

# ECONOMICS OF EDUCATION





NEW

SZÉCHENYI PLAN

# ECONOMICS OF EDUCATION

Sponsored by a Grant TÁMOP-4.1.2-08/2/A/KMR-2009-0041

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The project is supported  
by the European Union.

National Development Agency  
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The projects have been supported  
by the European Union.

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# ECONOMICS OF EDUCATION

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June 2011

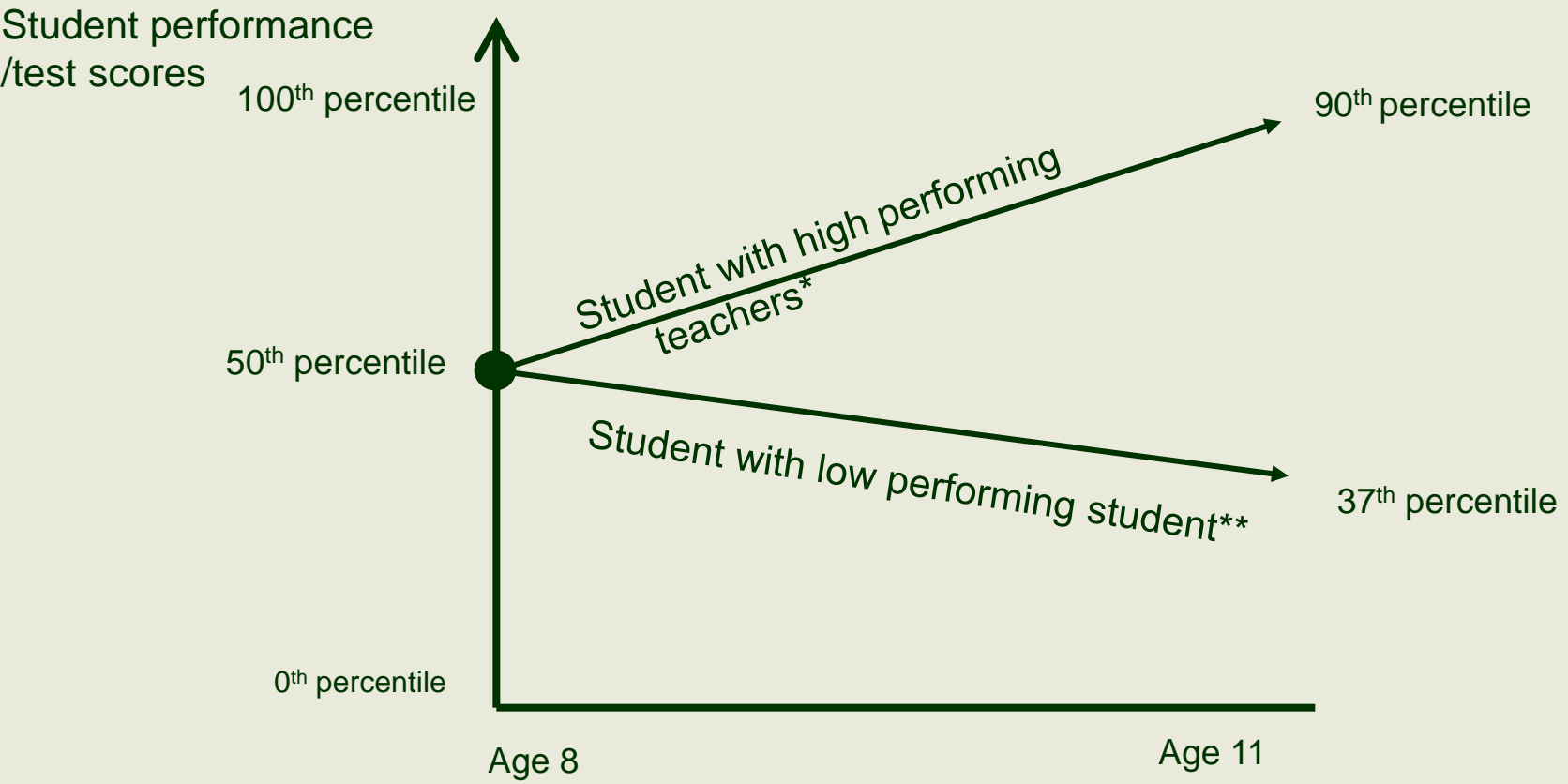
# ECONOMICS OF EDUCATION

## Week 11

### The labor market for teachers

Júlia Varga

# Teachers' effects



\* Among the top 20% of teachers;

\*\*Among the bottom 20% of teachers

Source: Sanders & Rivers *Cumulative and Residual Effects on Future Student Academic Achievement*

# Teacher labor market

Not perfectly competitive

- Dominant role of the government as a provider and regulator (near-monopolistic supplier of schooling, near monopsonistic buyer of teachers' services)
- Segmented and stratified nature of the market (by level of education, subject matter)
- Collective bargaining on wages
- Level of rewards mainly depends on qualification and seniority
- Teachers are often selected and recruited by levels of administration which do not define the reward structure

