



Accelerating Taiwan Biotech Development

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Taiwan's Quick Facts

Area: 35,980 km²

Population: 23 million

GDP : US\$357.3 billion (2009)

Per Capita GNP : US\$15,600 (2009)

GDP Growth Rate: 4.72% (2010,forecast)

Imports (global ranking): 18th

Exports (global ranking): 18th

Languages: Mandarin/Taiwanese/English



Global Competitive Ranking

Topic of Survey (Date of Publication)	Rank	Surveying Institution
Global Competitiveness Index (2009)	12	(WEF)
Patents issued (2009)	1	(IMD)
Science & Technology Infrastructure (2009)	4	(IMD)
Lowest risk environment for investment (2009)	5	(BERI)
Operations risk index score (2009)	5	(BERI)
Remittance and repatriation factor (2009)	4	(BERI)

World Economic Forum (WEF); Institute of management development (IMD); Business environment risk intelligence (BERI); Economist intelligence unit (EIU)

A Global Leader in IT Production

Industry	Output Value ¹ (US\$ million)	Global Share (%)
<u>No. 1 in the World</u>		
Mask ROM	344	92.9
IC Testing	3,063	65.2
Wafer Foundry	12,612	64.3
IC packing	7,038	47.3
Portable Navigation Devices	1,492	39.9
TN/STN LCD panels	1,309	34.2
<u>No. 2 in the World</u>		
Large TFT-LCD panels	26,540	37.0
OLED Panels	241	34.1
IC Design	10,712	25.2
DRAM	4,900	20.0
LEDs	1,258	18.6

Source: The Republic of China Yearbook 2009 ; 1. Excludes overseas production by Taiwanese companies



A global leader in IT production, Taiwan showcases its innovations each year at Computex Taipei for foreign buyers.

