

Building a Competitive Taiwan

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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), "Building the Microeconomic Foundations of Competitiveness," 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, 2008), and ongoing research on clusters and competitiveness. 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. Further information on Professor Porter's work and the Institute for Strategy and Competitiveness is available at www.isc.hbs.edu

The State of the Taiwanese Economy

- High and rising standard of living
- Highly educated workforce and strong technology base
- Progress on infrastructure, corruption, and other areas

BUT

- Slower economic growth
- Concerns about income inequality
- Low birth rate and aging population
- Concerns about future economic direction

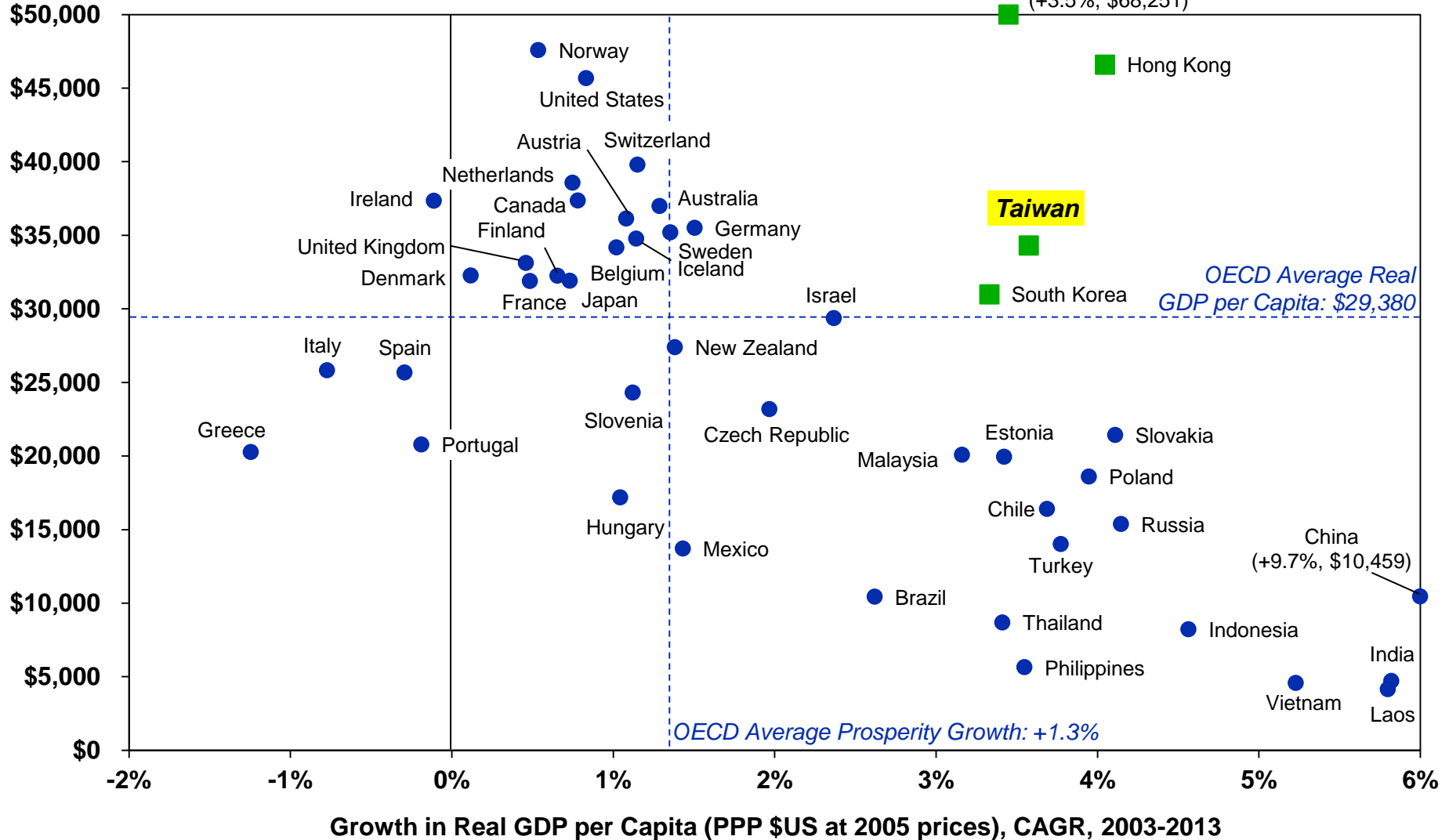
Agenda

- Taiwan's Prosperity Performance
- Taiwan's Competitiveness Fundamentals
- Taiwan's Role in the Regional and Global Economy
- An Economic Strategy for Taiwan

Prosperity Performance

Selected Countries

PPP-Adjusted Real GDP
per Capita, 2013 (\$USD
at 2005 prices)



Note: Luxembourg omitted from OECD average.

Source: EIU (2014), authors calculations

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What is Competitiveness?

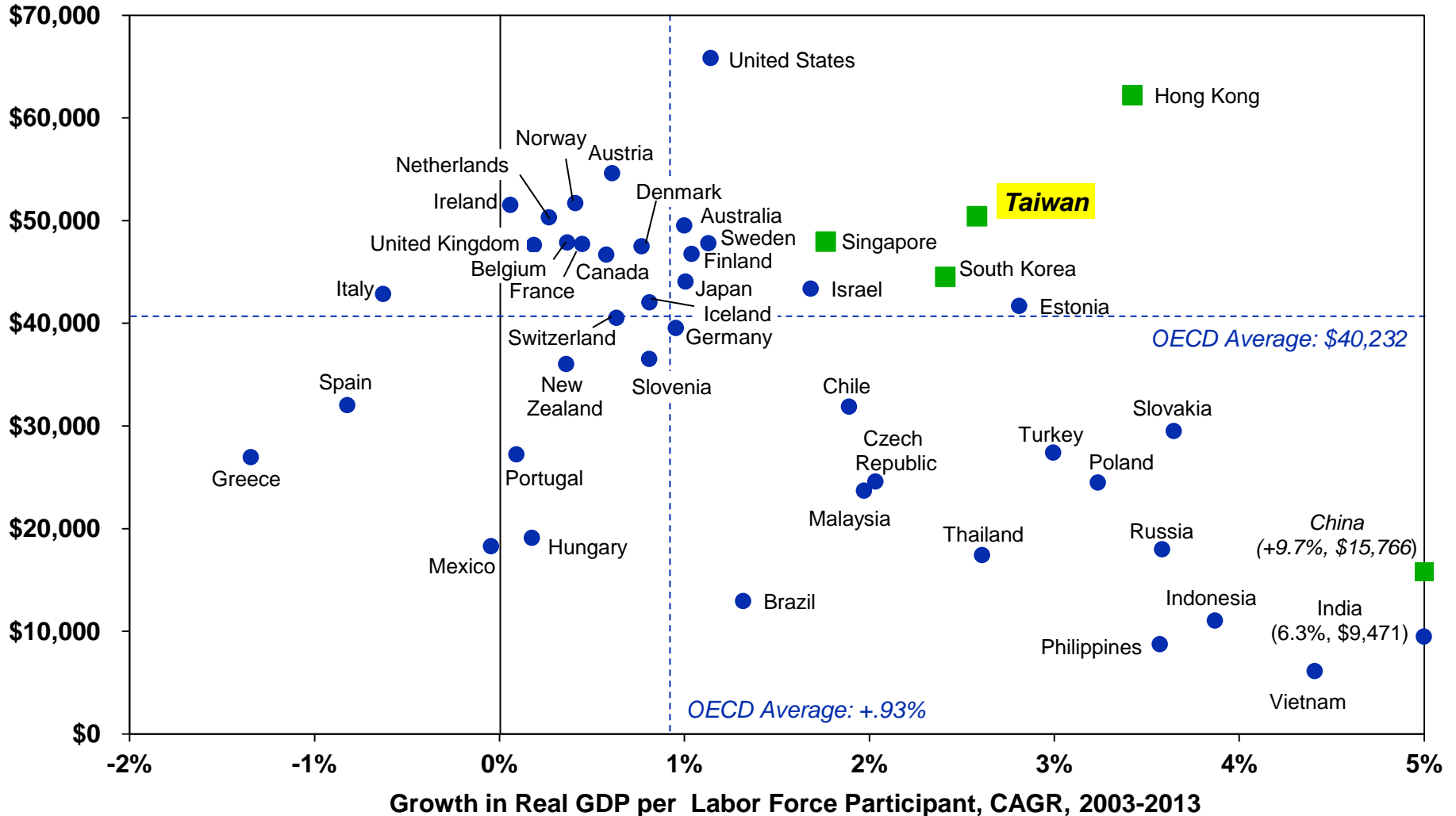
A nation or region is competitive to the extent that firms operating there are able to **compete successfully** in the national and global economy while maintaining or improving **wages and living standards** for the average citizen

- Competitiveness depends on the **long-run productivity and efficiency** of a location as a place to do business
 - The productivity of **existing** firms and workers
 - The ability to achieve **high participation** of citizens in the workforce
- Competitiveness is **not**:
 - Low wages
 - A weak currency
 - Jobs per se

Strong Labor Productivity Performance

Selected Countries

Real GDP per Labor
Force Participant
(1990 GK\$), 2013



Note: Luxembourg omitted from OECD average. Growth calculated as compound annual growth rate.

