THE ROLE OF CHOICE AND ACCOUNTABILITY FOR THE EFFICIENCY AND EQUITY OF SCHOOLING IN COUNTRIES IN TRANSITION

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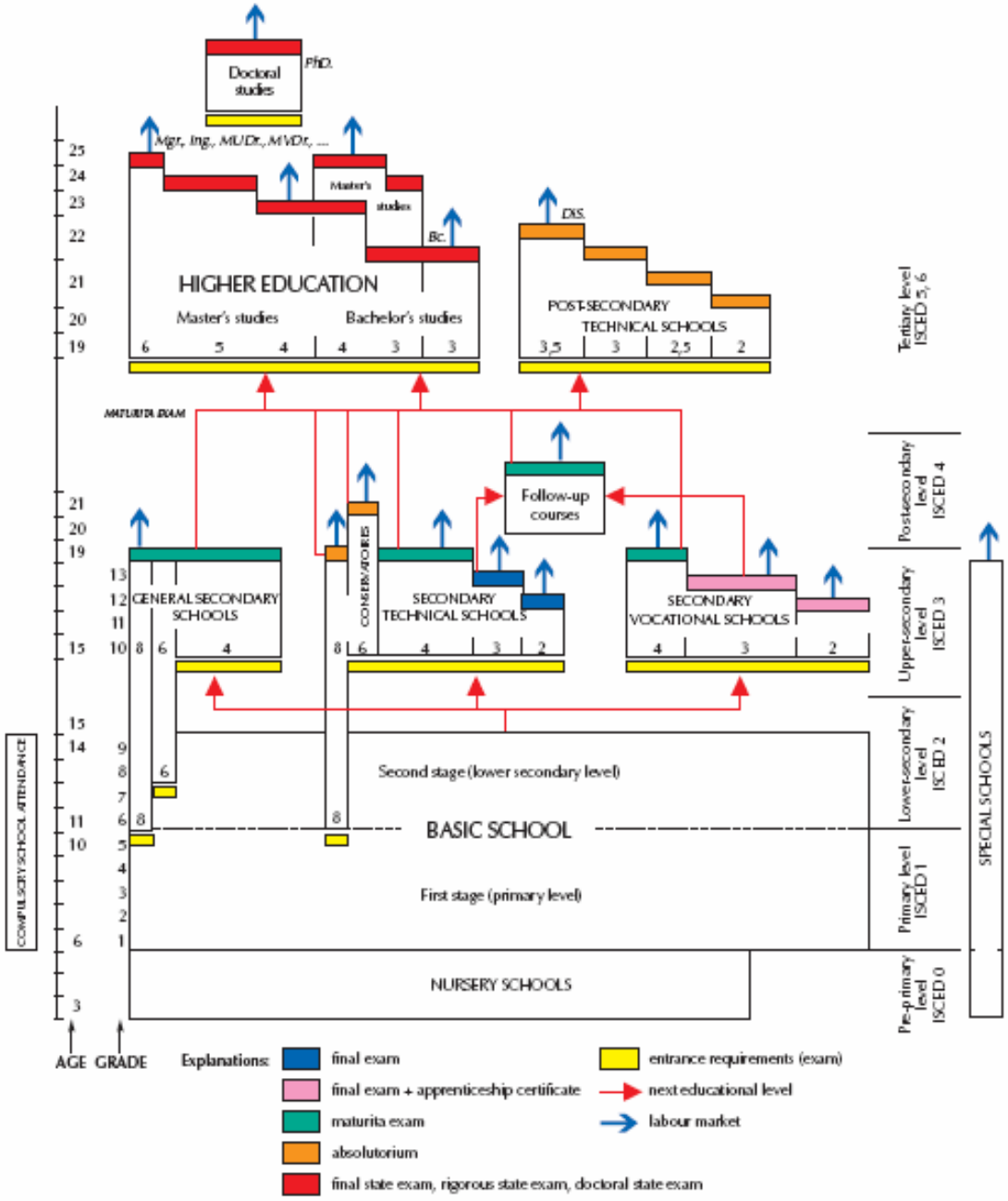
PRESENTATION OUTLINE

