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978-0-521-83073-7 - The Politics of High-Tech Growth: Developmental Network States in the Global Economy

Sean O Riain

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The Politics of High-Tech Growth

Developmental Network States in the Global Economy

The 1990s saw a surprising economic boom in the Republic of Ireland's "Celtic Tiger" economy, driven by high-tech foreign investment. This book argues that beneath the Irish trade and foreign investment boom lies a much more interesting story of regional innovation promoted by an alliance between the state and local technical communities. This alliance was governed through a decentralized set of state institutions, drawing on "global" and "local" economic and political resources. This "Developmental Network State" has had a significant impact on the growth of Ireland's high-tech cluster and is central to the emergence of an international network of "global high-tech regions" from Silicon Valley to Ireland, Taiwan, and Israel. The book provides a detailed study of the rise of the software industry in Ireland and of the state institutions and political conditions that promoted it. It shows how new "network-state" policies and institutions have been central to high-tech regions elsewhere. Ultimately, the analysis points to an emerging political choice between neoliberal policies that attack these social and political institutions and social democratic policies that sustain the social embedding of the global information economy.

Seán Ó Riain is Professor of Sociology, National University of Ireland, Maynooth.

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Sean O Riain

Frontmatter

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Frontmatter

[More information](#)

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Sean O Riain

Frontmatter

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Sean O Riain

Frontmatter

[More information](#)

CONTENTS

<i>List of Tables</i>	page ix
<i>List of Figures</i>	xi
<i>Abbreviations</i>	xiii
<i>Preface</i>	xv
Part I: Development in the Global Information Economy	
1. Networks of Development: Globalization, High Technology, and the Celtic Tiger	3
2. State Developmentalisms and Capitalist Globalizations	15
3. Explaining the Celtic Tiger	39
Part II: Software and the Celtic Tiger	
4. "Location Nation": Remaking Society for Foreign Investment	69
5. Indigenous Innovation and the Developmental Network State	90
6. Making Global and Local	111
7. The Class Politics of the Global Region	127
Part III: The Politics of the Developmental Network State	
8. Institutions of the Developmental Network State	143
9. Politics and Change in Development Regimes	167
10. Developmental Bureaucratic and Network States in Comparative Perspective	193
11. Futures of the Network State	232
A. Appendix A: Methodology of the Study	243
<i>Bibliography</i>	247
<i>Index</i>	265

Cambridge University Press

978-0-521-83073-7 - The Politics of High-Tech Growth: Developmental Network States in the Global Economy

Sean O Riain

Frontmatter

[More information](#)

LIST OF TABLES

2.1. Developmental Bureaucratic and Network States	<i>page 37</i>
3.1. Key Indicators of the Turnaround in the Irish Economy, 1970–2002	42
3.2. Institutional Change in the Irish Political Economy, 1960–2000	46
3.3. Irish-Owned Industry, 1991–1999	50
3.4. Foreign-Owned Industry, 1991–1999	52
3.5. Number of Companies, Employment, and Revenues of Foreign and Irish Ownership in the Irish Software Industry, 1987–1997	57
3.6. Sales and Exports in the Indigenous Software Industry in India, Ireland, and Israel, 1993–1997	59
3.7. Sectoral Employment Growth, 1961–2000	61
4.1. Software Localization and Fulfillment, 1992–2001	82
4.2. Foreign-Owned Companies with Software Development Operations, 1992–2001	85
5.1. Trends in Private Equity Investment, 1997–1999 (000s of Irish Pounds)	96
5.2. R&D Funding in Indigenous Software Firms, 1993–1995	98
5.3. The Impact of State Grant Aid and Other Factors on Product Orientation, Export Orientation, and Employment among Indigenous Software Firms	102
5.4. A Longitudinal Analysis of the Impact of Grant Aid on Employment among Indigenous Software Firms, 1994–1997	103
5.5. Leading Indigenous Software Companies, 1992–2001	106
6.1. Local and International Alliances among Companies, 1997	113
6.2. Percentage of Companies Having either Technology/Business or Contracting Alliances with either Irish or International Firms, 1997	114
6.3. Explaining the Pattern of Interfirm Networking for Irish Firms	115

