

# Chile's Competitiveness: Where Does the Country Stand?

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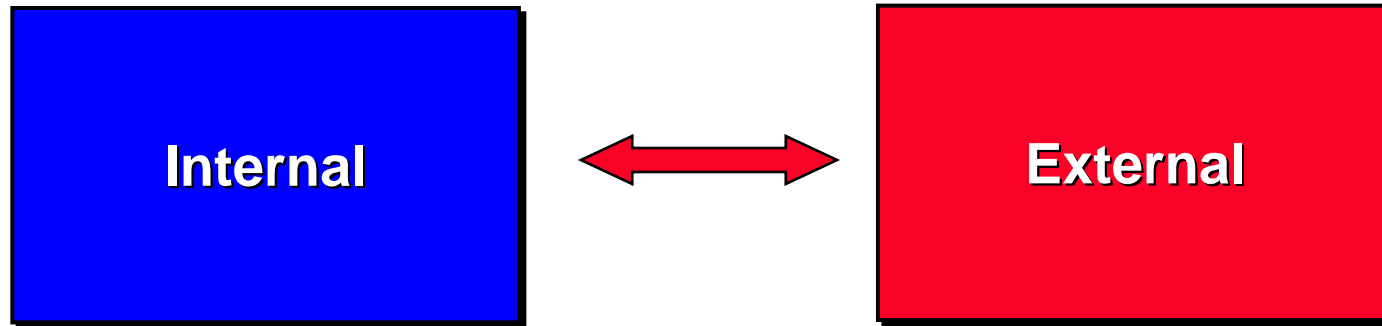
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This presentation draws on ideas from Professor Porter's articles and books, in particular, [The Competitive Advantage of Nations](#) (The Free Press, 1990), "The Microeconomic Foundations of Economic Development," in [The Global Competitiveness Report 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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# Perspectives on Firm Success

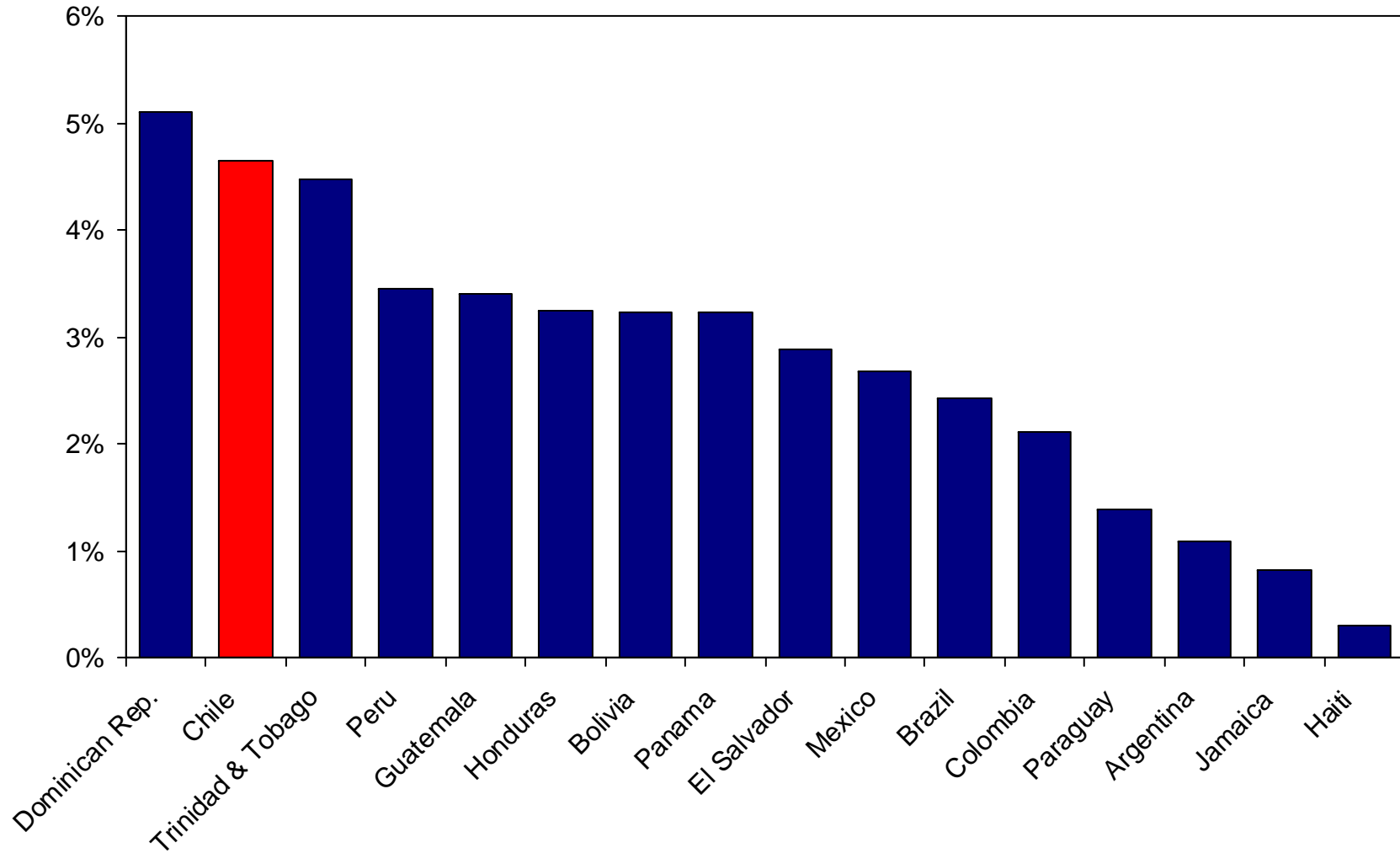


- Competitive advantage resides solely **inside** a company or in its industry
- Competitive success depends primarily on **company choices**
- Competitive advantage (or disadvantage) resides partly in the **locations** at which a company's business units are based
- **Cluster participation** is an important contributor to competitiveness

# Comparative Economic Performance

## Real GDP Growth Rates

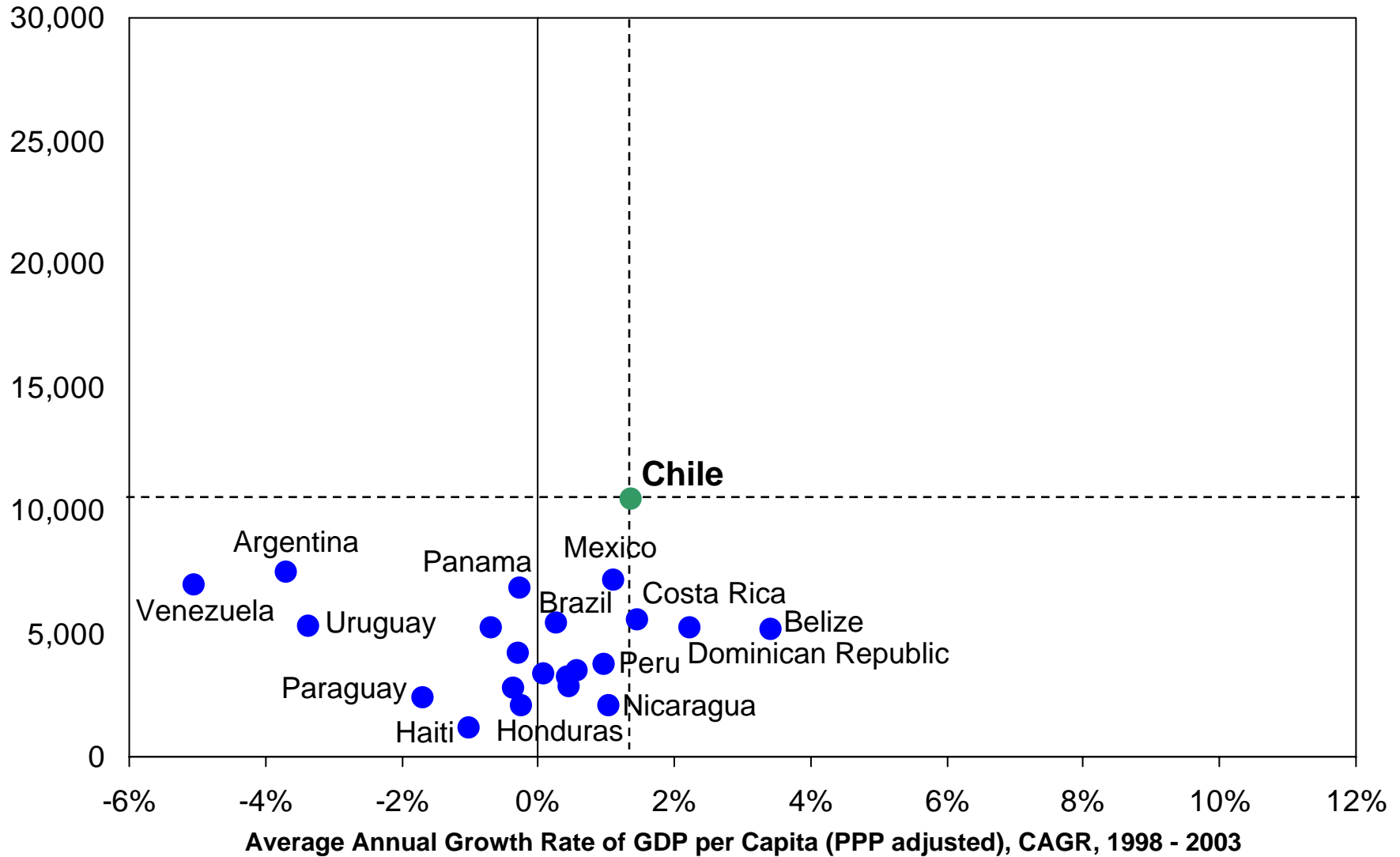
Compounded annual growth rate  
(CAGR) of real GDP, 1994 - 2004



# Prosperity

## Latin American Countries

GDP per Capita, 2003 (PPP adjusted),  
in 1990 US-Dollar



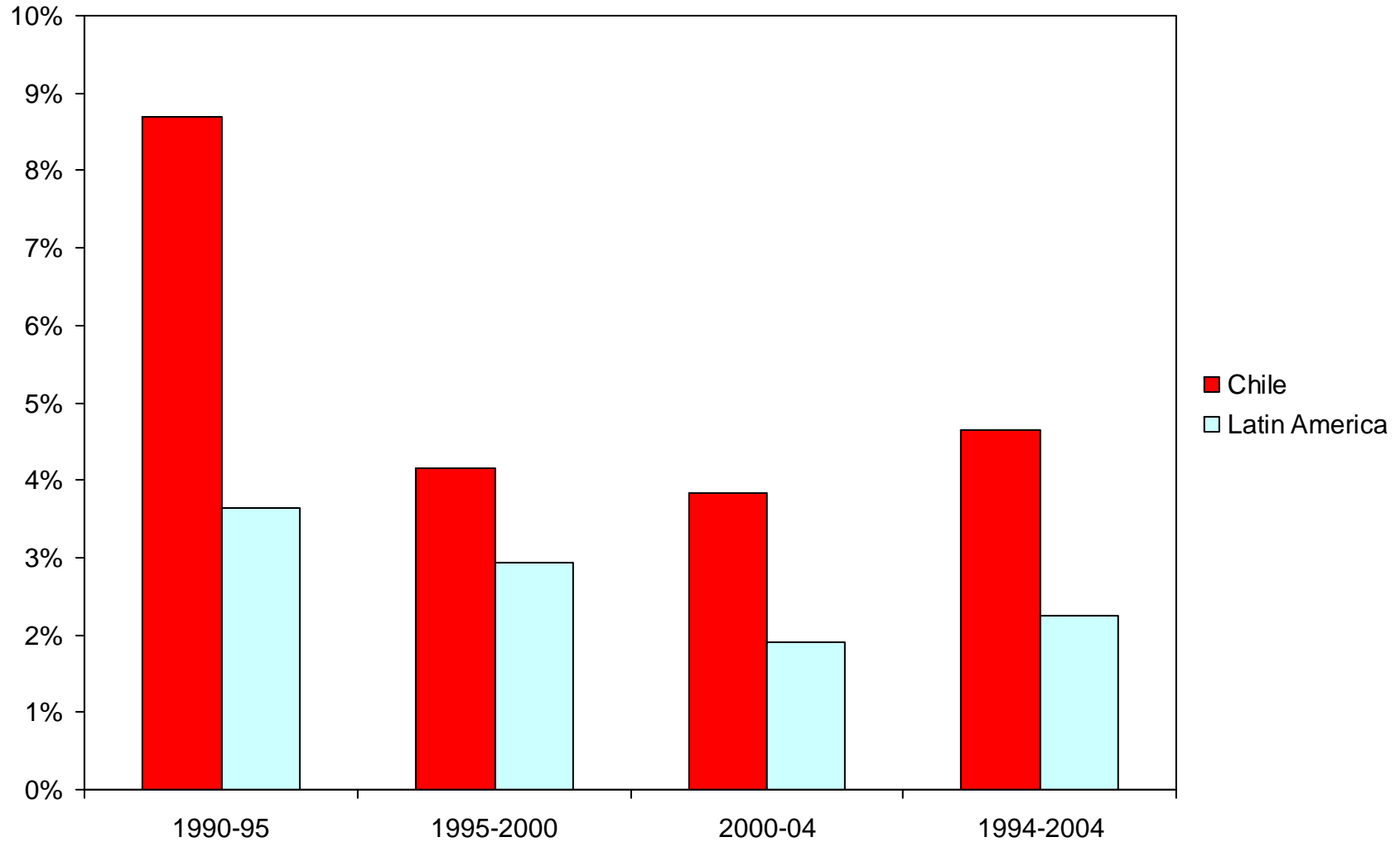
Note: South and Central American countries are blue

Source: Groningen Growth and Development Centre and The Conference Board (2005), EIU (2005)

# Comparative Economic Performance

## Real GDP Growth Rates Over Time

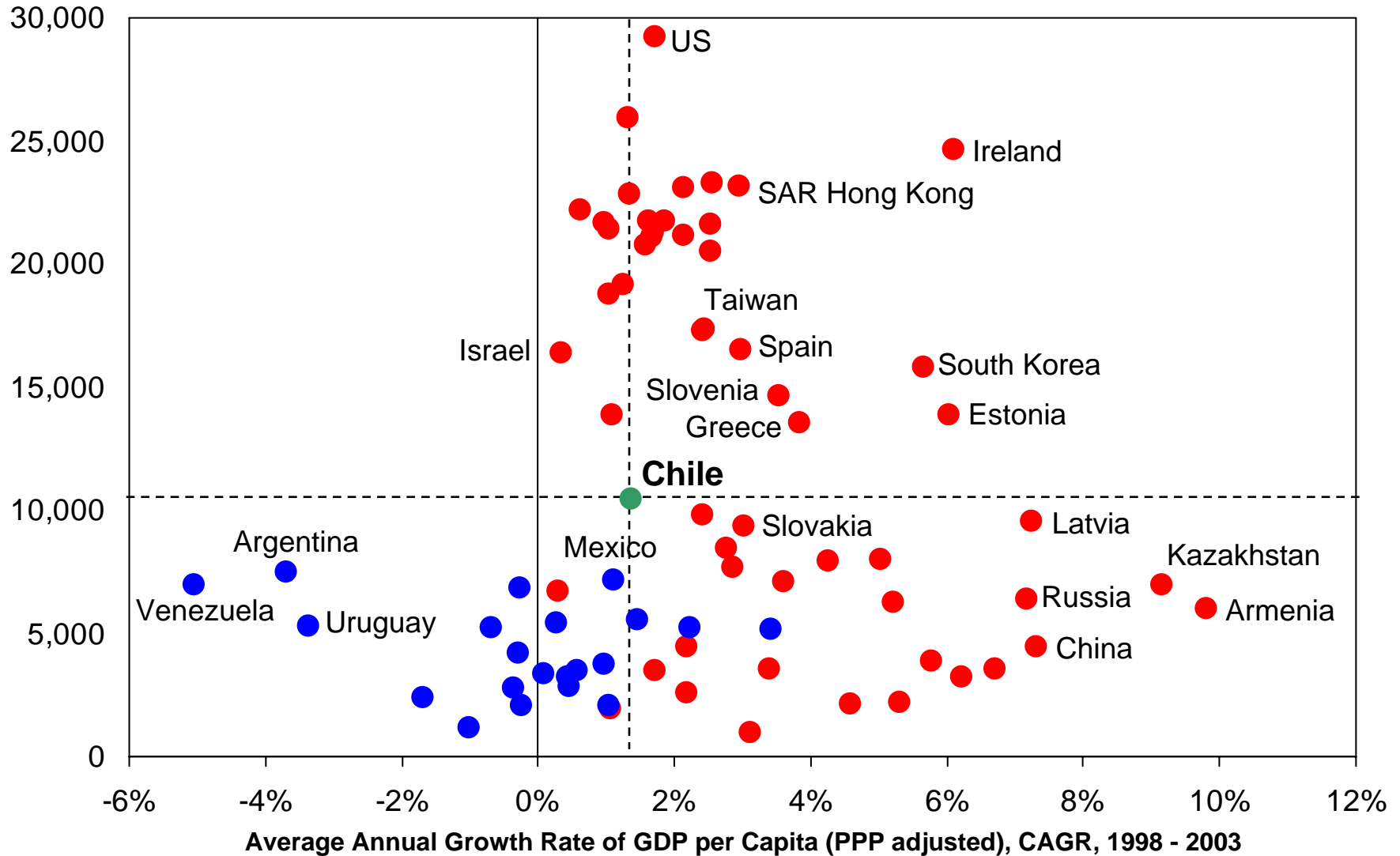
Compounded annual  
growth rate  
(CAGR) of real GDP



