Creating an Economic Strategy for Taiwan

Prof. Michael E. Porter
Harvard Business School

Global Leaders Forum
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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 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.
Taiwan’s Current Malaise

• Recent economic downturn

• Highest unemployment in decades

• Uncertainty of future relationship to China
Taiwan’s Current Malaise

• Recent economic downturn

• Highest unemployment in decades

• Uncertainty of future relationship to China

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)

OECD average: 4.15%

OECD average: $24,590

Growth of Real GDP per Capita (PPP-adjusted), CAGR, 1990 to 2000

Source: EIU (2010), authors calculations
Prosperity Performance
Selected Countries, 2000 to 2009

Source: EIU (2010), authors calculations
Taiwan’s Prosperity Performance
1950-2009

Index of GDP per Capita
(1950 = 100)

CAGR: +5.05%
CAGR: +7.22%
CAGR: +5.63%
CAGR: +2.21%

Taiwan
China
Hong Kong
USA

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)

OECD Average: 3.1%
Singapore (24.4%, 208.3%)
Hong Kong (68.3%, 196.6%)

OECD Average: 23.8%

Malaysia (-27.9%)
Philippines (-20.2%)
Russia
Canada
Indonesia
Taiwan

0% -20.0% -15.0% -10.0% -5.0% 0.0% 5.0% 10.0% 15.0% 20.0%

Change of Exports as Share of GDP, 1999 to 2009

Australia
Brazil
China
India
Japan
Kentucky
Mexico
New Zealand
Norway
Philippines
Spain
Sweden
Thailand
Taiwan
United States
United Kingdom
Uruguay
Vietnam

Source: EUI (2010)

Taiwan Competitiveness 2010
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Innovative Output
Selected Countries, 1998 to 2008

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

- United States
- Japan
- Taiwan
- Other countries: Hong Kong, Germany, Canada, Norway, Belgium, Netherlands, Taiwan, India, France, Israel, Spain, Sweden, Finland, Denmark, UK, Singapore, South Korea, Austria, Netherlands, Australia, China, South Africa, Italy, Belgium, France, Italy, South Africa


International Patenting Output
Change 1998 - 2008

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

Taiwan 85
Singapore 45
Finland 25
Iceland 15
South Korea 10
Japan 5
Ireland 5
Austria 5
Hong Kong 5
Sweden 5
Germany 5
Australia 5
Norway 5
Canada 5
Denmark 5
Malaysia 5
China 5
India 5
Thailand 5
Philippines 5
Indonesia 5
Vietnam 5
Russia 5
United Kingdom 5
United States 5
Switzerland 5

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

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

Source: Patenting By Geographic Region (State and Country), Breakout By Organization, USPTO (2010)
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
• 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

**Microeconomic Competitiveness**
- Quality of the National Business Environment
- State of Cluster Development
- Sophistication of Company Operations and Strategy

**Macroeconomic Competitiveness**
- Social Infrastructure and Political Institutions
- Macroeconomic Policies

**Inherited Endowments**

The **internal company skills, capabilities, and management practices** required to attain a given level of productivity and innovation.
Determinants of Competitiveness

- The external business environment conditions supporting company productivity and innovation
Quality of the Business Environment

- **Context for Competition**
  - Local *rules and incentives* that encourage investment and productivity
    - e.g., incentives for capital investments, intellectual property protection, corporate governance standards
  - Open and vigorous *local competition*
    - Openness to foreign competition
    - Competition laws

- **Factor Inputs**
  - Access to high quality *business inputs* and *infrastructure*
    - e.g., human resources, capital, physical infrastructure, administrative rules, scientific and technological infrastructure

- **Demand Conditions**
  - Sophisticated and *demanding* local customers and needs
    - e.g., Strict quality, safety, and environmental standards
    - Consumer protection laws

- **Related and Supporting Industries**
  - Availability of *suppliers* and *supporting industries*

- **Many things matter** for competitiveness
- Successful economic development is a process of *successive upgrading*, in which the business environment improves to enable increasingly sophisticated ways of competing
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

- Public Relations & Market Research Services
- Food Suppliers
- Property Services
- Maintenance Services
- Travel agents
- Tour operators
- Attractions and Activities e.g., theme parks, casinos, sports
- Restaurants
- Hotels
- Airlines, Cruise Ships
- Local retail, health care, and other services
- Local Transportation
- Souvenirs, Duty Free
- Banks, Foreign Exchange
- Government agencies e.g. Australian Tourism Commission, Great Barrier Reef Authority
- Educational Institutions e.g. James Cook University, Cairns College of TAFE
- Industry Groups e.g. Queensland Tourism Industry Council

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

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*
Taiwan’s Competitiveness Profile, 2009

Harvard Country Competitiveness Model

Country Competitiveness (19)

Macroeconomic Competitiveness (24)
- Political Institutions (22)
- Rule of Law (29)
- Human Development (24)
- Macroeconomic Policy (12)

Microeconomic Competitiveness (13)
- Business Environment Quality (13)
- Company Sophistication (14)

