

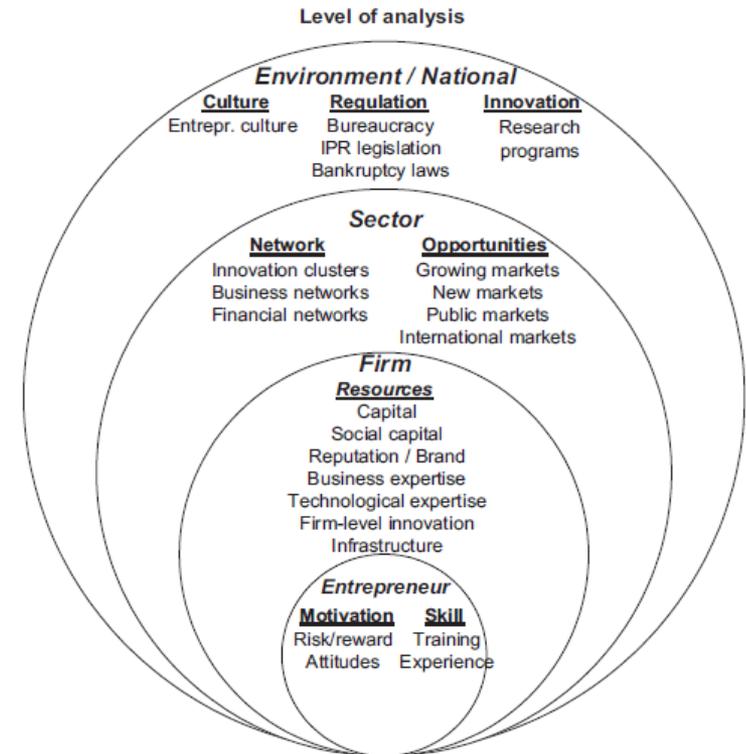
Industrial policy – supporting innovation, exports, entrepreneurship and business scaling

Stephen Roper

Stephen.roper@wbs.ac.uk

Innovation, exporting, entrepreneurship and business scaling

- Innovation, exporting and entrepreneurship are perhaps the key competitive weapons for a small open economy (although costs matter too of course)
- For firms this mean that they:
“... cannot afford to leave innovation to chance. Rather, managements are forced by market pressures to support innovation activity systematically” (Baumol, 2002, p. ix).
- For government this means taking action to support innovation, exporting and entrepreneurship and this involves decisions about the level and focus of any intervention
- This suggests wide-ranging agendas (including education, skills, competition policy etc.) but in terms of industrial policy involves:
 - Building system strengths
 - Supporting business development



Innovation and exporting depend on both internal and external enablers

- Innovation generates exports, and innovators are more likely to generate growth from exporting than non-innovators ([Love and Roper, 2013](#)). In other words, innovation and exporting work jointly to improve business performance and productivity – a strong synergy
- But ... both innovation and exporting depend strongly both on firms' internal capabilities *and* the resources available externally – partnerships, alliances, networks and spill-overs
- These external or 'system' resources are more important for innovation/exporting in smaller firms. Absorptive capacity is also important, however.
- Policy implications?
 - 1. Innovation/export synergies suggest the benefits of co-ordinated policy support. More difficult in the UK – UKTI (exporting) and TSB (innovation). Here, one agency but still two Ministries. Co-ordination?
 - 2. System capabilities are important in supporting innovation and exporting

Building system strengths

Building system strengths – a key role for government

- What is the innovation system?

‘...that set of distinct institutions which jointly and individually contribute to the development and diffusion of new technologies and which provides the framework within which governments form and implement policies to influence the innovation process. As such it is a system of interconnected institutions to create, store and transfer the knowledge, skills and artefacts which define new technology’ (Metcalf, 1997, pp.461-462)
- Government’s role is to:

‘... address systemic failures that block the functioning of innovation systems, hinder the flow of knowledge and technology and, consequently, reduce the overall efficiency of R&D efforts’. (OECD, 1999, p. 10).
- **System failures?**
- System failures relate to framework conditions, capabilities and links between system actors:
 - Infrastructural failures
 - Transmission or technology adoption failures
 - Lock in or path dependency
 - Regulatory or legal failures
 - Failures of political or social values or attitudes
 - ‘Closed’ network failures leading to lock-in
 - Weak diffusion mechanisms
 - Capabilities failure on the part of groups of system actors
- Source: Woolthuis et al. (2005)

