

# ECONOMICS OF EDUCATION





NEW

SZÉCHENYI PLAN

# ECONOMICS OF EDUCATION

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Course Material Developed by Department of Economics,

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# ECONOMICS OF EDUCATION

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## Week 9

### Financing education

Júlia Varga

1. Who should pay?
2. How to allocate resources to different levels and types of education?
3. What is the appropriate government structure – degree of centralization/decentralization in funding and provision of schooling?
4. What is the appropriate form of distributing government funding?

# 1. The share of public sources in funding

Explanations of public subsidy

Market failure

- externalities or spillover effects
- imperfect capital markets that limit the ability to borrow in order to invest in human capital
- imperfect information

Equity

## 2. Allocating resources to different levels and types of education

Efficiency considerations – we have discussed this question as part of planning education

Equity – education affects distribution of income and wealth

What is the level of equity associated with the actual characteristics of the education system and what changes might result from alternative educational policies?



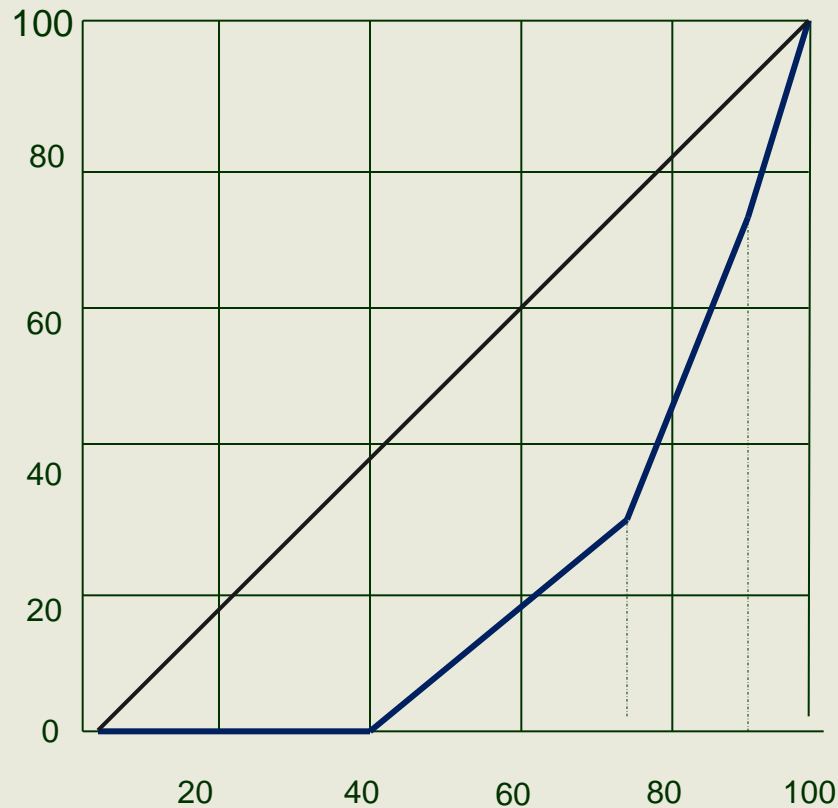
# Equity in the distribution of public spending on education

Level of education	Enrollment ratio	Public unit cost per year of study	Years in cycle of study
Primary	60	20	5
Secondary	25	40	4
Higher	5	120	3

## Distribution of cumulative public spending on education

Highest Educational Attainment	Number of students	Cumulative public expenditure per student	Aggregate cumulative expenditure	Share of total aggregate expenditure
No schooling	40	0	0	0
Primary	$(100-40-25)=35$	$(5*20)=100$	$(35*100)=3500$	29,7
Secondary	$100-40-35-5=20$	$(100+(4*40))=260$	$(20*260)=5200$	44,1
Higher	5	$(260+(3*120))=620$	$(5*620)=3100$	26,2
Total	100	-	11800	100