The Ten Emerging Industries to Drive the Next Wave of Economic Growth

Ten emerging industries to drive the next wave of economic growth

Technology Policies in Taiwan

Green Energy

Tourism

Cultural Creativity

Biotech

Healthcare

Quality Agriculture

Cloud Computing

Intelligent Electric Car

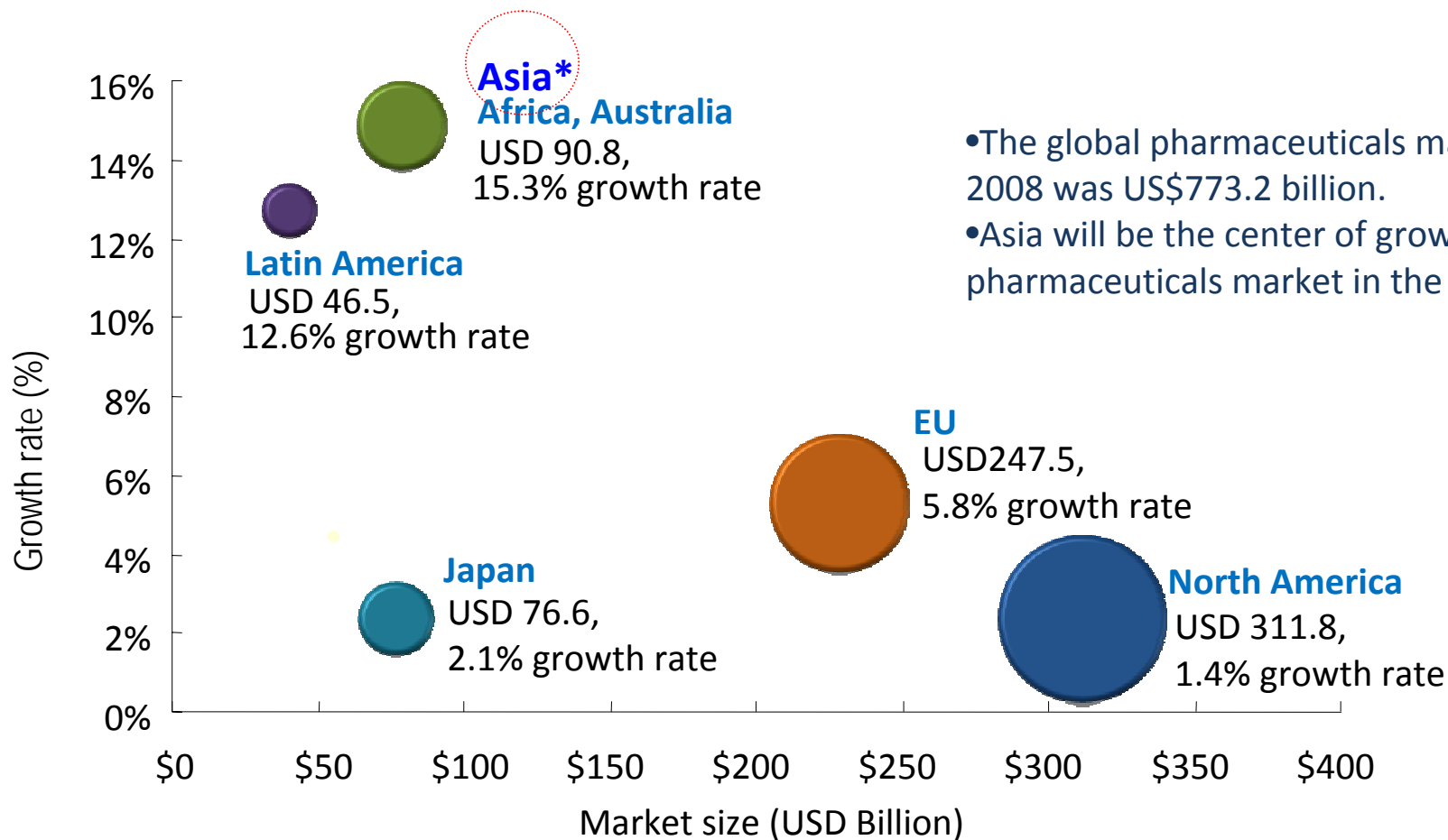
Intelligent Green Building

Patents & Innovation

Taiwan's Biotech Industry

- Trends in the Global Biotech Industry
- Developmental Status of Taiwan's Biotech Industry