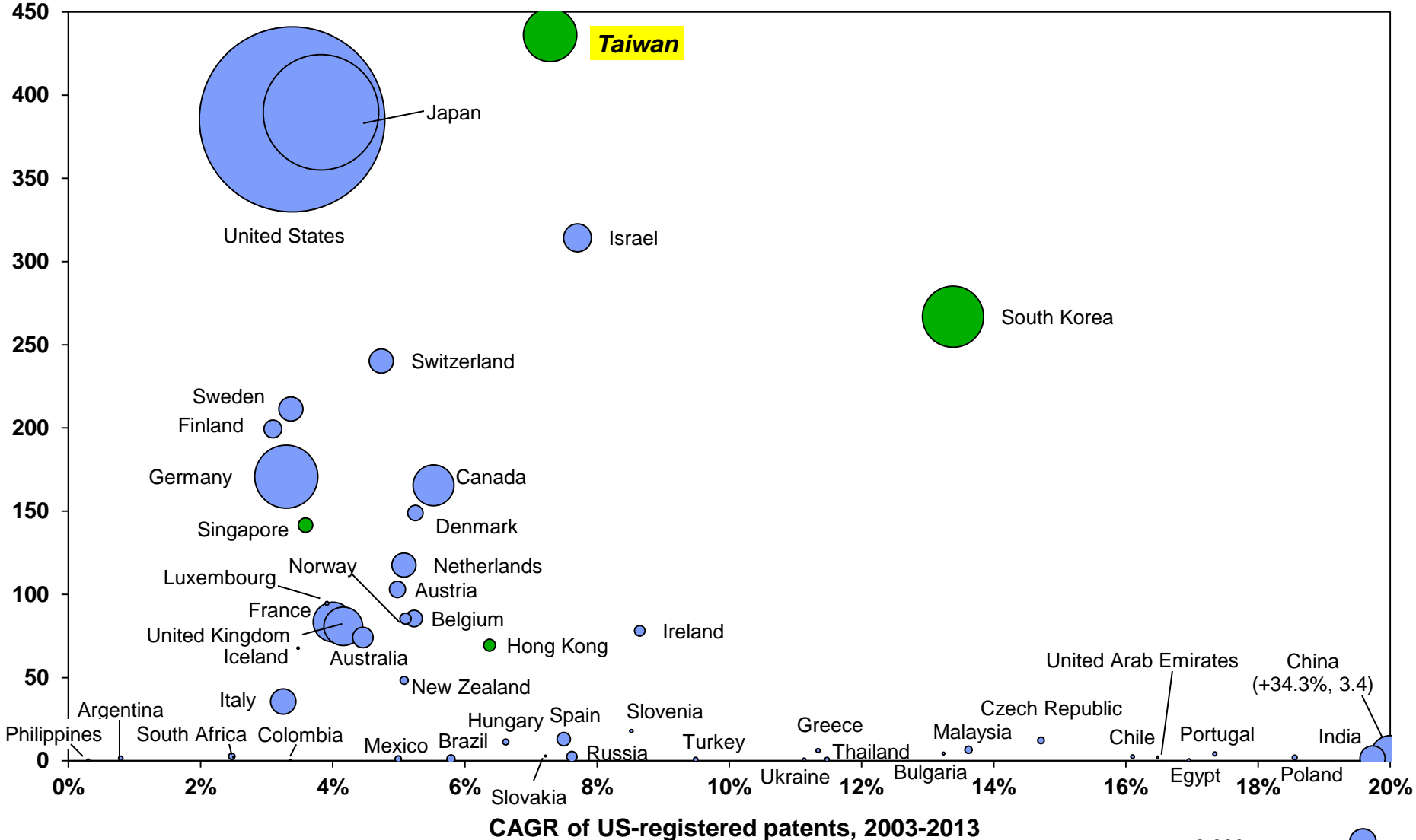
Source: The Conference Board Total Economy Database, EIU (2014)

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Strong Innovative Output

Selected Countries

Average U.S. patents per
1 million population, 2011-2013

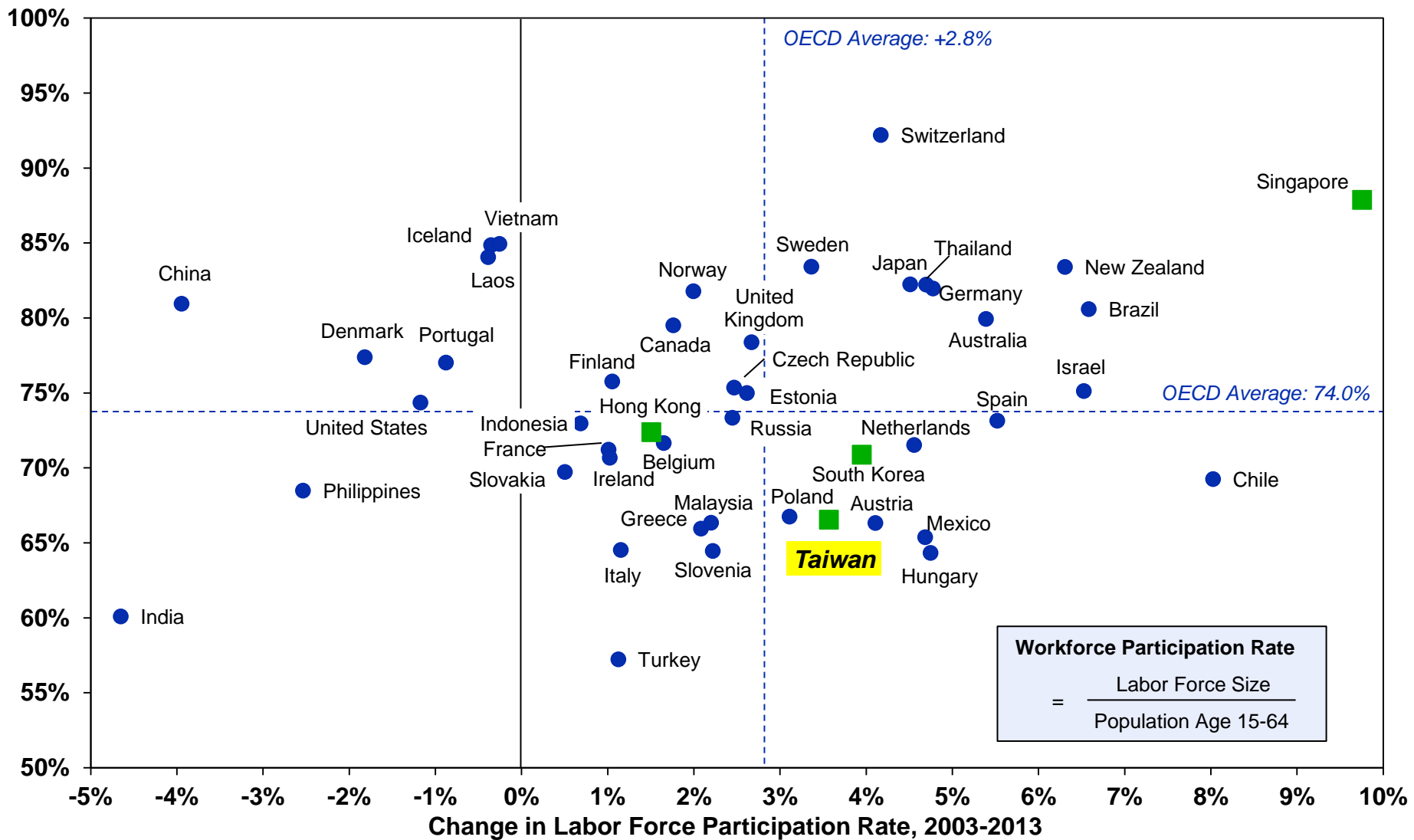


Source: USPTO (2014), EIU (2014)
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Low Workforce Participation

Selected Countries

Labor Force Participation (2013)

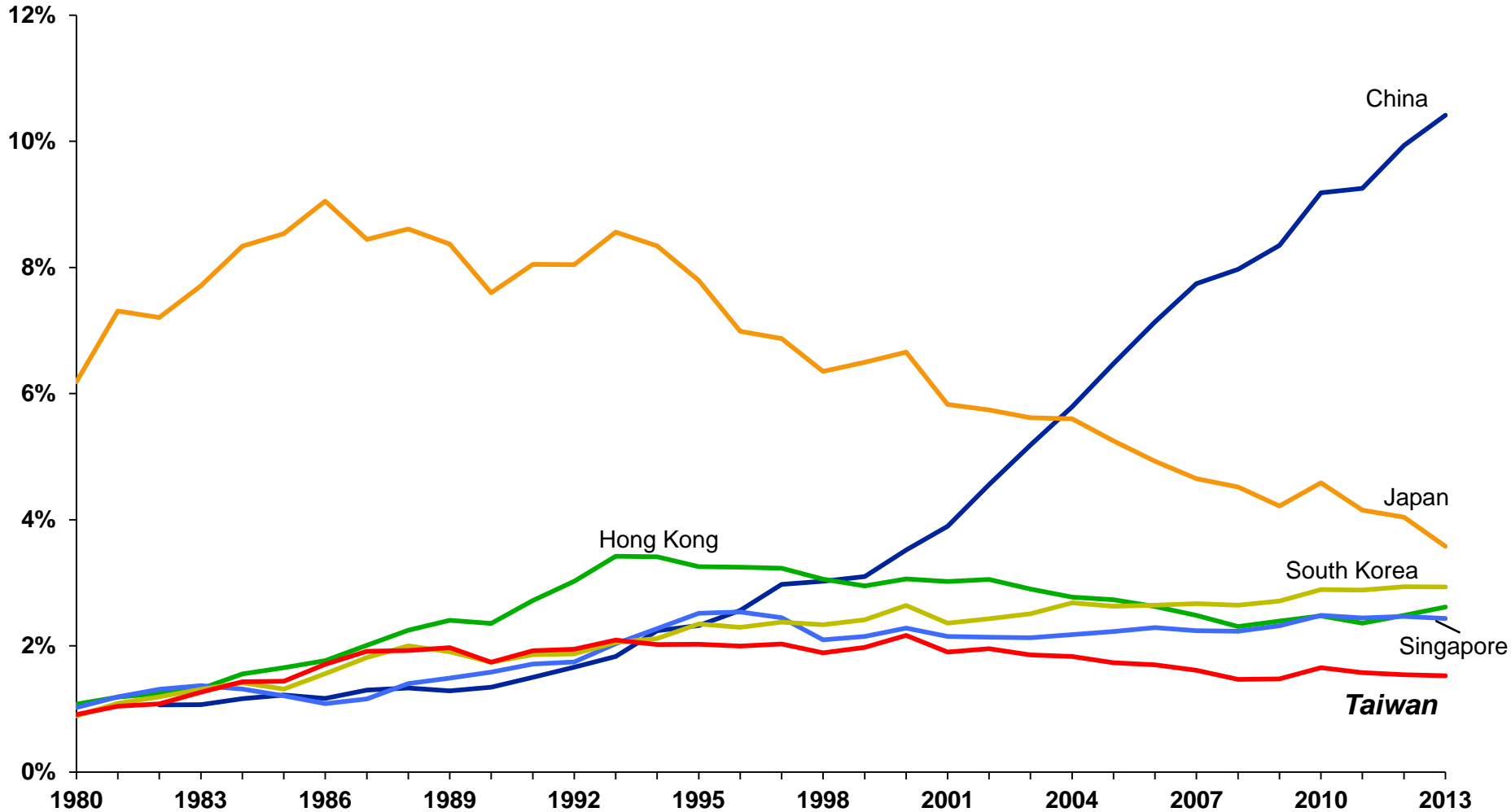


Note: Luxembourg omitted from OECD average.
 Source: EIU (2014), World Bank, authors calculations
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Declining Share of World Exports

