

# Regional Competitiveness in a Global Economy: Issues for Luxembourg

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*Luxembourg*  
*May 25, 2005*

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This presentation draws on ideas from Professor Porter's articles and books, in particular, [The Competitive Advantage of Nations](#) (The Free Press, 1990), "The Microeconomic Foundations of Economic Development," in [The Global Competitiveness Report 2004](#), (World Economic Forum, 2004), "Clusters and the New Competitive Agenda for Companies and Governments" in [On Competition](#) (Harvard Business School Press, 1998), and the *Clusters of Innovation Initiative* ([www.compete.org](http://www.compete.org)), a joint effort of the Council on Competitiveness, Monitor Group, and Professor Porter. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means - electronic, mechanical, photocopying, recording, or otherwise - without the permission of Michael E. Porter.

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# Luxembourg Competitiveness 2005

- Based a strong upswing of growth in the mid-90s, Luxembourg has become one of Europe's **most prosperous regions**
- The successful development of the **financial services cluster**, now the core engine of the Luxembourg economy, has been the main driver of success
- Since 2001, Luxembourg has registered from **significantly lower growth rates**, reflecting the slow-down in the European economy and in the financial services cluster
- The changing competitive landscape in financial services, especially regulatory changes on the European level, are creating new **challenges** for the Luxembourg cluster

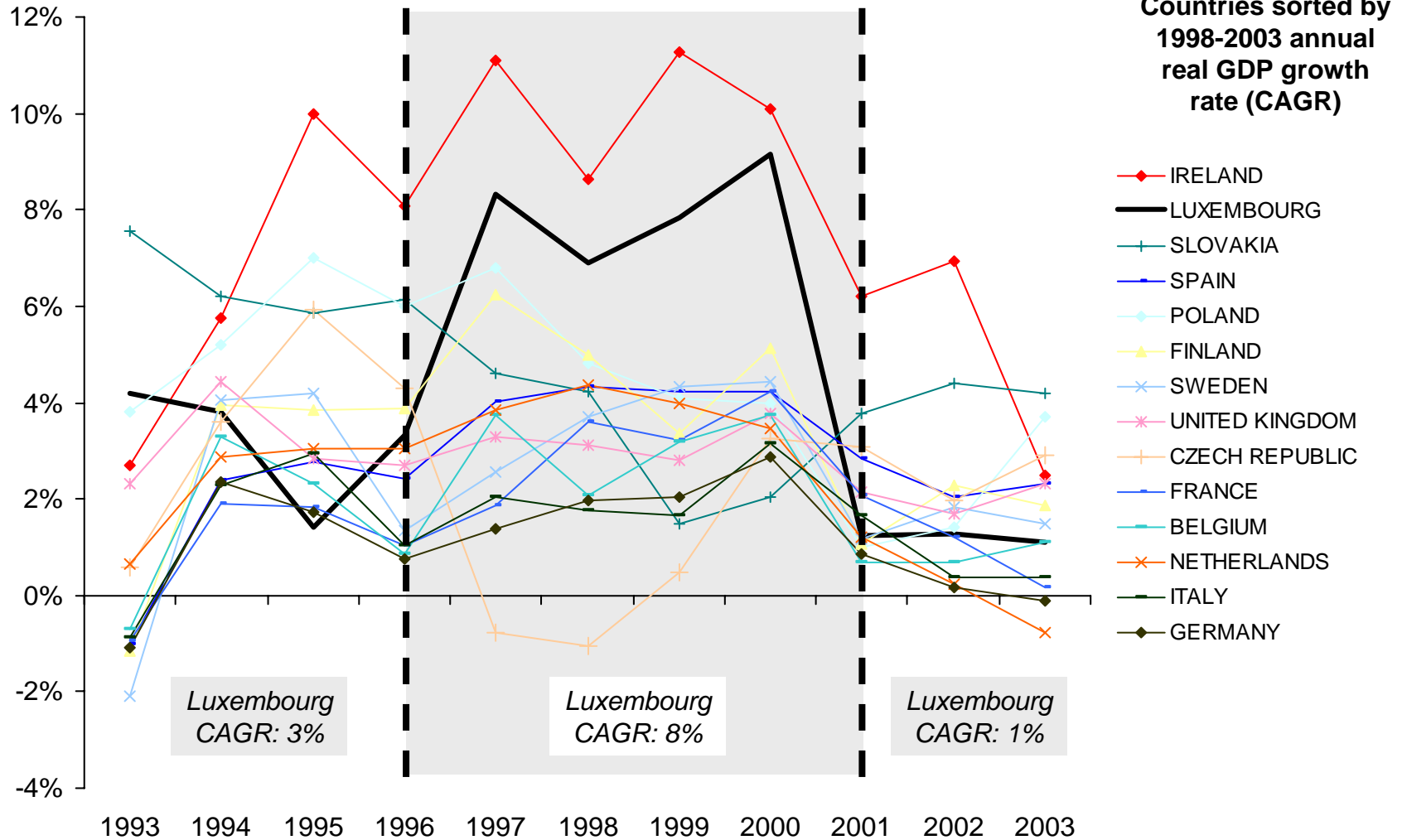


- To sustain and grow its high level of prosperity in the new competitive environment, Luxembourg needs to define a clear **competitiveness strategy**

# Comparative Economic Performance

## Real GDP Growth Rates

Annual growth rate  
of real GDP



# Regional Competitiveness in a Global Economy: Issues for Luxembourg

- **Fundamentals of Regional Competitiveness**
- **Luxembourg's Current Competitive Position**



- Towards a Competitiveness Agenda for Luxembourg

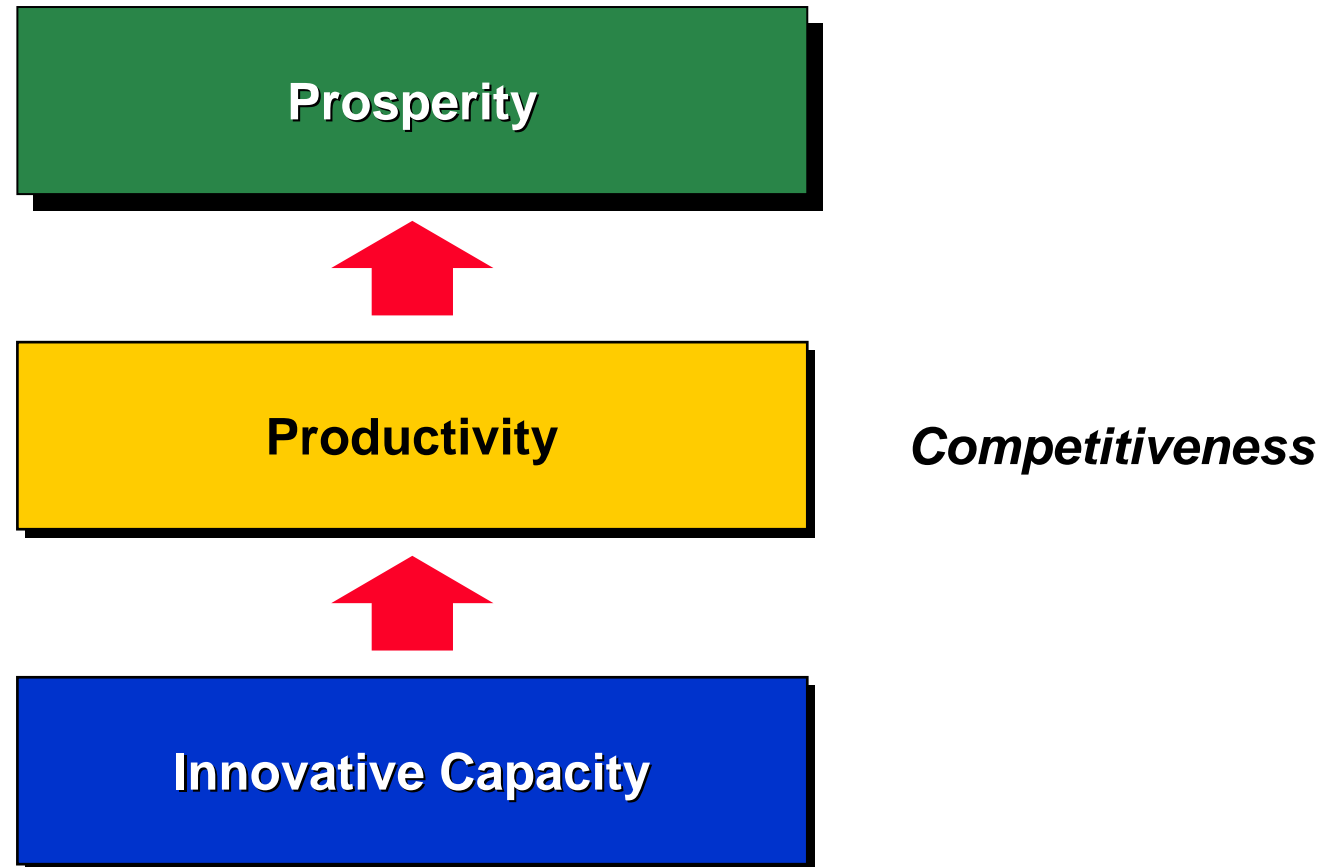
# What is Competitiveness?