Global Pharmaceutical Market

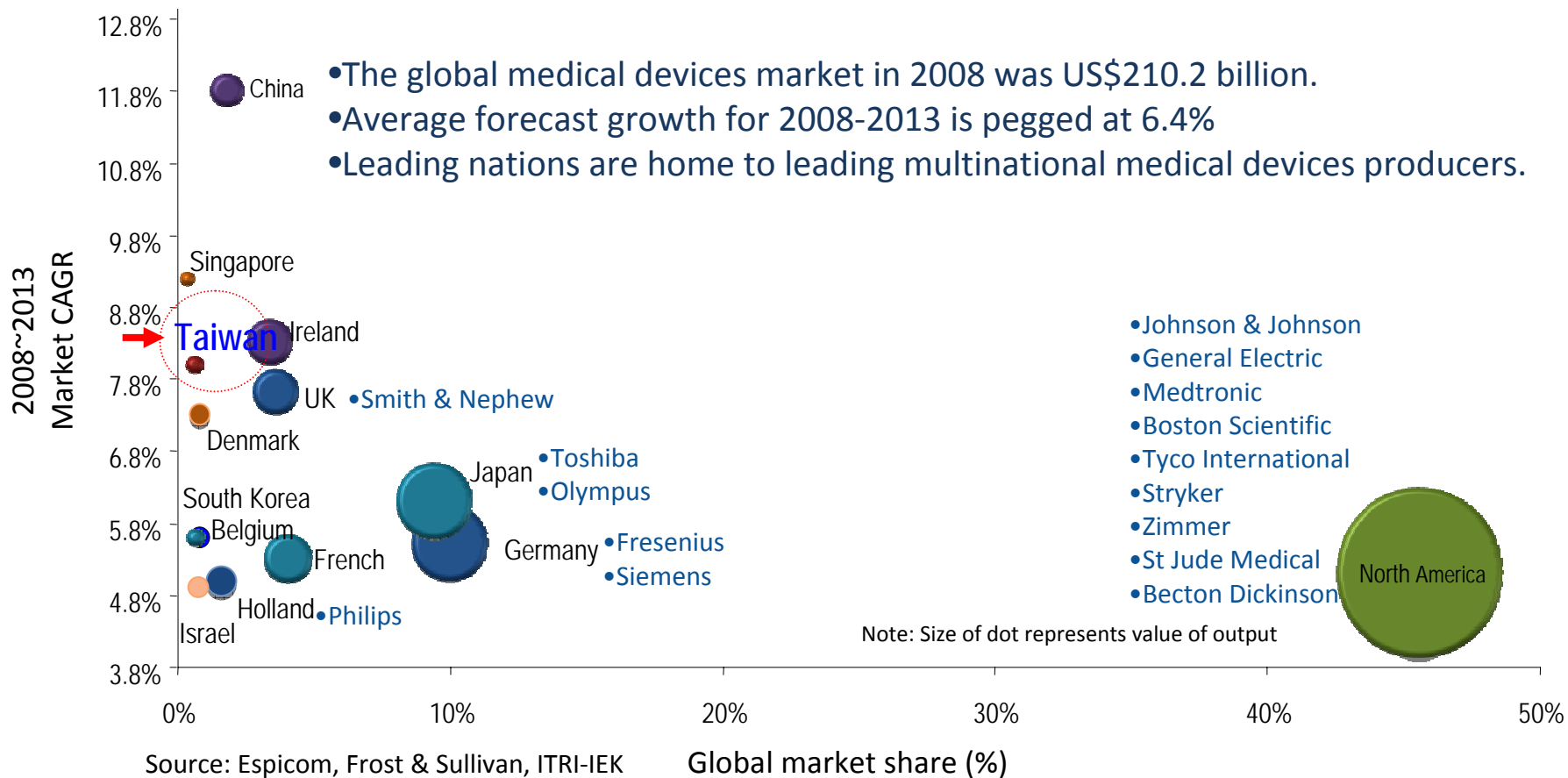


- The global pharmaceuticals market in 2008 was US\$773.2 billion.
- Asia will be the center of growth in the pharmaceuticals market in the future.

Reference: IMS, IT IS, DCB

* Exclusive Japan

Global Medical Devices Market

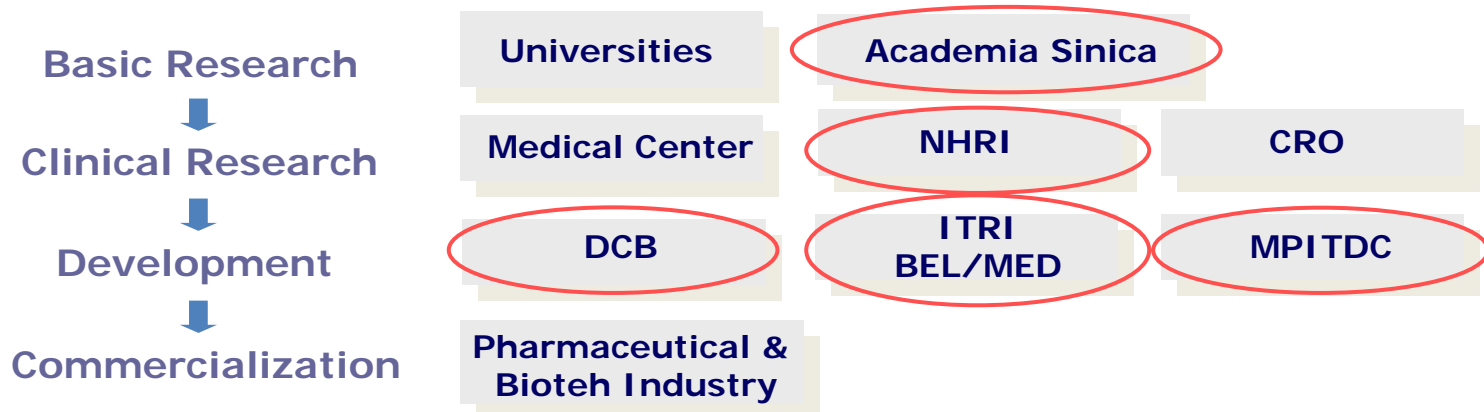


Taiwan's Strengths in Biotech Development

~ Well Positioned Major Research Institutes ~

Major life science-focused research institutes include:

