

Higher Education in China

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中国高等教育

江波



Promote International Exchanges



**At the Ministry of Education (China)
1981-2012**

**Student in France
1978-1981**

2018

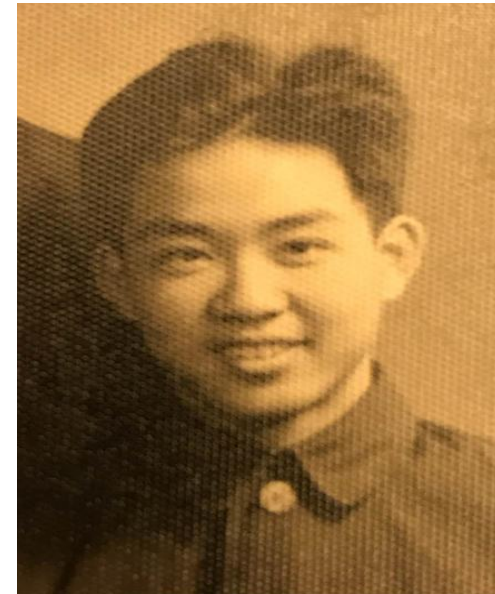


**Practicing & Promoting
International Education
Exchange & Cooperation**



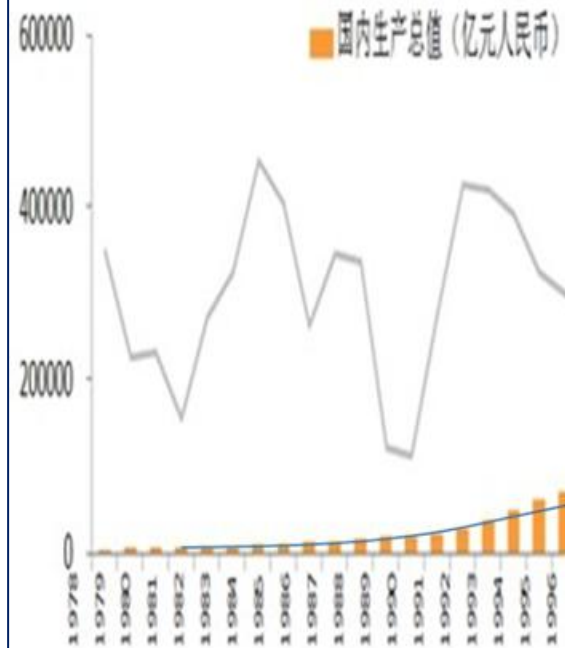
40 Years

1978





China's GDP Changes 1978-2018



1978: 360 bill. RMB
 2018: 90 trill. RMB (12 trill. \$)
 (compared: US GDP 19 tri. \$)





2018





“大学” (Da Xue) — University

Tóng jì dà xué
同 济 大 学

ā	á
ǎ	à

			
甲骨文	金文	小篆	楷体

大：一个很高的人，伸着两个胳膊站立，象征强大强壮；一个正面站立的人。 **A tall human being is standing with two arms outstretched. It's a symbol of strength. A person is standing on the front.**

	
小篆	楷体

学：上面左右两边是两只手，手中间是占卜用的卦，中间部分是一个房间，最下面是小孩子；小孩子在房间里学占卜。 **In the above part, on the left and right sides, there are two hands, in the middle of which are the Divination Trigrams. The middle part is a room while the bottom a child, who is learning the knowledge about the divination in the room.**

大学 (Dà xué)

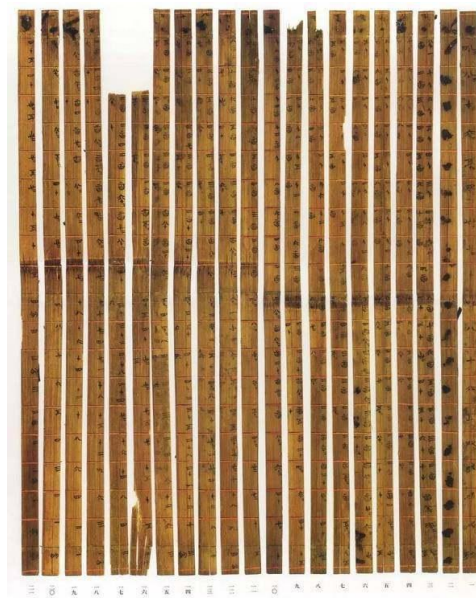
𠂔	𠂔	𠂔	大
甲骨文	金文	小篆	楷体

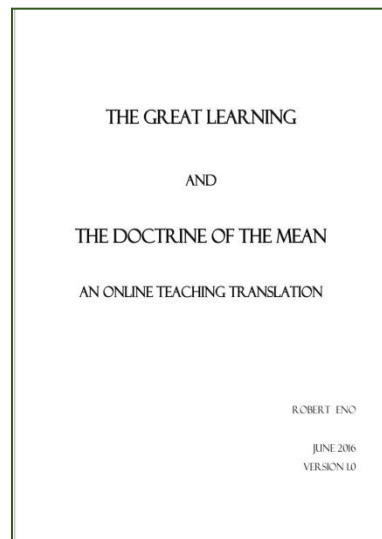
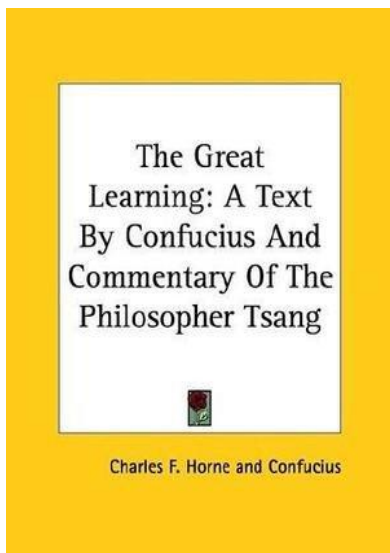
𠂔	学
小篆	楷体

大学 (Dà xué)
is
A Book
(2500 years ago)



“大学”
means
The
Great
Learning





<h1 style="text-align: center;">THE GREAT LEARNING</h1> <h2 style="text-align: center;">I. TEXT</h2> <h3 style="text-align: center;">I.A <i>The Three Guidelines</i></h3> <p>The Dao of Great Learning lies in making bright virtue brilliant; in making the people new; in coming to rest at the limit of the good.</p> <p>Only after wisdom comes to rest does one possess certainty; only after one possesses certainty can one become tranquil; only after one becomes tranquil can one become secure; only after one becomes secure can one contemplate alternatives; only after one can contemplate alternatives can one comprehend.</p> <p>Affairs have their roots and branches, situations have their ends and beginnings. To know what comes first and what comes after is to be near the Dao.</p>	<p>Lines in gray type are not part of <i>The Great Learning</i>. They have been added to clarify the structure of the text.</p> <p>On the word “Dao,” see the Glossary.</p> <p>This is a how-to manual: steps cannot be skipped.</p> <p>“Roots and branches” concerns priority and causation. “Ends and beginnings” can be interpreted as pointing to</p>
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The Three Guidelines:

1. Making one’s “bright virtue” brilliant
2. Making the people new
3. Coming to rest in the highest good

These phrases are cryptic and largely meaningless in themselves, and when first encountered in the “Text” section of *The Great Learning* (Section I.A), the language that explains them, while intriguing, is also mysterious. Our understanding of the Three Guidelines is enhanced in the “Commentary” section (II.A), but even there, this portion of *The Great Learning* remains more inspirational than instructional.

The “Text” also provides a brief introduction to the “Eight Stages,” which are more clearly an ordered path of self-cultivation. Here is a list of the Stages:

The Eight Stages:

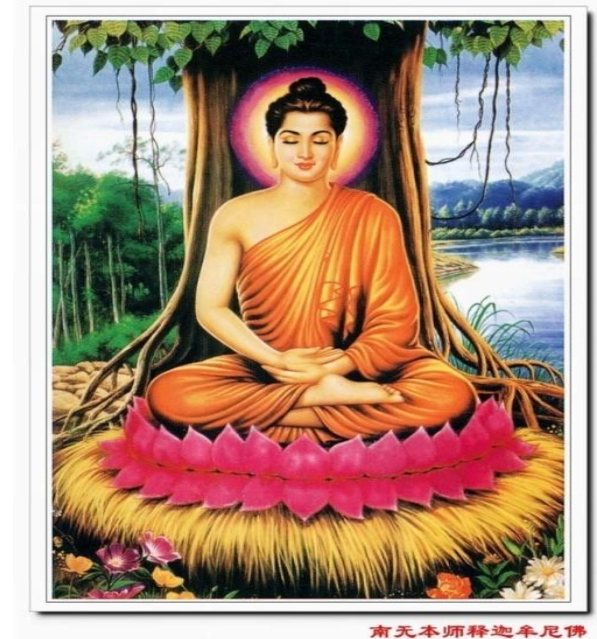
1. Aligning affairs
2. Extending understanding
3. Making intentions genuine
4. Balancing the mind
5. Refining one’s person
6. Aligning one’s household
7. Ordering the state
8. Setting the world at peace

Dao (dao 道). The term “Dao” (often translated as “Way”) denotes the ideal moral path for individuals, rulers, and states to follow in order to realize a perfection of character and life that is destined for humankind, if only humankind summons the will to follow its natural calling. The basic meaning of the term *dao* is “path,” and it often is used metaphorically in this sense: the Dao can be “walked” or “traveled,” just as a path can be. However, there is also a secondary meaning of “method” or “formula.” Many different schools of Warring States era thought called their central teachings “the Dao,” most famously the school of Daoism, which used the term in a cosmological sense so distinctive that it was later applied as the name of the school. The Confucian Dao focuses on various forms of ethical conduct on the personal, social, and political levels, associated with sage rulers of the past.

Contents

- 1. Context & Background**
- 2. Higher Edu. Governance**
- 3. A Case : Tongji University**
- 4. Challenges & Oppotunities**

Higher Education in China : “Time” & “Culture” dimensions



Chinese Education Philosophy & Tradition

Banlance between Being & Nature, Individuals & Society



石山書院，创建于公元498年
Shi Shan **Shu Yuan** ("Studium Generale"), 498 AD

Long History of "Institutionalized Academies" in China



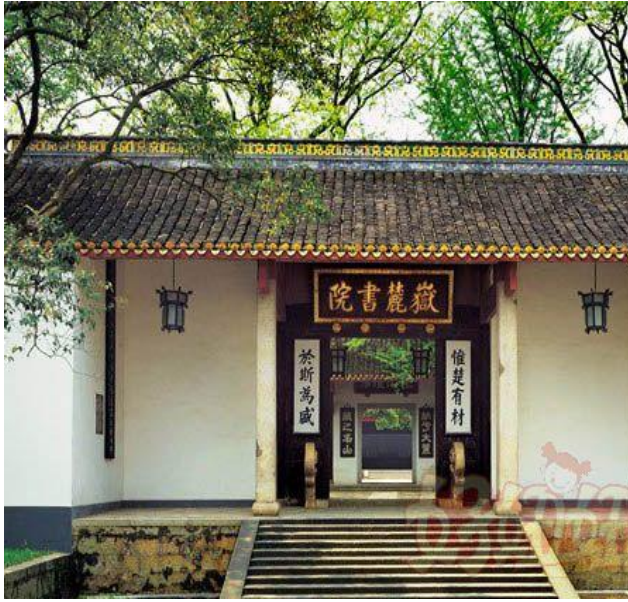
Studium Generale/Universitas



Yuelu Academy
Changsha, Hunan, China
Year: A.D. 958



Università di Bologna
Bologna, Emilia-Romagna, Italia
Year: A.D. 1088



Yue Lu Academy (岳麓书院), one of the four famous academies in China. Established by Zhudong, magistrate of Tanzhou prefecture in **976A.D** at the time of Northern Song Dynasty. The academy accepted disciples throughout the Song, Yuan, Ming and Qing Dynasties.