Selected Countries

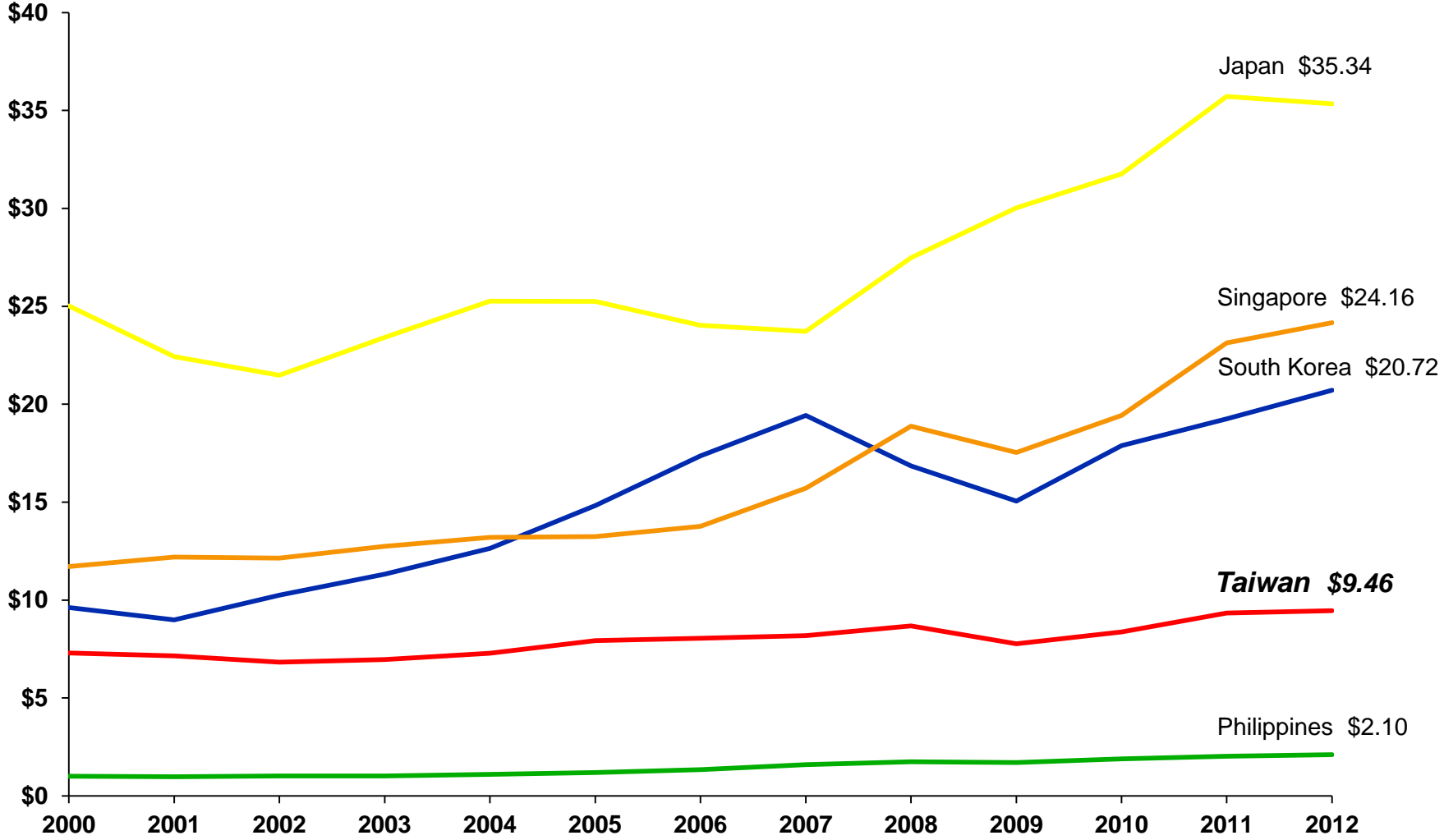
Share of World Exports of Goods and Services



Lagging Wages

Manufacturing Wages, Selected Countries

Manufacturing Wage Level (\$US)



Source: BLS, EIU (2014)

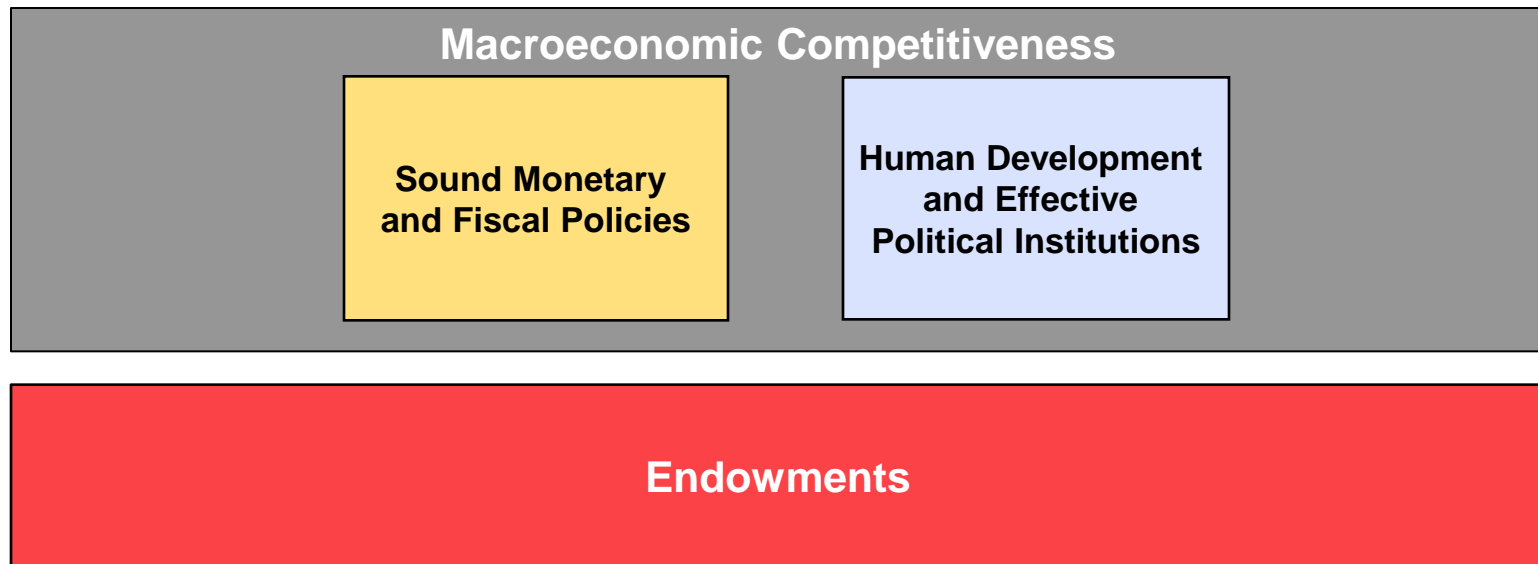
What Determines Competitiveness?