# Demand for teachers

$$D_T = \frac{S}{C} \cdot \frac{L^S}{L^T}$$

$D_T$  – demand for teachers

$S$  – aggregate student population

$C$  – average class size

$L^S$  – average number of required learning hours for students

$L^T$  – average teaching load for teachers



# Determinants of student teacher ratio

$$r_T^S = \frac{S}{T} = C \cdot \frac{L^T}{L^S}$$

T – total number of teachers

S – aggregate student population

- size of school age population
- starting and ending age of compulsory schooling
- enrolment rates
- in-grade retention rates

C – average class size

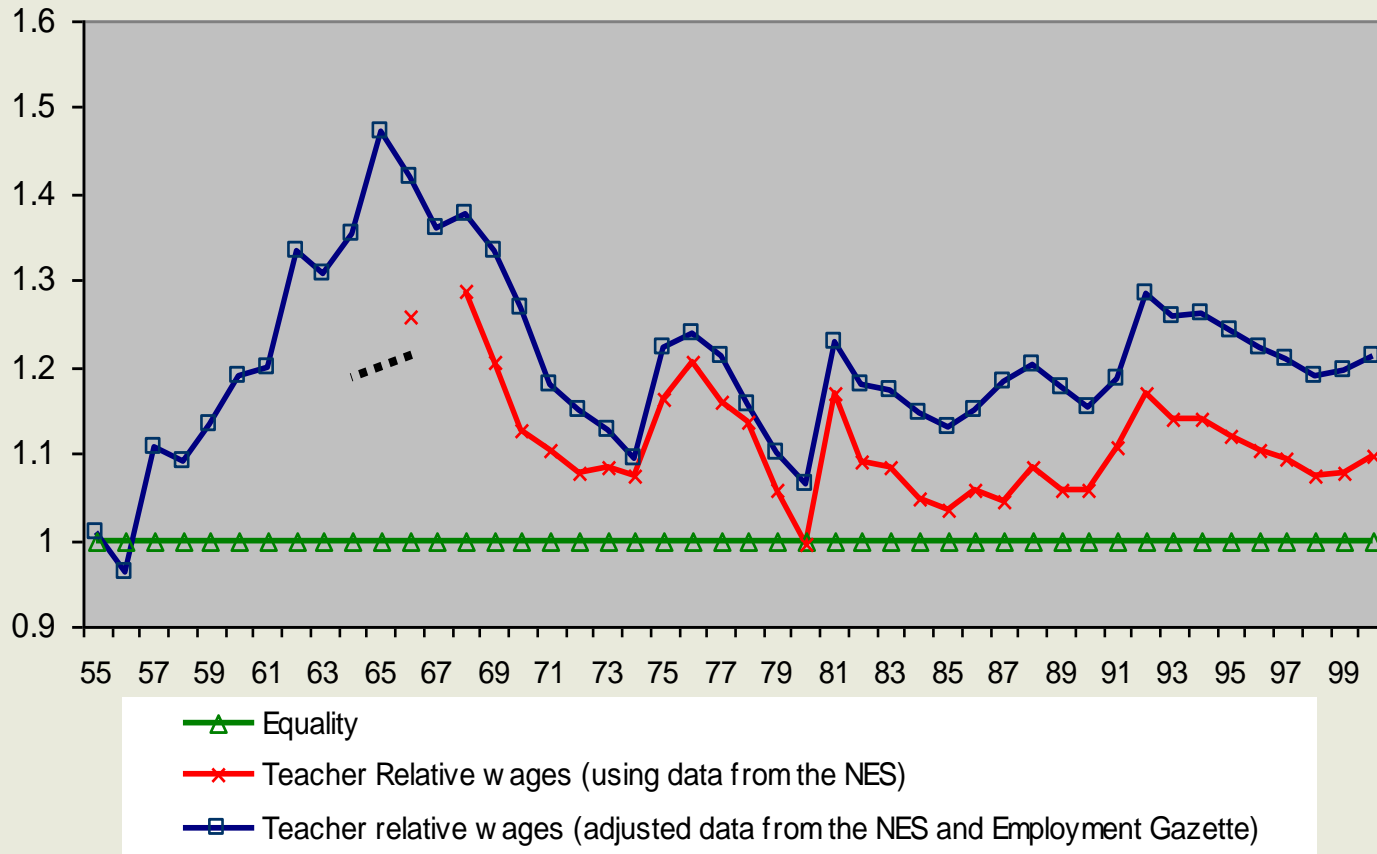
$L^T$  – average teaching load for teachers

$L^S$  – average number of required learning hours for students

# Determinants of teacher supply

- Relative salaries and alternative opportunities
- Salary structure
- Merit-based incentives
- Working conditions
- Teacher education and certification

