

Excellence, Research and Quality System in Taiwan Higher Education and Challenges for Internationalization

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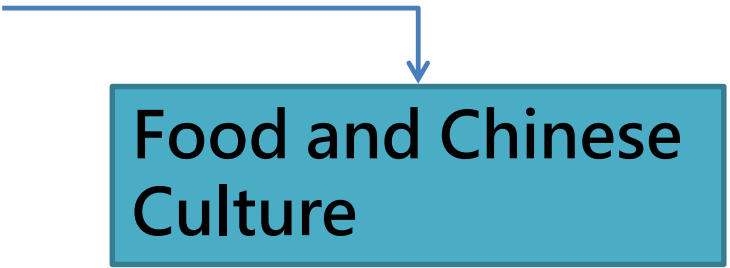
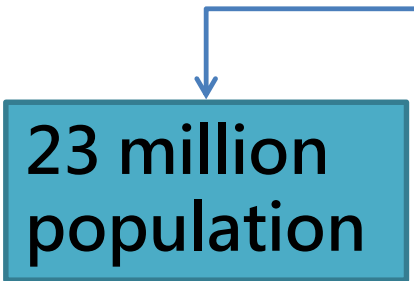
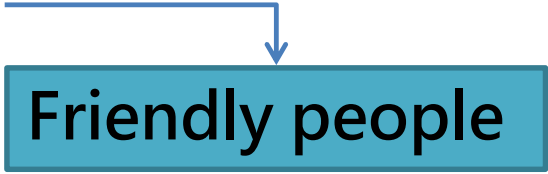
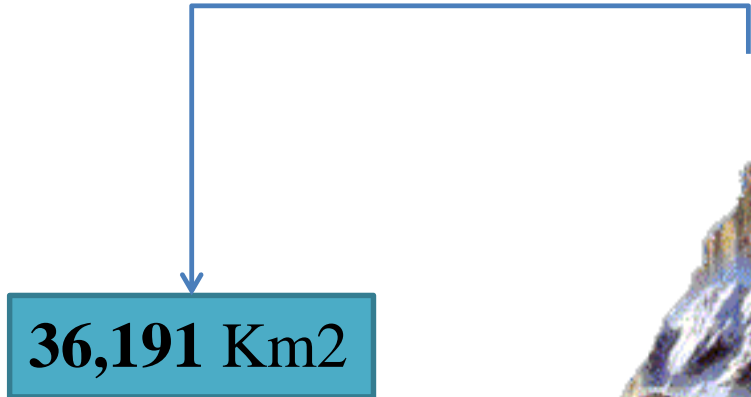
Vice President, Asia Pacific Quality Network

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Outline of Presentation

- Overview of Taiwan higher education
- Research System and World Class University Building
- Quality Assurance and Impacts
- Internationalization and Outcomes
- New Policy and Challenges
- Conclusion

I. OVERVIEW OF TAIWAN HIGHER EDUCATION

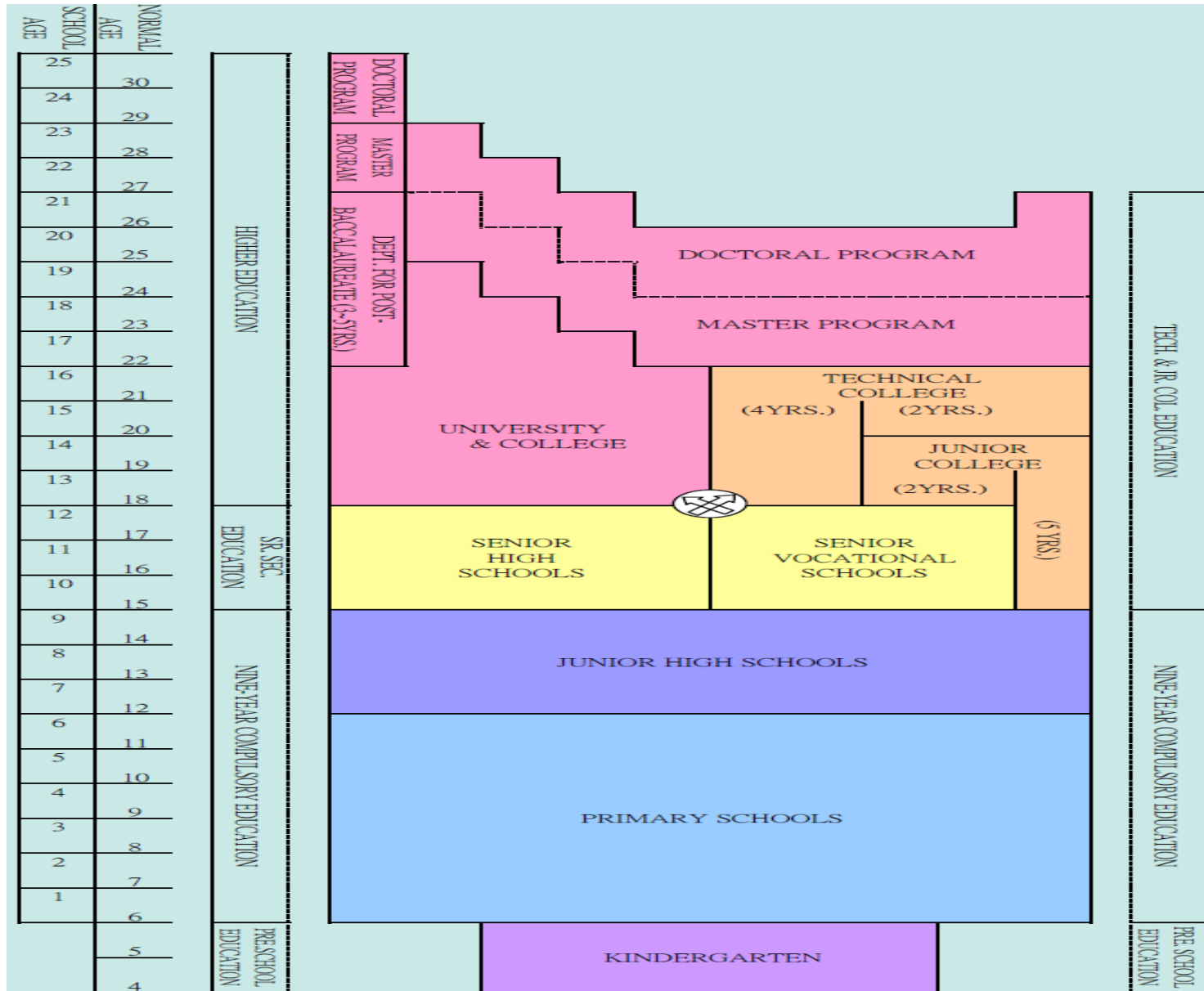


Taiwan

Fact Sheet in Taiwan Higher Education

1. Number of universities and colleges
Increased by **120%** in the past 10 years with more than 159 institutions
(1/3 national U; 2/3 private U)
2. Student enrollment
With a total number of 1.3 millions increased **65%** with a number of **33751 Ph.D. students, 183401 graduate students, 1 million undergraduates**
3. University Entrance Exam admission rate
88% in 2012
4. Net enrollment in higher education/ /Gross enrollment
55.3% (total number of 18-22 year-old students studying at a university and a college / school-aged population between 18-21 years old)
5. Gross enrollment rate increased
78.6% (total number of students studying at a university and a college / school-aged population between 18-21 years old)
6. Tuition
1,924 USD for National universities / 3,552 USD for Private universities
7. Ph.D holder faculty : more than 80%
8. R & D expenditure: **16.5 Billion USD in 2015**
9. Annual expenditure of higher education: **2.1% GDP**

