

# Creating an Economic Strategy for Taiwan

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*Harvard Business School*

*Global Leaders Forum*  
*Taipei, Taiwan*  
*April 8, 2010*

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This presentation draws on ideas from Professor Porter's articles and books, including, The Competitive Advantage of Nations (The Free Press, 1990), "The Microeconomic Foundations of Economic Development," in The Global Competitiveness Report, (World Economic Forum), "Clusters and the New Competitive Agenda for Companies and Governments" in On Competition (Harvard Business School Press, 1998) and ongoing research at the Institute for Strategy and Competitiveness. Additional information may be found at the website of the Institute for Strategy and Competitiveness, [www.isc.hbs.edu](http://www.isc.hbs.edu) **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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# Taiwan's Current Malaise

- Recent economic downturn
- Highest unemployment in decades
- Uncertainty of future relationship to China

# Taiwan's Current Malaise

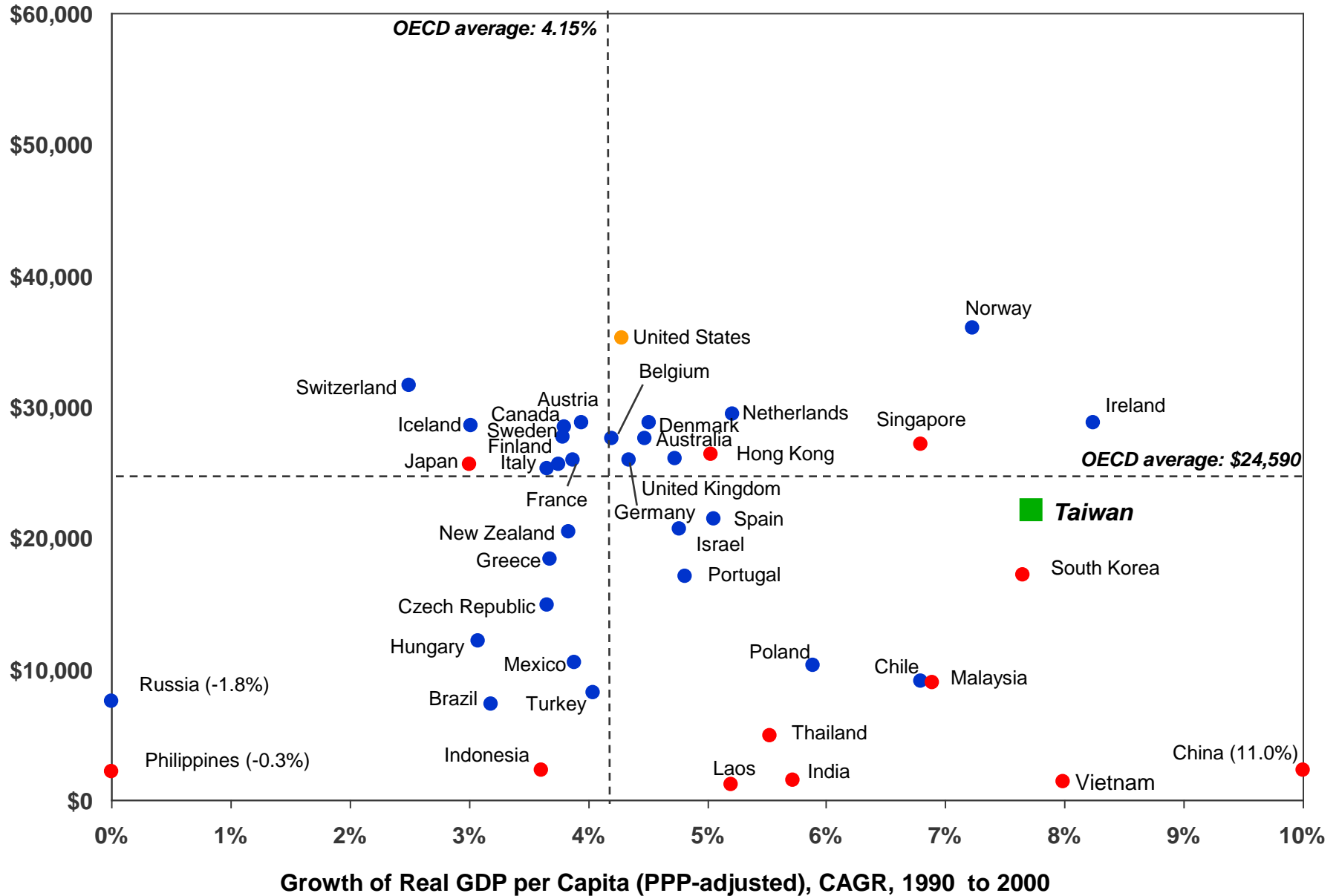
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**Slide from “The Competitive Advantage of Taiwan”  
Commonwealth Speech  
delivered on July 31, 2001**

# Prosperity Performance

## Selected Countries, 1990 to 2000

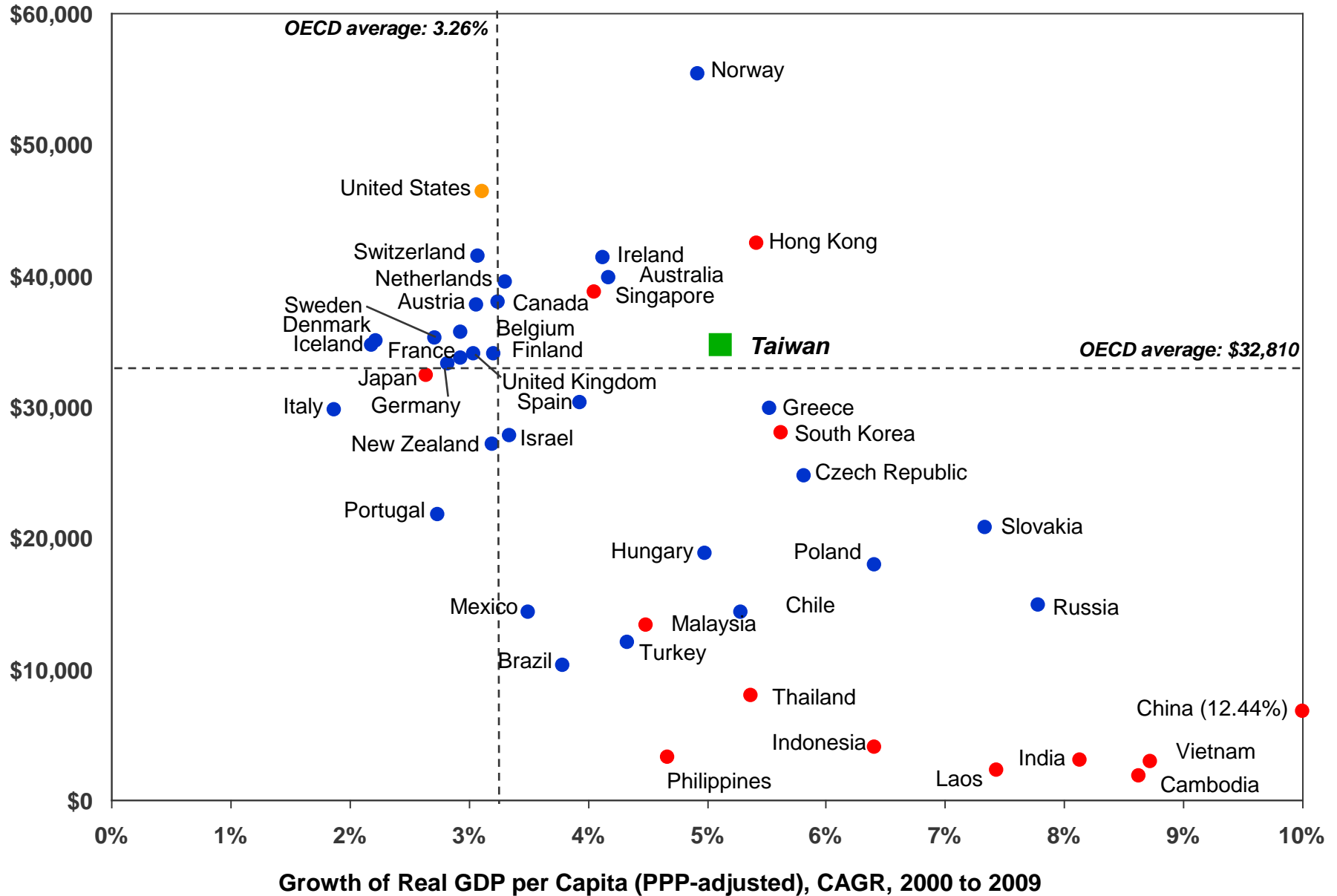
PPP-adjusted GDP per Capita, 2000 (\$USD)



# Prosperity Performance

## Selected Countries, 2000 to 2009

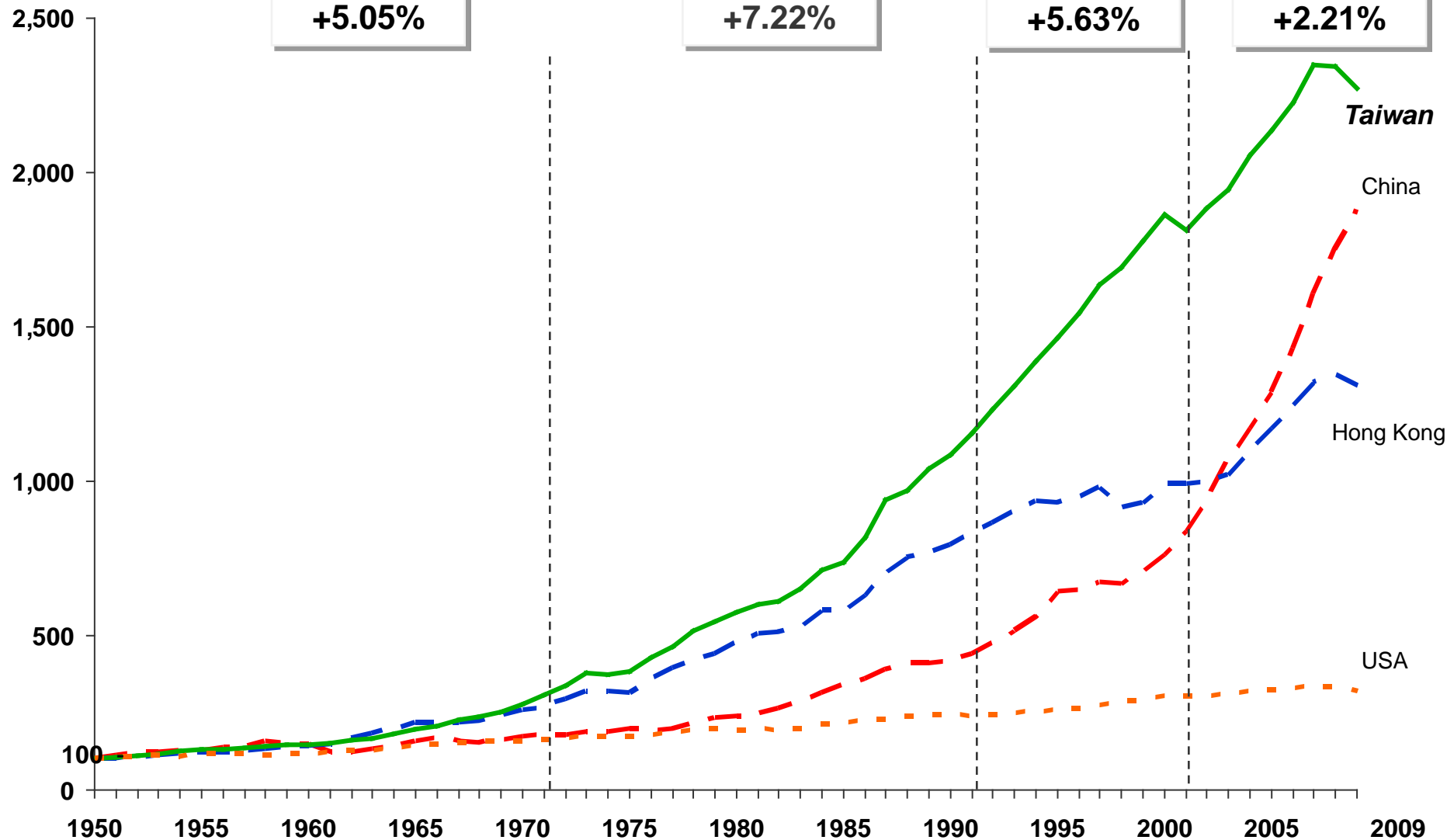
PPP-adjusted GDP per Capita, 2009 (\$USD)



# Taiwan's Prosperity Performance

1950-2009

Index of GDP per  
Capita  
(1950 = 100)

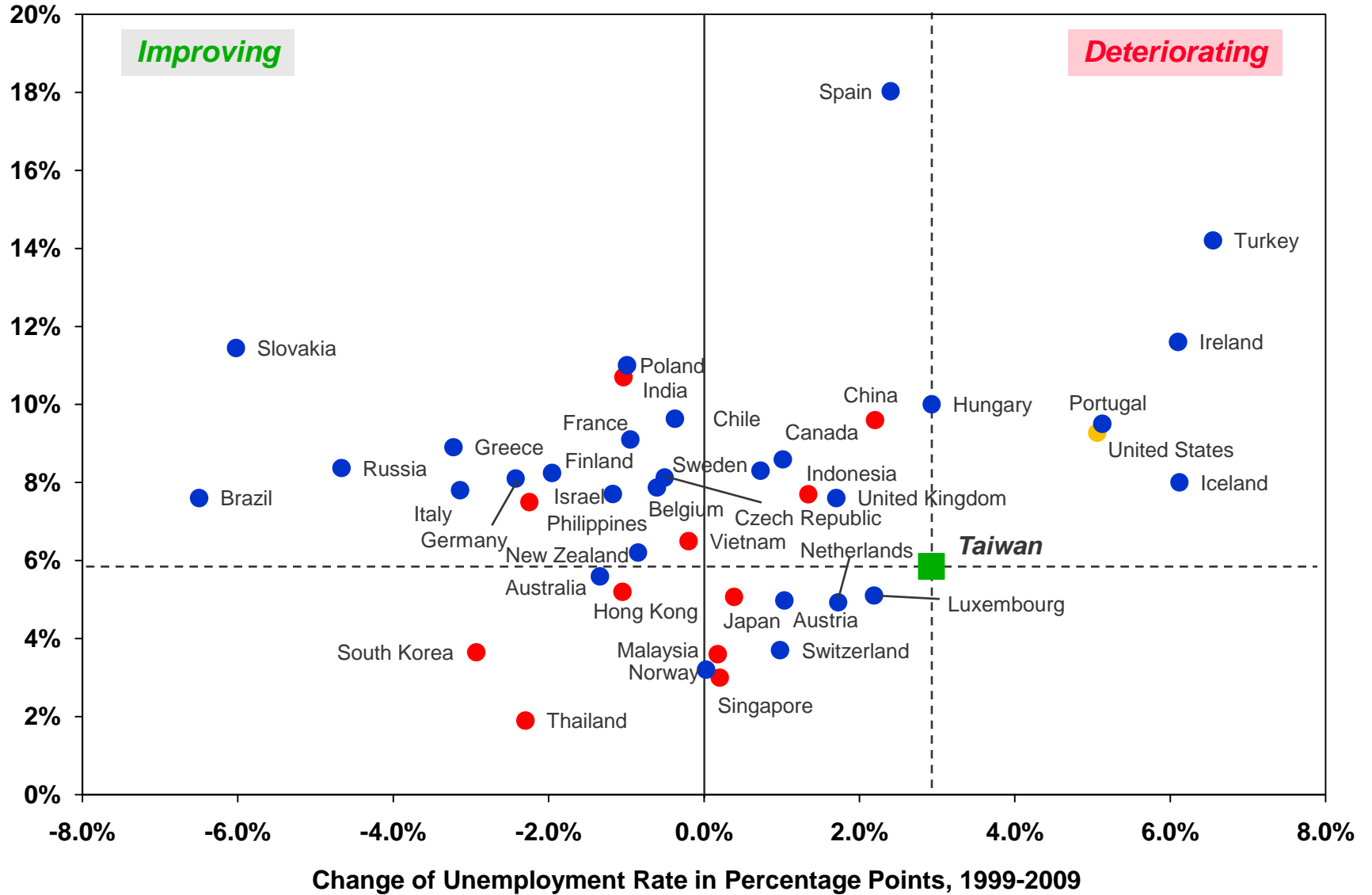


Note: PPP using Geary Khamis calculation methodology. Source: Groningen Growth and Development Centre, Total Economy Database (Accessed March 2010)