# Teachers' relative wages in the UK



Source: Dolton, 1990

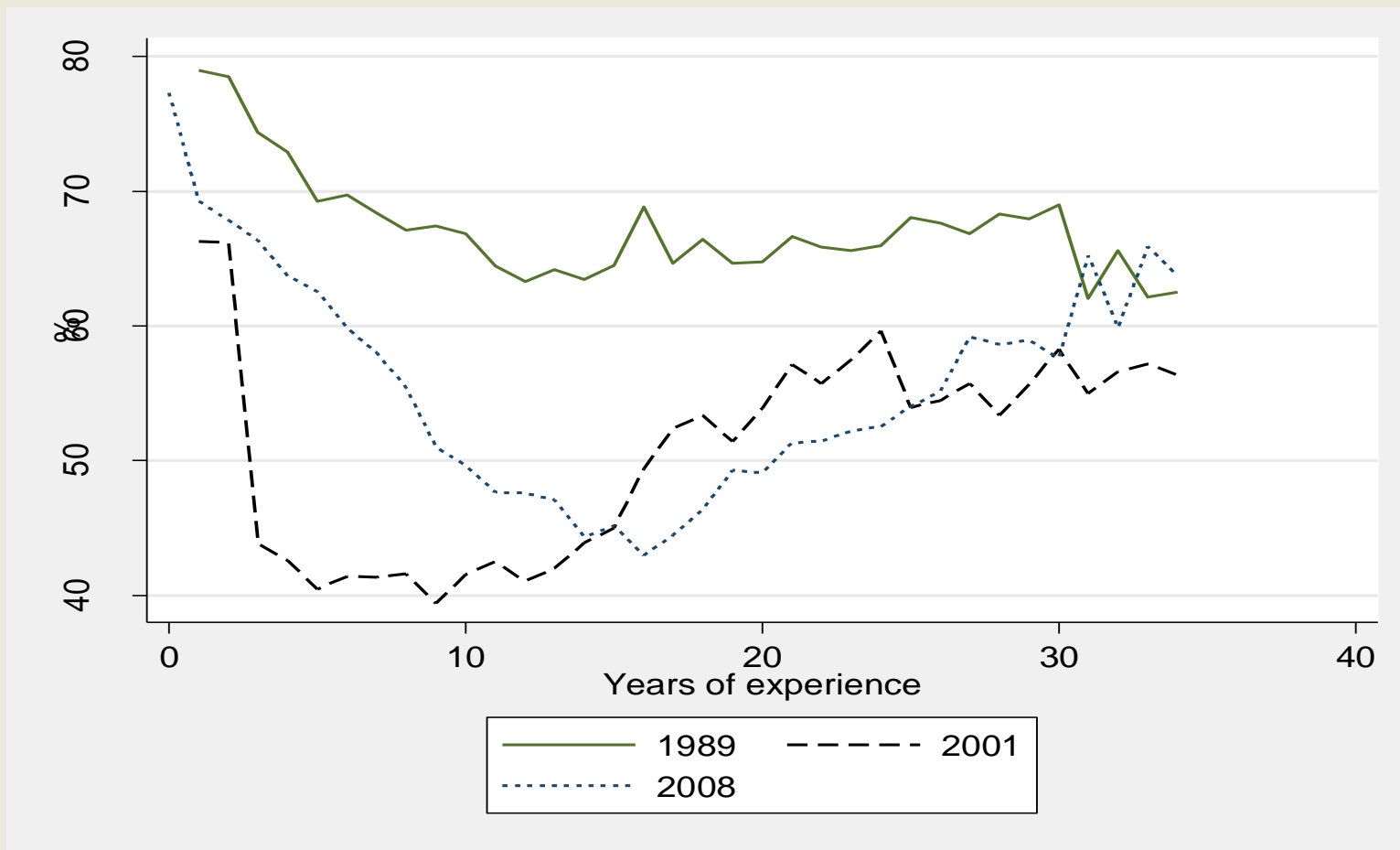
# Teachers' relative wages in Hungary

Teachers' salaries as a % of college or university graduate salaries  
1989-2008



# Teachers' relative wages in Hungary

## Teachers' wages as a % of graduates wages by years of experience

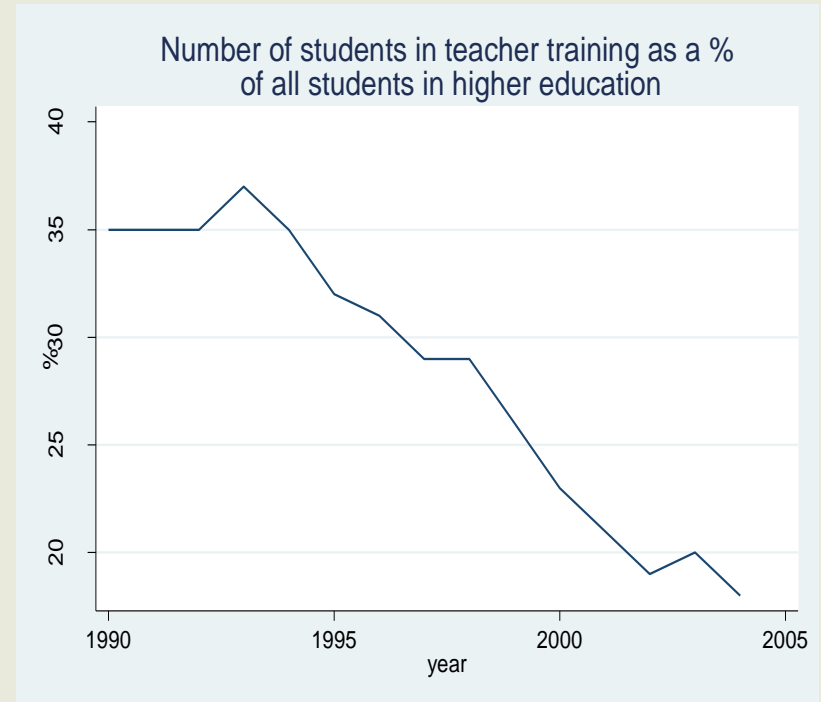
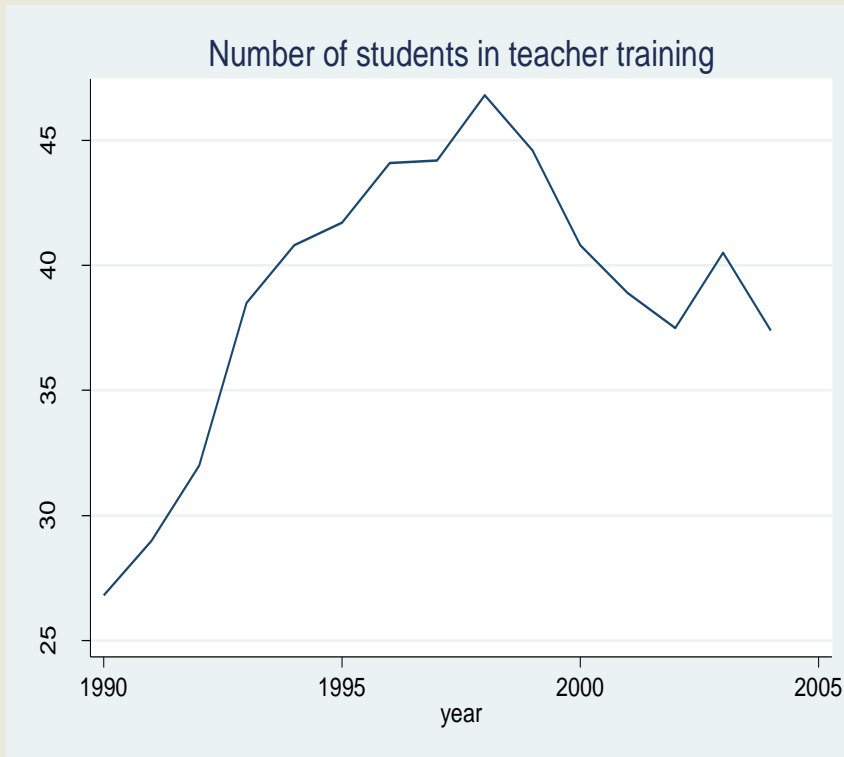


Source: Estimations of Varga, (2009) based on data og Hungarian Wage Tariff Surveys

# Alternative opportunities

Growing labor market opportunities for woman outside teaching (*Corcoran et al. 2004; Murnane et al. 1991; Bacolod 2002; Stoddard 2003; Temin 2002; Corcoran et al. 2004.*)

# Higher education expansion – changing possibilities for higher education studies in Hungary



Source: Based on data of National Admission Office

# Salary structures

## Teacher salaries

- degree level and experience
- little link between pay and performance
- no differentials based on job difficulty
- uniform salaries across academic subjects
- uniform salaries across geographic regions
- wage compression