Educational System



Dural Track System

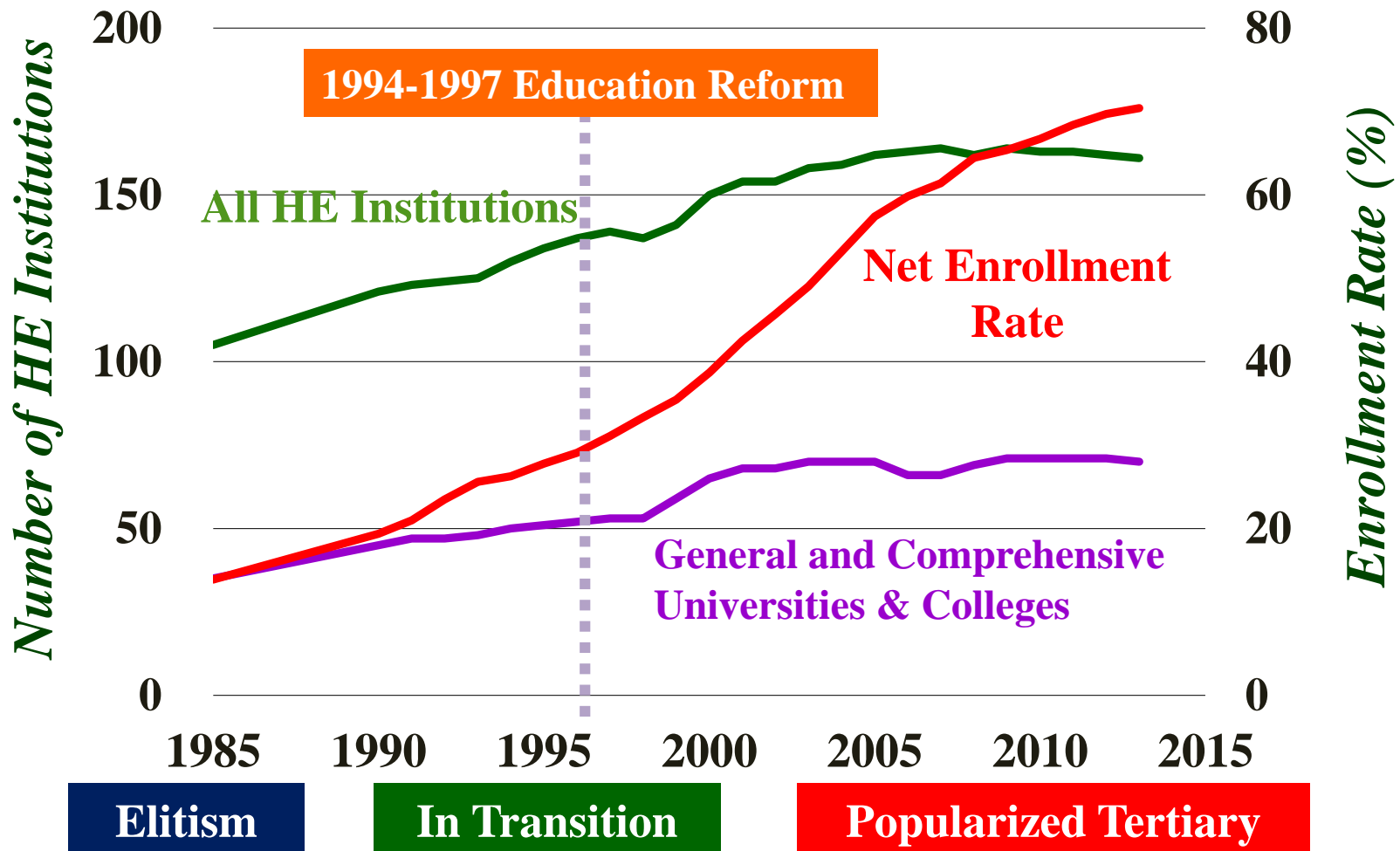
- **Universities, Colleges and Junior Colleges**
- **Vocational and Technological Colleges and Universities**
- **Learning periods**
 - The duration of master program is 1 to 4 years
 - doctoral program is 2 to 7 years.
 - The duration of medicine school is shortened from 7 years to 6 years since 2013.

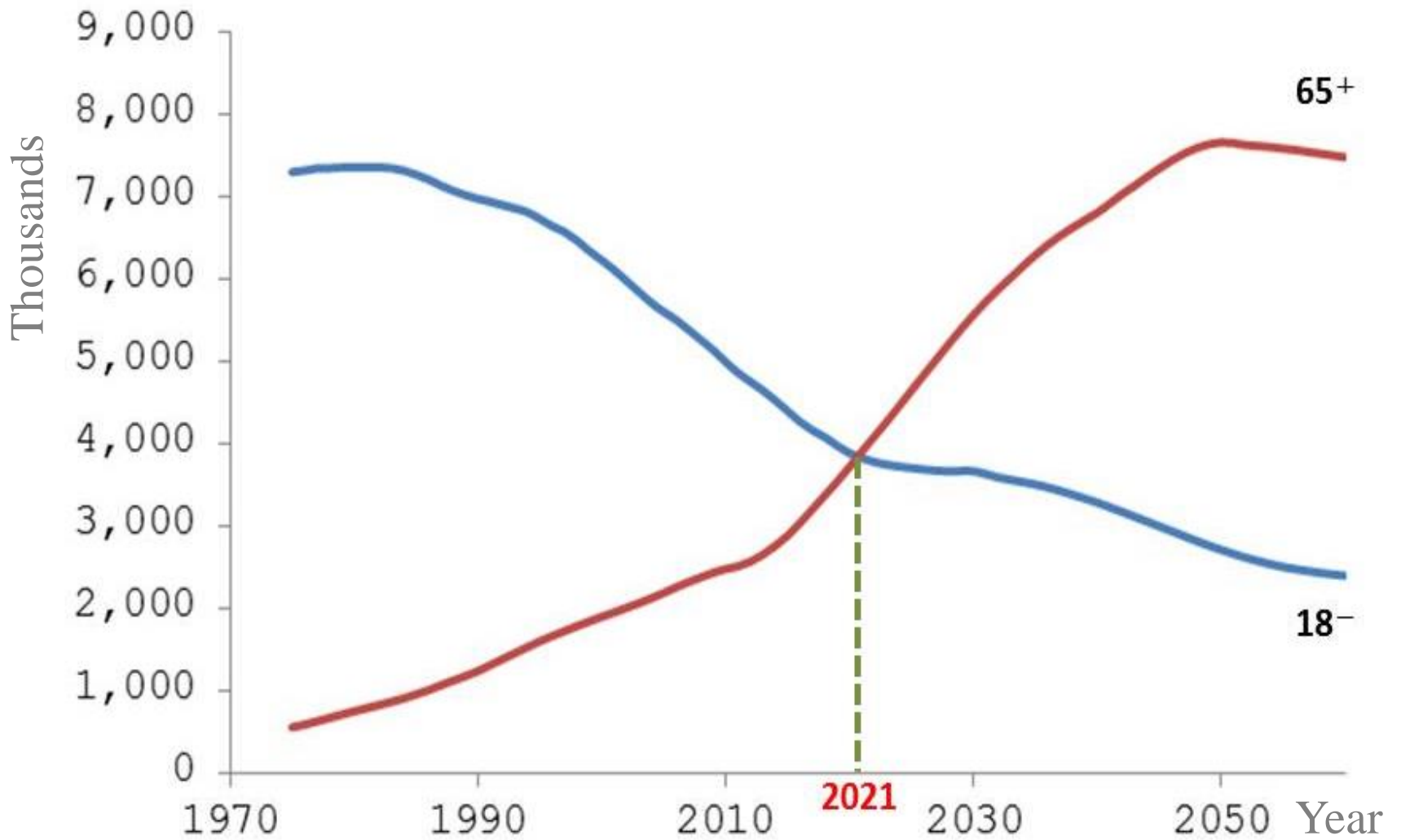
Two Major Issues

- **Massification / Privatization**
 - An increasing number of higher education institutions due to societal demand and educational reform over past two decades
- **Quality of Teaching and learning**
 - A continually decreasing trend of fertility rates was then found. A shortage of university applicants started in 2016
 - this is not the single case in Asia

