Industrial Competitiveness and Investment Opportunities in Taiwan

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Content

1. Industrial Focus and Competitive Advantages of Taiwan

2. Investment Opportunities in Taiwan

3. Key Enabler: Public-Private Partnership
Taiwan industrial development shifting to innovation focus

Innovation focus
Knowledge intensive
Technology intensive
Capital intensive
Heavy industries
Light industries
Labor intensive

US$ 35,604
10X in 30 yrs


GDP per capita (PPP$^1$)

US$ 3,570

1: Adjusted by Purchasing Power Parity (PPP) for proper country comparison. In 2010, nominal GDP per capita is US$ 18,588.
Source: IEK of ITRI research (2011)
High ranking in innovation and overall competitiveness

(WEF/2011-2012)

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Source: The World Competitiveness Yearbook 2011 (IMD); The Global Competitiveness Report 2011-2012 (WEF)
Taiwan’s future industrial development focus

Vision: Golden Decade

6 Emerging Industries
- Green Energy
- High-end Agriculture
- Cultural & Creative Industries
- Medical Care
- Biotechnology
- Tourism

10 Major Service Industries
- Medical Tourism
- Urban Renewal
- International Logistics
- Advanced Education
- Music and Digital Content
- Capital Fund Raising
- Conferences and Exhibitions
- Broadband Wireless
- Cuisine
- Chinese-language e-Commerce

4 Key Intelligent Industries
- Cloud Computing
- Intelligent Electric Vehicle
- Intelligent Green Buildings
- Patent Industrialization

Source: Office of the President and Executive Yuan (2010-2011)
Taiwan’s industrial competitive advantages

- World-leading industrial clusters of ICT
- Complete industrial value chains and clustering
- Crucial role in global R&D and production network
- Springboard to China and beyond after ECFA
- Emerging brand players for higher value-add (HTC ranked 98th in world)
- Competitive corporate tax policy (17%) among Asian countries

These advantages help Taiwan develop world-class manufacturers and emerging brand names
World-leading industrial clusters of ICT

- Complete clusters encompassing ICT industrial value chains
- Center of high-end IT and IC manufacturing and service

World top-2 products/services made by Taiwan

**World No. 1 in 2010**
- Foundry
- IC Packaging & Testing
- Mask ROM
- PND
- xDSL CPE, Cable CPE
- WLAN, Motherboard
- Server, LCD monitor
- NB, Desktop PC

**World No. 2 in 2010**
- IC Design
- Large size (>10”)
- Small size (<10”)
- TFT LCD
- TN/STN LCD
- OLED Panel
- DSC

Source: ITIS project under MOEA (2011)
Complete industrial value chains and clustering

Hsinchu Science Park (HSP)
- IC manufacturing
- Optoelectronics
- Biotechnology

Central Taiwan Science Park
- Semiconductor, optoelectronics
- Biotechnology
- Precision Machinery

Changhua Coastal Industrial Park
- Metal products, metal surface treatment
- Recycling, green energy

Southern Taiwan Science Park
- Optoelectronics
- Environmental technology
- Automobile parts
- Precision machinery

Yongkang Technology Industrial Park
- Petrochemical, iron and steel industry
- Metal processing, precision machinery
- IC, optoelectronics, communications
- Environmental technology

Nankang Software Park
- IC design
- Digital Content
- Biotechnology

1.5 hours N to S

Source: IEK of ITRI research (2011)
Springboard to China and beyond after ECFA

**International Linkage**
- Springboard to China
- Integrate into regional economy (e.g. FTAs)
- Hub for Asia-Pacific operations and global innovation

**Market Access**
- China market
- Other Asian and global countries

**Industry Transformation**
- Differentiation (e.g. Quality, design, customization)
- Service orientation (e.g. Internationalization, technology-enabled)

Note: ECFA as Economic Cooperation Framework Agreement signed on 2010.6.29
Source: IEK of ITRI research (2011)
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Key investment themes in Taiwan industries

- Joint force for global market (e.g. Telecom)
- Leadership in global market (e.g. ICT)
- Test site before entering to China (e.g. Telecare)
Taiwan-Japan Investment Arrangement signed to accelerate future business cooperation

Aim to promote mutual cooperation on:

- Investment promotion
- Investment protection
- Investment liberalization

Followed by Taiwan-Japan investment funds

- Funded by public/private entities to invest in Taiwan
Taiwan: Land of investment opportunities

Partial Industry Examples

**Machinery Industry**
- Machine Tools
- Plastic Machine/Woodworking Machine
- Automatic Engineering Service
- Automobile Parts
- PV/LED Equipment
- Metal Products

**ICT Industry**
- IC Design
- Passive component
- Connectors
- Electronic Material
- Telecommunication
- Car Electronics

**Life Industry**
- Textile
- Medical Device Distribution
- Biotech
- Food
- Printing Service
- Integrated Service-Hotel/Restaurant
- Integrated Service-Logistics
- Integrated Service-Advertisement/Security

Source: IEK of ITRI research with Department of Investment Services, MOEA (2011)
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Obama administration to focus on innovation policy for leadership in advanced manufacturing

*Advanced Manufacturing Initiative (AMI)* proposed by President’s Council of Advisors on Science and Technology:

- Support applied research programs for new technologies (example by ITRI of Taiwan

- Co-invest in Public-Private Partnerships around broadly-applicable and precompetitive technologies

- Create and disseminate design methodologies for manufacturing

- Invest in shared technology infrastructure to support advances in existing manufacturing industries

1: “… Unlike any U.S. agency, ITRI has the sole mission of developing technology for commercialization purposes. In 2004, it had a budget of $579 million, had spun off more than 100 companies, and had sent 17,000 of its former employees (trained in science and technology) into the Taiwanese workforce.”

Source: “Report to the President on Ensuring American Leadership in Advanced Manufacturing“ by US President’s Council of Advisors on Science and Technology (2011/06)
Taiwan’s collaborative innovation ecosystem

- Industries
- Academia
- Research Institutes
- Government

Research collaboration
Funding & Supervision
ITRI: Shared innovation platform

R&D Scope
- Information and Communications
- Electronics and Optoelectronics
- Green Energy and Environment
- Medical Device and Biomedical
- Mechanical and Systems
- Material, Chemical & Nanotechnology
ITRI and HSP – Where Taiwan’s High-Tech began

66 spin-off companies, and 167 companies from Open Lab

Note: HSP – Hsinchu Science Park which is in the same city as ITRI.
Source: ITRI (2010)
Recent R&D awards for innovation by ITRI

2010 R&D100 Awards
- Fire-Resistant Material
- Localized Switchable 2D/3D Display
- Flexible Substrate

2009 R&D100 Awards
- STOBA Battery Technology

2011 R&D100 Awards
- TFT-LCD Protection Film
- Rewritable, Reusable e-Paper
- On-Chip AC LED

Source: Partial examples by ITRI (2011)
Conclusion

• **Innovation focus** to anchor Taiwan’s future competitive advantages for China and global markets

• **Attractive options and leverage** for foreign investment in Taiwan

• **Unique Public-Private Partnership** model enabling Taiwan to turn innovation into scalable industrialization and profitable business