Cambridge University Press

978-0-521-83073-7 - The Politics of High-Tech Growth: Developmental Network States in the Global Economy

Sean O Riain

Frontmatter

[More information](#)

x

List of tables

6.4. Factors Affecting Overseas Employment among Indigenous Software Firms	117
7.1. Emigration Rates of Degree-Level Graduates, 1984–1996	128
7.2. Managerial and Professional Occupations among Irish-Born Residents of the United States	129
7.3. Inward Migration Rates by Country and Year of Return for Usual Residents of the Republic of Ireland, 1996	132
8.1. The Embeddedness of State Agencies and Commissions	150
10.1. Strategies of State Developmentalism in Comparative Perspective	196
10.2. Comparative Developmental State Institutions	206
10.3. Comparative Historical Development of Developmental Bureaucratic and Network States	213
11.1. Three Futures of the Network State	238

LIST OF FIGURES

2.1. Stylized Version of Senghaas/Mjoset Model of Autocentric Development	<i>page 25</i>
2.2. Dilemmas of Institution-Building in Developmental States	31
3.1. The Vicious Circle of Fordist Underdevelopment	41
3.2. The Virtuous Circle of Post-Fordist Development	62
4.1. Technology-Driven Commodity Chains	79
11.1. The Vicious Circle of Neoliberal Cost Competitiveness	235
11.2. The Virtuous Circle of the Socially Embedded Economy	239

ABBREVIATIONS

ABT	An Bord Tráchtála
BDCC	Buyer-Driven Commodity Chain
BIRD	Bi-National Industrial R&D
CBT	Computer-Based Training
CS	Computer Science
CSE	Center for Software Engineering
CSO	Central Statistics Office
DBS	Developmental Bureaucratic State
DCU	Dublin City University
DNS	Developmental Network State
EC	Electronic Commerce
EDB	Economic Development Board
EDP	Enterprise Development Program
EEC	European Economic Community
EI	Enterprise Ireland
ELI	Export Led Industrialization
EPTR	Export Profit Tax Relief
EPZ	Export-Processing Zone
ERSO	Electronics Research and Service Organization
ESRI	Economic and Social Research Institute
EU	European Union
FÁS	Forás Áiseanna Saothair (labor-market services agency)
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
HEA	Higher Education Authority
HSIP	Hsinschu Science-Based Industrial Park (Taiwan)
IBEC	Irish Business and Employers Confederation
IC	Irish Computer
ICSA	Irish Computer Services Association (currently ISA)

Cambridge University Press

978-0-521-83073-7 - The Politics of High-Tech Growth: Developmental Network States in the Global Economy

Sean O Riain

Frontmatter

[More information](#)

xiv

Abbreviations

ICSTI	Irish Council for Science, Technology, and Innovation
ICT	Information and Communication Technologies
IDA	Industrial Development Authority
IEP	Irish Pounds (unit of currency)
IMF	International Monetary Fund
ISA	Irish Software Association (formerly ICSA)
ISI	Import Substitution Industrialization
IT	Information Technology
ITRI	Industrial Technology Research Institute (Taiwan)
LRC	Localization Resources Center
LSM	Labor Settlement Movement (Israel)
MAC	(National) Microelectronics Application Center
MNE	Multinational Enterprise
MTI	Multimedia Technologies Ireland
NBST	National Board for Science and Technology
NESC	National Economic and Social Council
NESF	National Economic and Social Forum
NIHE	National Institutes for Higher Education
NMRC	National Microelectronics Research Center
NSC	National Software Center
NSD	National Software Directorate
OCS	Office of the Chief Scientist (Israel)
ODM	Original Design Manufacturing
OECD	Organization for Economic Cooperation and Development
OEM	Original Equipment Manufacturing
OTP	Office of Technology Policy (Israel)
PAT	Program in Advanced Technologies
RTC	Regional Technical College
PAP	People's Action Party (Malaysia)
PDCC	Producer-Driven Commodity Chain
PRC	People's Republic of China
R&D	Research and Development
SLIG	Software Localization Interest Group
SME	Small/Medium Sized Enterprise
SSISI	Statistical and Social Inquiry Society of Ireland
STAG	Science and Technology Advisory Group
STIAC	Science, Technology, and Innovation Advisory Council
TDCC	Technology-Driven Commodity Chain
TFP	Total Factor Productivity
TNC	Transnational Corporation
UCD	University College Dublin
UL	University of Limerick
VEC	Vocational Education Committee
WAIPA	World Association of Investment Promotion Agencies