Higher Education Transition

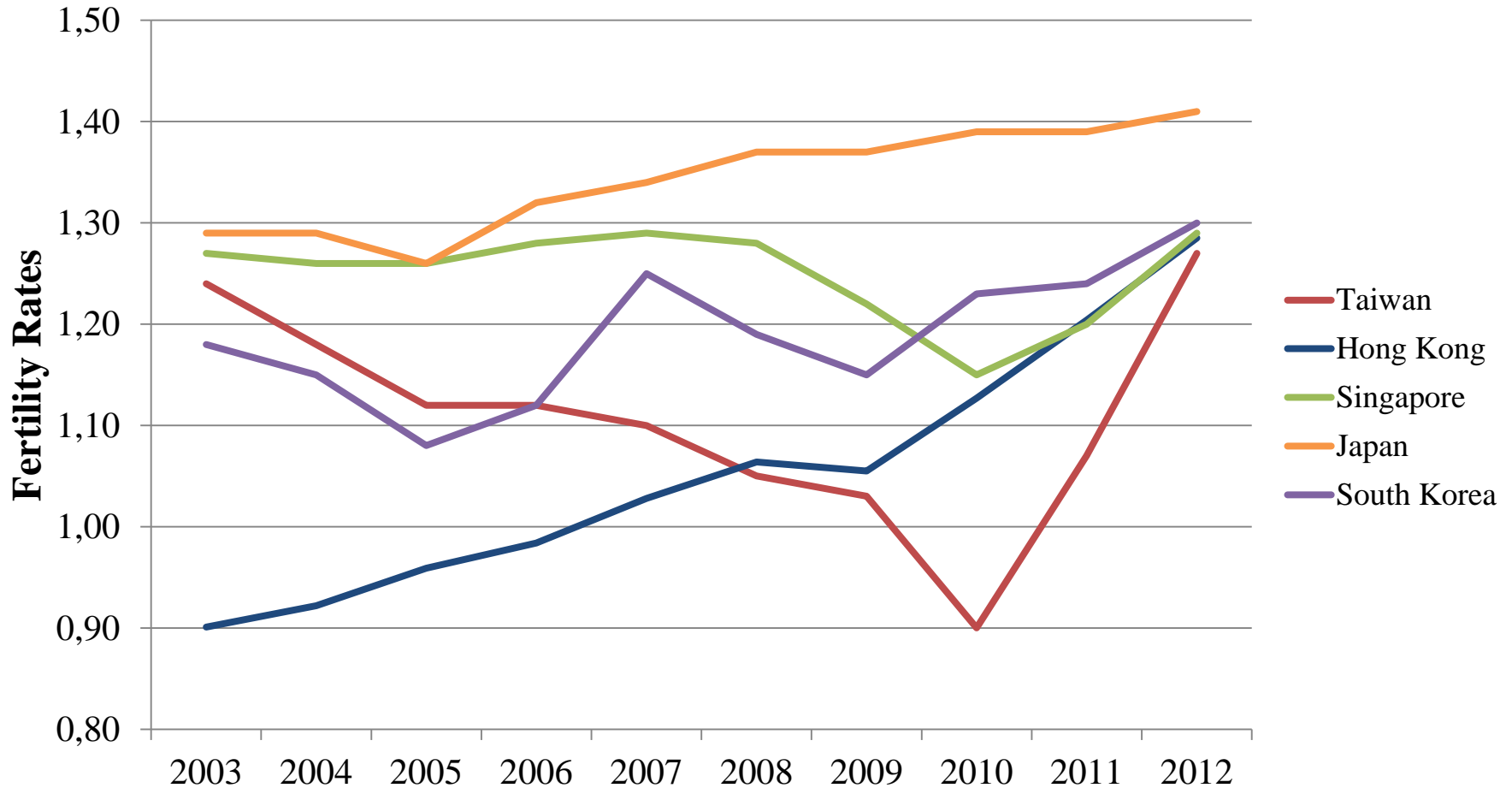
Taiwan, 1985-2015





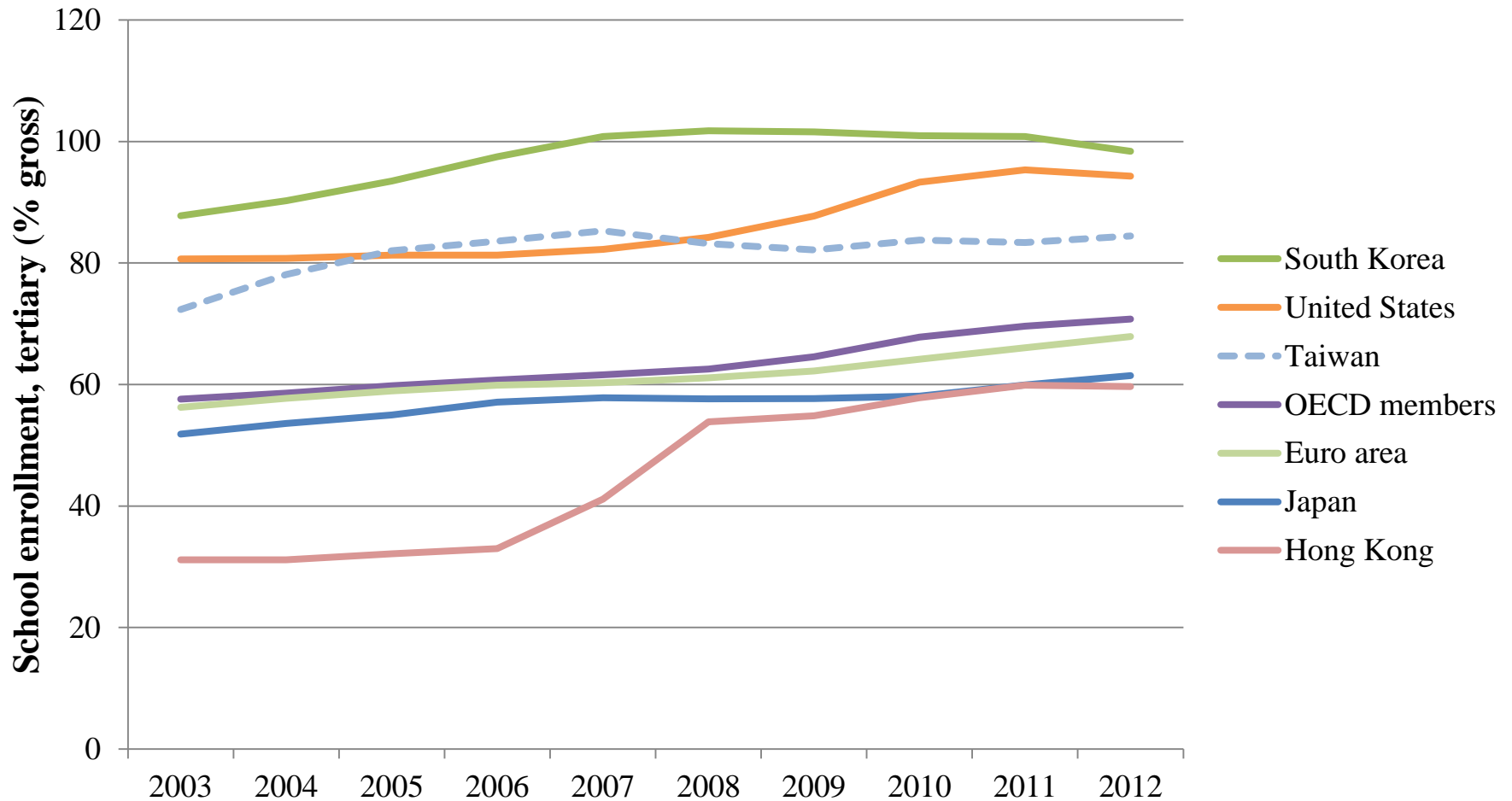
Projection of critical population reversal in Taiwan

