

# Affirmative Action or Stratification: Chinese Financial Aid System at Crossroad

Po YANG

Peking University/China Institute for Education Finance Research

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# OUTLINE

- Motivation: Tertiary expansion and higher education finance
- Expansion and student aid: Economics perspective
- Federalism in higher education and response to expansion
- Evolution of US and Chinese student aid system
- Missing target: Policy impact

# Key challenges

- **Prior economics analysis focuses on impacts of student aid (graduate debt)**
- **Lack of analysis of changes of student aid system and sources of variation**
- **Lack of analysis of responses of student aid system to tertiary expansion, even though high participation system research shows expansion influences governance, horizontal diversity, vertical stratification, equity, and society (Cantwell, Marginson, Smolentsev, forthcoming)**

# Key questions

- Purpose of this study is to investigate interaction among division of higher education duty, higher education governance, and finance
- It intends to address how tertiary expansion shapes the configuration of current student aid systems
- and how expansion is enlarging rather than mitigating stratification

# Conclusion

- **Global tertiary education expansion has shaped the configuration of current student aid system**
  - Tertiary expansion brings huge fiscal pressure
  - Countries under various types of federalism in higher education response differently to such fiscal pressure
    - Decentralization or cooperation between governments
    - Use of cost-sharing policies
  - General trend towards revenue diversification and cost-sharing (resource mobilization); towards performance-based funding (institution funding); towards high-fee and high-aid system; towards outcome-oriented and decentralized system

# Conclusion

- **Evolution of national student aid systems implies tacit government action to reduce fiscal pressure related to tertiary expansion**
  - As tertiary system moves towards phase, use of tuition fees increases; coverage of grants and scholarships is shrinking; use of student loan and market loan is increasing
  - Degree of subsidization decreases, more conditions put on aid programs; low-subsidy aid programs grow at the expense of high-subsidy aid
  - Recent changes of student aid policies reduce fiscal pressure on government, but adding attendance costs for students—paying tuition, receiving financial aid with less subsidy

# Conclusion

- **Response of student aid system to tertiary expansion is enlarging rather than mitigating n stratification**
  - In the process of rapid tertiary expansion, China's student aid system is incapable of coping with the growing financial needs
  - Targeting is distorted by student ability sorting and concentration of resources in elite institutions
  - Student aid in expanding tertiary systems tends to reinforce rather than minimize stratification

**Motivation: Tertiary expansion and higher education finance**



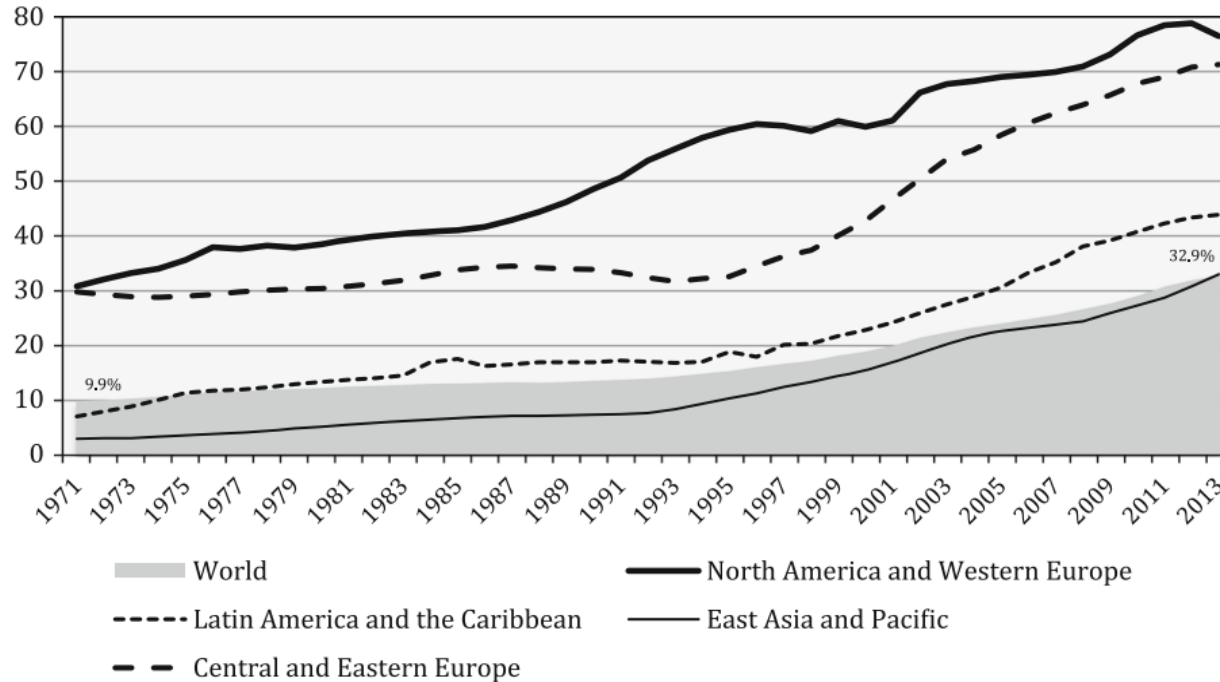
## **Point 1**

**world-wide tertiary expansion has brought about huge fiscal pressure on government, especially for central government**

# Higher education expansion and fiscal pressure

## Increasing fiscal pressure due to expansion

- Gross tertiary enrollment ratio (%) (Margionson, 2016, Figure 1)

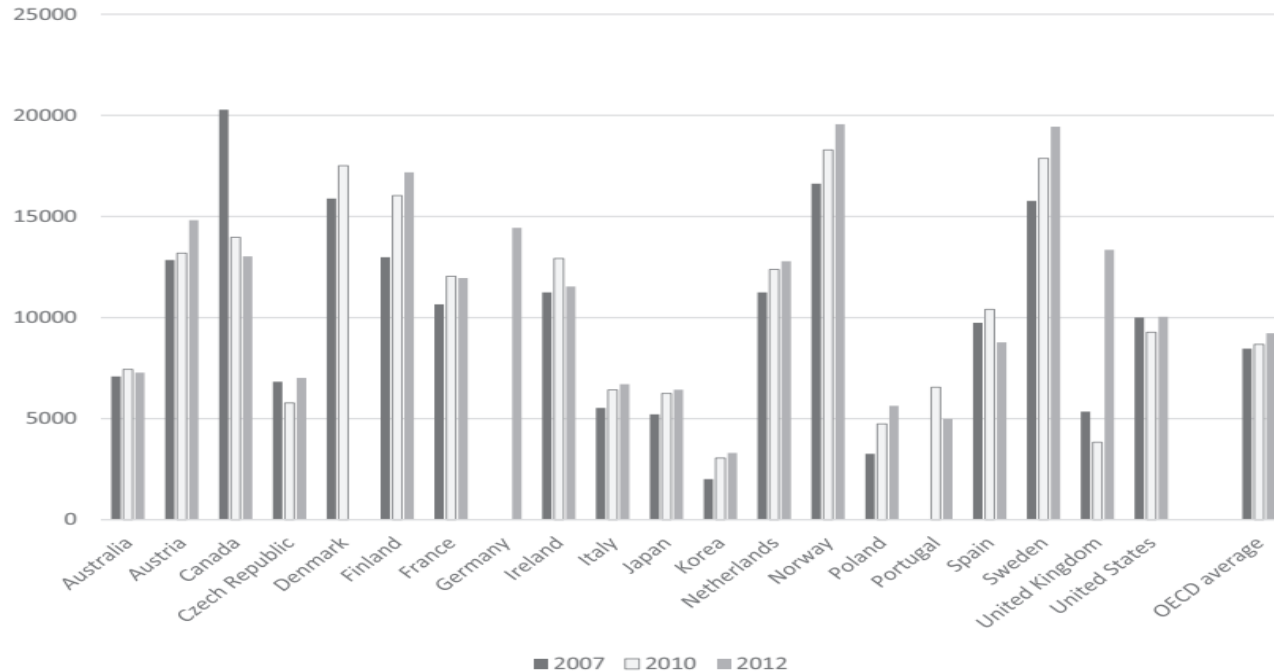


Increasing number of students supported by public subsidy

# Higher education expansion and fiscal pressure

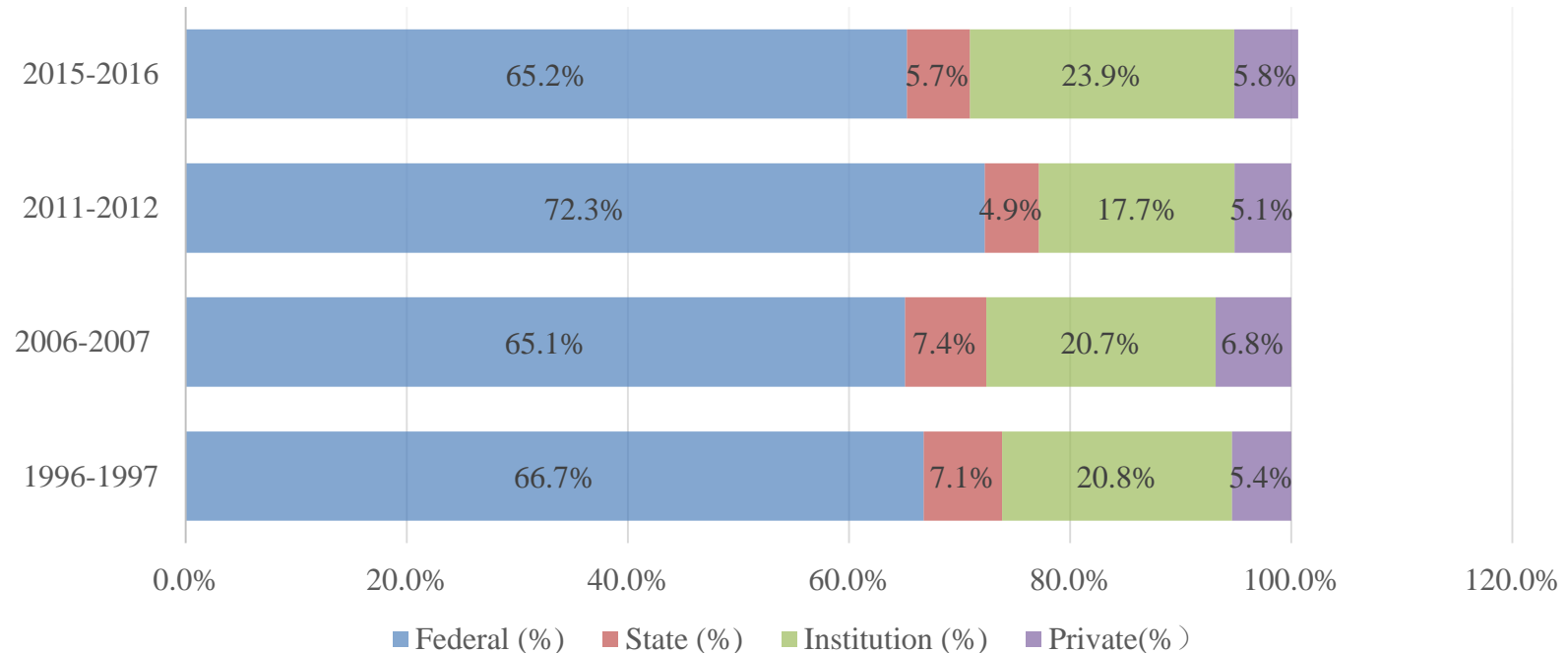
## Increasing fiscal pressure due to expansion