Endowments

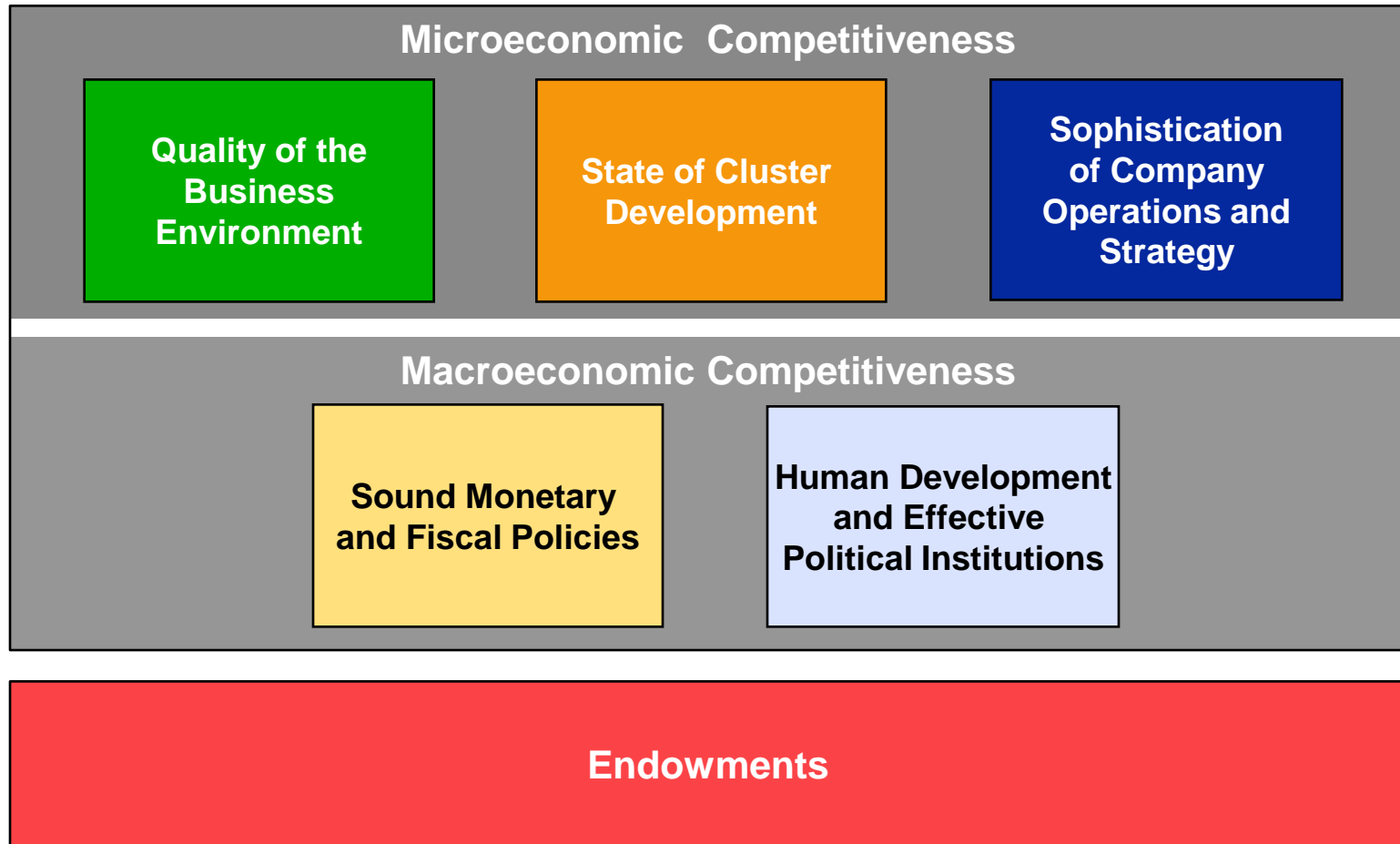
- Endowments, including **natural resources**, **geographical location**, **population**, and **land area**, create a foundation for prosperity, but true prosperity arises from **productivity in the use of endowments**

What Determines Competitiveness?



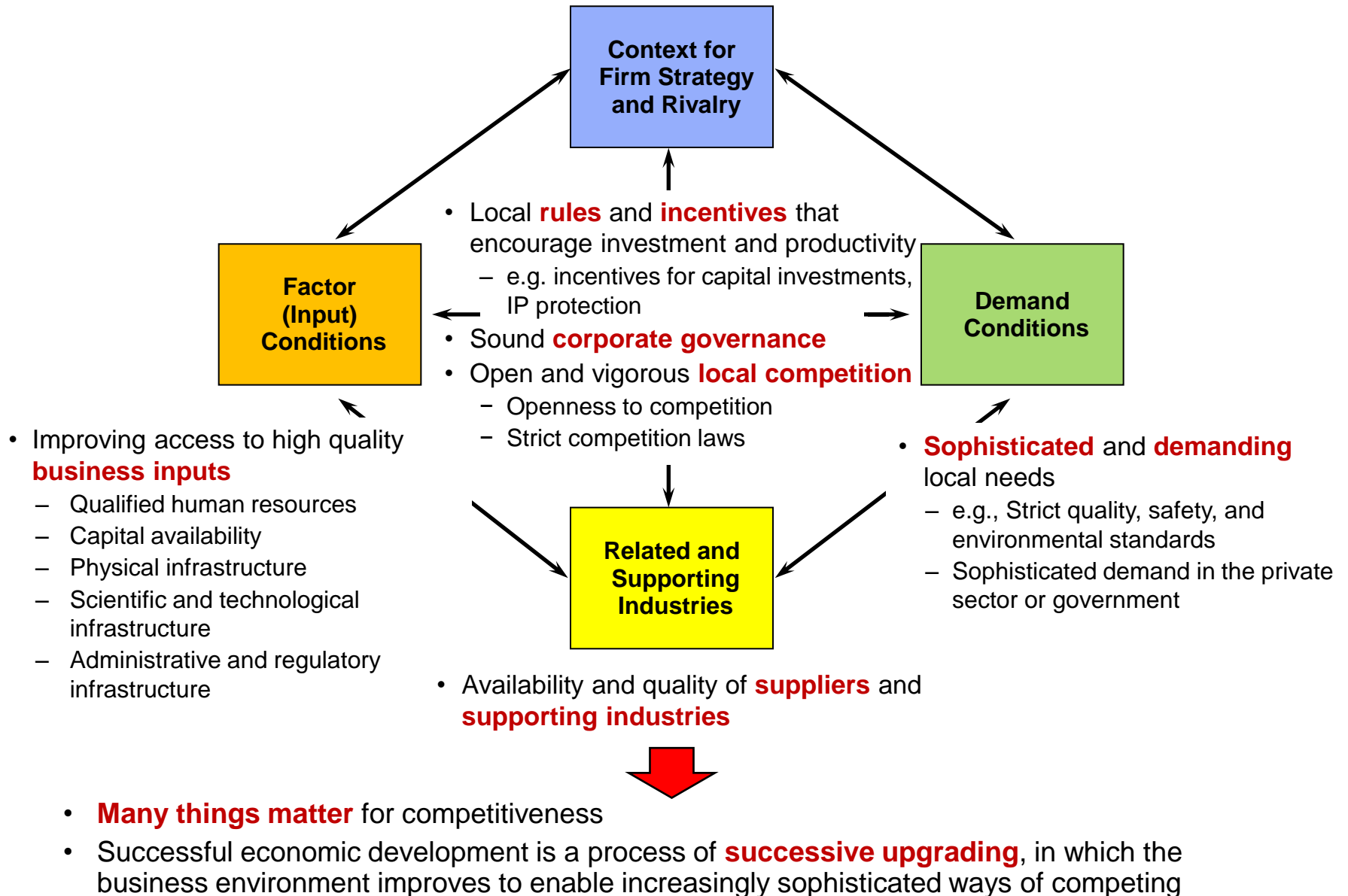
- Macroeconomic competitiveness sets the **economy-wide** context for productivity to emerge, but is **not sufficient** to ensure productivity
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What Determines Competitiveness?

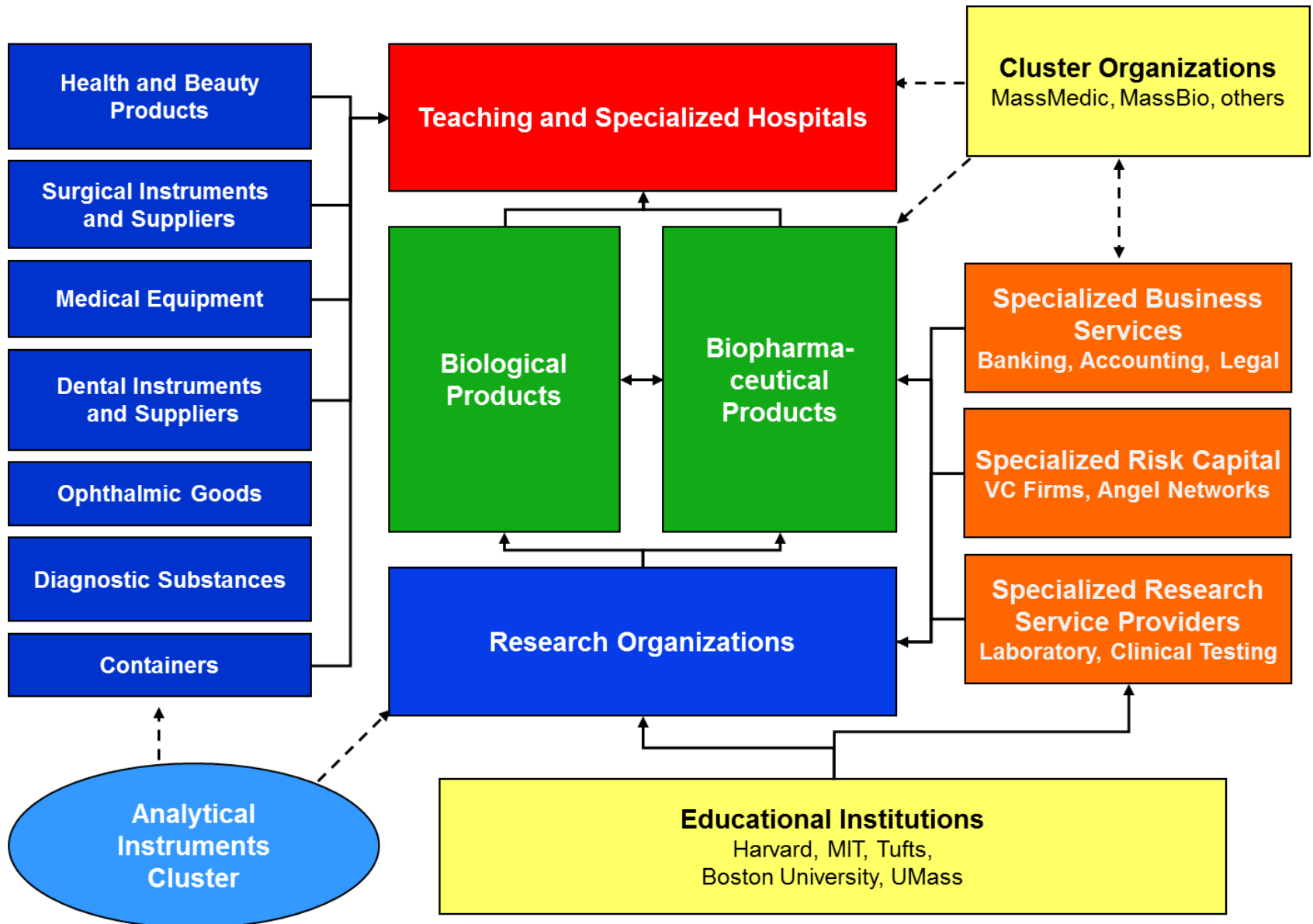


- Productivity ultimately depends on improving the **microeconomic capability** of the economy and the **sophistication of local competition** revealed at the level of firms, clusters, and regions
- Macroeconomic competitiveness sets the **economy-wide** context for productivity to emerge, but is **not sufficient** to ensure productivity
- Endowments, including **natural resources**, **geographical location**, **population**, and **land area**, create a foundation for prosperity, but true prosperity arises from **productivity in the use of endowments**