In 1903, the academy transformed from a school of traditional Confucian learning to an institute of higher learning. **In 1926**, officially named **Hunan University**.



Western Case: “Continuity” since 11th century

Timeline



China Case: “Discontinuity” since “1900”

Timeline



Modern “HE INSTITUTIONS” borrowed from the West since the late of 19th Century.



Long March of China's Socialist Modernization

1911 : Founding of the Republic of China

1921 : Founding of the Communist Party of China

1936 : Victory of China in the Anti-Japanese War

1949: Founding of the People' s Republic of China

1978: Entering into the period of Reform & Opening up

2000: Overall accessing to a well-off society

2020: Building a well-off society in an all-round way

(100 years since the founding of the Communist Party of China)

2035: Basically achieving the socialist modernization

2050: Building a strong socialist modern country, which is prosperous, democratic, civilized, harmonious and beautiful

(100 years since the founding of New China)

China Dream

1949:

People' s Republic of China



1978:

Reform & Opening Policy

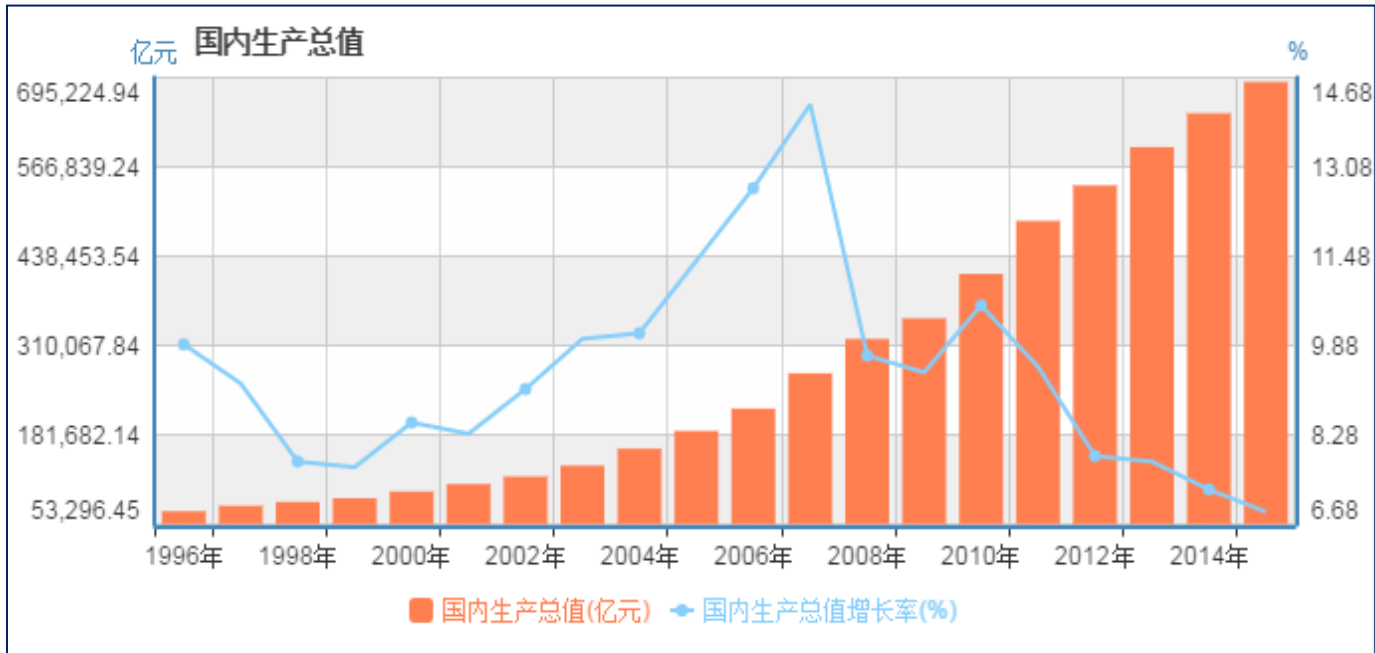


2012 :

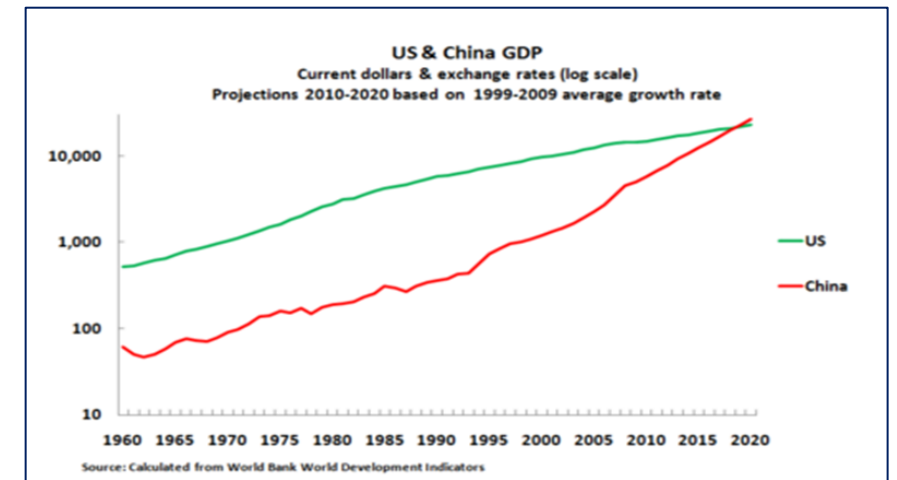
New Era



China, the 2nd largest economy in the world



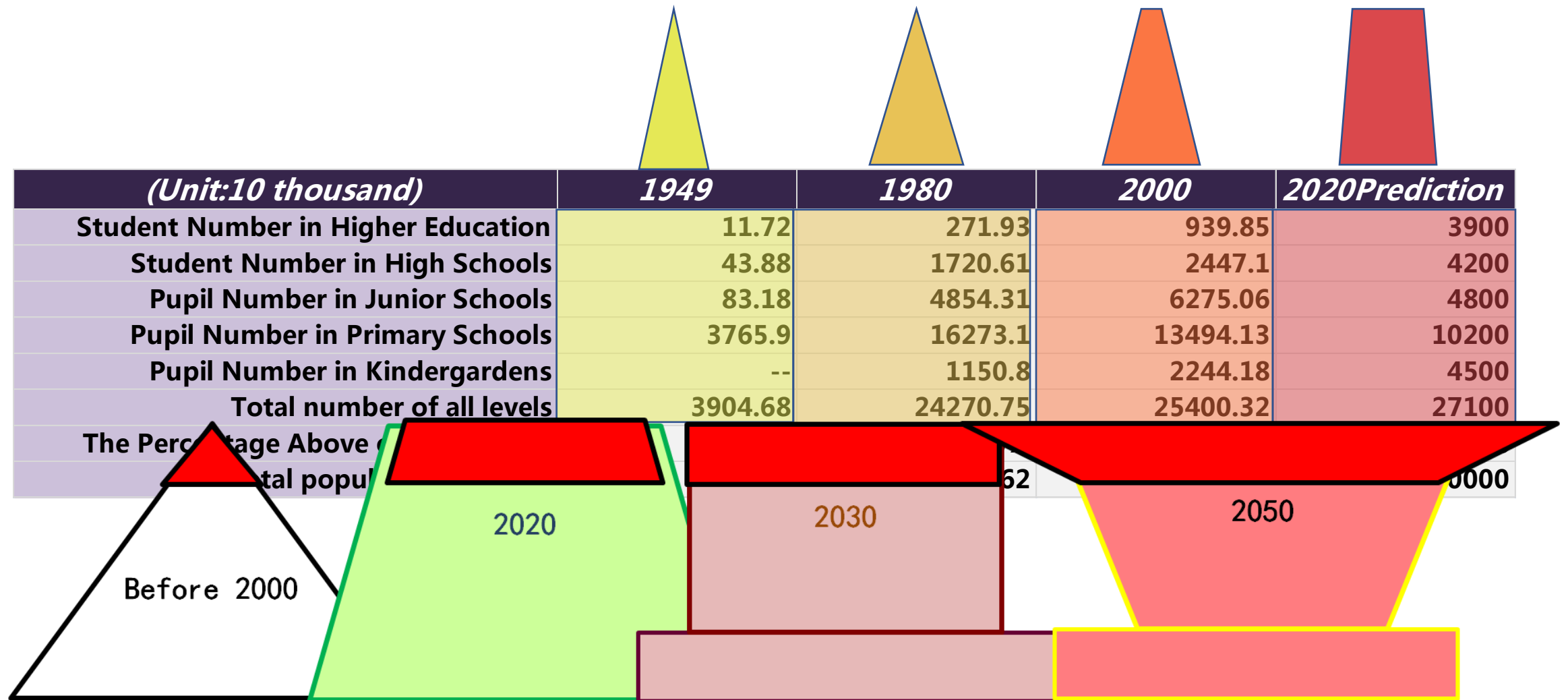
Annual GDP increases on average
with a rate of about 9% for 40 years



In 2017, China's GDP totaled 82712.2 billion yuan, about US **\$12.6 trillion**. For the first time, it exceeded 80 trillion yuan.