# Distribution of cumulative public spending on education

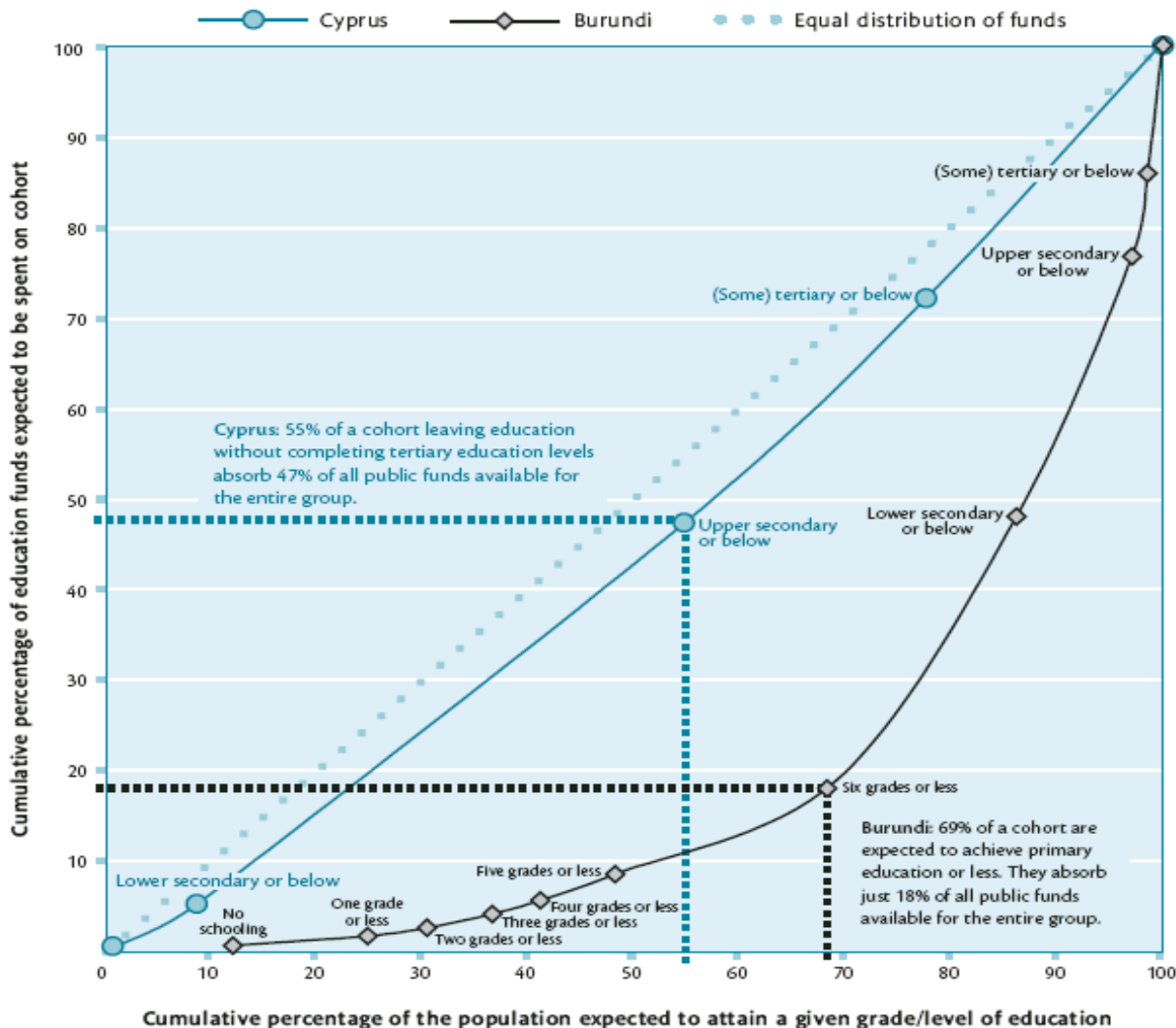


Lorenz curve

Gini coefficient = 0.6

## How equally are public education funds distributed among children with different levels of expected education attainment?