Assessing the Quality of the Business Environment

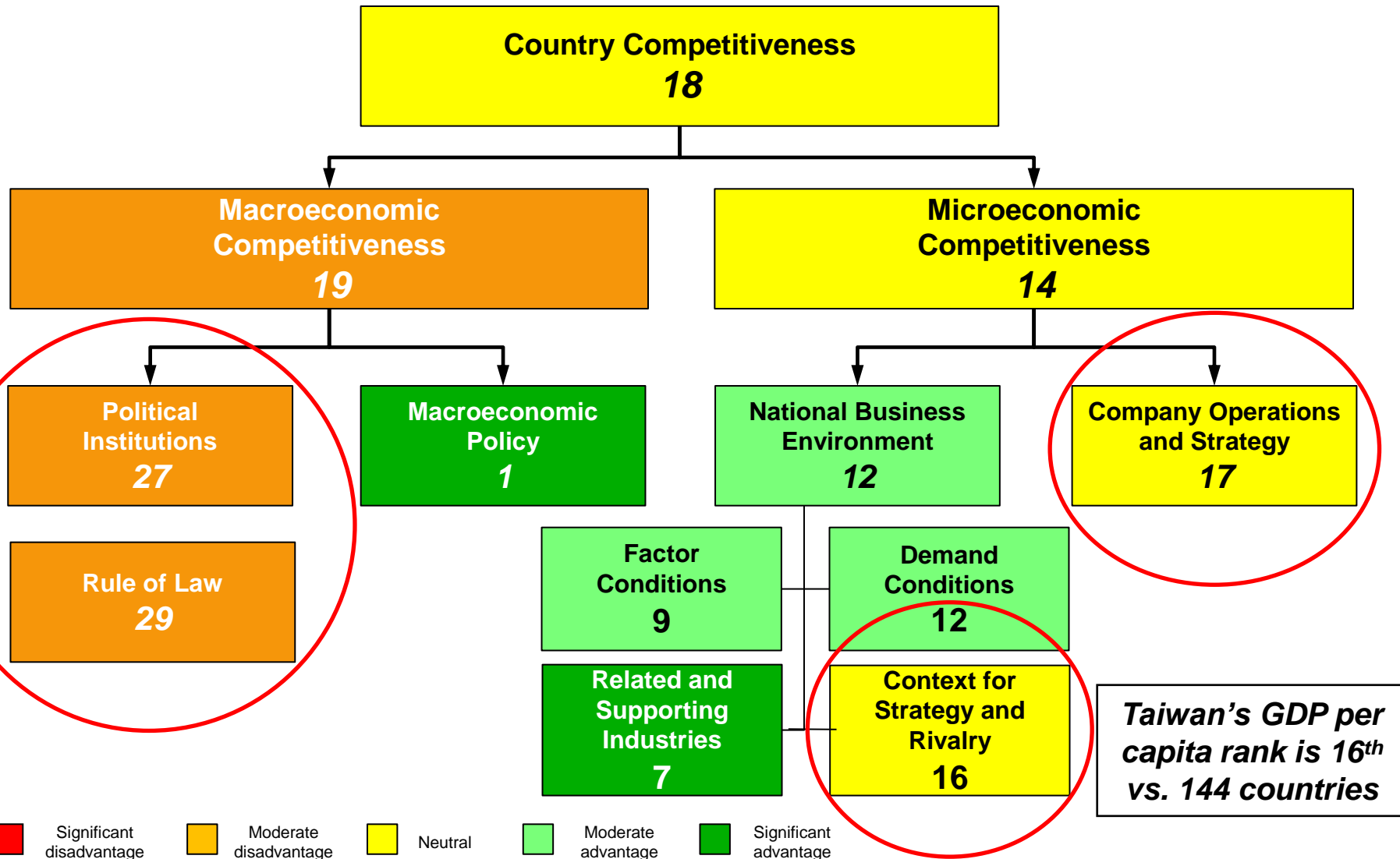


Massachusetts Life Sciences Cluster



ISC Competitiveness Model

Taiwan's Competitiveness Profile, 2013



Note: Rank versus 144 countries, *Color coding based on comparison relative to income.

Source: Institute for Strategy and Competitiveness, Harvard University (2012), based in part on survey data from the World Economic Forum; analysis prepared based on research findings by Scott Stern, Mercedes Delgado, and Christian Ketels.

Taiwan's Strengths and Weaknesses

Strengths

- Some strong clusters
- Availability of scientists and engineers
- Math and science education
- University-industry research collaboration
- Intense local competition
- Solid IP protection
- Transportation and physical infrastructure

Companies

- R&D spending

Weaknesses

- Inefficient legal framework
- Brain drain
- Ability to attract and retain talent
- Doing business costs
- Distortive tax system
- Weak environmental regulations
- High tariffs
- Low prevalence of inward FDI

Companies

- Professionalism of management
- Extent of staff training

Doing Business Selected Countries

Country	Ease of Doing Business Rank	Starting a Business	Dealing with Construction Permits	Getting Electricity	Registering Property	Getting Credit	Protecting Investors	Paying Taxes	Trading Across Borders	Enforcing Contracts	Resolving Insolvency
Singapore	1	3	3	6	28	3	2	5	1	12	4
Hong Kong SAR, China	2	5	1	5	89	3	3	4	2	9	19
United States	4	20	34	13	25	3	6	64	22	11	17
Malaysia	6	16	43	21	35	1	4	36	5	30	42
Korea	7	34	18	2	75	13	52	25	3	2	15
Taiwan	16	17	7	7	31	73	34	58	18	84	16
Thailand	18	91	14	12	29	73	12	70	24	22	58
Japan	27	120	91	26	66	28	16	140	23	36	1
China	96	158	185	119	48	73	98	120	74	19	78

Rank out of 189 countries.

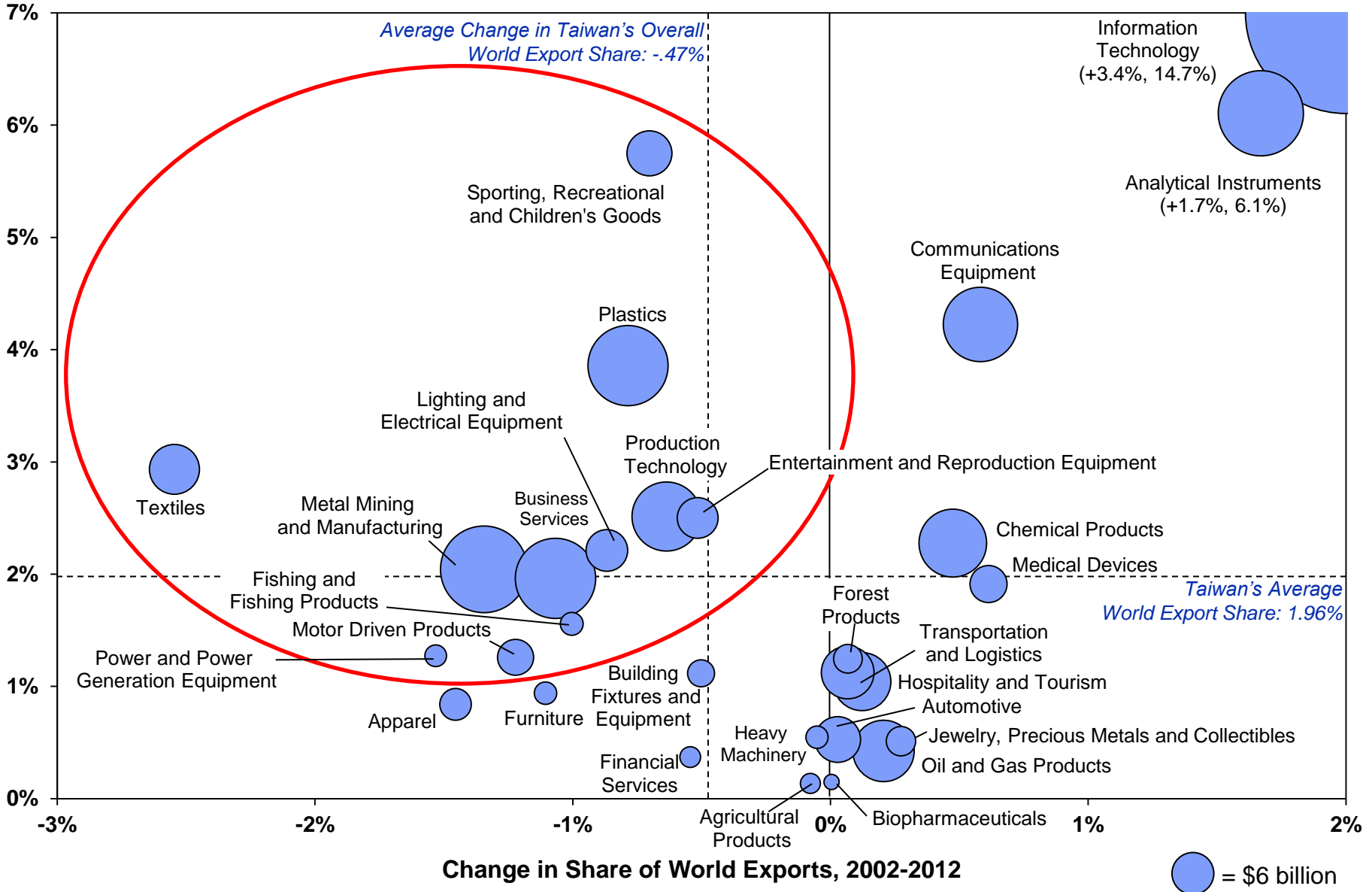
Source: World Bank Doing Business (2014)

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Taiwan's National Cluster Export Portfolio