- Annual public expenditure per student (Jongbloed and Vossensteyn, 2016, Figure 3)



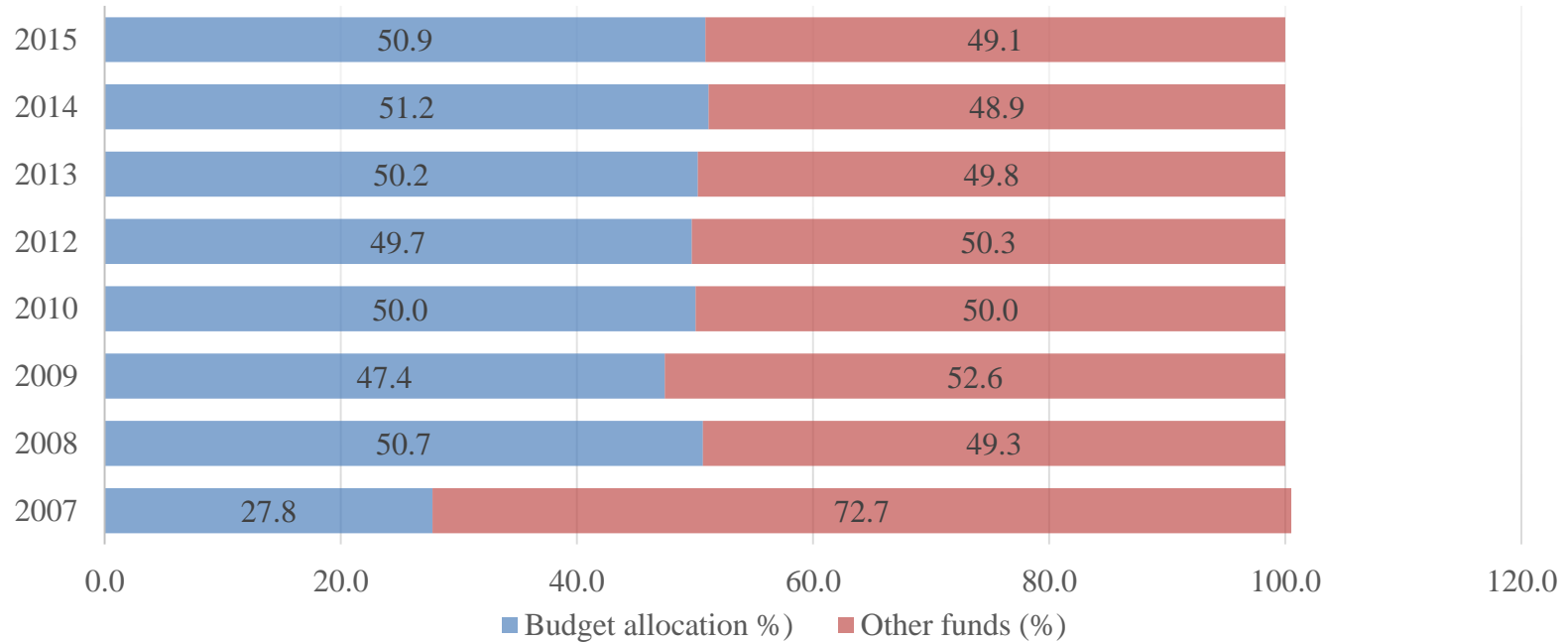
Increasing public expenditure per student: \$8000-9000 per student per year

## USA: Total Undergraduate Student Aid by Source, 1996-97 to 2015-16, Selected Years



Source: The College Board, Trends in Student Aid 2017, Figure 2.

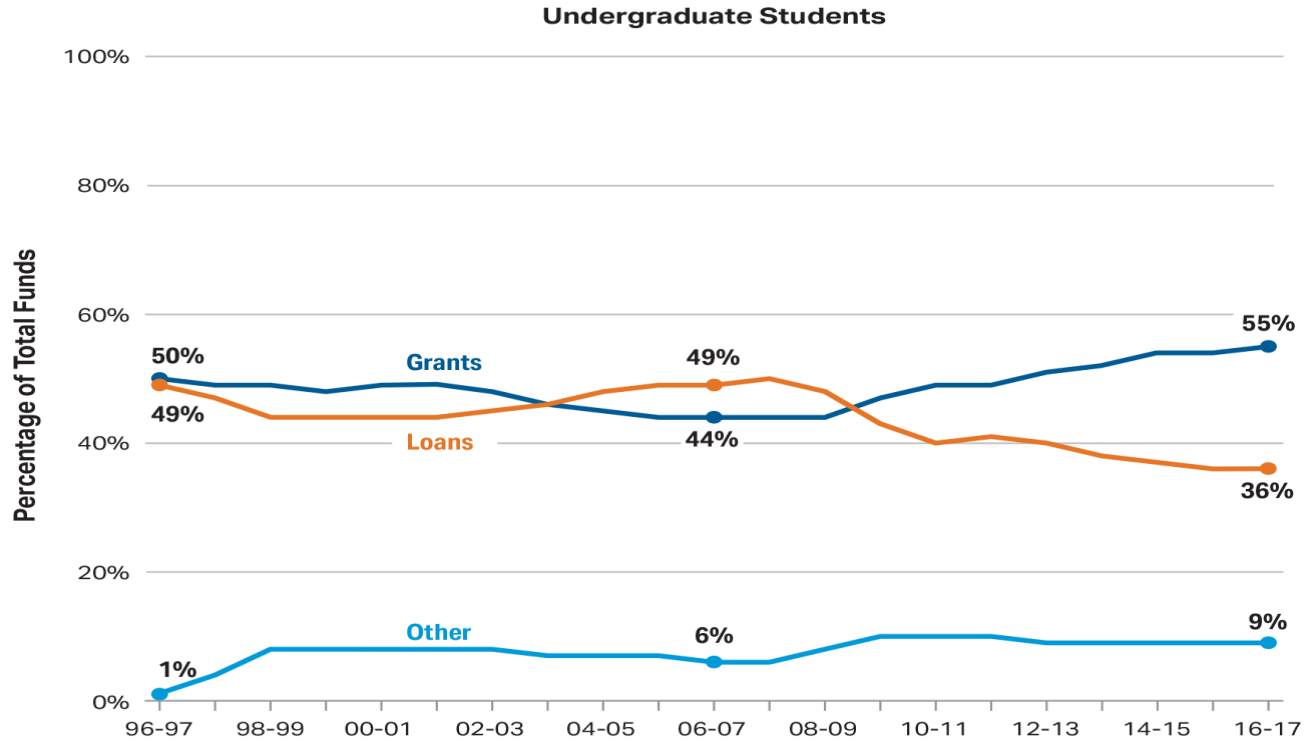
## China: Total College Student Aid by Source, 2007-08 to 2015-16, Selected Years



## **Point 2**

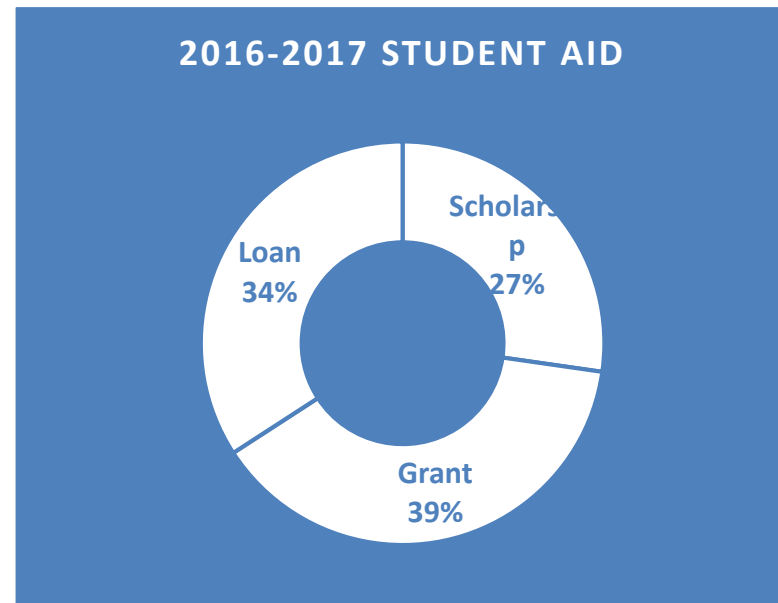
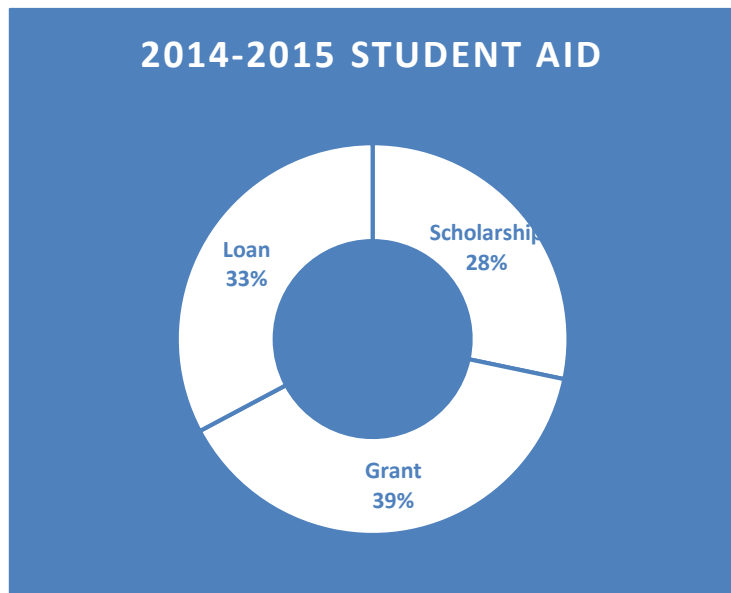
**Significant change in structure of student aid system:  
unconditional high-subsidy aid (e.g. grant) is replaced  
by conditional low-subsidy aid (e.g. loan)**

# USA: Composition of Total Aid and Nonfederal Loans, 1996-97 to 2016-17



Source: The College Board, Trends in Student Aid 2017, Figure 5.