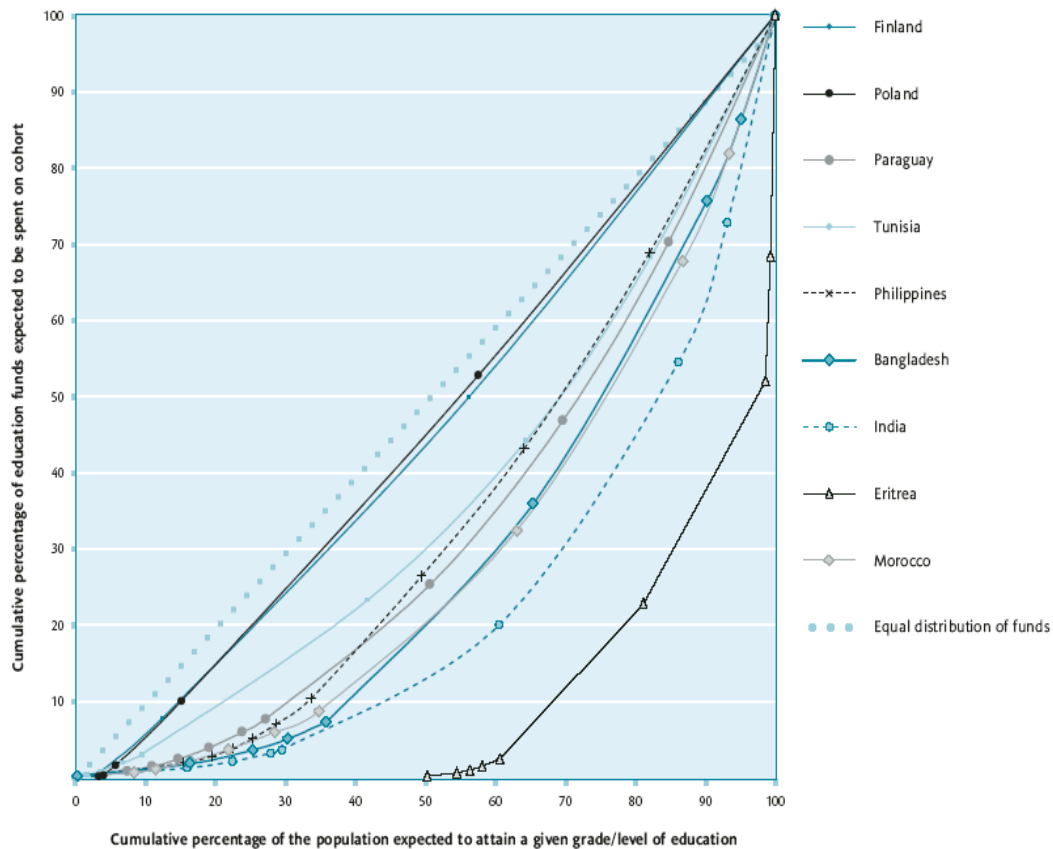
### Distribution of public funding for education in Burundi and Cyprus, 2005



**FIGURE 10**

**How equally is public education expenditure distributed among children with different levels of expected education attainment?**

Distribution of public funding for education in nine selected countries, 2005



Note: See notes for Figure 9.  
Sources: UNESCO Institute for Statistics database and calculations based on Statistical Tables 2, 4, 5, 7 and 8.

# 3. What is the appropriate government structure – centralization – decentralization

- Funding and administration of schooling involve multiple levels of government throughout the world.
- Higher education – mostly centralized
- Public education – less centralized
- For efficient allocation of resources public services should be located at the lowest level of government encompassing, in a spatial sense, the relevant benefits and costs (subsidiary, fiscal federalism).
- Who are the beneficiaries of external benefits of education?
  - High mobility – the externalities of education are no longer localized.
  - Low mobility – the externalities of education are mostly localized.

# 3. What is the appropriate government structure – centralization – decentralization

- Highly decentralized systems entails substantial state level transfers to local governments
- Reasons for local provision  
Subsidiarity: for efficient allocation of resources public services should be located at the lowest level of government encompassing, in a spatial sense, the relevant benefits and costs.
- Mobility because then the externalities involved in schooling are no longer localized.