Low Fertility Rates in Some Asian Countries



Gross fertility rates of Asian countries

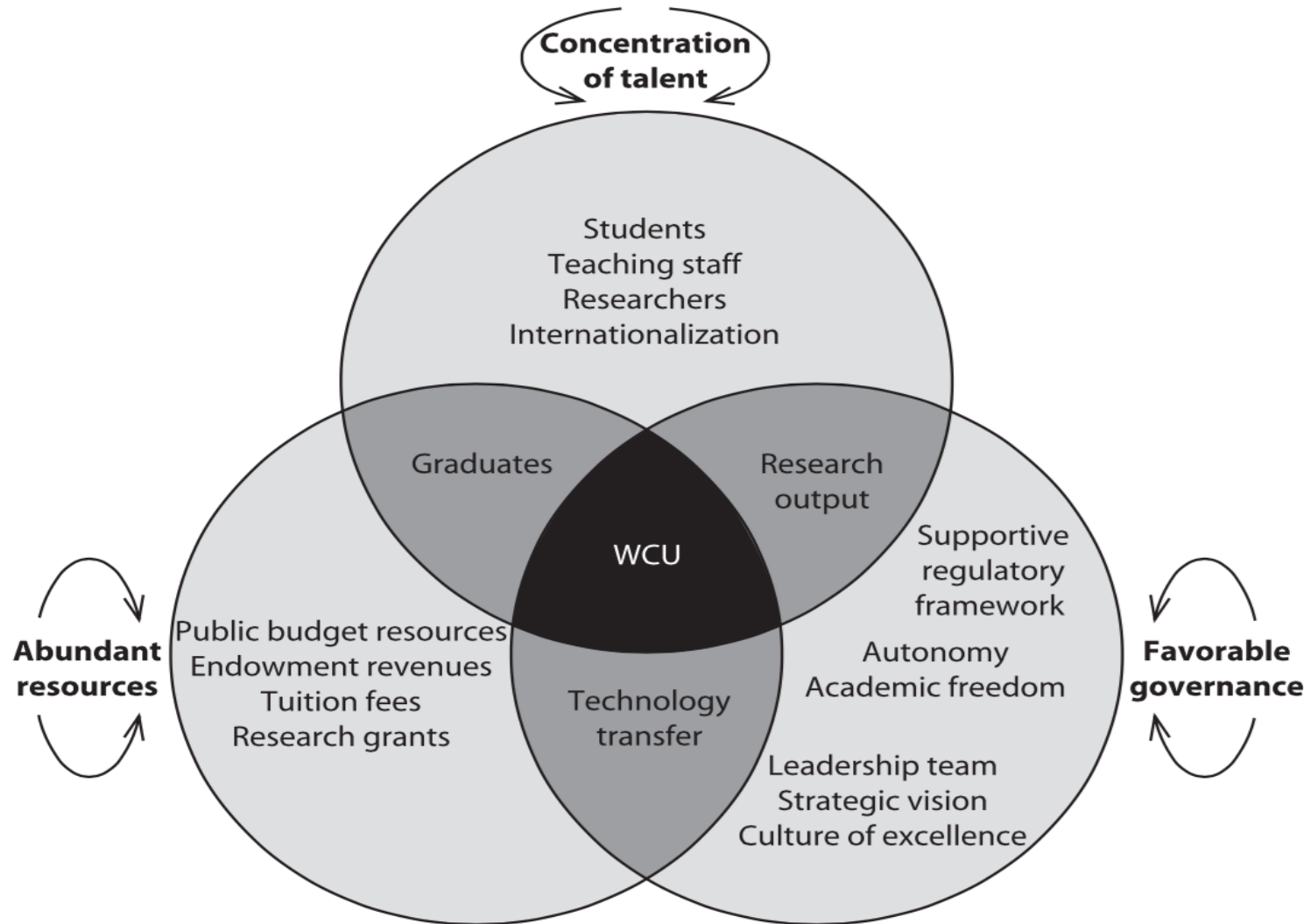
Gross HE Enrollment under Low Fertility Rates



Trends of gross HE enrollment rates for different countries

II. RESEARCH SYSTEM AND WORLD CLASS UNIVERSITY BUILDING

World Class Universities by Jamil Salmi



Characteristics for Top Ranked Universities

- Talents
 - Diversity
 - Faculty (21% to 40% foreign born)
 - International students (10 % to 20%)
- Research
 - Global Ranking outcomes
 - Highly cited papers and scholars
 - 6 -8 papers per faculty
- Resources
 - Diversified (less than 25 % from tuition)
- Governance
 - Developing internal supporting system
 - Autonomy from government
 - Maintenance of academic freedom
 - Management by professional staff
 - Financial autonomy

Major strategies at Non English Speaking Countries

- Enhancing research funding
- Attracting highly reputed researchers
- Selection and concentration policy
- Project-based competition to building world class universities
- Building brand new universities but require a lot of investment of resources

Asian Practice

- Government is the major funder
 - Lack connection with social and economic development needs
- Seniority and academic favoritism
 - Academic capacity is the least important
- Rigid Curriculum and pedagogy
 - General education and selective courses

Average Number of top 500 Universities of Japan, China, South Korea and Taiwan by three rankings

Country	ARWU (2004~2015)	HEEACT NTU (2007~2015)	QS (2007~2015)	THE (2010~2015)	US News (2014~2015)	Ave No
Japan	26.92	25.66	22.33	10.50	16.00	20.28
China	20.00	20.78	14.89	9.00	28.50	18.63
South Korea	9.50	10.90	11.89	6.83	10.00	9.82
Taiwan	6.59	6.00	9.22	6.17	5.00	6.60
Hong Kong	5.00	5.00	5.79	5.67	5.00	5.29
India	1.75	2.00	7.89	2.50	3.50	3.53

註：THE於2010僅統計前兩百名大學，其餘各年則統計至前四百名

Figure 1: The number of the paper published on SCI and SSCI journals in China, Taiwan, Japan, South Korea