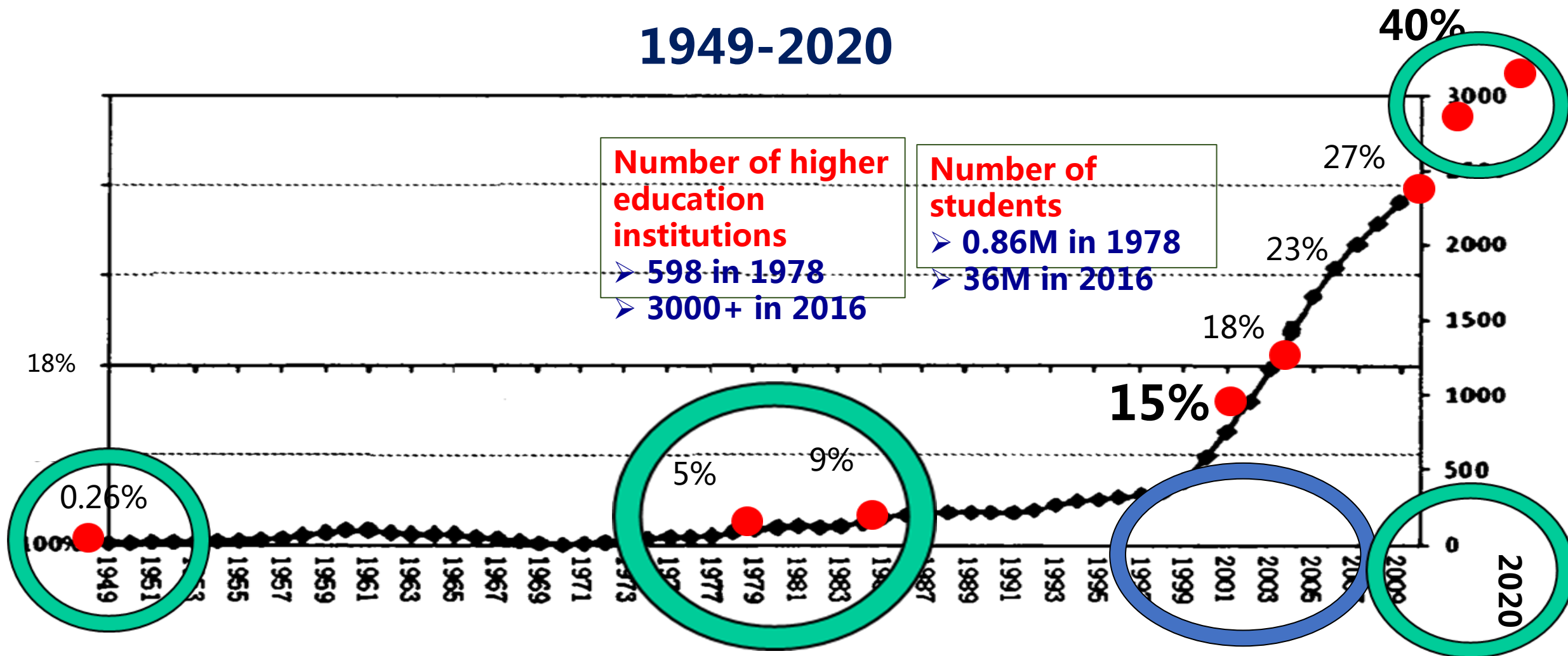
In 2017, the GDP growth rate of the United States was 2.2%, with a total of US **\$19.362 trillion**.

Overview of China's Edu. & HE: 1949-2020



"Gross Enrollment Rate" in Higher Education in China

1949-2020



Gross Enrollment Rate = all registered students ÷ a certain age group population (X%)

China's higher education

In 2018:

(1) Input on education: **4%** of GDP

Gov. Budget expenditure on higher education: **0.9%** of GDP

Each student: more than **12 thousand RMB**

(2) Universities, Colleges & Research Institutes (HE providers: **2852+217**)

Directly under the central ministries and commissions: **113**

Of which directly under the Ministry of Education: **75**

Postgraduate Education in 2016

2.6 Million Postgraduate students, of which:

77% FT students;

342 thousand PHD students.

Education/HE Institutions are mainly a part of the public system.



2018年在学总人
数3833万



2018年各类高校
2663所（本科院
校1245所）



48.1%



全球平均水平及
全球中等收入国
家平均水平

高等教育在学
规模世界第一



在学规模



经费总投入

2016 Public Budget for Education (RMB) for all levels					
	primary school	junior high school	High School	vocational schools	Colleges and universities
Average	9557.89	13415.99	12315.21	12227.70	18747.65
Maximum	25793.55	45516.37	50802.57	38661.50	55687.68
Min	5036.31	7811.96	6397.76	6425.03	12236.78
Max/Min	5.12	5.83	7.94	6.02	4.55

In 2016, the total investment in education funds in China was RMB388.839 billion.

The state's financial education funds include public budget education, government funds budget education, enterprise allocations in enterprises, school-run industries and social services income for education funds, etc., a total of 313.9625 billion yuan, accounting for 4.22% of GDP.

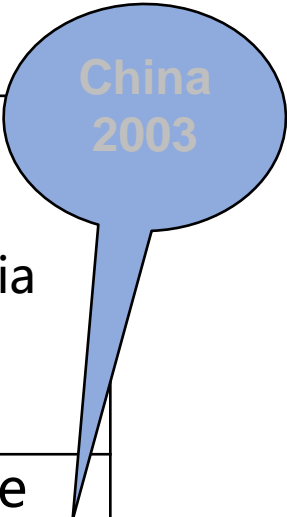
Social capital investment includes the input of organizers in private schools (kindergartens), donations from various sectors of society and individuals at home and abroad, and the school's teaching and scientific research and support activities are obtained in accordance with the law with the approval of the financial department to retain funds and the withdrawal of funds from the financial sector, including tuition fees and other income, totalling 749.214 billion yuan, or 1% of GDP.

The main objectives of the 13th Five-Year Plan (2016-2020) for the Development of Education and Human Resources Development

	2015	2020	
Preschool education			
Number of young children in the park (10,000)	4265	4500	Anticipated
Gross entry rate in the first three years of school (%)	75.0	85.0	Anticipated
Primary school education			
School students (10,000)	14004	15000	Anticipated
Among them: secondary vocational education admission rate (%)	93.0	95.0	Binding
High school education			
School students (10,000)	4038	4130	Anticipated
Among them: secondary vocational education admission rate (%)	1657 87.0	1870 90.0	Anticipated Anticipated
Higher education			
Total size in school (10,000 people)	3647	3850	Anticipated
School students (10,000)	3511	3680	Anticipated
Among them: graduate students (10,000) (including full-time and part-time graduate students)	250 [191]	290 [230]	Anticipated
Among them: General specialty (10,000 people)	2625	2655	Anticipated
admission rate (%)	40.0	50.0	Anticipated
Continuing education for practitioners (10,000)		35000	Anticipated
Human resources development			
Average number of years of education in the new labour force (years)	13.3	13.5	Anticipated

2000年以来全国高教规模变化及2020年走势

Year	Wide-caliber school attendance (10,000)	Among them: students in this specialty (10,000 people)			Graduate students (10,000 people)	Hair admission rate (%)	Troia
		Total	Colleges and universities	Adult colleges and universities			
2000	1230	909.73	556.09	353.64	30.12	12.5	Elite <15%
2005	2300	1997.85	1561.78	436.07	97.86	21	Popularization 15-50%
2010	3105	2767.8	2231.8	536.0	153.8	26.5	
2016	3699	3280.2	2695.8	584.4	198.1	42.7	
原预测 2020	3550	3100	(2700)	(400)	200	40	
2020 调整	3850	3680	2655		230	50	Universalization >50%



地位
作用

基础支撑 → 支撑引领并重
高等教育成为可持续发展的最大红利和牵引动力

发展
阶段

大众化阶段 → 普及化阶段
高等教育成为每个人职业生涯的“基础教育”

类型
结构

相对单一 → 更加合理、类型齐全、体系完备
多样化成为高等教育发展最显著的特点

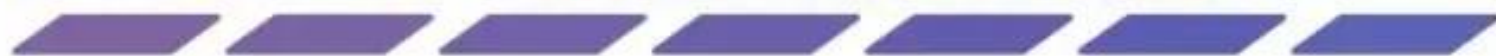
舞台坐标
格局

在世界舞台、国际坐标和全球格局中
谋划发展与改革，参与竞争与治理

	本科专业类/ 专业	专业点数	高校数	在校生数	毕业生数
数量	31/201	19447	1171所	551万	125万
占比	-	33.2%	92.6%	33.3%	32.8%

数据截止2019年7月

最大工程教育供给体系（工科本科毕业生占世界总数的38%）



类型多样、专业齐全、区域匹配



中国工程教育支撑“大国工程、国之重器”



高铁2.9万公里



港珠澳大桥



兰渝铁路



C919大飞机

中国车、中国桥、中国路、中国网.....

载人航天、深空深海探测、北斗导航、大飞机、高性能计算机.....