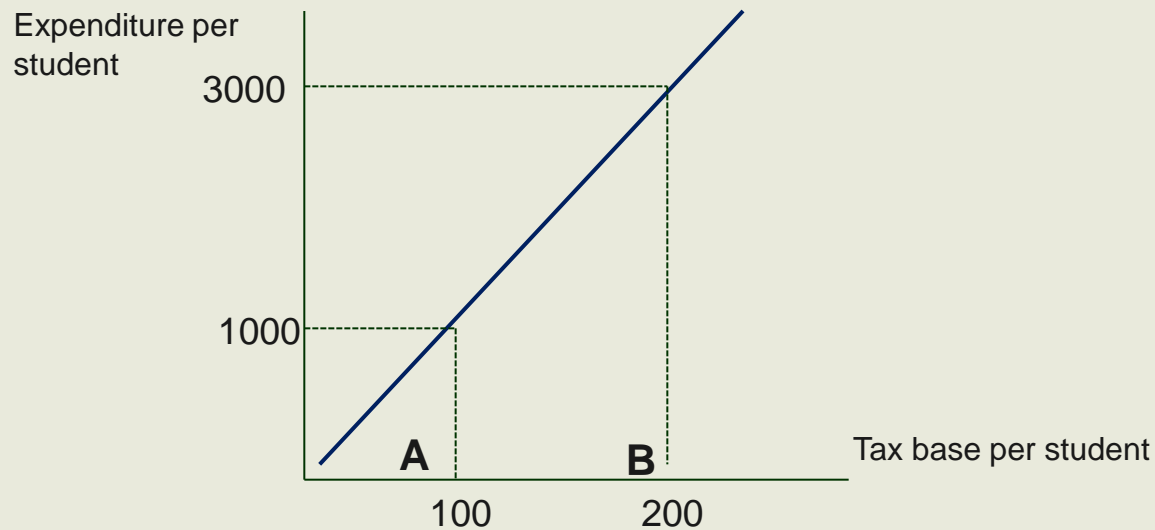
# Public education

## Fiscal decentralization

Local provision – allows variation in response to variation to local government, costs and preferences.

Centralized funding – correcting for regional variations in wealth, income level, ability to fund.

# Decentralization – no state aid



## A local government

**Tax base per student: 100**

**Local tax effort for education – local tax rate 15%**

**Tax revenue for education per student 1500**

## B local government

**Tax base per student: 200**

**Local tax effort for education – local tax rate 15%**

**Tax revenue for education per student 3000**



# 4. Types of government support for public education

- A) Equal total provision philosophy – full state funding
- B) Minimum provision philosophy
- C) Equal access philosophy

# A) Equal total provision – full state funding

State finances all (or most) expenses of schools to ensure equity

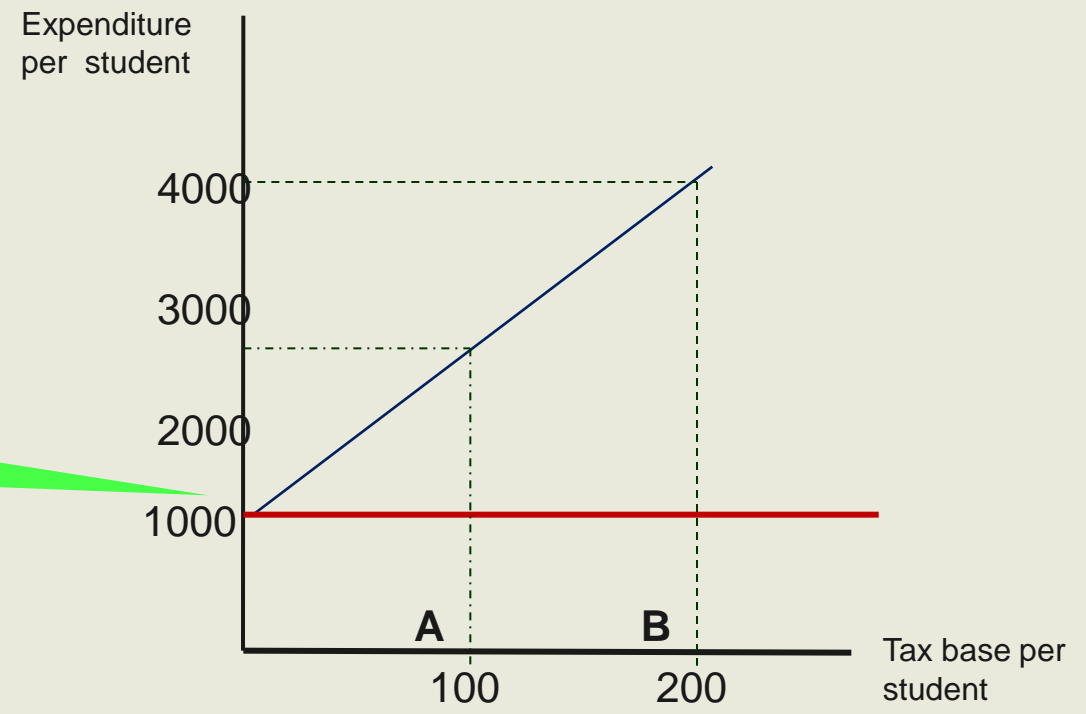
- Does not eliminate questions of equity – substantial interschool variations in the quality of instruction through personal policies (Clune, 1972).