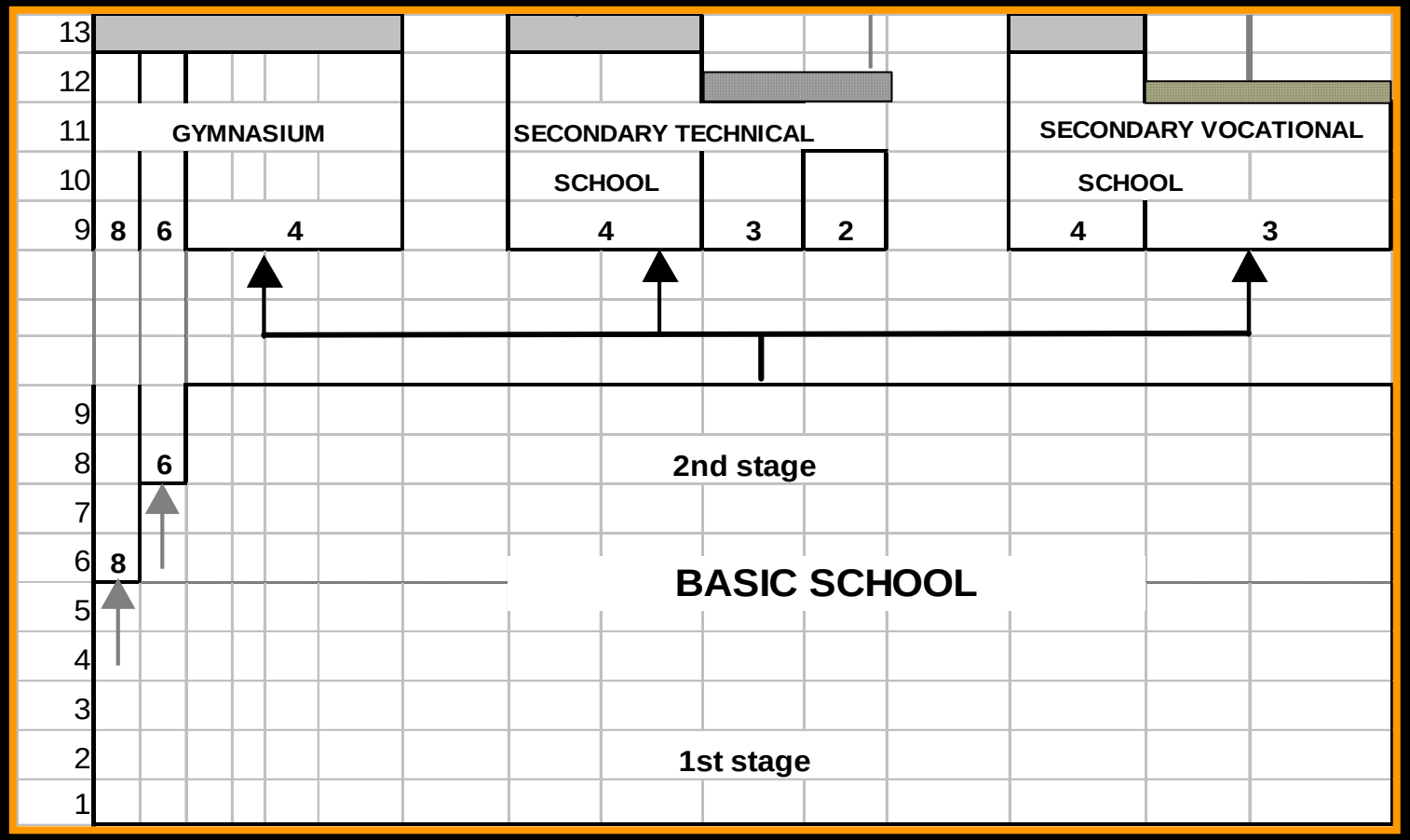
Academic review using empirical examples from the Czech Republic

1. Brief (necessary) background about the schooling system.
2. Supply/demand gap filled by entry of non-state schools: increasing access to education.
3. 3-tracks schooling system and demand & supply discrepancies: problem of students & schools (mis)matches.
4. School admission scheme: possible problem.
5. Sizeable demographic changes.

Education System of the Czech Republic



3-TRACKS UPPER-SECONDARY SYSTEM (simplified version)



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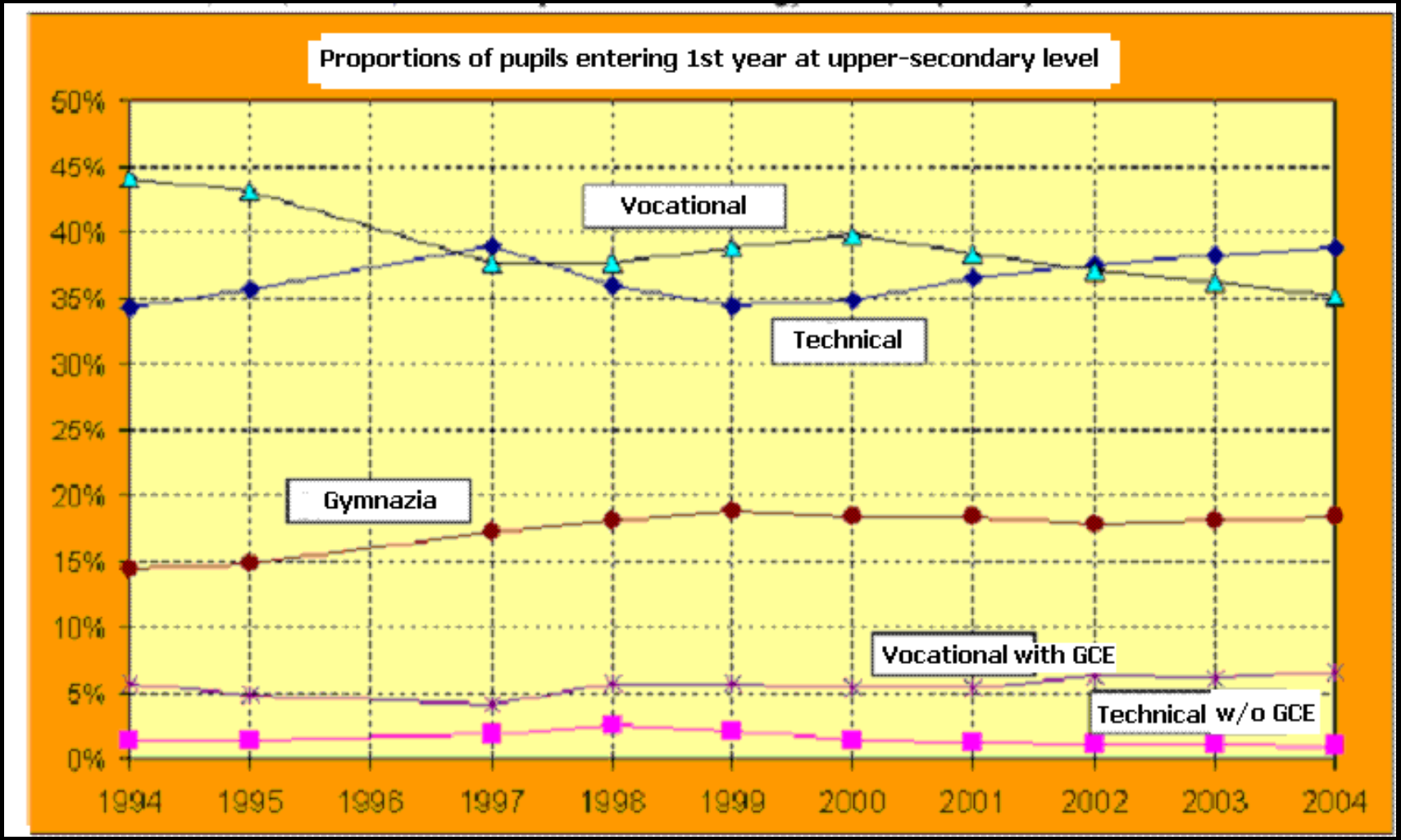