# Prosperity

## Selected Countries

GDP per Capita, 2003 (PPP adjusted),  
in 1990 US-Dollar

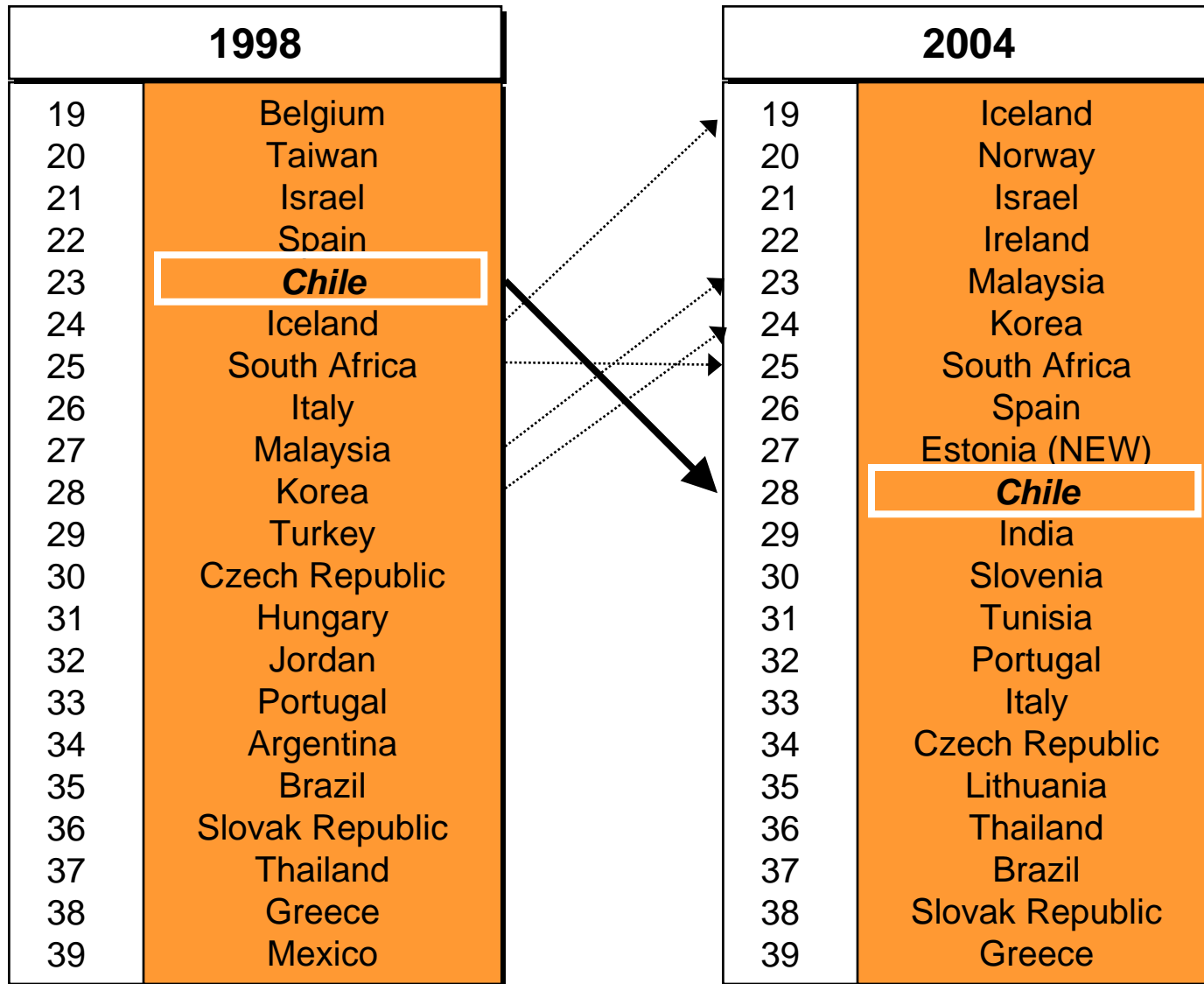


Note: South and Central American countries are blue

Source: Groningen Growth and Development Centre and The Conference Board (2005), EIU (2005)

# Current Competitiveness Index

## Chile's Position over Time



# Chilean Competitiveness

- Chile is the leading **Latin American success story** in national competitiveness
- Recent economic growth is **solid**

## However

- Chile's growth rates have **slowed down** over time
- Chile's performance looks **less** remarkable when compared to a wider sample of countries
- The attractiveness of Chile as a place to do business has improved but other countries outside the region have improved **even more**



- Significant changes will be **necessary** to allow further growth



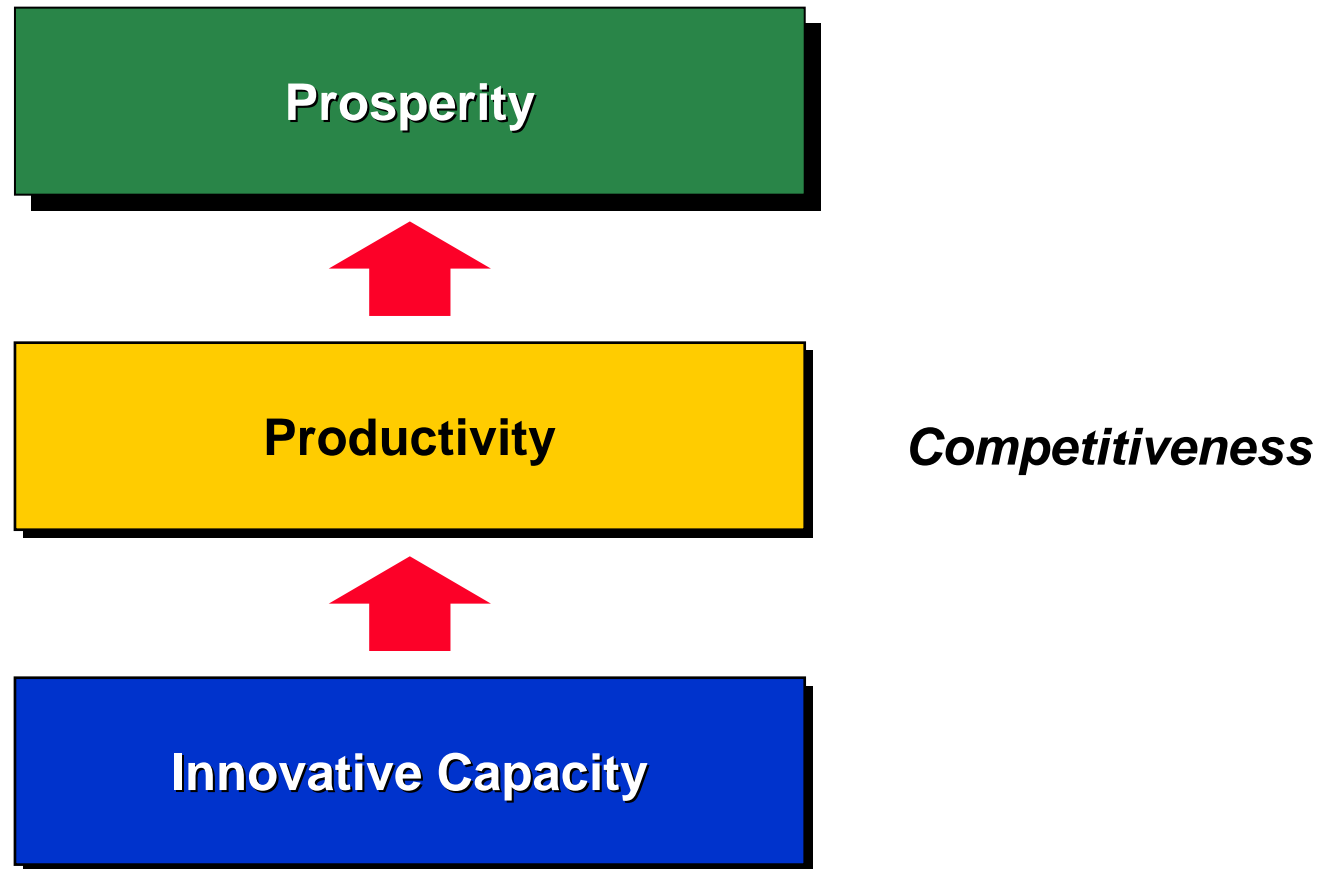
# What is Competitiveness?

- 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 or 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

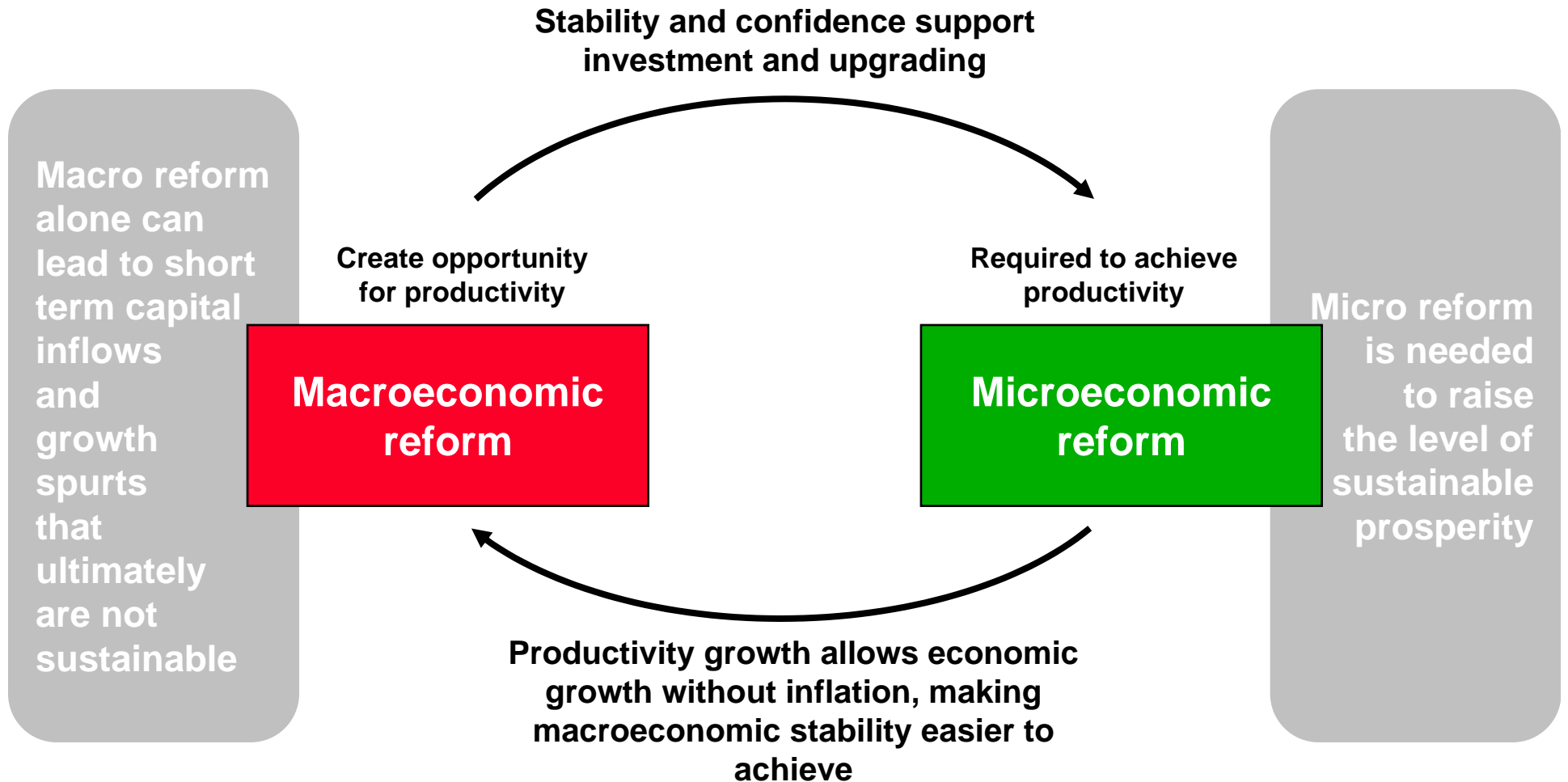
The Sophistication  
of Company  
Operations and  
Strategy



The Quality of the  
Microeconomic  
Business  
Environment

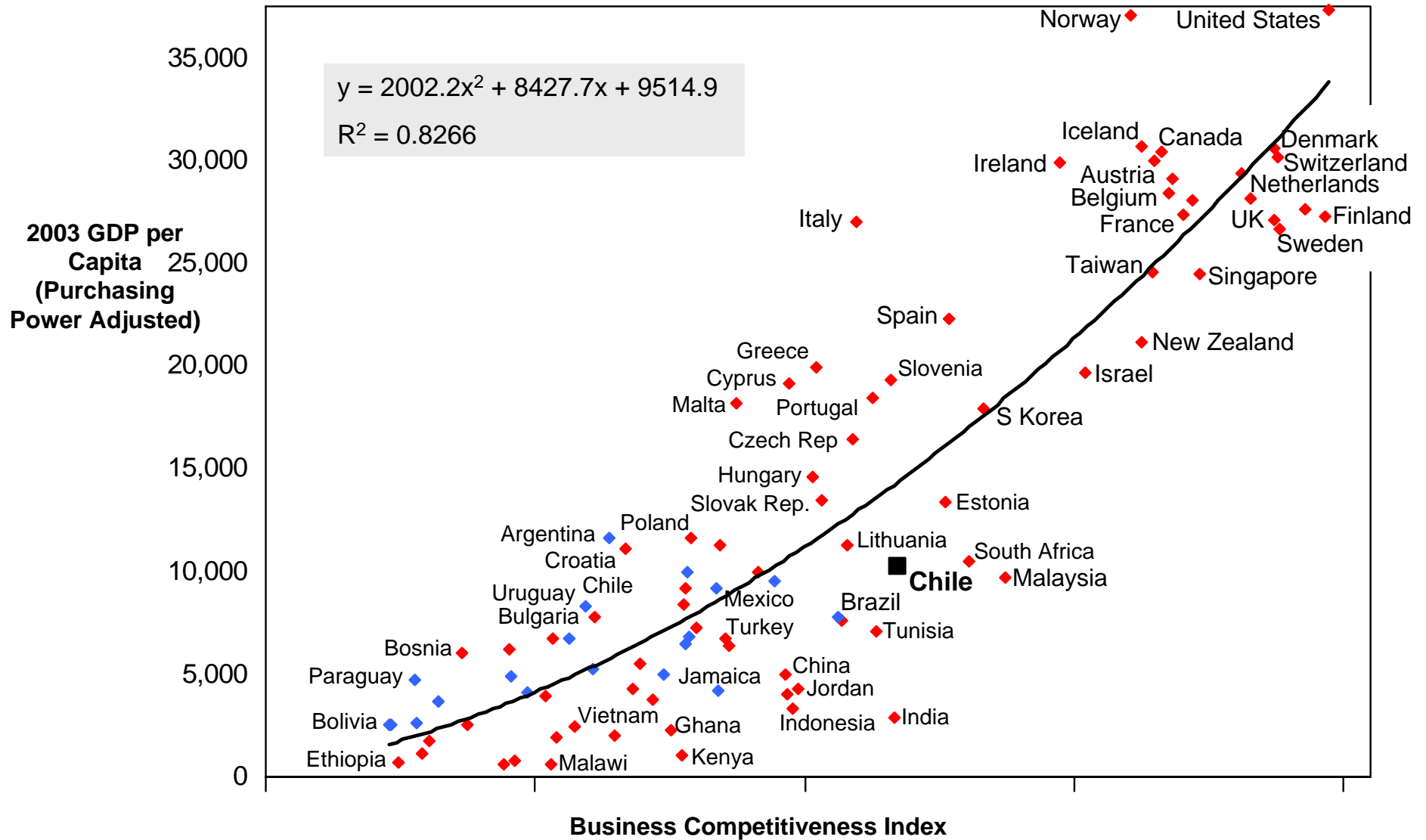
- A sound macroeconomic, political, legal, and social context creates the potential for competitiveness, **but is not sufficient**
- Only **firms** can create wealth, not government