## CHINA: Composition of Total Aid, 2016-17





# **Expansion and student aid: Economics perspective**

## **Point 1**

- In different phases of HE development, the nature of HE changes, so does the way government supports HE**
- When higher education moves from individual good worthy good, HE funding model also changes**

# Trow's three phases of higher education

- Trow (1973) definition
  - Elite system: Less than 15% of school leaver age group in higher education
  - Mass system: 15-50%
  - Universal system: Over 50%
- Marginson (2017)
  - High-participation system: Over 50%
  - Higher education becomes preeminent social differentiator and allocator
  - Maintaining a higher education system is one of the core duties of state, like airports and roads, clean water → social infrastructure

Different approaches to public/private

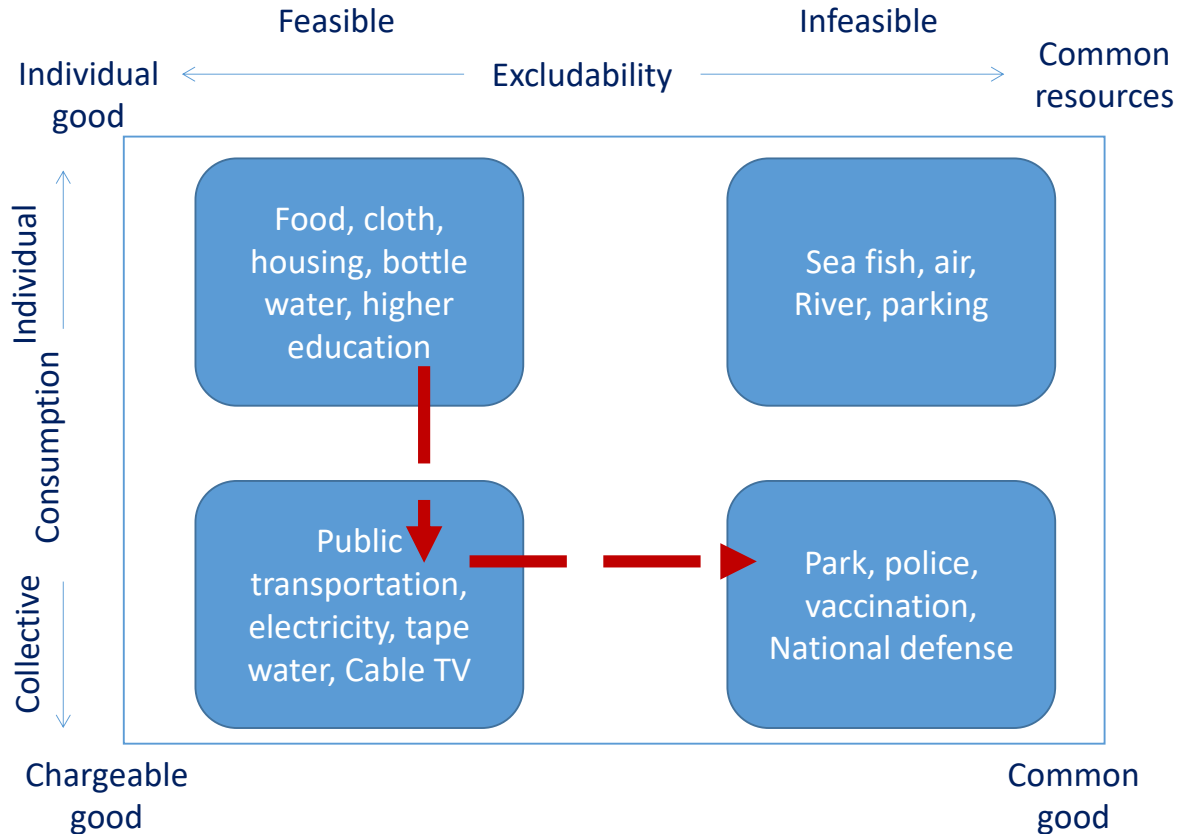
# Public choice definition of 'public'

e.g. by James Buchanan

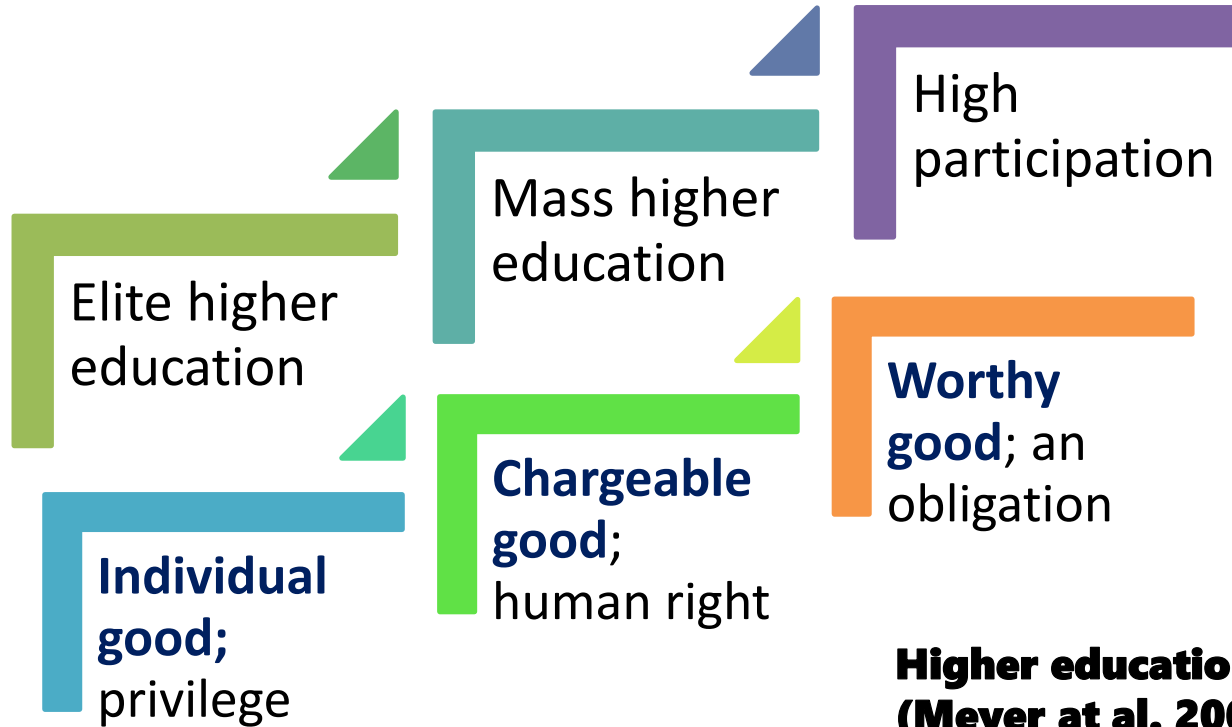


- Public choice refers to the way in which people decide the demand for and the supply of public good through democratic political process
- Political willingness and fiscal feasibility determine the border of public and private good

# Degree of excludable and consumption



# Trow's three phases of higher education



**Higher education as institution (Meyer at al. 2005); as social infrastructure (Marginson, 2017)**

## **Point 2**

- Elite phase: HE as individual good or club good; market provision in terms of charging tuition as user fees; or government provision in terms of free HE with living subsidy**
- Mass phase: HE becomes chargeable goods and government introduces cost-sharing policy; and government subsidizes institutions and students**
- High participation phase: HE becomes worthy good, government can directly subsidize students or private providers, or provide HE services. Extensive use of cost-sharing and alternative HE services such as online provision**

# **Federalism in higher education and response to expansion**



## **Point 1**

- Division of higher education duty is determined by central-local relation in a particular country**
- In federal countries, nations adopt competitive or cooperative federalism in higher education**
- In non-federal country like China, central government adopts Commanding Heights Strategy**

# Federalism and higher education governance

- **Competitive federalism model**
  - Clear division of administrative duty between national and subnational government in higher education (as in U.S.A)
    - **Higher education is mainly the responsibility of state governments and federal government provides supplementary support**
    - **States are responsible for regional tertiary institutions' operating budgets; approval of new institutions; quality assessment; planning and coordination and the regulation of tuition fees**
    - **States are able to fulfil these functions because of their budgetary autonomy and a good match between administrative duty and rights to fiscal revenues**
    - **Federal government often offers financial support for research and student aid**

Wang, R. & Yang, P. (Forthcoming) China: The "Commanding Heights" Strategy Revisited. In Carnoy, M., Froumin, I., Leshukov, O., Margionson, S., et al. Higher education in federal countries: a comparative Study. Sage Publication India.

Trow, M. (1993) Federalism in American Higher Education.

# Federalism and higher education governance

- **Cooperative federalism model**
  - Shared governance and responsibility (in Germany)
    - **State (Länder) governments are in charge of higher education legislation, supervision and finance**
    - **In areas requiring nationwide coordination, there are two types of coordination—interstate and between federal and state governments. The areas of coordination are wide, including access and admission, accreditation, funding for research, funding for temporary policy areas and international activities**
    - **Federal–state coordination is inevitable and plays a relatively strong role. This relates to the constitutional belief in homogeneity of living conditions which requires equal access to tertiary education across regions**
    - **Federal government can utilize largescale intergovernmental transfers for regional equalization**

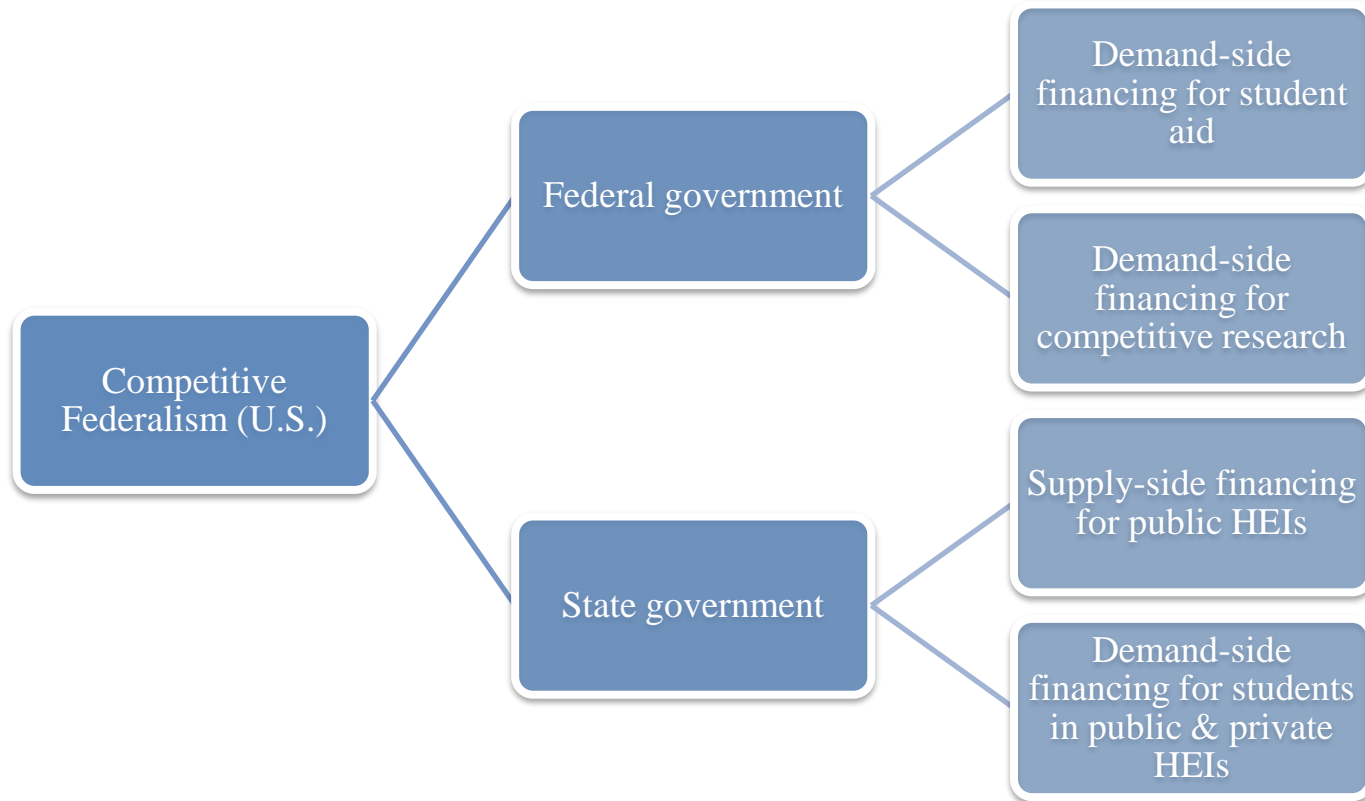
# Federalism and higher education configuration