Note: Dominance of vocational schools has declined slowly. Share of gymnasia grew slowly and remains low.

STYLIZED FACTS

- Extraordinary high proportion of age cohorts attains at least upper-secondary education,
- 15 years old Czechs score slightly above average in PISA 2003,
- the system is viewed as highly selective (high variance in PISA scores),
- public schools dominate (~95%), private schools entered in early 1990s,
- small proportion of secondary-school graduates continues at a college (college supply gap),
- 3-tracks upper-secondary system : Gymnasia, Technical, Vocational schools.
- tracks differ in curriculum (well documented) and quality/demand (poorly documented),
- test scores at graduation differ across school types.

DIFFERENTIALS BETWEEN SCHOOLING TYPES

	Vocational	Technical	Gymnazia
Costs/pupil	high	medium,	Low
Excess demand	no	medium	high
Entry test scores	low	medium	high
Exit test scores	Low	medium	high
Labour market wage	Low	medium	High
Unemployment rate	high	medium	Low
College admission probability	zero	low	High
Partic. in life-long learning	minimal	low	Higher

Note: Obvious structural imbalances and inefficiencies.

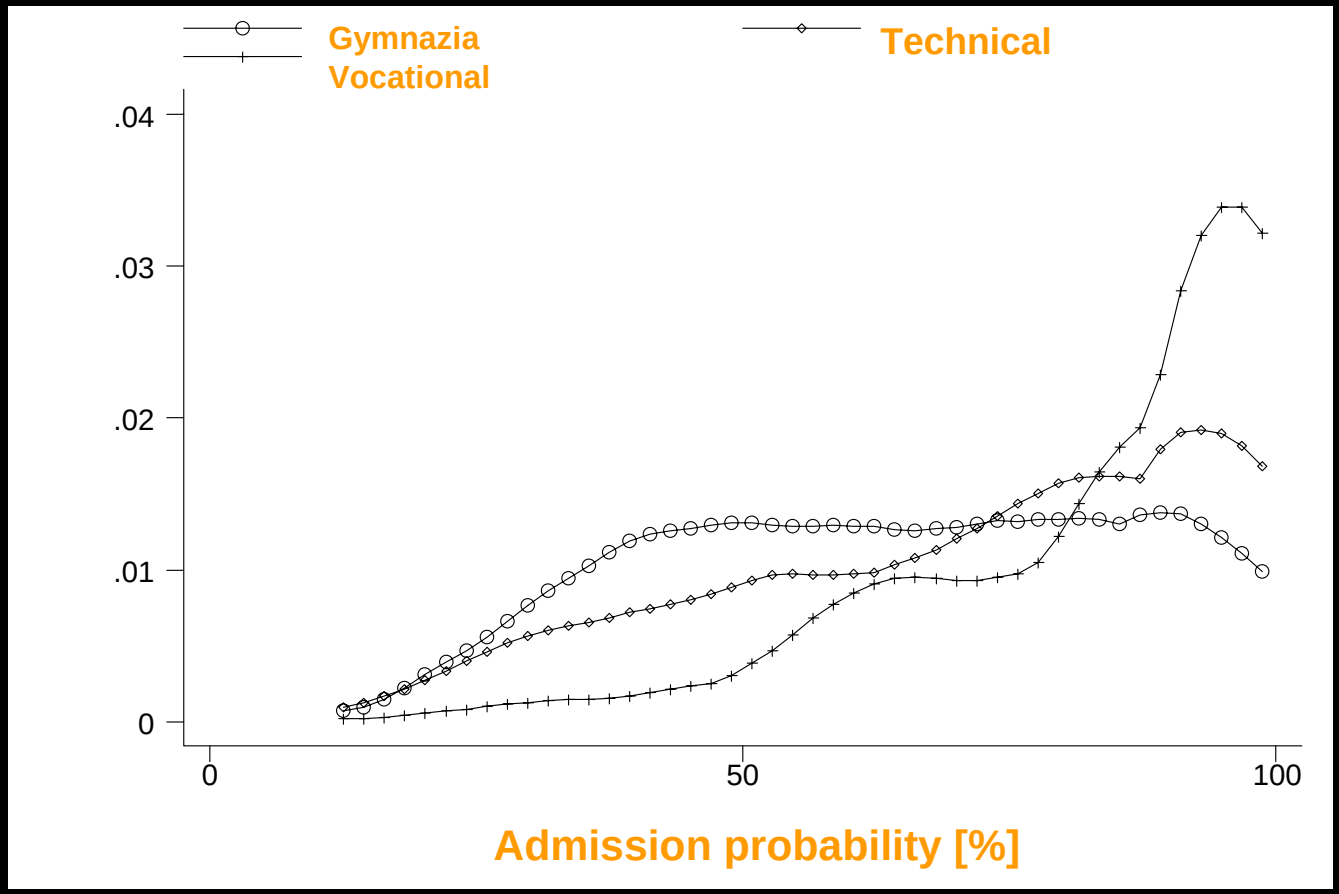
DIFFERENTIALS BETWEEN SCHOOLING TYPES

Table 7: Aggregate Components of the Raw SAT Score Gap Between Vocational and Grammar Schools Students

Component	Gap		
	Absolute	% of the raw gap	% of avg. score in vocational schools
Raw gap	14.0	100.0	34.6
Selection	2.5	18.0	6.2
Endowment	4.6	33.1	11.4
Intercepts	6.4	45.7	15.8
Coefficients w/o intercepts	-1.6	-11.3	-3.9
Interaction	2.0	14.6	5.0

Note: great deal of test score difference between gymnazia and technical school graduates is due to school type and not due to selection and initial conditions.

Distribution of admission probability [x-axis: admitted/applicants in %] (by school types)



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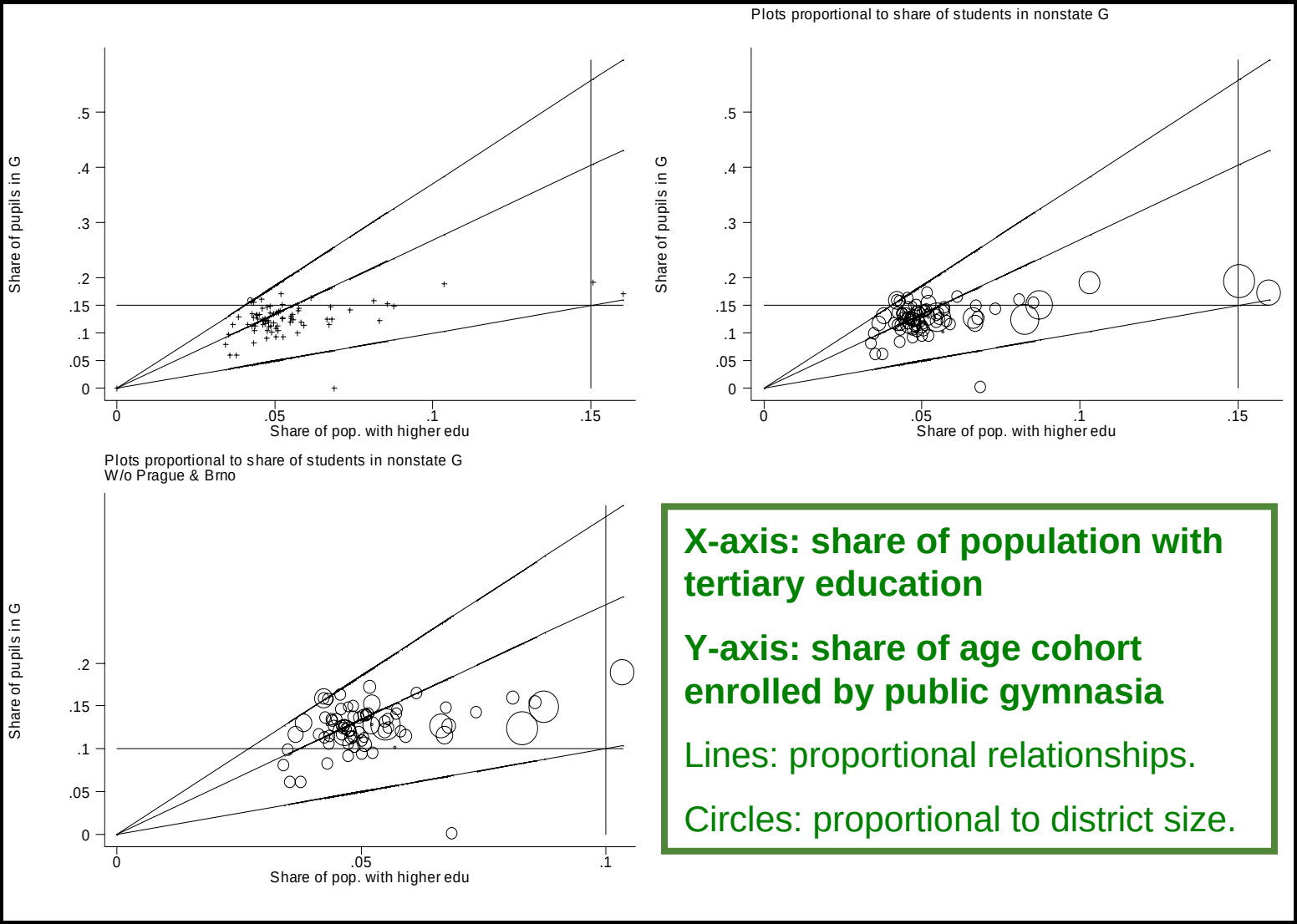
Share of gymnasia grew slowly and remains low.