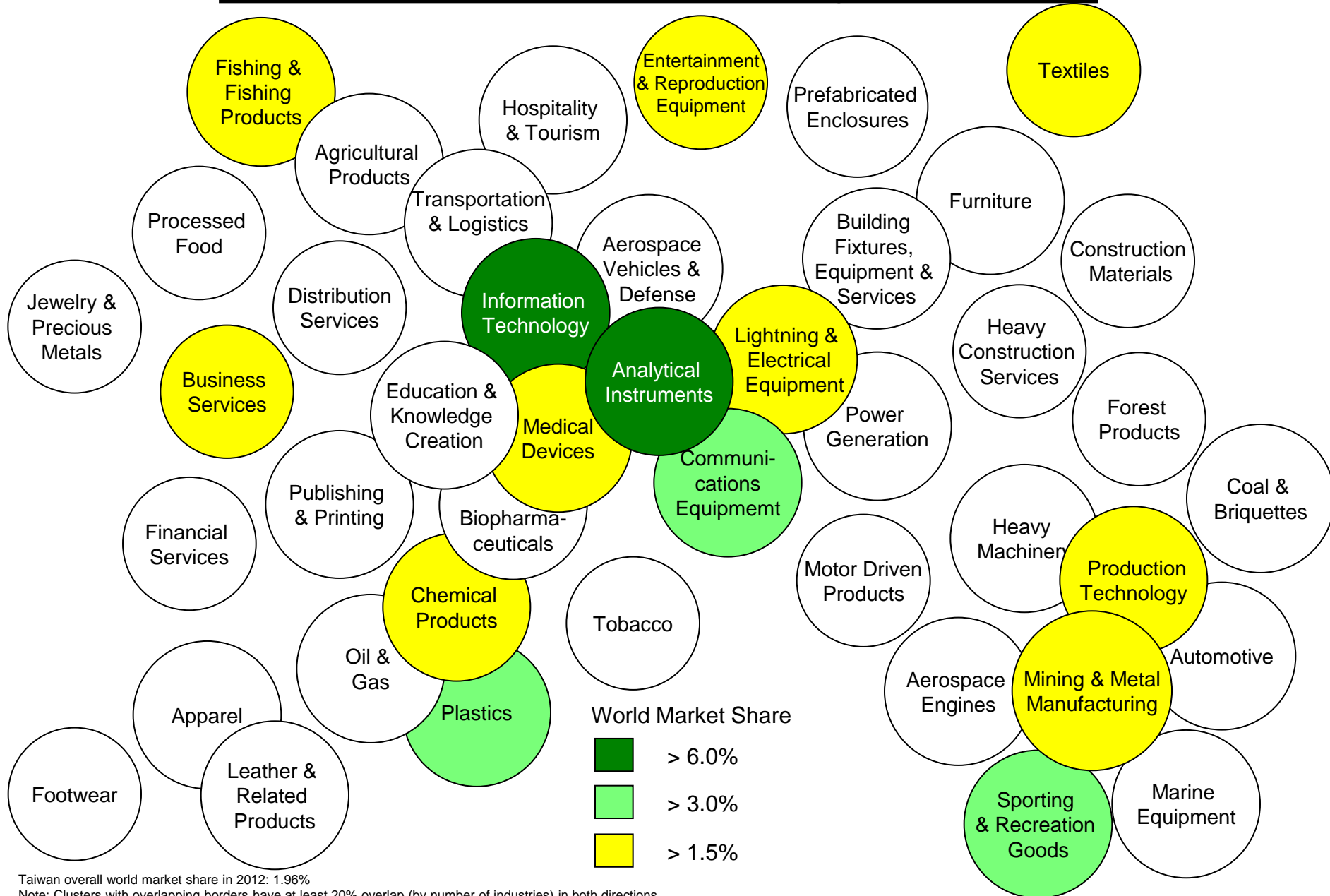
2002-2012

Share of World Exports, 2012



Opportunities for Economic Diversification

Taiwan's Share of World Exports by Cluster, 2012



Taiwan overall world market share in 2012: 1.96%

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

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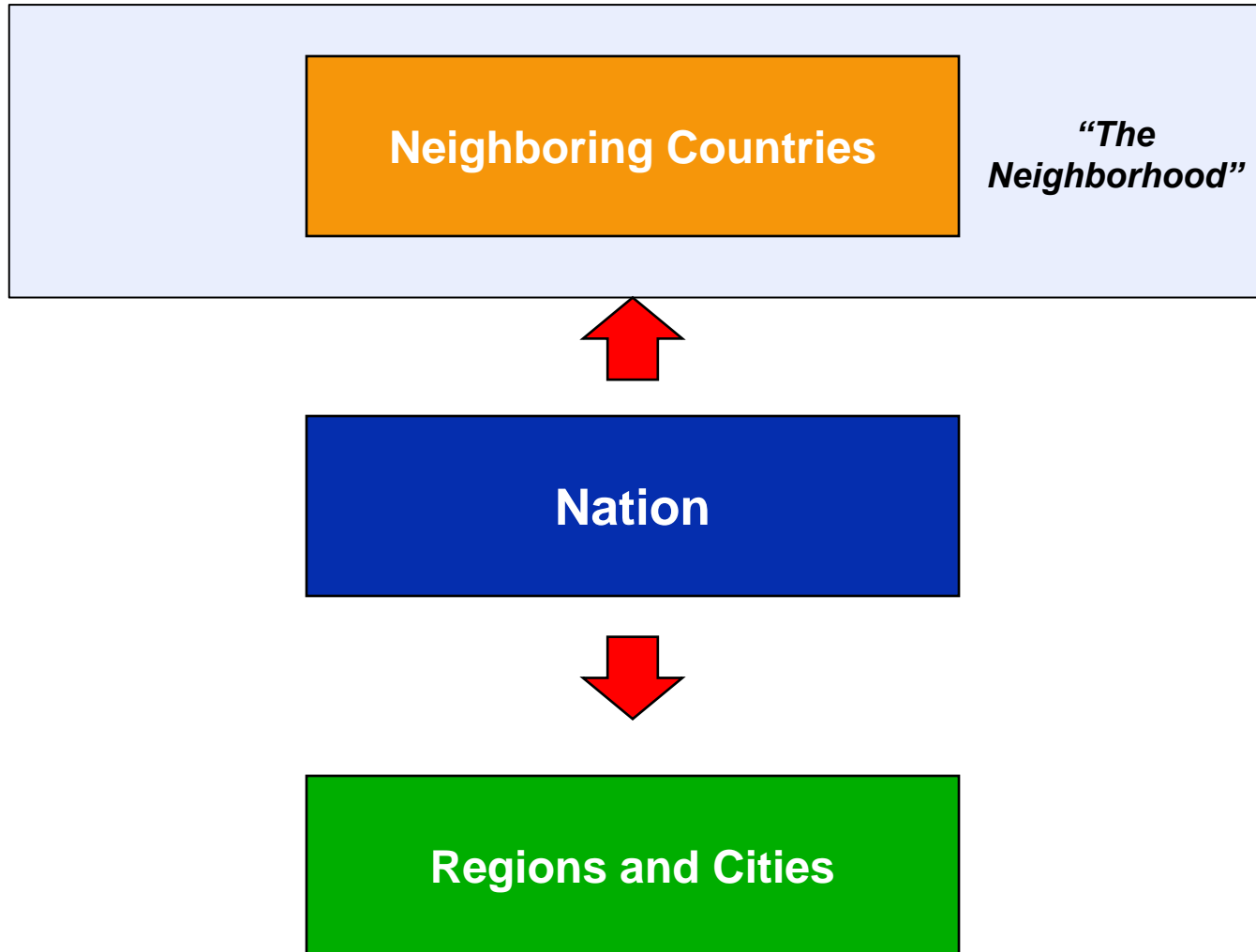
Opportunities for Economic Diversification