一流工程教育



优秀工程人才



超级工程

人才支撑

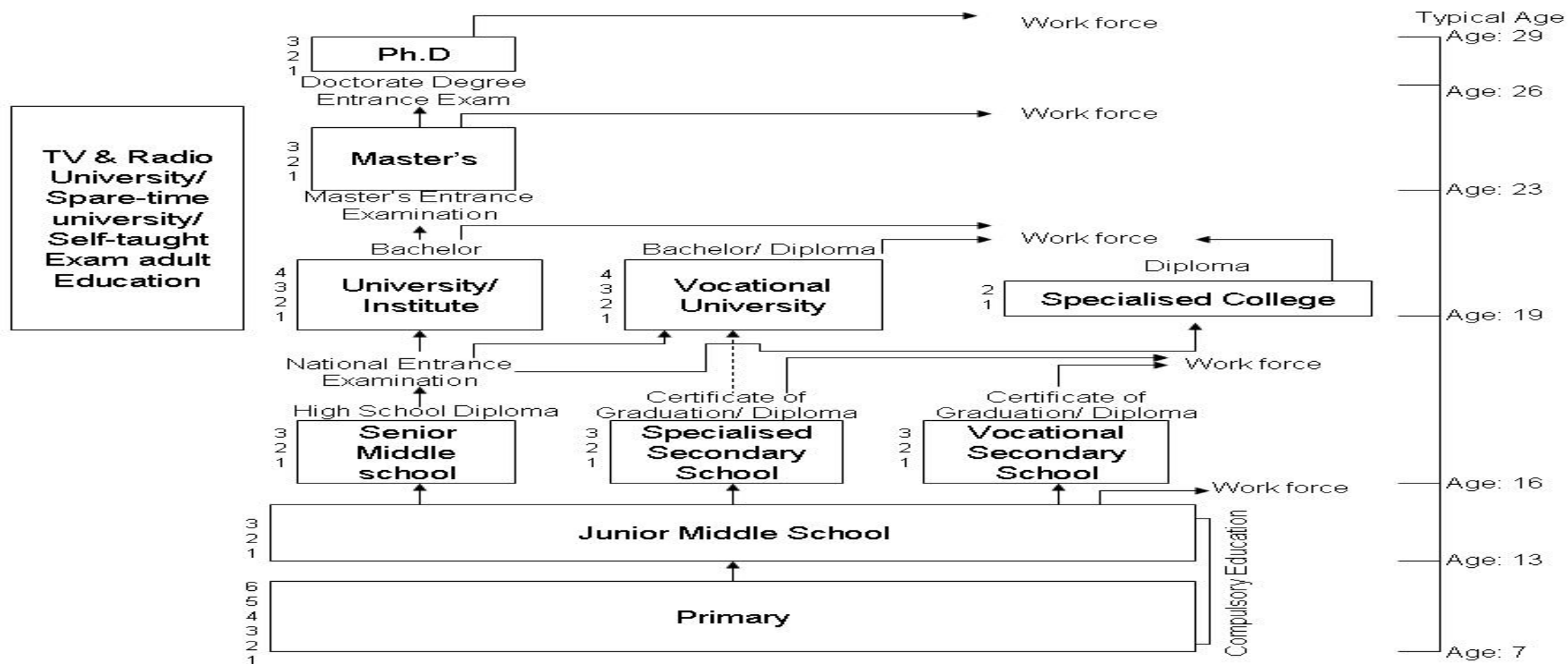
动力引领

中央文件（2018年8月24日）

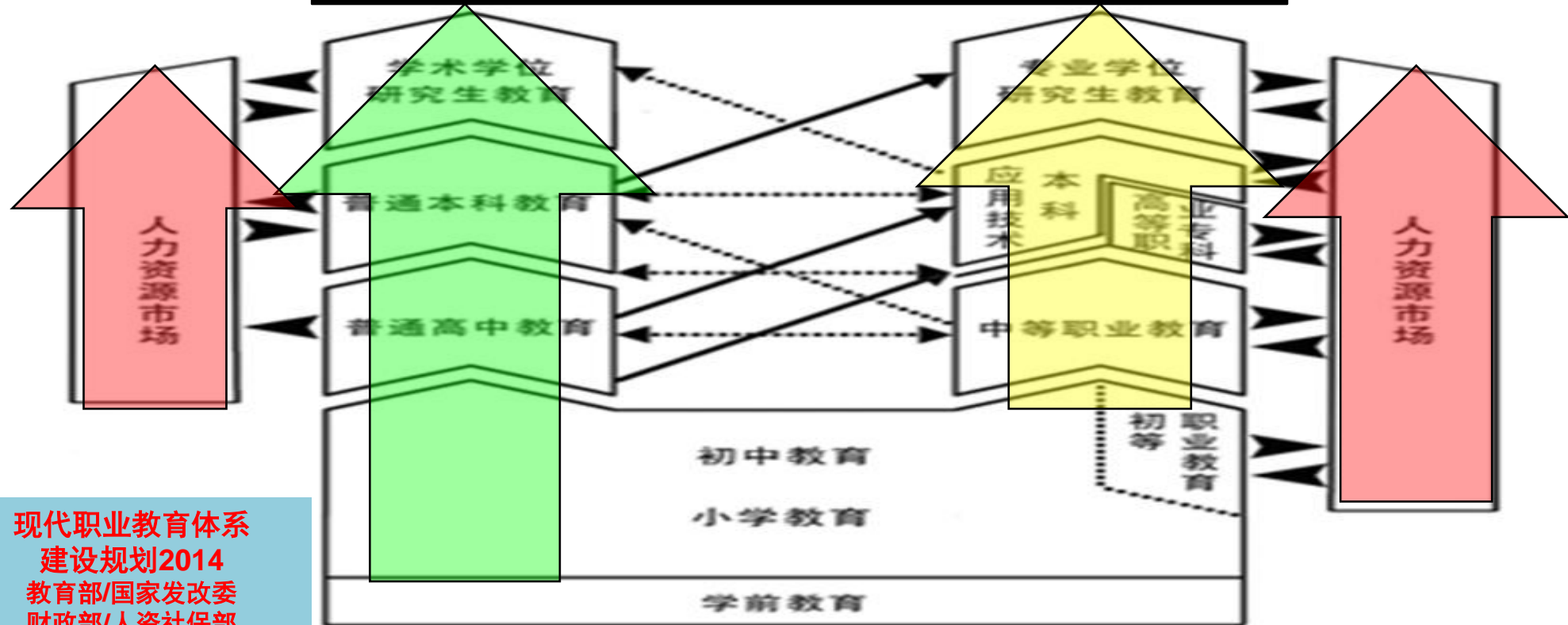
要推动高质量发展，进一步提升教育服务能力和贡献水平.....发展新工科、新医科、新农科、新文科。

Governance & Management (Macro Level)

Education System



Framework of China's Education System



现代职业教育体系
建设规划2014
教育部/国家发改委
财政部/人社部
农业部/国务院扶贫办

and Branch Tendency

普通教育体系

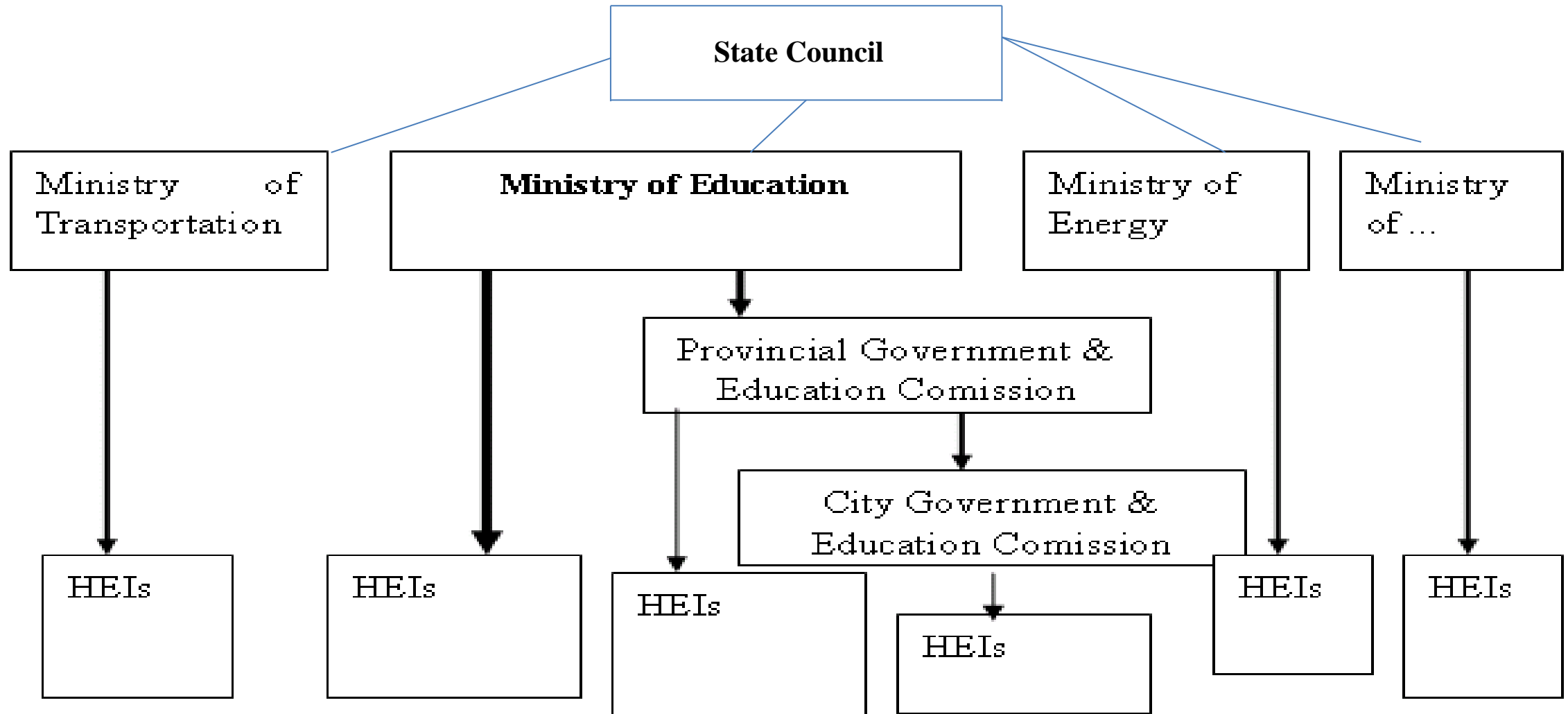
Career positions and
group tendencies

职业教育体系

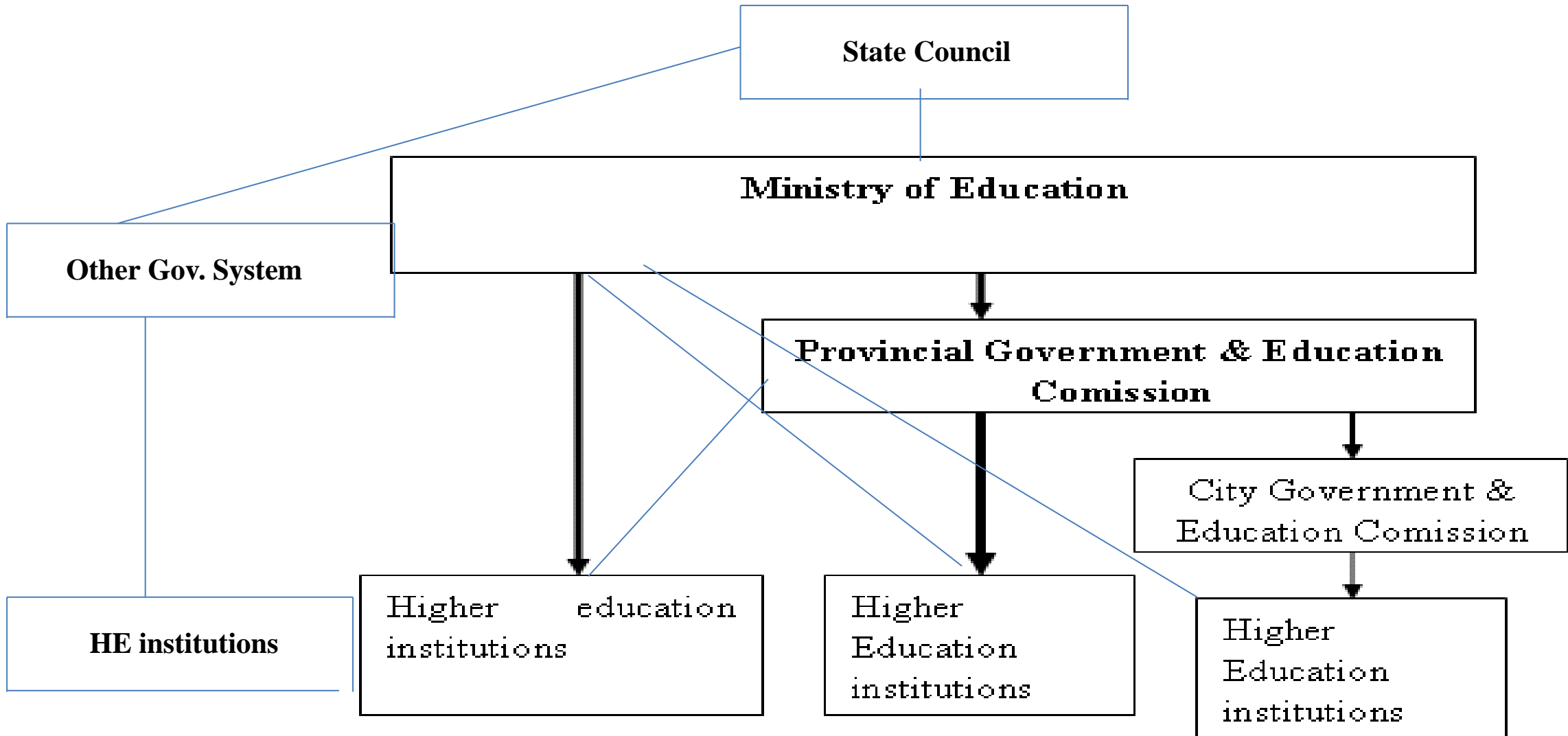
Personalized multi-
selection tendency

继续教育体系

Governance structure before reforms by the early 1990s



Governance structure after reforms in 1990s



Governance reforms 1 (1950s-1980s)

The central (national) government (Ministry of Education & other Ministries) assumed the responsibility for formulating higher education policies, allocating resources, exercising administrative controls, employing teaching and research staff, developing curriculum, choosing textbooks, recruiting students and assigning jobs to university graduates, ...