SUPPLY GAP IN EARLY ’90s BEING FILLED BY NON-STATE SCHOOLS



X-axis: share of population with tertiary education

Y-axis: share of age cohort enrolled by public gymnasia

Lines: proportional relationships.

Circles: proportional to district size.

COMPARING PUPILS IN STATE AND PRIVATE SCHOOLS

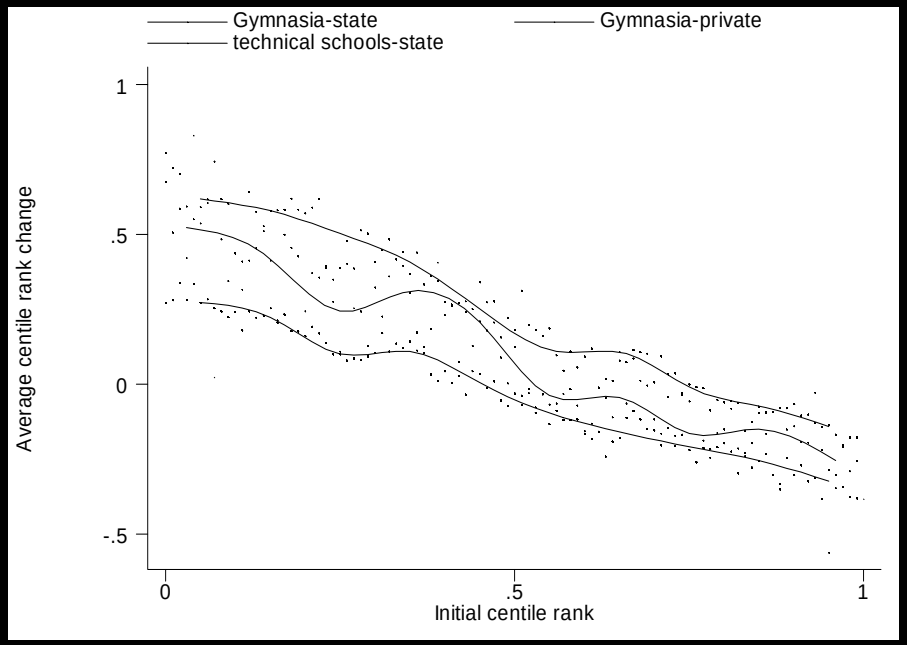
	Education mother	Education father	Grade	PC
Gymnasia				
Public	3.08	3.14	1.35	0.53
Private	3.20	3.32	1.47	0.63
Technical schools				
Public	2.59	2.65	1.50	0.40
Private	2.65	2.71	1.58	0.45

Education: 2 ~ vocational, 3 ~ upper-secondary GCE, 4 ~ tertiary
Grade: at the admission, 1~best, 2~worst
PC: proportion of pupils with PC at home

Comment: Compared to public gymnasia and technical schools pupils, private schools pupils have in average lower study aptitude and more educated parents (smarter?, wealthier?, willing to pay?).

Conclusion: Private schools filling supply gap served pupils who would otherwise end-up in public schools of inferior type. Public funding of education provided by non-state schools can increase access to education and decrease inequity.

PUPILS' INITIAL SKILLS AND SKILLS GAINED (by school & ownership types).



Legend:

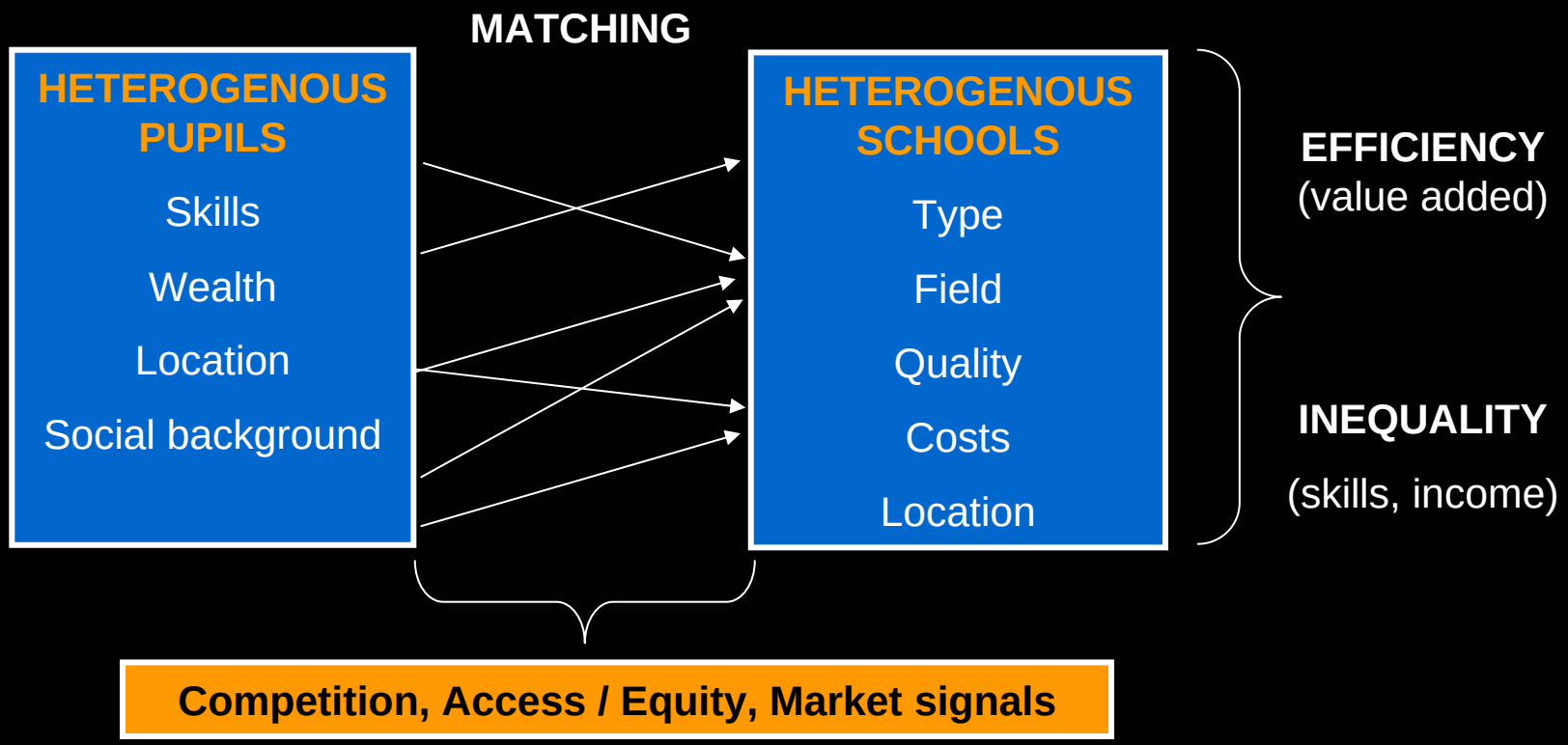
X~ centile rank of initial skills (at the admission).
Y~ average centile rank change during studies measured at graduation.