# Unemployment Performance

## Selected Countries

Unemployment  
Rate, 2009

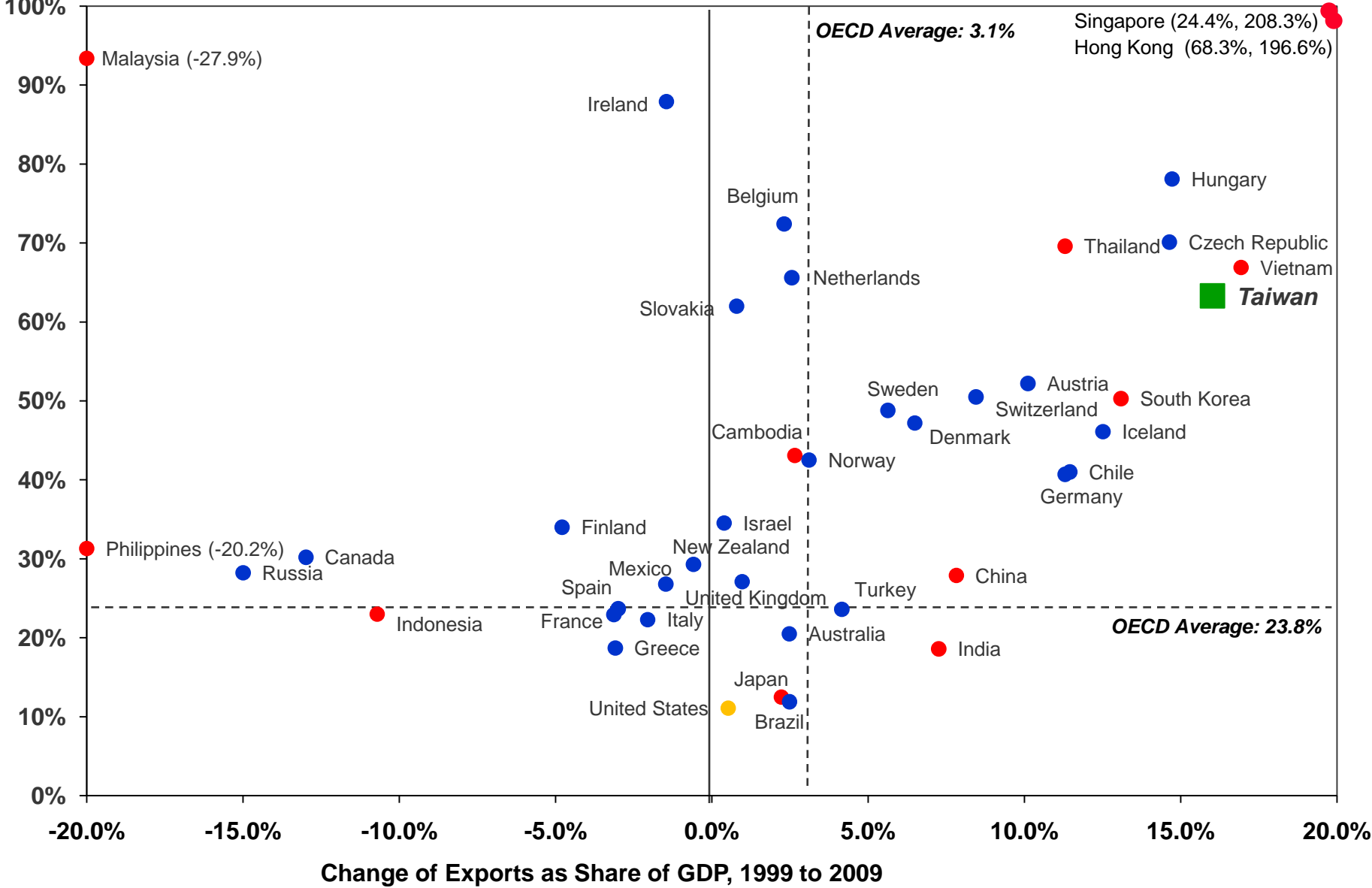


Source: EIU (2010)

# Export Intensity

## Selected Countries

Exports as %  
GDP, 2009



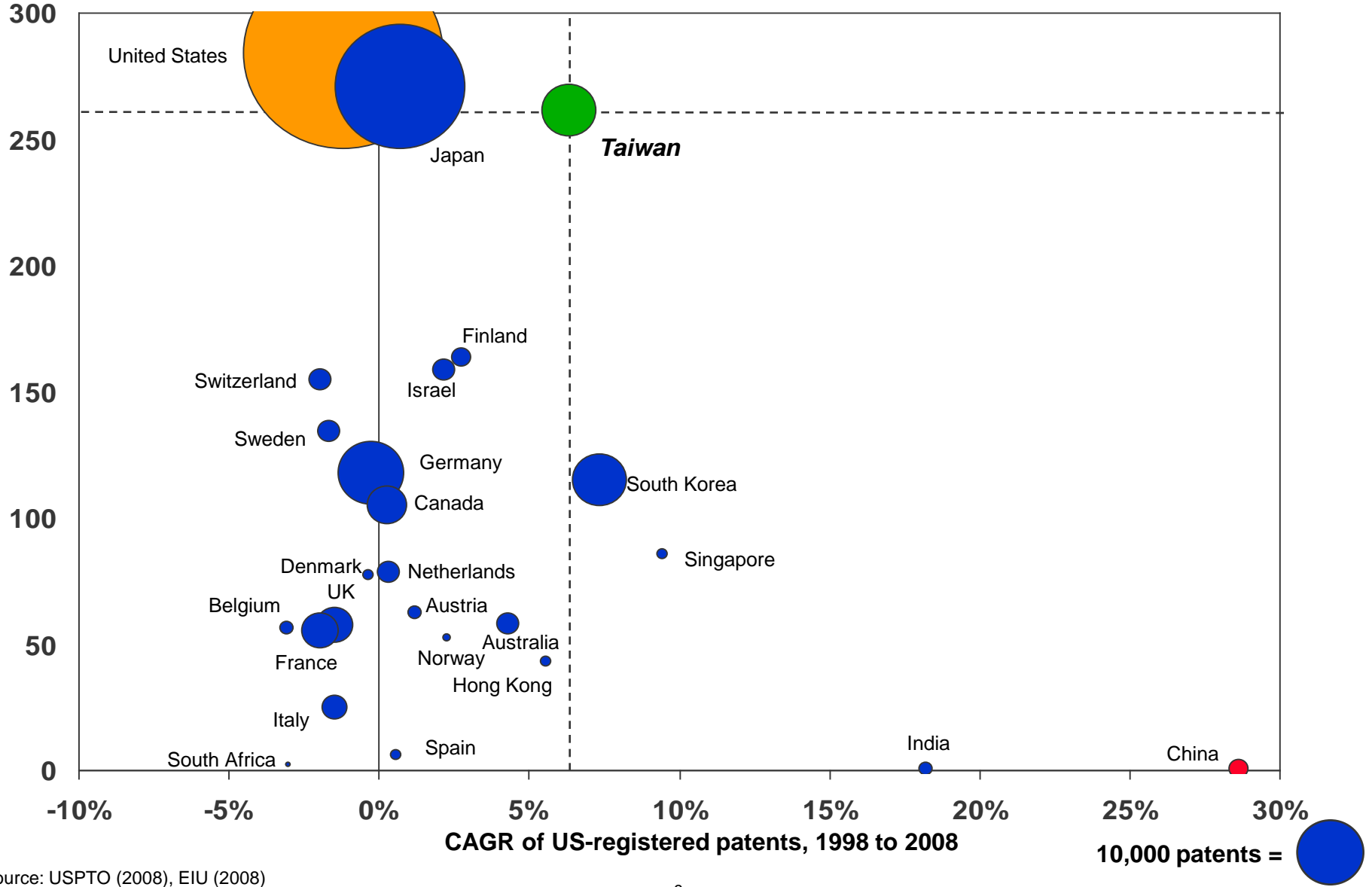
Source: EUI (2010)  
Taiwan Competitiveness 20100408



# Innovative Output

## Selected Countries, 1998 to 2008

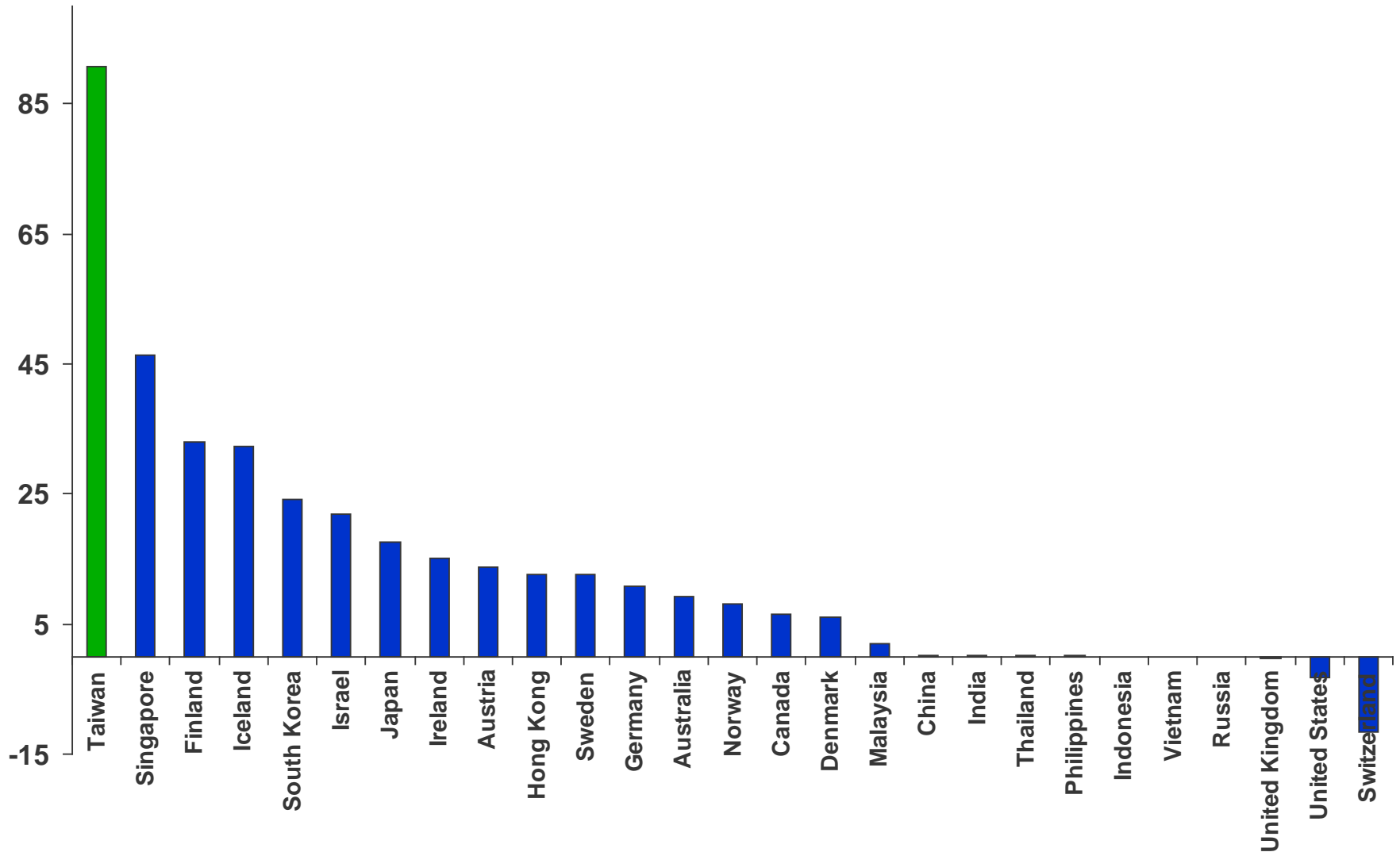
Average U.S. patents per 1 million population, 2006-2008



# International Patenting Output

## Change 1998 - 2008

Change in the annual number of U.S. patents per 1 million population



# Top 20 Taiwanese Originators of U.S. Patents, 2004-2008

First-Named Assignee	2004	2005	2006	2007	2008	Total
Taiwan Semiconductor Manufacturing Co., Ltd.	455	430	459	454	355	2,153
Industrial Technology Research Institute, Taiwan	196	159	237	224	271	1,087
Hon Hai Precision Ind. Co., Ltd.	216	136	231	183	278	1,044
Au Optronics Corp.	76	104	157	176	174	687
Via Technologies, Inc.	112	118	159	144	125	658
Macronix International Co., Ltd.	161	101	107	124	119	612
United Microelectronics Corporation	74	91	104	122	117	508
Ben Q Corporation	79	81	105	134	39	438
Mediatek Inc.	22	29	104	121	151	427
Delta Electronics Inc.	85	70	90	82	86	413
Inventec Corporation	26	36	47	84	130	323
Nan Ya Technology Corporation	100	84	74	17	28	303
Advanced Semiconductor Engineering, Inc.	53	41	82	66	57	299
Winbond Electronics Corp.	81	54	48	31	17	231
Chunghwa Picture Tubes, Ltd.	12	27	32	49	70	190
Realtek Semiconductor Corporation	10	16	41	64	55	186
Quanta Computer Inc.	40	25	45	38	37	185
Powerchip Semiconductor Corp.	27	37	35	40	44	183
Hannstar Display Corp.	44	30	34	23	37	168
Lite-On Technology Corporation	35	27	42	25	37	166
<i>All Other Taiwan Assignees</i>	<i>3,380</i>	<i>2,872</i>	<i>3,439</i>	<i>3,283</i>	<i>3,381</i>	<i>16,355</i>
<i>Total Taiwan Utility Patents</i>	<i>5,284</i>	<i>4,568</i>	<i>5,672</i>	<i>5,484</i>	<i>5,608</i>	<i>26,616</i>

# Taiwan's Economic Challenge

## Three Agendas

- I. Address some **chronic weaknesses**
- II. Expand, upgrade, and globalize the **innovation-driven economy**
- III. Redefine Taiwan's **economic relationship to China**



These agendas are **interrelated**

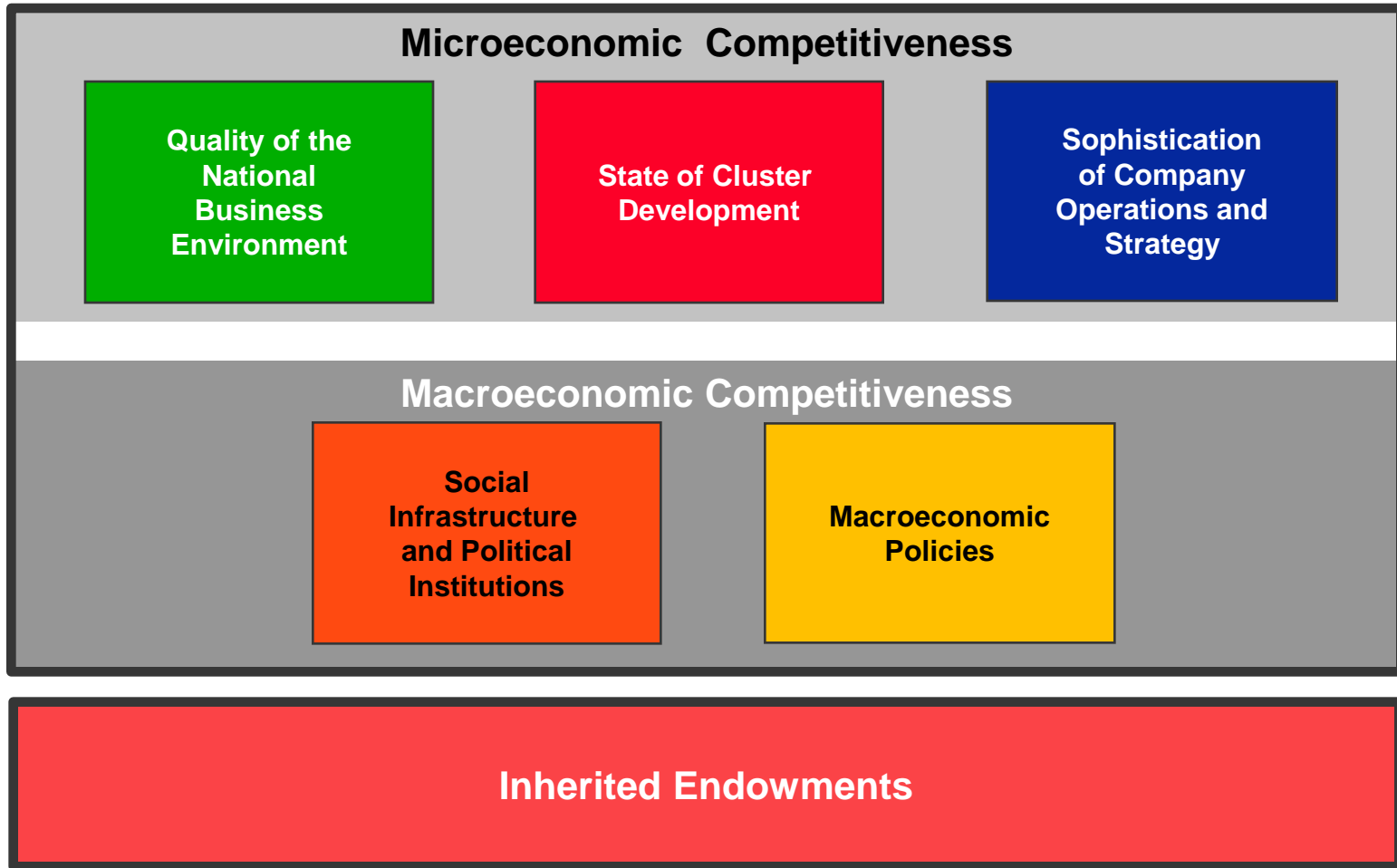
# What is Competitiveness?