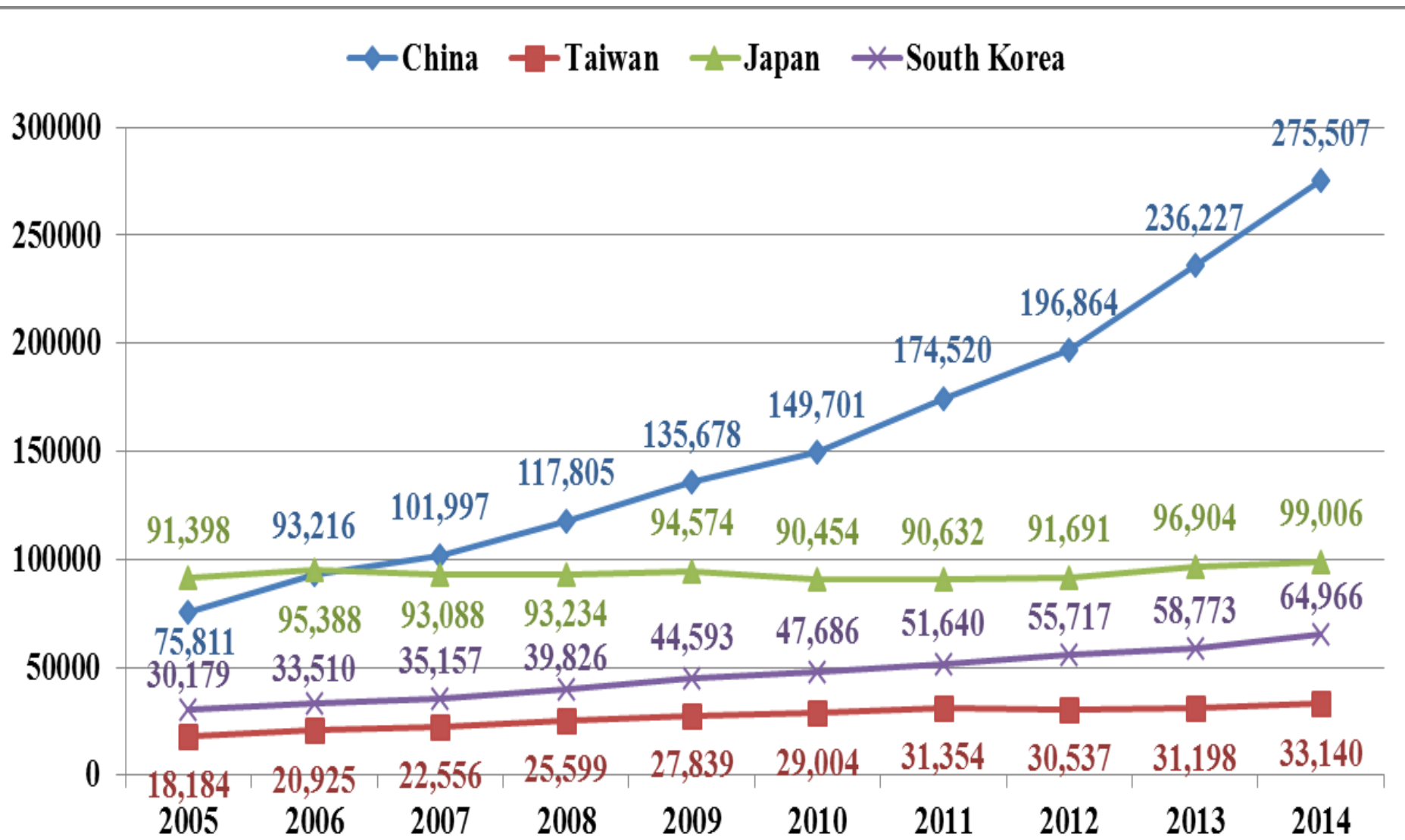
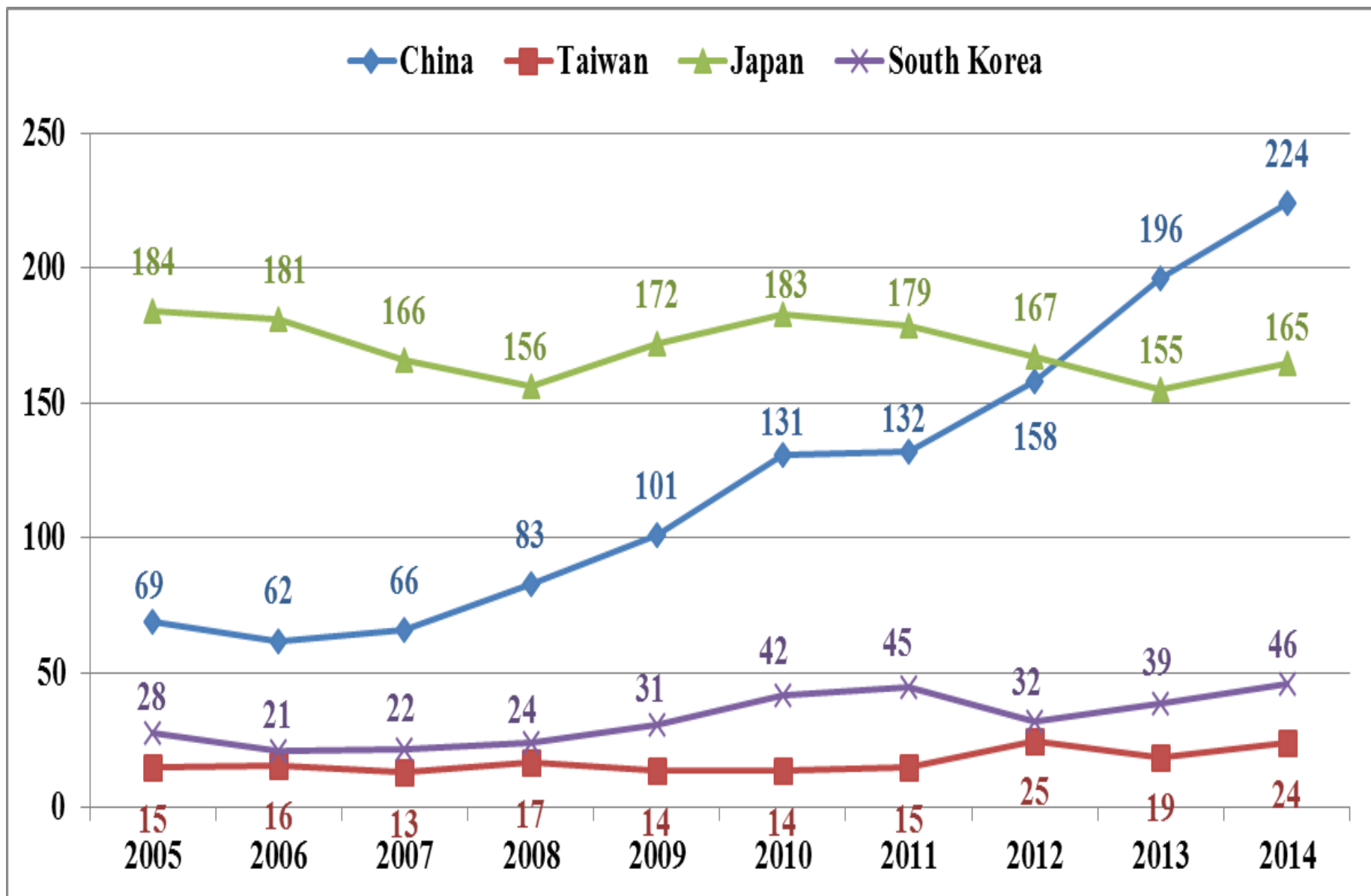


Figure 2: Number of papers in Nature & Science in seven years in China, Taiwan, Japan, South Korea



Taiwan Top 100 in Asia (10)

- National Taiwan University (15)
- National Taiwan University of Science and Technology (Taiwan Tech)(28)
- National Chiao Tung University(31)
- National Tsing Hua University(35)
- National Cheng Kung University (NCKU)(41)
- China Medical University, Taiwan(46)
- National Taiwan Normal University(68)
- National Yang-Ming University(70)
- National Sun Yat-Sen University (73)
- National Central University (94)
- Chung Yuan Christian University(141-150)
- Fu Jen Catholic University (181–190)

Research System

- Ministry of Education
 - Funding World Class University
 - Funding Top Research Center
 - Funding Teaching Excellence University
 - Funding **Technological University Paradigms**
- Ministry of Science and Technology
 - Funding individual research projects
 - Outcomes based (50% proposal/ 50% publications)
 - Funding national research project
 - Funding cross-national project