## B) Minimum provision

- A specific minimum of schooling should be guaranteed to every citizen.
- State can determine the costs of minimum education and allocates it to communities on per student basis.
  - Flat-grants
  - Foundation grants

# B) Minimum provision – Flat grant

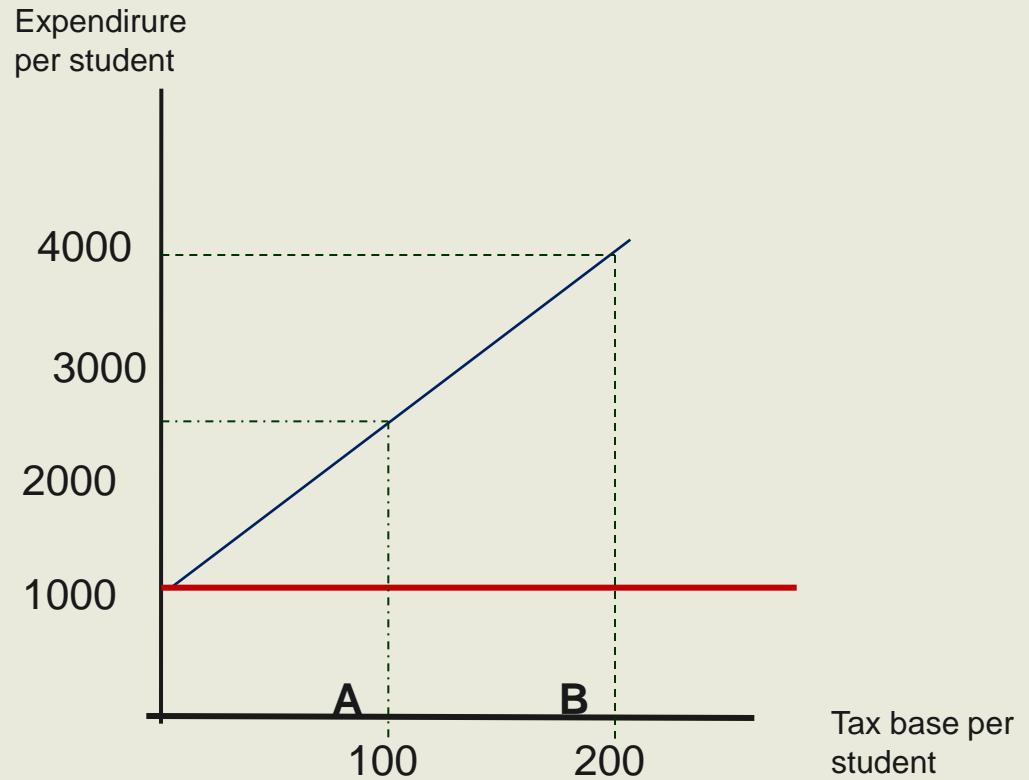
**Flat grant equal aid per student**



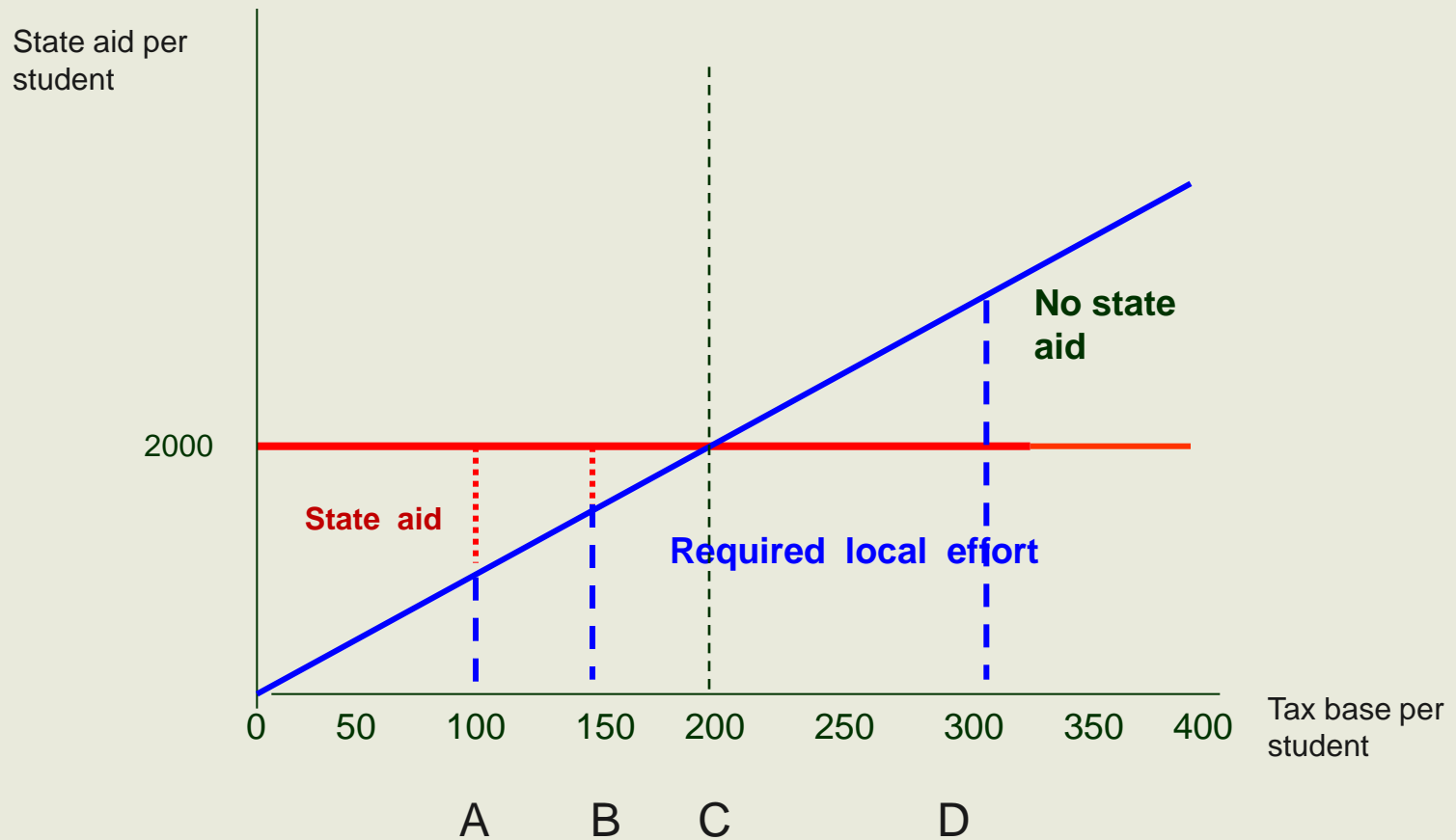
# B) Minimum provision – flat grant

**A local government**  
 Tax base per student 100  
 Local tax effort for education – local tax rate 15%  
 Local tax revenue per student 1500  
 Expenditure per student 2500

**B local government**  
 Tax base per student 200  
 Local tax effort for education – local tax rate 15%  
 Local tax revenue per student 3000  
 Expenditure per student 4000



# B) Foundation grants



## C) Equal access

- No attempt to equalize expenditures on education
  - Equalize the access to funds for education expenditure
  - Actual per student expenditures depend on local preferences
- 
- Percentage equalizing
  - Power equalizing
  - Guaranteed tax base

# C) Equal access – percentage equalizing

State aid increases with per student expenditures on education and is an inverse function of the relative wealth of local community

The extent to which the state is willing to share in education expenditures

$$T_i = L_i [1 - x(V_i / V_s)] K_i$$

State aid to community *i*.