Taiwan Export Share Growth Successes

Industry	Cluster	World Export Share	Change in Share (2002-2012)	Export Value
1 Drawn, float, cast glass, worked	Lighting and Electrical Equipment	30.26%	26.02%	\$1,133,371,687
2 Parts of primary cells, batteries	Motor Driven Products	22.19%	16.34%	\$126,892,748
3 Vessels and other floating structures	Marine Equipment	20.33%	15.01%	\$73,828,746
4 Electronic microcircuits	Information Technology	26.51%	13.79%	\$108,458,422,289
5 Cast, rolled glass in sheets	Building Fixtures and Equipment	11.02%	10.47%	\$89,768,214
6 Synthetic or reconstituted precious stones	Jewelry, Precious Metals and Collectibles	11.66%	8.23%	\$125,568,869
7 Calendaring or other rolling machines	Production Technology	13.64%	7.76%	\$85,643,159
8 Phenols, phenol-alcohols, and derivatives	Chemical Products	11.65%	7.69%	\$906,954,360
9 Optical fibers, lenses and other elements, unmounted	Medical Devices	8.38%	6.31%	\$2,415,172,064
10 Crystals and parts of electronic components	Information Technology	22.10%	5.90%	\$7,020,359,651
11 Transfers, decalcomanias	Publishing and Printing	9.21%	5.72%	\$110,018,229
12 Chemical elements for electronics	Information Technology	17.79%	5.02%	\$2,081,104,729
13 Other acyclic alcohols and derivatives	Chemical Products	8.24%	4.96%	\$1,450,496,652
14 Radar apparatus, radio navigational aid and remote control apparatus	Analytical Instruments	13.52%	4.30%	\$2,335,437,479
15 Miscellaneous ash, residues containing metals	Metal Mining and Manufacturing	5.17%	4.14%	\$186,625,087
16 Float, ground, polished glass	Building Fixtures and Equipment	5.10%	4.14%	\$291,996,085
17 Video recording or reproducing apparatus	Entertainment and Reproduction Equipment	5.25%	4.08%	\$2,700,629,565
18 Lenses, prisms, and other optical elements, mounted	Analytical Instruments	7.20%	4.06%	\$915,601,865
19 Miscellaneous parts for machine-tools with metal	Production Technology	6.22%	4.03%	\$690,507,938
20 Miscellaneous glass articles	Medical Devices	7.34%	3.96%	\$545,633,440
21 Aldehyde-, ketone-, and quinone- function compounds	Chemical Products	6.74%	3.46%	\$549,187,760
22 Snow vehicles, golf cars and similar vehicles	Automotive	4.31%	3.41%	\$92,675,289
23 Acyclic hydrocarbons	Chemical Products	3.76%	3.36%	\$1,076,449,905
24 Copper foil, powder and flakes	Metal Mining and Manufacturing	22.71%	3.32%	\$1,750,702,646
25 Drawn, blown glass in sheets	Building Fixtures and Equipment	5.12%	3.08%	\$157,068,923
26 Toughened safety glass	Automotive	3.71%	2.99%	\$154,662,960
27 Silver, platinum and other metals of the platinum group	Jewelry, Precious Metals and Collectibles	3.05%	2.92%	\$1,762,468,962
28 TV, radio transmitters	Communications Equipment	5.56%	2.92%	\$9,143,353,757
29 Polycarboxylic acids, and their derivatives	Chemical Products	13.15%	2.90%	\$2,532,433,702
30 Work-holders, tool holders	Production Technology	5.71%	2.88%	\$305,819,796
31 Lathes, metal-working	Production Technology	11.93%	2.74%	\$966,873,447
32 Miscellaneous mixed alkylbenzenes and alkylnaphthalenes	Chemical Products	6.37%	2.63%	\$150,184,605
33 Parts for telecommunication equipment	Communications Equipment	5.35%	2.57%	\$7,257,442,452
34 Cyclic hydrocarbons	Oil and Gas Products	3.39%	2.42%	\$1,918,306,852
35 Machining-centers, unit construction machines, not lathes	Production Technology	11.49%	2.14%	\$1,525,270,652
36 Carboxylic acids and their derivatives	Chemical Products	3.12%	2.11%	\$196,960,541
37 Polyacetals, polycarbonates in primary forms	Plastics	8.19%	2.04%	\$4,237,721,802
38 Esters, inorganic acid and their derivatives	Chemical Products	3.19%	2.03%	\$73,926,950
39 Other pulp, paper, making machinery	Forest Products	7.16%	2.01%	\$304,210,052
40 Miscellaneous machinery parts, non-electrical	Production Technology	3.20%	1.96%	\$302,271,569

Note: Includes Taiwan's 405 largest export industries, with export values of greater than \$50 million in 2012.

Geographic Influences on Competitiveness



- Economic coordination and integration with neighboring countries is a **major force of productivity and competitiveness**

Taiwan's Major Impact on China's Economy

Top 10 Exporters in China, 2012

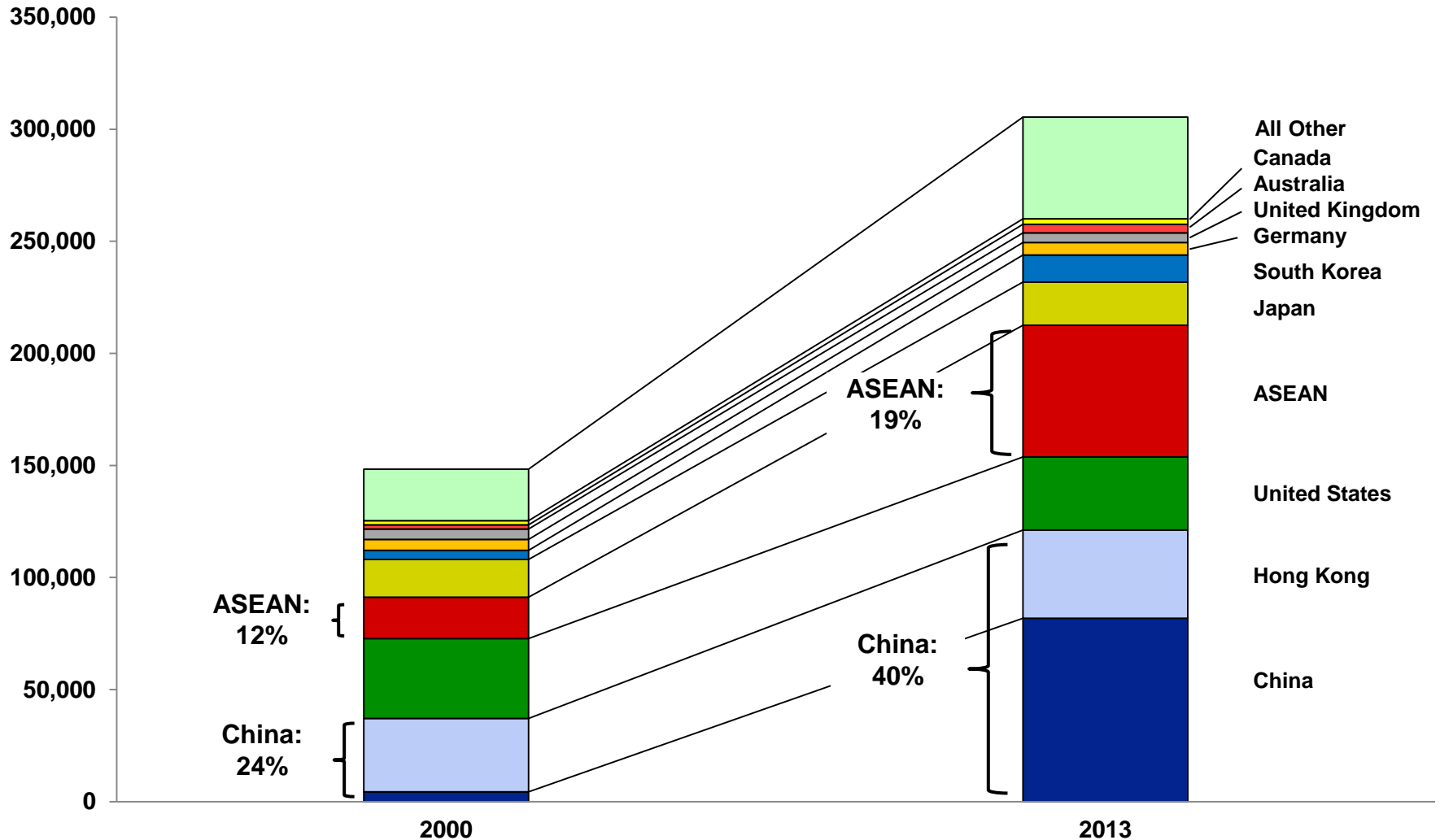
- Among top 10 biggest exporters in China, 7 exporters are Taiwanese enterprises

Rank	Company	Subsidiary Company	Country	Amount of Exports (Unit: US\$ million)
1	Hon Hai Precision Industry Co., Ltd.	Foxconn (Shenzhen) Technology Group	Taiwan	35,543
2	Quanta Computers	Tech-Front (Shanghai) Computer Co., Ltd.	Taiwan	26,974
3	Hon Hai Precision Industry Co., Ltd.	Hongfujin (Zhengzhou) Precision Industry Co.,Ltd.	Taiwan	15,735
4	Pegatron Corp.	GNDC (Shanghai) Co., Ltd.	Taiwan	15,143
5	Huawei Technologies Co., Ltd.	Huawei (Shenzhen) Technologies Co., Ltd.	China	12,259
6	Hon Hai Precision Industry Co., Ltd.	Hongfujin (Chengdu) Precision Industry Co.,Ltd.	Taiwan	11,994
7	Samsung Group	Samsung (Huizhou) Group	Korea	9,422
8	China Petrochemical Development Corp.	China Petrochemical Development Corp.	China	7,681
9	Hon Hai Precision Industry Co., Ltd.	Hongfujin (Yantai) Precision Industry Co.,Ltd.	Taiwan	6,999
10	Pegatron Corp.	Pegatron (Suzhou) Corp.	Taiwan	6,664

Taiwan in the Region

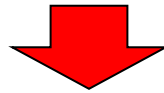
Exports

Exports (US\$M)



Taiwan, China, and the Region

- Taiwan's traditional model has been delivering **high-tech inputs** for final assembly in China to be sold on the U.S. market, often under other firms' brands