- Competitiveness is determined by the **productivity** (value per unit of input) with which a nation, region, or cluster uses its human, capital, and natural resources. Productivity sets a nation's or region's standard of living (wages, returns on capital, returns on natural resources)
  - Productivity depends both on the **value** of products and services (e.g. uniqueness, quality) as well as the **efficiency** with which they are produced.
  - It is not **what** industries a nation or region competes in that matters for prosperity, but **how** firms compete in those industries
  - Productivity in a nation or region is a reflection of what both domestic and foreign firms **choose to do in that location**. The location of ownership is secondary for national prosperity.
  - The productivity of **“local”** industries is of fundamental importance to competitiveness, not just that of traded industries
  - Devaluation and revaluation do **not** make a country more or less “competitive”



- Nations and regions compete in offering the **most productive environment** for business
- The public and private sectors should play **different but interrelated roles** in creating a productive economy

# Innovation and Competitiveness



- Innovation is **more than just scientific discovery**
- There are **no low-tech industries**, only low-tech firms

# Determinants of Competitiveness

Macroeconomic, Political, Legal, and Social Context

## Microeconomic Foundations

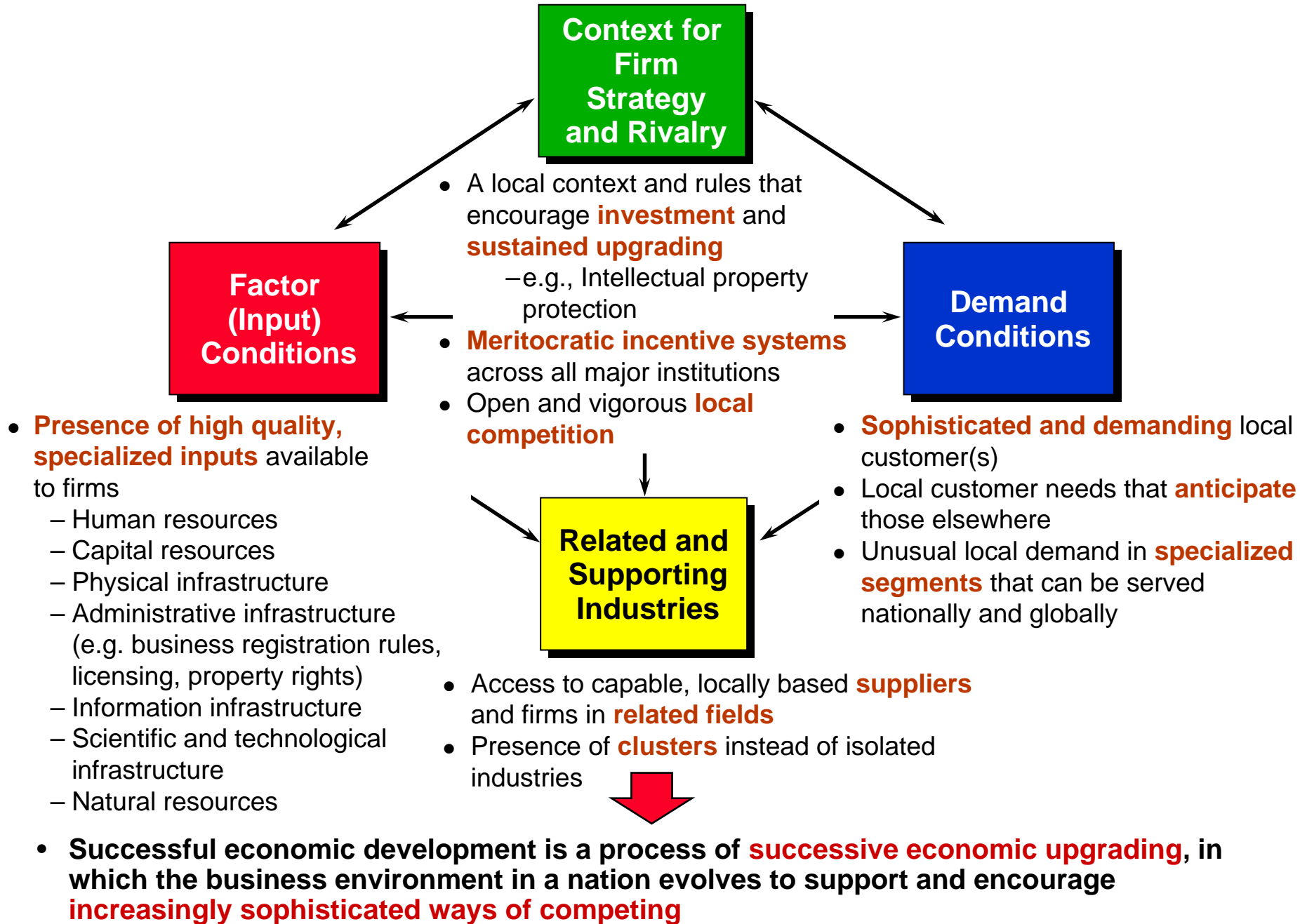
The Sophistication  
of Company  
Operations and  
Strategy