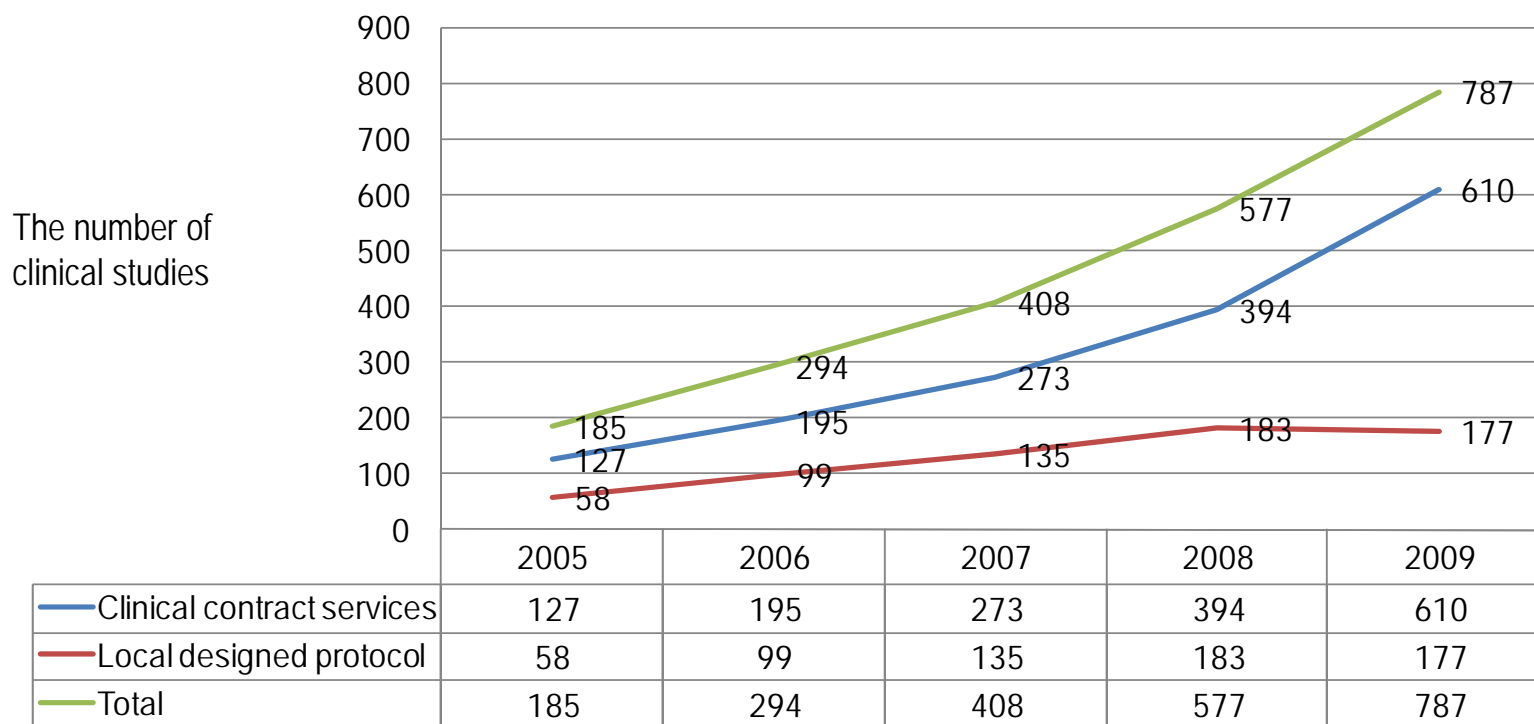
- Academia Sinica and Universities
- National Health Research Institutes (NHRI)
- Development Center for Biotechnology (DCB)
- Industrial Technology Research Institute (ITRI)
 - Biomedical Engineering Research Laboratories (BEL)
 - Medical Electronics & Device Technology Center (MED)
- Medical and Pharmaceutical Industry Technology and Development Center (MPITDC)



Taiwan's Strengths in Biotech Development

~ Centers of Excellence for Clinical Trials~

- Top Performance in Global Clinical Trials: leading pharmaceutical firms like Novartis, GSK, Boehringer Ingelheim, Merck, and Pfizer have drawn up plans to conduct clinical trials at centers of excellence such as NTUH.