- **Commanding Heights model**
  - Unified leadership, decentralized management (in China)
    - **Central government has claimed its rights to the most important elements of its tertiary sector in two ways—directly managing the commanding heights of the institutional hierarchy and controlling the commanding heights of mechanisms of intervention (Wang 2014)**
    - **Central authority has kept control over elite research universities and key resources for higher education development, while loosening its grip on the mass of higher education institutions and decentralizing them towards local governments**
    - **Political and personnel centralization, governance and finance decentralization**

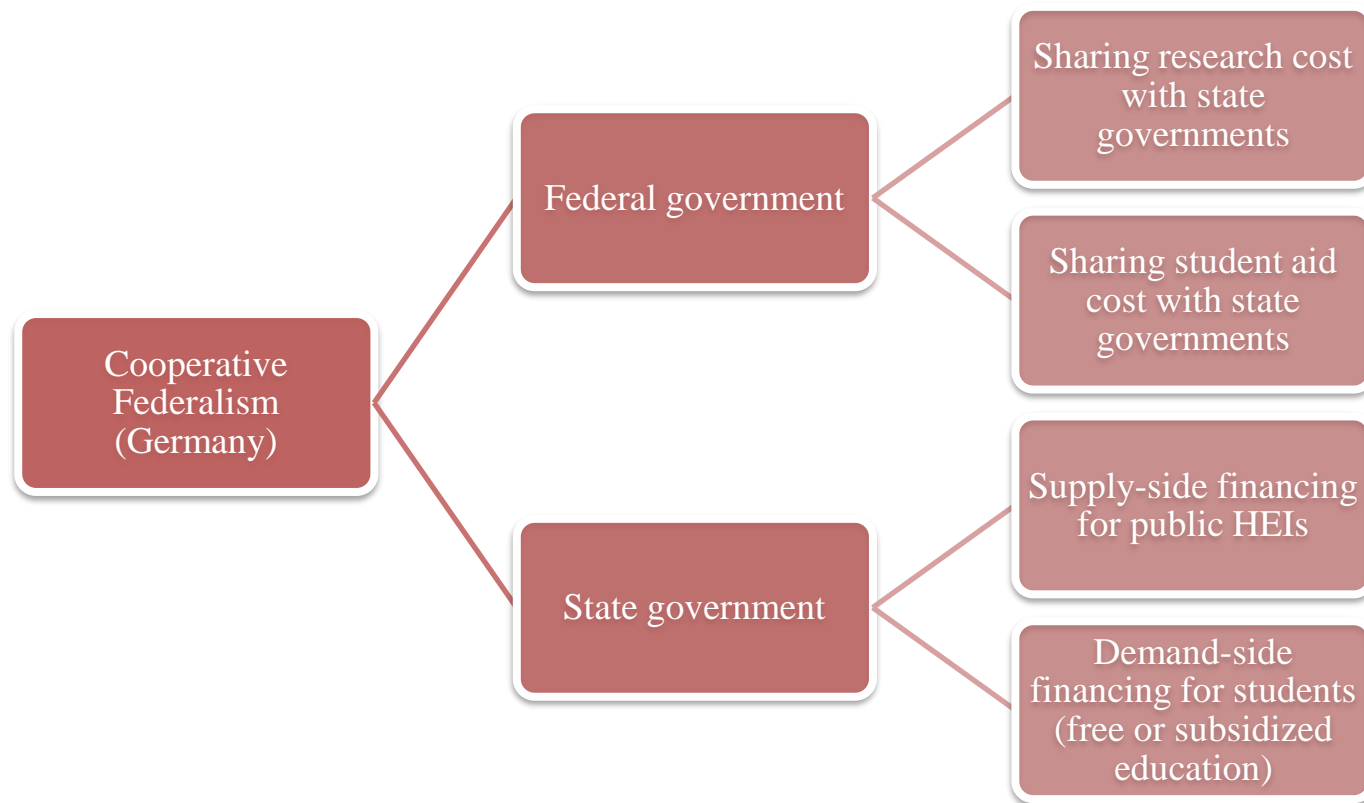
## **Point 2**

- Central and regional governments assume different roles under different models**
- In competitive model, federal government subsidizes students but not institution**
- In cooperative model, federal government shares research costs and student aid with states**
- In Commanding Heights model, central government provides funds for its affiliated HEIs and student aid to all eligible students**

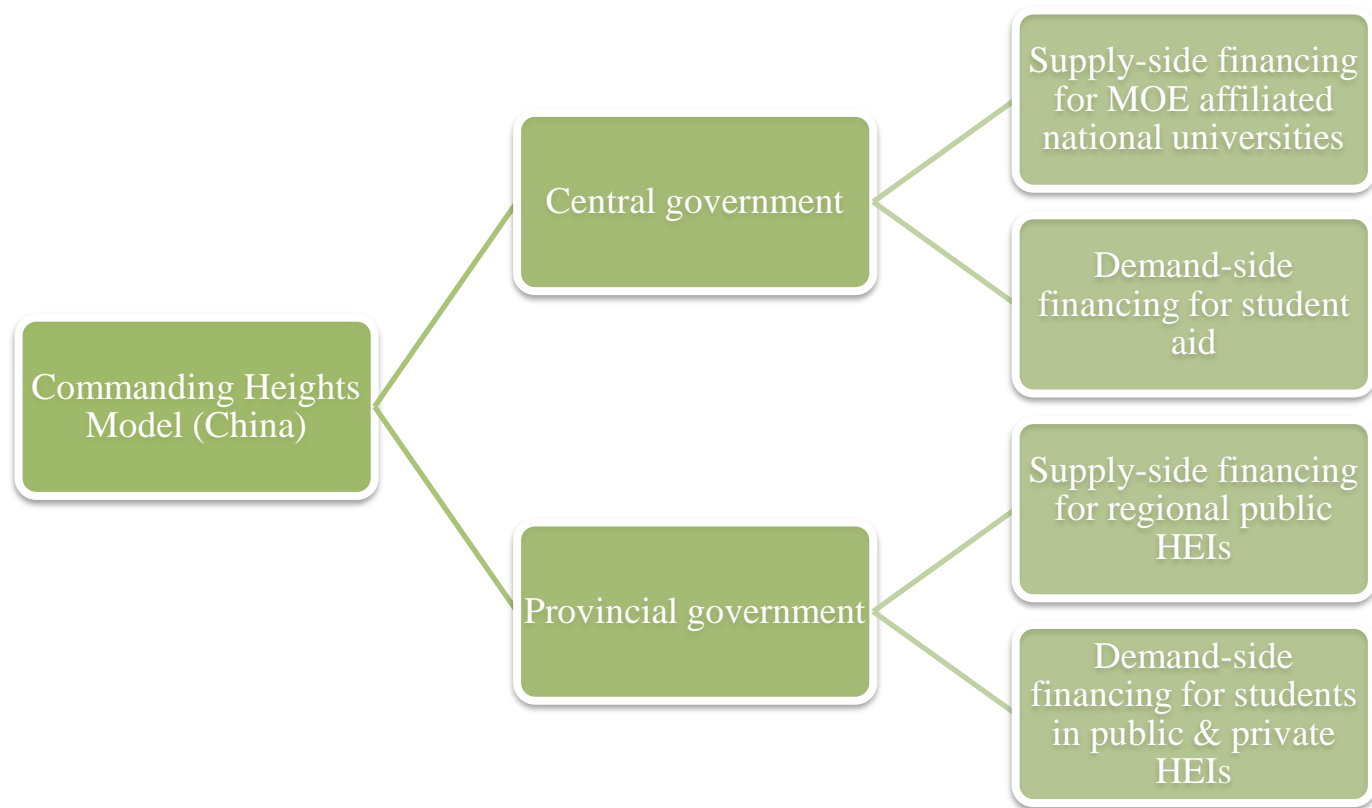
# Federalism and higher education finance



# Federalism and higher education finance



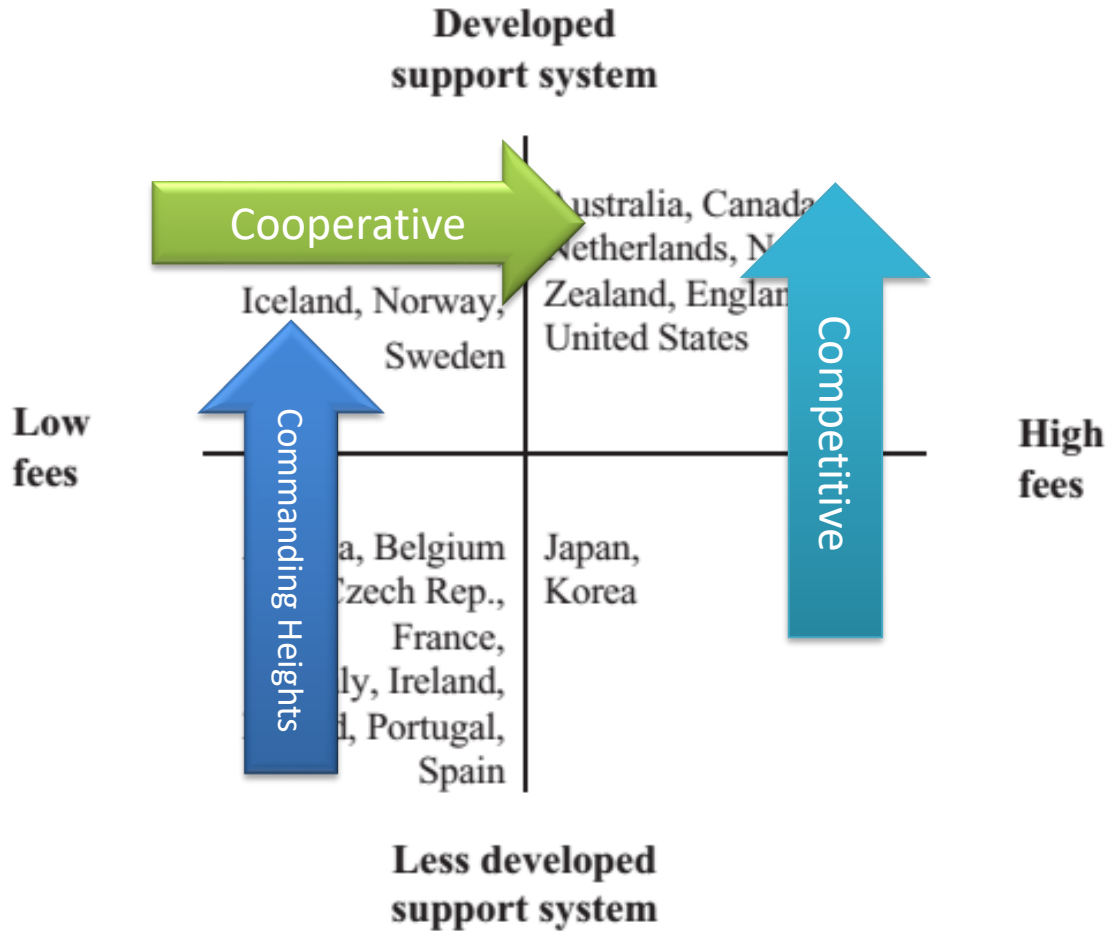
# Federalism and higher education finance