The Quality of the  
Microeconomic  
Business  
Environment

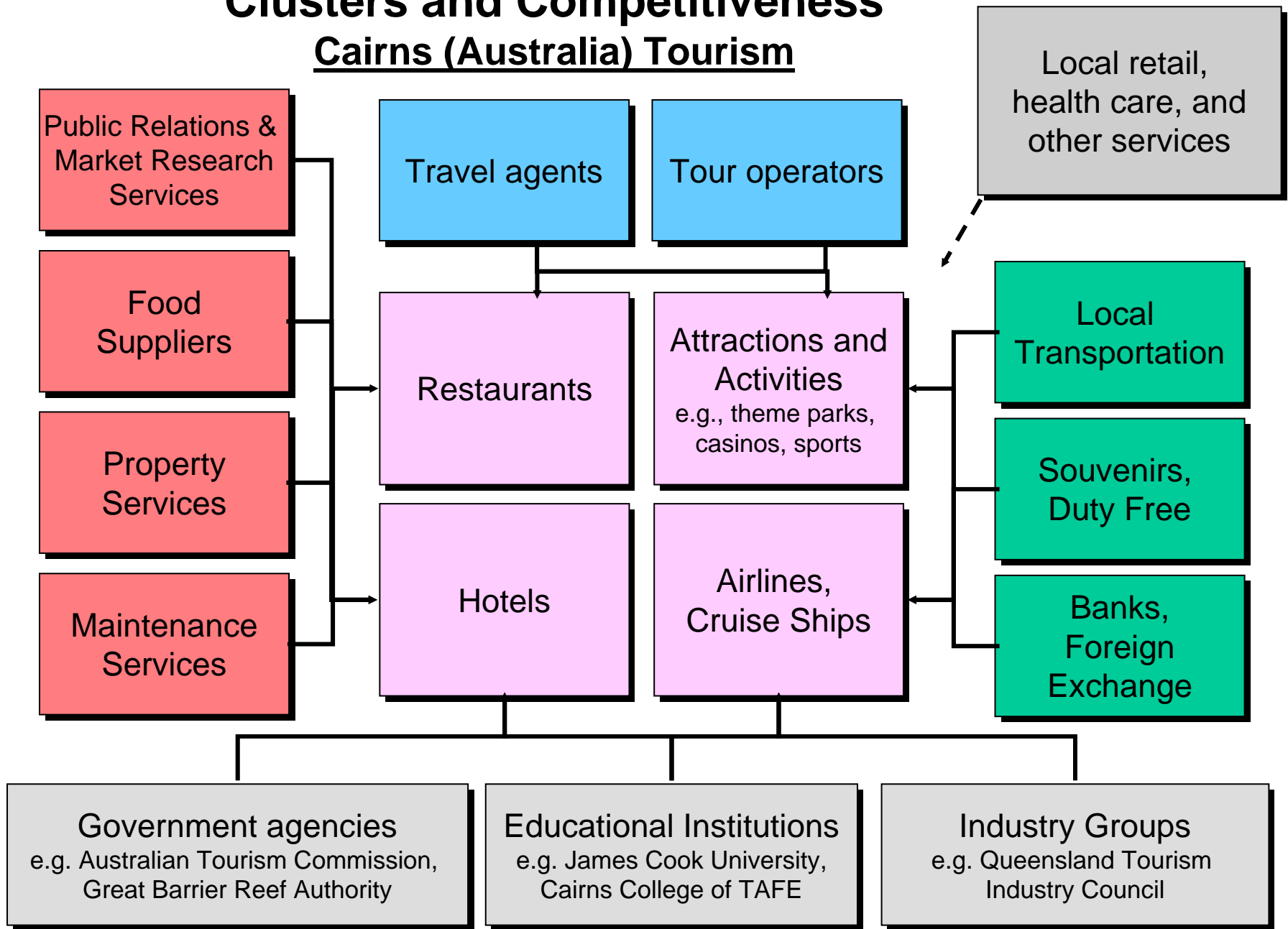
- A sound macroeconomic, political, legal, and social context creates the potential for competitiveness, **but is not sufficient**

# Productivity and the Business Environment

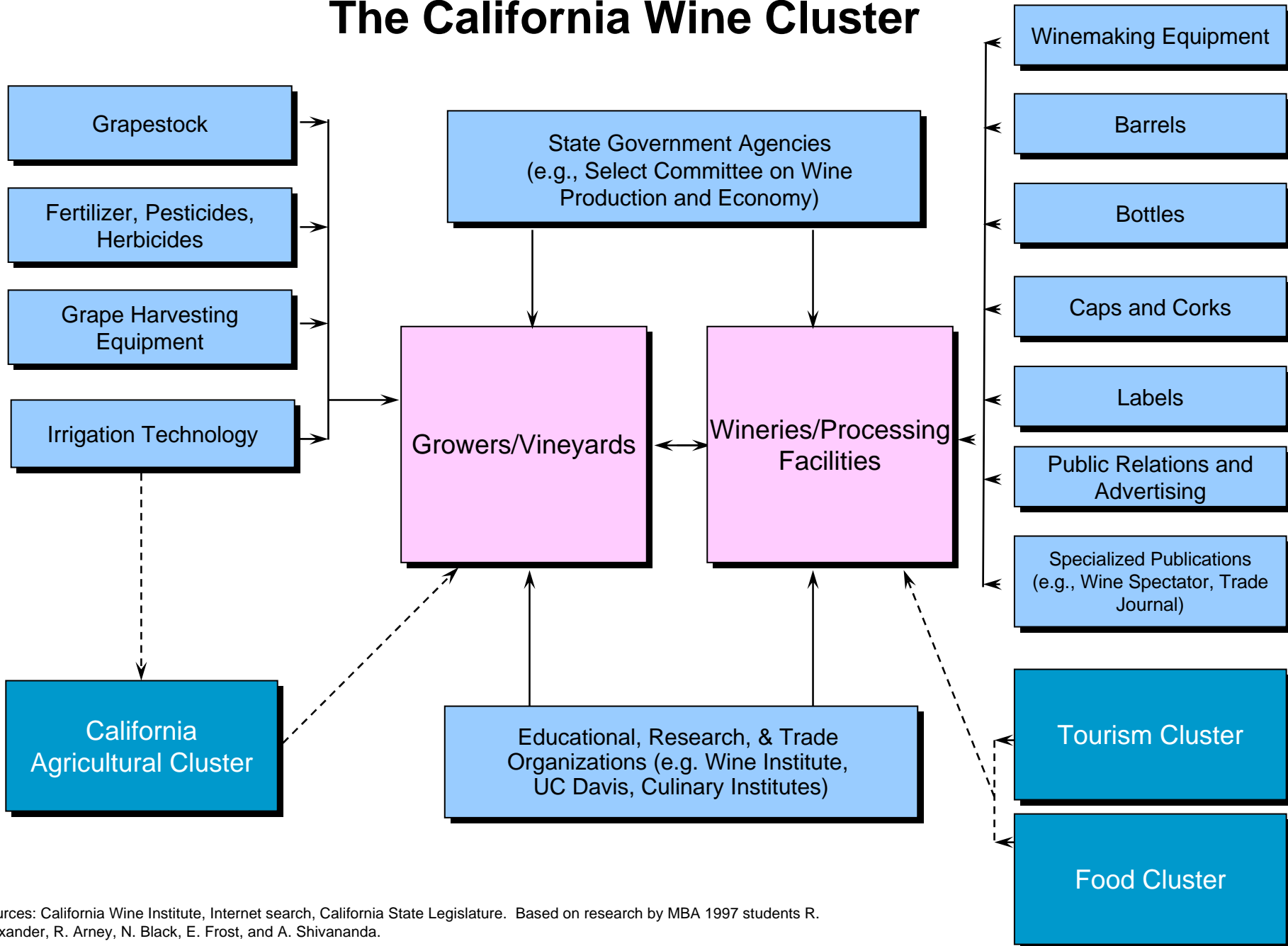


# Clusters and Competitiveness

## Cairns (Australia) Tourism



# The California Wine Cluster



# Finding an International Niche

## Leading Footwear Clusters

### Portugal

- Production
- Focus on short-production runs in the medium price range

### Romania

- Production subsidiaries of Italian companies
- Focus on lower to medium price range

### China

- OEM Production
- Focus on low cost segment mainly for the US market

### Italy

- Design, marketing, and production of premium shoes
- Export widely to the world market

### United States

- Design and marketing
- Focus on specific market segments like sport and recreational shoes and boots
- Manufacturing only in selected lines such as hand-sewn casual shoes and boots

### Brazil

- Low to medium quality finished shoes, inputs, leather tanning
- Shift toward higher quality products in response to Chinese price competition

### Vietnam/Indonesia

- OEM Production
- Focus on the low cost segment mainly for the European market

# **Institutions for Collaboration**

## **Selected Massachusetts Organizations, Life Sciences**

### **Life Sciences Industry Associations**

- Massachusetts Biotechnology Council
- Massachusetts Medical Device Industry Council
- Massachusetts Hospital Association