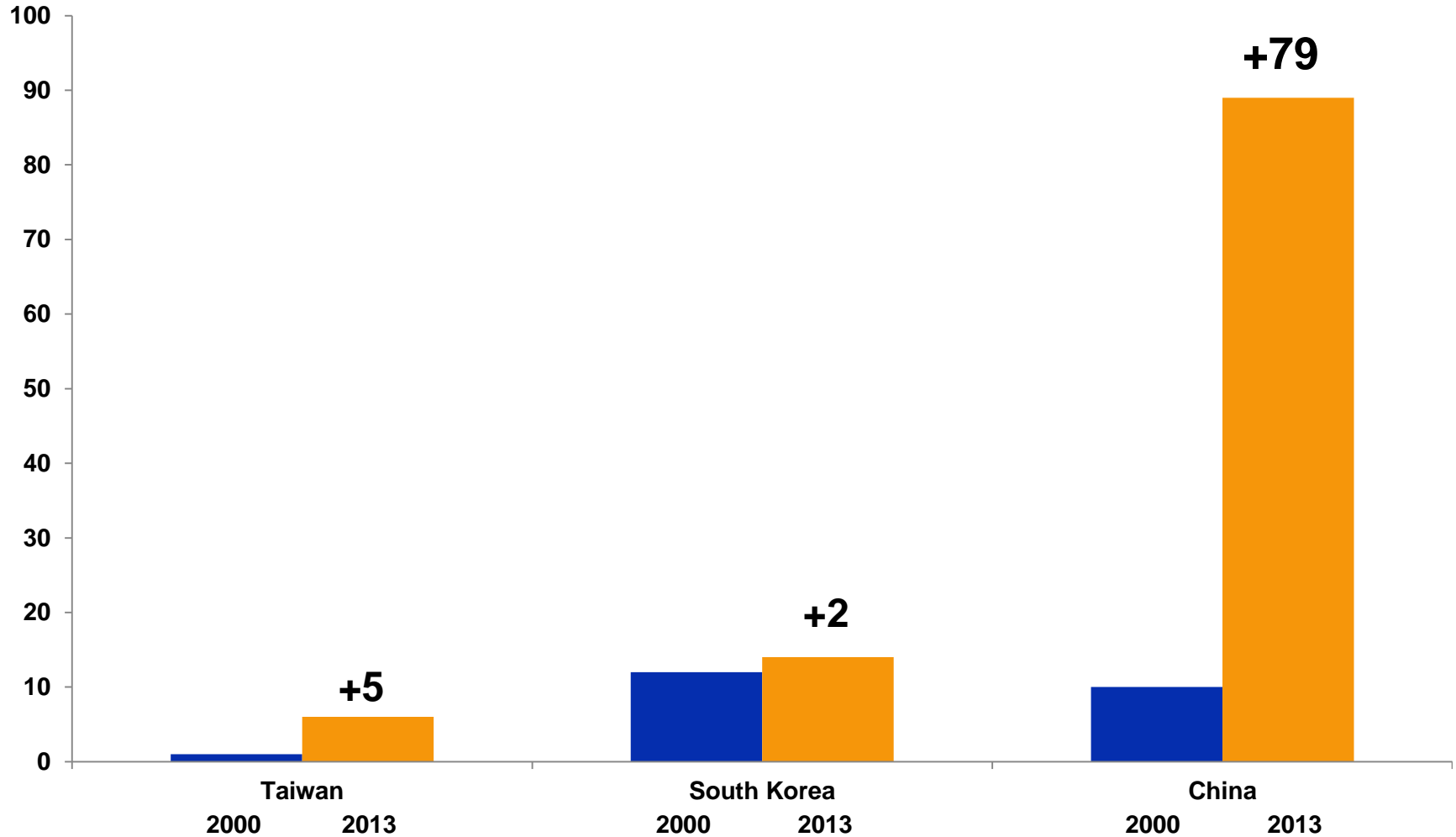
Challenges

- China is getting more expensive as a production site versus other locations in Asia
- Much of the value is captured by those in control of the brand and the overall value chain
- Taiwanese firms are under pressure from rivals like Korean firms, that often have stronger brands
- China's growth is increasingly domestic demand, with local Chinese firms putting pressure on Taiwanese firms 'from below'

Taiwan and the Region

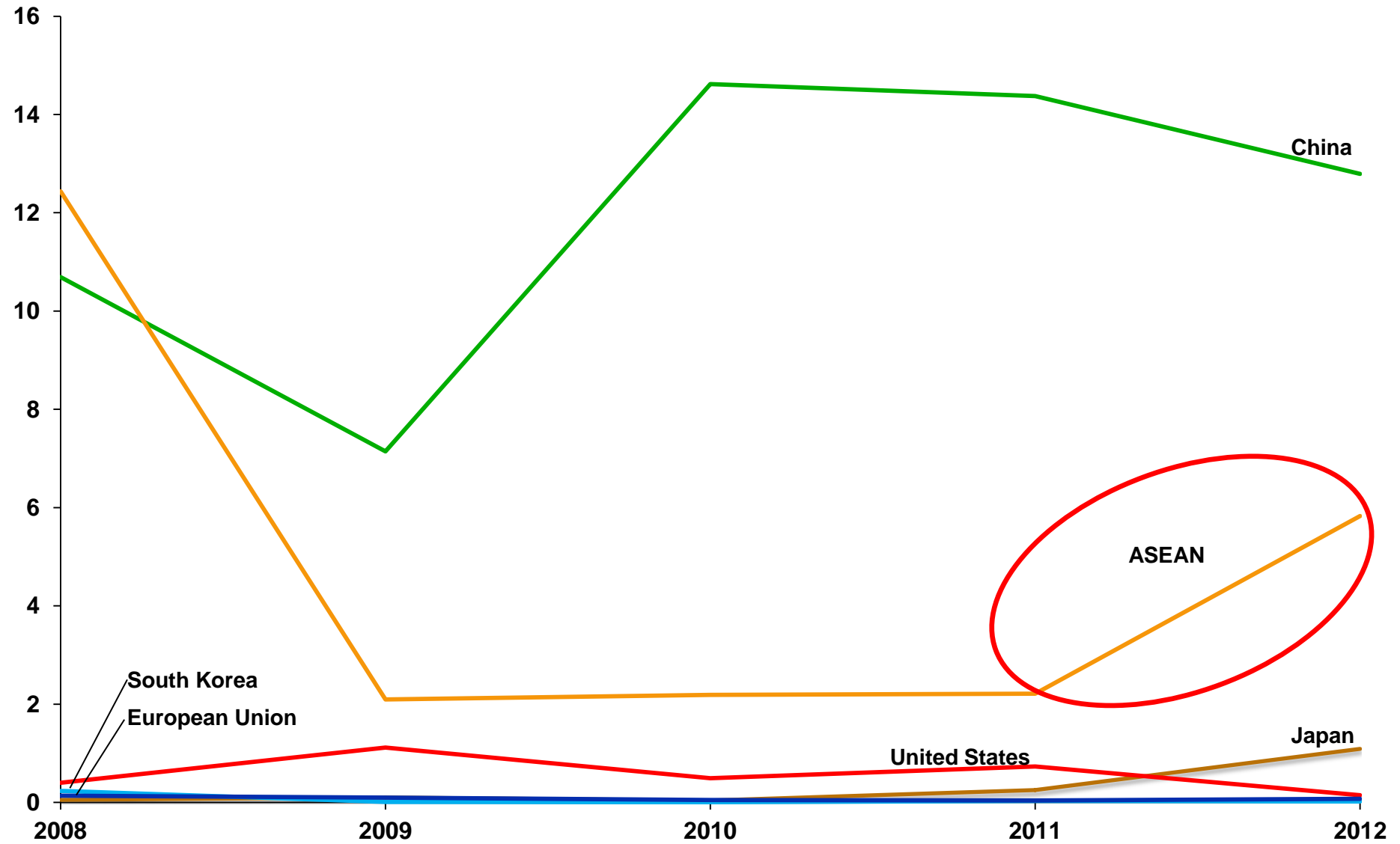
Fortune Global 500 Companies

Number of
Companies in
Top 500



Taiwan's Outbound FDI 2008-2012

\$US (Billions)



Source: MOEA

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Current Economic Policies in Taiwan

- The current economic development strategy emphasizes **knowledge-intensive innovation**
 - Promote and encourage the development of **diverse industries** and **export markets**
 - Promote **innovation**, high-tech industries and investment in R&D centers
 - Support the **growth of entrepreneurship** through incubators and accelerators
 - Create an environment conducive to the introduction of **high quality human resources** (in particular R&D and global management talents and skills)
 - Encourage **private investments** and **public infrastructure investments**
 - **Improve government service** functions
 - **Level the playing field** for Taiwan's businesses by concluding FTAs with key trading partners (e.g. China)
- Taiwan has recently identified **10 key industries** for investment

Emerging Industries	Intelligent Industries
<ul style="list-style-type: none">• Biotechnology• Medicine and healthcare• Culture and creativity• Tourism• Green energy• High end agriculture	<ul style="list-style-type: none">• Cloud computing• Smart electric vehicles• Green architecture• Patent commercialization

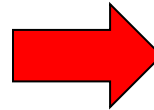
The Need for an Economic Strategy

Policy Improvement

- Implementing **best practices** in each policy area



- There are a **huge number** of policy areas that matter
- No region or country can (or should try to) make **progress in all areas** simultaneously



Economic Strategy

- An overall agenda for creating a **more competitive** and **distinctive** position for a country or region, based on its **particular** circumstances

Creating an Economic Strategy

National Value Proposition

- What is the **distinctive competitive position** of the nation given its location, legacy, existing strengths, and potential strengths?
 - What unique advantages as a business location?
 - For what types of activities and clusters?
 - What roles with the surrounding countries and the broader global economy?

Developing Unique Strengths

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

Achieving and Maintaining Parity with Peers

- What **weaknesses** must be addressed to remove key constraints and achieve parity with peer locations?

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

Toward a Taiwanese Economic Strategy

What is Unique about Taiwan?

- **Gateway to China:** Strongest democracy, freedom of speech of any Chinese-speaking country
- Strategic location in the **Asia-Pacific region**
- **Entrepreneurial, flexible** business culture
- **SME** economy
- World class **technology**
- Strong **intellectual property protection**
- Large pool of **researchers**
- Strong **science** and **technology education**, as well as **research** institutions
- Some deep **technology clusters** in related industries
- **Logistics** strengthened in past 10 years
- Strong **outbound FDI**, so far mostly to China

Renewing Taiwan's Competitiveness

Address Urgent Competitive Weaknesses

- Reduce the **cost of doing business** in Taiwan
- Improve the supply of **VC** and increase **incentives for investment** in SMEs
- Realign **training** and **higher education** around Taiwan's business needs
- Create a world class strategy to **attract inward FDI**
- Pragmatically pursue **FTAs or similar agreements** with as many countries as possible
- Shift immigration policy towards **skilled** immigration
- Create institutions to raise the **participation of women** in the workforce
- Improve the efficiency and sophistication of **local industries**

Build on Strengths

- Continue to improve Taiwan's **innovation system**
- Raise the sophistication of **management** training
- Mount a plan to raise the **quality of life**, including cultural life, environmental quality, housing, and health care

Renewing Taiwan's Competitiveness – continued

Evolve and Widen Taiwan's Cluster Portfolio

- Mount an aggressive **cluster development** program
- Build on existing and emerging strengths, especially in areas where **China is not a leader** and there are needs in ASEAN
 - e.g., Chemicals
 - Plastics
 - Advanced production machinery
 - Specialty agriculture
- Focus on **high value-added** segments and niches
- Pursue **advanced services** connected to Taiwan's strengths (e.g., software, IoT)

Reposition Taiwan in the Region and the World

- Gateway to China and Asia
 - Greater China regional headquarters
 - R & D and advanced manufacturing hub
- Technology provider and advanced manufacturer for **ASEAN** markets