- Competitiveness is the **productivity** with which a nation uses its human, capital, and natural resources
  - Productivity **sets the standard of living**
  - Productivity growth sets **sustainable economic growth**
- Productivity and prosperity depends on **how** a nation competes, not what industries it competes in
  - Productivity in the modern global economy arises from a **combination of domestic and foreign firms**
- **Relentless innovation** is necessary to drive **productivity growth** and enable the standard of living to rise
  - Technology, products, and organizational methods



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

# Determinants of Competitiveness



- Macroeconomic competitiveness creates the potential for high productivity, but is **not sufficient**
- Productivity ultimately depends on improving the **microeconomic capability** of the economy and the **sophistication of local competition**

# Macroeconomic Competitiveness

## Social Infrastructure and Political Institutions

### Basic human capacity

- Basic education
- Health system

### Political institutions

- Political freedom
- Voice and accountability
- Political stability
- Government effectiveness
- Decentralization of economic policymaking

### Rule of law

- Judicial independence
- Efficiency of legal framework
- Business costs of corruption
- Civil rights

## Macroeconomic Policies

### Fiscal policy

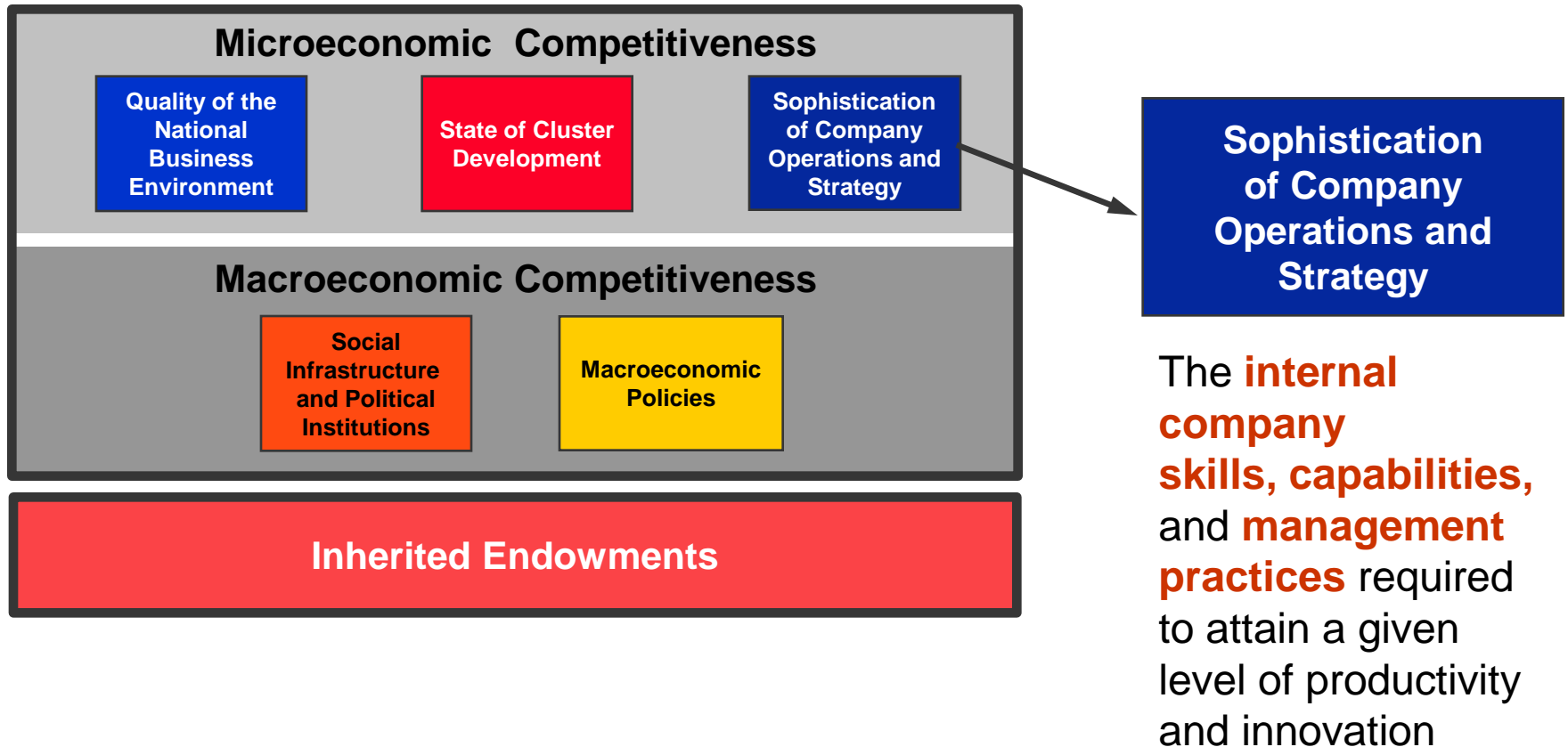
- Government surplus/deficit
- Government debt