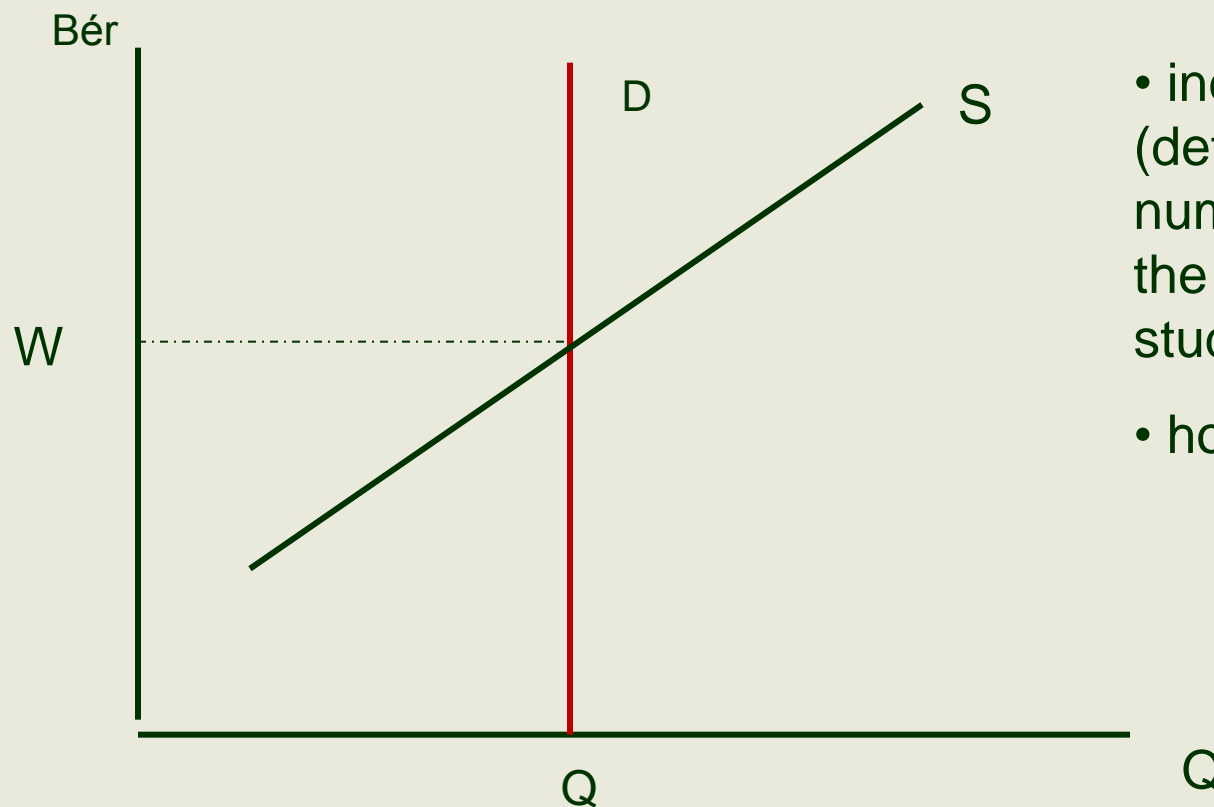
## Non-teacher salaries

significant (and increasing) returns to

- individual test scores
- college quality (*Brewer et al, 1999*)
  - technical skills (*Grogger and Eide, 1995*)
  - pay for performance plans



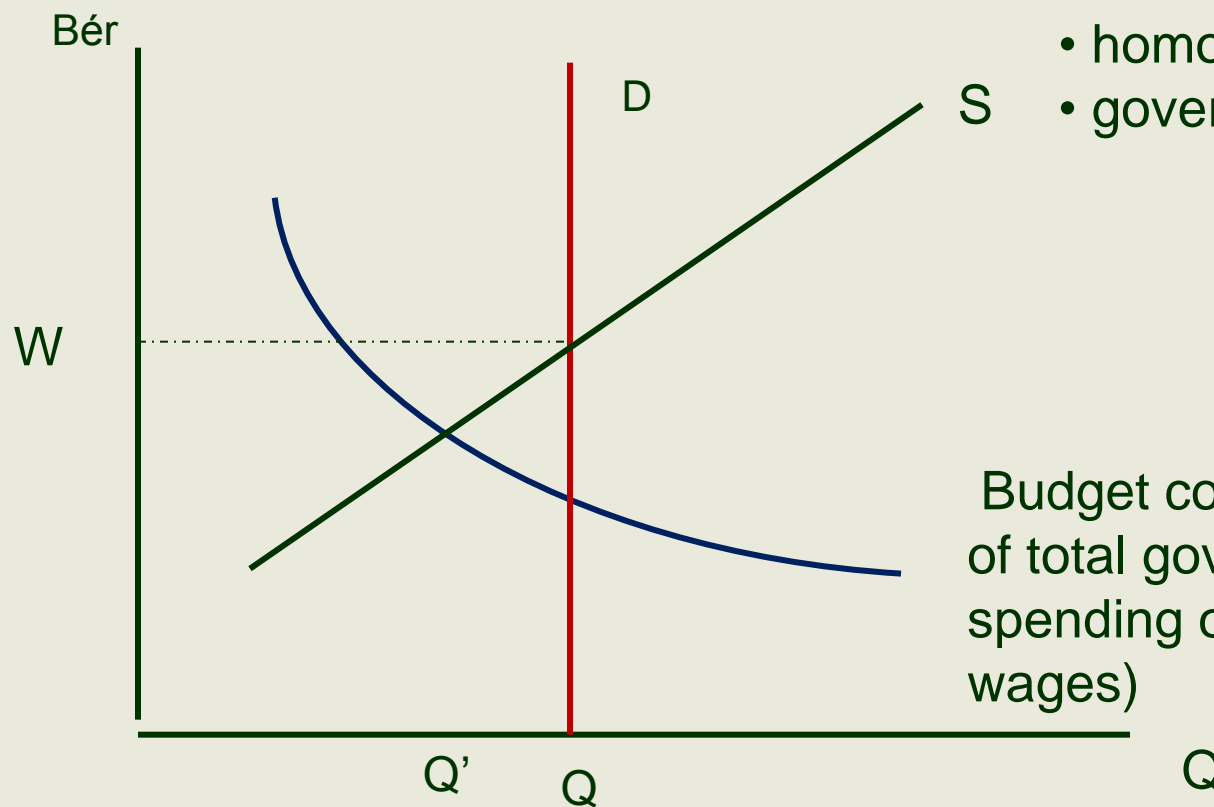
# Teacher supply and demand



- inelastic demand (determined by the number of children and the desired teacher student ratio)
- homogenous supply