Several National Projects for Academic Research before 2005

- **University Academic Excellence (2000 to 2006)**
 - **Funded by Ministry of education and Council Science Council (Ministry of Science and Technology)**
 - **4.2 Billion USD**
 - **4 fields**
- **Enhancing Global Competitiveness Plan(2002 to 2004)**
 - **Internationalization in research and teaching**
 - **EMI courses**
 - **Joint and Double degrees**
 - **Recruit international students**
- **University Mergers and Intercampus Research Center (2002)**
 - **Develop cross campus research centers among national universities**
- **Enhancing Quality of Graduate Education in National Universities(2001)**
 - **Improve Infrastructure**
 - **Establish Ph.D. programs**
 - **Interdisciplinary programs**
 - **Internationalization of graduation education**

Two Phases of University Academic Excellence Projects from 2000 to 2006

Phase Field	Phase I			Phase II		
	Number of projects	Pass rate	Funding (in thousand)	Number of projects	Pass rate	Funding (in thousand)
Bio Science	5		1,114,518 (20.7%)	3	27.3%	609,873.54 (28.7%)
Social Sciences	4		1,125,245 (20.9%)	2	40.0%	178,499.99 (8.4%)
Engineering and Technology	3		1,460,000 (27.1%)	6	35.3%	1,190,000 (56.0%)
Humanities and Social Sciences	4		681,408 (15.6%)	1	16.7%	70,000 (3.3%)
Total	16	6.13%	4,381,171	12	30.8%	2,124,873.53

Excellence Initiatives in Taiwan

After 2005

- Program for Developing First-class University and Top Research Centers
 - 11 recipients
- Teaching Excellence Program
 - 31 recipients
- Academia-Industry Collaboration Program
 - 12 recipients

Universities Funded by MOE Excellence Initiatives in Research from 2006 to 2010(USD in million)

Institutions	2006	2007	2008	2009	2010	Total 5-year funding	
National Taiwan University	100.0	100.0	100.0	100.0	100.0	500	30%
National Cheng Kung University	56.7	56.7	56.7	56.7	56.7	283.5	17%
National Tsing Hua University	33.3	33.3	40.0	40.0	40.0	186.6	11.2%
National Chiao Tung University	26.7	26.7	30.0	30.0	30.0	143.4	8.6%
National Central University	20.0	20.0	23.3	23.3	23.3	109.9	6.6%
National Sun Yat-sen University	20.0	20.0	20.0	20.0	20.0	100	6%
National Yang Ming University	16.7	16.7	16.7	16.7	16.7	83.5	5%
National Chung Hsing University	13.3	13.3	15.0	15.0	15.0	71.6	4.3%

Universities Funded by MOE Excellence Initiatives in Research from 2011 to 2016 (USD in million)

Universities and Category	Funding	Universities and Category	Funding
National Taiwan University	103.3	National ChengChi University	6.5
National Cheng Kung University	53.3	National Taiwan Normal University	6.5
National Tsing Hua University	40.0	National Taiwan University of Science and Technology	6.5
National Chiao Tung University	33.3	Chang Gung University	6.5
National Central University	22.9	Strengthen university System	4.2
National Yang Ming University	16.1	Promote Humanities and Social Sciences Fields	1.6
National Sun Yat-sen University (Ocean Technology)	12.9 -- (1.6)	Promote Academic Cooperation between Taiwan universities and Foreign Top	5.5
National Chung Hsing University	9.7	Total	322.6₂₇

Academic performance by increase rate

- Research outputs
 - the number of SCI papers increased by 49%
 - SSCI papers by 172%.
 - highly cited papers by 129%
- Internationalization
 - Number of international students by 79%
 - Number of international scholars by 700%
- University and Industry collaboration
 - Funding generating from industry-university collaborations by 28%

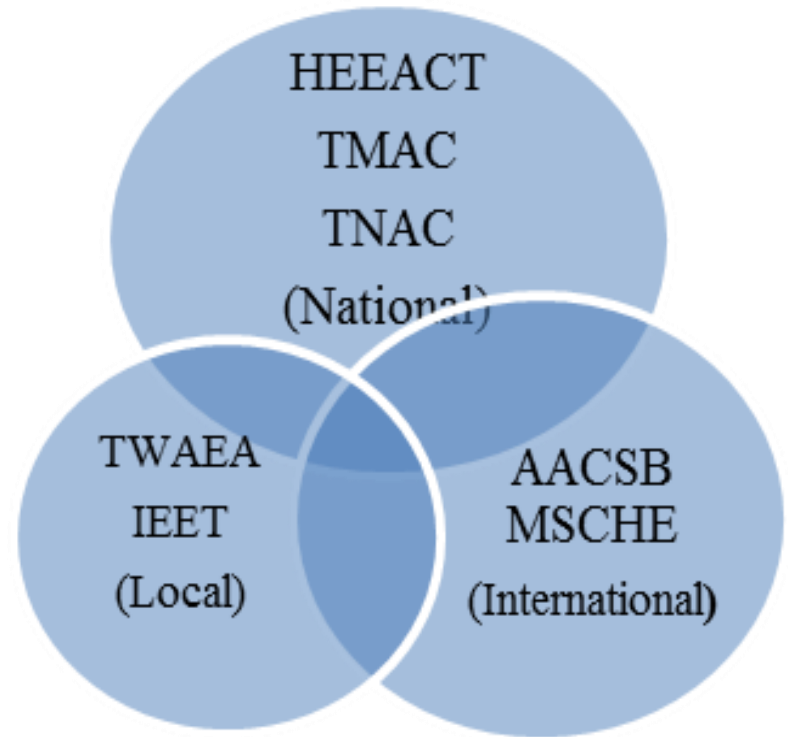
Challenges For Building World Class universities in Taiwan

Items	Taiwan
Types of excellence programme	Development plan for world-class universities and research centres of excellence Teaching excellence initiative Technological university paradigms
Purpose of excellence project	Develop several top universities Developing centre for higher education in Asian and Pacific regions
Goal achieved	7 universities in top 500
Shrinking student-aged population	50% drop in the number of high school graduates in 2016
Governance	Rigid salary scheme
Talents	Not attracting many international scholars/ decline in number of applicants to PhD programmes
Resources	Selection and concentration/diversified
Internationalization	Faculty needs to improve international capacity/offer more EMI courses

III. QUALITY ASSURANCE AND ITS IMPACT

Taiwan QA system

- A decentralized system of quality assurance framework in Taiwanese higher education was formed in 2005
- Institutional VS Professional
- International/ National / local



QA trends in Taiwan Higher Education

- Learning outcome base model
- Quality embedded in teaching, learning and research
- Emphases on IQA
- Reviewer's training
- Act as a quality gatekeeper
- Seeking International accreditation
 - “Task force of Recognition of local and international accreditors” in 2009
- Self-accrediting