# Integration of Macro- and Microeconomic Reforms



# Global Competitiveness Report 2004

## The Relationship Between Business Competitiveness and GDP Per Capita

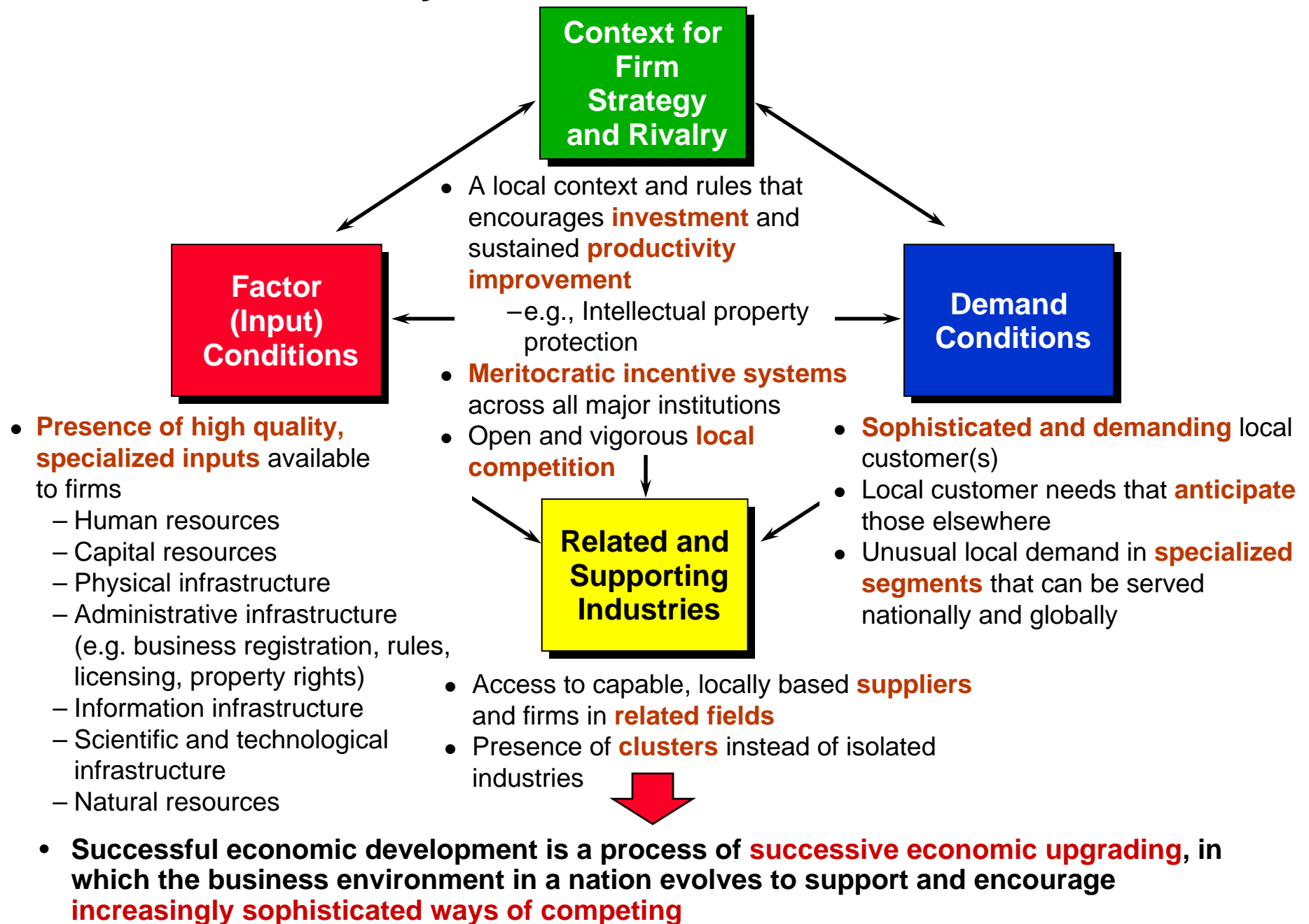


Note: South and Central American countries marked in blue

Source: Global Competitiveness Report 2004

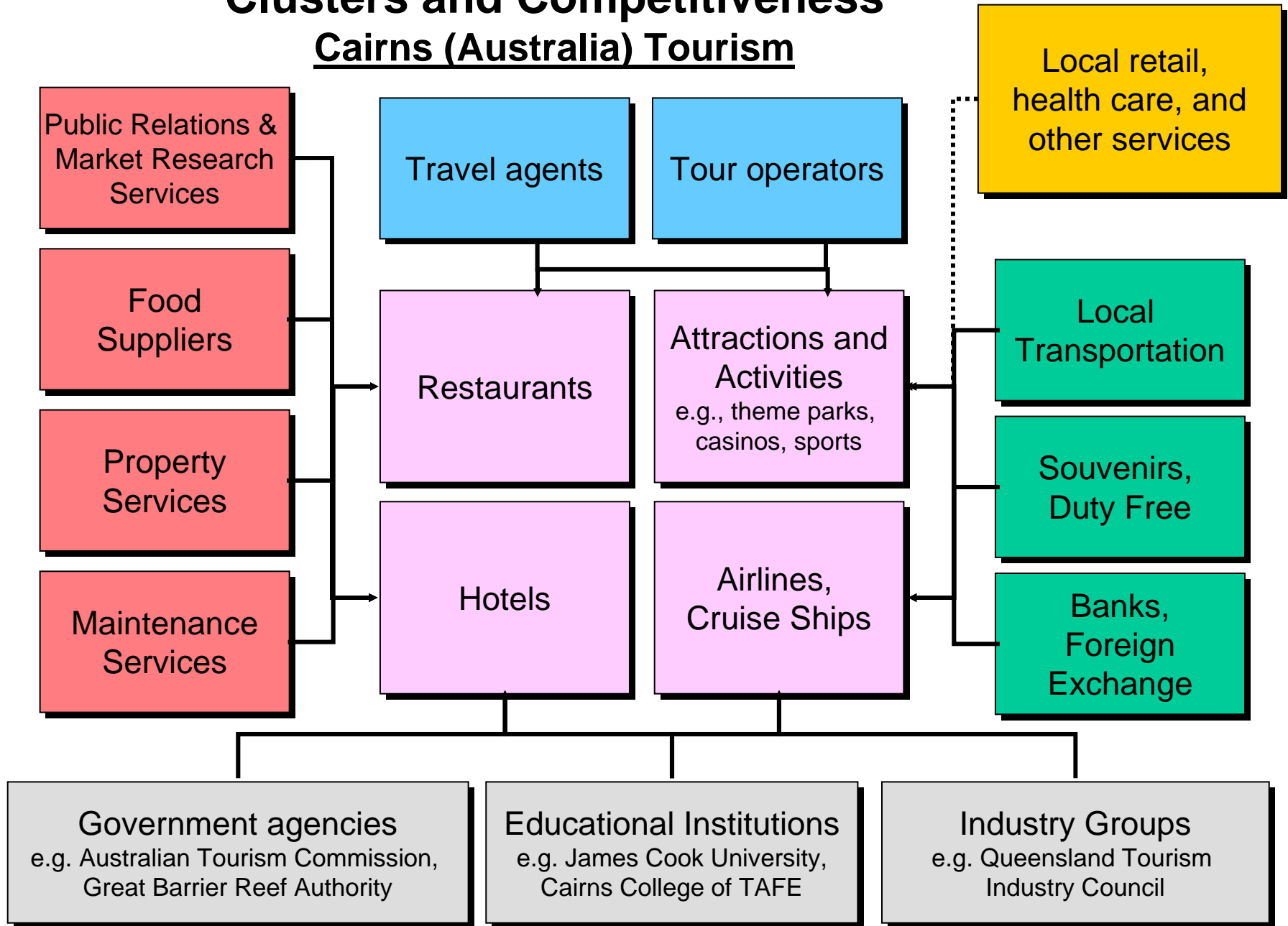
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# Productivity and the Business Environment



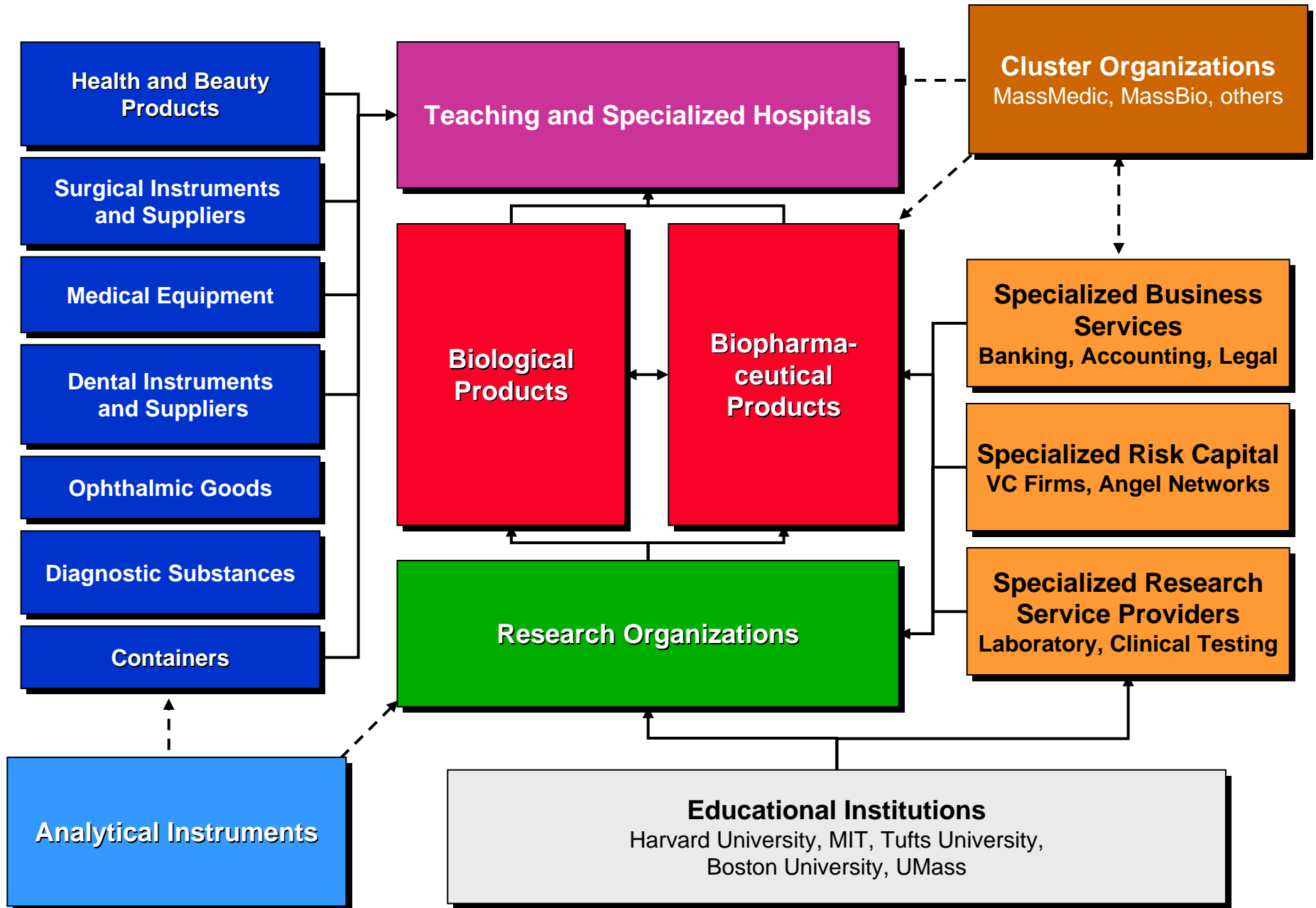
# Clusters and Competitiveness

## Cairns (Australia) Tourism



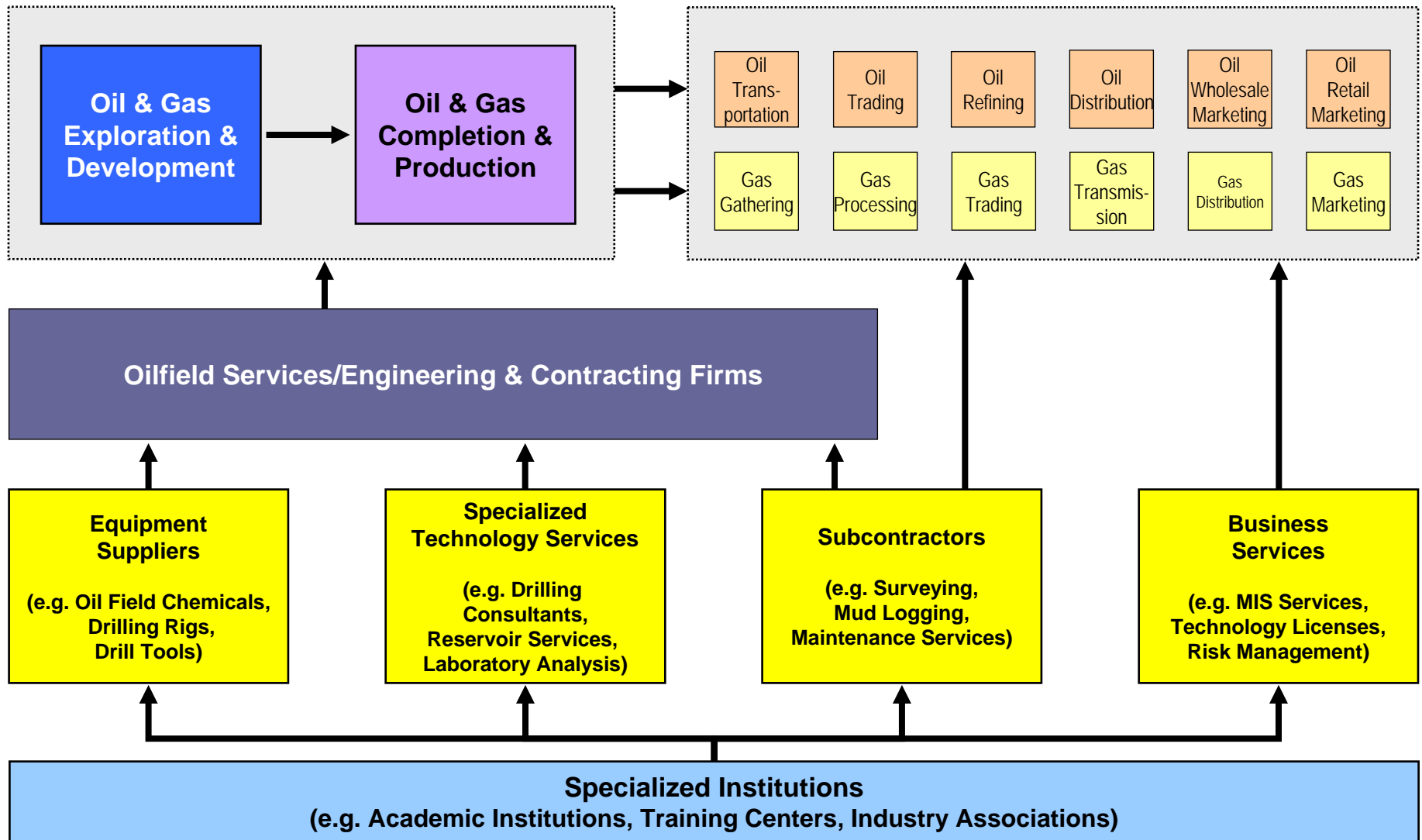
Sources: HBS student team research (2003) - Peter Tynan, Chai McConnell, Alexandra West, Jean Hayden

# Massachusetts Life Sciences Cluster





# The Houston Oil and Gas Cluster



- Houston exports technology, knowledge, and management, not just resources

# Clusters and Competitiveness

- **Clusters Increase Productivity / Efficiency**
  - Efficient **access** to specialized inputs, services, employees, information, institutions, and “public goods” (e.g. training programs)
  - Ease of **coordination** and transactions across firms
  - Rapid **diffusion** of best practices
  - Ongoing, visible **performance comparisons** and strong incentives to improve vs. local rivals
- **Clusters Stimulate and Enable Innovations**
  - Enhanced ability to **perceive innovation opportunities**
  - Presence of multiple suppliers and institutions to assist in **knowledge creation**
  - Ease of **experimentation** given locally available resources
- **Clusters Facilitate Commercialization**
  - Opportunities for **new companies** and **new lines of established business** are more apparent
  - **Commercializing** new products and starting new companies is easier because of available skills, suppliers, etc.



Clusters reflect the fundamental influence of **externalities / linkages** across firms and associated institutions in competition

# 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

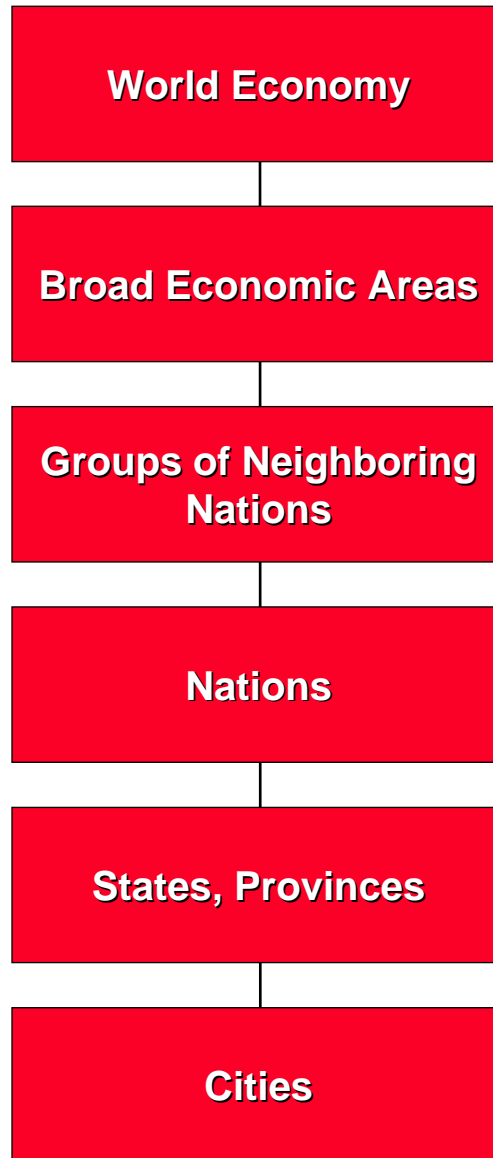
- Company alumni groups
- Venture capital community
- University alumni groups