Governance reforms 2 (1990s)

- **Governance structure reforms at Macro Level**
- **Decentralization of administrative structure**
- **Structural reorganization of HEIs**
- **Diversifying financial sources for mass higher education**

Governance reforms 3

Structural Reorganization(1990s) : 4 models

- **Joint Construction** (共建) : Provincial authorities are invited to participate in the sponsorship and management of centrally controlled institution. By 1999, 200 institutions were involved.
- **Jurisdiction Transference**(转制) : Transferring affiliation signified a complete change from central ownership to provincial ownership. By 2002, 250 had been transferred from central ministries to local administration.
- **Institutional Amalgamation**(合并) : Mergers among HEIs are intended to consolidate small institutions into comprehensive universities. By 2002, 597 higher education institutions had been involved in mergers, resulting in 267 new institutions.
- **Institutional Cooperation**(合作) : This model can denote various kinds of cooperation between institutions of different jurisdictions and types, on a voluntary basis, with their financial resources remaining unchanged.

Governance reforms 4 (2000-2016)

Decentralization of higher education governance:

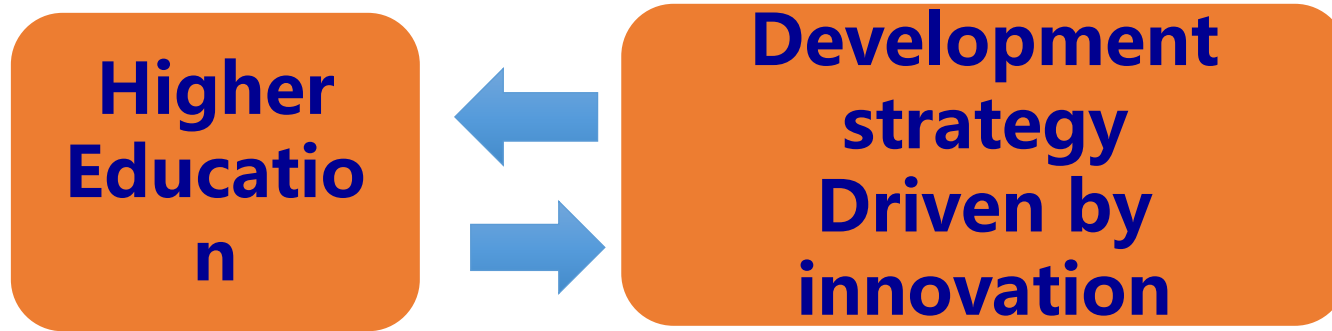
- **Enhance the role of provincial government in supervising and supporting the higher education institutions, implementing the coordination of administration between central and provincial governments.**
- **Further clarify the relationship between governments and institutions, enlarging the autonomy of higher education institutions to guarantee their independence as the legal and economic entities.**

Governance reforms 5

Major Achievements

- **A Large and Comprehensive system established, Largest system worldwide**
- **Enter the stage of Mass higher education**
- **Gradual Improvement on governance and regulations**
- **emerging Market-oriented mechanism for management**
- **Multiple-channel of financial sources: governments, clients, enterprises etc**

Reform of the Chinese Higher Education



**National Strategy:
First priority given to
Education and science /
technology**





“985工程”是我国政府为建设若干所世界一流大学和一批国际知名的高水平研究型大学而实施的高等教育建设工程。



“Project 211” (1995)

100 Univ. +



« Project 985 » (1998)

39 Univ.



Year 2015

« World-Class Universities & Disciplines Building Project »
« DoubleWorld First-Class Project »

43 Univ.

More than 100 Univ. +

狠抓教育教学改革——“1+N”



中华人民共和国教育部

Ministry of Education of the People's Republic of China



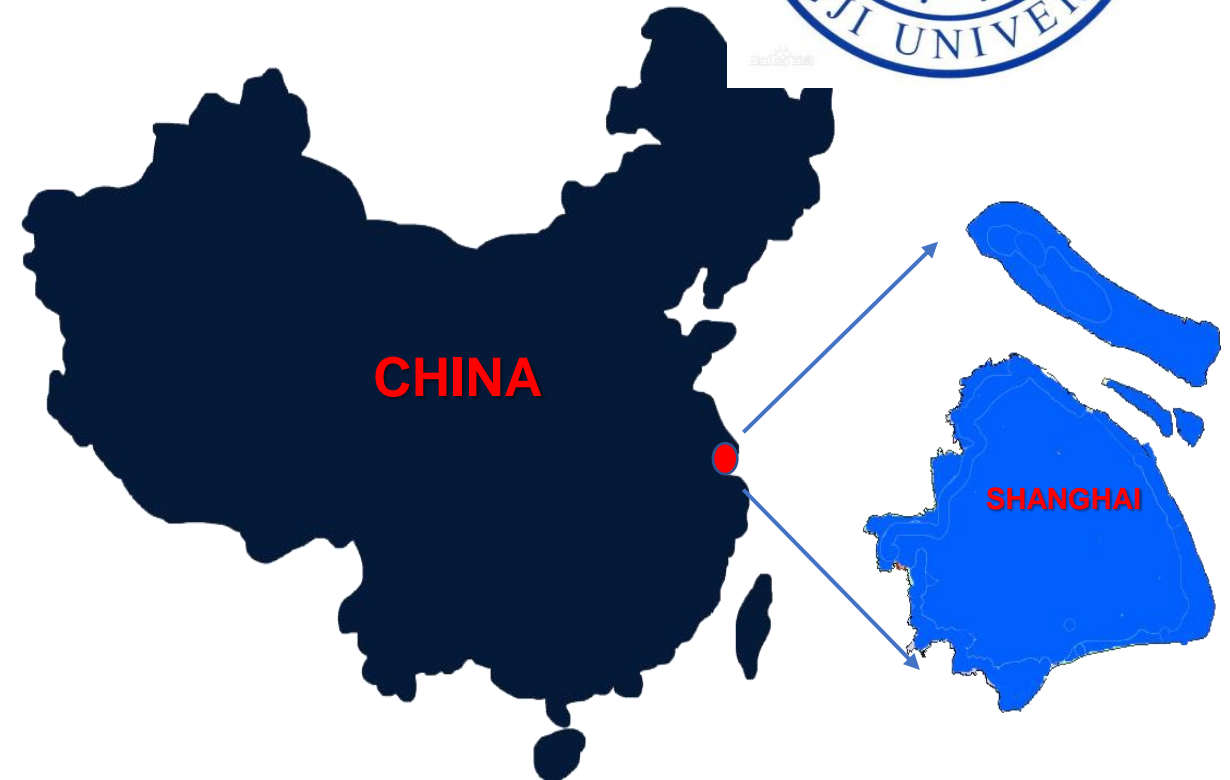
Contents

- 1. Context & Background**
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- 3. A Case : Tongji University**
- 4. Challenges & Oppotunities**

TONGJI University



- Located in Shanghai, China
- Established in 1907(Sino-German)
- “985” Project Univ.
- Comprehensive U with Engineering in the lead
- Excellency (education, research)
- Internationalization
- Innovation & Entrepreneurship

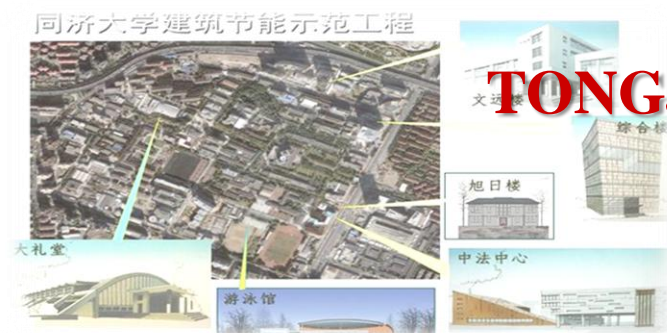
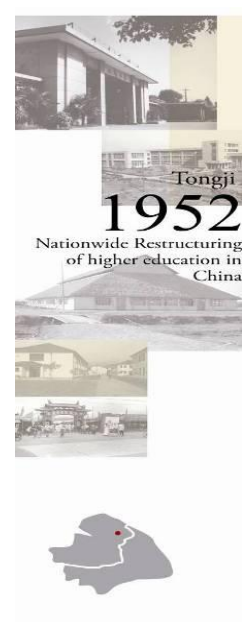
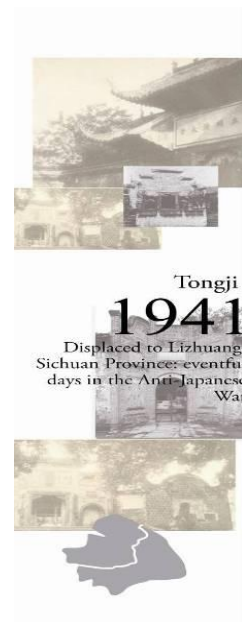
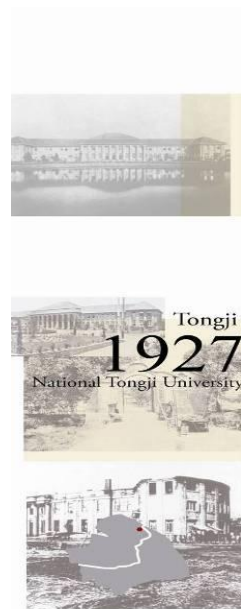
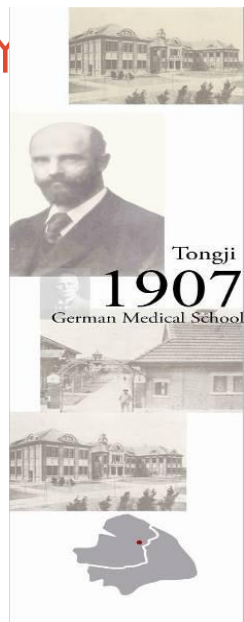


同濟

TONGJI UNIVERSITY

TONGJI IN HISTORY

Sustainable University



TONGJI TODAY



TONGJI IN THE FUTURE



Key Figures (2018)

35,809 **Students (full time)**

17,757 BA/BSc 12,852 MA/MSc 5,246 PhD

3,468 **International Students** (from **100+** countries and regions)

300,000 **Alumni**

2,814 **Teaching & Research Faculty** (1028 professors, 1029 associate professors)