Addressing system failures: Facilitating OI in Northern Ireland – An evidence-based initiative

- **Evidence base – key points**
- Open Innovation (OI) has strong benefits for growth and exports, particularly for SMEs
- NI has persistently lagged other UK regions in terms of innovation and particularly open innovation
- Current policy is evidently not working. System failures and market failures (spill-overs) justify public intervention
- **Policy action**
- **Consider an open innovation centre for Northern Ireland with aim of**
 - Building awareness of open innovation
 - Advocacy around open innovation to influence policy development
 - Capability building in firms
 - Inbound and outbound partner information
 - Facilitating innovation partnerships
 - Structuring innovation partnerships
- **Proposals developing – now at economic appraisal stage**

But a systemic approach extends beyond innovation...

- With a recent focus on national systems of entrepreneurship:

” National System of Entrepreneurship is the dynamic, institutionally embedded interaction between entrepreneurial attitudes, activities, and aspirations, by individuals, which drives the allocation of resources through the creation and operation of new ventures” (Acs, Autio & Szerb 2012)



- And, as a system subject to same types of system failures – bottlenecks – as innovation systems

Calibrating systems using GEDI – the Global Entrepreneurship Development Index

	<u>Institutional Variable</u>	<u>Individual Variable</u>	<u>Pillars</u>	<u>Northern Ireland Rank (7 countries +NI)</u>			
<i>Attitudes</i>	Market Agglomeration	0.315	Opportunity Perception	0.153	Opportunity Perception	0.075	75
	Education PostSec	0.485	Skill Perception	0.417	Start-up Skills	0.353	47
	Business Risk	1.000	Nonfear of Faliure	0.144	NonFear of Failure	0.547	26
	Internet Usage	0.825	Know Entrepreneurs	0.318	Networking	0.413	32
	Corruption	0.971	Career Status	0.503	Cultural Support	0.658	11
<i>Activity</i>	Economic Freedom	0.931	TEA_Opportunity	0.836	Opportunity Startup	0.656	9
	Tech_Absorption	0.724	TEA_Technology	0.539	Tech Sector	0.527	15
	Staff Training	0.767	TEA_Education	0.517	Quality of Human Resources	0.441	25
	Domestic Market	0.865	TEA_Competition	1.000	Competition	0.725	5
<i>Aspiration</i>	Technology Transfer	0.777	TEA_NewProduct	0.389	Product Innovation	0.473	28
	GERD	0.364	TEA_NewTech	0.120	Process Innovation	0.169	36
	Business Strategy	0.857	TEA_Gazelle	0.239	High Growth	0.404	25
	Globalisation	0.806	TEA_Export	0.590	Internationalisation	0.473	27
	Venture Capital	0.908	Informal Investment	0.244	Risk Capital	0.397	18

- Illustrative GEDI system analysis for Northern Ireland by Erkkö Autio – 2011 data

And identifying priorities for policy attention....

- Suggested issues for Northern Ireland
 - Opportunity recognition
 - Process innovation
 - Networking
- Removing these bottlenecks should release constraints on resource use across the system