### **General Industry Associations**

- Associated Industries of Massachusetts
- Greater Boston Chamber of Commerce
- High Tech Council of Massachusetts

### **Economic Development Initiatives**

- Massachusetts Technology Collaborative
- Mass Biomedical Initiatives
- Mass Development
- Massachusetts Alliance for Economic Development

### **University Initiatives**

- Harvard Biomedical Community
- MIT Enterprise Forum
- Biotech Club at Harvard Medical School
- Technology Transfer offices

### **Informal networks**

- Company alumni groups
- Venture capital community
- University alumni groups

### **Joint Research Initiatives**

- New England Healthcare Institute
- Whitehead Institute For Biomedical Research
- Center for Integration of Medicine and Innovative Technology (CIMIT)

# Composition of Regional Economies

## United States, 2002

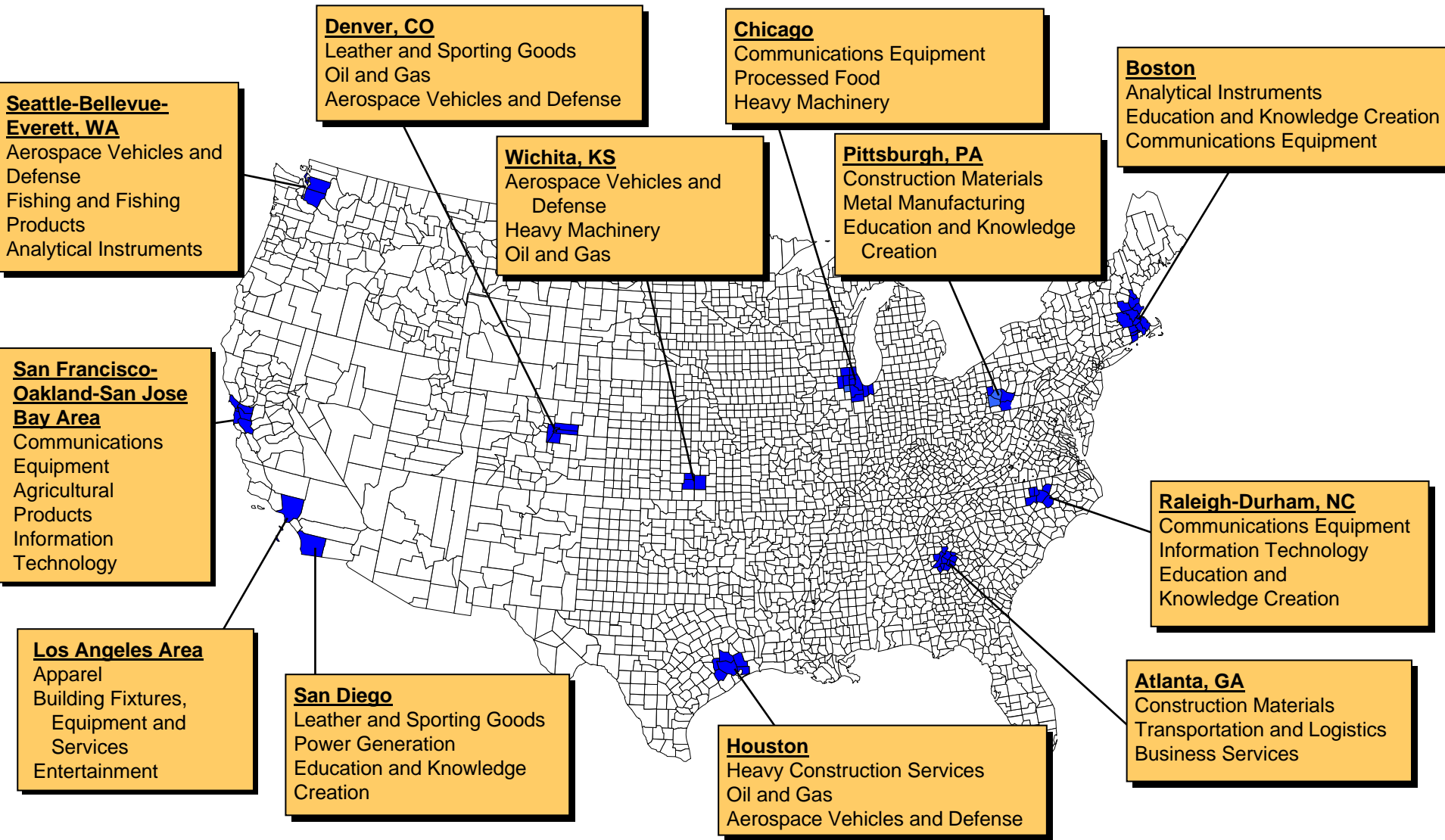
	Traded Clusters	Local Clusters	Natural Resource-Driven Industries
Share of Employment	30.5%	68.8%	0.7%
Employment Growth Rate, 1990 to 2002	0.9%	2.4%	-1.2%
Average Wage	\$45,511	\$29,010	\$33,066
Relative Wage	129.7%	82.7	94.3
Wage Growth	4.3%	3.6%	1.8%
Relative Productivity	144.1	79.3	140.1
Patents per 10,000 Employees	21.3	1.3	7.0
Number of SIC Industries	590	241	48

Note: 2002 data, except relative productivity which uses 1997 data.