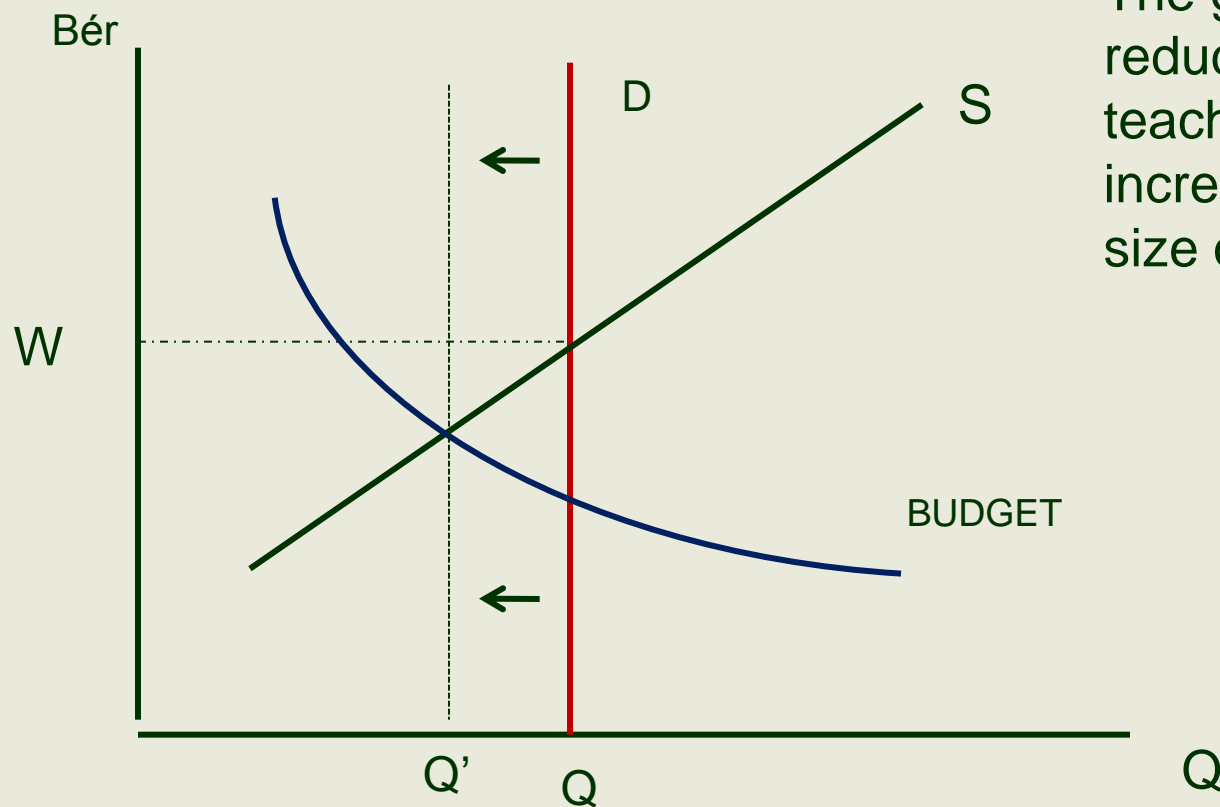
# Teacher supply and demand

- inelastic demand
- homogenous supply
- government sets wages



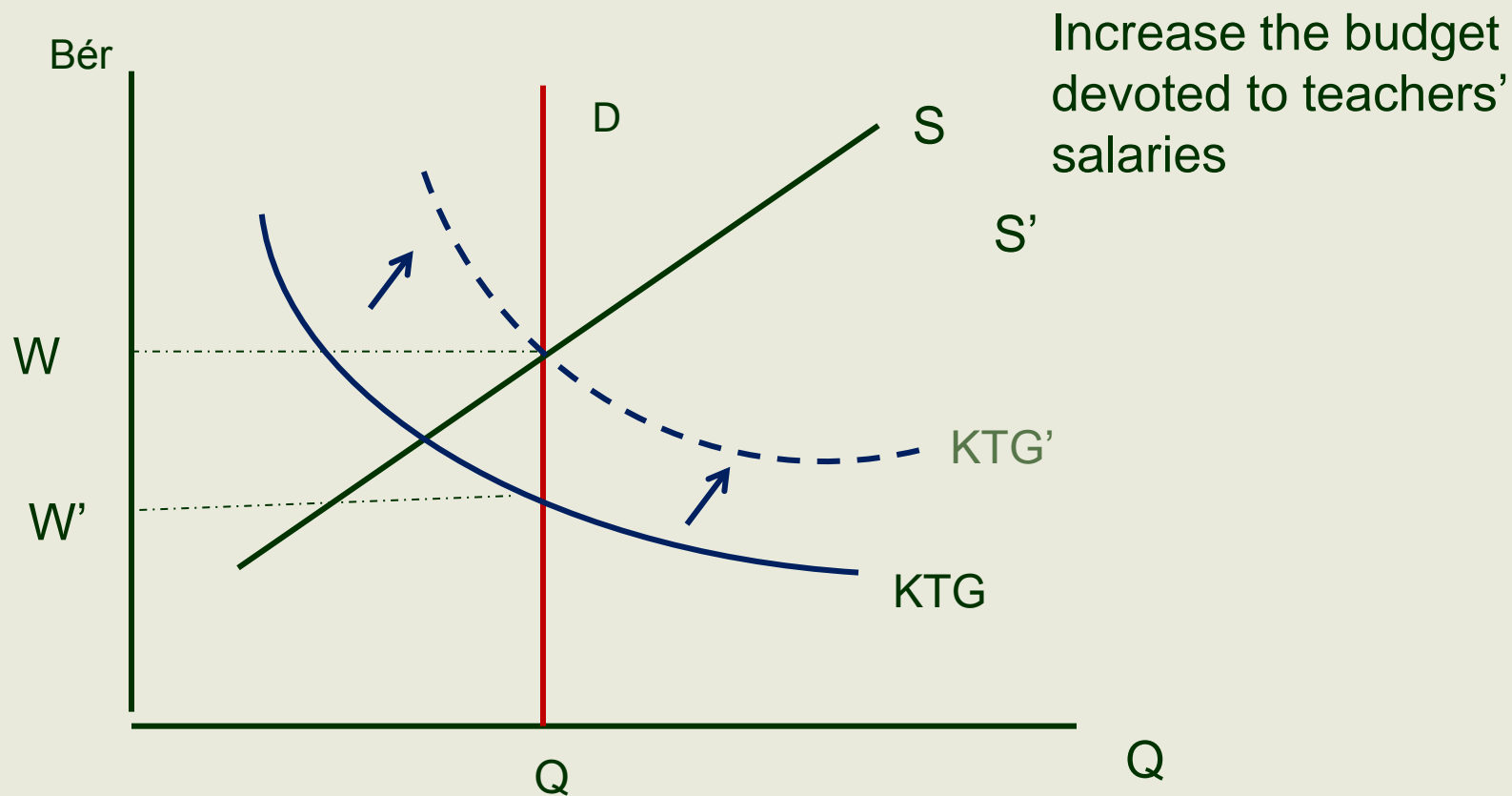
Budget constraint (level of total government spending on teachers' wages)