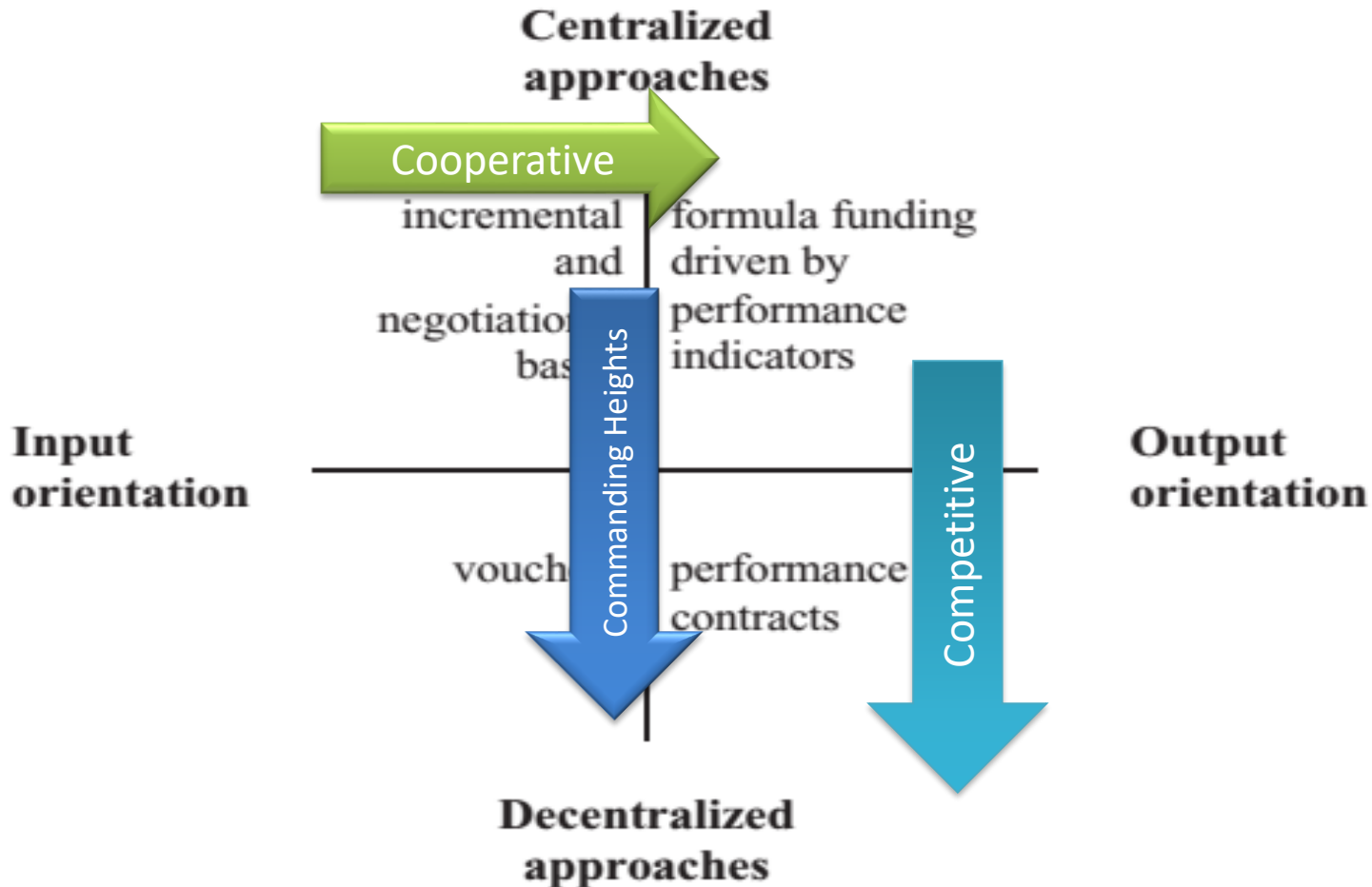


## **Point 3**

- Competitive country refers to market mechanism to solve the excess demand for student aid (e.g. income-contingent loan)**
- Cooperative country introduces cost-sharing (e.g. student fees) and performance-based funding**
- CH country decentralizes non-selective HEIs to release fiscal pressure; and regions uses cost-sharing and revenue-diversification to release fiscal pressure**
  
- General trend towards revenue diversification and cost-sharing (resource mobilization); towards performance-based funding (institution funding); towards high-fee and high-aid system; towards outcome-oriented and decentralized system**



Framework by Jongbloed and Vossensteyn(2016)



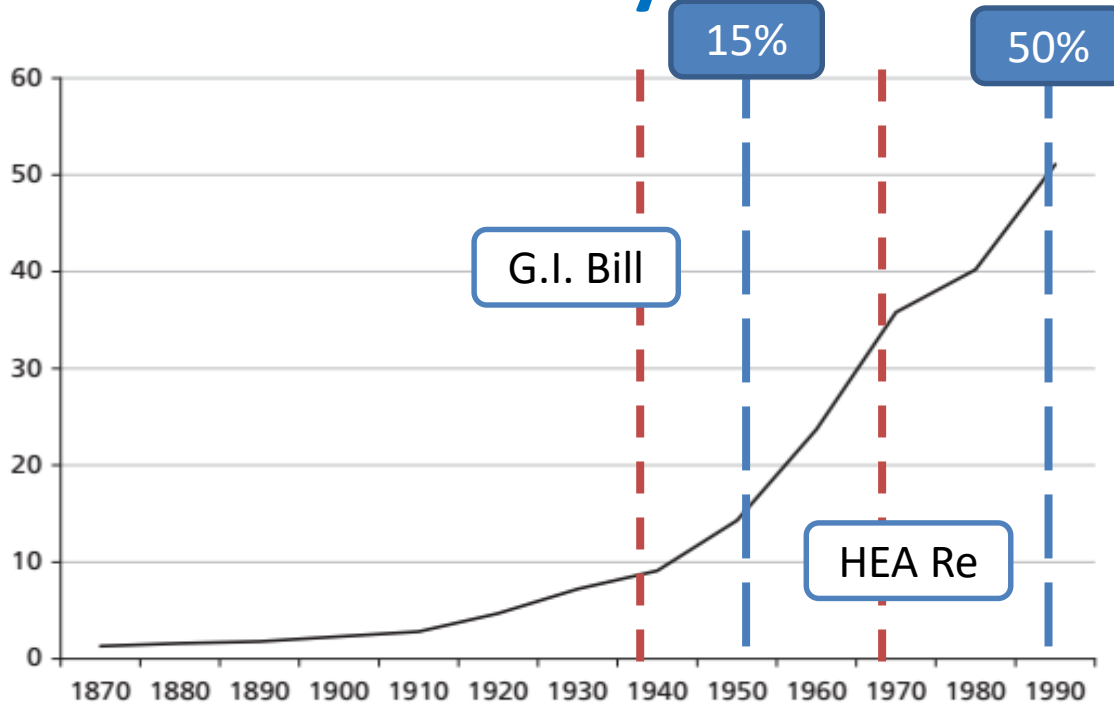
Jongbloed and Vossensteyn, 2016

# Evolution of US and Chinese student aid system

# Point 1: USA

- Federal and state governments assume different roles in institution and student financing
- The role of federal government in student aid is expanding
- Degree of subsidization declines, but aid coverage increases
- Unconditional, highly subsidized aid is replaced by deferred payment or conditional, low-subsidy aid

# Evolution of USA HE system



**Figure 9.1.** Higher education as a share of the 18–24-year-old cohort in the USA, 1870–1990

Cantwell, B. (forthcoming) Broad Access and Steep Stratification in the First Mass System: High Participation Higher Education in the United States of America. Figure 9.1

# Evolution of US aid system

1944      Late 1950s    1958      1965      1972      1978      1980      1986      1993      1997

G.I. Bill (federal aid system started)

Federal aid expended to all college students

Direct federal aid  
to student

National Defense Education Act (NDEA)

Title II: National Defense Student Loan Program

Higher Education Act

Education Opportunity Grant (Pell Grant)

Federal Workstudy Program

Guaranteed Student Loan (Stafford Loan Program)

Education Amendment of 1972

Basic Educational Opportunity Grants (BEOG)

State Student Incentive Grants (SSIG)

Student Loan Marketing Association (Sallie Mae)

GLS expanded to for-profit and vocational institutions

Middle Income Student Assistance Act

Federal aid  
expansion, via  
loan program

Cost-sharing, public  
aid limited to low-  
income students

Higher Education Act Reauthorization

Parent Loans for Undergraduate Students (PLUS)

Supplemental Loans to Student (SLS)

Federal Family Education Loan Program

Aid for middle-  
income students

Taxpayer Relief Act

Hope Scholarship Credit

Lifetime Learning Credit

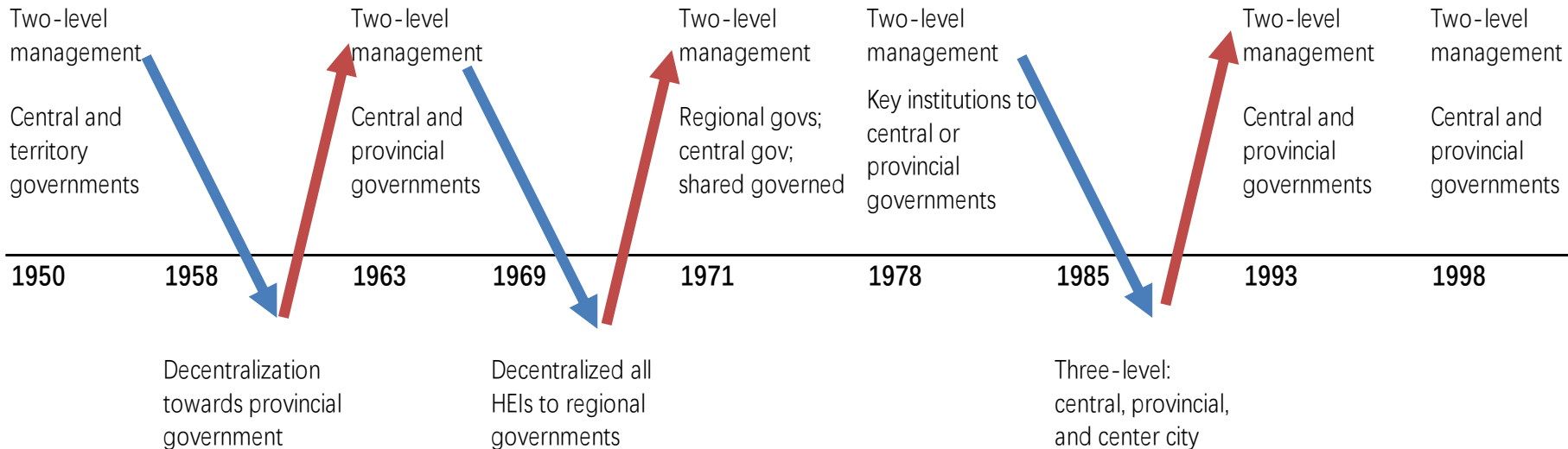
## **Point 2: China**

- Centralization and decentralization cycles; central government role in student aid expands**
- As tertiary system expands, tuition and aid policies changes accordingly**
- Development of aid system is left behind tertiary expansion and cost-sharing policy**
- Unconditional, highly subsidized aid is replaced by conditional, high-subsidy aid and low-subsidy aid**