Source: Prof. Michael E. Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

# Specialization of Regional Economies

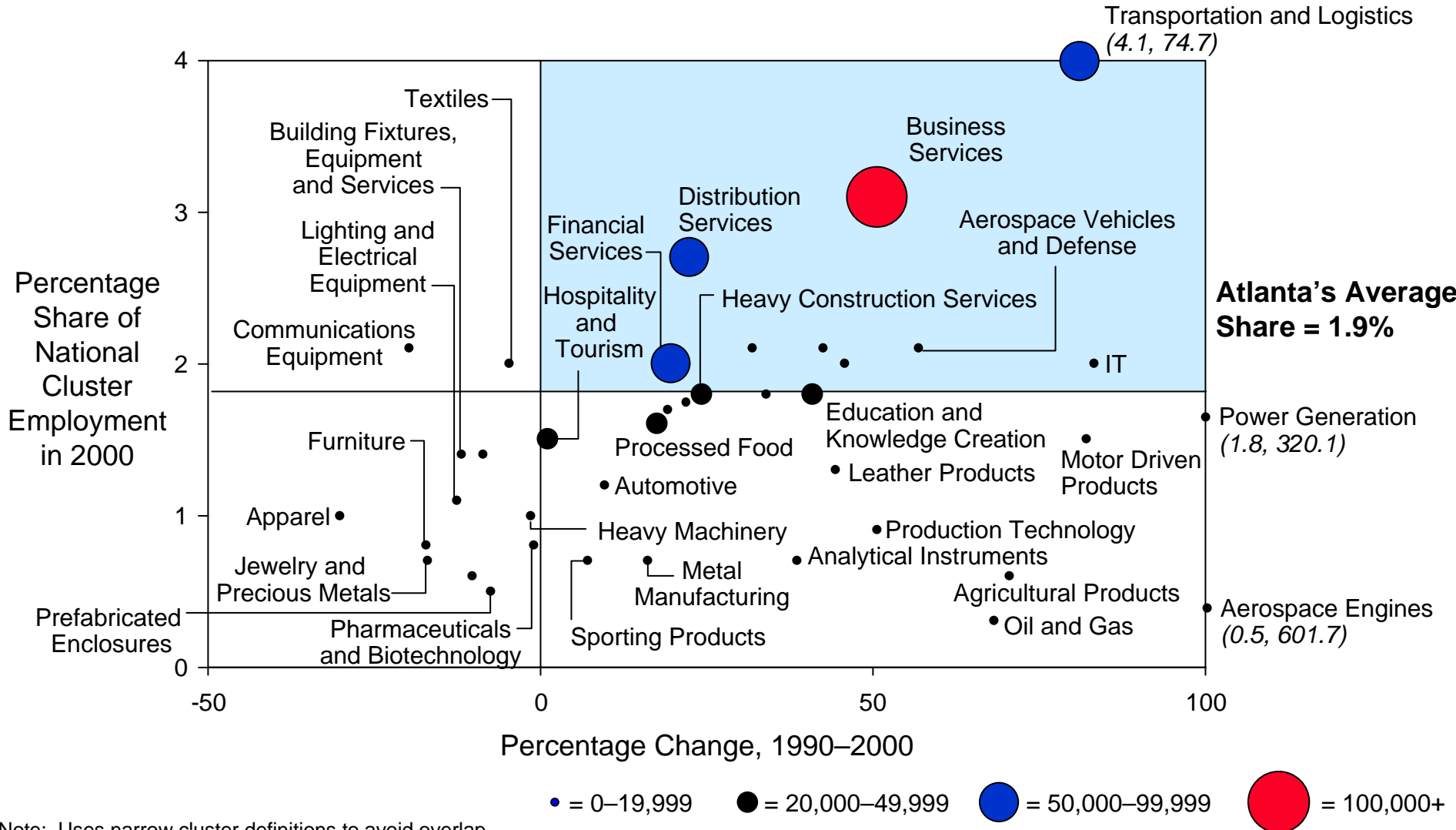
## Select U.S. Geographic Areas



Note: Clusters listed are the three highest ranking clusters in terms of share of national employment  
Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

# Specialization of Regional Economies

## Atlanta Metro Area



Note: Uses narrow cluster definitions to avoid overlap

Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

# Competition Between Locations

## Context

- Falling **trade barriers**
- Falling **costs** of transportation and communication
- Increasing number of locations meeting **basic requirements** of businesses

## Trends

- More **competition** between locations
- More **specialization** of locations
- More **linkages** across locations



- Changes in the geography of economic activities are **not** a zero-sum game
- Companies and locations are **learning** how to manage the changes in locational patterns under way

# Shifting Responsibilities for Economic Development

## Old Model

- **Government** drives economic development through policy decisions and incentives



## New Model

- Economic development is a **collaborative process** involving government at multiple levels, companies, teaching and research institutions, and institutions for collaboration

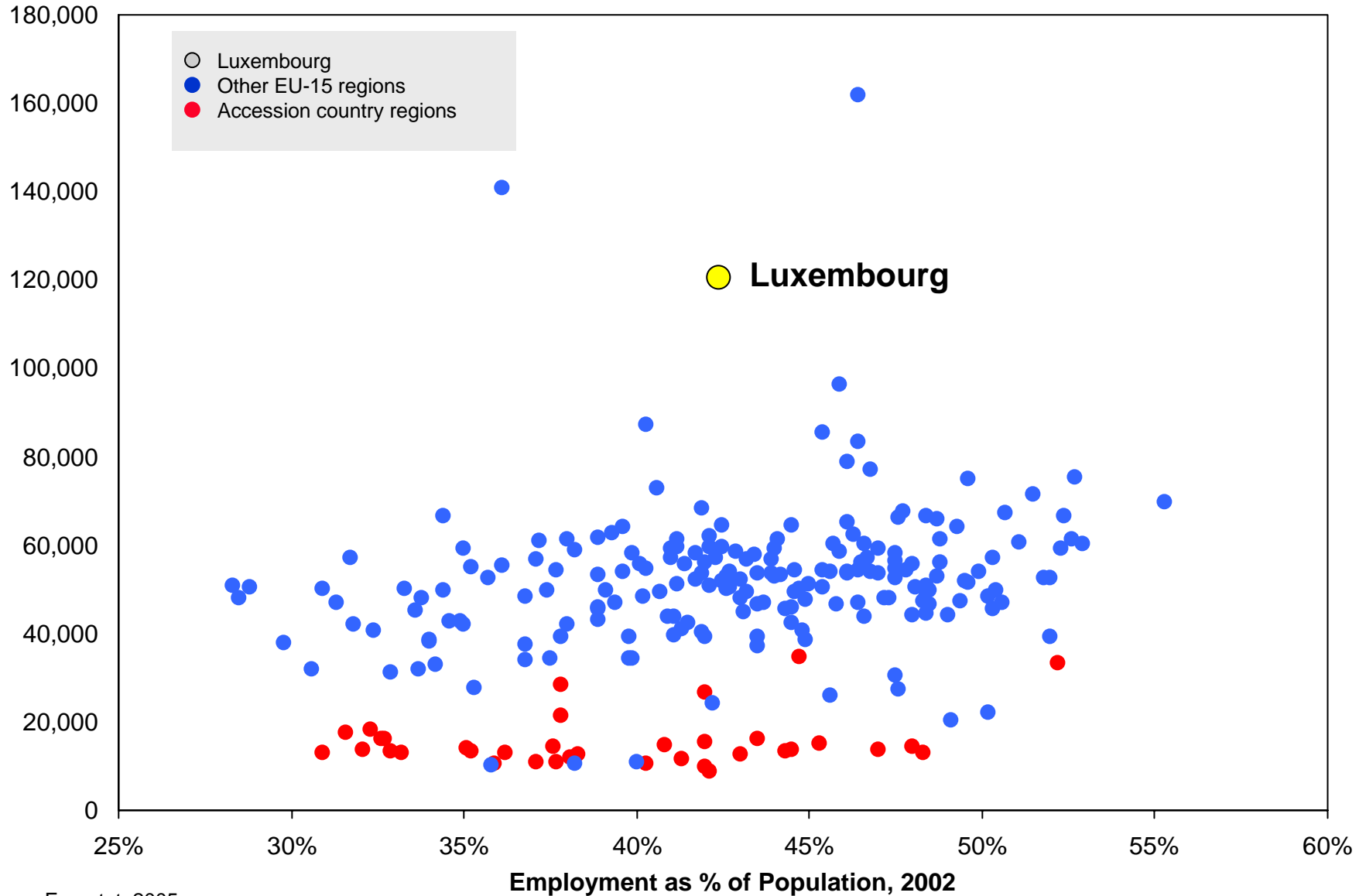
# Luxembourg's Economic Performance

- High level of labor productivity but **low growth rates** in recent years
- **Magnet for labor** from neighboring countries and further abroad
  - Roughly one third of the labor force expatriates, one third commuting in from neighboring countries
  - Low local unemployment
- **High local price levels**
- Patenting is **substantial** for the size of the economy, with a significant presence of foreign companies
  - Most of the patenting in traditional sectors not classified as “high-tech”
- Large **inward foreign direct investment**, driven by strong international presence in the financial services cluster
- Strong **world market position** in financial service exports; stable but modest in goods exports

