: PricewaterhouseCoopers.
- PricewaterhouseCoopers (2000), *Money for Growth: The European Technology Investment Report 1999*, London: PricewaterhouseCoopers.
- PricewaterhouseCoopers (2001), *Money for Growth: The European Technology Investment Report 2000*, London: PricewaterhouseCoopers.
- PricewaterhouseCoopers/Thomson Venture Economics/National Venture Capital Association, MoneyTree Survey (2002a),



- MoneyTree Survey: Full Year and Q4 2001 Results*, February 2002, at [www.pwcmoneytree.com](http://www.pwcmoneytree.com).
- PricewaterhouseCoopers (2002b), *Money for Growth: The European Technology Investment Report 2001*, London: PricewaterhouseCoopers.
- PricewaterhouseCoopers (2002c), *Money for Growth: The Private Equity Market – An Irish Perspective*, Dublin: PricewaterhouseCoopers.
- PricewaterhouseCoopers (2002d), *2001 Survey of Private Equity and Venture Capital in Europe*, Dublin: PricewaterhouseCoopers Global Technology Industry Group.
- PricewaterhouseCoopers/Thomson Venture Economics/National Venture Capital Association *MoneyTree Survey (2003a)*, *MoneyTree Survey: Full Year and Q4 2002 Results*, February 2003, at [www.pwcmoneytree.com](http://www.pwcmoneytree.com).
- PricewaterhouseCoopers (2003b), *Money for Growth: The European Technology Investment Report 2002*, June 2003, London: PricewaterhouseCoopers.
- PricewaterhouseCoopers (2003c), *2002 Survey of Private Equity and Venture Capital in Europe*, 2003, Dublin: PricewaterhouseCoopers Global Technology Industry Group.
- PricewaterhouseCoopers (2004), *IPO Watch Europe: Review of the Year 2003*, London: PricewaterhouseCoopers.
- Quinn, E., 'Two-tier exchange planned', *The Sunday Business Post*, October 31, 2004, p. M1.
- Reynolds, P.D., M. Hay and S.M. Camp (1999), *Global Entrepreneurship Monitor*, Kansas City, MO: Kauffman Center for Entrepreneurial Leadership at the Ewing Marion Kauffman Foundation, June 1999.
- Reynolds, P.D., W.D. Bygrave, E. Autio, L.W. Cox and M. Hay (2003), *Global Entrepreneurship Monitor, 2002 Report*, Kansas City, MO: Kauffman Foundation.
- Ross, S. (2003), 'Enterprise Ireland shares plunge', *Irish Independent*, 13 July 2003.
- Rowley, I. (2003), 'Try, try again', *CFO Europe*, 1 July 2003.
- Rubel, T. and S. Palladino (2000), *Nurturing Entrepreneurial Growth in State Economies*, 2000, Washington DC: National Governor's Association.
- Sales, R. (2000), 'Irish stock exchange and Deutsche Borse agree on technology partnership', *Wall Street and Technology*, March 2000, vol. 18, no. 3, pp 38.

- Schertler, A. (2002), 'What Drives Venture Capital Activity in Europe?', Germany: The Kiel Institute for World Economics, 25 September 2002.
- Schafer, D. (n.d.), *How Important is the Venture Capital Industry? An Assessment based on a Comparison of the US and German financial systems*, Berlin: German Institute of Economic Research.
- SEBIC (2003), 'EI seed funds continue to invest in start-up and early-stage companies', SE News, 14 October 2003.
- Shepard, D.A., A. Zacharakis and R.A. Baron (2003), 'VC's decision processes: Evidence suggesting more experience may not always be better', *Journal of Business Venturing*, 2003, vol. 18, pp 381-401.
- Sohl J. and B. Sommer (2002), 'Angel Investment Activity: Funding High Tech Innovations', presented at the New Frontiers Between Small and Large Firms, 8-10 September 2002, Sophia Antipolis: EISB Conference.
- Steil, B. (2001), 'Creating Securities Markets in Developing Countries: A New Approach for the Age of Automated Trading', *International Finance*, 2001, vol. 4, no. 2, pp 257-278.
- Steil, B. (2002a), *Changes in the Ownership and Governance of Securities Exchanges: Causes and Consequences*, Brookings-Wharton papers on financial services, 2002, available at [www.fese.be/initiatives/other\\_reports/brookings\\_wharton\\_2002.pdf](http://www.fese.be/initiatives/other_reports/brookings_wharton_2002.pdf).
- Steil, B. (2002b), 'Why do exchanges demutualise?', in *The Handbook of World Stock, Derivative and Commodity Exchanges*, United Kingdom: Mondovisione.
- Stevenson, L. and L. Anders (2001a), 'Background, Introduction and Context for the Rise of Entrepreneurship', in *Patterns and Trends in Entrepreneurship/SME Policy and Practice in Ten Economies*, (volume 3) Swedish Foundation for Small Business Research.
- Stevenson, L. and L. Anders (2001b), 'The Case of Ireland', in *Patterns and Trends in Entrepreneurship/SME Policy and Practice in Ten Economies* (volume 3), Swedish Foundation for Small Business Research.
- Suiter, J. (2004), 'Pension fund plans €800m property move', *The Sunday Times*, 25 April 2004, p. 3.3.
- Telesis Consultancy Group (1982), *Review of Industrial Policy: A Report Prepared by the Telesis Consultancy Group*, Dublin: National Economic and Social Council.
- Timmons, J.A. and W.D. Bygrave (1986), 'Venture capital's role in

- financing innovation for economic growth', *Journal of Business Venturing*, Spring 1986, vol. 1, no. 2, pp 161-176.
- VCJ Staff (2004), 'Limited Partner Notes', *Venture Capital Journal*, 1 February 2004.
- VentureOne (2003a), 'Valuations for US Venture-backed Companies (1997-3Q 2003)', VentureOne, San Francisco, CA.
- VentureOne (2003b), 'Investment in European Venture-Backed Companies, 2000-3Q 2003', VentureOne, San Francisco, CA.
- Walsh, M. and J. Murray (1993), 'Pension Fund Investment in Venture Capital', Dublin: Stationery Office.
- Webb, N. (2002), 'Enterprise Ireland takes a €180m bath', *Irish Independent*, 28 July 2002.
- Whelan, S.F. and Co (2001), *Irish Pension Funds: Size, Growth and Composition of Assets*, A research report prepared for the Irish Association of Pension Funds, Dublin: Shane F. Whelan and Co, October 2001.
- Wilmerding, A. (2002), *Term Sheets and Valuations – A Line by Line Look at the Intricacies of Venture Capital Term Sheets and Valuations*, Boston: Aspatore Books.
- Zacharakis, A.L., W.D. Bygrave and D.A. Shepard (2001), *Global Entrepreneurship Monitor, 2000 Report*, Kansas City, MO: Kauffman Center for Entrepreneurial Leadership at the Ewing Marion Kauffman Foundation.
- Zacharakis, A.L., H.M. Neck, W.D. Bygrave and L.W. Cox (2002), *Global Entrepreneurship Monitor, 2001 Report*, Kansas City, MO: Kauffman Center for Entrepreneurial Leadership at the Ewing Marion Kauffman Foundation.