Taiwan’s GDP per capita rank is 19th versus 133 countries

Note: Rank versus 133 countries; overall, Taiwan ranks 19th in 2009 PPP adjusted GDP per capita and 19th in Global Competitiveness.
Taiwan’s Strengths

Factor Inputs

- High level of innovation
- Strong university education, especially scientists and engineers
- Strong research institutions
- Excellent basic education
- Strong physical infrastructure
- Labor-management cooperation
- Venture financing

Demand Conditions

- Strict local regulations on environmental protection, consumer safety
- Sophisticated demand in technology-related fields

Related and Supporting Industries

- Some deep clusters in higher technology

Context for Competition

- Strong intellectual property protection and enforcement
- Network of industrial parks, export processing zones, and free trade zones
- Free and open media
Ranking Economic Competitiveness and Prosperity
Harvard Country Competitiveness Index, 2009

GDP per Capita, log scale
(Purchasing Power Adjusted)

$100,000

$10,000

$1,000

New Global Competitiveness Index 2009

R² = 0.7377
Taiwan’s Economic Agenda in 2010

I. Address some chronic weaknesses

— Improve political institutions
Governance Indicators
Selected Countries

Index of Governance Quality, 2008

Best country in the world

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.
Taiwan’s Economic Agenda in 2010

I. Address some **chronic weaknesses**
   — Improve political institutions
   — Reduce corruption
Corruption Perception Index, 2009

Change in Rank, Global Corruption Report, 2009 versus 2001

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

Taiwan Competitiveness 20100408

Corruption Perception Index, 2009

Low corruption

Deteriorating

Improving

Source: Global Corruption Report, 2009

Note: Ranks only countries available in both years (91 countries total)
Source: Global Corruption Report, 2009
I. Address some **chronic weaknesses**
   - Improve political institutions
   - Reduce corruption
   - **Reduce bureaucracy and regulatory complexity**
## Doing Business
### Selected Countries

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

Rank out of 183 countries.
## Factor Conditions
### Taiwan's Relative Position 2009

#### Competitive Advantages Relative to GDP per Capita

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

#### Competitive Disadvantages Relative to GDP per Capita

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

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**Note:** Rank versus 133 countries; overall, Taiwan ranks 19th in 2009 PPP adjusted GDP per capita and 19th 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**

<table>
<thead>
<tr>
<th>Competitive Advantages Relative to GDP per Capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intensity of local competition</td>
</tr>
<tr>
<td>Pay and productivity</td>
</tr>
<tr>
<td>Low extent of market dominance by business groups</td>
</tr>
<tr>
<td>Efficacy of corporate boards</td>
</tr>
<tr>
<td>Cooperation in labor-employer relations</td>
</tr>
<tr>
<td>FDI and technology transfer</td>
</tr>
<tr>
<td>Impact of taxation on incentives to work and invest</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Competitive Disadvantages Relative to GDP per Capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rigidity of employment</td>
</tr>
<tr>
<td>Restrictions on capital flows</td>
</tr>
<tr>
<td>Distortive effect of taxes and subsidies on competition</td>
</tr>
<tr>
<td>Market disruption from state-owned enterprises</td>
</tr>
<tr>
<td>Tariff rate</td>
</tr>
<tr>
<td>Prevalence of trade barriers</td>
</tr>
<tr>
<td>Strength of investor protection</td>
</tr>
<tr>
<td>Prevalence of foreign ownership</td>
</tr>
<tr>
<td>Regulatory quality</td>
</tr>
<tr>
<td>Strength of auditing &amp; reporting standards</td>
</tr>
</tbody>
</table>

**Note:** Rank versus 133 countries; overall, Taiwan ranks 19th in 2009 PPP adjusted GDP per capita and 19th in Global Competitiveness. Source: World Economic Forum and Institute for Strategy and Competitiveness, Harvard University (2009).
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.
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**
## Context for Strategy and Rivalry

### Taiwan's Relative Position 2009

### Competitive Advantages Relative to GDP per Capita

<table>
<thead>
<tr>
<th>Advantage</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intensity of local competition</td>
<td>2</td>
</tr>
<tr>
<td>Pay and productivity</td>
<td>3</td>
</tr>
<tr>
<td>Low extent of market dominance by business groups</td>
<td>5</td>
</tr>
<tr>
<td>Efficacy of corporate boards</td>
<td>12</td>
</tr>
<tr>
<td>Cooperation in labor-employer relations</td>
<td>13</td>
</tr>
<tr>
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### Competitive Disadvantages Relative to GDP per Capita

<table>
<thead>
<tr>
<th>Disadvantage</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rigidity of employment</td>
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<tr>
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### Note

Rank versus 133 countries; overall, Taiwan ranks 19th in 2009 PPP adjusted GDP per capita and 19th in Global Competitiveness. Sources: 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
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   - Improve labor force flexibility and ease skilled immigration
   - Reduce distortions and barriers to competition
   - **Improve the quality and transparency of financial markets**
## Factor Conditions
### Taiwan's Relative Position 2009