Cambridge University Press

978-0-521-83073-7 - The Politics of High-Tech Growth: Developmental Network States in the Global Economy

Sean O Riain

Frontmatter

[More information](#)

PREFACE

In 1992, I took the path followed by many young Irish people at that time and emigrated to the United States. In my case, I left Dublin for Berkeley, California, to get a Ph.D. in sociology and, within a year or two, I found myself beginning to study the Irish software industry from 6,000 miles away in Silicon Valley. Over the next ten years or so, I followed the social ties within the industry – at first through the transnational ties that connected Silicon Valley and Ireland, then within a software development team in a Silicon Valley company in Dublin, and on through interviews in corporate and state offices, as well as with software developers themselves.

Ultimately, this project took me far from where I had expected to travel in the course of my sociological journey. I had begun my research as an investigation into the underdevelopment of the Irish economy and the accompanying mass unemployment and emigration of the 1980s. My initial research, however, revealed a more complex picture with glimmers of industrial revival – an impression confirmed by my early visits to Irish software firms. To my surprise, I found myself walking through the cubicles of youthful software developers as I met the managers that I was interviewing, and I discovered a world of vibrant social spaces and commercial entities that turned my project on its head. The ethnographic moment of those interviews challenged what I felt I knew about the inevitability of industrial underdevelopment in Ireland and defined the puzzle for my research: how to reconcile the development that I observed around me, which soon became central to the “Celtic Tiger” boom, with the empirical reality and sociological theorization of overpowering global forces. This book is an attempt to grapple with the ambiguities of this situation and to provide a way to think through its dilemmas and possibilities.

However, if this research took me to unexpected sociological destinations, it also took me to social destinations more familiar than I had expected. I had expected to face the ethical and political dilemmas of “studying down” – a male, middle-class researcher eliciting stories of exclusion in the kitchens of the high-unemployment

Cambridge University Press

978-0-521-83073-7 - The Politics of High-Tech Growth: Developmental Network States in the Global Economy

Sean O Riain

Frontmatter

[More information](#)

xvi

Preface

regions around Dublin. Instead, I found myself sitting in comfortable offices and the bars of affluent Dublin, getting to know a world parallel to that in which I had grown up – a world dominated by middle-class men.

By the time I carried out my research in Ireland, I had made many of the connections and followed many of the transnational career paths that were such a big part of my coworkers' experience. My own life in the social sciences had mirrored the experiences of many of those I met in my research – educated on different sides of the same college campuses; working at home and abroad on emerging meanings and logics; one foot in the local culture, the other in the global economy. Software had seemed like a distant world, only for ethnography to reveal the many aspects already familiar to me from life in the Irish knowledge-worker diaspora.

To my surprise, I was “studying up” and even “across” in socially familiar and politically uncertain territories. The dilemmas of this research were challenging – trying to maintain political heterodoxy without breaching the assumed trust that comes with social similarity; respecting the abilities and insights of participants in the high-technology world of the Celtic Tiger, while maintaining an analytical distance from the assumptions of that world; and attempting to fashion an argument that might bridge the worlds of high technology and progressive political change. This social separation also made me less comfortable in the worlds of sociology and progressive politics because there have been few clear-cut political projects to which I could connect the findings of my research. This book is an attempt – written from a place of social familiarity and sociological ambiguity – to make some of those connections among the global information economy, its social conditions and consequences, and the political choices and possibilities contained within them.