Taiwan Biotechnology Takeoff Diamond Action Plan

Resource integration, cross-ministry coordination

Promotion Framework

Supra Incubator Center

Software resources --

- To provide legal, IPR, technical, and operations services and assistance
- To bridge the gap between academic and industrial communities, and offer a specialized technology assessment mechanism

Hardware resources —

- Hsinchu Biomedical Science Park (medical devices)
- Southern Taiwan Science Park (medical devices)
- National Biotech Development Park in Nangang (pharmaceuticals)
- National Laboratory Animal Center

Associated plans —

- The southern Taiwan biomedical devices industry cluster development plan

Regulatory process (transparency & efficiency)

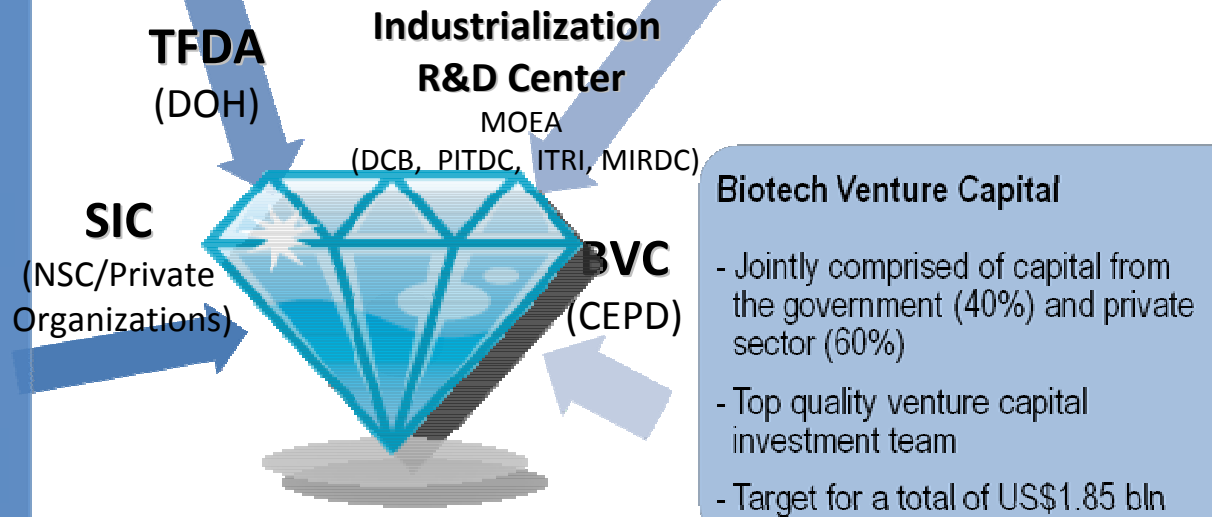
- Accelerating the commercialization processes
- Regional regulatory harmonization

Strengthening of translational research --

- Establishing pre-clinical research platform (toxicology, PK and other translational research)
- Establishing rapid prototyping center of medical devices

Associated plans and resources —

- National science & technology program for biotech
- Medical Devices cross-division development project



Biotechnology Takeoff Diamond Action Plan

Anticipated Results

- Strengthen pharmaceutical translational research and medical devices prototype production.
- Establish SIC to commercialize biotech inventions into developed products and license to private sector, hence to create a strong domestic biotech industry.
- Set up of a biotech venture capital fund to help promote funding of early stage inventions.
- Establish TFDA to expedite the approval process for new drugs and foster a regulatory framework toward harmonization to expand the international market.

Perspective

- Promote Taiwan as a R&D partner for the international biotech community.
- Encourage the collaboration between the field of biotechnology and ICT to construct a modern healthcare system.
- Attract private capital into the biotech sector to help promote funding of early stage inventions.
- Promote a more efficient review system and a drug regulatory environment in line with international standards.
- Approach to entering China market and elaborate the opportunities in cross strait biotech development.
- Recruit overseas elites to work on domestic biotech industry

Conclusion

- Taiwan's biotech industry has established:
 - a top-notch clinical research and health-care system
 - comprehensive R&D and manufacturing climate
 - well protection of intellectual property rights
- With these advantages in mind, the biotech sector here is poised to become the perfect Asian R&D partner for the international biomedical community.
- It is hoped that the Taiwan government and Biotechnology Takeoff Package Diamond Action Plan will hasten the development of Taiwan's biotech industry.



End of the Presentation
Thank you for your attention!

“Taipei 101” Landmark in Asia and in the World