### Competitive Advantages Relative to GDP per Capita

<table>
<thead>
<tr>
<th>Factor</th>
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</tr>
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<tbody>
<tr>
<td>Utility patents per million population</td>
<td>1</td>
</tr>
<tr>
<td>Telephone lines per 100 population</td>
<td>3</td>
</tr>
<tr>
<td>Tertiary enrollment</td>
<td>4</td>
</tr>
<tr>
<td>Quality of railroad infrastructure</td>
<td>6</td>
</tr>
<tr>
<td>Ease of starting a new business</td>
<td>6</td>
</tr>
<tr>
<td>Quality of math and science education</td>
<td>6</td>
</tr>
<tr>
<td>Financing through local equity market</td>
<td>7</td>
</tr>
<tr>
<td>Availability of scientists and engineers</td>
<td>7</td>
</tr>
<tr>
<td>Personal computers per 100 population</td>
<td>8</td>
</tr>
<tr>
<td>Quality of roads</td>
<td>9</td>
</tr>
<tr>
<td>Quality of domestic transport network: business</td>
<td>9</td>
</tr>
<tr>
<td>Internet access in schools</td>
<td>9</td>
</tr>
<tr>
<td>Venture capital availability</td>
<td>10</td>
</tr>
<tr>
<td>Quality of port infrastructure</td>
<td>11</td>
</tr>
<tr>
<td>Quality of telephone infrastructure</td>
<td>11</td>
</tr>
<tr>
<td>Ease of access to loans</td>
<td>11</td>
</tr>
<tr>
<td>Quality of the educational system</td>
<td>11</td>
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<td>University-industry research collaboration</td>
<td>13</td>
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<td>Time required to start a business</td>
<td>59</td>
</tr>
<tr>
<td>Getting Credit, legal rights</td>
<td>54</td>
</tr>
<tr>
<td>Paying Taxes, tax rates</td>
<td>44</td>
</tr>
<tr>
<td>Soundness of banks</td>
<td>41</td>
</tr>
<tr>
<td>Number of procedures to start a business</td>
<td>38</td>
</tr>
<tr>
<td>Quality of air transport infrastructure</td>
<td>35</td>
</tr>
<tr>
<td>Protection of minority shareholders' interests</td>
<td>32</td>
</tr>
<tr>
<td>Financial market sophistication</td>
<td>31</td>
</tr>
<tr>
<td>Mobile telephone subscribers per 100 population</td>
<td>30</td>
</tr>
<tr>
<td>Quality of management schools</td>
<td>26</td>
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<tr>
<td>Quality of electricity supply</td>
<td>24</td>
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<tr>
<td>Regulation of securities exchanges</td>
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Inbound Foreign Investment
Stocks and Flows, Selected Countries


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

FDI Inflows as % of Gross Fixed Capital Formation, Average 2000 - 2008
Inbound Foreign Investment Performance
Flows, Selected Countries

Inbound FDI Flows, % of GDP

Context for Strategy and Rivalry
Taiwan's Relative Position 2009

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<td>Intensity of local competition</td>
<td>2</td>
</tr>
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<td>Pay and productivity</td>
<td>3</td>
</tr>
<tr>
<td>Low extent of market dominance by business groups</td>
<td>5</td>
</tr>
<tr>
<td>Efficacy of corporate boards</td>
<td>12</td>
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<td>Cooperation in labor-employer relations</td>
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   — Broaden Taiwan’s portfolio of competitive clusters
Share of World Exports by Cluster
Taiwan, 1997

Note: Clusters with overlapping borders have at least 20% overlap (by number of industries) in both directions.
Share of World Exports by Cluster
Taiwan, 2007

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Clusters and Economic Diversification

- Develop Related Clusters
- Turn Niche Products Into Clusters
- Build Clusters Around Strong MNCs
- Deepen Existing Clusters
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III. Redefine Taiwan’s relationship with China
Taiwan’s Trade With China
1993-2007

Source: Taiwan Bureau of Foreign Trade (2008)
Taiwan’s Total Exports By Partner

Source: Taiwan Directorate-General of Budget, Accounting and Statistics
Approved Taiwanese Indirect Investment In Mainland China, 1991 - 2008

Outbound Flows ($B)

Ease of Doing Business Rankings
Taiwan’s Relative Position, 2009

Ranking, 2009 (of 183 countries)

Favorable

Unfavorable

Taiwan’s per capita GDP rank: 19

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

Taiwan

- Innovation center for first-generation technology
- Manufacturing of high-technology, complex products
- Strong intellectual property rights and protection make Taiwan a prime destination for MNC Asian innovation centers
- Higher education center in science and technology
- Skills training center for technical workers

China

- Assembly location for less complex manufacturing
- Source of commodities and natural resources
- Manufacturing center for mass consumer market

Hong Kong

- China commerce and trade gateway
- Business and financial services
- Commercialization center for consumer products
- Management training center
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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