Top line: state gymnasia (highest value added)
Middle line: private gymnasia
Bottom line: state technical schools.

Findings: Public gymnasia outperform non-state gymnasia (in terms of student's rank improvement) but non-state gymnasia are still better than state technical schools (the only would-be alternative for non-state gymnasia students if these gymnasia would not exist). Note that vocational schools are not included due to lack of data (not collected!)

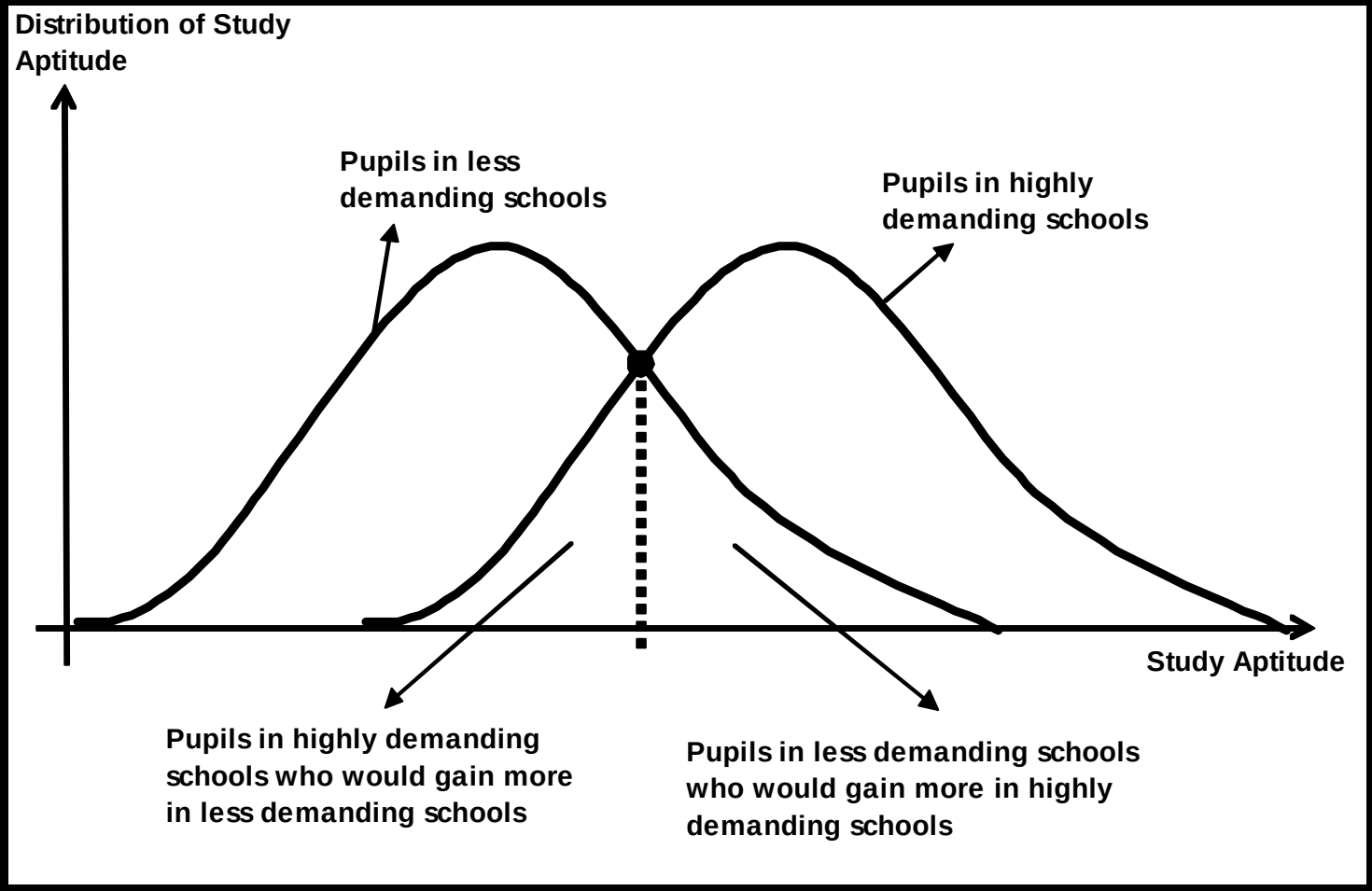
Conclusions: under some conditions, publicly financed private schooling can widen access to better education.