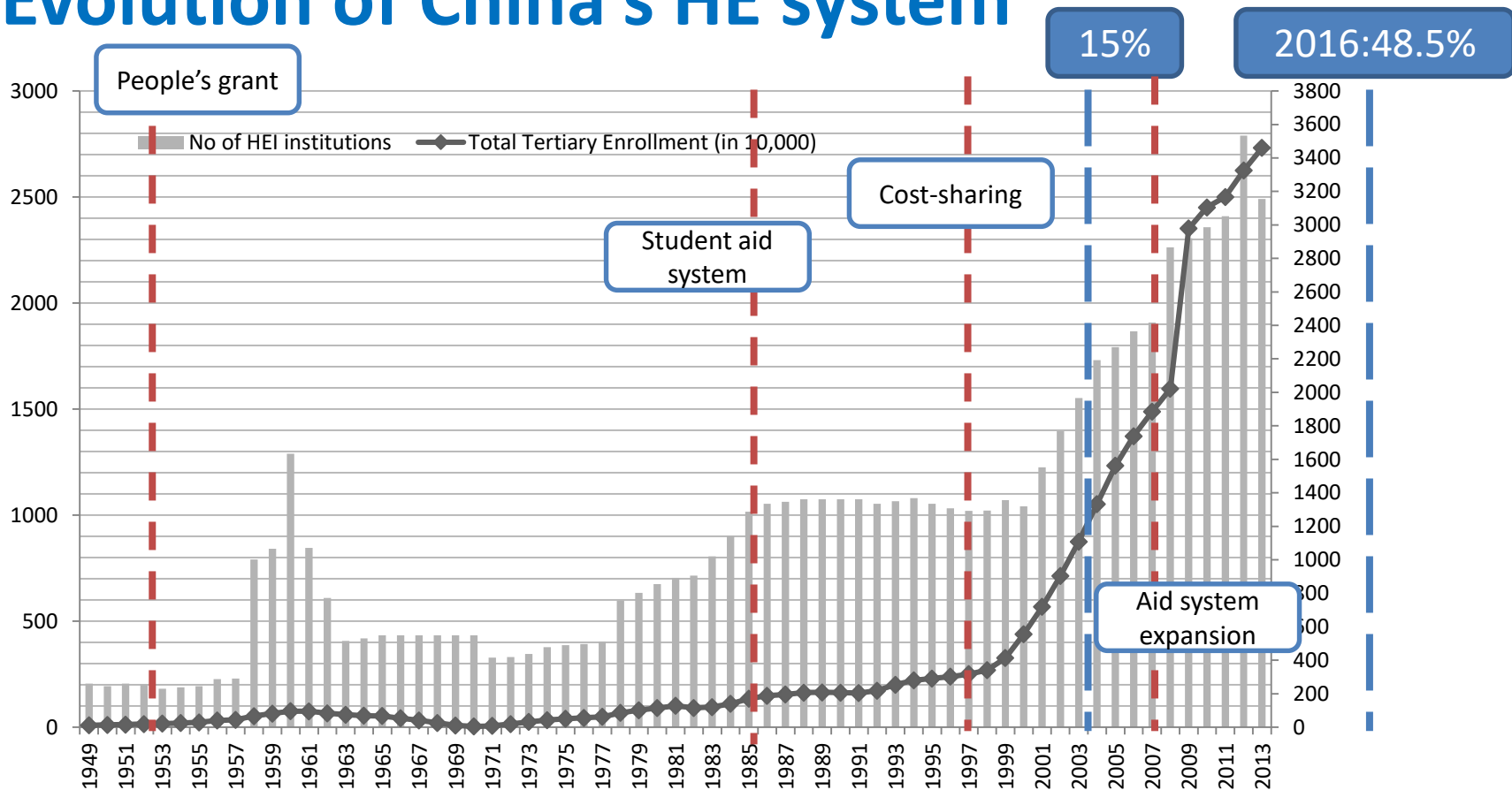


# Evolution of Chinese HE governance

- **Federalism in Chinese higher education** (Wang & Yang, forthcoming)



# Evolution of China's HE system



# Evolution of Chinese aid system

1949-1952 1952 1977 1983 1985 1987 1991 1994 1995 1997 1998 1999 2004 2005 2007 2008 2011 2013

Public funds for all

People's Grant (uniform allocation)

Free tuition for all

Uniform grant with free HE

Adjusting People's Grant coverage and level by SES  
Adjusting People's Grant coverage and level by major and SES

Differentiate scholarship

Converting People's Grant to scholarship and student loan

Interest-free student loan

Dual-track tuition policy

Revenue diversification policy

Undergraduate tuition to 50 HEIS

National workstudy program

Undergraduate tuition to 246 HEIS

Tuition waiver for low-income student

Cost-sharing

Undergraduate tuition to all HEIs

Higher Education Act

Tuition+ student aid

Subsidized loan

Commercial Bank Student Loan

Subsidy for students with special difficulty

National Development Bank student loan

National Scholarship

National Grant

Aid system expansion

National Incentive Grant

Residence-based student loan








Grants for enlisted students and veterans

Tuition waiver for poverty reduction

## **Point 3:**

- In different phase of tertiary expansion, government alternates tuition and aid policies**
- Degree of subsidization decreases; more aid programs add conditions**
- As low-subsidy aid expands, fiscal pressure on government decreases, but financial burden of students increases**

# Evolution of aid system

<b>Tuition Policy</b>	No tuition	Introduction of tuition fees	Extensive use of tuition fees	
<b>Student Aid Instrument</b>				
Grant	For all students	For low-income students	For low-income students	
Scholarship	Non-competitive	Competitive	Highly competitive	
Government student loan	Rarely used	For low-income students	Extensively used, available to most students	
Market loan	Not used	Rarely used	Extensively used	
	Less than 15%	15-50%	More than 50%	
<b>Degree of subsidization</b>				
Grant	Fully subsidized	Fully subsidized	Fully subsidized	
Scholarship	Fully subsidized	Fully subsidized	Fully subsidized	
Government student loan	Fully subsidized	Partially subsidized	Partially subsidized	
Market loan	Not applicable	Rarely subsidized	Rarely subsidized	
<b>Degree of conditional offer</b>				
Grant	No condition	Need-based	Need- and merit-based	
Scholarship	Merit-based	Merit-based	Merit-based	
Government student loan	Need-based	Partially need-based	Partially need-based	
Market loan	Not applicable	No condition	No condition	

**Missing target: Policy impact**

## **Point 1: Increasing access and achievement**

- Access to aid: need-based aid is allocated to low-income students; merit-based aid is allocated to high-ability, low-income students**
- Mixed results: financial aid is sometimes positively related to college engagement, learning outcomes, and post-graduate employment**

# Access and achievement

- **Yang (2010):** A higher proportion of female and low-income students receive aid

**Table 1**

Summary of college student characteristics.

	Complete sample		Low-SES sample	
	Mean	S.D.	Mean	S.D.
Total public aid amount (RMB)	1714.79	(2974.83)	4752.89	(4003.93)
Total government aid amount (RMB)	1082.41	(2563.69)	3616.18	(3753.82)

- **Liu et al. (2011) :** Early Financial Aid Commitment Project, Random control trial: ECFA reduces enrollment in military and normal university; no difference in college matriculation rate
- **Wei et al. (2009):** Information intervention for high school graduates: receiving aid information significantly increases probability of college attendance or retaking college entrance exam



# Access and achievement

- **Yang (2009):** Receiving aid is positively related to higher GPA and lower course failure, longer study time; getting grant instead of loan encourages more learning effort
- **Wang et al. (2011):** RCT, receiving 4000 yuan need-based aid has NO effect on psychological well-being; NO difference in time for part-time employment, campus activity and community services
- **Cheng (2011):** natural experiment due to policy change: students with GSSLP loan spent more on food, worked fewer hours of paid employment; NO effect anxiety or total education expenditure
- **Li et al. (2015):** Tsinghua University administrative data from 2011 to 2013: PSM: scholarship from previous year has positive effect on GPA , but grant fails to leverage learning outcomes
- **Yang (2011):** PSM of national college graduate sample: receiving aid increases likelihood of getting employment

## **Point 2: Inadequate and poorly targeted**

- Financial aid coverage is low among needy students**
- Targeting is not achieved: selection based on ability and institution selectivity**
- Poverty reduction effect of college aid is very limited**
- Prevalent use of market short-time cash flow indicate an unmet financial need of students**

# Inadequate and poorly targeted

- **Yang (2010): public and government aid is biased towards students in selective institutions**

**Table 2**

Student aid received by type of institution.

	Very selective 4-year	Selective 4-year	Less-selective 4-year	Less-than-4-year vocational	Total
Percent of students who					
Received any public grant	29.1%	27.2%	24.3%	7.7%	24.8%
Received any public loan	12.2%	13.3%	5.8%	3.3%	9.1%
Received any public aid	43.1%	47.1%	41.3%	45.0%	43.7%
Received any public financial aid	57.6%	60.3%	52.0%	49.2%	55.3%
Percent of students who					
Received any government grant	8.3%	8.6%	6.2%	3.9%	7.2%
Received any government loan	11.3%	12.3%	5.2%	2.9%	8.3%
Received any government aid	18.2%	16.7%	11.5%	11.0%	14.4%
Received any government financial aid	28.0%	26.2%	17.2%	14.8%	21.9%

# Inadequate and poorly targeted

- Wu et al. (2011): 47% of needy students received grant-in-aid; targeting error was 64%; need-based aid only reduces poverty rate by 2.6%, the poverty rate is still 79% among needy students after receiving aid

表 6 大学生援助项目的减贫效果

定义	贫困率		贫困差距指标			大学经济负担			
	奖助学金前	助学金后	奖助学金后	奖助学金前	助学金后	奖助学金后	奖助学金前	助学金后	奖助学金后
平均值	0.218	0.192	0.172	0.080	0.065	0.056	0.669	0.617	0.573
贫困生	1.000	0.884	0.791	0.367	0.300	0.259	0.385	0.368	0.348
城镇地区	0.099	0.090	0.082	0.034	0.029	0.025	0.469	0.446	0.421
农村地区	0.315	0.274	0.245	0.117	0.095	0.082	0.831	0.756	0.697

# Inadequate and poorly targeted

- **Yang and Liu (2018): among MA students; low aid coverage among needy students; high omission rate and leakage rate, indicating targeting error; aid reduces poverty rate by 4-8%, 14% still in poverty**