# Labor Productivity and Utilization

## European Regions

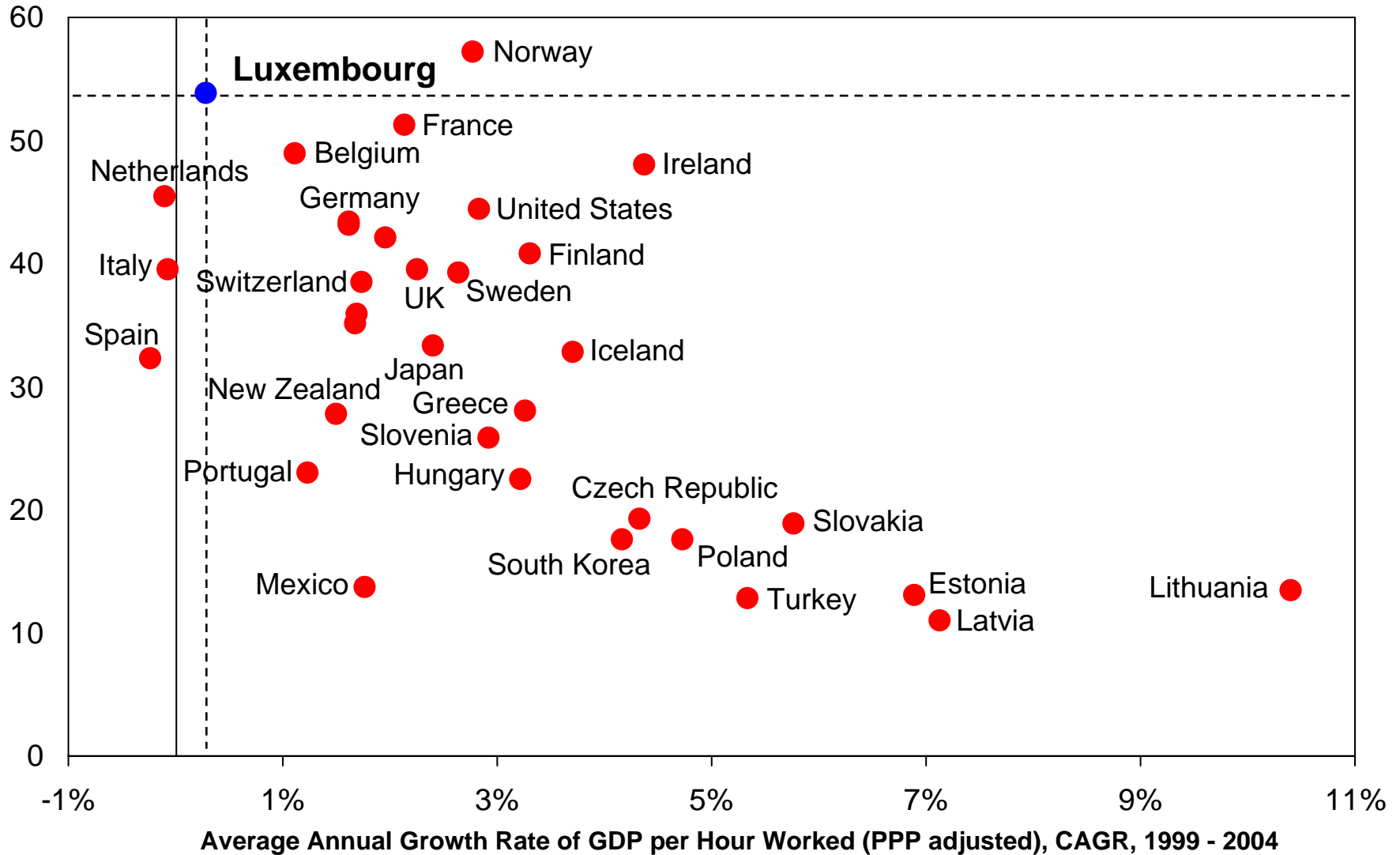
GDP per Employee, Euro,  
2002



# Labor Productivity – Level and Growth

## Selected Countries

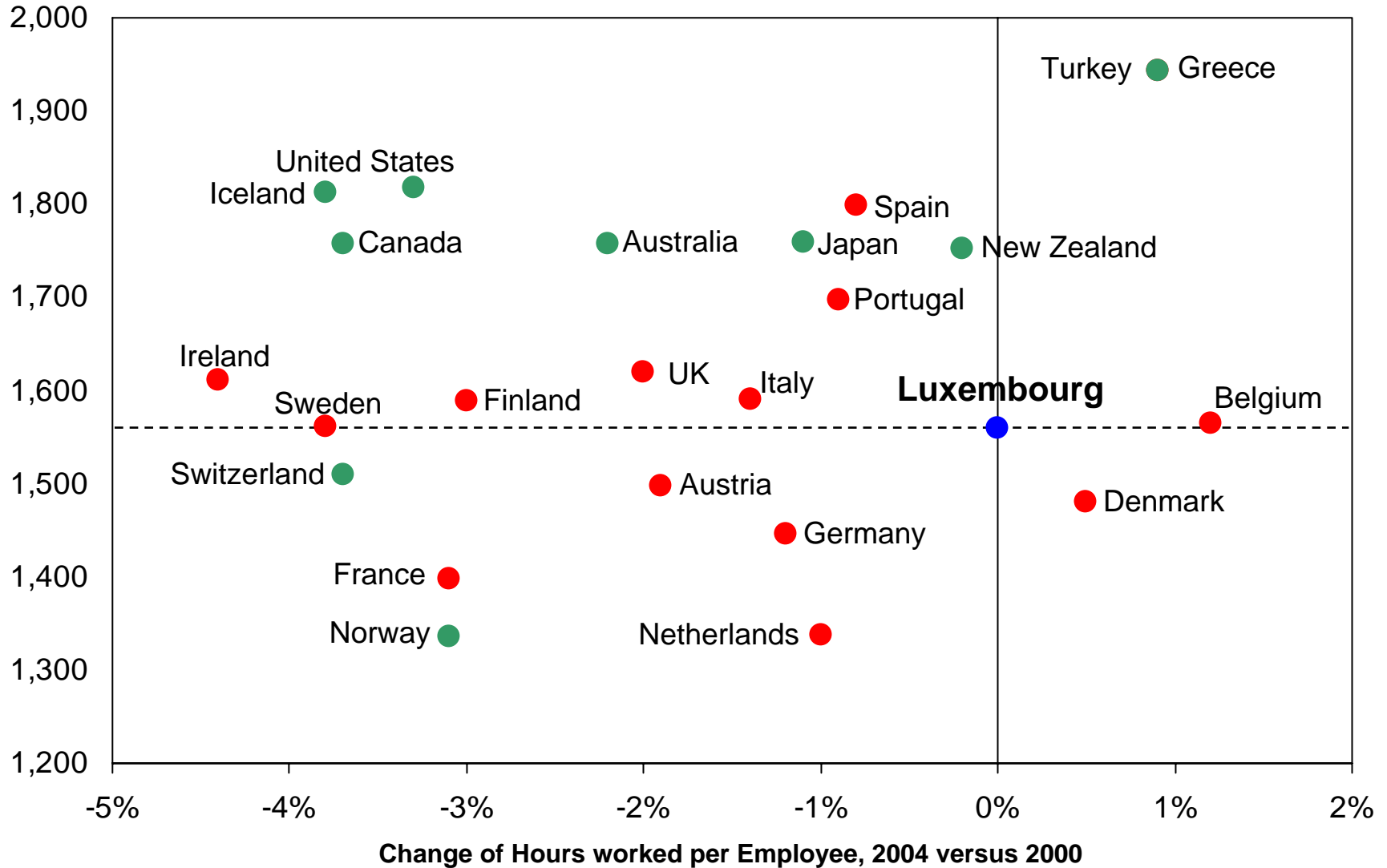
GDP per Hour Worked,  
US-\$, 2004 (PPP adjusted)