### Monetary policy

- Inflation
- Interest rate spread

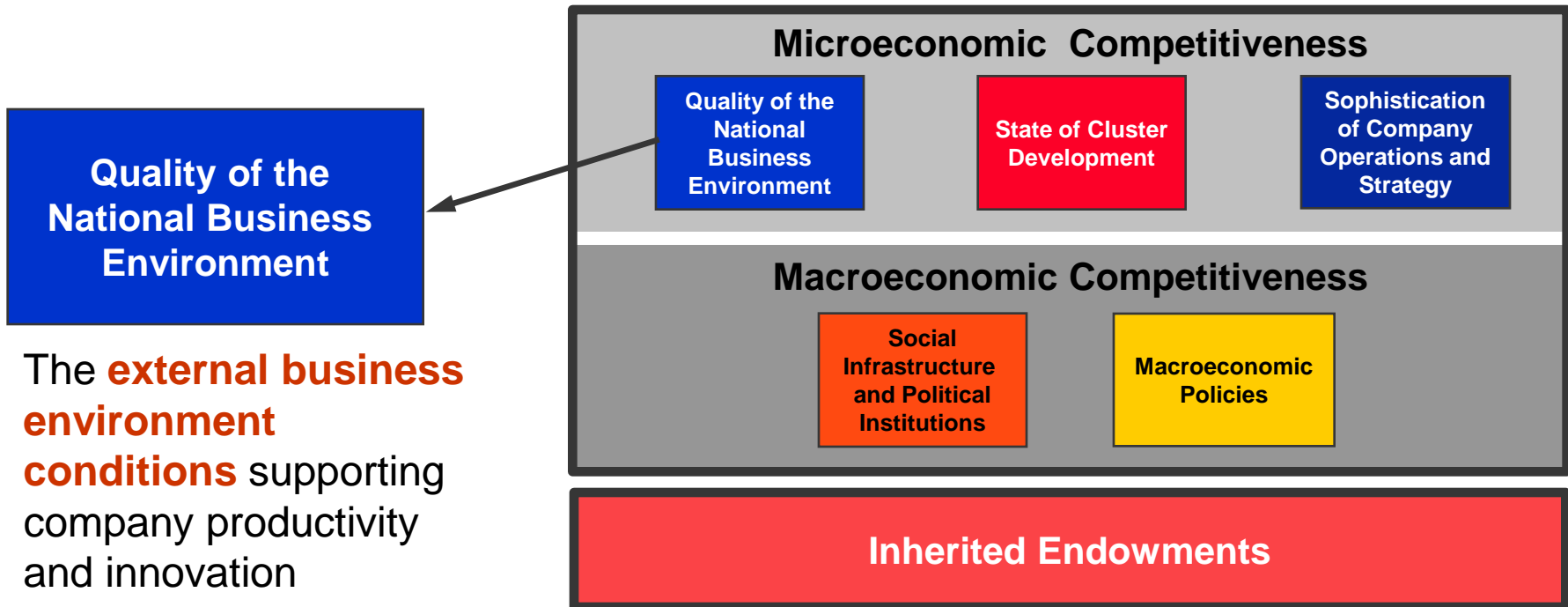
### Macroeconomic Management

# Determinants of Competitiveness

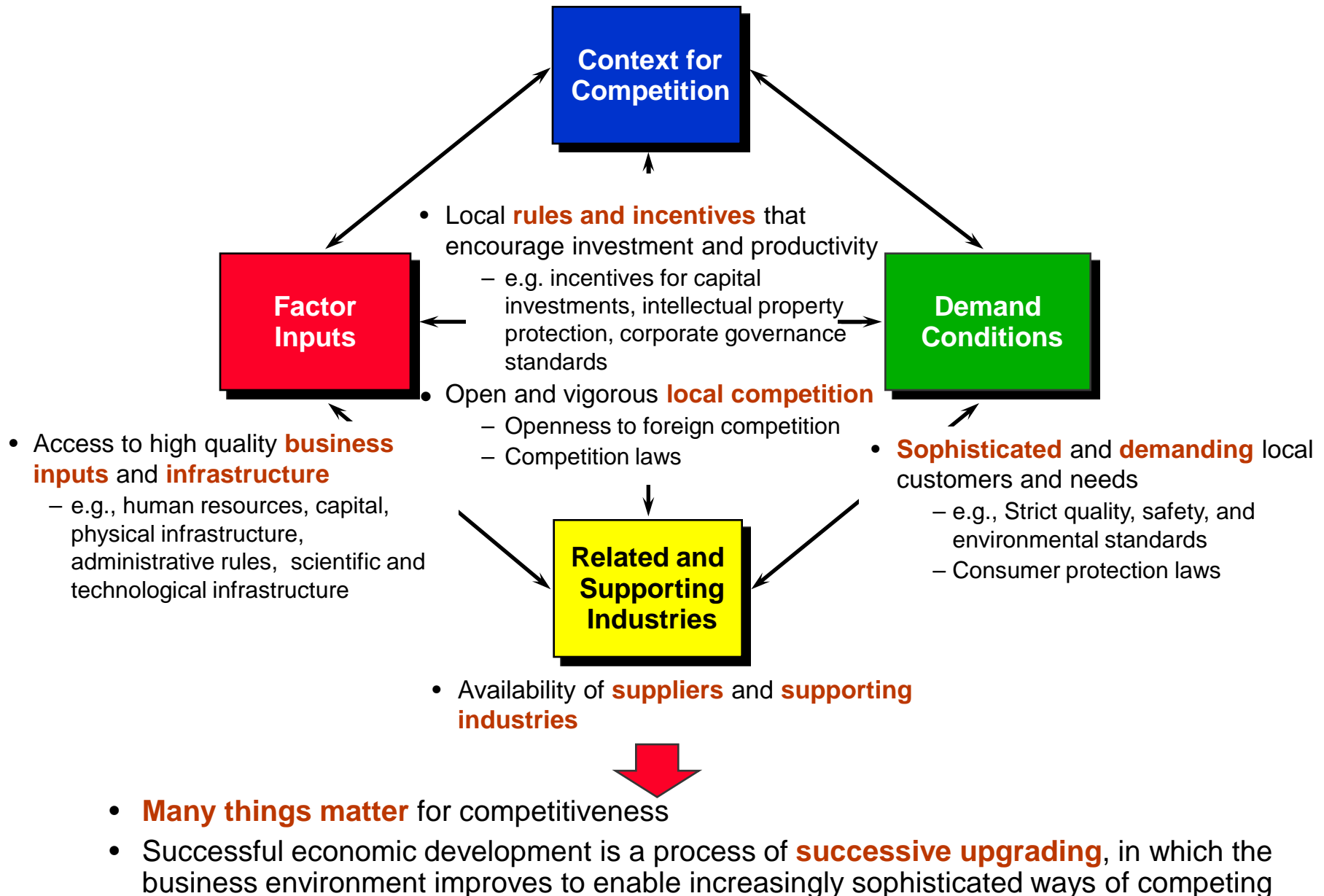




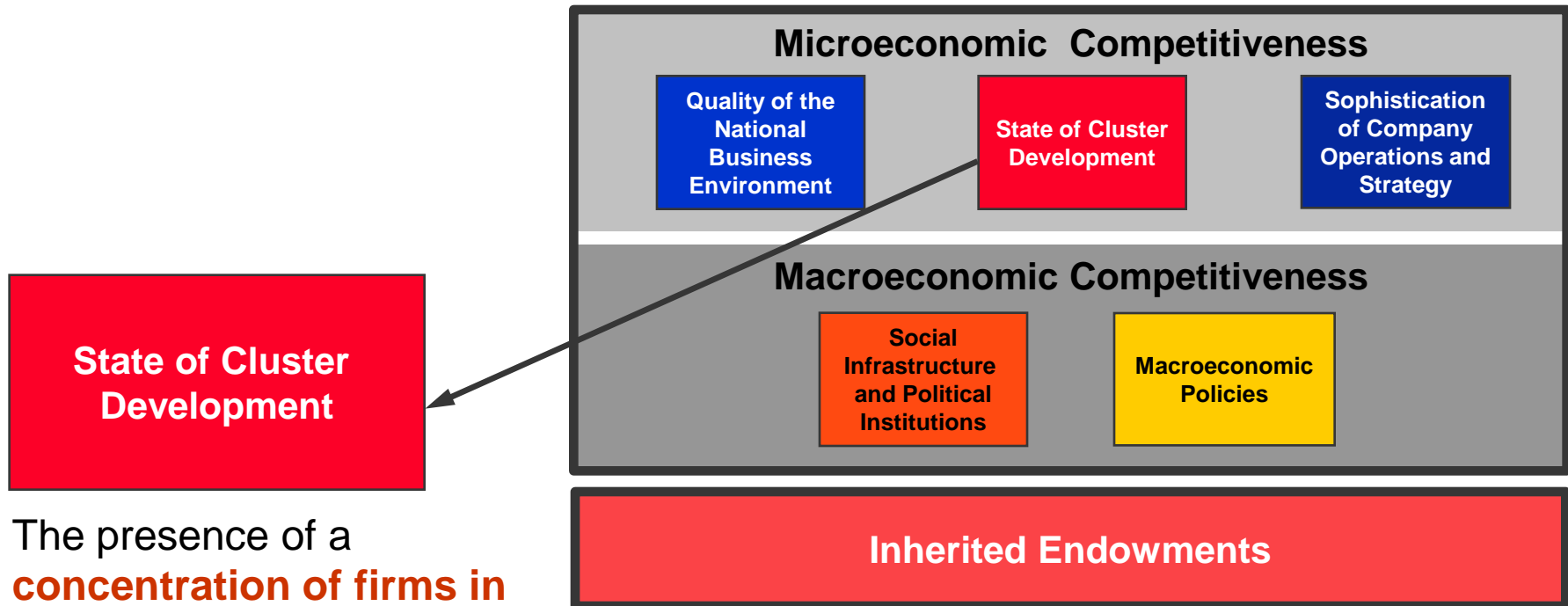
# Determinants of Competitiveness



# Quality of the Business Environment



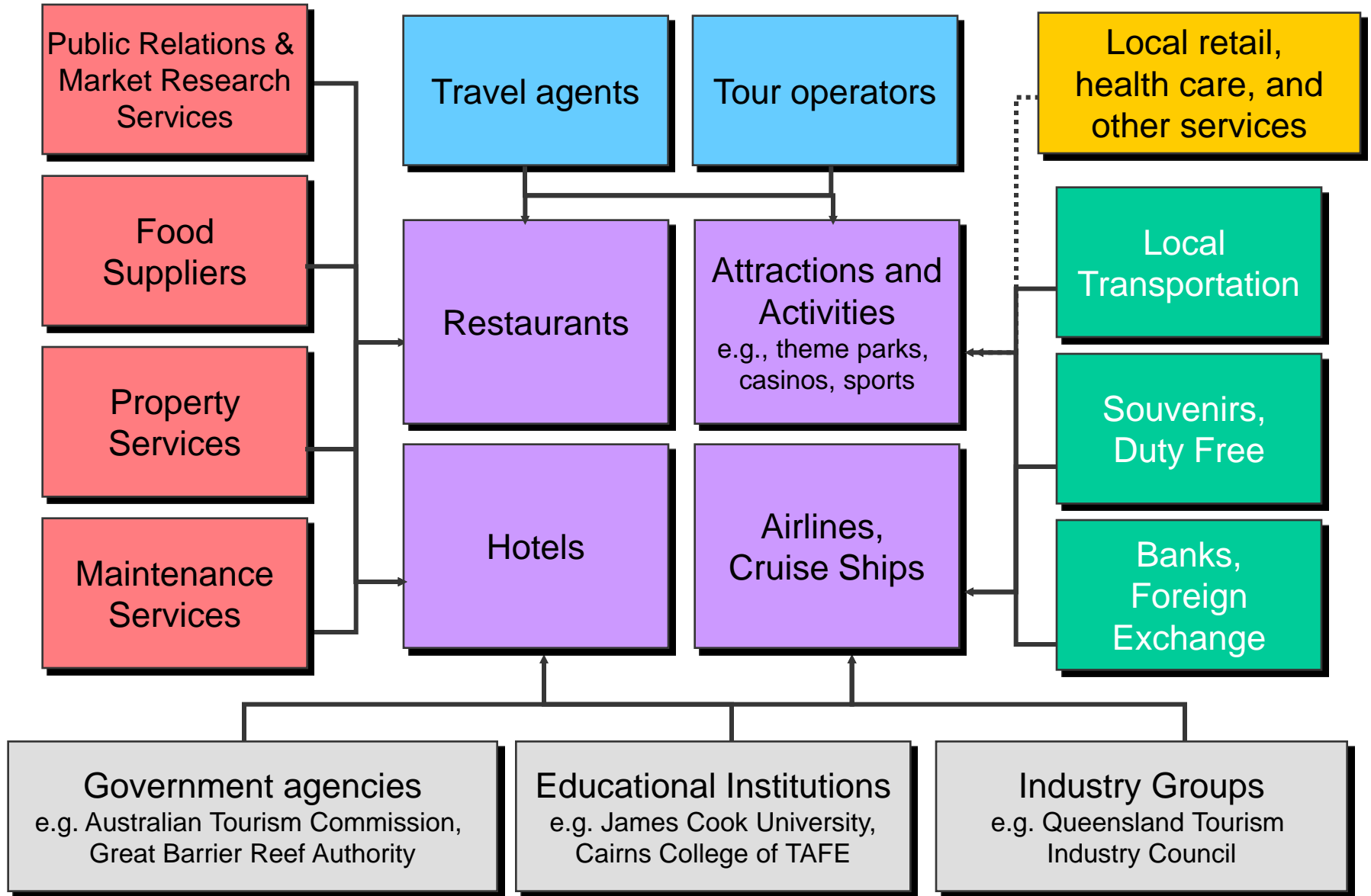
# Determinants of Competitiveness



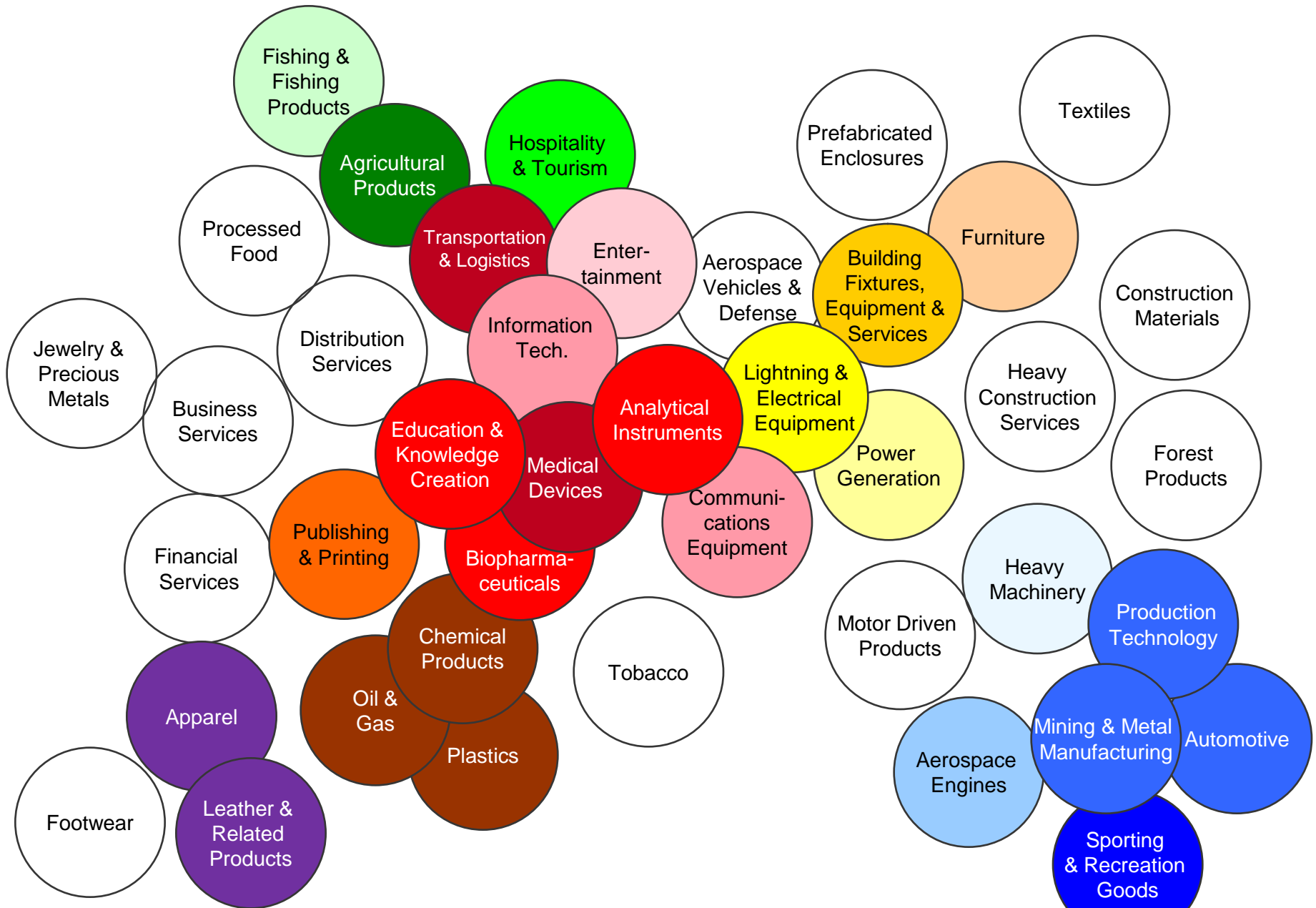
- The presence of a **concentration of firms in particular fields**, together with specialized skills, infrastructure, and supporting institutions, enabling productivity through externalities across related entities

# State of Cluster Development

## Tourism Cluster in Cairns, Australia



# Cluster Linkages and Economic Diversification



Note: Clusters with overlapping borders or identical shading have at least 20% overlap (by number of industries) in both directions.

# Defining a National Economic Strategy

## National Value Proposition

What are the **distinctive competitive assets** of the nation's economy given its location, legacy, existing strengths, rate of progress, and potential strengths?

- What unique value as a business location?
- In what areas of the economy / clusters?
- Playing what roles with neighbors, the region, and the broader world?

## Developing Unique Strengths

- What elements of institutional context and the business environment can be **unique strengths** relative to peers/neighbors?
- What **existing** and **emerging clusters** can be built upon?

## Addressing Crucial Constraints

- What are the crucial **weaknesses** and **constraints** that must be addressed to achieve parity with peer countries and allow the country to move to the next level?

- **Priorities** and **sequencing** are a necessity in economic development



# Taiwan's Economic Agenda in 2010

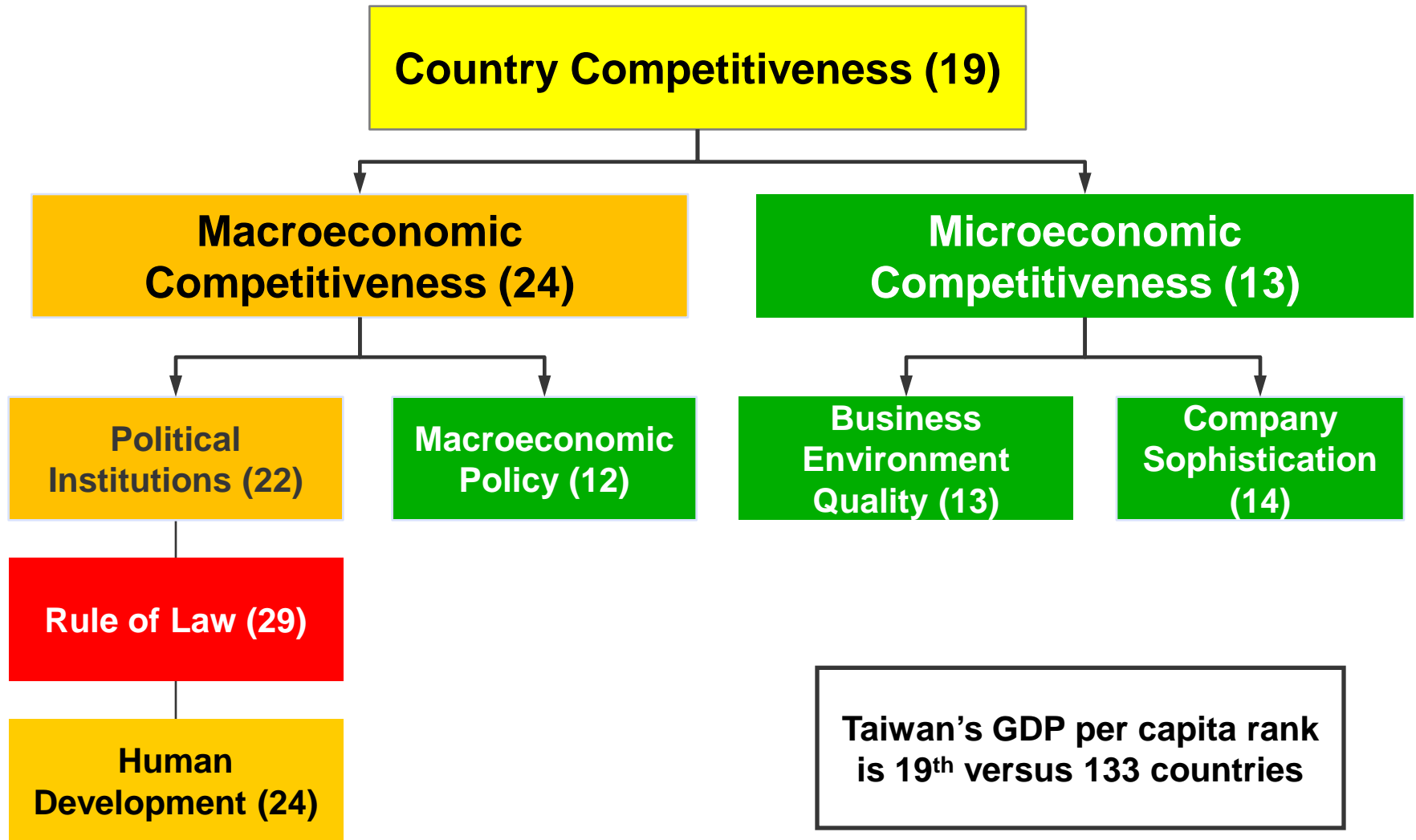
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- II. Expand, upgrade, and globalize the **innovation-driven economy**
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These agendas are **interrelated**

# Taiwan's Competitiveness Profile, 2009

## Harvard Country Competitiveness Model

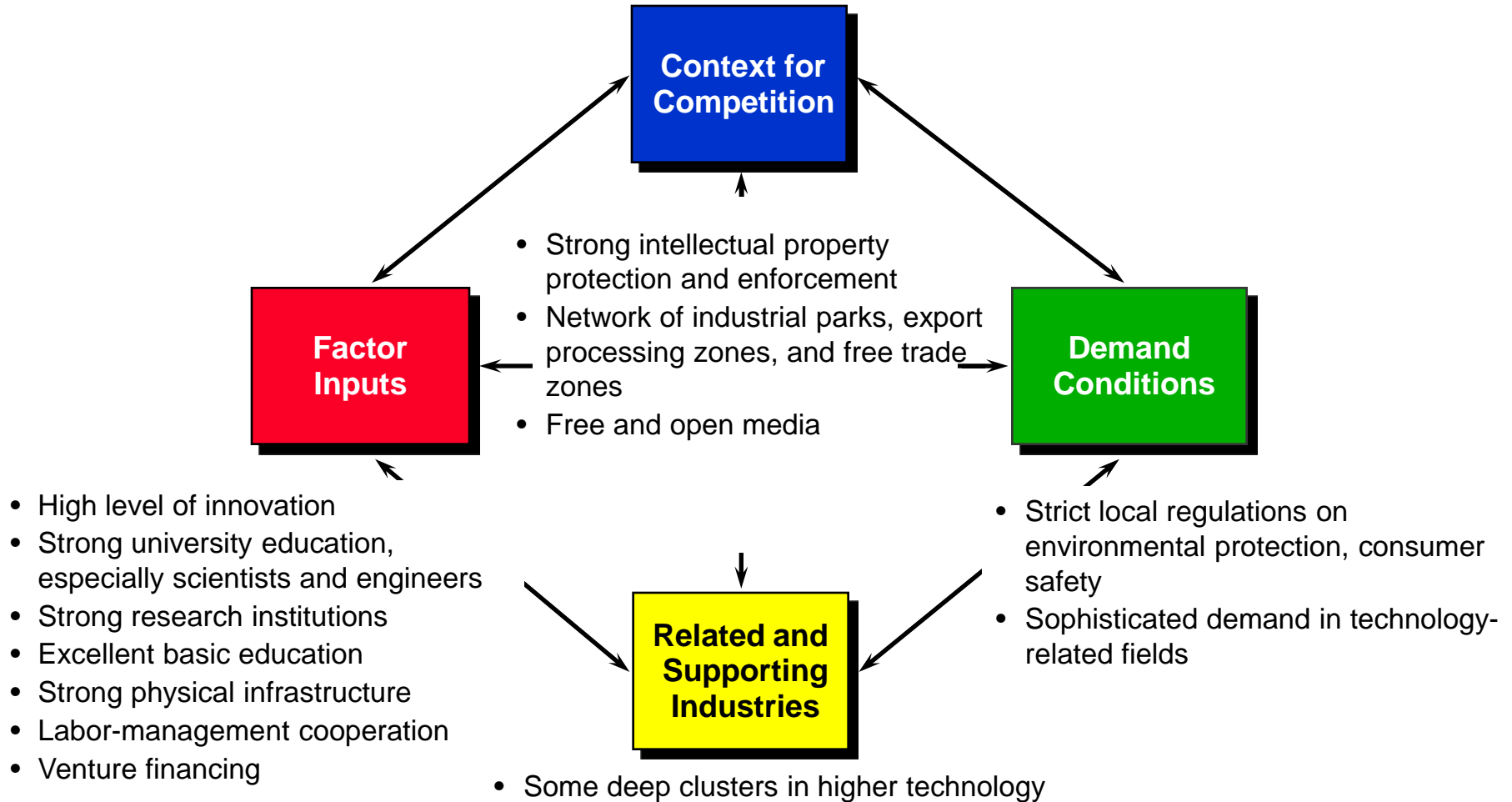


Note: Rank versus 133 countries; overall, Taiwan ranks 19<sup>th</sup> in 2009 PPP adjusted GDP per capita and 19<sup>th</sup> in Global Competitiveness

Source: Institute for Strategy and Competitiveness, Harvard Business School and Harvard University (2009), based in part on data ??? by the World Economic Forum