	Whole sample	Academic MA	Professional MA
Poverty rate	20.40%	20.60%	19.40%
Needy students with aid	11.90%	13%	8.90%
Non-needy students without aid	35.30%	32.10%	44.80%
Needy students without aid (omission)	8.70%	7.90%	10.10%
Non-needy students with aid (leakage)	44.20%	46.90%	36.20%
Family burden	58.59%	56.55%	63.44%
Coverage of need-based aid	55%	58.70%	44.90%

# Inadequate and poorly targeted

- **Yang and Bai (2018):** high proportion of undergraduates use online financial platform for short-term cash flow; relative poverty rate is 59%;

	Needy students	Non-needy students
Student loan	18.10%	8.60%
Online lending from e-platforms	16.00%	23.50%
Borrow from others	8.70%	9.80%
Borrow from credit card	12.20%	15.30%

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  - Countries under various types of federalism in higher education response differently to such fiscal pressure
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    - Use of cost-sharing policies
  - General trend towards revenue diversification and cost-sharing (resource mobilization); towards performance-based funding (institution funding); towards high-fee and high-aid system; towards outcome-oriented and decentralized system



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  - As tertiary system moves towards phase, use of tuition fees increases; coverage of grants and scholarships is shrinking; use of student loan and market loan is increasing
  - Degree of subsidization decreases, more conditions put on aid programs; low-subsidy aid programs grow at the expense of high-subsidy aid
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- **Response of student aid system to tertiary expansion is enlarging rather than mitigating n stratification**
  - In the process of rapid tertiary expansion, China's student aid system is incapable of coping with the growing financial needs
  - Targeting is distorted by student ability sorting and concentration of resources in elite institutions
    - Student aid system opens college access for some disadvantaged students; but distribution of aid favors high-ability students in selective institutions
    - Many needy students are not covered by aid system
    - Even among aided students, need-based aid is insufficient to reduce poverty
  - Student aid in expanding tertiary systems tends to reinforce rather than minimize stratification

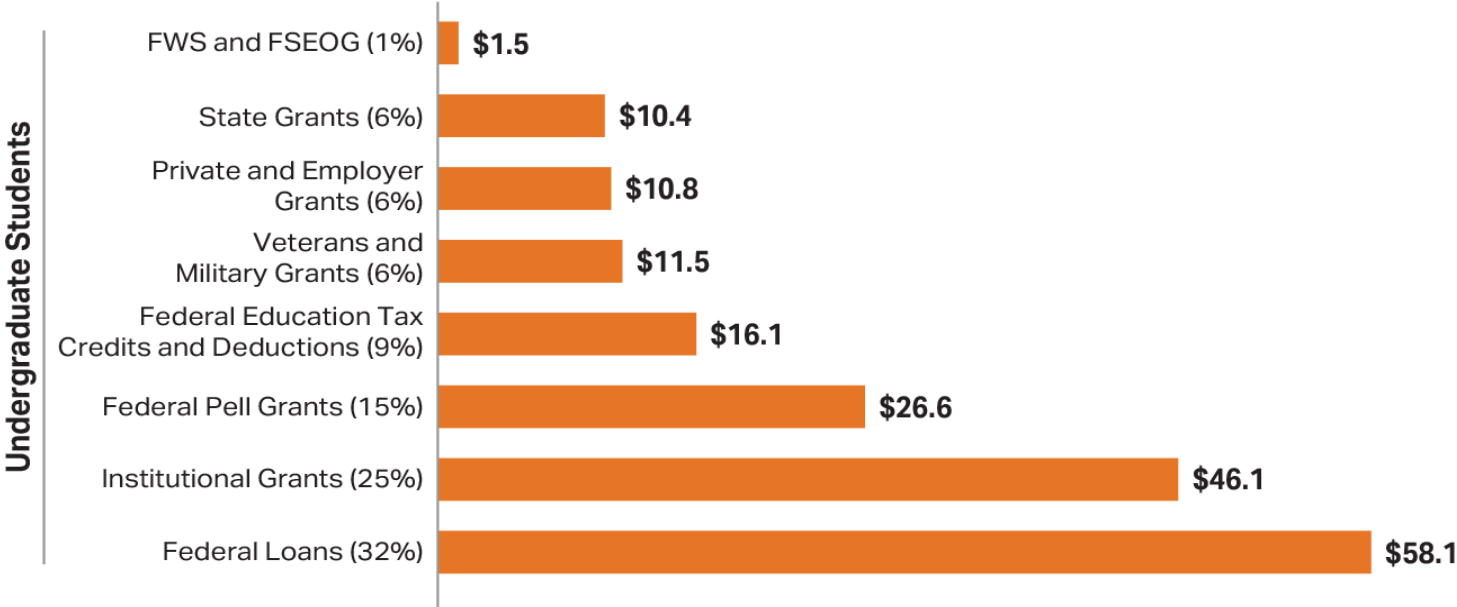
不让一名学生  
因家庭经济困难而失学



**Thank you!**

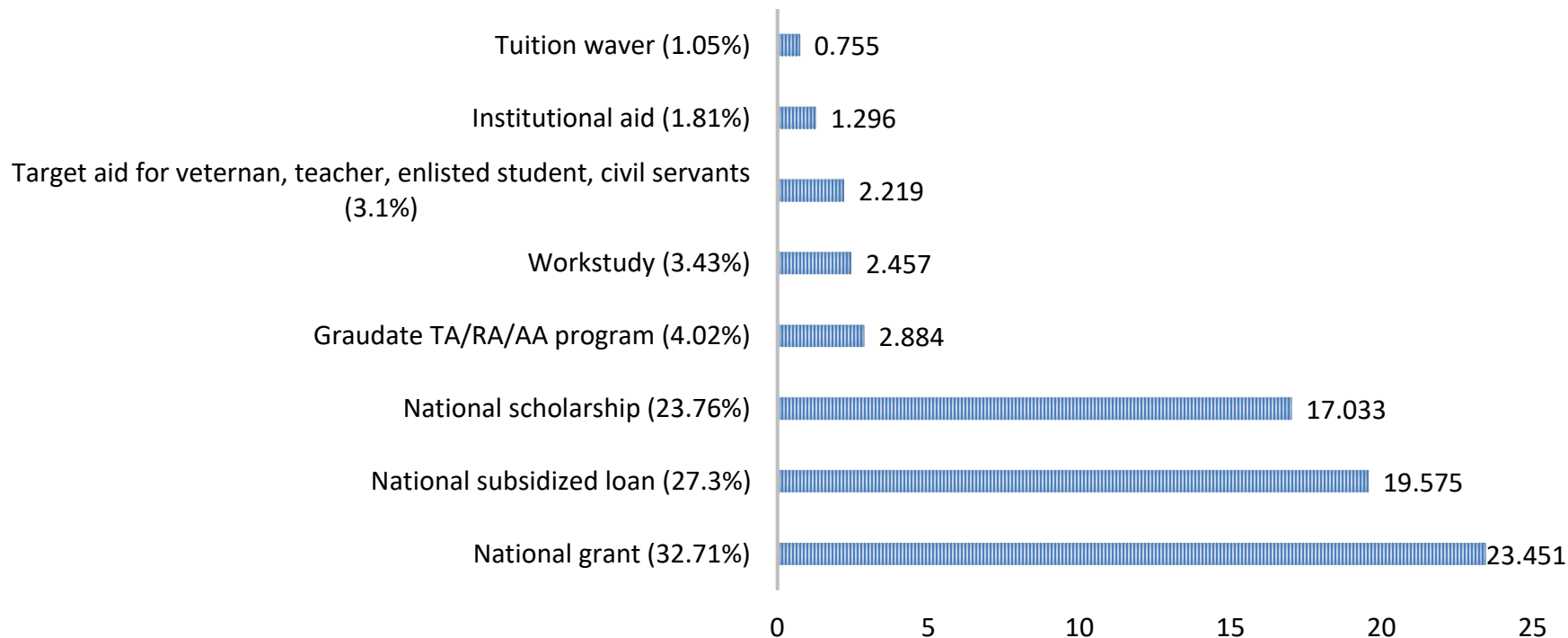
[poyang@pku.edu.cn](mailto:poyang@pku.edu.cn)

# USA: Total Undergraduate Student Aid by Source and Type (in Billions US dollars), 2016-17

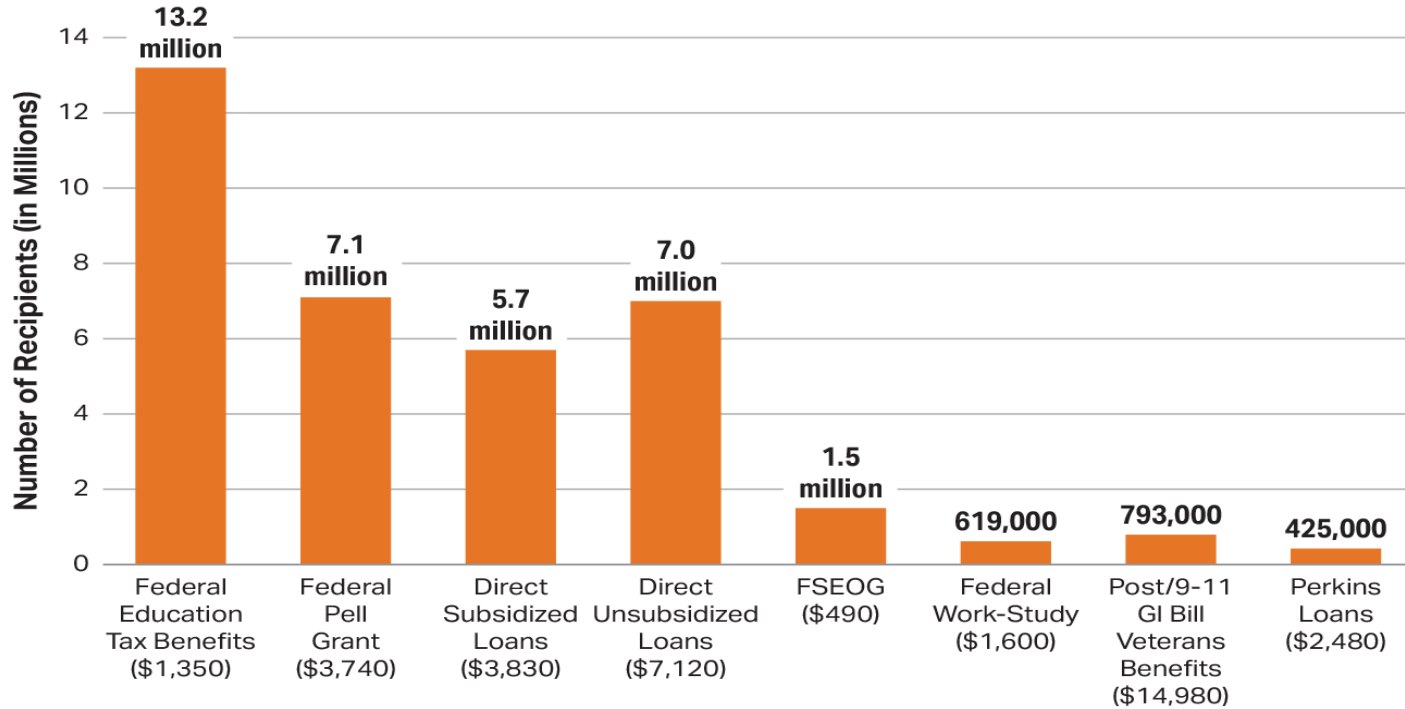


Source: The College Board, Trends in Student Aid 2017, Figure 2.