TRANSITION TO HIGHER SCHOOLING LEVEL



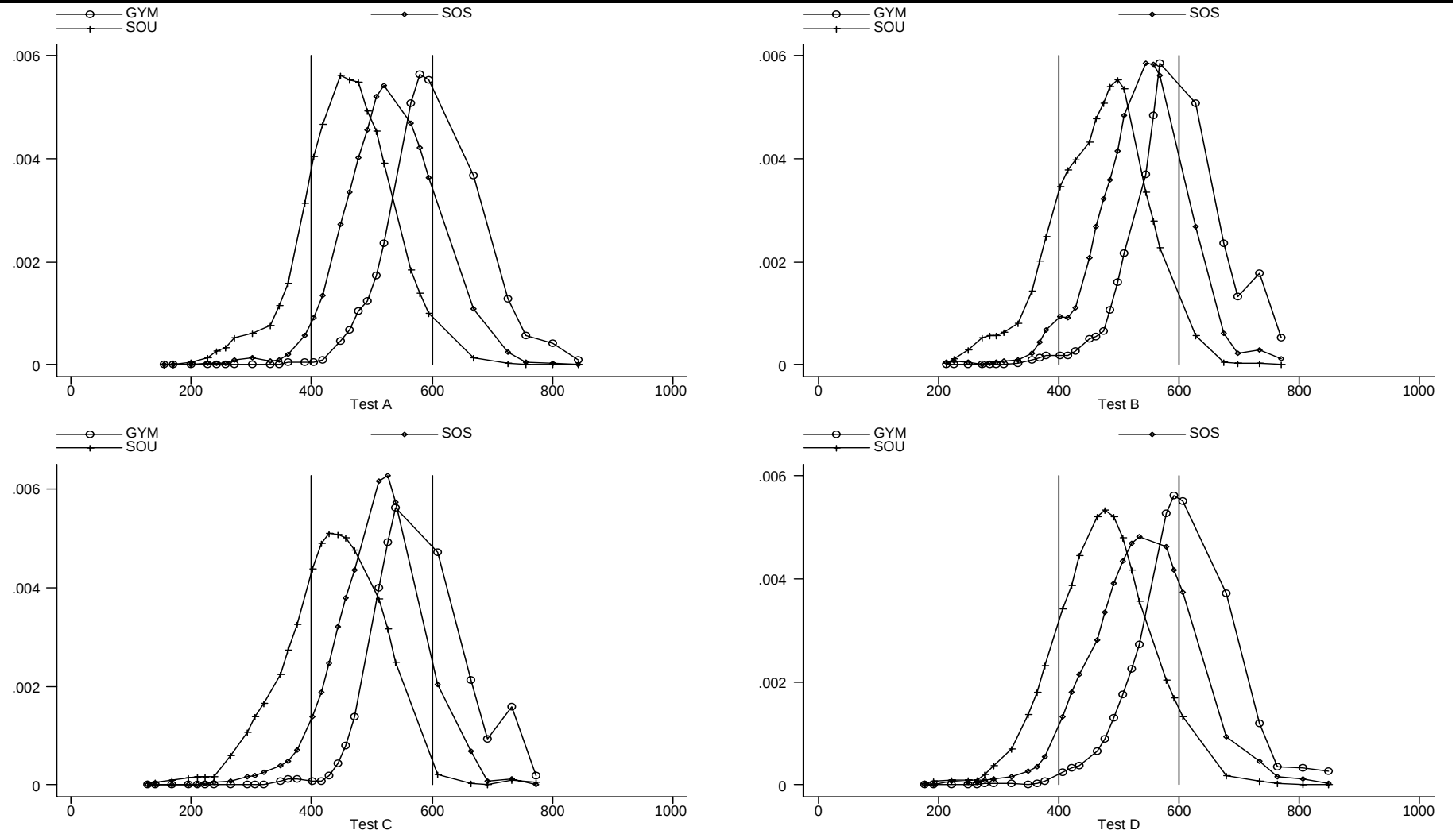
Negative trade-off between efficiency and equity does not necessary hold
→ call for policy intervention.

PUPILS' STUDY APTITUDE AND SCHOOL REQUIREMENTS
Theoretical case



The overlap can be due to supply & demand imbalances, spatial mismatch, imperfect information, etc. plus specific preferences of some pupils.

Empirical case



Distribution of PISA 2003 test scores (A-Math, B-Problem Solving, C-reading, D-Natural Sciences) of 15-years old Czech pupils entering upper-secondary schools (GYM-gymnasia, SOS-technical schools, SOU-vocational schools.

Share of pupils enrolled in inferior school type A who outperform at least 25% of pupils enrolled in (superior) school type B.

	Voc vs. Tech	Voc vs. Gym	Tech vs. Gym
Boys in			
small towns	0.327	0.027	0.329
big towns	0.398	0.065	0.401
Girls in			
small towns	0.153	0.022	0.201
big towns	0.146	0.026	0.247

Note: there is high discrepancy between skills and school types in case of boys at vocational and technical schools.