# Teacher supply and demand

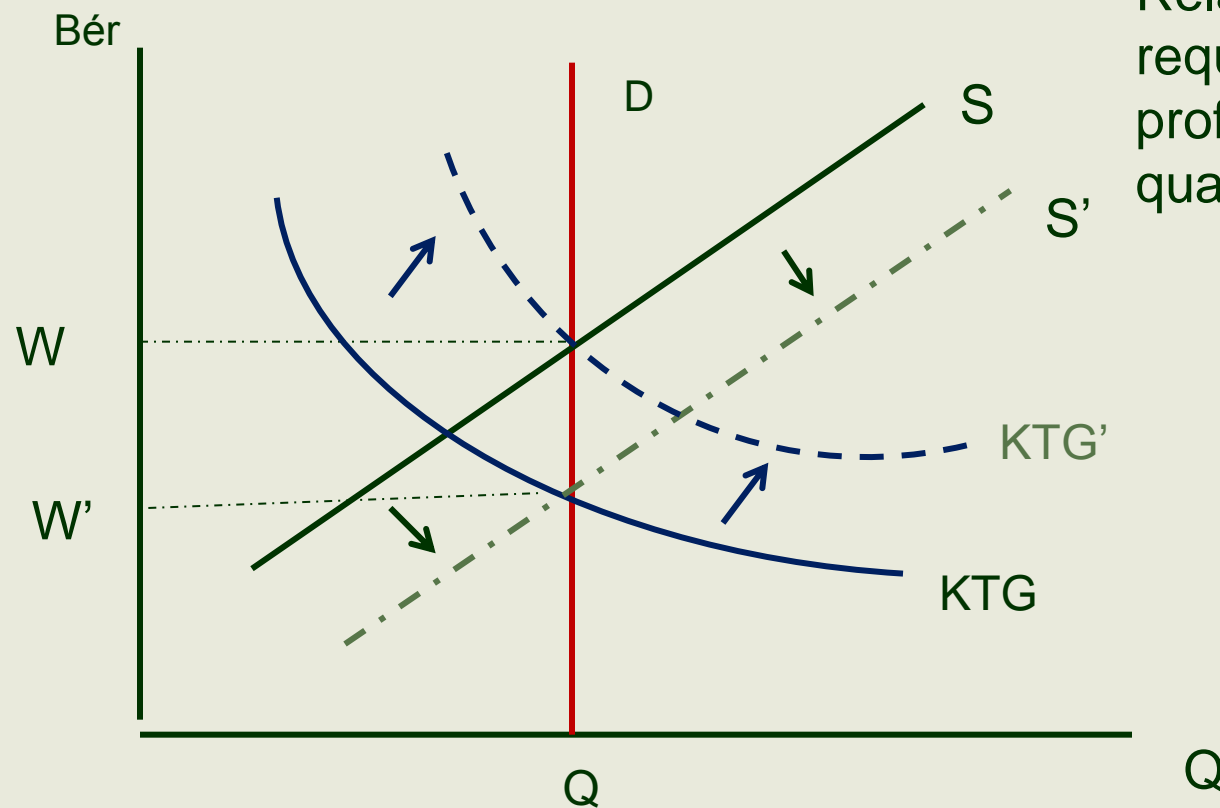


The government can reduce the number of teachers needed by increasing the class size or teaching load

# Facing teacher shortage

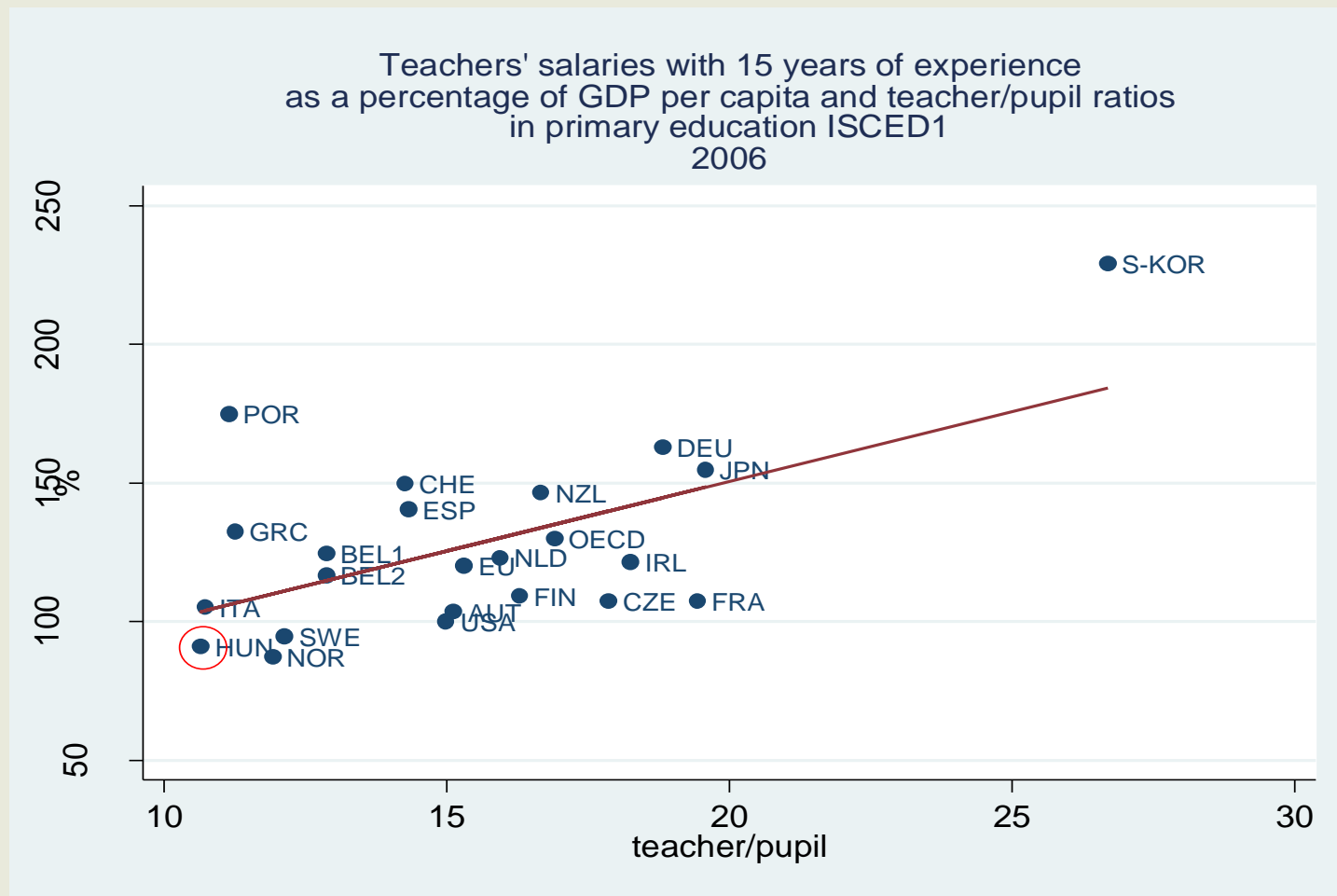


# Facing teacher shortage



Relax the entry requirements in the profession and hire less qualified individuals

# Trade-off between employment and wages



Source: Based on data of OECD Education at a Glance, 2008

# Single salary schedule