# Taiwan's Strengths



# Ranking Economic Competitiveness and Prosperity

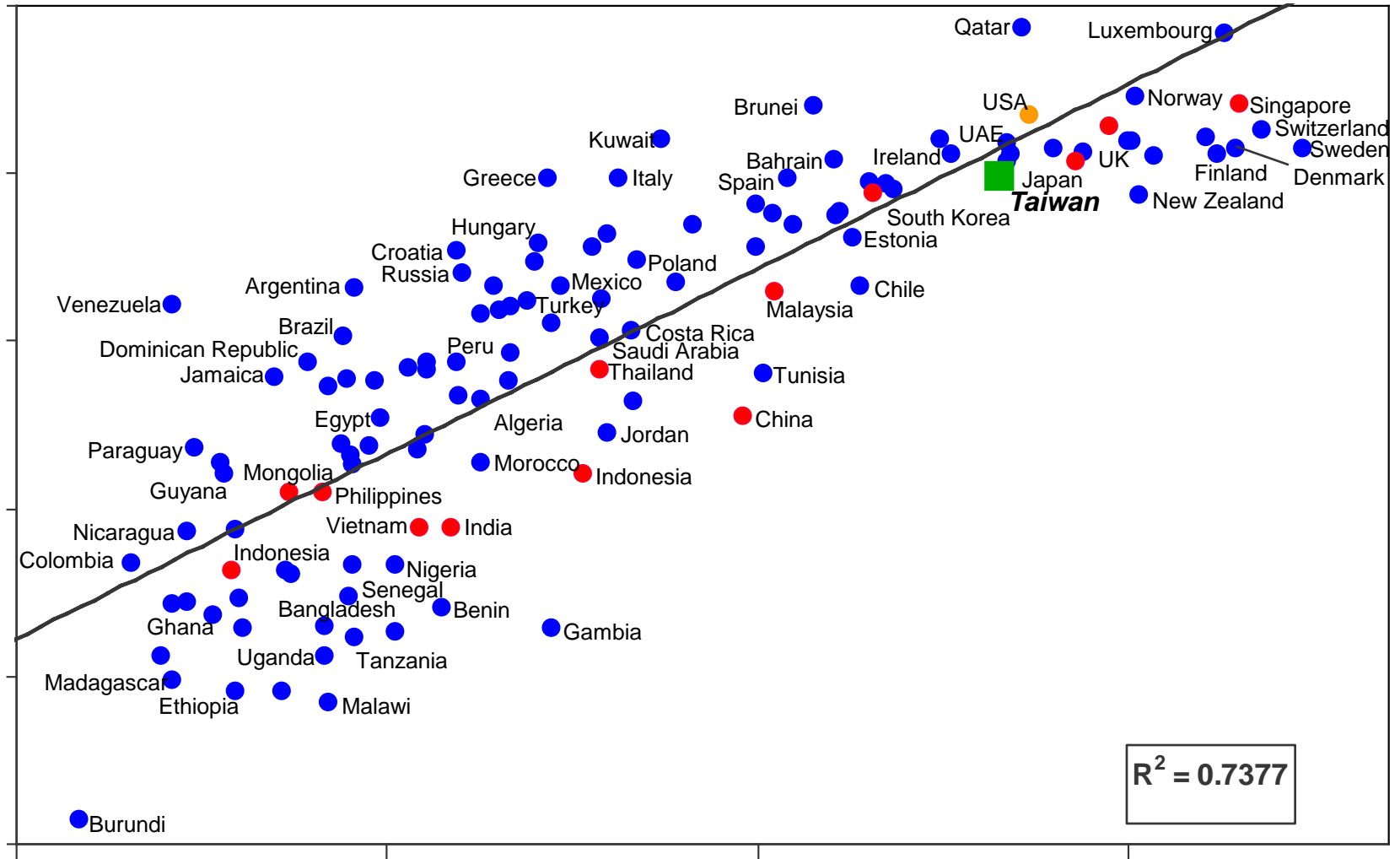
## Harvard Country Competitiveness Index, 2009

GDP per Capita, log scale  
(Purchasing Power Adjusted)

\$100,000

\$10,000

\$1,000



Low

New Global Competitiveness Index 2009

High

# Taiwan's Economic Agenda in 2010

## I. Address some **chronic weaknesses**

- Improve political institutions

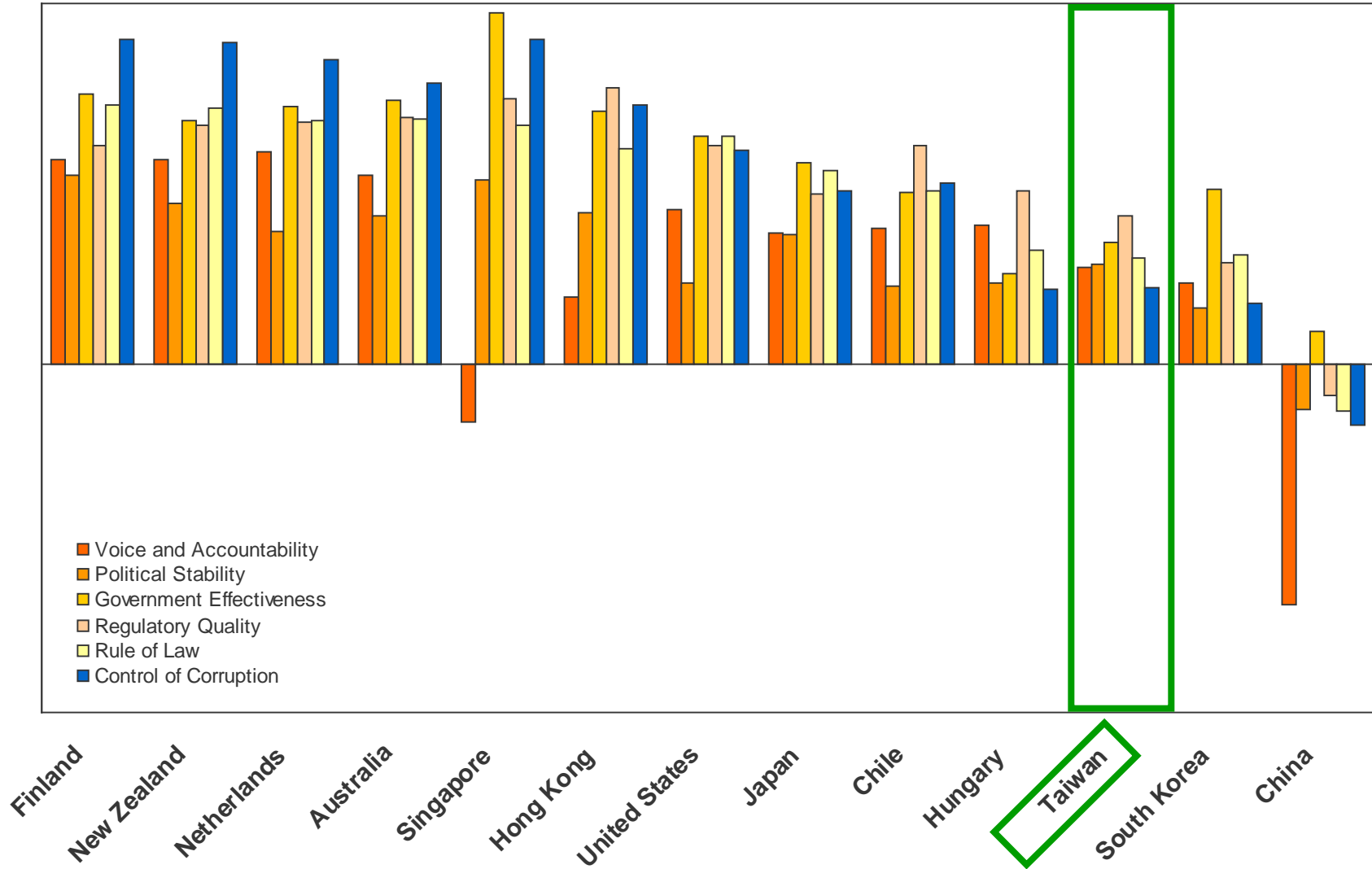
# Governance Indicators

## Selected Countries

Best country in the world

Index of Governance Quality, 2008

Worst country in the world



Note: Sorted left to right by decreasing average value across all indicators. The 'zero' horizontal line corresponds to the median country's average value across all indicators.

Source: World Bank (2009)

# Taiwan's Economic Agenda in 2010

## I. Address some **chronic weaknesses**

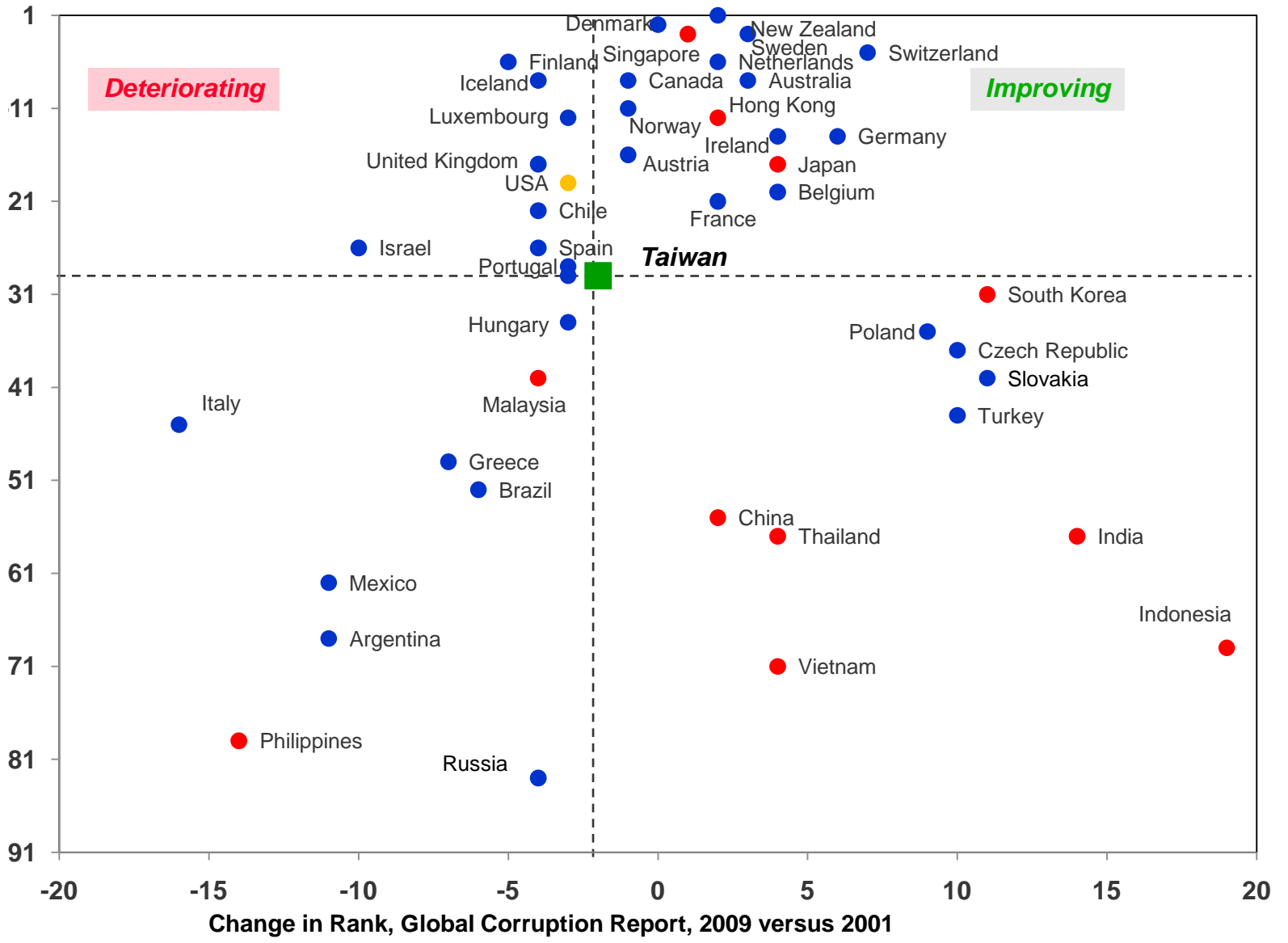
- Improve political institutions

- **Reduce corruption**

# Corruption Perception Index, 2009

Rank in Global  
Corruption Index,  
2009

Low  
corruption



Note: Ranks only countries available in both years (91 countries total)  
Source: Global Corruption Report, 2009

# Taiwan's Economic Agenda in 2010

## I. Address some **chronic weaknesses**

- Improve political institutions
- Reduce corruption

— **Reduce bureaucracy and regulatory complexity**

# Doing Business Selected Countries

	Ease of Doing Business Rank	Starting a Business	Dealing with Construction Permits	Employing Workers	Getting Credit	Protecting Investors	Paying Taxes	Enforcing Contracts	Closing a Business
Singapore	1	4	2	1	4	2	5	13	2
Hong Kong	3	18	1	6	4	3	3	3	13
United States	4	8	25	1	4	5	61	8	15
Thailand	12	55	13	52	71	12	88	24	48
Japan	15	91	45	40	15	16	123	20	1
South Korea	19	53	23	150	15	73	49	5	12
Taiwan	46	29	97	153	71	73	92	90	11
China	89	151	180	140	61	93	125	18	65

Rank out of 183 countries.

Source: World Bank Doing Business (2010).

Taiwan Competitiveness 20100408



# Factor Conditions

## Taiwan's Relative Position 2009

### Competitive Advantages Relative to GDP per Capita

Utility patents per million population	1
Telephone lines per 100 population	3
Tertiary enrollment	4
Quality of railroad infrastructure	6
<b>Ease of starting a new business</b>	<b>6</b>
Quality of math and science education	6
Financing through local equity market	7
Availability of scientists and engineers	7
Personal computers per 100 population	8
Quality of roads	9
Quality of domestic transport network: business	9
Internet access in schools	9
Venture capital availability	10
Quality of port infrastructure	11
Quality of telephone infrastructure	11
Ease of access to loans	11
Quality of the educational system	11
University-industry research collaboration	13

### Competitive Disadvantages Relative to GDP per Capita

<b>Time required to start a business</b>	<b>59</b>
Getting Credit, legal rights	54
Paying Taxes, tax rates	44
Soundness of banks	41
<b>Number of procedures to start a business</b>	<b>38</b>
Quality of air transport infrastructure	35
Protection of minority shareholders' interests	32
Financial market sophistication	31
Mobile telephone subscribers per 100 population	30
Quality of management schools	26
Quality of electricity supply	24
Regulation of securities exchanges	23

Note: Rank versus 133 countries; overall, Taiwan ranks 19<sup>th</sup> in 2009 PPP adjusted GDP per capita and 19<sup>th</sup> in Global Competitiveness

Source: World Economic Forum and Institute for Strategy and Competitiveness, Harvard University (2009)

# Taiwan's Economic Agenda in 2010

- I. Address some **chronic weaknesses**
  - Improve political institutions
  - Reduce corruption
  - Reduce bureaucracy and regulatory complexity
  - **Improve labor force flexibility and ease skilled immigration**

# Context for Strategy and Rivalry

## Taiwan's Relative Position 2009

### Competitive Advantages Relative to GDP per Capita

Intensity of local competition	2
Pay and productivity	3
Low extent of market dominance by business groups	5
Efficacy of corporate boards	12
Cooperation in labor-employer relations	13
FDI and technology transfer	13
Impact of taxation on incentives to work and invest	13

### Competitive Disadvantages Relative to GDP per Capita

<b>Rigidity of employment</b>	<b>64</b>
Restrictions on capital flows	61
Distortive effect of taxes and subsidies on competition	58
Market disruption from state-owned enterprises	47
Tariff rate	42
Prevalence of trade barriers	41
Strength of investor protection	39
Prevalence of foreign ownership	32
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Strength of auditing & reporting standards	26

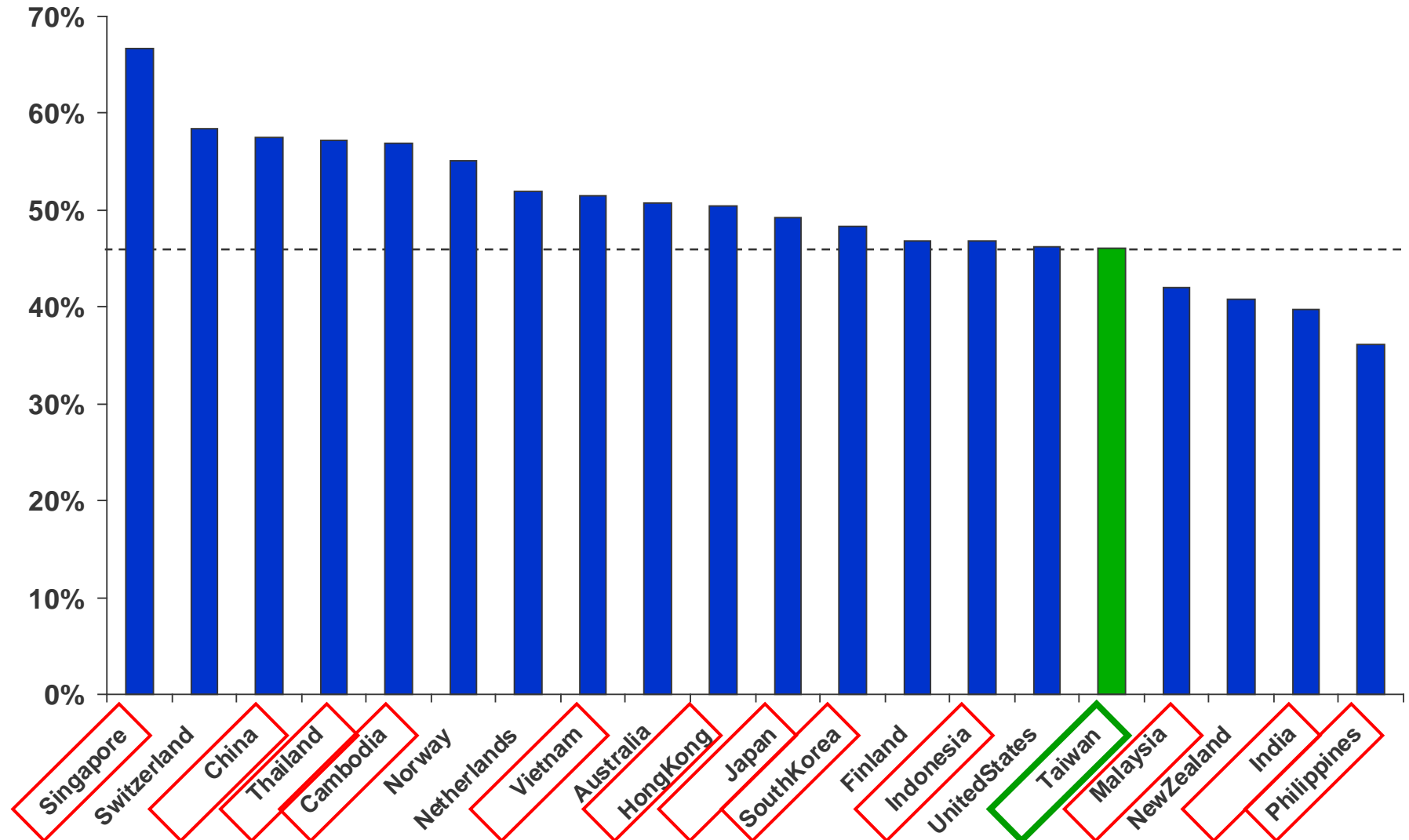
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# Labor Force Mobilization

## Selected Countries

Employees as % of  
Total Population, 2009



Source: Groningen Growth and Development Centre, Total Economy Database, accessed March 2010; Labor Force Mobilization is defined by total employment over total population.