### Joint Research Initiatives

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

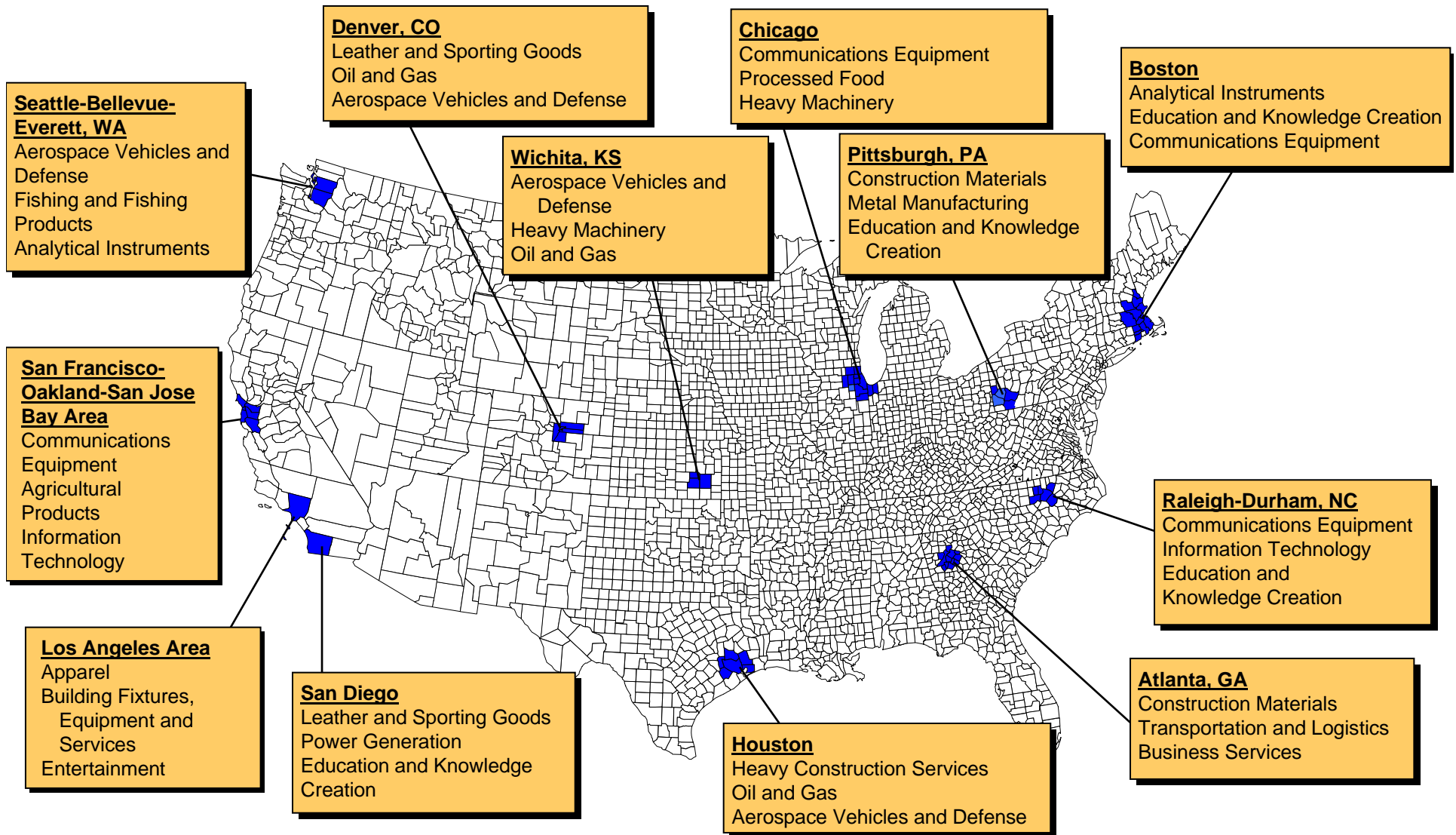
# Influences on Competitiveness

## Multiple Geographic Levels



# 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

# Composition of Regional Economies

## United States, 2002

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

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

# 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

- Competitiveness must become a **bottoms-up process** in which citizens take responsibility
- **Every** community and cluster can take steps to enhance competitiveness

# Role of the Private Sector in Economic Development

- A company's competitive advantage is partly the result of the **local environment**
- Company membership in a cluster offers **collective benefits**
- Private investment in **“public goods”** is justified



- Take an **active role** in upgrading the local infrastructure
- Nurture **local suppliers** and attract new supplier investments
- Work closely with local **educational and research institutions** to upgrade **quality and create specialized programs addressing cluster needs**
- Provide government with **information** and **substantive input** on regulatory issues and constraints bearing on cluster development
- Focus **corporate philanthropy** on enhancing the local business environment



- An important role for **trade associations**
  - Greater influence
  - Cost sharing

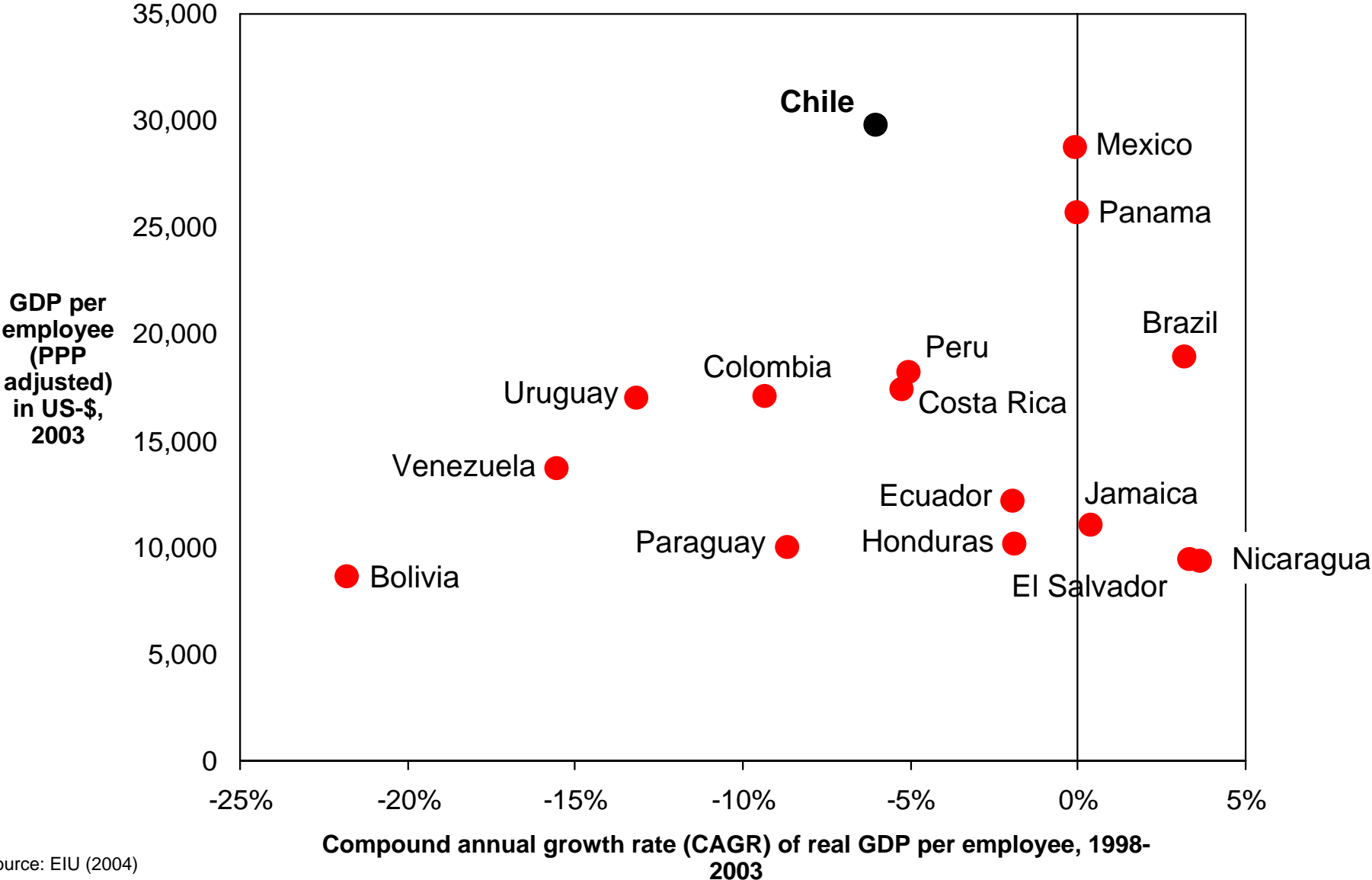


# Assessing Chilean Competitiveness

## Results

- Labor productivity **tops the Latin American region** but has eroded over time
- In a global comparison, Chile ranks only **average** on both labor productivity and labor hours
- Strong on **FDI attraction**
- Chile's world export market share has **slowly fallen** since 1997 but rebounded strongly in 2004, driven by copper price increases
- Very weak on **patenting**

# Comparative Labor Productivity Performance

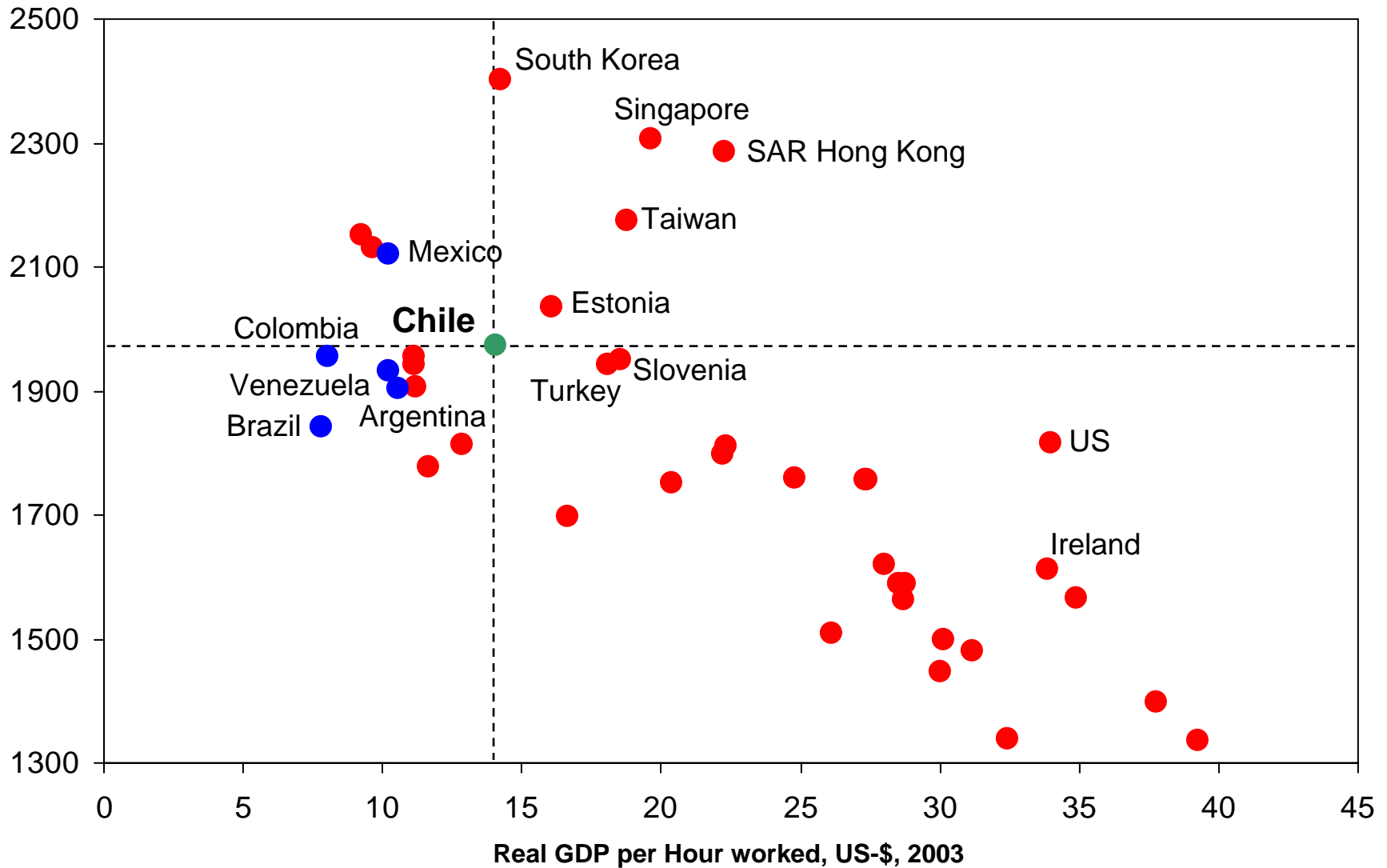


Source: EIU (2004)

# Labor Utilization and Productivity

## Selected Countries

Annual Hours worked per Employee, 2003

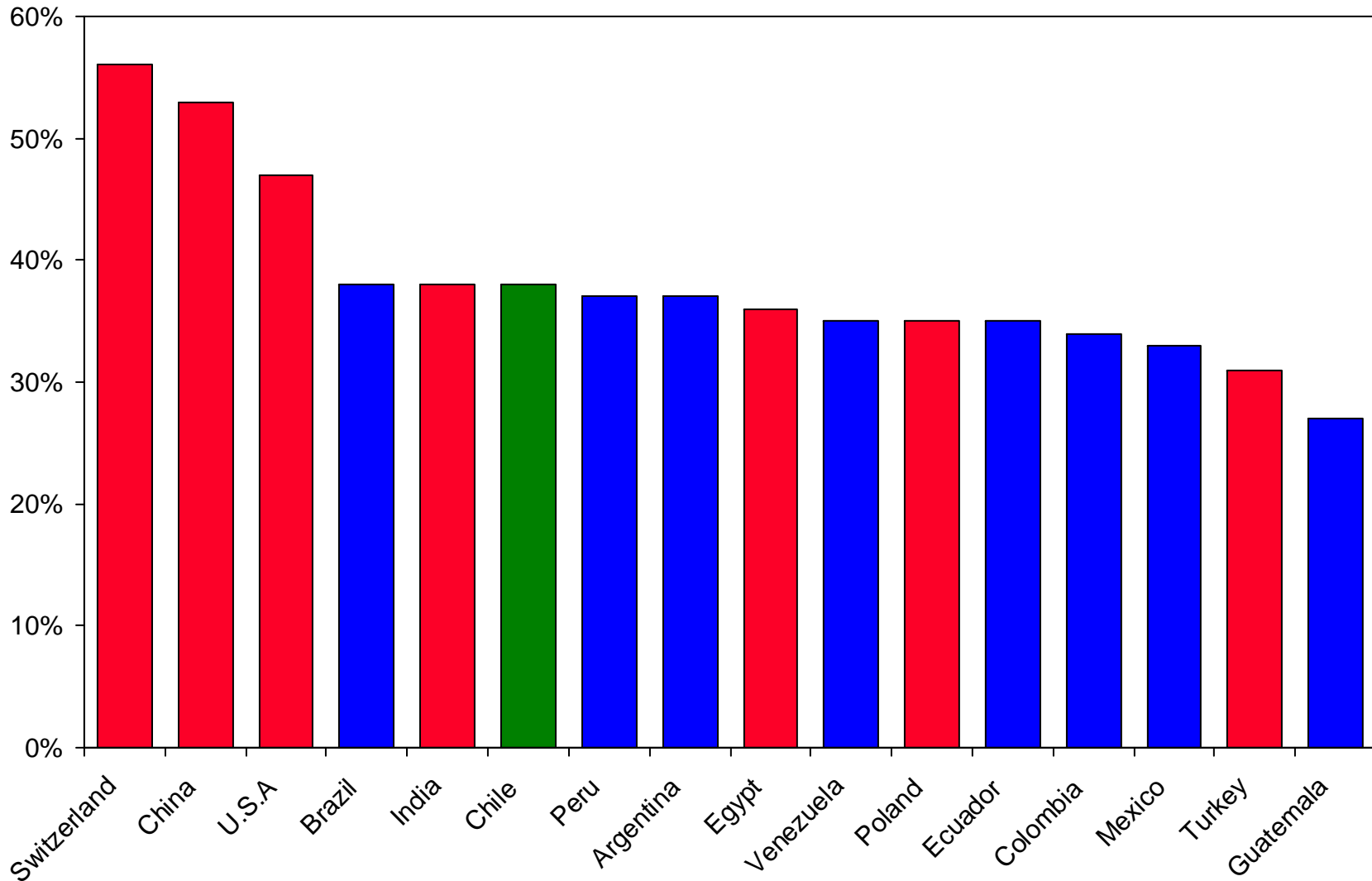


Note: Latin American countries in blue, other countries in red

Source: Groningen Growth and Development Centre and The Conference Board, 2005

# Labor Force Mobilization

Employees as % of Population, 2003



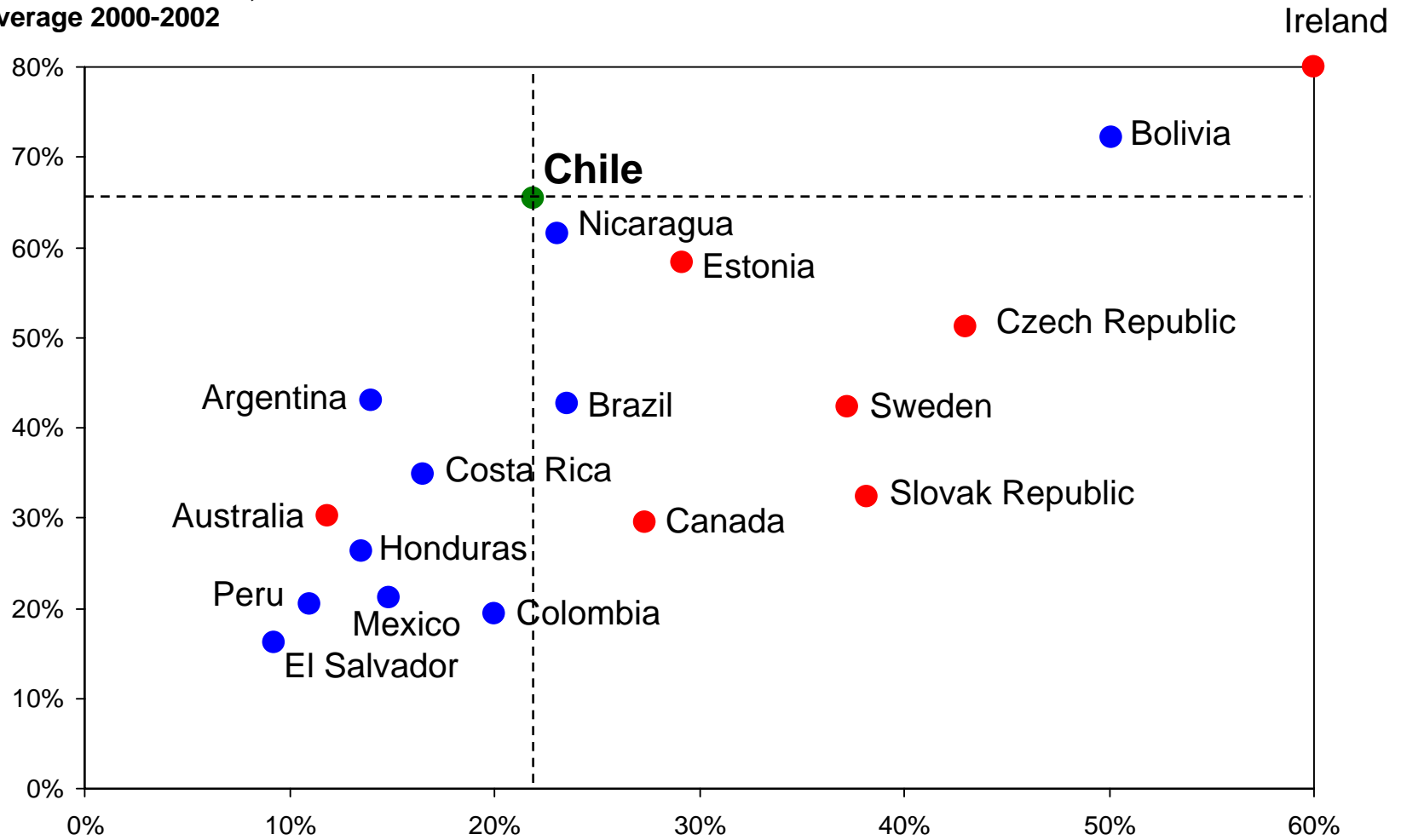
Note: Latin American countries in blue, other countries in red