# Labor Utilization – Level and Growth

## Selected Countries

Hours worked per Employee, 2004



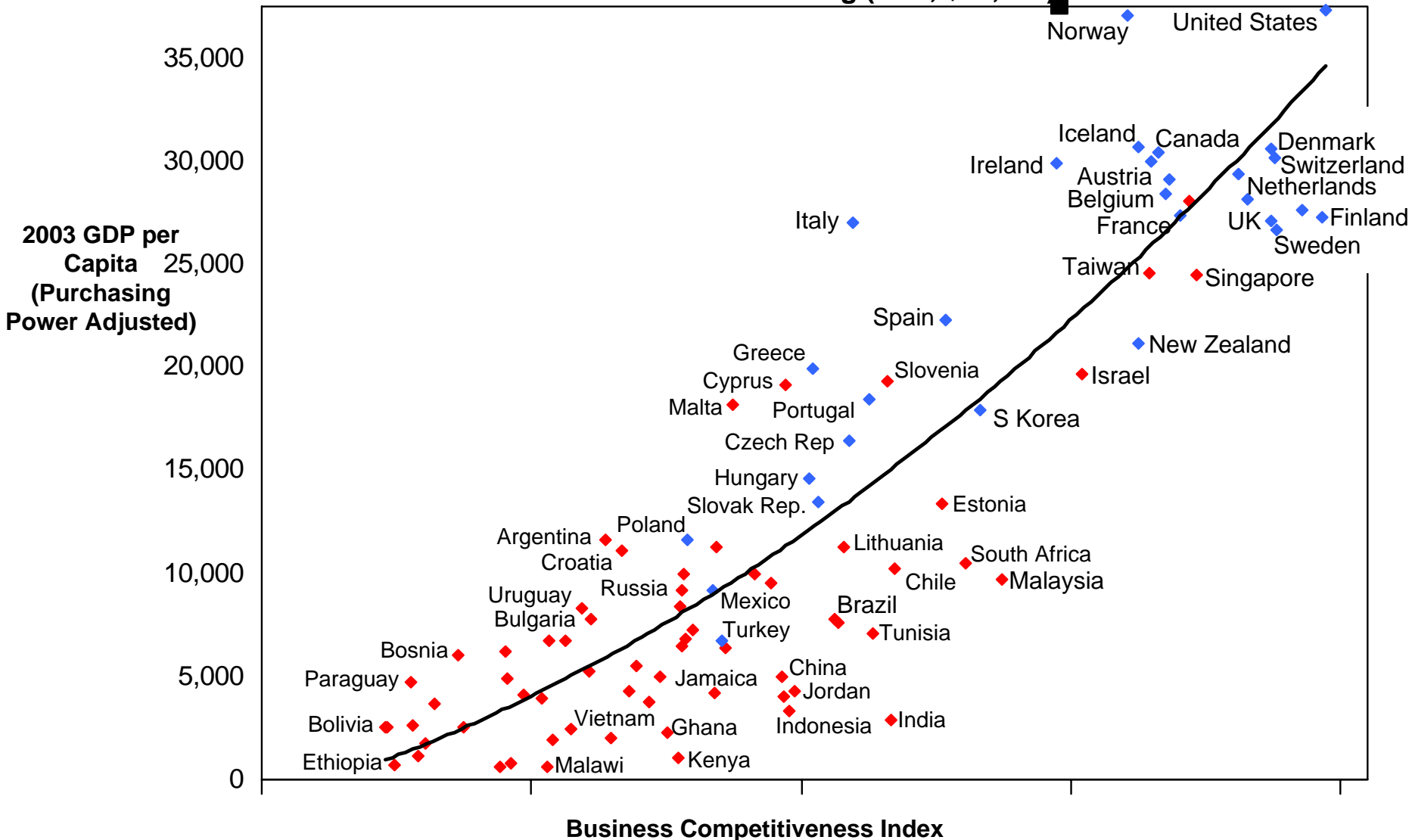
# Luxembourg's Current Competitiveness

- Level of general business environment quality is **insufficient** to sustain current level of prosperity
  - Strengths in the cluster-specific business environment for the financial services sector can partly compensate
  - But there are clear barriers for the evolution of other clusters that would decrease the dependency on one cluster
- Company sophistication ranks somewhat **higher** than business environment quality

# Global Competitiveness Report 2004

## The Relationship Between Business Competitiveness and GDP Per Capita

Luxembourg (0.96, \$42,000)



Note: OECD countries marked in blue  
Source: Global Competitiveness Report 2004

# Business Competitiveness Index Rankings, 2004

Country	BCI Rank	Business Environment	Company Sophistication
United States	1	2	2
Finland	2	1	7
Germany	3	5	1
Sweden	4	6	5
Switzerland	5	7	4
United Kingdom	6	4	8
Denmark	7	3	9
Japan	8	11	3
Netherlands	9	9	6
Singapore	10	8	13
Hong Kong SAR	11	10	15
France	12	16	10
Australia	13	12	20
Belgium	14	19	11
Canada	15	13	16
Austria	16	17	14
Taiwan	17	20	12
New Zealand	18	15	21
Iceland	19	18	18
Norway	20	14	24
Israel	21	21	19
<b>Luxembourg</b>	<b>22</b>	<b>23</b>	<b>17</b>
Ireland	23	22	23
Malaysia	24	24	29
Korea	25	28	22