Individual projects are always profoundly shaped by their barely hidden foundation of institutional and, more importantly, social supports – both the research in this book and the trajectory of the project itself have confirmed this for me. Financial support for this research was provided by the Graduate Division, University of California, Berkeley; the Department of Sociology, University of California, Berkeley; the John L. Simpson Fellowship of the Institute for International Studies, University of California, Berkeley; the Economic and Social Research Institute (ESRI), Dublin; Forfás and Forbairt, Dublin; the Joint Committee on Western Europe of the American Council of Learned Societies and the Social Science Research Council, with funds provided by the Ford and Mellon Foundations; the Academic Senate, University of California, Davis; Institute for Governmental Affairs, University of California, Davis; and the Institute for Labor and Employment, University of California.

I received helpful comments at presentations of parts of this research at the ESRI, Dublin; Conference on “Ireland, Europe, and the Global Information Society,” Dublin; the Center for Western European Studies, University of California, Berkeley; the Center for Work, Technology, and Organizing, Stanford University; Braverman Memorial Conference on the Labor Process, SUNY-Binghamton; the Sloan Foundation Globalization Workshop for Junior Scholars, Duke University;

Cambridge University Press

978-0-521-83073-7 - The Politics of High-Tech Growth: Developmental Network States in the Global Economy

Sean O Riain

Frontmatter

[More information](#)*Preface*

xvii

and Departments of Sociology at Queens College, City University of New York; Indiana University, Bloomington; University of California, Davis; Stanford University; University of California, Berkeley; Northwestern University; and the University of Arizona.

Invaluable research assistance was provided by Brooke Bennett, Matt Keller, Niall Moran, Dina Biscotti, and Julie Collins. Alia Winters has been a wonderfully patient and supportive editor. I received detailed and very constructive comments from two referees, Lars Mjoset and Neil Fligstein. And I give special thanks to Mark Granovetter, who believed in this book when it was a very raw dissertation – Mark’s calm encouragement and wry sense of humor have helped me to keep going over the past few years.

The ESRI provided invaluable support to me during the past ten years, above and beyond the call of duty. Special thanks go to Damian Hannan, Kieran Kennedy, Brendan Whelan, and Chris Whelan. A special word of appreciation goes to John Sterne, without his dedicated and insightful journalism during the past twenty-five years, a great deal of the analysis in this study would not have been possible. He has been extremely generous with time, encouragement, comments, and access to back issues.

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Cambridge University Press

978-0-521-83073-7 - The Politics of High-Tech Growth: Developmental Network States in the Global Economy

Sean O Riain

Frontmatter

[More information](#)

xviii

Preface

John Walton, Michael Peter Smith, Frank Hirtz, Mike Hout, Hugh King, JoAnn King, Debbie Burns, Bob Burns, Art O'Connor, and the Starry Plough soccer team.

Thanks for everything to my family in Dublin, especially for letting me come and go around the world without guilt or dispute. Thanks to Eimer, Gearóid, and Ciarán for being great brothers and sister. All my love and thanks to my parents, Seán and Brighdín, who always tried to give us a broad-minded view on life, a curiosity about the world, and a sense of justice – values that I hope run throughout this book. I dedicate this book to you both. Thanks also for invaluable indexing and proofreading!

Aidan and Aisling – thanks for regularly interrupting the work on this book and sorry for the time it has cost you. Finally, all my love and thanks to my fantastic wife, Rebecca King. You have been great – the demands of listening to job talks over and over look easy now compared to raising children and writing books . . . it would hardly have been possible without you, but it certainly wouldn't have been nearly as much fun.