# Taiwan's Economic Agenda in 2010

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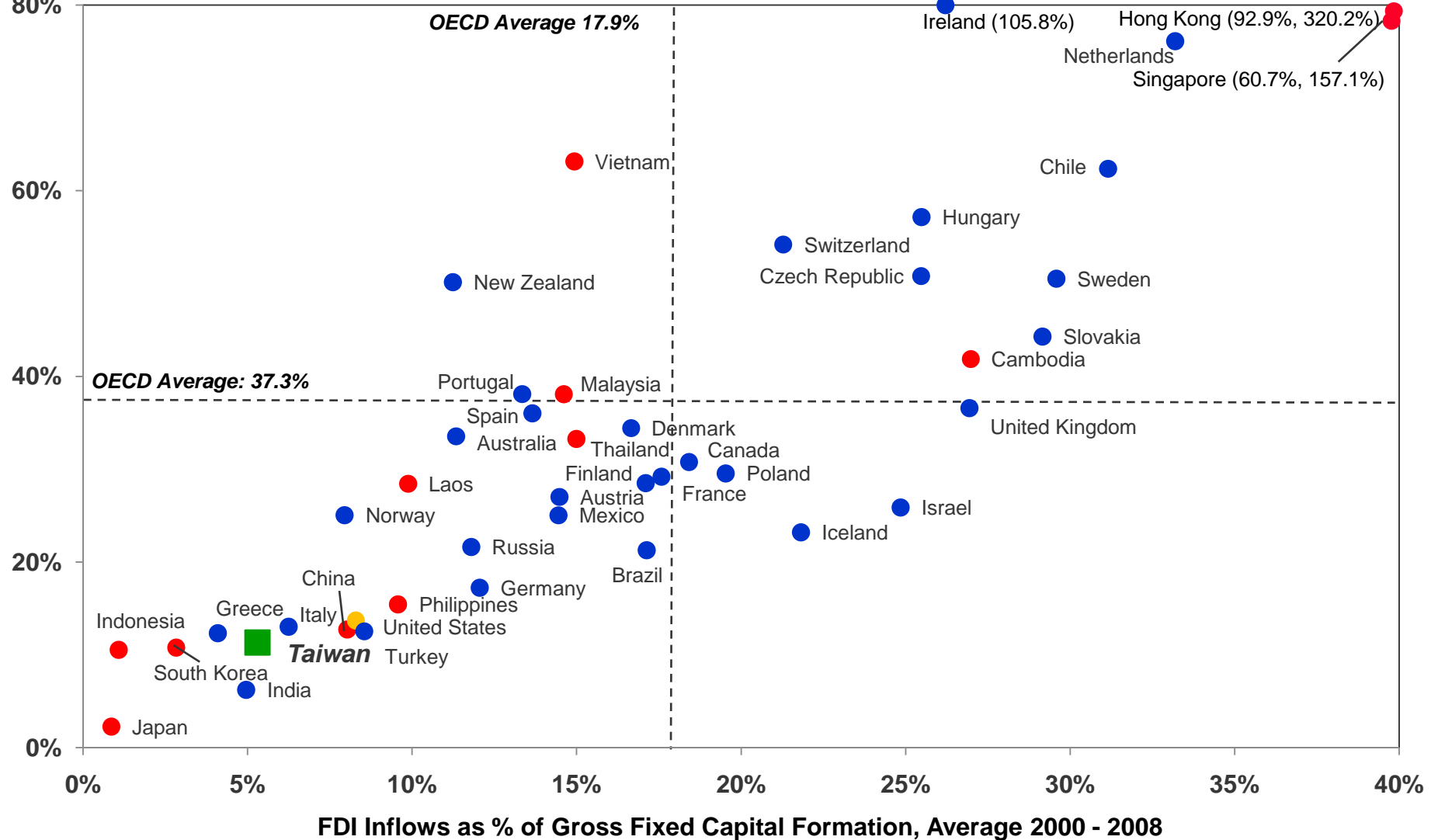


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  - Improve the quality and transparency of financial markets
- II. Expand, upgrade, and globalize the **innovation-driven economy**
  - **Open Taiwan to foreign direct investment by world-class companies**

# Inbound Foreign Investment Stocks and Flows, Selected Countries

**Inbound FDI Stocks  
as % of  
GDP, Average 2000-  
2008**

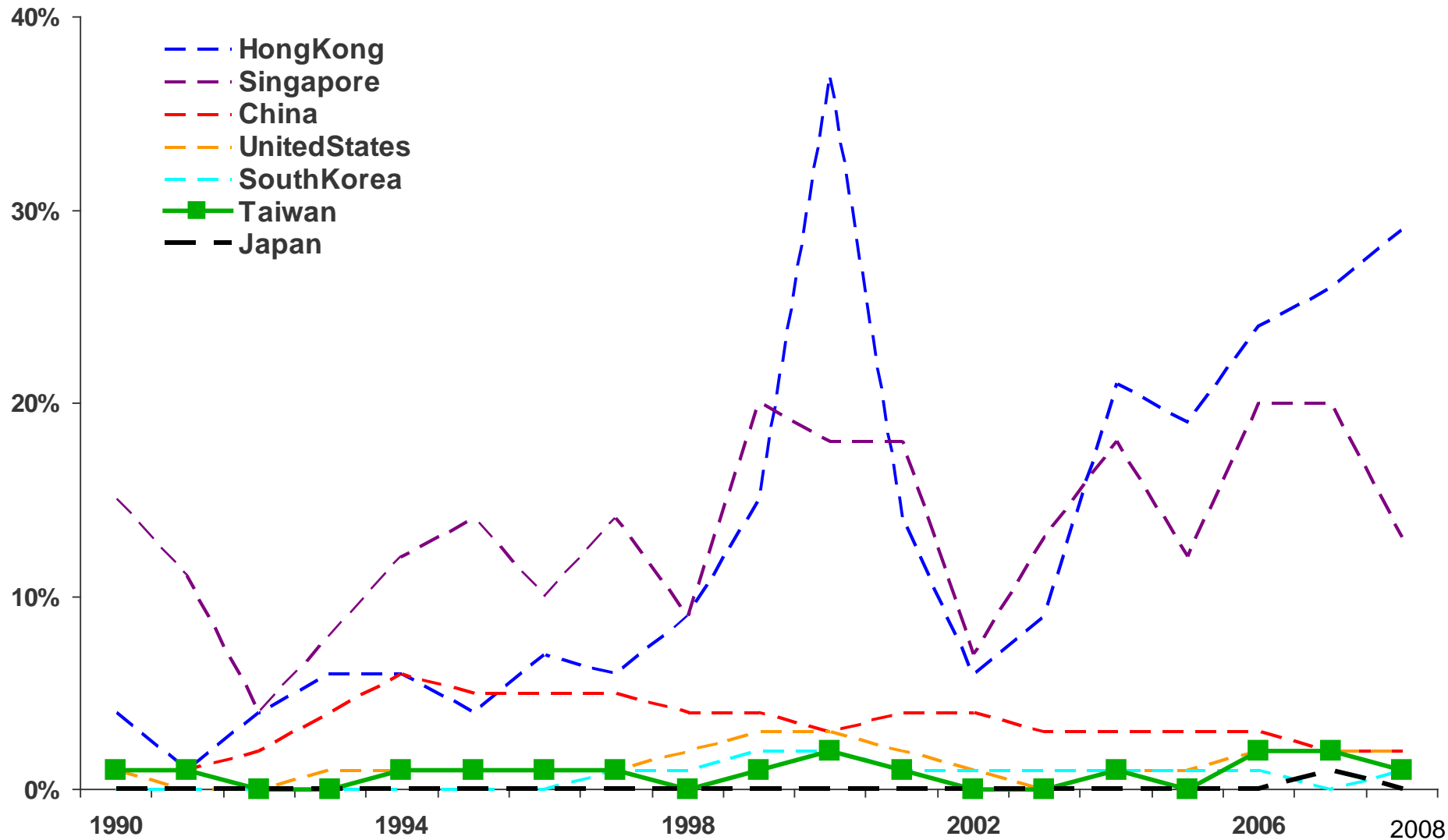


Source: UNCTAD, World Investment Report (2009). OECD Average does not include Luxembourg.

# Inbound Foreign Investment Performance

## Flows, Selected Countries

Inbound FDI  
Flows, % of GDP



# Context for Strategy and Rivalry

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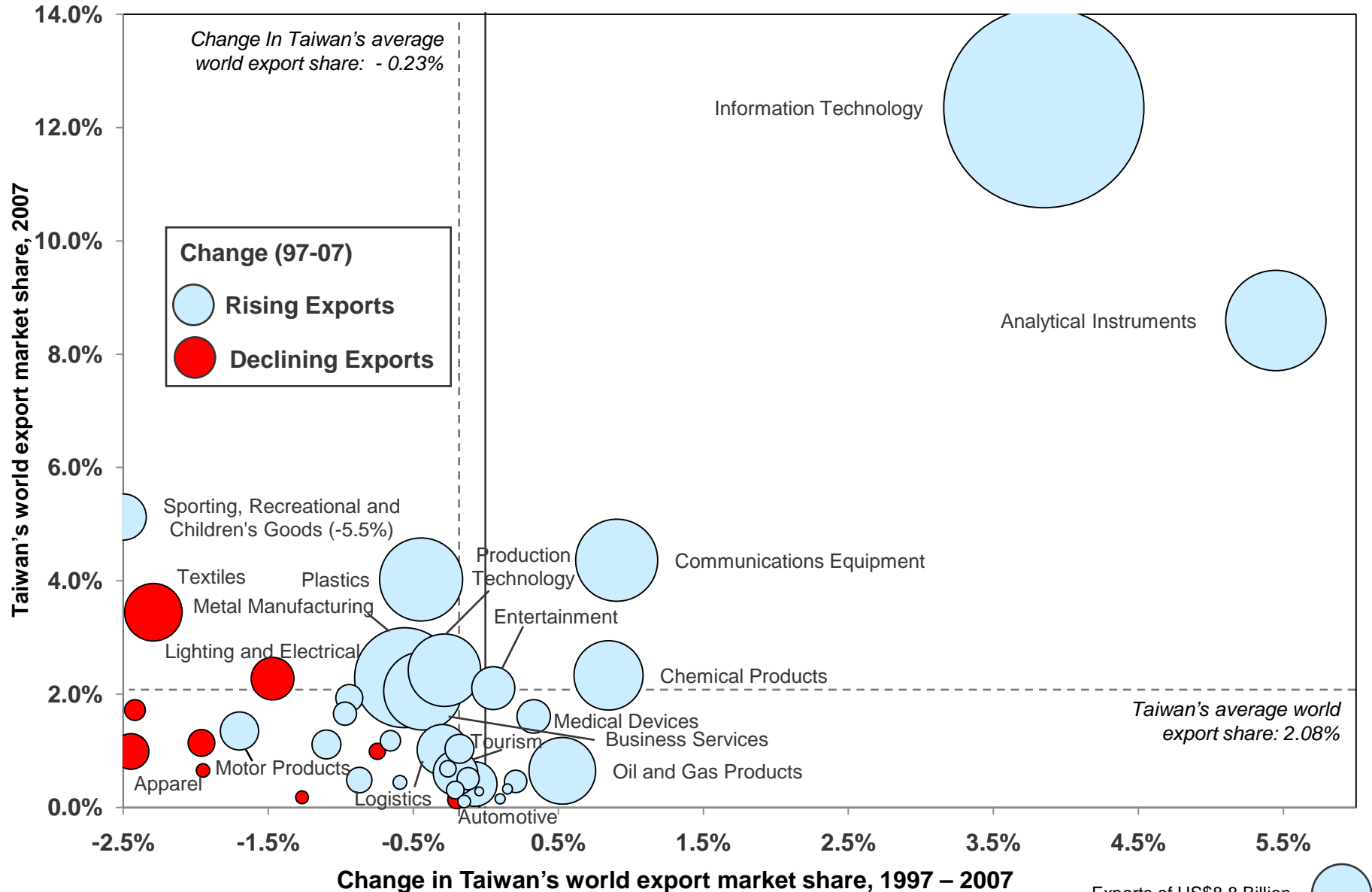
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  - **Grow Taiwanese companies to regional and global stature**

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- II. Expand, upgrade, and globalize the **innovation-driven economy**
  - Open Taiwan to foreign direct investment by world-class companies
  - Grow Taiwanese companies to regional and global stature
  - **Broaden Taiwan's portfolio of competitive clusters**

# National Cluster Export Portfolio

## Taiwan, 1997-2007



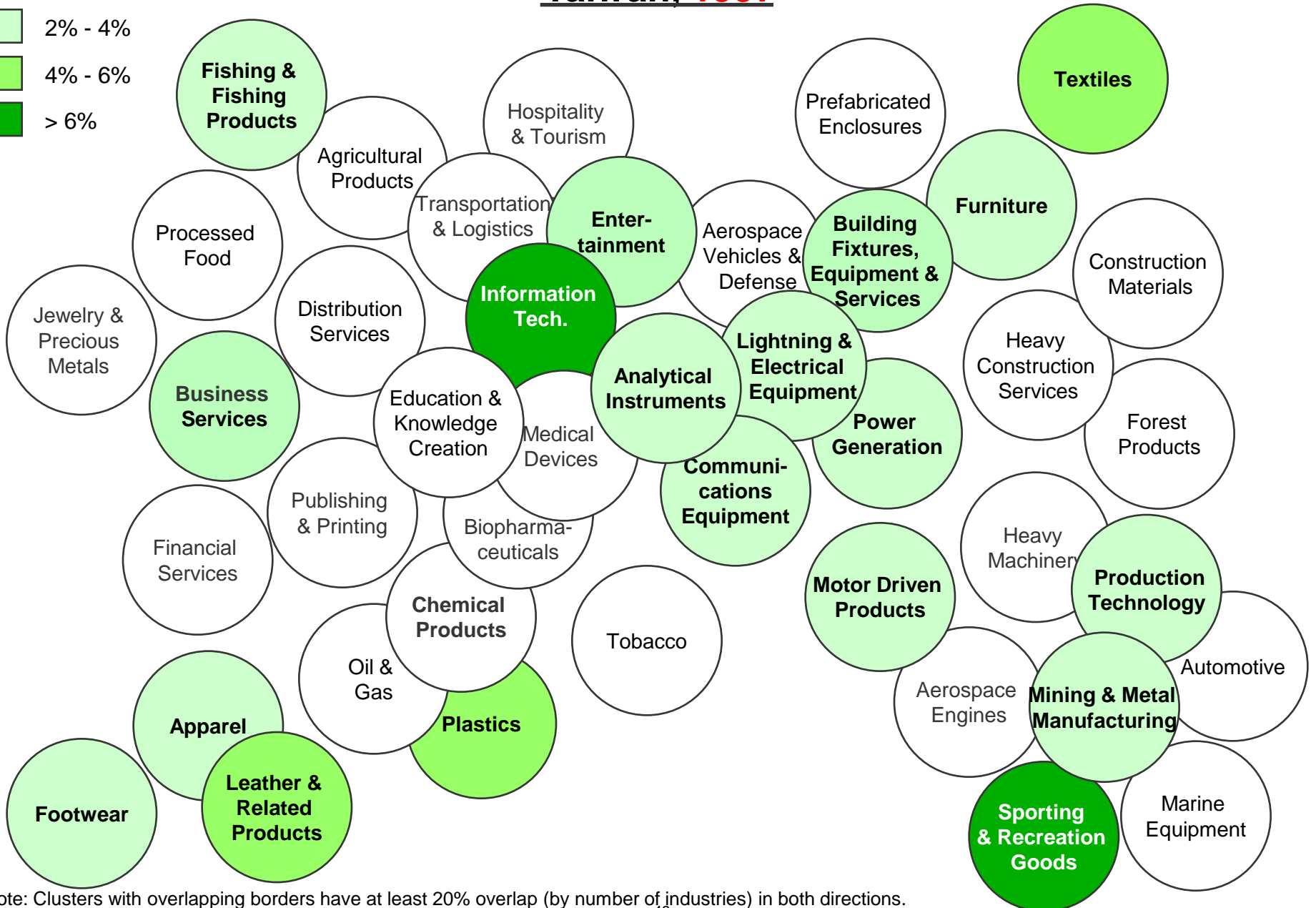
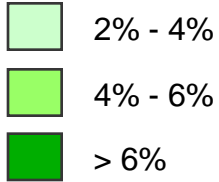
Exports of US\$8.8 Billion =

Source: Prof. Michael E. Porter, International Cluster Competitiveness Project, Institute for Strategy and Competitiveness, Harvard Business School; Richard Bryden, Project Director. Underlying data drawn from the UN Commodity Trade Statistics Database and the IMF BOP statistics. Taiwan Competitiveness 20100408

# Share of World Exports by Cluster

Taiwan, 1997

World Market Share



Note: Clusters with overlapping borders have at least 20% overlap (by number of industries) in both directions.