209 **Degree Programs**

85 Bachelor' s programs 65 Master degree programs
34 PhD programs 25 postdoctoral stations

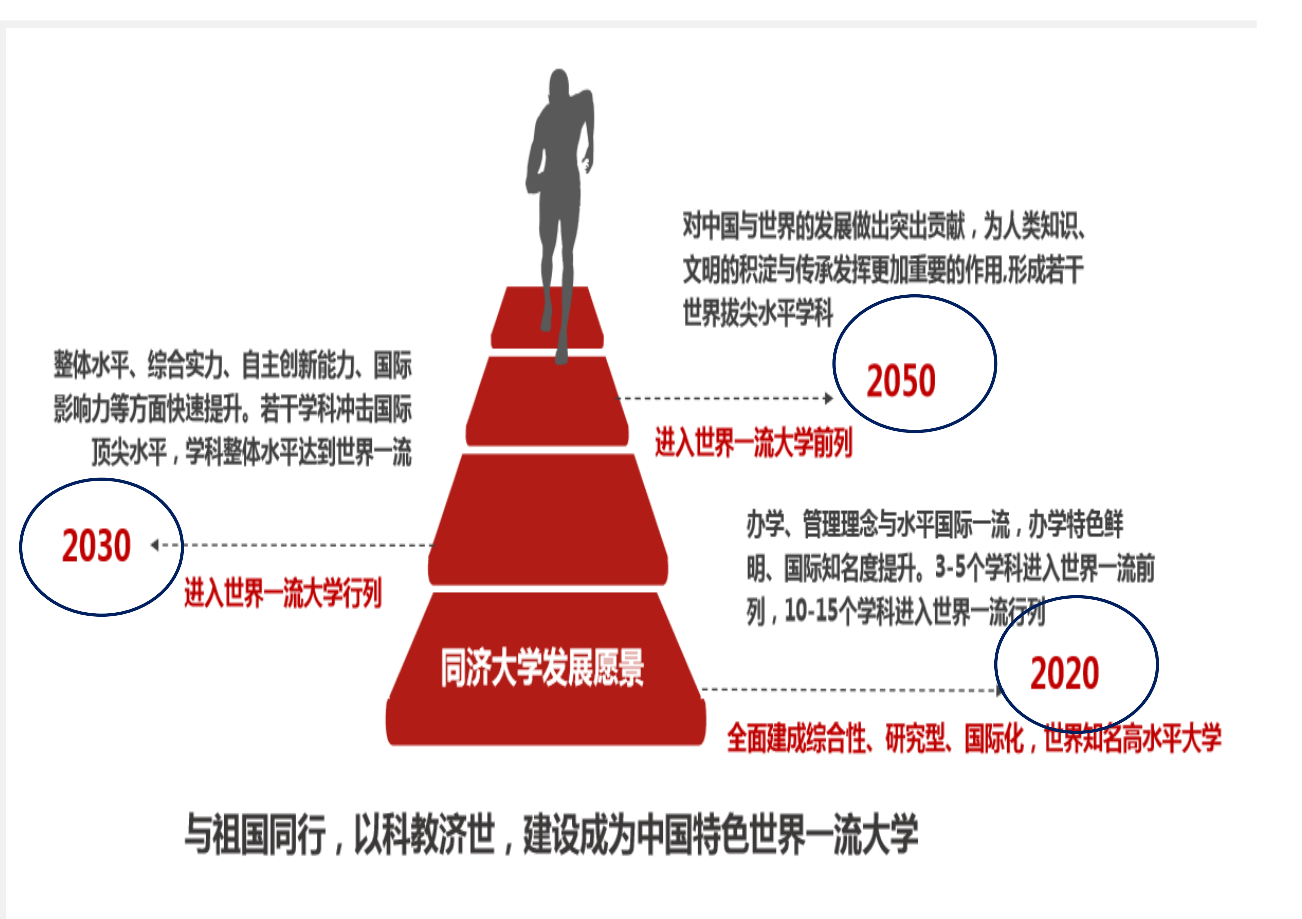
10 **Categories of disciplines** (science, engineering, medicine, economics, management, humanities, law, philosophy, education, art)

7 **Affiliated hospitals** (with 7656 beds)

64 **National, Provincial or Ministerial labs and research centers**

9 Billion (RMB) **Budget** (40% public, 60% industrial contracts)

Vision: World First Class University



**Top discipline in China
4th round national evaluation
(2017-12-28)**

Civil Engineering	A+
Urban Planning	A+
Environment Science and Engineering	A+
Management Science and Engineering	A+
Design	A
Architecture	A-
Landscape	A-
Traffic and Transportation	A-
Mathematics	A-
Mechanical Engineering (including Vehicle engineering)	A-
Computer Science and Technology	A-
Software Engineering	A-

**First-class
disciplines
(2017-09-20)**

Civil Engineering
Urban Planning
Environmental Science and Engineering
Art and Design
Architecture
Landscape
Surveying and Mapping

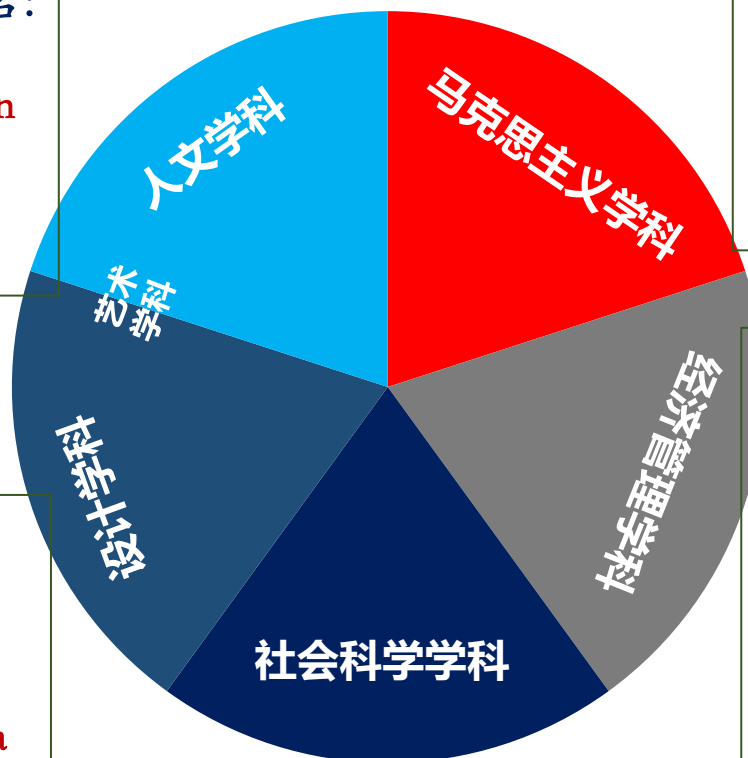
**Top 50 disciplines
in the world in QS Ranking**

	2017	2018
Civil Engineering	37	31
Architecture	20	18
Art and Design	26	18

Humanities & Social Sciences

- 全球大学“人文艺术”学术引用排名：
中国大陆高校第八
#8 of Universities of China (Mainland) in
the Ranking of Academic Citation in the
Subject of “Humanities & Arts”
(2019 THE)

- “一流学科”（国家认定）
First Class of Academic Discipline
“Design”
- “艺术设计”全球第14、亚洲第一
#14 in the World Ranking & #1 in Asia
(2019 QS)



- “社会科学总论”为ESI前1%
1% in the Subject of “Social
Sciences in General”
(ESI)

- 2019年初列入“全国重点马克思主义学院”考察对象；上海市重点马克思主义学科
Top Ranked Programs in the Studies of the
Socialism with Chinese Characteristics
(China's Central & Local Governments)

- “管理科学与工程” A+（教育部第四轮学科评估）
A+ Program of Management Science
& Engineering (China's Central
Governments)
- “工商管理”全球251-300、“经济学
与计量经济学”全球351-400
“Business Studies” “Economics &
Econometrics” : #251-351 in the World
Ranking
(2019 QS)

Education of Excellence (2018)



实施2018培养方案
设立新生院 (11个专业)

NEW

Undergraduate Education
Curriculum Development



入选“三全育人”
综合改革试点单位

1/10

One of Ten China's Top
Universities in Piloting
Comprehensive Reform in
Education of Excellence



获批学位授权
自主审核高校

1/20

One of 20 China's Top
Universities having the
Autonomy of Establishing
Degree Programs



QS2019全球毕业生
就业竞争力

大陆高校第 8

8 in China (Mainland)
in “Job Competitiveness”
in World Ranking
(2019 QS)

Examples of Research



DESIGN AND INNOVATION Reinventing the wheel

The Tongji University College of Design and Innovation has a reputation as



TRANSPORTATION Moving ever forward

TONGJI 110th ANNIVERSARY

ENVIRONMENTAL SCIENCE

Leading the way in clean and safe solutions

Environmentally sustainable development requires knowledge and innovation brought by basic research, cutting-edge technology and major engineering applications. The College of Environmental Science and Engineering at Tongji University strives to conduct research on environment and sustainable development while providing a high education standard for students. It owns important technologies with proprietary intellectual property rights

concerning wastewater treatment, solid waste treatment, materials and environmental remediation. These technologies have been applied to some major national projects, such as those designed to control pollution of the Taihu Lake and the Chaohu Lake. The college is also cooperating with the World Wildlife Fund (WWF) on low-carbon city and ecological protection in the Yangtze River basin.

Moreover, the college has developed technologies that can be used to optimize drainage systems; control pollution caused by run-off in cities in the Chaohu Lake basin; upgrade the processes of urban sewage treatment works; and build land-lake eco-zones to intercept pollutants in rivers flowing through cities. With expertise in a range of key technologies such as aquatic biological-ecological remediation, pre-oxidization and biological pretreatment, as well as ozone-activated carbon-UF membrane treatment, the college has effectively used the technologies to control the pollution in



rivers, treat sewage in urban areas, protect the safety of drinking water and improve rural environments. Treating underground and wastewater with nano zerovalent iron (nZVI) is at the frontier of research in ecological and environmental science.

The college has been an active player representing China in global environmental affairs. Since 2012, as the expert group leader on the China-UN-Africa Water Action programme, the college has been looking at problems facing the Nile, Lake Tanganyika and the Sahara. More than 100 teachers and students have gone to Africa to undertake projects to protect and improve drinking water in countries including Kenya, Ethiopia and Zimbabwe. They have built the Tongji University-Nairobi Lab for Safe Water Supply and provided training to more than 100 water treatment technicians in Africa.

In 2015, the college jointly released a white paper with the United Nations Environment Programme (UNEP). The paper, *UNEP-China-Africa Cooperation Programme: Enhancing the role of ecosystem management in climate change adaptation*, not only increases the college's





Tongji University

In the 110 years since its founding by German doctor Erich Paulun in Shanghai as a western-style medical school, Tongji University has developed into a comprehensive research-oriented university with a formidable reputation in China and internationally. In 2013, it set out a formal goal to become a research-oriented world-class university with a strong focus on sustainability.

Sustainability permeates the research and education programmes of Tongji. With a remit of fostering creativity and excellence in young people, Tongji University has integrated knowledge and capability in its

Thriving with the country for 110 years, and benefiting the society with science and education

of new energy vehicles, intelligent greenhouse control systems, spatial information technologies for remote sensing, ocean drilling and breakthroughs in molecular genetics, along with other medical and life science research achievements.

With a focus on the application of basic research, Tongji University's research results are widely applied, contributing to national infrastructure and transportation construction, earthquake and natural disaster prevention, environmental protection and other social developments. The university is also keen to explore new approaches for social services and has created a

A working model of sustainability science

Zhu Dajian, Han Chuanfeng, Zhang Chao (Institute of Sustainable Development and Management, Tongji University)

The establishment of a universally applied theoretical model is a hallmark of the maturity of a research field. Researchers of Tongji University have been developing such a model for sustainable development studies through years of exploration.

This proposed model is based on three key dimensions — the object, the subject, and the process.

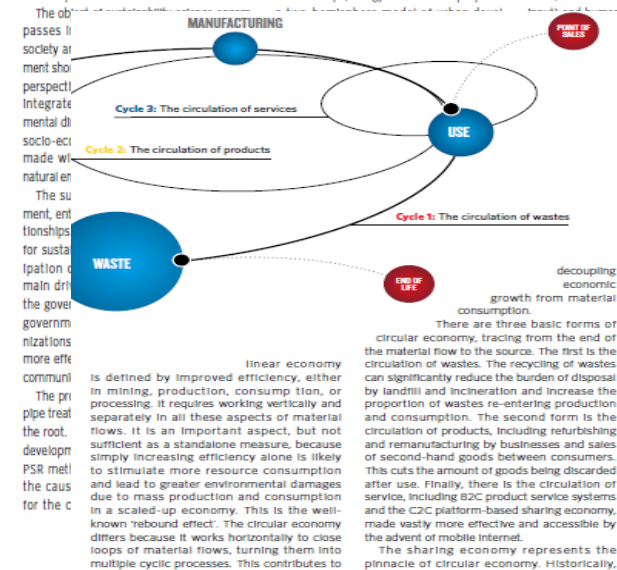
The object dimension of sustainability science is defined as encompassing the economy, society, environment and their relationships, Tongji researchers proposed

In response to either a state or outcome, or to pressure or causes. It is best to combine these factors to find a solution that addresses both causes and effects.