## CHINA: Total Undergraduate & Graduate Student Aid by Source and Type (in Billions RMB), 2014-15



## USA: Number of Recipients by Federal Aid Program (with Average Aid Received), 2016-17



**Federal Aid Programs (with Average Aid per Recipient)**

Source: The College Board, Trends in Student Aid 2017, Figure 6A.

# Worthy goods

- Some of private good and chargeable good turns into common resources and common good in recent years
  - Positive externality related to consumption of worthy goods
  - All citizen desire such good, so the excludability is withdrawn
  - Consequence
    - Dramatic increase of common good consumption
    - Government direct subsidy for private providers, individuals, or direct service or good provision by government
    - Dynamic nature of certain goods, such as higher education, from individual good to common good

# Provision of common/worthy good

Producer	Planner	
	Public sector	Private sector
Public sector	Government service; Inter-government arrangement	Government sale
Private sector	Contract; charter; Subsidy	Free market; Volunteer; Self-service' Voucher

Savas, E. S (2000). Privatization and public-private partnerships. Sage Publication



# Federalism in higher education

## Arguments

- A. Federalism in higher education varies across countries
- B. Different types of federalism in higher education implies different division of labor between central and local governments, in terms of governance and finance
- C. Countries response differently to fiscal pressure brought about by tertiary education expansion

# Competitive vs. Cooperative Federalism

- **Competitive (or dual) federalism** can refer to state of affairs between regional government (horizontal competition) and between central and regional governments (vertical competition)
- **Cooperative federalism** is a concept of [federalism](#) in which national, [state](#), and [local governments](#) interact cooperatively and collectively to solve common problems, rather than making policies separately but more or less equally (such as the [dual federalism](#) of the 19th-century [United States](#)) or clashing over a policy in a system dominated by the national government

Buchanan, J.M. 1995/96. Federalism and individual sovereignty. *The Cato Journal*, 15(2/3).

Buchanan, J.M. 1995. Federalism as an ideal political order and an objective for constitutional form. *Publius*, 25(2): 19–27.

# Responses to fiscal pressure due to expansion

- **Competitive federalism country**

- Federal government provides direct financial aid to students (Zhou and Mendoza, 2017)
  - Federal aid to students take various forms
  - Federal aid can be used in any HEIs, including private and vocational ones
  - Coverage of federal aid expands overtime, including needy and non-needy students
- Universal cost-sharing in public and private HEIs
- Shifting from input-based formula funding to performance funding

# Responses to fiscal pressure due to expansion

- **Cooperative federalism country**
  - Government increases cost-sharing (Jongbloed and Vossensteyn, 2016)
    - Shifting in financing from public to private sources
    - Introduction of student fees
  - Government moves towards performance-based funding
  - Moving from free HE to fee-paying HE
- **Commanding Heights Strategy** (Wang and Yang, forthcoming)
  - Central government increases control over national universities, through direct institution subsidy and student aid and research fund
  - Provincial governments introduce cost-sharing and revenue-diversification extensively
  - Shifting from input-based formula funding to performance-based formula funding

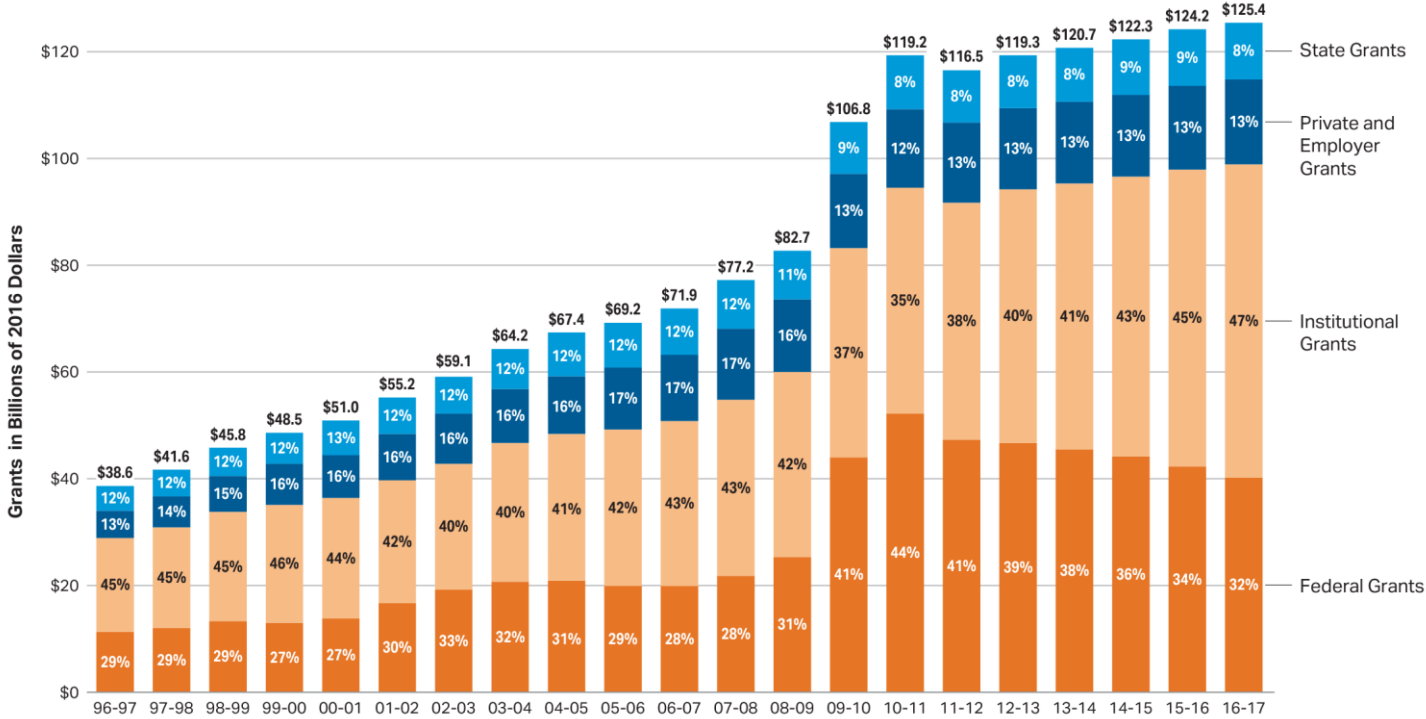
# Evolution of US aid system

- **Federalism in American higher education (Trow, 1993)**
  - United States places the primary responsibility for education on the states rather than on the federal government
  - Federalism in the U.S. can be seen as the major determinants of the governance and finance of the nation's system of higher education
    - Role of regional government in higher education
    - Role of private, non-governmental sources of support

# Evolution of US aid system

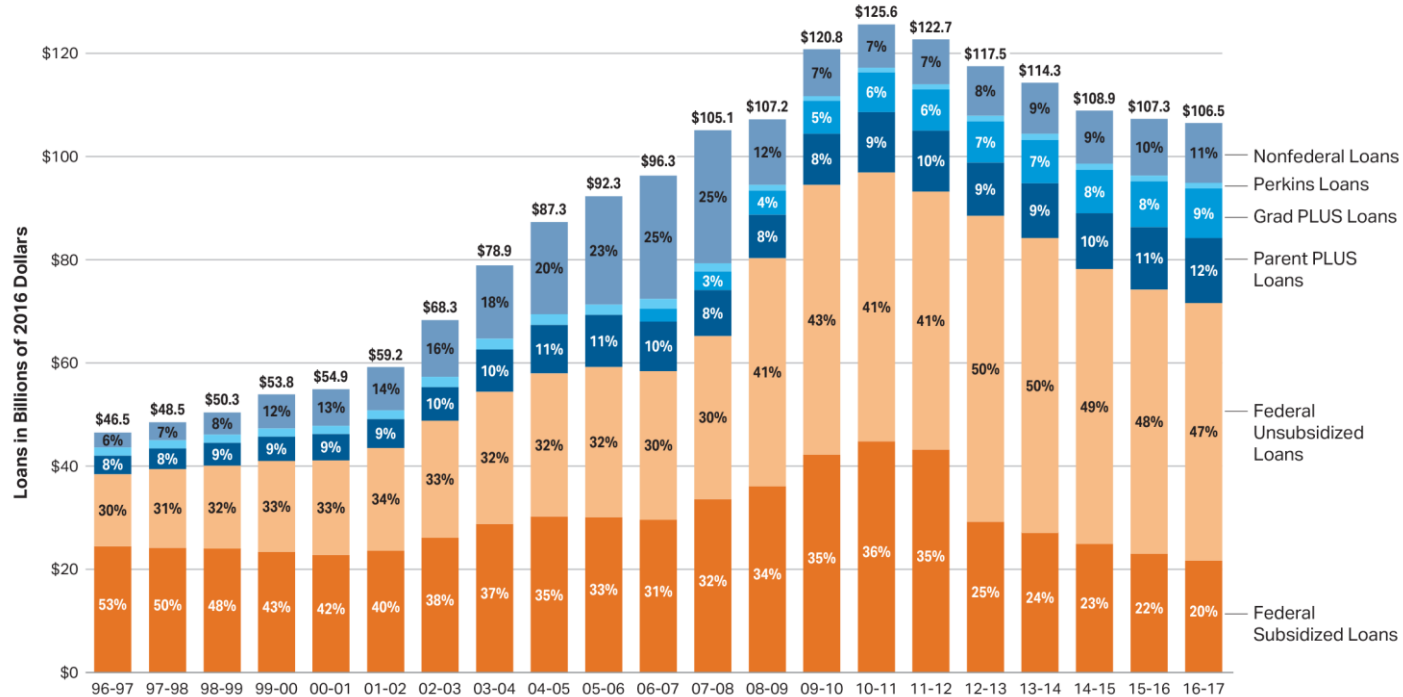
- **Federalism in American higher education (Trow, 1993)**
  - Critical historical junctures
    - Failure of establishing a national university → Limiting role of federal government in shaping characteristics of American higher education
    - 1819's Supreme Court decision on Dartmouth College case → Restricting right of state government in administration of private higher education
    - The Morrill Act of 1862, 1890 and Hatch Act of 1890 → Defining federal government's role as land provider, not intervening the establishment and administration of public/private land-grant HEIs
    - G.I. Bill of 1944 → Providing federal support for college students, not institutions
    - Education Amendment of 1972 → Expanding federal support for students and researchers; protecting institutional autonomy by not providing direct subsidy for HEIs

# USA: Total Grant Aid in 2016 Dollars by Source of Grant, 1996-97 to 2016-17



Source: The College Board, Trends in Student Aid 2017, Figure 3.

# USA: Total Federal and Nonfederal Loans in 2016 Dollars, 1996-97 to 2016-17



Source: The College Board, Trends in Student Aid 2017, Figure 4.