Systems effects on entrepreneurial ambition – the evidence

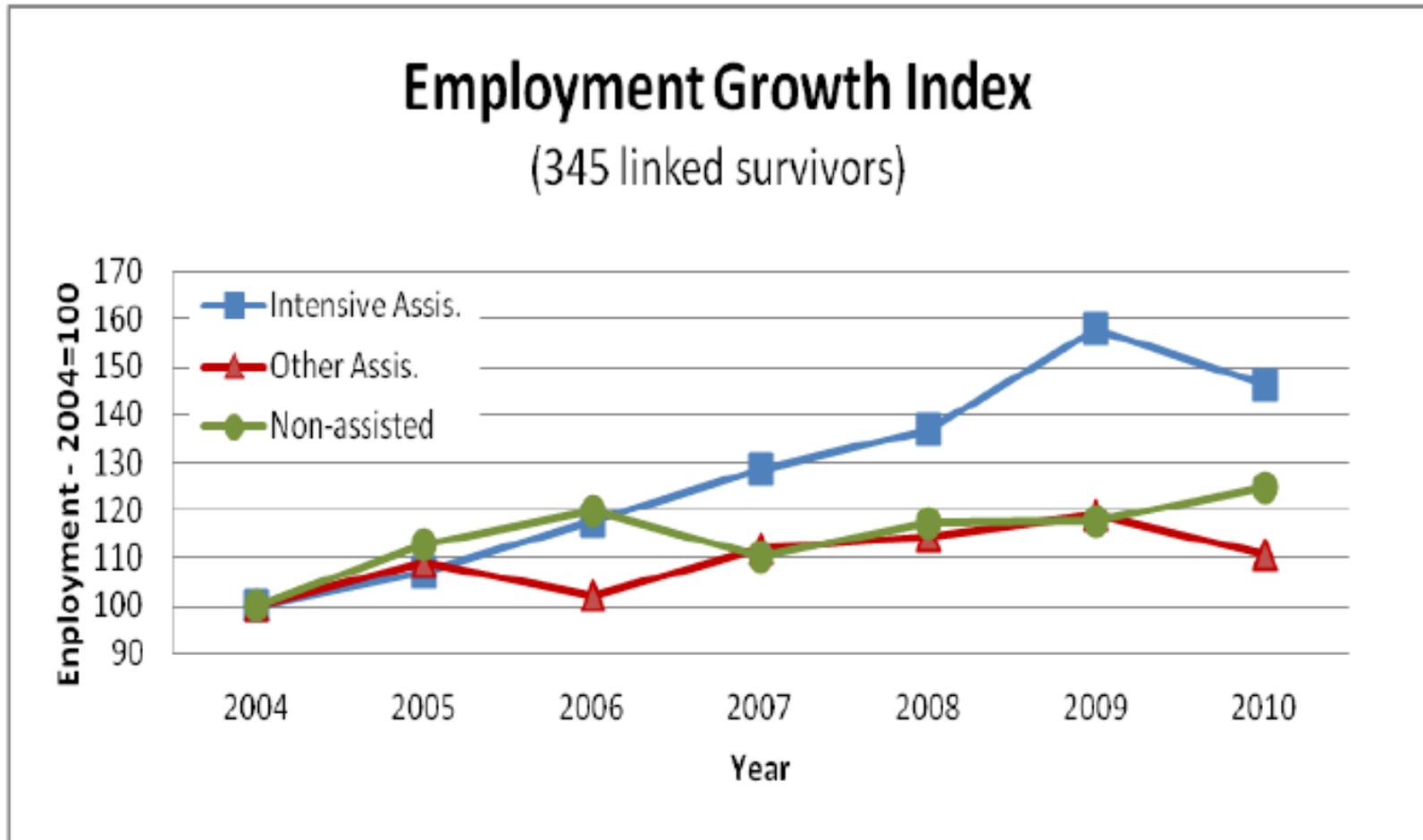
- Systems can impact on entrepreneurial outcomes but studies using the Global Entrepreneurship Monitor (GEM) data suggest they also impact on ambition and the prevalence of growth oriented entrepreneurs
- Recent meta analysis by [Jonathan Levie and Erkkö Autio](#) (2013) suggests a number of key results:
 - The higher the regulatory burden in a country, the lower the prevalence rate of growth-oriented entrepreneurs.
 - When the rule of law is strong, and regulatory burden is high, then the prevalence of early-stage entrepreneurs is low.
 - Significant positive associations exist between the prevalence of wealth motives for starting a business and relative prevalence of growth-oriented entrepreneurs.
 - Home market size is positively linked to the relative prevalence of growth-oriented entrepreneurs.
- Some implications are obvious, e.g. regulation. But do Irish entrepreneurs see the EU as their home market, or Ireland ?