Object analysis and urban development

Given that the object dimension of sustainability science is defined as encompassing the economy, society, environment and their relationships, Tongji researchers proposed

coastal and inland cities in China need substantial improvement in the efficiency of sustainable development, measured by ecological footprint (the



THE THREE ADVANCED STAGES OF CIRCULAR ECONOMY

RAW MATERIALS

NATURAL RESOURCES

people have largely believed that a rich and comfortable life requires the ownership of goods and that greater ownership equates to a better life. The sharing economy, on the contrary, prioritizes the right to use rather than ownership. As consumers can use an item without owning it, consumption can be made more convenient, and superfluous production and possession of goods can be avoided. Under this system, it is possible to achieve better socioeconomic welfare without much resource consumption and to delink the two, as sustainable development requires.

Subject analysis and inter-organizational interface management

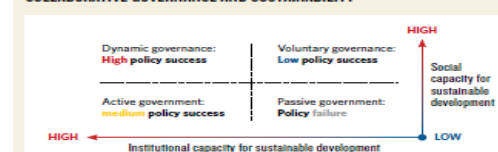
The subject dimension of sustainability science promotes strengthening inter-organizational communication as the key to sustainable collaborative governance. Several processes and methods could be used by organizations to manage interactions.

Sustainable development depends on the diversification of various organizations and their capacity for collaboration. Without interface management and collaborative governance, separate organizations will not contribute to sustainable development, no matter how developed and diverse they are.

The general approach to improving interface management requires going beyond the traditional single-sector model and ensuring participation of both internal and external stakeholders. Stakeholders should be involved in discussion about issues important to organizations and society, focusing on finding the common ground. And priority issues should meet the "triple bottom line" of sustainable development from the common ground of internal and external stakeholders. These should form the basis of an integral management process including planning, implementation and evaluation.

On the road to sustainable development, government, enterprises, social organizations and the public generally have three levels of responsibilities according to their interrelations with one another: the core responsibility, cooperative responsibility, and volunteer responsibility. To achieve collaborative governance needed for sustainable development, any organization needs to adhere to its core responsibility and to cooperate with relevant organizations, while taking on volunteer responsibilities when

COLLABORATIVE GOVERNANCE AND SUSTAINABILITY

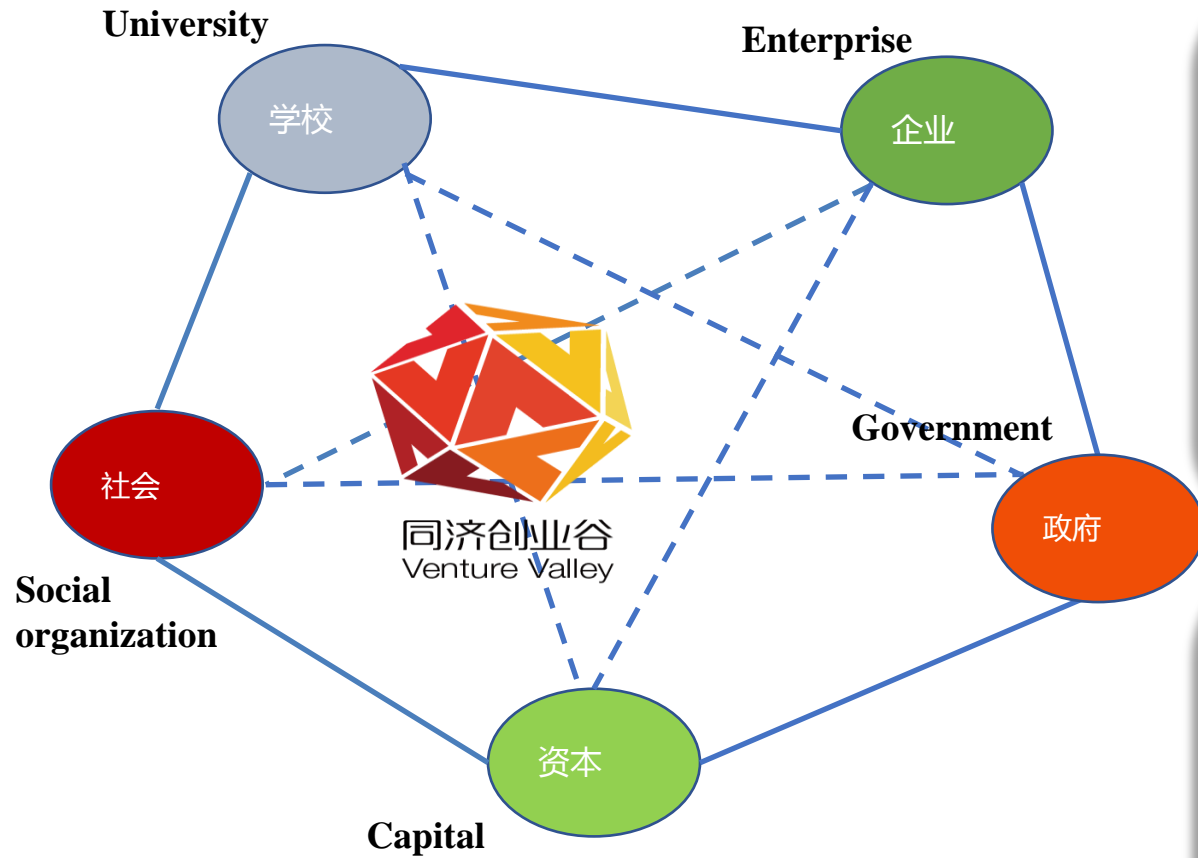


Social Service

Support For National Projects

- **Master Plan Design for 2010 Shanghai Expo**
- Bird Nest of 2008 Peking Olympic Games
- Yangshan Deep-water Harbor
- Backbone for the innovation of China' s Clean-energy vehicle development
- Large-scale biological processing of source water
-





同济创业谷 Tongji Venture Valley



同济知识经济圈

Tongji Knowledge-Economy Ring



- The most effective design valley in China
- 2.6 sq.km. core area
- 2000+ enterprises
- 42.7 Billion RMB Sales Volume (2018)

Better internationalization Will improve the quality of development.



Better Internationalization

- Integrating quality foreign resources into teaching and research
- Carry out co-training of talents and joint scientific research
- Strengthening international co-innovation
- Creating a better international environment
- Participate in the development of international rules, international assessment and accreditation
- ...

International Cooperation

- **200+ 国际合作伙伴高校**
International partners
- **10 国际合作平台**
International Cooperative Platforms
- **100+ 双学位合作项目**
Double Degree Programs
- **400+ 英语授课课程**
Courses taught in English
- **14 英语授课专业 (本2硕9博3)**
English taught programs (2 Bachelor, 8 master, 3 PhD)
- **国际科研合作 (项目、实验室、研究中心等)**
Joint Research (projects, labs, research centers, etc.)

10 + International Cooperation Platforms

1 Sino-German Institute for Master's level training (CDHK)	1998
2 Franch-Chinese Institute of Engineering and Management (IFCIM) * Platform for cooperation and exchanges with France and La Francophonie)	1999
3 UNEP-Tongji Institute for the Environment for Sustainable Development (IESD)	2002
4 Sino-German Institute for Applied Sciences (CDHAW)	2004
5 Sino-Italian Campus / Sino-Italian Campus (SIC)	2006
6 UNESCO Institute for Training and Research on the World Heritage in Asia-Pacific (WHITRAP)	2007
7 Sino-Finnish Center / Sino-Finnish Center	2011
8 Campus Sino-Spanish * Platform for cooperation and exchange with countries where Spanish is spoken	2012
9 Shanghai International Design and Innovation Institute (Shanghai D & I)	2016
10 Shanghai International Intellectual Property Institute	2016

14 International Programmes

1. International Bachelor of Medicine & Bachelor of Surgery (MBBS)
2. Tongji-UNSW Dual Bachelor Degree in Architecture * *Cooperation with UNSW (Australia)*
3. International Master's Degree Program in Environmental Assessment and Integrated Management in Urban Areas * *Cooperation with UNEP*
4. International Master's Degree Program in Environmental Engineering * *Cooperation with UNEP*
5. International Master's Degree Program in Environmental Management and Sustainable Development * *Cooperation with UNEP*
6. International Master's Degree Program in Enterprise Management
7. International Master's Degree Program in Software Engineering
8. International Master's Degree Program in Structural Engineering
9. International Master's Degree Program in Transportation Engineering
10. International Master's Degree Program in Intellectual Property * *Cooperation with WIPO*
11. International Master's Degree Program in Transportation Engineering (railway) * *Cooperation with ENPC (France) and CRRC (China)*
12. International PhD Program in Environmental Management and Sustainable Development * *Cooperation with UNEP*
13. International PhD Program in Civil Engineering
14. International PhD Program in Transportation Engineering

Major Trends of Internationalization of China's Higher Education

University World News
THE GLOBAL WINDOW ON HIGHER EDUCATION

Issue 00428
23 September 2016
Register to receive our free newsletter by email each week

CHINA
Breathtaking scale of higher education internationalisation
Robert Coelen and Jiang Bo 15 July 2016 Issue No:422

University World News
THE GLOBAL WINDOW ON HIGHER EDUCATION

Issue 00363
22 April 2015
Register to receive our free newsletter by email each week

CHINA
'Fast track' to internationalisation
Jiang Bo and Robert Coelen 09 January 2015 Issue No:349

The shape, speed and content of internationalisation of higher education in China will depend on a number of factors, including, for example, the level of commitment from the highest ranks in government, the interest of foreign students and the nature of the motivation within higher education institutes throughout the country.

If the volume of the discussion has anything to do with it, you cannot escape the conclusion that in China internationalisation of higher education is on a fast track. In just the last weeks of 2014 there were big and small conferences on the subject.