Source: Groningen Growth and Development Centre and The Conference Board, 2005

# Comparative Inward Foreign Investment

## OECD Countries

FDI Stocks as % of GDP,  
Average 2000-2002

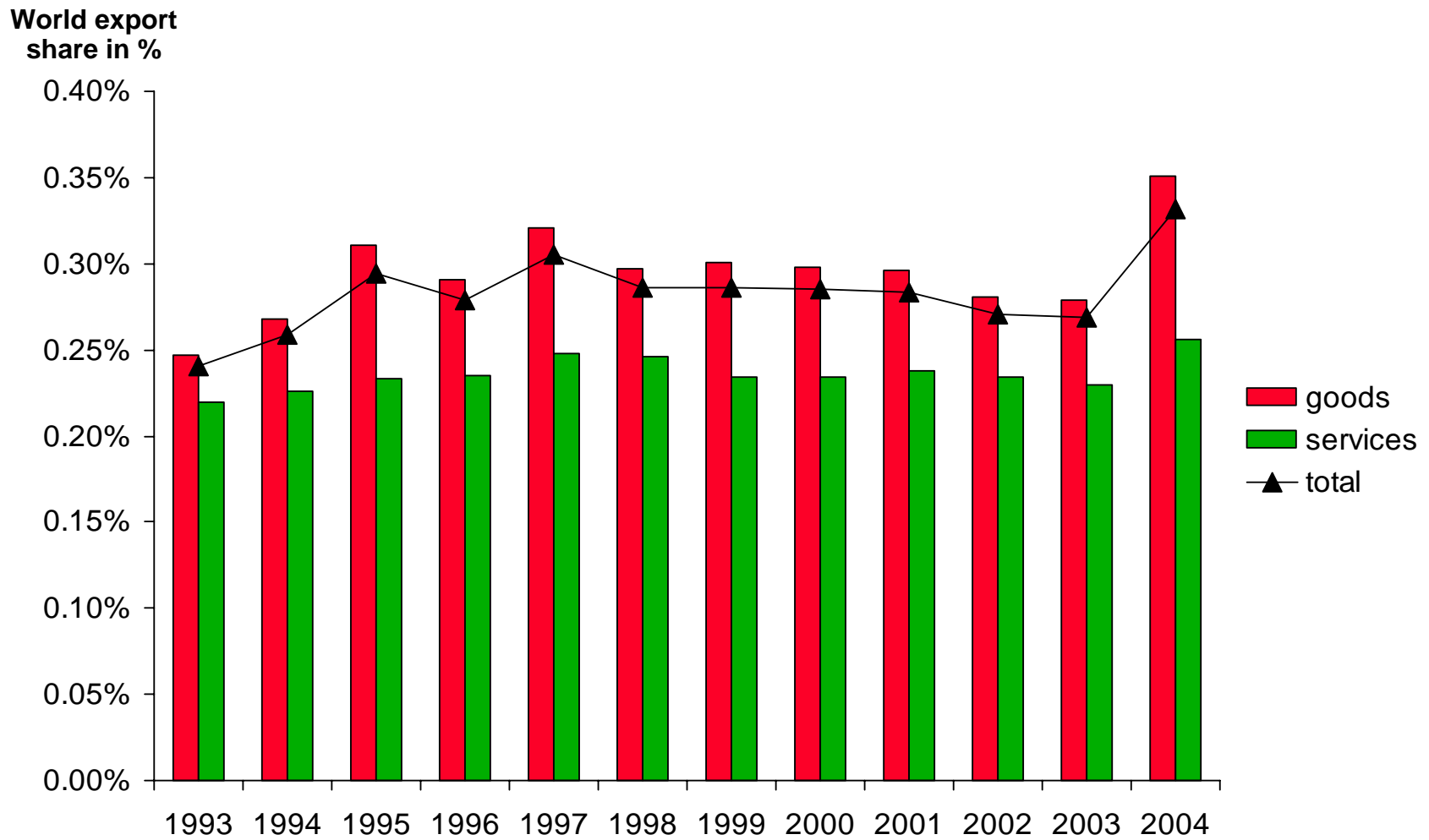


FDI Inflows as % of Gross Fixed Capital Formation, Average 2000-2002

Source: UNCTAD (2004)

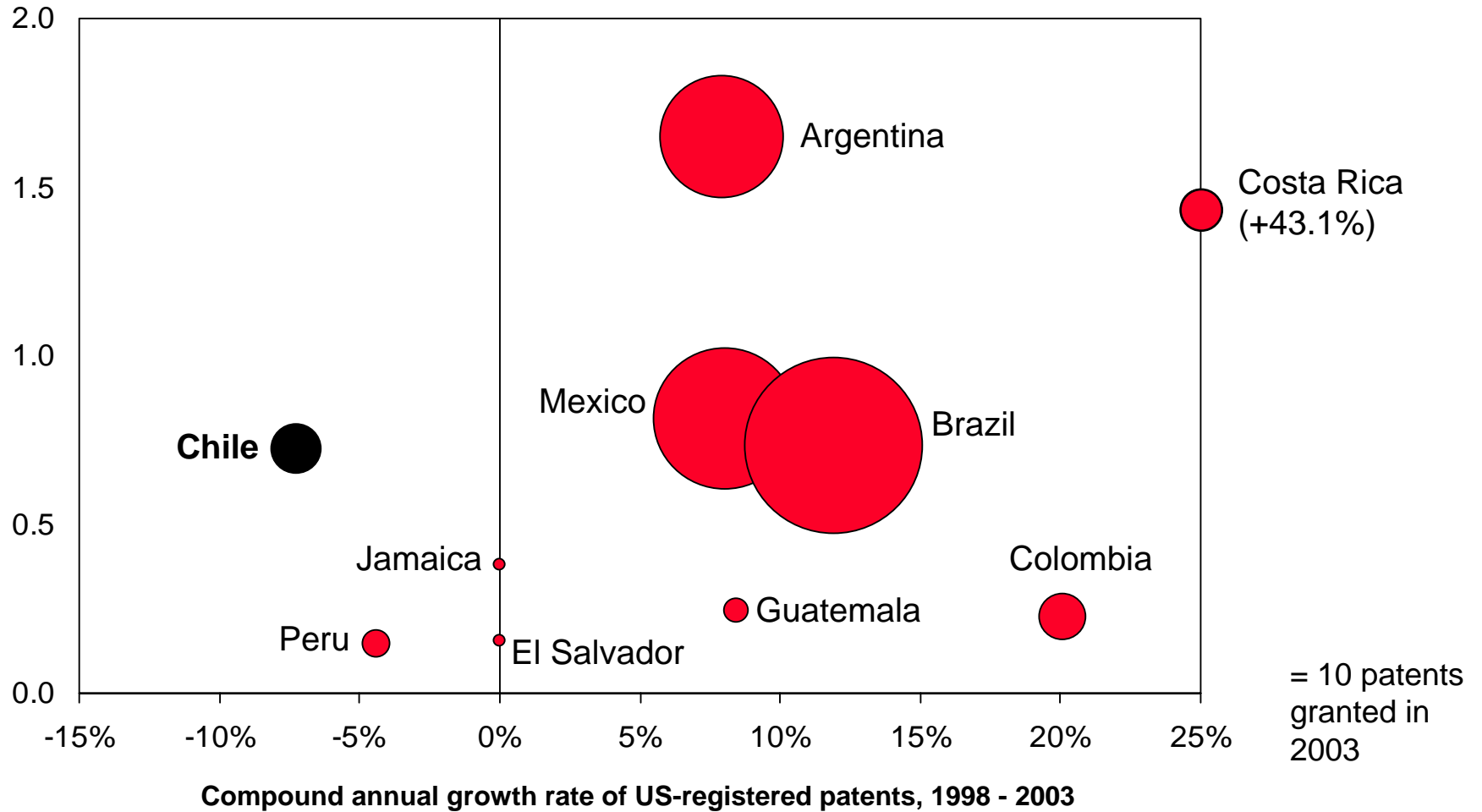
# Chile's Export Performance

## World Export Market Shares



# International Patenting Output Selected South American Countries

Annual U.S. patents per 1 million population, 2003



Source: US Patent and Trademark Office ([www.uspto.gov](http://www.uspto.gov)). Author's analysis.

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# Determinants of Chilean Competitiveness

## Macroeconomic, social, political, and legal context

- Strong institutions have supported sound macroeconomic policies, an effective legal system, and an increasingly stable political system
- While overall growth and new social programs have helped many Chileans, inequality remains an issue treated as a social not an economic problem

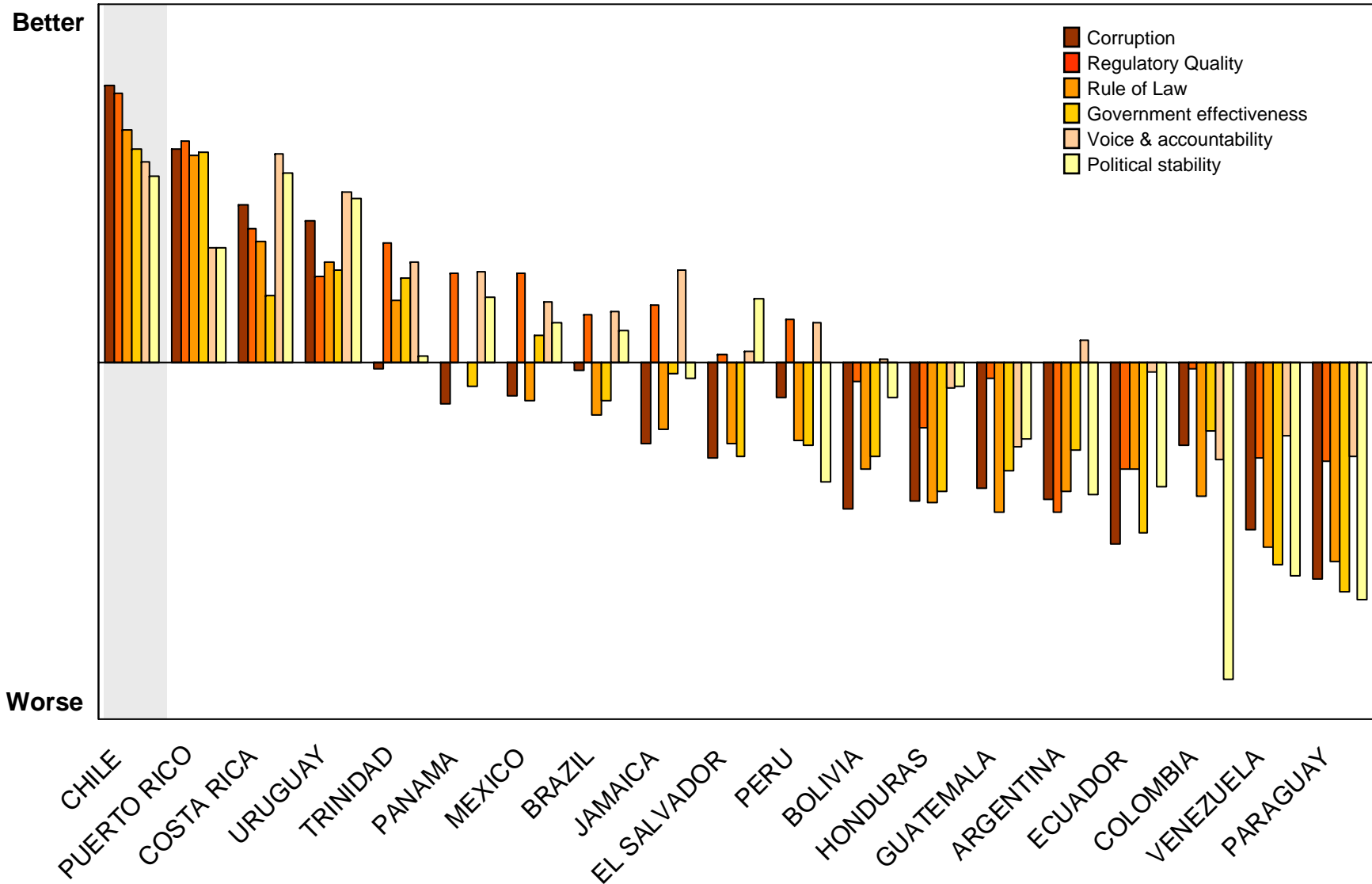
## Microeconomic business environment

- Key strength is the context for firm strategy and rivalry
- Key weaknesses in human capital and technological sophistication



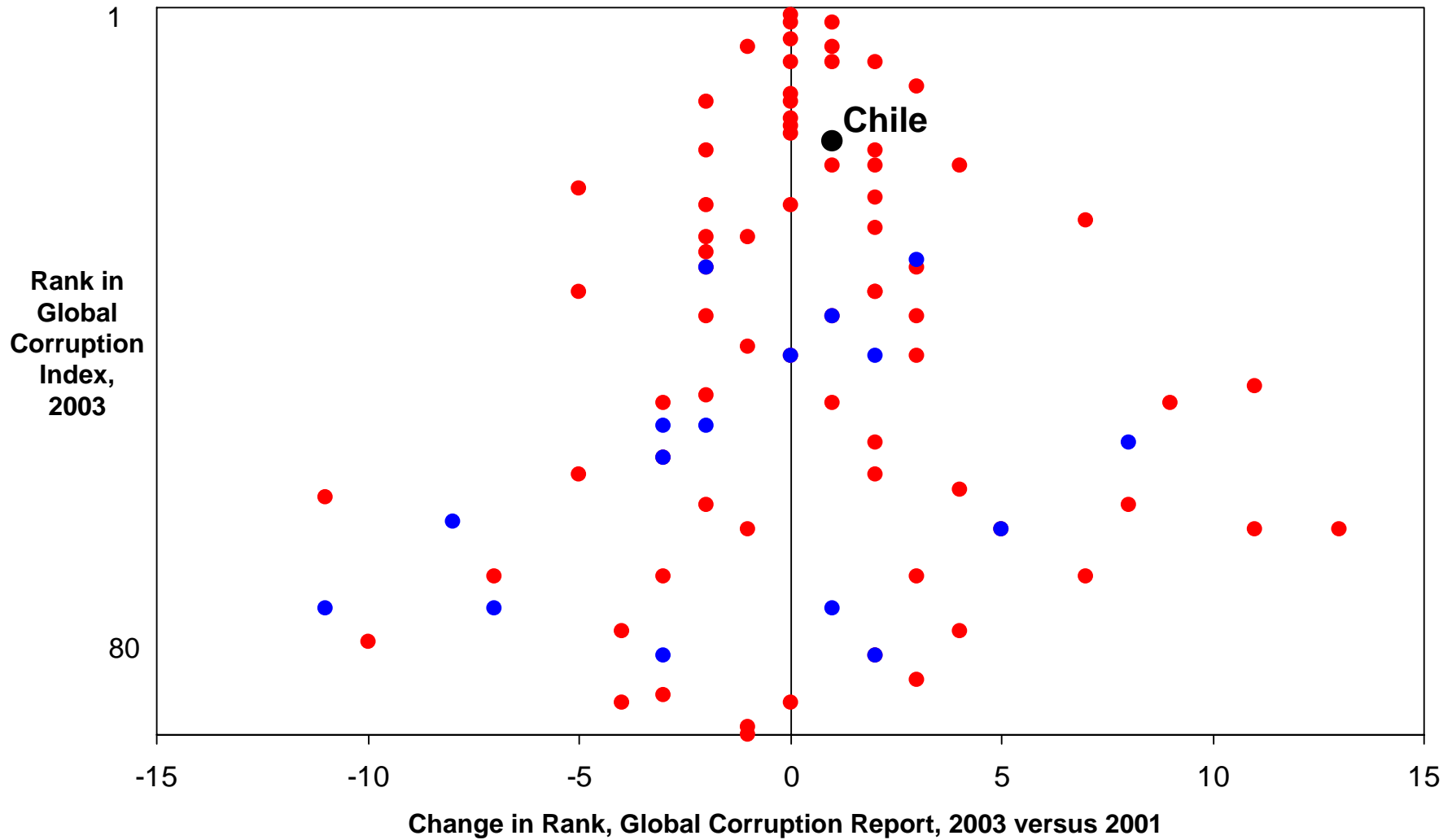
# Governance Indicators

## Selected Countries



Note: Sorted left to right by decreasing average value across all indicators  
 Source: World Bank (2004)