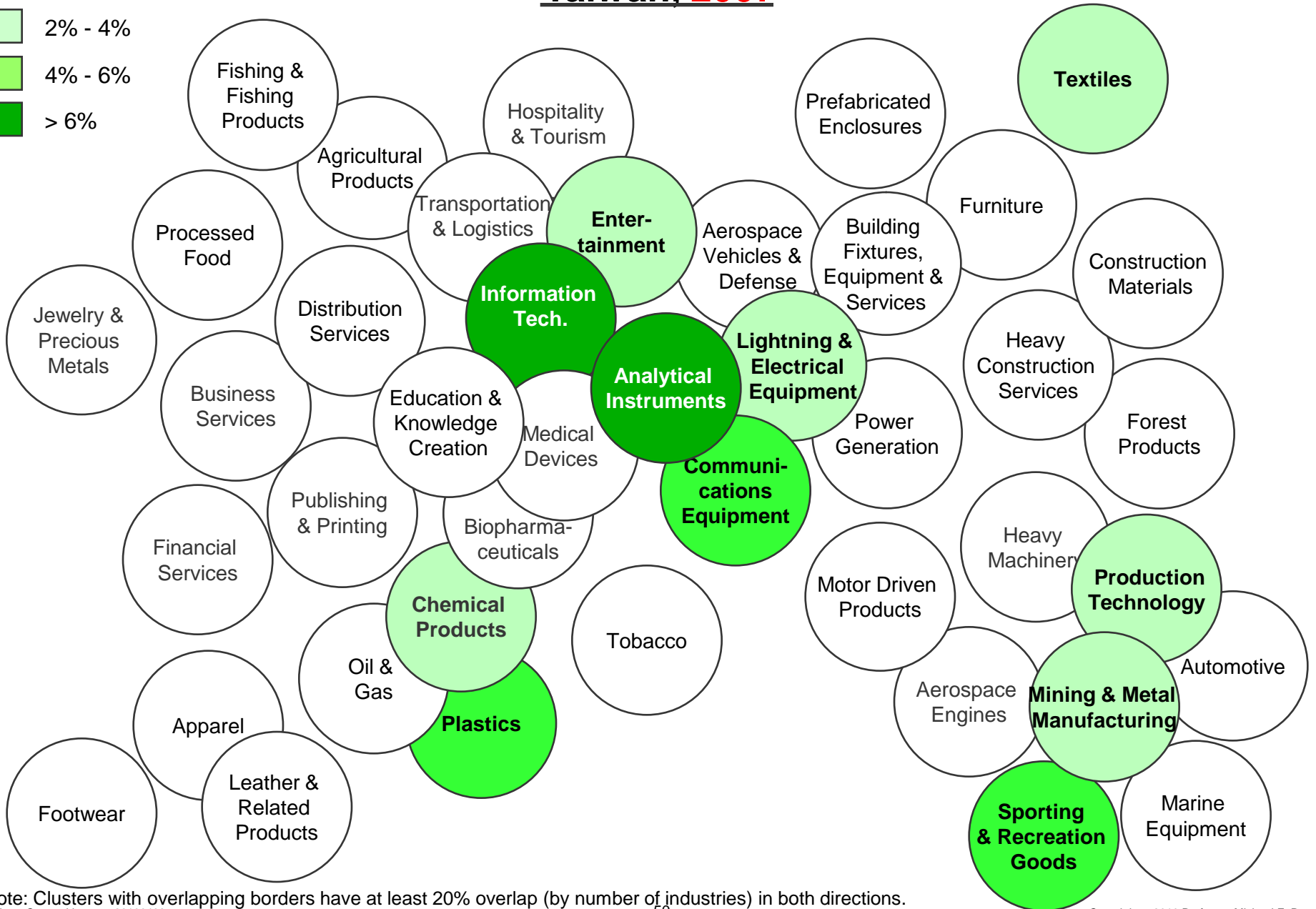
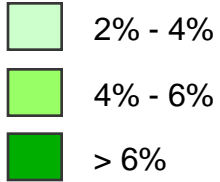




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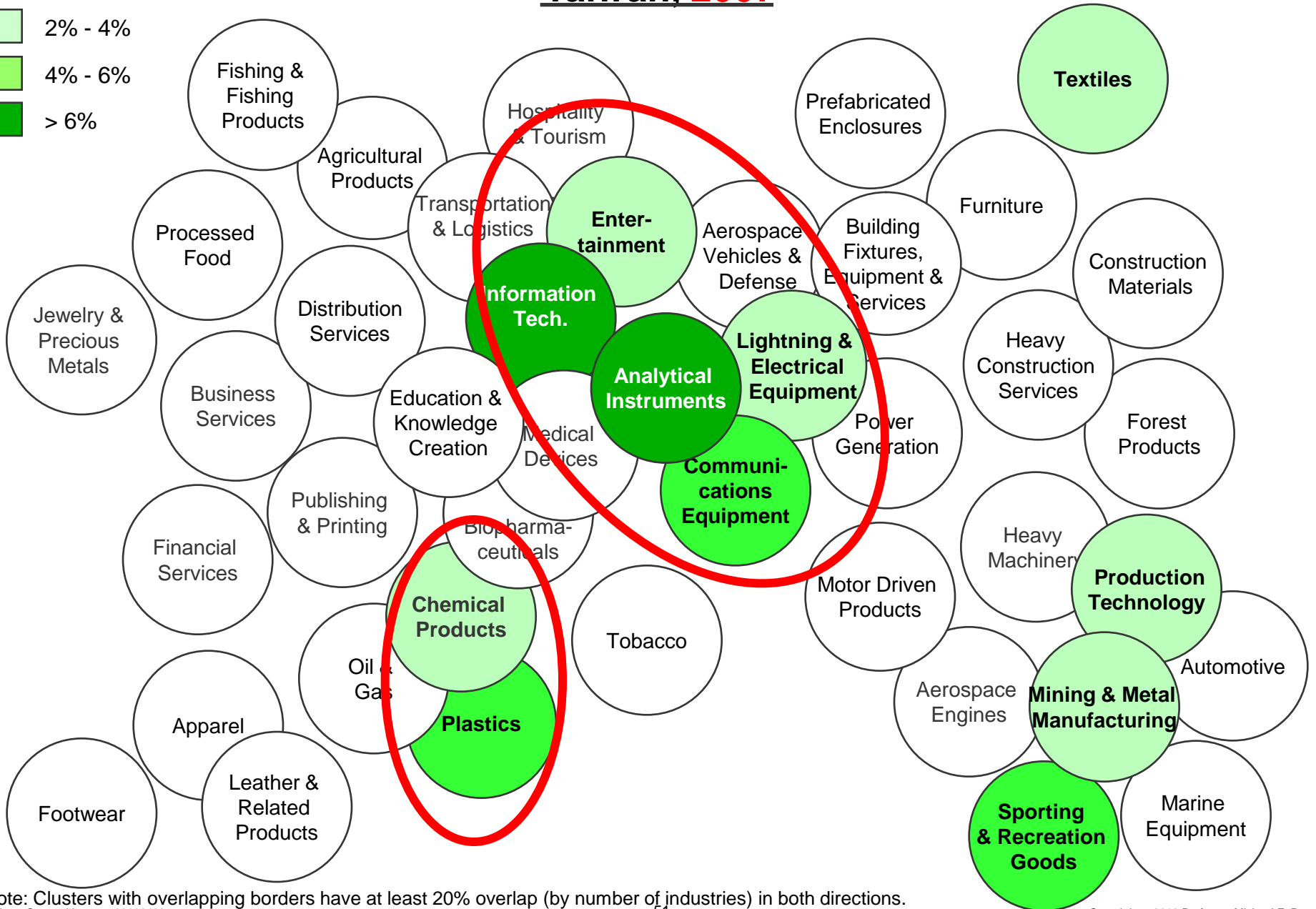
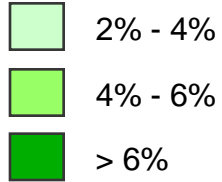


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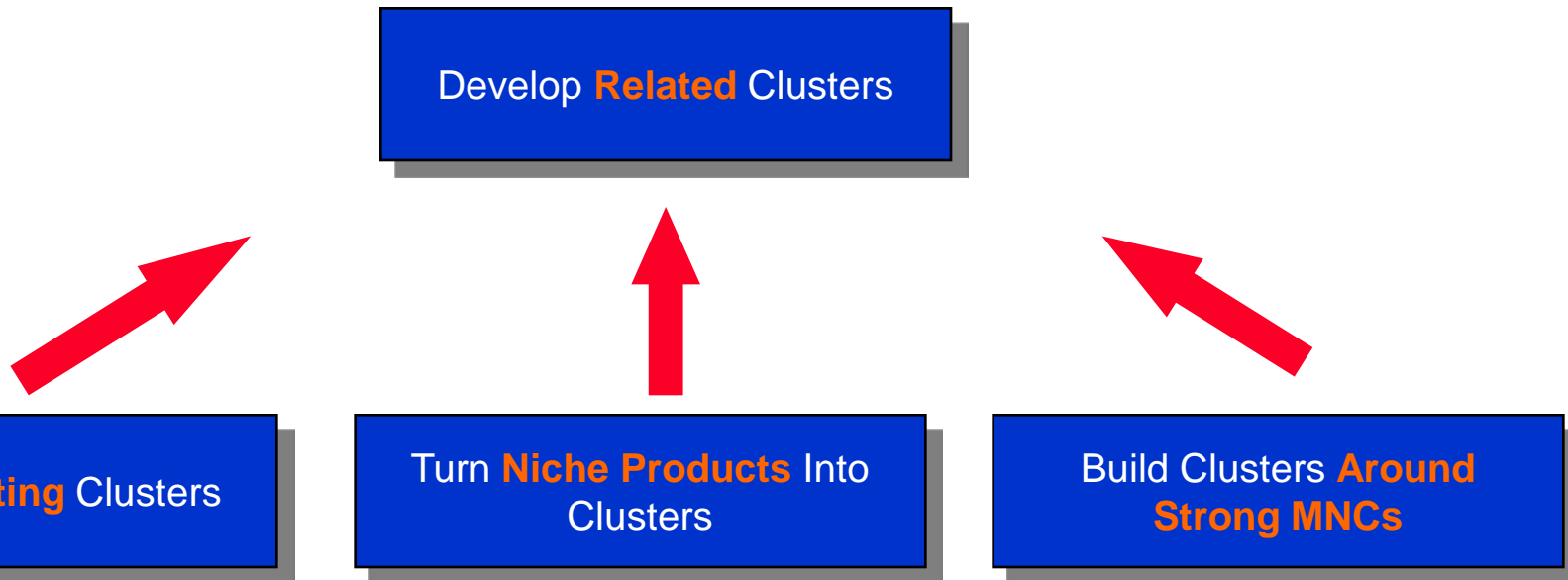
Taiwan, 2007

World Market Share



Note: Clusters with overlapping borders have at least 20% overlap (by number of industries) in both directions.

# Clusters and Economic Diversification



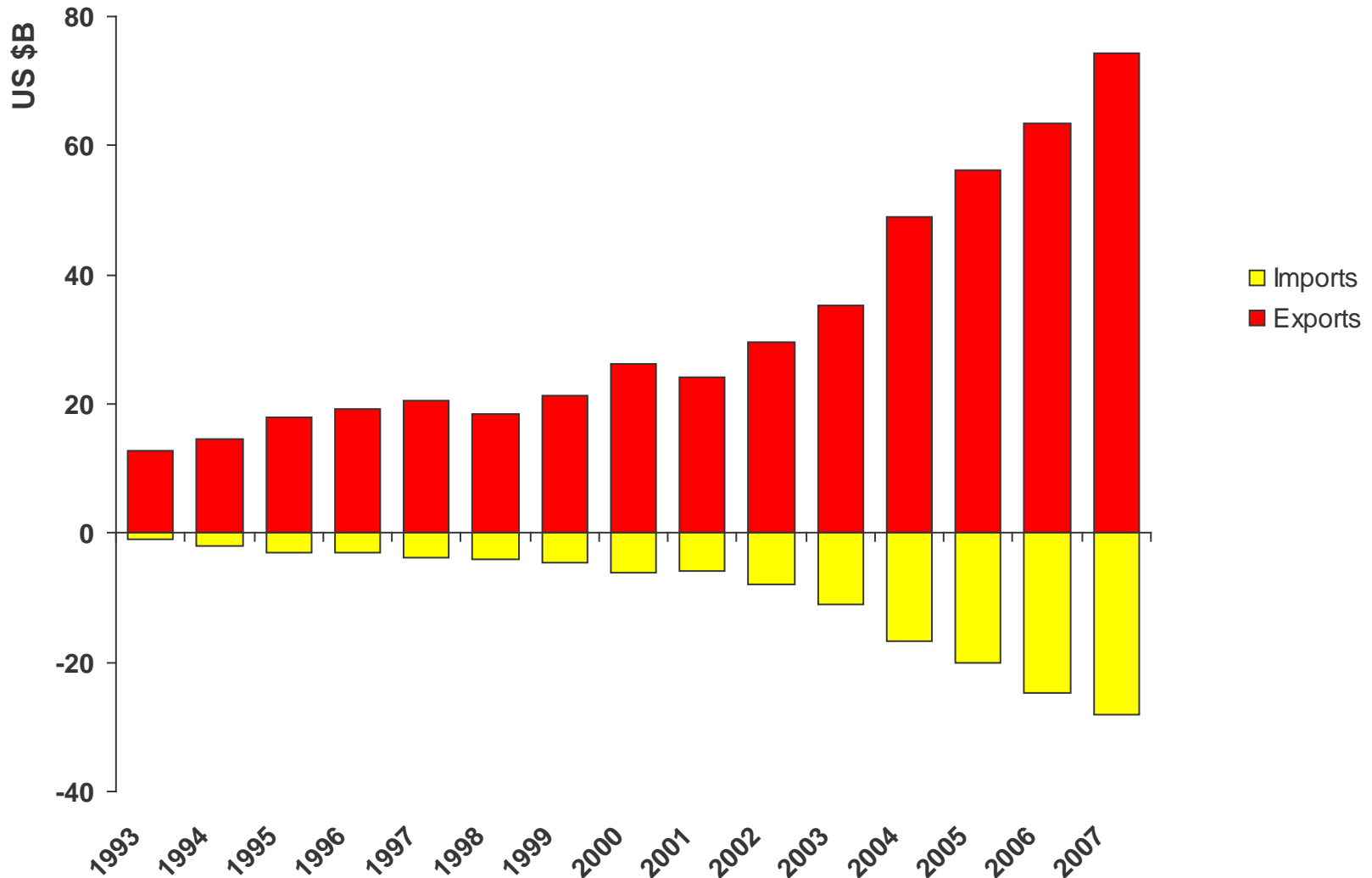
# Taiwan's Economic Agenda in 2010

- I. Address some **chronic weaknesses**
  - Improve political institutions
  - Reduce corruption
  - Reduce bureaucracy and regulatory complexity
  - Improve labor force flexibility and ease skilled immigration
  - Reduce distortions and barriers to competition
  - Improve the quality and transparency of financial markets
- II. Expand, upgrade, and globalize the **innovation-driven economy**
  - Open Taiwan to foreign direct investment by world-class companies
  - Grow Taiwanese companies to regional and global stature
  - Broaden Taiwan's portfolio of competitive clusters