Building enterprise capabilities

High growth v sustainable growth – the evidence

- Numerous empirical studies have demonstrated the importance of high growth SMEs in creating new jobs and introducing and commercialising radical innovations.
- The apparent contribution of high-growth firms to job creation depends very significantly on the measurement approach adopted
- Our best estimates are that high growth firms (c. 1 per cent of all firms) created 22 per cent of *all* jobs created in the UK in 2007-2010 ([Anyadike-Danes et al. 2013](#))
- The evidence also suggests, however, that:
 - the contribution of high-growth firms to UK job creation has declined markedly since 2005
 - high growth is episodic and rarely sustained
- Long-term evaluations of business support in the UK suggest the value for sustained growth of intensive mentoring and developmental support

Long-term effects of Business Link advisory support



Supporting sustainable growth – what works?

OECD-LEED Programme report and (forthcoming) ERC White Paper reviewed:

Systemic Approaches

- Danish Growth Houses
- U.S. Jobs and Innovation Accelerator Challenge

Holistic Approaches

- Sweden's national incubator program
- Ontario's Medical and Related Science Discovery District (MaRS)
- The Dutch Growth Accelerator
- Scotland's 'Companies of Scale' programme

Thematic measures

- Germany's high-tech grunderfonds
- Commercialisation Australia
- England's Growth Accelerator
- Ireland's Management for Growth Programme

- This leads to best practice guidelines for supporting sustainable growth relating to:
 - Enabling effective self-selection into support schemes
 - Firm selection criteria need to be strong, and reflect both the private and social benefits of supporting the development of specific businesses
 - Schemes are likely to involve sustained engagement with a business over a period of years.
 - Supporting sustained fast growth requires a dual focus on the development of the business and the capabilities of the entrepreneur.
 - Measures should be partnership based - business schools perhaps in partnership with banks or Chambers.
 - Delivery is likely to be regionally organised to facilitate attendance and peer-group learning.
- The Management for Growth programme typifies many of these guidelines very well except perhaps need for sustained support as the business develops

Final remarks

- Industrial policy priorities are clear around innovation, exporting, entrepreneurship and minimising costs
- There remain market and system failures which suggest a role for government intervention at both system and firm level
- There is no silver bullet but a robust evidence-base can inform policy priorities and the design of specific interventions
- Robust evidence is expensive but cheaper and less risky than misguided policy and its potential consequences
- Evaluation should be both summative and formative – ex post for sure, but also need to think about potential role of ex ante evaluation approaches such as RCTs

Continuing challenges

- **Substantive:**
- Continuing the development of Ireland's innovation and entrepreneurship systems:
 - Where does responsibility lie for this development?
 - Where are the current bottlenecks?
- Building on leading practice locally (and internationally) to better support firms with innovation/export/growth potential.

- **Professional:**
- Developing a robust evidence-base and using it to shape policy options
- Looking beyond market failure as a justification for intervention
- Embedding evaluation and feedback into the policy development process. What works? Why?

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ERC Key Contacts

Website

www.enterpriseresearch.ac.uk

Leadership team

- Director Stephen Roper – stephen.roper@wbs.ac.uk
- Deputy Director Mark Hart – mark.hart@aston.ac.uk
- Associate Director (Publications) Mike Wright - mike.wright@imperial.ac.uk
- Associate Director (Capability Building) Sara Carter - sara.carter@strath.ac.uk

Administration

- Centre Manager (Warwick) – Deidre Kennedy - d.r.kennedy@warwick.ac.uk
- Centre Manager (Aston) Jackie Carter – j.carter1@aston.ac.uk

Research theme leads

- Theme 1: Entrepreneurial Ambition and Growth – Erkko Autio – erkko.autio@imperial.ac.uk
- Theme 2: Entrepreneurial Leadership, Capabilities and Growth – Andy Lockett – andy.lockett@wbs.ac.uk
- Theme 3: Diversity and SMEs in the Emerging Economy – Sara Carter – sara.carter@strath.ac.uk
- Theme 4: Finance and Growth – Mike Wright-- mike.wright@imperial.ac.uk
- Theme 5: SME Innovation, Exporting and Growth – Jim Love – j.h.love@aston.ac.uk
- Theme 6: Firm Dynamics, Job Creation and Productivity Growth – Mark Hart - mark.hart@aston.ac.uk