# Corruption



Note: South and Central American countries in blue, constant country sample

Source: Global Corruption Report, 2003

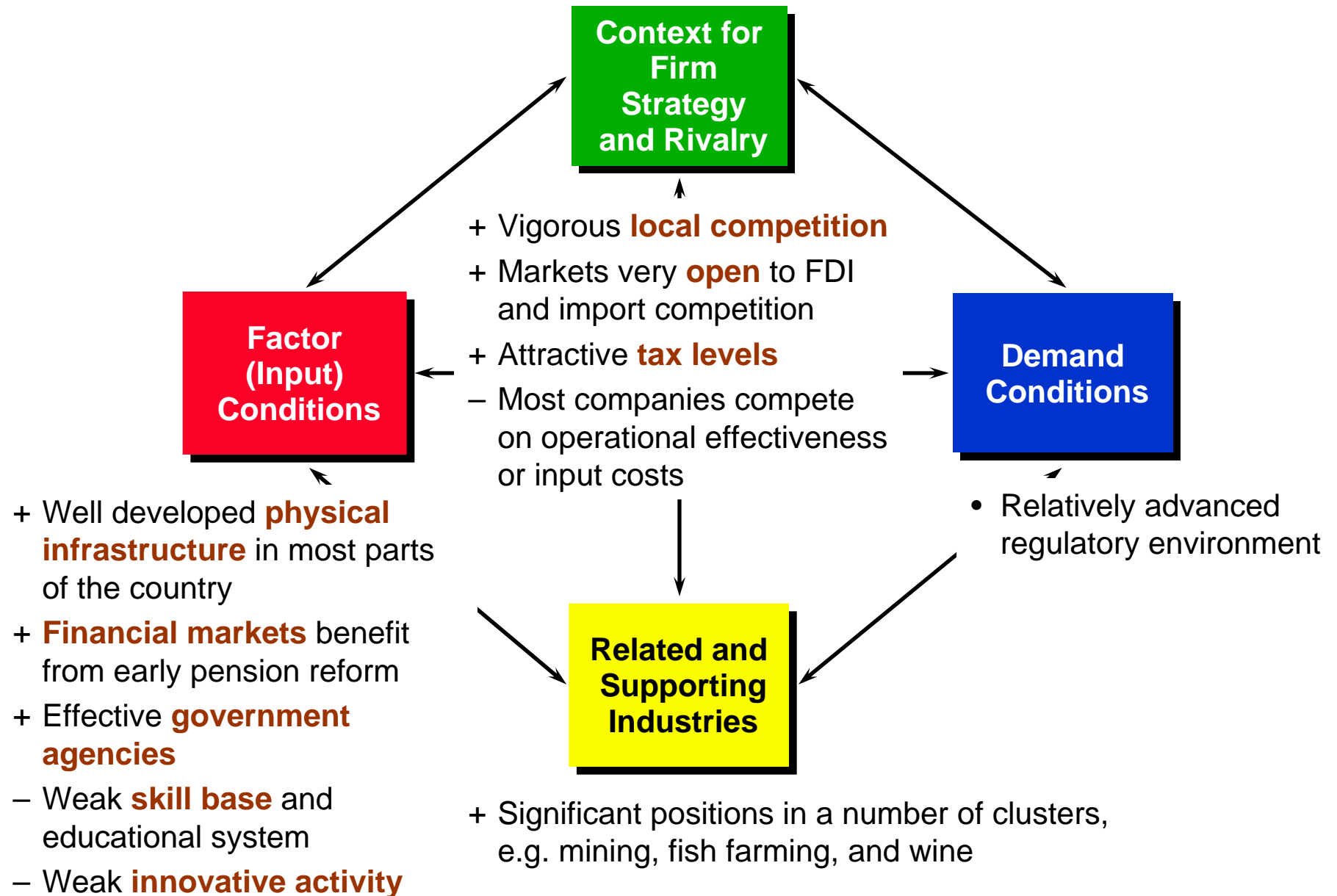
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# Business Competitiveness Index Rankings, 2004

Rank	Country	Rank	Country
1	United States	26	Spain
2	Finland	27	Estonia
3	Germany	<b>28</b>	<b>Chile</b>
4	Sweden	29	India
5	Switzerland	30	Slovenia
6	United Kingdom	31	Tunisia
7	Denmark	32	Portugal
8	Japan	33	Italy
9	Netherlands	34	Czech Republic
10	Singapore	35	Lithuania
11	Hong Kong SAR	36	Thailand
12	France	37	Brazil
13	Australia	38	Slovak Republic
14	Belgium	39	Greece
15	Canada	40	Hungary
16	Austria	41	Jordan
17	Taiwan	42	Indonesia
18	New Zealand	43	Cyprus
19	Iceland	44	Morocco
20	Norway	45	China
21	Israel	46	Costa Rica
22	Ireland	47	Latvia
23	Malaysia	48	Malta
24	Korea	49	Namibia
25	South Africa	50	Turkey

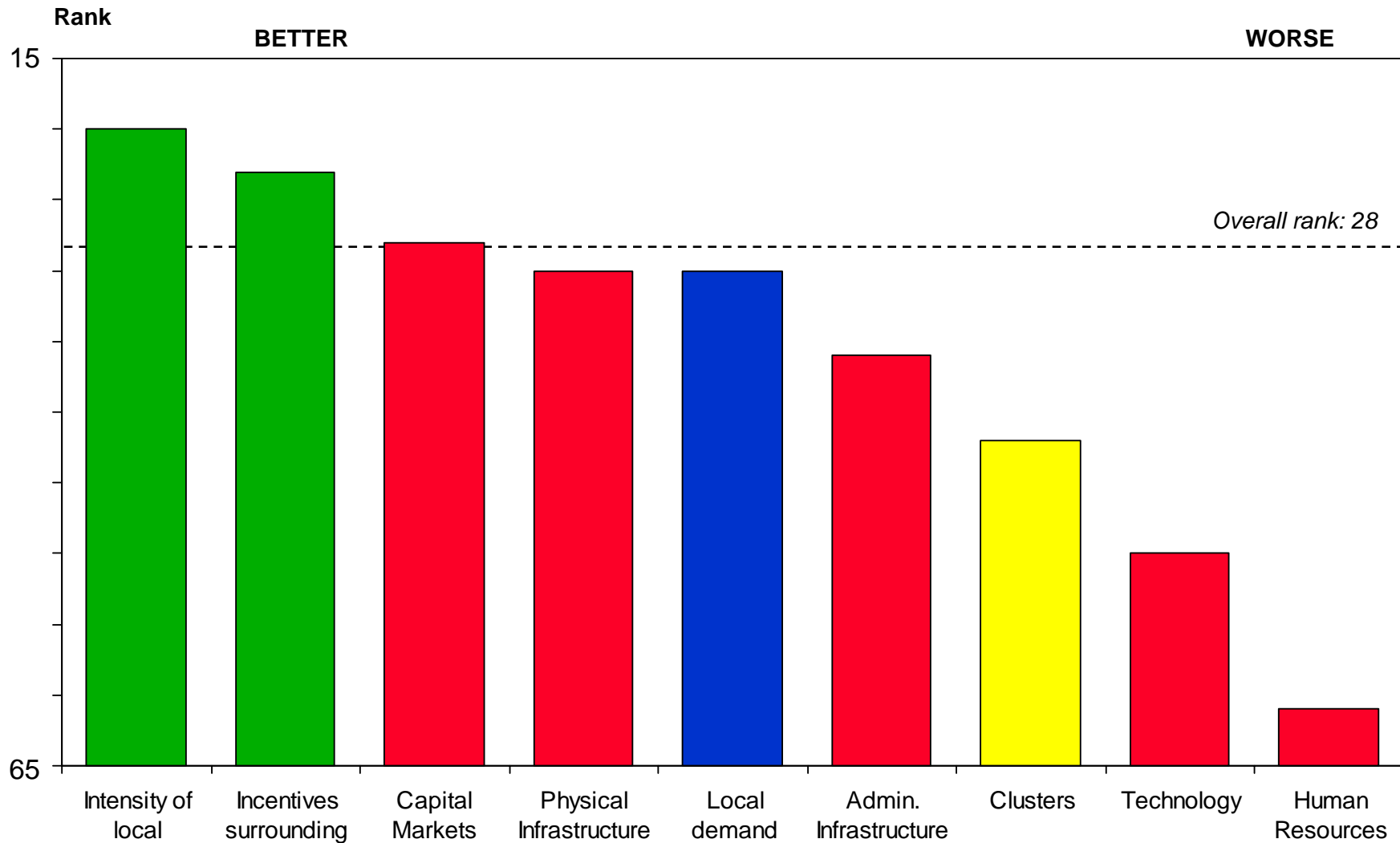
# Chilean Business Environment

## Key Strengths and Weaknesses



# National Business Environment Overview

## Chile's Relative Strengths and Weaknesses



- Factor Conditions
- Context for Firm Strategy and Rivalry
- Demand Conditions
- Related and Supporting Industries

Source: Global Competitiveness Report 2004

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# Context for Firm Strategy and Rivalry

## Chile's Relative Position

### Competitive Advantages Relative to GDP per Capita

Country Ranking, Arrows  
indicate a change of 5 or more  
ranks since 1998

Tariff liberalization	6	↑
Foreign ownership restrictions	6	
Hidden trade barrier liberalization	9	↑
Intensity of local competition	9	
Regulation of securities exchanges	14	
Favoritism in decisions of government officials	17	↓
Business costs of corruption	20	
Efficacy of corporate boards	20	↓
Effectiveness of anti-trust policy	21	↓
Protection of minority shareholders' interests	22	

### Competitive Disadvantages Relative to GDP per Capita

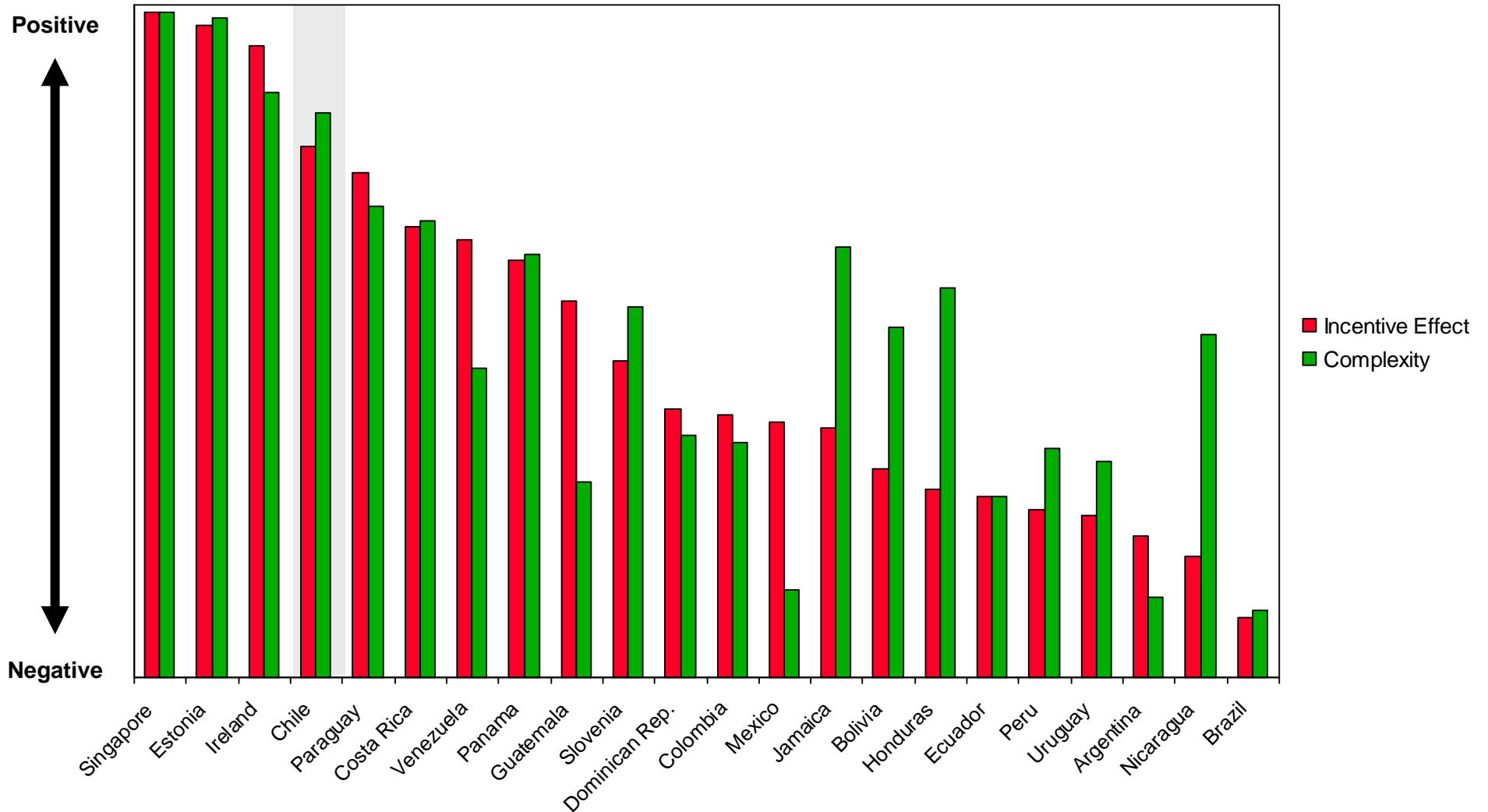
Country Ranking, Arrows  
indicate a change of 5 or more  
ranks since 1998

Decentralization of corporate activity	41
Prevalence and ease of mergers and acquisitions	40
Intellectual property protection	39

Note: Rank versus 93 countries; overall, Chile ranks 28<sup>th</sup> in Business Competitiveness and 41<sup>th</sup> in 2003 PPP adjusted GDP per capita  
Source: Global Competitiveness Report 2004-2005

# Taxation

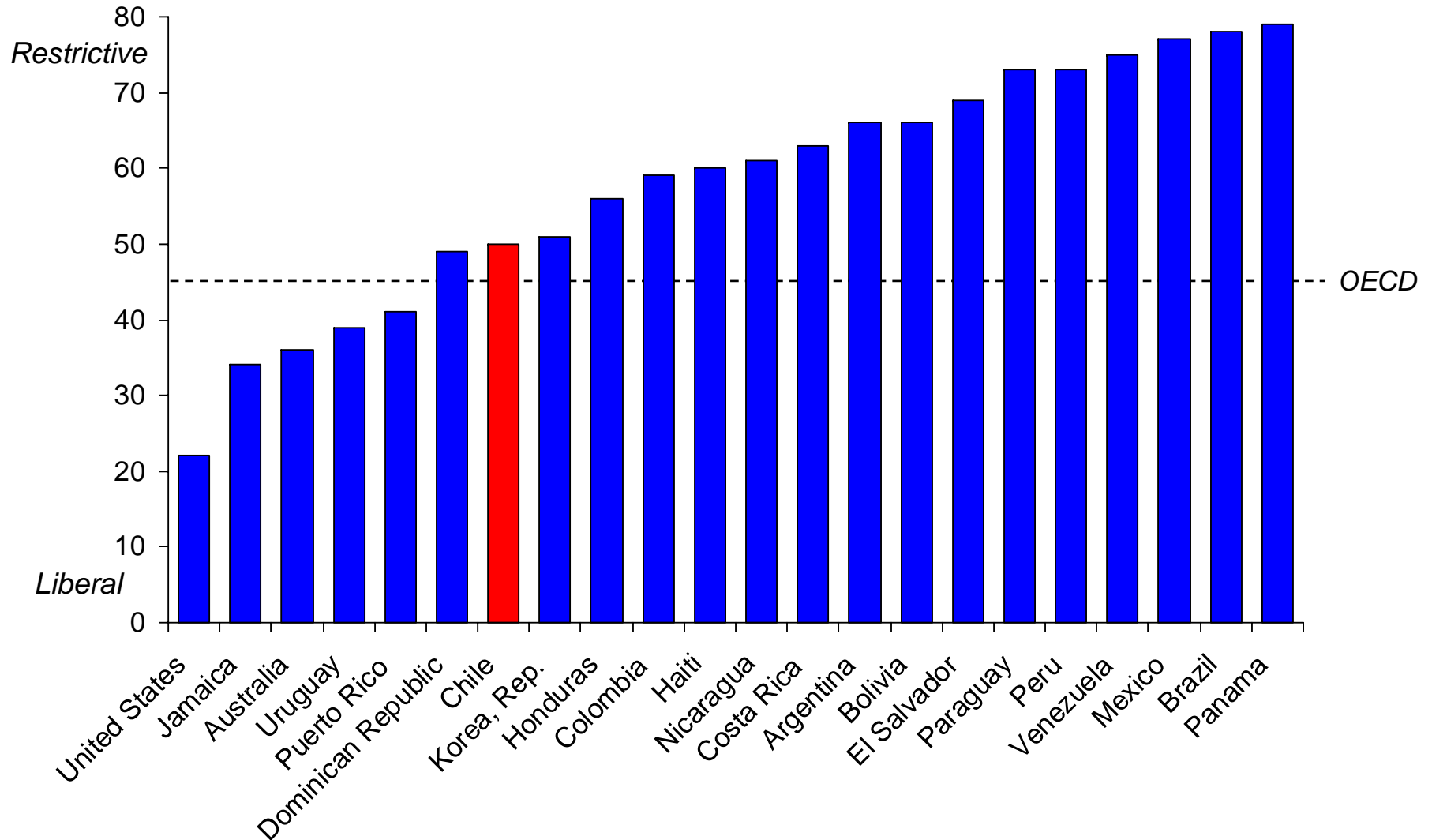
## Selected Countries



Source: Global Competitiveness Report 2004

# Labor Market Regulation Selected Countries

Stringency of Labor Market Regulation\*, (0-100)



Note: Average of values for hiring, firing, and employment condition regulations

Source: World Bank (2005)

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**Factor  
(Input)  
Conditions**

# Factor (Input) Conditions

## Chile's Relative Position

### Competitive Advantages Relative to GDP per Capita

Country Ranking, Arrows  
indicate a change of 5 or more  
ranks since 1998

Extent of bureaucratic red tape	12	↑
Telephone/fax infrastructure quality	15	
Quality of management schools	17	↓
Air transport infrastructure quality	20	
Financial market sophistication	21	
Ease of access to loans	23	
Port infrastructure quality	26	↑
Overall infrastructure quality	27	↑
Quality of electricity supply	27	
Efficiency of legal framework	28	
Local equity market access	32	