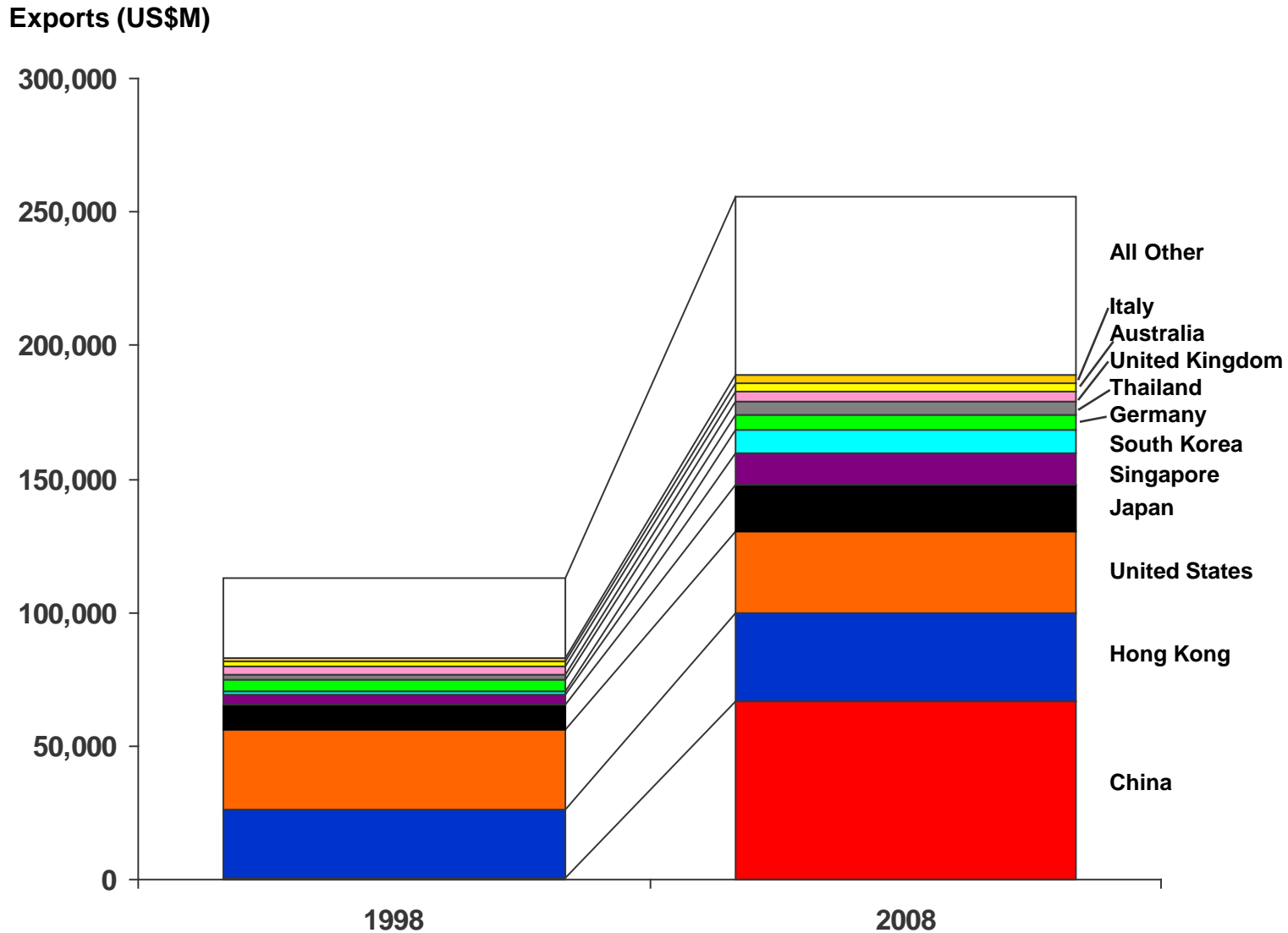
## III. Redefine Taiwan's relationship with China

# Taiwan's Trade With China

## 1993-2007

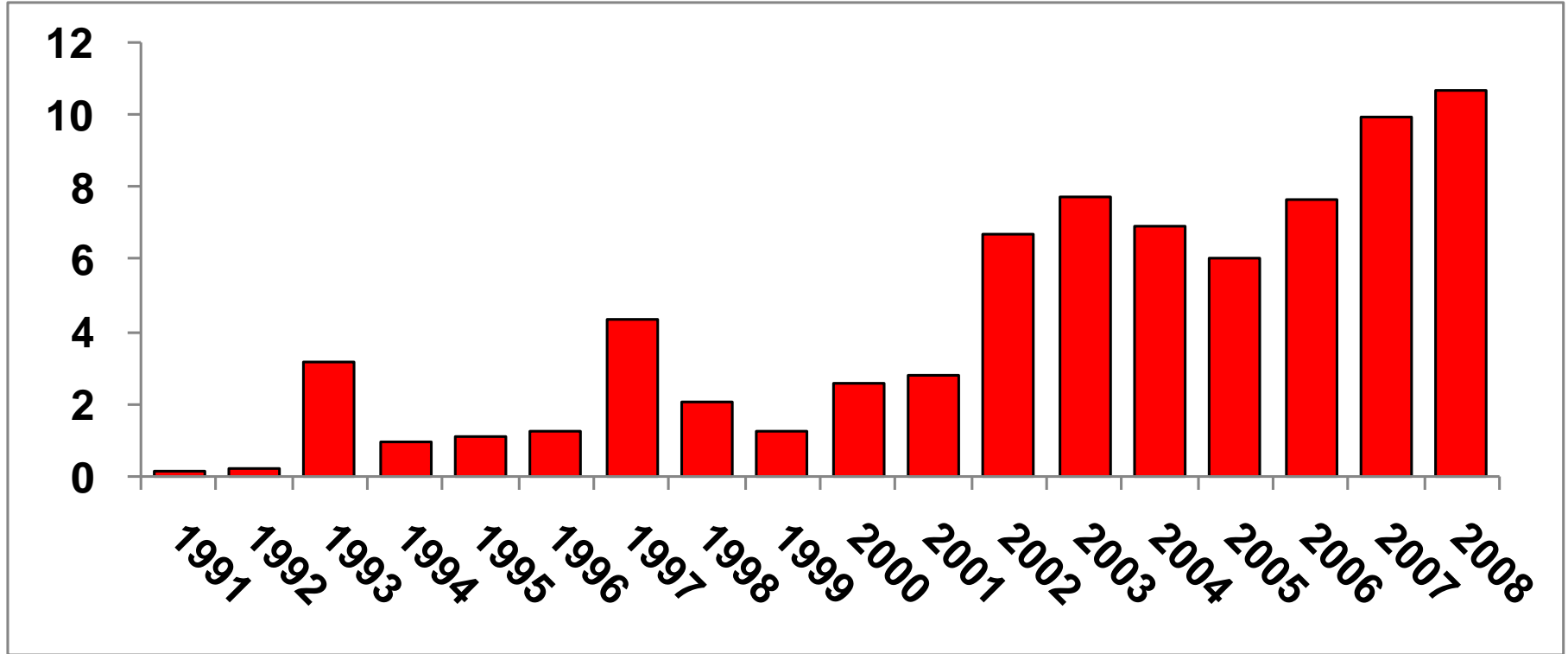


# Taiwan's Total Exports By Partner



# Approved Taiwanese Indirect Investment In Mainland China, 1991 - 2008

Outbound Flows  
(\$B)



Source: Investment Commission, Ministry of Economic Affairs, R.O.C., Statistics on Overseas Chinese & Foreign Investment, Outward Investment, Indirect Mainland Investment, R.O.C., March 2009.



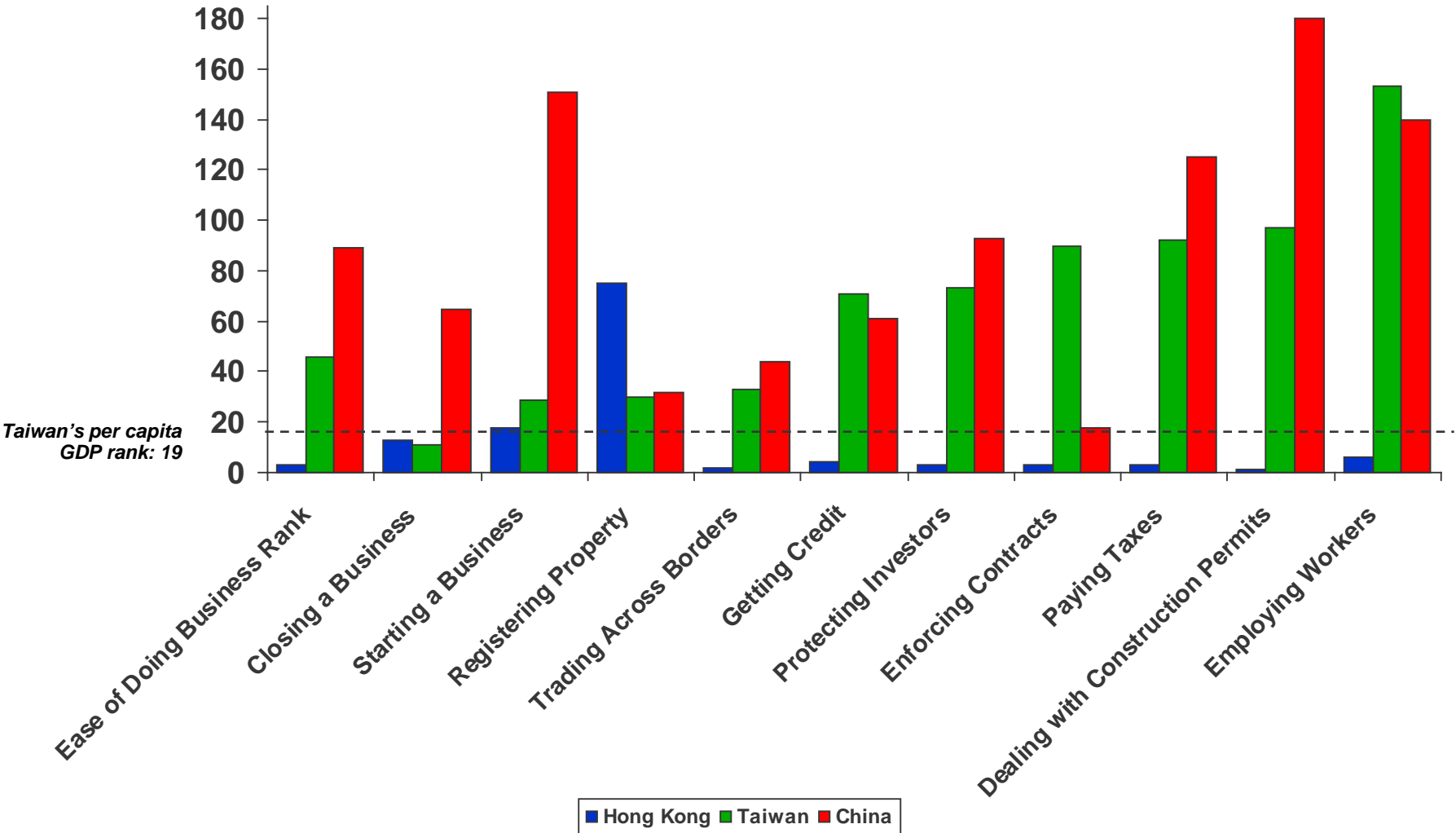
# Ease of Doing Business Rankings

## Taiwan's Relative Position, 2009

Ranking, 2009 (of 183 countries)

*Favorable*

*Unfavorable*



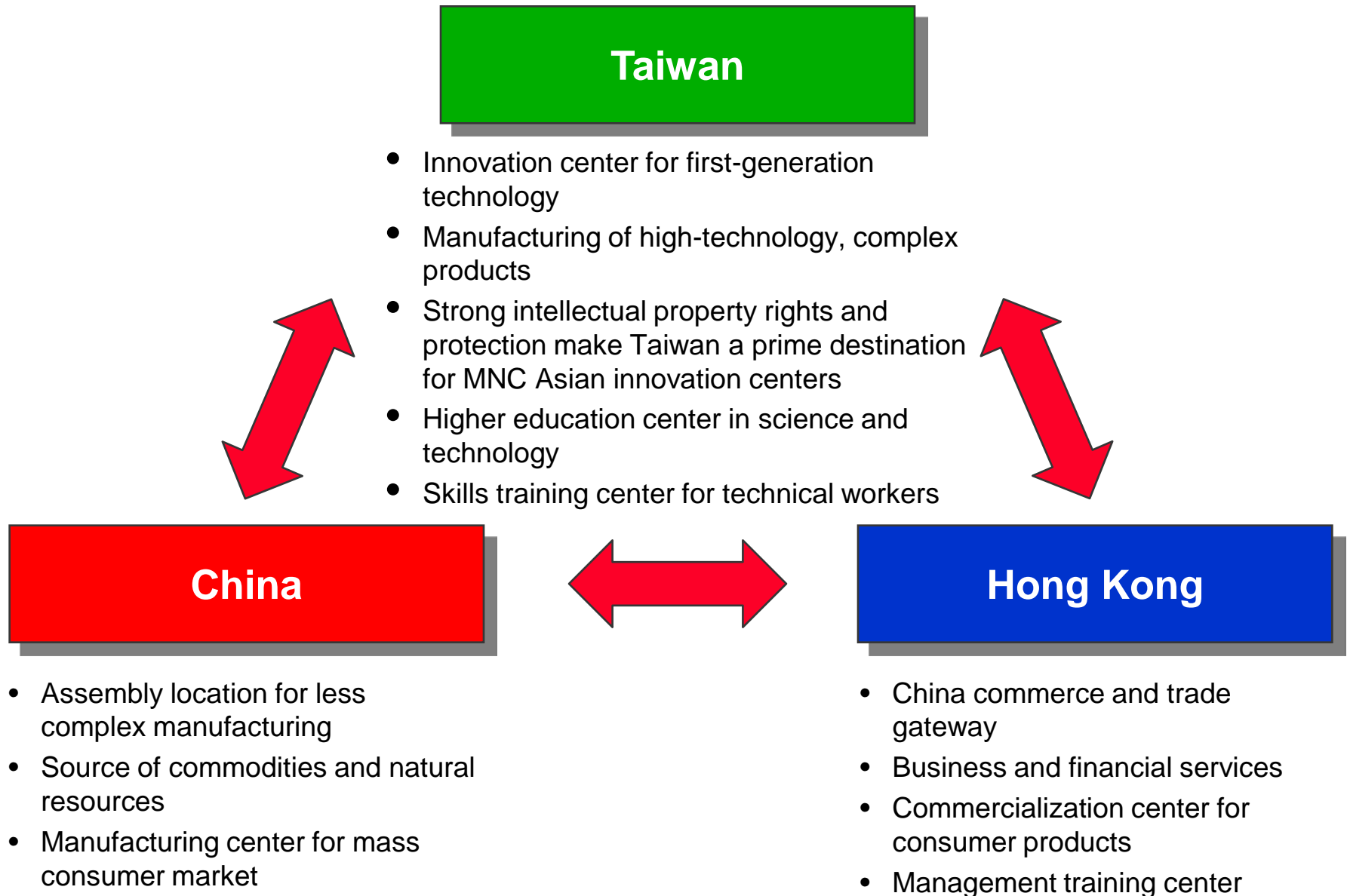
Source: World Bank Report, Doing Business (2010).

# Toward A Taiwanese Economic Strategy

## What Is Unique About Taiwan?

- Highly innovative
- Strong intellectual property protection
- Entrepreneurial
- Flexible business culture reacts rapidly
- Large pool of researchers
- Strong science and technology education, research institutions
- Some deep technology clusters in closely related industries
- Logistics strengthened In past 10 years
- Strong outbound FDI
- Gateway to China: strongest democracy, freedom of speech of any Chinese-speaking country

# Creating a Complementary Positioning



# Toward A Taiwanese Economic Strategy

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### Some Implications

- Make Taiwan the research, technology, and complex manufacturing base for MNCs in Asia
  - Become the most attractive site for R&D centers
  - Create a welcoming, transparent, and highly efficient investment climate
  - Make Taiwan the easiest place in Asia to do business
  - Serve as the secure technology gateway to China
  - Provide world-class logistics and business services
  - Develop Taiwan as a knowledge and education center
  - Become a hub for information