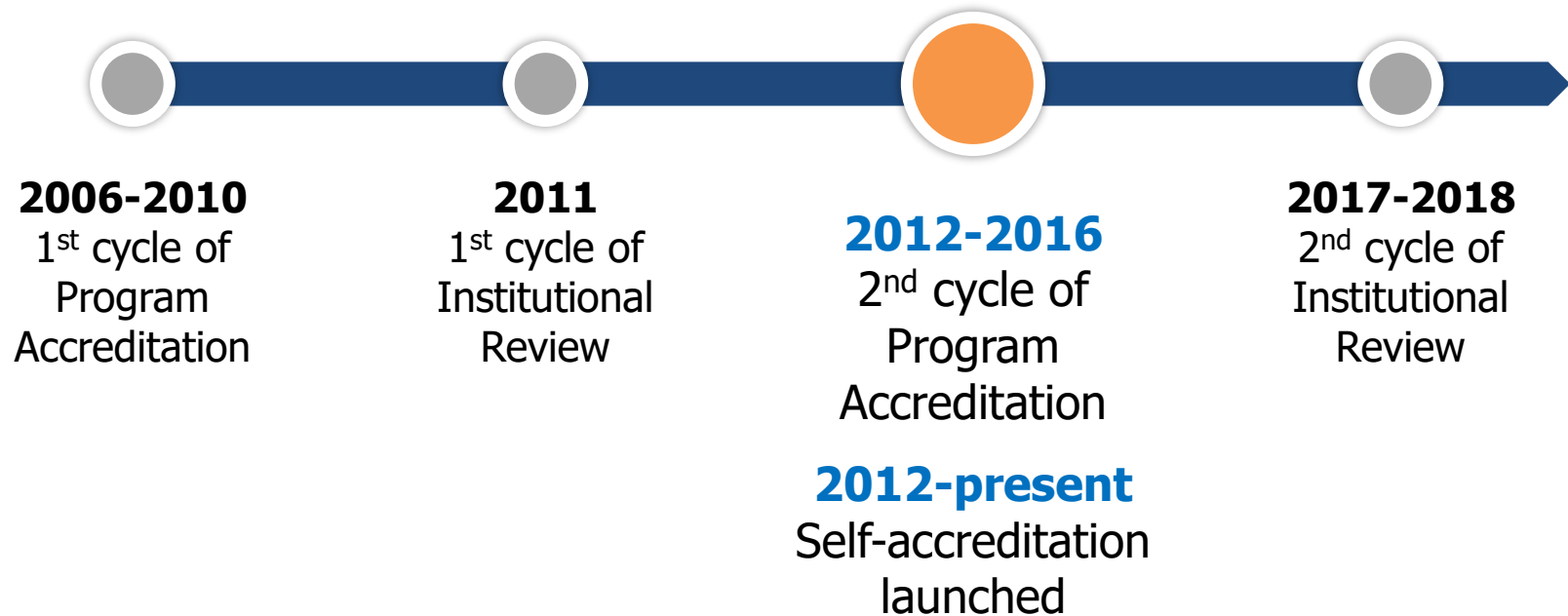
Higher Education Evaluation & Accreditation Council of Taiwan (HEEACT)

- Funded by 153 institutions and the Taiwan government on Dec, 2005 according to University Act
- A non-governmental accrediting body
- Conduct both institution and program accreditation
- Developed varying ranking since 2007

HEEACT Accreditation Model

- Compulsory approach
- Publication of review reports
- Program Accreditation
 - 2006, first cycle program accreditation (IQA mechanism)
 - 2012, second cycle program accreditation (learning outcome focus)
- Institutional Accreditation
 - 2011, first cycle Institutional Accreditation (learning outcome focus)
 - 2016, second cycle Institutional Accreditation (institutional research)

2006-Present: Timeline



Accreditation Standards

1. Institutional Review

- Institutional governance and management (self-positioning)
- Institutional resources and support system (teaching and learning)
- Efficiency and effectiveness (accountability)
- Self-improvement and sustainable development (quality improvement)

2. Program Accreditation

- Goals, core competency, and curriculum
- Teacher, teaching, and support system
- Student, learning, and support system
- Research, service, and support system
- Self-analysis, improvement, and development

Accreditation Status

Accredited	Conditionally Accredited	Denied
Passed accreditation	Passed accreditation partially and should be reviewed again in the following year	Did not pass accreditation (not eligible to standards)
Appeal		

* The duration of the accreditation validity is five years.

Accreditation Outcome

Institutional Accreditation	Program Accreditation	
<p style="text-align: center;">2011</p> <p>71 institutions, 48 passed five standards.</p>	<p style="text-align: center;">1st Cycle (2006-2009)</p> <p>Total: 2978 programs Accredited: 73.9% (2201) Conditionally Accred.: 11.1% (332) Failed: 9.7% (289)</p>	<p style="text-align: center;">2nd Cycle (2012-2015)</p> <p>Total: 1775 programs Accredited: 90.9% (1614) Conditionally Accred.: 8.6% (152) Failed: 0.5 (9)</p>

*Military related programs are excluded.

Self-accreditation policy launched in 2012

- 34 universities granted
 - recipients of MOE grants of the Development Plan for World Class Universities and Research Centers of Excellence
 - recipients of MOE grants for the Teaching Excellence Project providing more than 6.7 million in USD over a consecutive four years
- Give institutions more autonomy
- Encourage IQA development

Efficient Use of Accreditation Results by Institutions

- Institutions not only made great efforts to develop their features but also strengthened institutional governance and management on resources allocation, program revitalization, curriculum reform and staff recruitment
 - Rate of new faculty recruitment at partially accredited institutions drops
- Program survival and closure rate
 - 92.2 % of accredited programs at the first cycle review were retained by institutions, in comparison with only 41.2 % of not being accredited ones.

Both institutional and program accreditations with high pass rate

- National University
- Located in Central part of Taiwan
- **Self accrediting universities**
- Number of undergraduate programs >30
- Number of graduate programs >39
- Student enrollment >10000
- Faculty student ratio <22
- Research type
- Natural Sciences
- First cycle program accreditation pass rate >95%

Three QA Challenges in Taiwan Higher Education

- external validity
 - The public still worried about quality of HE
 - Such as small colleges
- evaluation use
 - related to quality assurance effectiveness
 - Used by government and universities
 - 83% at the conditionally accredited status and 45% at the denial status do not exist (97% at accredited)
- evidence-base approach
 - a lack of quantitative evidence to assist QA policy making

IV. INTERNATIONALIZATION AND OUTCOMES

Internationalization in Taiwan Higher Education

- With the support and the guidance of the MOE, universities in Taiwan have already pursued the goal of internationalization for years **since the late 1990s**.
- This pursuit have generated a number of ideas, projects, and actions in many universities in Taiwan.
- Various types of transnational higher education have been developed in Taiwan, including joint / double degree programs and online/distance education (e.g. MOOCs)

Internationalization strategies by universities

- MOUs
- Exchange Student Programs
- International Summer School
- Short-Term Summer Study Abroad Programs
- Full English-Taught Programs
- Double and Joint Degree Programs
- Exchange Faculty Programs
- Jointly-Taught Courses
- Recruiting International Students
- Mandarin promotion programs

Major MOE Programs

- Enhancing Global Competitiveness Plan in 2002
 - fostering international exchange activities
 - improving the international competitiveness of institution
 - increasing the number of foreign students studying in Taiwan
 - 78,261/ mainland China (32.1%), ASEAN countries (25.9%), Malaysia (13.3%), and Japan (7.3%)
- Development Plan for World Class Universities and Research Centers of Excellence in 2006
 - US\$ 330 million for 10 years from 2006 to 2016
 - 11 to 12 world class universities
- Recognition of International Accreditation in 2009
 - 10 AACSB accredited business school
 - 1 accredited by MSCHE

National Policy Toward International Students Recruitment in Taiwan

- Scholarship programs
- A more open policy toward Chinese students seeking to study in Taiwan (since 2011)
 - Chinese Oversea Students (22918)
 - Mainland China Students (7813/ 27030)
 - Language Students (18545)
 - Foreign Students (15792)
- Offering English taught programs and courses

Enhancing Young People's Global Mobility in 2014

- In 2014, MOE launched the project “Enhancing Young People's Global Mobility”
- Aim to equip young people with the 6 core capabilities to stand out in the future
 - global mobility, employability, innovative ability, cross-disciplinary ability, IT ability, and good citizenship