### Competitive Disadvantages Relative to GDP per Capita

Country Ranking, Arrows  
indicate a change of 5 or more  
ranks since 1998

Reliability of police services	80	↓
Quality of math and science education	76	
Quality of public schools	70	
Quality of the educational system	64	
Availability of scientists and engineers	55	
Quality of scientific research institutions	54	
Railroad infrastructure development	50	↑
Administrative burden for startups	46	↓
University/industry research collaboration	42	↓
Judicial independence	35	
Venture capital availability	35	

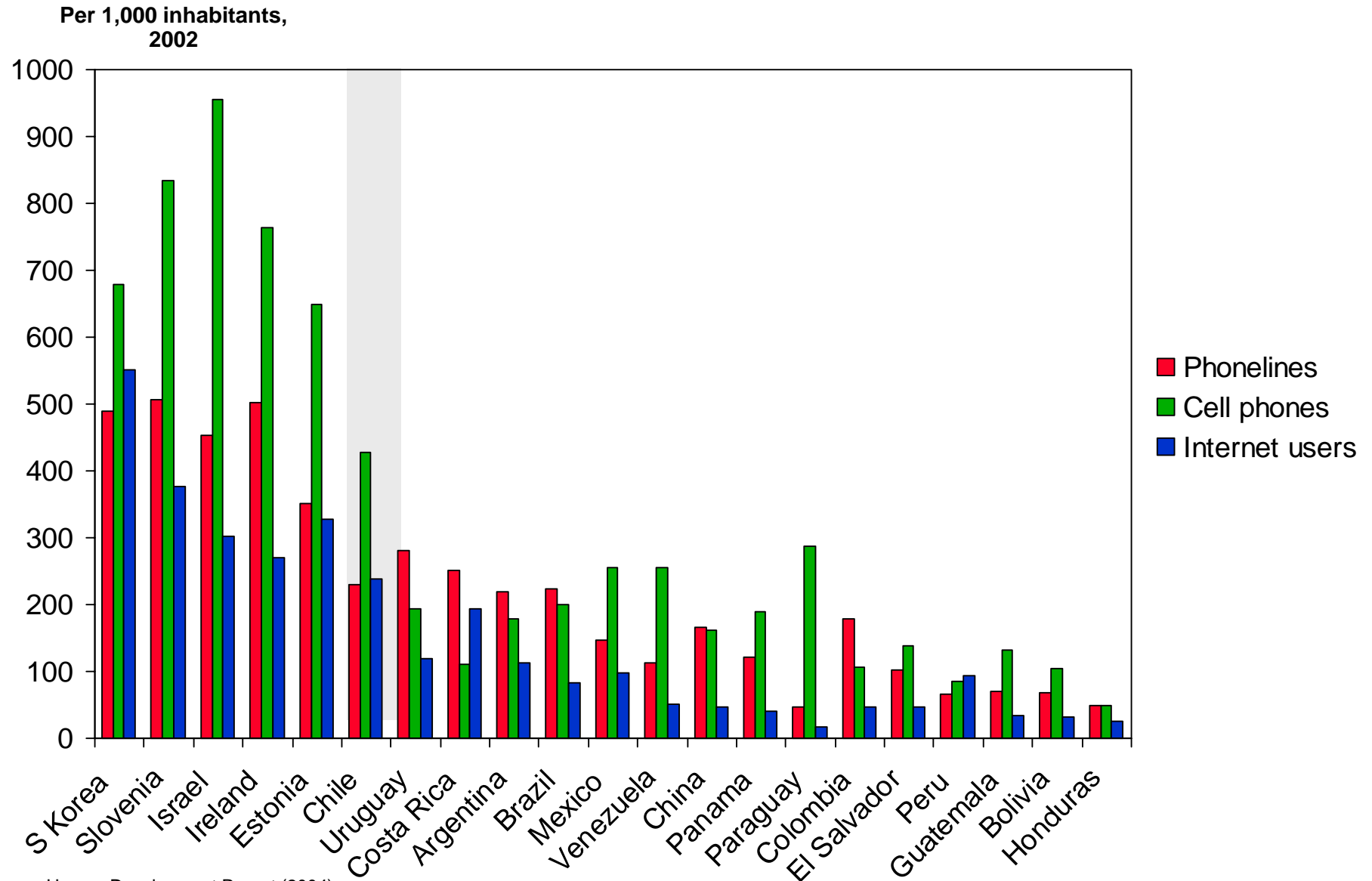
Note: Rank versus 93 countries; overall, Chile ranks 28<sup>th</sup> in Business Competitiveness and 41<sup>th</sup> in 2003 PPP adjusted GDP per capita

Source: Global Competitiveness Report 2004-2005

**Factor  
(Input)  
Conditions**

# Communication Infrastructure

## Chile's Relative Position



Source: Human Development Report (2004)  
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# **Demand Conditions**

## **Chile's Relative Position**

### **Competitive Advantages Relative to GDP per Capita**

Country Ranking, Arrows  
indicate a change of 5 or more  
ranks since 1998

Laws relating to ICT	26
Stringency of environmental regulations	31
Presence of demanding regulatory standards	32
Overall local buyer sophistication	33

### **Competitive Disadvantages Relative to GDP per Capita**

Country Ranking, Arrows  
indicate a change of 5 or more  
ranks since 1998

Government procurement of advanced technology products	46
Local buyer's openness to new products and processes	37

Note: Rank versus 93 countries; overall, Chile ranks 28<sup>th</sup> in Business Competitiveness and 41<sup>th</sup> in 2003 PPP adjusted GDP per capita  
Source: Global Competitiveness Report 2004-2005

# Related and Supporting Industries

## Chile's Relative Position

### Competitive Advantages Relative to GDP per Capita

Country Ranking, Arrows indicate a change of 5 or more ranks since 1998

Local supplier quality 29

### Competitive Disadvantages Relative to GDP per Capita

Country Ranking, Arrows indicate a change of 5 or more ranks since 1998

Extent of collaboration among clusters 57

Local availability of process machinery 53

State of cluster development 51

Local availability of components and parts 47

Local availability of specialized research and training services 38

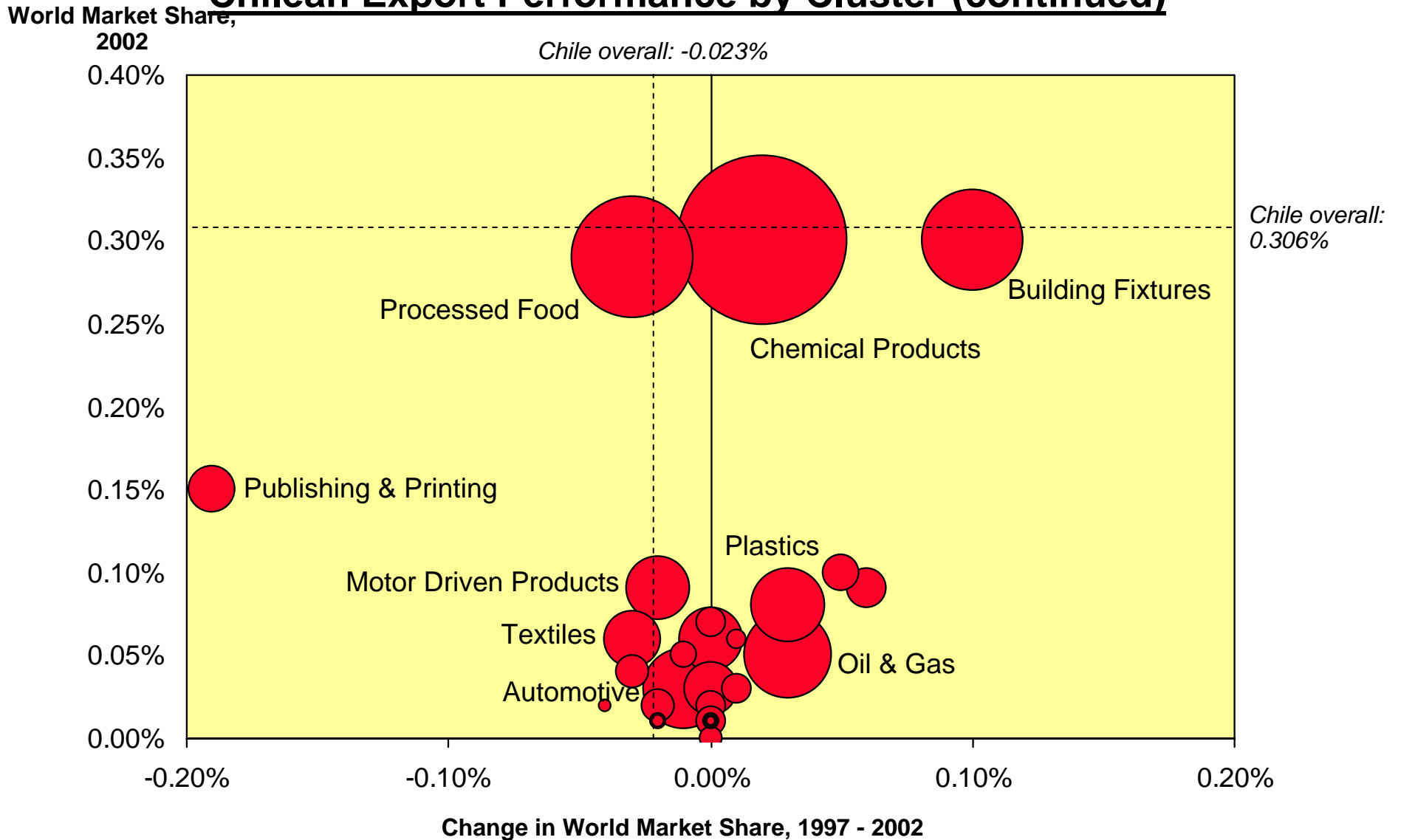
Local supplier quantity 35 ↓

Note: Rank versus 93 countries; overall, Chile ranks 28<sup>th</sup> in Business Competitiveness and 41<sup>th</sup> in 2003 PPP adjusted GDP per capita  
Source: Global Competitiveness Report 2004-2005



# Cluster Composition

## Chilean Export Performance by Cluster (continued)



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

# Leading Chilean Export Industries, 2002

	Industry	Cluster	World Export Share	Change in Share 1997-2002	Export Value in \$thousands
1	Copper, copper anodes and alloys	Metal Manufacturing	36.54%	4.59%	\$ 4,540,102
2	Copper ores and concentrates	Metal Manufacturing	30.07%	2.51%	\$ 1,733,989
3	Fruit, nuts excluding oil nuts	Agricultural Products	4.71%	0.32%	\$ 1,325,221
4	Fish, fresh, chilled, or frozen	Fishing and Fishing Products	5.72%	2.09%	\$ 1,195,632
5	Chemical wood pulp, soda, bleached	Forest Products	5.63%	1.34%	\$ 686,057
6	Wine of fresh grapes	Agricultural Products	4.19%	2.84%	\$ 610,017
7	Wood of conifer, sawn	Furniture	2.37%	1.28%	\$ 383,422
8	Flours, meals of meat, fish or aquatic invertebrates for animal feeds	Agricultural Products	13.10%	-14.67%	\$ 323,370
9	Acyclic monohydric alcohols	Chemical Products	5.24%	3.79%	\$ 300,948
10	Gold, non-monetary, excluding ores	Jewelry, Precious Metals and Collectibles	1.28%	-0.69%	\$ 240,581
11	Ores and concentrates of molybdenum, titanium, zirconium	Metal Manufacturing	14.16%	2.28%	\$ 230,067
12	Wood of conifer, worked, shaped	Furniture	16.36%	13.78%	\$ 192,790
13	Petroleum Oils	Oil and Gas Products	0.16%	0.12%	\$ 185,448
14	Miscellaneous prepared or preserved fish, crustaceans and the like	Fishing and Fishing Products	2.40%	-0.20%	\$ 182,798
15	Other meat, meat offal	Agricultural Products	0.62%	0.47%	\$ 144,659
16	Iron Ore and Concentrates	Metal Manufacturing	1.45%	-0.51%	\$ 140,029
17	Chemical wood pulp, soda, unbleached	Forest Products	23.86%	-1.79%	\$ 135,757
18	Fiberboard	Building Fixtures and Equipment	2.97%	1.40%	\$ 134,903
19	Other chemical elements	Chemical Products	4.02%	1.25%	\$ 131,729
20	Fruit, preserved or prepared	Agricultural Products	2.16%	0.47%	\$ 130,379
21	Miscellaneous food preparations	Processed Food	0.90%	0.79%	\$ 128,716
22	Wood in chips or particles	Forest Products	7.21%	-4.07%	\$ 123,158
23	Crustaceans, mollusks, and aquatic invertebrates	Fishing and Fishing Products	0.80%	0.50%	\$ 112,020
24	Nitrites; nitrates	Chemical Products	33.93%	11.14%	\$ 102,748
25	Fertilizer, except crude (group272)	Agricultural Products	0.70%	0.44%	\$ 99,366

# Leading Chilean Export Industries, 2002 (continued)

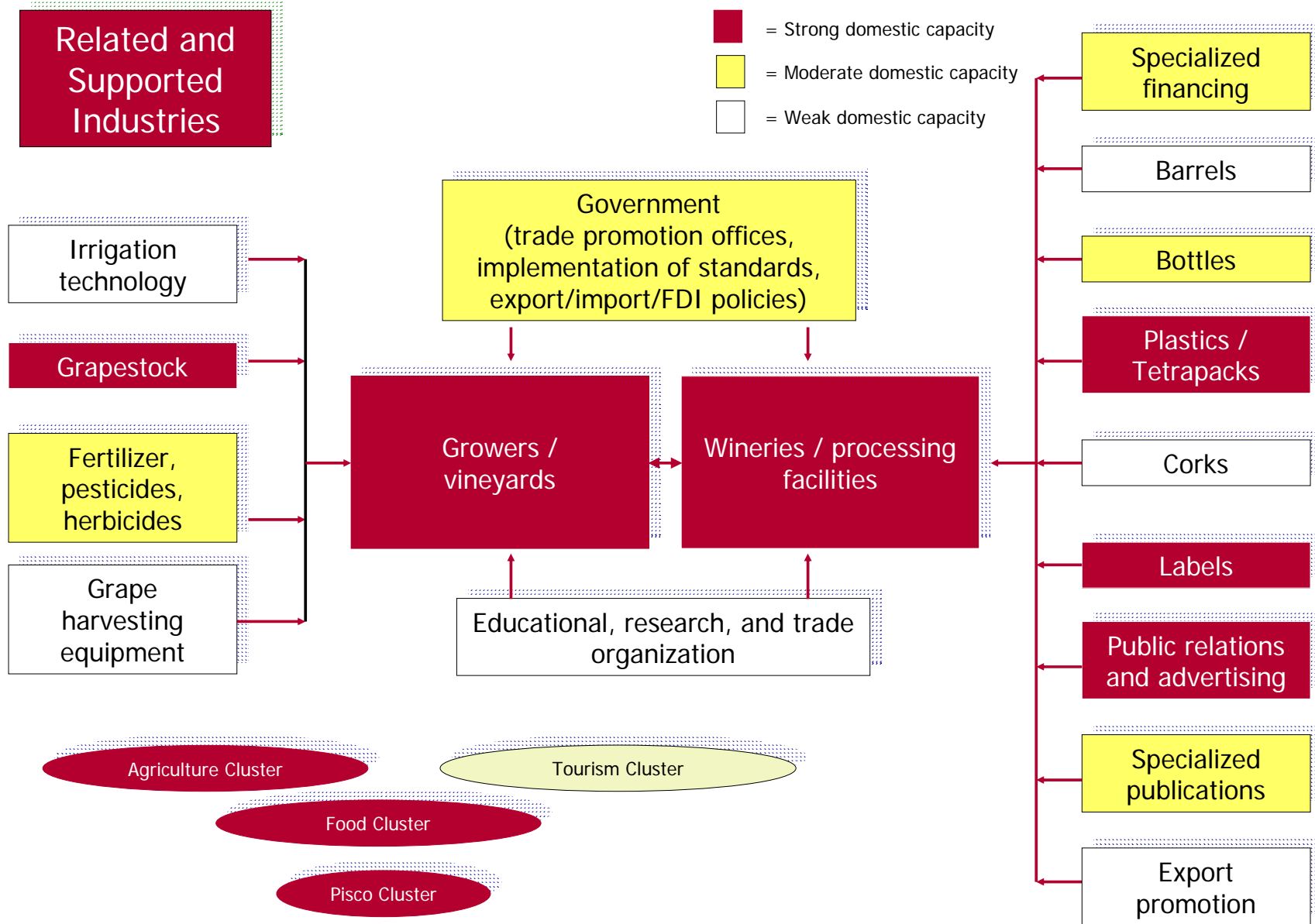
	Industry	Cluster	World Export Share	Change in Share 1997-2002	Export Value in \$millions
26	Builders' joinery and carpentry of wood	Furniture	1.37%	0.86%	\$ 96,643
27	Silver, platinum and other metals of the platinum group	Jewelry, Precious Metals and Collectibles	0.97%	-1.12%	\$ 90,829
28	Plywood, solely of wood	Building Fixtures and Equipment	1.66%	1.52%	\$ 89,866
29	Newsprint, rolls, sheets	Forest Products	1.11%	0.39%	\$ 88,535
30	Miscellaneous paper and paperboard, coated	Forest Products	0.60%	0.59%	\$ 83,130
31	Rubber tires, tubes	Motor Driven Products	0.33%	0.12%	\$ 82,236
32	Miscellaneous prepared or preserved vegetables	Agricultural Products	0.71%	-0.63%	\$ 78,107
33	Miscellaneous goods vehicles	Automotive	0.15%	0.12%	\$ 75,913
34	Fruit, vegetable juices	Agricultural Products	1.19%	-0.60%	\$ 72,588
35	Miscellaneous ash, residues containing metals	Metal Manufacturing	7.57%	7.53%	\$ 66,358
36	Copper wire	Metal Manufacturing	1.59%	-0.03%	\$ 65,357
37	Maize unmilled	Agricultural Products	0.66%	0.33%	\$ 65,088
38	Vegetables	Agricultural Products	0.29%	-0.17%	\$ 62,648
39	Mucilages and thickeners	Processed Food	7.21%	0.48%	\$ 57,614
40	Carbonates, percarbonates	Chemical Products	2.49%	0.23%	\$ 55,764
41	Passenger transport vehicles	Automotive	0.02%	0.00%	\$ 55,139
42	Seeds, fruit and spores for sowing	Agricultural Products	2.29%	0.39%	\$ 54,240
43	Fish, dried, salted, or smoked	Fishing and Fishing Products	2.11%	1.76%	\$ 52,517
44	Other plastics in primary forms	Plastics	0.12%	0.10%	\$ 39,799
45	Miscellaneous articles of iron or steel	Metal Manufacturing	0.22%	0.21%	\$ 37,337
46	Wood rough, rough squared	Forest Products	0.58%	-0.59%	\$ 37,324
47	Other non-ferrous metal waste	Metal Manufacturing	0.55%	0.52%	\$ 36,886
48	Ships, boats and other vessels	Marine Equipment	0.10%	0.04%	\$ 34,237
49	Milk, concentrated or sweetened	Processed Food	0.45%	0.37%	\$ 30,983
50	Miscellaneous medicaments	Biopharmaceuticals	0.03%	-0.02%	\$ 30,779

**Top 50 Industries as % of Chile's total goods exports: 89.0%**

Source: Prof. Michael E. Porter, International Cluster Competitiveness Project; UN Comtrade.