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University World News
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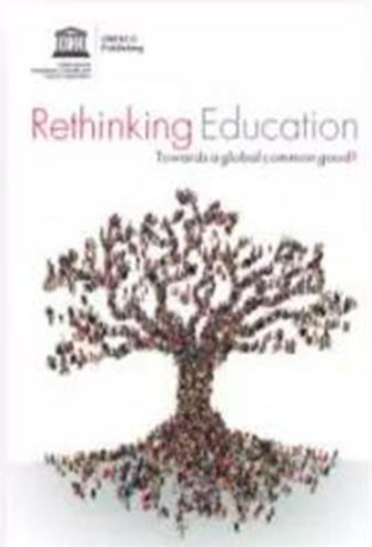
This Week
NEW HORIZONS IN INTERNATIONAL EDUCATION

China's Higher Education Internationalization on the Fast Track

Contents

- 1. Context & Background**
- 2. Higher Edu. Governance**
- 3. A Case : Tongji University**
- 4. Challenges & Oppotunities**

Challenge



UNESCO, 2015

The world is changing – deep transformation, new forms of education, competencies, today and tomorrow

世界正在变化 - 教育也必须改变。世界各地的社会都在经历着深刻的变革，这就需要新的教育形式，以培养当今和未来社会和经济所需要的能力。



MIT, 2018

Rapid and fundamental change, most highly-rated programs, emergence of new players, future benchmark for excellence

工程教育进入了**快速和根本性变革**时期，最好的工程教育不限于世界一流研究型大学和小而精学校，新的竞争者将为未来优秀工程教育建立新的标准。

Challenge



克劳斯·施瓦布：深刻的转变！

- **大趋势**：技术和数字化在改变一切，第四次工业革命（The Fourth Industrial Revolution）的速度之快、范围之广、程度之深前所未有
- **大机遇**：物理、数字、生物世界的跨界融合，人工智能、机器人等一系列新兴突破技术涌现
- **大挑战**：新的商业模式出现
现有商务模式**被颠覆**
生产、消费、运输和交付体系**被重塑**

Challenge

美洲在行动、欧洲在行动、亚洲在行动、澳洲在行动.....



斯坦福大学2025计划：
开环大学、自定节奏、
有使命的学习等（2015）



佐治亚理工学院：开创未来
教育行动(Creating the Next
in Education, CNE, 2018)



麻省理工学院：新工
程教育转型计划
（NEET, 2017）



伦敦大学学院：综合工程项
目（Integrated Engineering
Education , IEP, 2018 ）

Challenge

Global Comparison : “Gross Enrollment Rate” at all Levels of Education

① High Level: >90%

② Middle Level: 80-89%

③ Middle & Low Level: 60-79%

④ Low Level <60%

<i>forecast of 2020</i>		<i>All levels of Edu.</i>	<i>Primary</i>	<i>Junior</i>	<i>High</i>	<i>HE</i>
①	North Am. & W. Europe	96	103	106	99	77
	Central & E. Europe	87	100	95	83	68
②	Latin Am. & the Caribbean	83	112	101	77	42
	Central Asia	81	100	97	102	24
	China	78	104	100	84	26.9
	E. Asia & Pacific	75	111	90	70	30
③	Arabic Countries	66	99	88	52	23
	W. & S. Asia	63	110	76	47	18
	Sub-Saharan Africa	48	101	49	32	8
	Average of All Countries	75	105	88	70	36

2020

2010

2000

Challenge

China's higher education facing with challenges

1. Scale & Quality
2. Balance & Equity
3. Issues in Macro Restructuring & Reform
4. Issues in Micro Reform & Development
-
8. Governance & Management

Challenge



West Area:
64% of Land 4% of Population

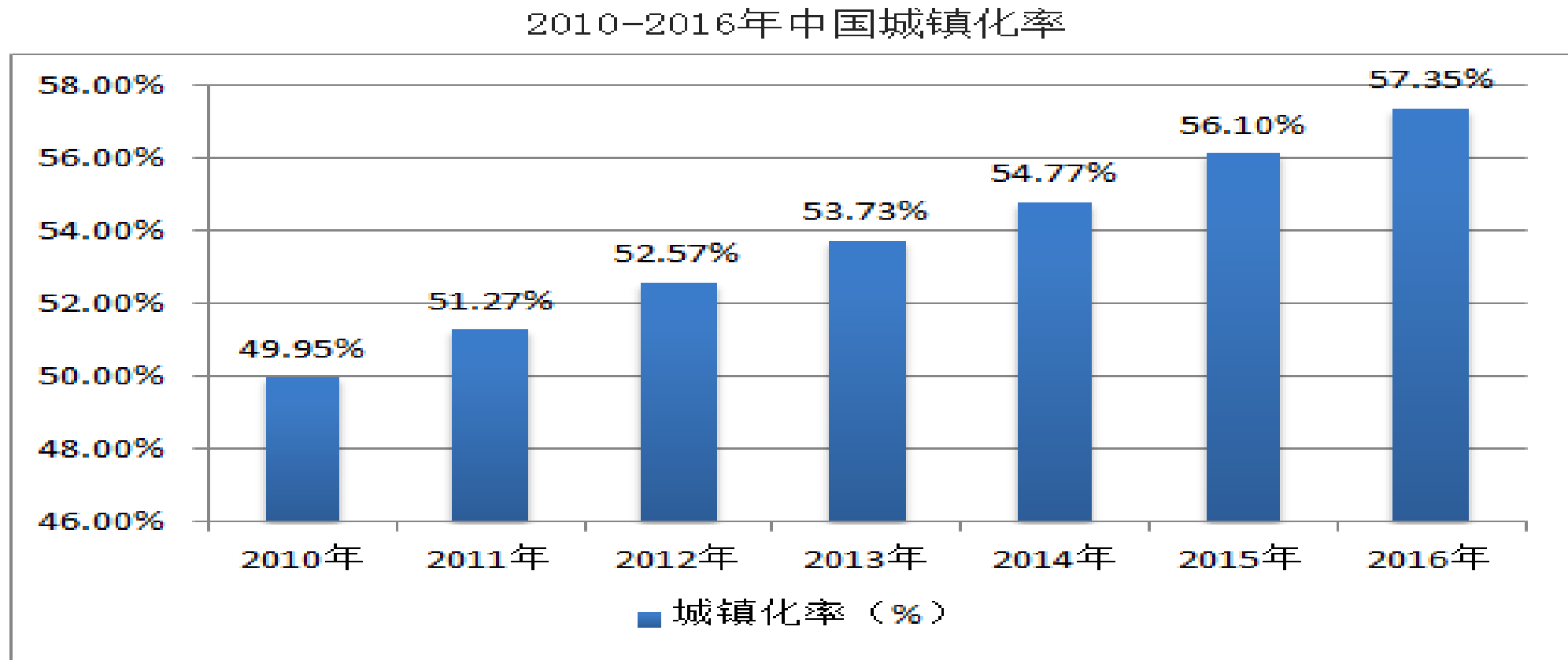
East Area:
36% of Land 96% of Population

***Hu Huan Yong
Line***

Unbalanced development of East & West

Challenge

China 's urbanization rate : from 18% (in 1978) to 57% (in 2016)





In today 's world, economic globalization and information socialization brought about by the commodity flow, information flow, technology flow, talent flow, cultural flow, such as the Yangtze River water, can not be blocked.

A country opening to the outside world must first promote the opening up of people, especially the opening up of talents.

If people's minds are locked up and their hearts are closed, there can be no real opening to the outside world.

China has insisted on opening its doors to carry out construction and has achieved a great historical turning point from a closed semi-closed to an all-round opening. Openness has become a distinct symbol of contemporary China. China's ever-expanding opening to the outside world has not only developed itself, but also benefited the world.

To further expand the opening , China will step up its push in the broader areas.

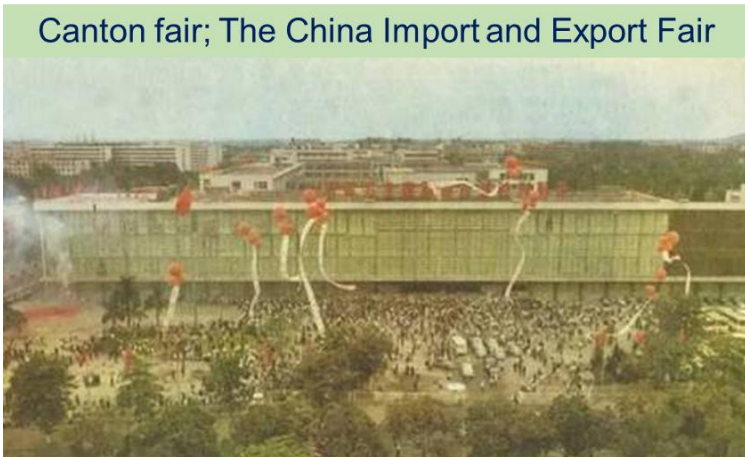
Building a Community of Shared Future for Mankind



- We will actively expand the convergence of interests with all parties, establish and develop different levels of interest community with different countries and regions, and promote the realization of the common interests of mankind.
- Promote the building of a community of shared responsibilities and multiple responsibilities among major countries.
- Committed to the establishment of a community of destiny with neighbouring countries and African countries.
- China is known as the world ideal, the world's thoughts are endless, the harmonious world followed in the former, the human destiny community innovation after.



进博会 (2018)



广交会 (1970s)



Belt & Road Initiative

Belt & Road is short for the Silk Road Economic Belt and the 21st Century Maritime Silk Road. The Belt & Road actively develops economic cooperative relations with countries along the route, and jointly builds a community of interests, a community of destiny and responsibility for political mutual trust, economic integration, cultural inclusion.



Principle Guidelines

坚持立德树人——统领

Whole Person Development

提高教育质量——主线

Quality is the Key

促进教育公平——重点

Equal Opportunity

深化综合改革——动力

Reform

推进依法治教——保障

Rule by Laws

促进教育治理体系和治理能力现代化——方向 Modern Governance

加快教育现代化，建设教育强国 Modernization & Education

Thank you for your attention!
Welcome to Tongji University!
Welcome to Shanghai, China!



Dr. JIANG Bo
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www.tongji.edu.cn

从“跟跑”到“并跑”“领跑”

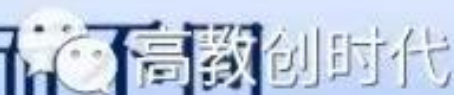


中国成为《华盛顿协议》第18个正式成员



1. 一个里程碑：从跟随模仿到比肩而行
2. 一张通行证：中国高等工程教育毕业生走向世界
3. 一套新标准：国际实质等效的中国高教质量标准
4. 一张入场券：中国工程师国际资格认证和流动
5. 一个新声音：国际质量标准、规则制定的中国声音
6. 一个新跨越：从高等教育大国向高等教育强国的历史跨越

理念同频共振、标准实质等效、模式和而不同



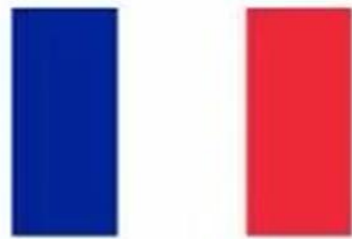
我们准备好了吗？



工业4.0



工业互联网战略



新工业法国



制造白皮书



创新驱动发展



瑞士：创新之国

- 政府、企业、创业孵化园合力打造极具活力的创新生态系统
- 高质量的高等教育
- 严格保护知识产权
- 给予创新企业较高税务优惠
- 金融市场充满活力
- 集聚世界各地顶级人才



教育毛入学（园）率国际比较（单位：%）

Country/Country Group 2012 data	Preschool education Gross entry rate	Primary school junior high school teaching growth enrollment rate	High school teaching growth enrollment rate	Higher education admission rate
World Average	53.7	110.0	61.7	32.1
High-income countries	86.3	100.0	98.5	75.1
OECD member countries	82	--	91.9	70.8
Middle- and high- income countries	69.2	103.9	75.9	33.9
Low- and middle- income countries	49.5	108.2	51.5	22.8
China 2012	64.5	104.0	85.0	30.0
China 2016	77.4	~104.0	87.5	42.1
Projected 2020	85.0	--	90.0	50