# Company Operations and Strategy

## Luxembourg's Relative Position 2004

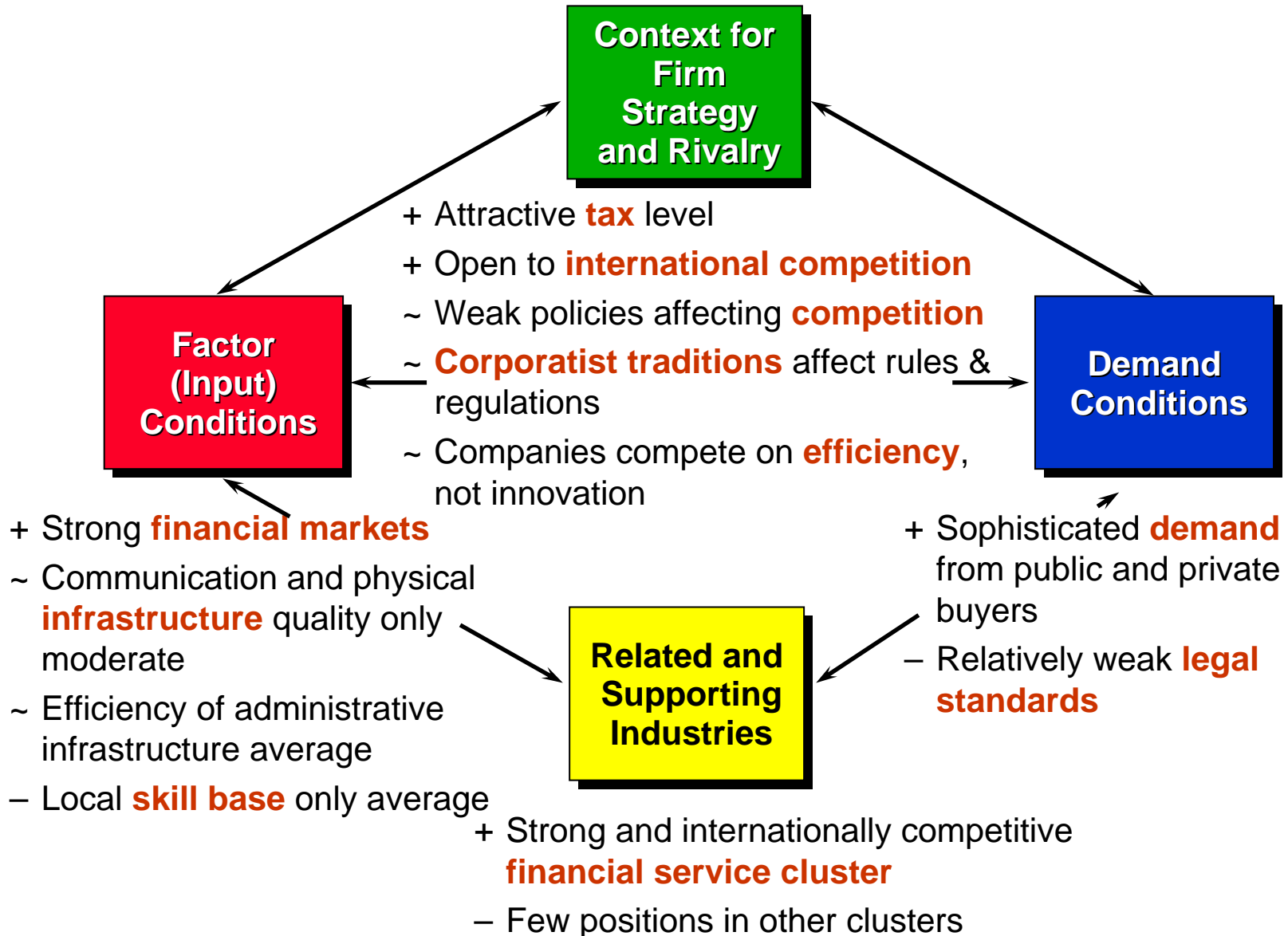
### Competitive Advantages

Extent of regional sales	4
Control of international distribution	8

### Competitive Disadvantages

Extent of marketing	25
Breadth of international markets	25
Extent of incentive compensation	23
Degree of customer orientation	22
Reliance on professional management	22
Willingness to delegate authority	19
Production process sophistication	18
Nature of competitive advantage	18
Value chain presence	18
Capacity for innovation	17
Extent of branding	17
Company spending on research and development	17

# Assessment of the Luxembourg Business Environment



## Education and Skills Luxembourg's Relative Position

### Competitive Advantages

### Competitive Disadvantages

Quality of management schools	83
Availability of scientists and engineers	62
Quality of math and science education	42
Quality of public schools	21

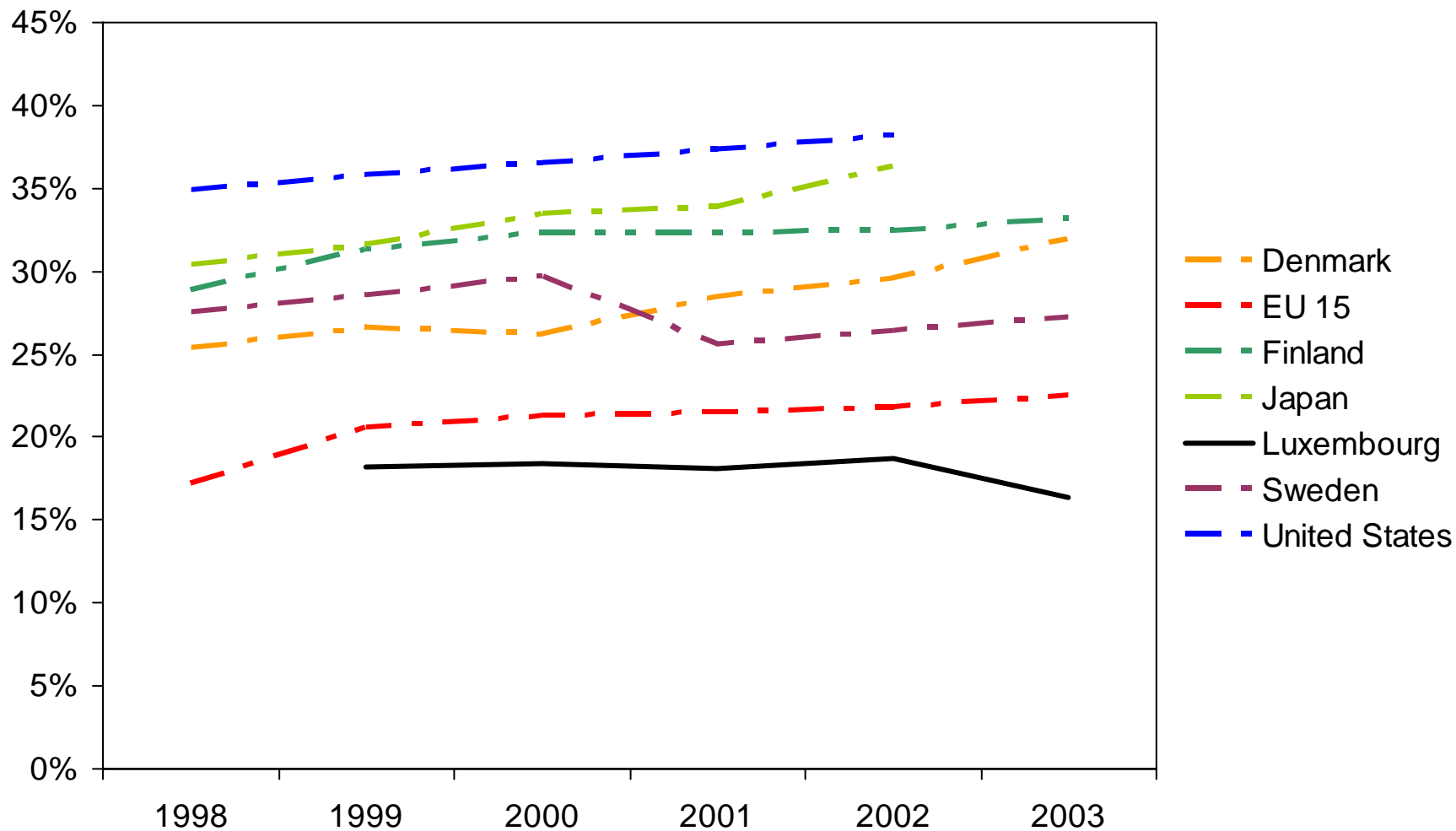


- Luxembourg has in the past relied on its ability to **attract high-skilled talent from abroad**, while the local workforce provided mid-level skills
- Continued growth of prosperity – especially outside the financial services cluster – will require a **significant upgrading** of the educational system

# Skill Base

## Selected Countries

Population with tertiary education,  
% of 25 – 64 years age class



# Physical and Administrative Infrastructure

## Luxembourg's Relative Position

### Competitive Advantages

Cell phones per 100 people (2003)	2
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### Competitive Disadvantages

Air transport infrastructure quality	42
Telephone/fax infrastructure quality	26
Internet users per 10,000 people (2003)	21
Reliability of police services	17
Railroad infrastructure development	15
Quality of electricity supply	13
Administrative burden for startups	13

# Science and Innovation

## Luxembourg's Relative Position

### Competitive Advantages

### Competitive Disadvantages

Availability of scientists and engineers	62
University/industry research collaboration	52
Quality of scientific research institutions	46



- While Luxembourg rates high on patenting and private sector R&D spending, the region **lags** in other key dimensions effecting innovative capacity

# Context for Firm Strategy and Rivalry

## Luxembourg's Relative Position

### Competitive Advantages

Tariff liberalization	3
Foreign ownership restrictions	3
Hidden trade barrier liberalization	8

### Competitive Disadvantages

Intensity of local competition	70
Ease of mergers and acquisitions	44
Extent of locally based competitors	39
Effectiveness of bankruptcy law	28
Effectiveness of anti-trust policy	24
Efficacy of corporate boards	15
Business costs of corruption	14
Favoritism in decisions of government officials	14
Cooperation in labor-employer relations	11



- While some of Luxembourg's **weaknesses** in terms of the context for firm strategy and rivalry are directly related to the region's **small absolute size**, there are also surprising in areas directly related to **policy choices**

# Towards a Competitiveness Agenda for Luxembourg

- Address weaknesses in the business environment
  - Upgrade the **skill base**
  - Develop the capabilities of the university, with a **cluster focus**
  - Raise **infrastructure** to world-class standards, especially in telecommunications
- Concerted effort to upgrade the **financial cluster**
- Broaden the **cluster base**, focusing on niches
  - Business services
  - Tourism
  - Others
- Deepen integration with **neighboring regions** of Belgium, France, and Germany
  - Linkages with neighboring clusters

# Public / Private Cooperation in Cluster Upgrading

## Minnesota's Medical Device Cluster