UMAP and Exchange Programs

- Nonprofit organization established in 1993 promoting student mobility and higher education.
- International Secretariat (IS) rotates around member countries every 5 years
 - 2001-2005 by Japan
 - 2006-2010 by Thailand
 - 2011-2015 by Taiwan
 - 2016-2020 by Japan
- 18 member countries including Hong Kong, Japan, South Korea, Malaysia, Mongolia, Philippines, and Thailand, etc.
- Over 514 member universities

UMAP Exchange Programs and Research Net

- Program A&B:
 - 1-2 semesters of student exchange in member universities.
 - Tuition Waived
 - Scholarship ~650USD/month From Taiwan Government
 - Receive and/or send 2 students
- Program C (Super Short Term Program, SSTP):
 - Summer program of 2-8 weeks in member universities
 - Quota of 100 students each year
 - Scholarship \$800USD per student
- Research Net
 - of two or more researchers from UMAP affiliated universities who share common research interests

Challenges for internationalization

- Curriculum
 - EMI courses
 - Quality
- Reply on Office of International education
- Elite internationalization
 - Few students can go abroad for exchanges
- Not many international research cooperation
- Faculty awareness

V. NEW POLICY AND CHALLENGES

Development in Taiwan HE

before May 20 , 2016

- “Free Economic Pilot Zone”
 - “Education Innovation” Project in 2013
 - gives universities more flexibility and autonomy to facilitate their capacity to jointly establish branch campuses or colleges in conjunction with prestigious overseas universities
 - 8 universities partner with top universities in 2015
- New Higher Education Trajectory in Taiwan 2015-2025
 - 6 Types
 - International Excellence / Community engagement
 - Learning Innovation / Research Center
 - Technology Innovation / Specialty Focus

Taiwan President Tsai Ing-wen



- National Taiwan University
- Cornell University
- London School of Economics
- Chairman of DDP

After May 20, 2016

- New government withdrew the sue of 126 'sunflower student movement' of people
- New Higher Education Trajectory has been suspended
- Excellence Imitative project funding has been cut in 2016
 - 300 million NT

“New Go South Policy “ by Taiwan Government in 2016

- Aiming at expanding industrial, educational, cultural and agricultural exchanges between Taiwan and ASEAN countries
 - Attract talented students
 - Strengthen partnership with ASEAN countries
 - Provide an opportunity for communication of scholars with ASEAN countries

2016 Two New Higher Education Projects

- ◆ **Flagship project—Linkage among University, industry and Research Center (2016/ 8)**
- ◆ **University Consortium on Local Engagement and Implication (2016/11)**

Flagship project—Linkage among University, industry and Research Center

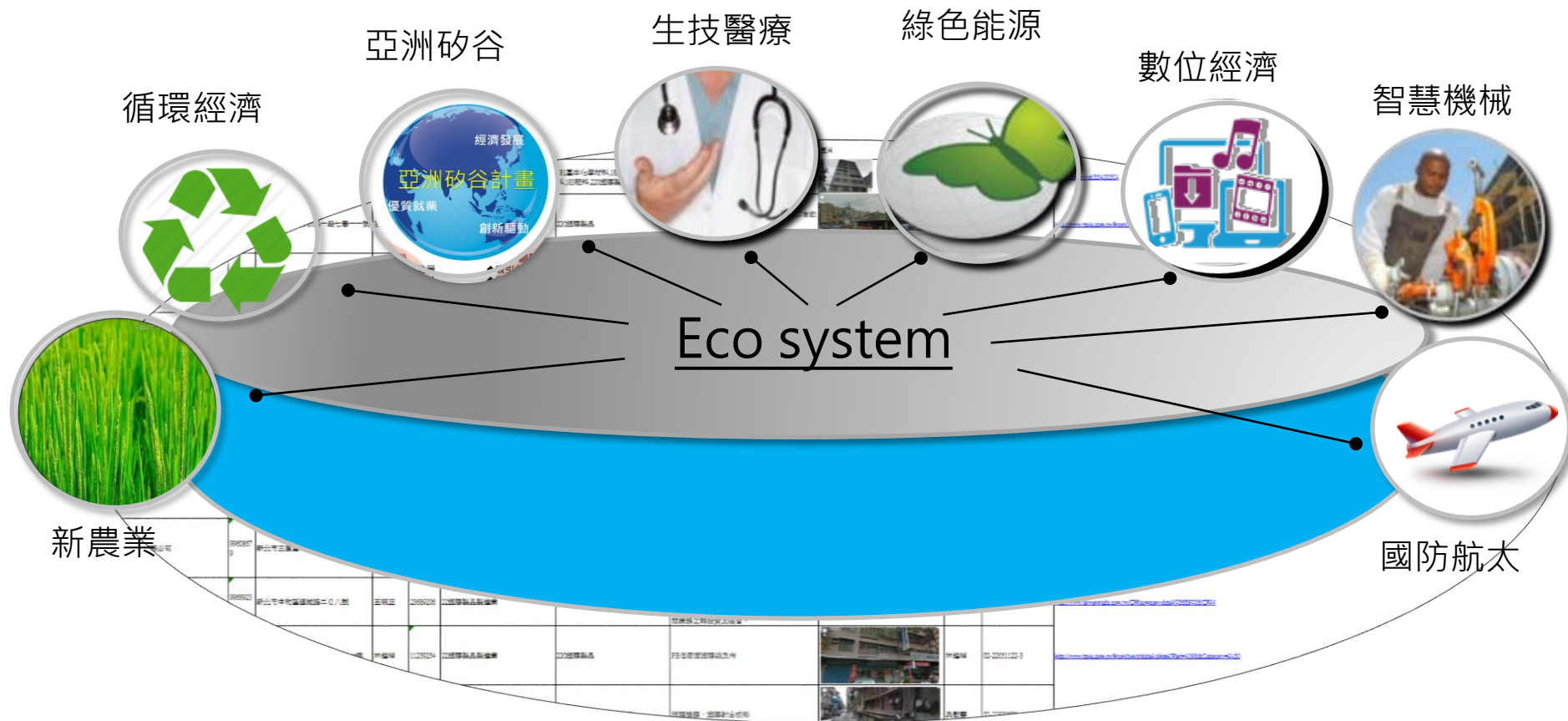
- Establish Linkage Center for University, Industry and Research Collaboration
- 5 +2 new industries
 - Intellectual mechanics, Asian silicon valley, Green energy, Biotech medicine, Defense aerospace, new agriculture, and circulation economics and digital economics
 - 4-8 Spin in or Spin off projects
- **248.4 million USD for 4 years**

Objectives

- Develop a research team with long term and innovative technology, which will make great contribution to national and social welfare
- Promote Entrepreneurship in collaboration with prestigious scholars, industry and top graduate students
- Spin off / Spin in
- Technology transfer
- 53 projects in 23 universities selected

Technology-Innovation System

5+3 Industries



University Consortium on Local Engagement and Implication

- Deep Plowing Project (2017/ 2018-2021)
- Universities vs Universities of Technology
 - Regionalization and localization
 - Local government engagement and Urban-rural Network
 - Local community and industry
 - 8-10 Consortiums

Characteristics of NEW DEEP Plowing Project

- 2017 new national project
 - Talent cultivation
 - Long term institutional report
 - Teaching focus/ Student-centered
 - Social impact

Conclusion

- World Class University vs Entrepreneurship
- Research vs Entrepreneurship
- Accountability vs Autonomy
- Academic excellence vs quality assurance

Final Remarks

**“THERE IS NO SINGLE ROAD TO
EXCELLENCE”**

**by Jamil Salmi (2010)
Coordinator,
Tertiary Higher Education, World Bank**

Happy Chinese New Year
Good luck for Rooster year



Thank you for your attention

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