Number of students

Local tax base of community *i*

Average tax base

Local per student expenditures



# Public versus private provision of public education

Private enrolment in primary and secondary schools

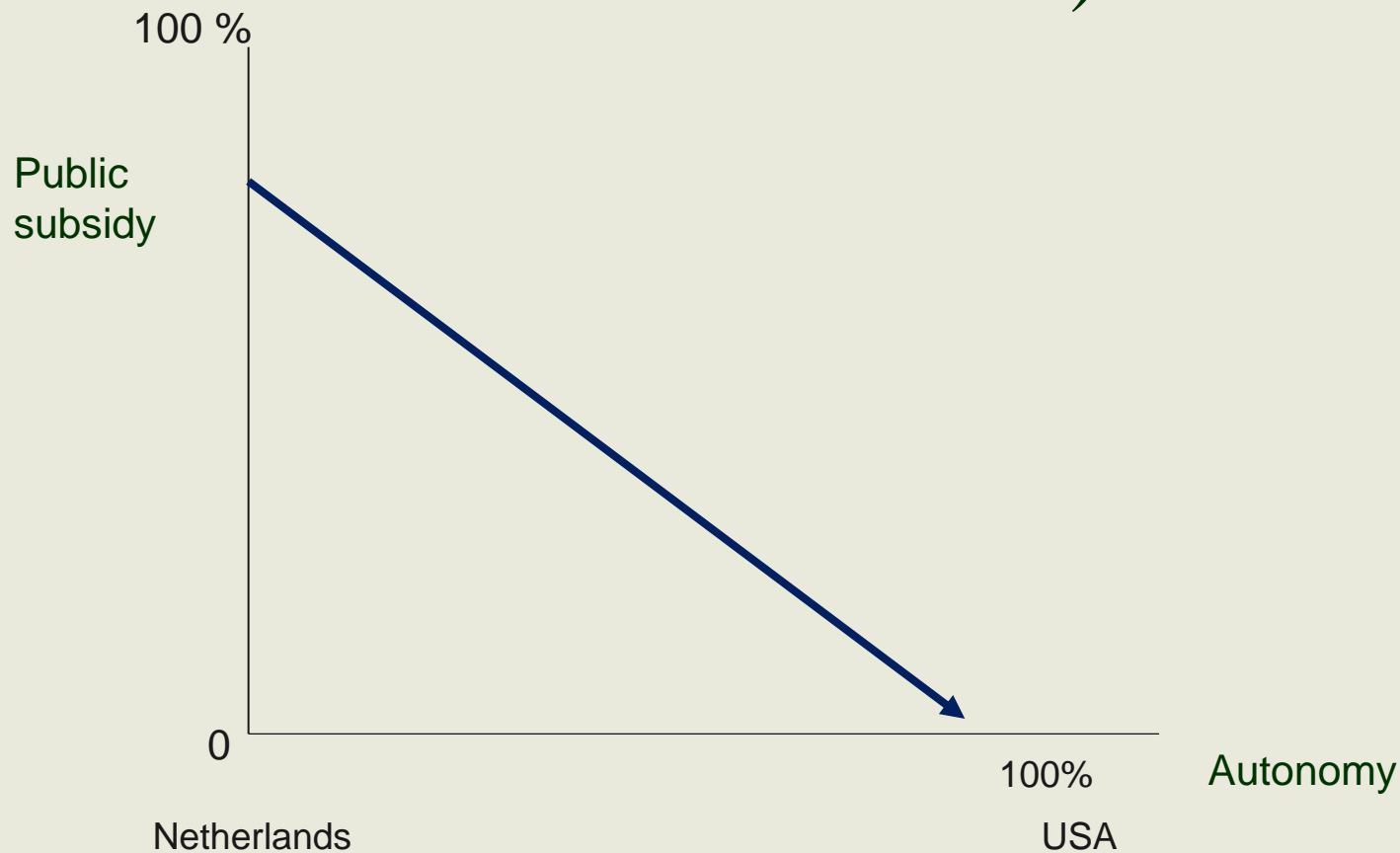
Country	Primary	Secondary
Belgium	51	62
Denmark	7	6
England and Wales	22	16
France	15	21
Germany	2	9
Italy	8	7
Netherlands	69	72
Sweden	1	2
USA	10	9
Hungary 2009	8	22

What are the reasons for the variation across countries?

Low income countries – access-demand (*James, 1993 Jimenez, Sawada, 2001*)

High income countries – cultural heterogeneity (*James, 1993*)

# Public subsidies to private schools and school autonomy (setting wages, determining enrollment etc.)



# Voucher system – demand side financing

Government aid in all countries is focused on educational institutions.

Voucher plans: government aid should be given to students who will decide where to enroll – competition should promote efficiency (Milton Friedmann, 1955)

Voucher experiments: USA (Milwaukee, Arizona, Michigan) Chile, New-Zealand

# Voucher system – problems

- Results in sorting: shift higher ability students into private schools, leaving public schools with students of lower capabilities than before the introduction of voucher plans (*Winkler – Rounds, 1996; Gauri, 1998; Fiske and Ladd, 2000*)