# Chilean Wine Cluster



Source: Research by HBS student team (Asier Alea, Judd Belstock, Don Lambert, Jacqueline O'Neill, Noah Sawyer), 2005

# Innovative Capacity Index

## 2004 Rankings

Rank	Scientists & Engineers Index	Innovation Policy Index	Cluster Environment Index	Linkages Index	Operations and Strategy Index
...		...	...	...	...
30	Estonia	China	Pakistan	Estonia	U. A. E.
31	Slovak Republic	Estonia	Indonesia	Brazil	Indonesia
32	Portugal	Portugal	China	Lithuania	Cyprus
33	Israel	Spain	Spain	Slovak Republic	Jamaica
34	Poland	New Zealand	Iceland	Czech Republic	Greece
35	Czech Republic	U. A. E.	South Africa	U. A. E.	<b>Chile</b>
36	Hungary	Thailand	Tunisia	Luxembourg	Malta
37	Greece	South Africa	Egypt	Spain	Czech Republic
38	Croatia	Turkey	Portugal	Slovenia	Brazil
39	Bulgaria	Cyprus	<b>Chile</b>	<b>Chile</b>	Bahrain
40	Italy	Greece	Morocco	Indonesia	South Africa
41	Latvia	Czech Republic	Russia	Portugal	Lithuania
42	Romania	Lithuania	Nigeria	Egypt	Mauritius
43	Argentina	Slovak Republic	Cyprus	Uganda	Egypt
44	Mozambique	Botswana	Bahrain	Turkey	India
45	China	Namibia	Turkey	Russia	Poland
46	Costa Rica	Bahrain	Estonia	Hungary	Jordan
47	Egypt	Italy	Ukraine	Jordan	Hungary
48	Trinidad	Malta	Mexico	Jamaica	Mexico
49	<b>Chile</b>	Jordan	Slovenia	Bahrain	Tunisia
50	Cyprus	<b>Chile</b>	Lithuania	Costa Rica	Estonia
...					

Source: Unpublished data using the methodology described in "Ranking National Innovative Capacity: Findings from the National Innovative Capacity Index" by Michael E. Porter and Scott Stern (part of The Global Competitiveness Report 2003-2004).

# U.S. Patenting by Organizations in Chile

Organization	1997	1998	1999	2000	2001	2002	Patents Issued 1997-2002
BETZDEARBORN INC.					1	2	3
SOCIEDAD MINERA SALAR DE ATACAMA S.A.	1		2				3
DEGESCH DE CHILE LTDA		1		1	1		3
TECMINOMET S.A.				3			3
MARDELA INTERNATIONAL INC. S.A.				2	1		3
UNIVERSITY OF STRATHCLYDE		1	1				2
SILICON LIGHT MACHINES INC.		1		1			2
HARTING, S.A.					1	1	2
BIOACTIVA MICROTECHNE						2	2
CORPORACION NACIONAL DEL CORBE DE CHILE		1					1
HENKEL CORPORATION			1				1
LITTON SYSTEMS INC.				1			1
CYTEC TECHNOLOGY CORP.			1				1
OSIRIS THERAPEUTICS, INC.					1		1
XYROFIN OY						1	1
UNIVERSIDAD CATOLICA DE VALPARAISO	1						1
NOVARTIS AG (FORMERLY SANDOZ LTD.)					1		1
EMBALAJES PROEM LIMITADA		1					1
LABORATORIO CHILE S.A.		1					1
FOSFOQUIM S.A.		1					1

Source: US Patent and Trademark Office

# Company Operations and Strategy

## Chile's Relative Position 2004

### Competitive Advantages Relative to GDP per Capita

Country Ranking, Arrows  
indicate a change of 5 or more  
ranks since 1998

Breadth of international markets	14	↑
Reliance on professional management	23	
Extent of marketing	24	↓
Production process sophistication	28	↓
Extent of incentive compensation	29	

### Competitive Disadvantages Relative to GDP per Capita

Country Ranking, Arrows  
indicate a change of 5 or more  
ranks since 1998

Extent of branding	64	↓
Value chain presence	55	↓
Capacity for innovation	53	↓
Nature of competitive advantage	52	
Extent of regional sales	50	↓
Degree of customer orientation	48	↓
Company spending on research and development	42	
Extent of staff training	39	
Control of international distribution	37	
Willingness to delegate authority	35	

Note: Rank versus 93 countries; overall, Chile ranks 28<sup>th</sup> in Business Competitiveness and 41<sup>th</sup> in 2003 PPP adjusted GDP per capita  
Source: Global Competitiveness Report 2004-2005

# Chilean Competitiveness

## Action Priorities

- Address weaknesses in the business environment that constrain productivity, especially the **skill base**
- Aggressively pursue **cluster development** as a tool to enable companies to compete with more sophisticated strategies
- Invest in upgrading **innovative capacity**
- Integrate **social and economic policies** to mobilize the full economic potential of the Chilean society
- Continue to work to foster **regional economic co-ordination** in areas that enhance competitiveness

# Stages Of Competitive Development



## Input Cost

- *Macro, political, and legal stability*
- *Efficient basic infrastructure*
- *Lowering the regulatory costs of doing business*

## Efficiency

- *Local competition*
- *Market openness*
- *Incentives and rules encouraging productivity*
- *Cluster development*

## Unique Value

- *Advanced skills*
- *Advanced infrastructure*
- *Incentives and rules encouraging innovation*
- *Cluster upgrading*

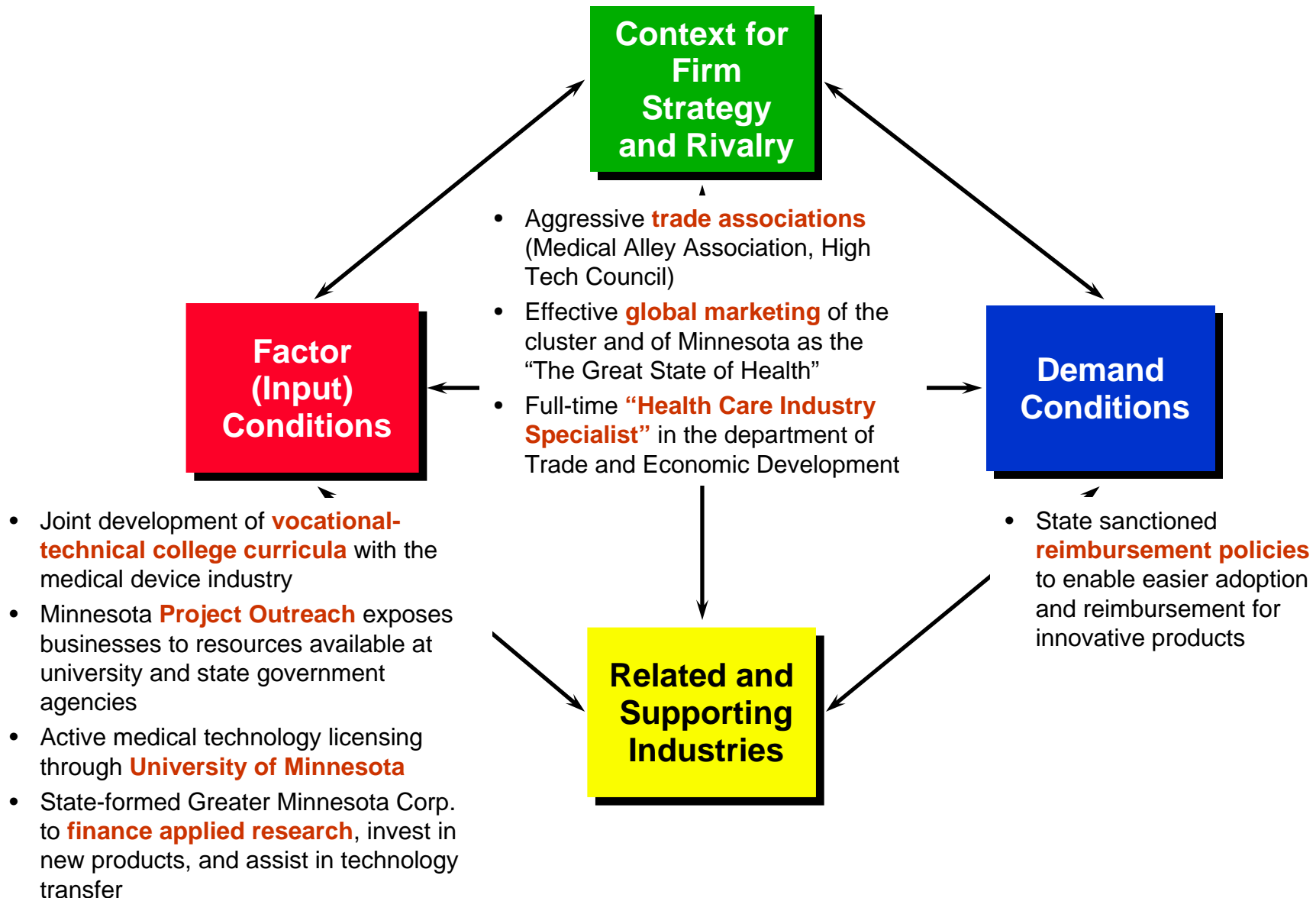
# Clusters as a Tool For Economic Policy

## Overview

- A **new way of thinking** about an economy and organizing economic development efforts
- Better aligned with the **nature of competition and sources of competitive advantage**. Clusters capture important **linkages** in terms of technology, skills, information, marketing and customer needs that cut across firms and industries. Such linkages are fundamental to competition and, especially, to the **direction and pace of innovation**
- **Recast the role** of the private sector, government, trade associations and educational or research institutions
- Brings together **firms of all sizes**
- Creates a **forum** for constructive business-government dialog
- A means to identify **common opportunities, not just common problems**
- Provides guidance for both **economic and social policies**

# Public / Private Cooperation in Cluster Upgrading

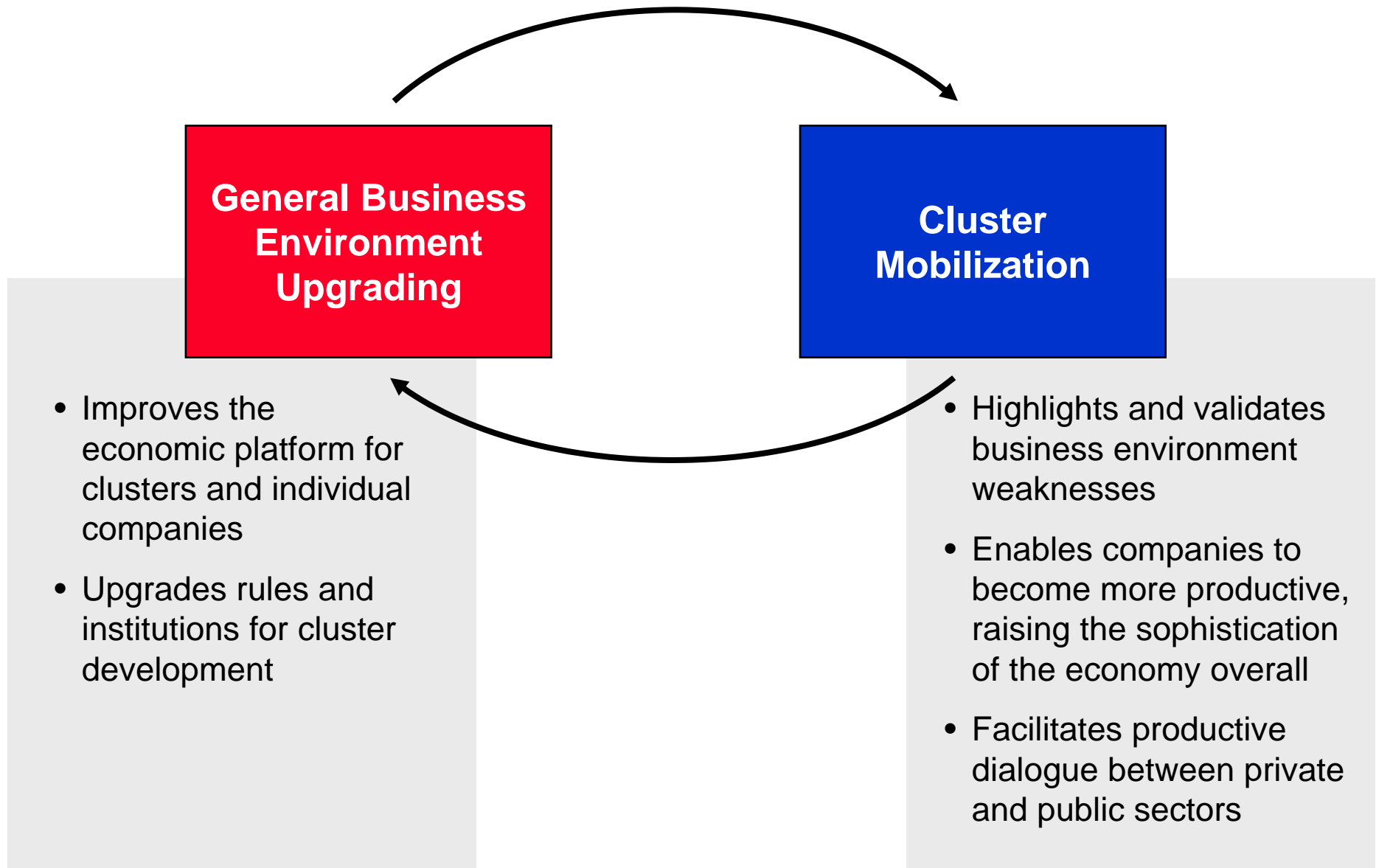
## Minnesota's Medical Device Cluster





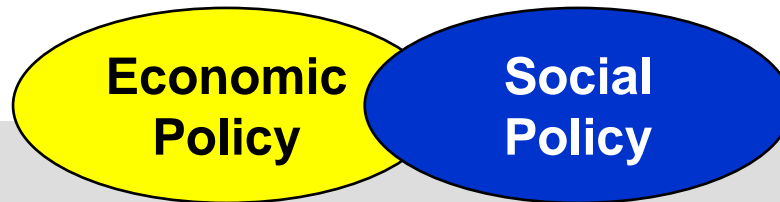
# Upgrading Competitiveness at the Microeconomic Level

## A Two-Pronged Approach



# Integrating Economic and Social Policy

In the new thinking on competitiveness, there is **no inherent conflict** between economic and social policy



- A **productive and growing economy** requires:
  - Rising skill levels
  - Safe working conditions
  - Healthy workers who live in decent housing in safe neighborhoods
  - A sense of equal opportunity
  - Assimilation of underemployed citizens into the productive workforce
  - Low levels of pollution (pollution is a sign of unproductive use of physical resources)
- “Social” policies must be **aligned with productivity** in the economy and prepare and motivate citizens to **succeed in the market system**
- “Economic” policies must include explicit programs to **raise human capability** and improve the lives and **sense of opportunity** for citizens

# Integrating Economic and Social Policy

## Examples

### Training

- Organize training investments around clusters

### Housing

- Create mechanisms to encourage home ownership; provide incentives for new company formation in the construction cluster; reduce unnecessary costs of housing construction due to regulatory and permitting delays; secure property rights to residents and property holders to provide incentives for investment

### Health Care

- Create incentives for private insurance; open health care delivery to competition to improve the value of care and improve health

### Social Security

- Establish a private pension system. Integrate welfare payments with training and incentives to return to the workforce

### Environmental Quality

- Institute a regulatory regime that encourages movement to more environmental friendly methods; invest in technical assistance in eco-efficient processes and practices

# Regions and Economic Strategy

## Traditional Views

Regions as **free trade zones**; regions as **economic unions** (e.g., United States, European Union)



## New View

A regional strategy as a powerful tool to enhance **competitiveness** in autonomous countries

Internal trade and investment

- Gains from internal trade and investment

AND

Company operations and strategy

- Enhancing the **competitive capability** of firms
- Expanding trade in **non-traditional** export industries

Business environment

- Mutual benefits to the **productivity of the business environment** through policy coordination that captures **external economies** and the benefits of **specialization** in institutions and infrastructure across borders

Cluster development

- **Cross-border cluster** specialization and integration

Foreign investment

- Enhancing interest and investment in the region by the **international community**

Economic policy process

- Improving economic policy formulation and implementation **at the national level**

# Chile's Competitiveness in 2005

- Chile has been **very successful** over a long period of time
- The **sound institutions** and **market-driven policies** the country has put in place set it apart from many of its neighbors



- Chile now has the opportunity to move to the **next level**, leveraging competitive markets with factor conditions that enable higher productivity and innovation
- Chile (and Chilean businesses) has earned the right to be confident that it can be a **role model** for many countries in the world, not only Latin America