Shares of parents who have preferred other school type (w/o unfavourable conditions)

	Small towns		Big towns	
	Boys	Girls	Boys	Girls
Gymnazia	0.13	0.09	0.08	0.11
Technical	0.17	**0.23**	0.14	**0.24**
Vocational	**0.30**	**0.34**	**0.22**	**0.37**

Share of parents who preferred other school (not available) by study aptitude, municipal size, school type.

	Small towns		Big towns	
Quartile/Type	Boys	Girls	Boys	Girls
Gymnasia	-	0.00	-	-
2	-	0.03	-	0.07
3	0.11	0.10	0.03	0.04
4	0.15	0.06	0.09	0.07
Technical	0.12	**0.21**	0.10	0.17
2	0.14	0.12	0.10	**0.19**
3	0.08	0.11	0.09	**0.21**
4	0.03	0.03	0.05	0.04
Vocational	0.18	**0.25**	0.11	**0.27**
2	**0.24**	**0.46**	**0.20**	-
3	**0.34**	-	**0.31**	-
4	-	-	-	-

ADMISSION SCHEME DESIGN: case of the Czech Republic

Step 1: Pupils gather info about schools in the neighborhood, past year excess demand

ROUND I

Step 2: Pupil (parents) chooses her 1st priority school and submits single application.

Step 3: Admission day (entry exam, interview, grades from the previous school levels)

Step 4: Admission decision (admitted/rejected)

ROUND II

Step 5: Gathering info about schools with remaining slots

Step 6: Admission day (entry exam, interview, grades at the previous school levels)

ROUND III, …etc until all applicants are placed.

ADMISSION SCHEME DESIGN: some problems

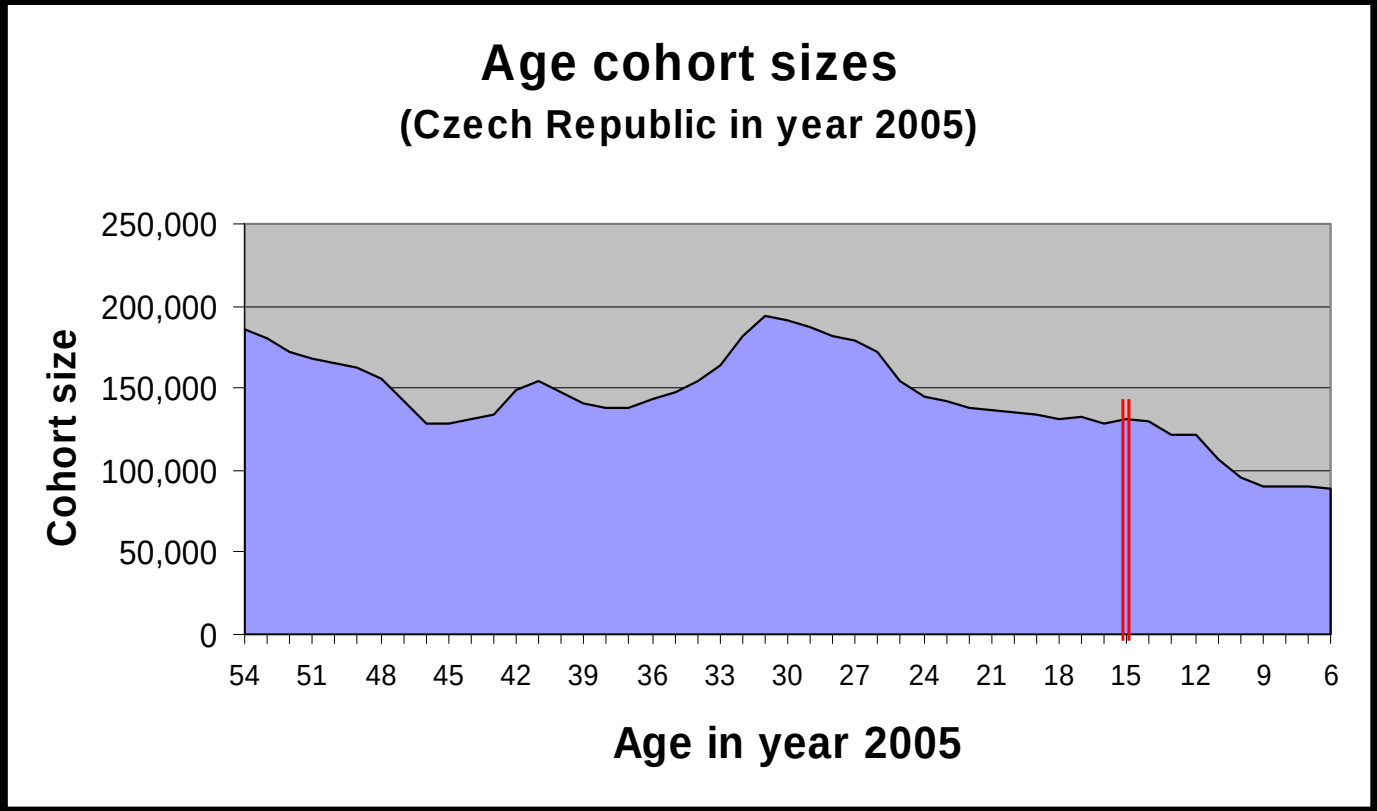
Those who failed in the 1st round face rather limited choice in the 2nd round.

- 1st round school choice is very risky
  - 1st round school choice is traumatic decision
  - pupils with better informed parents (more educated) have advantage
  - Bad day risk
- **Strategic misrepresentation of school preferences**
  - Actual demand (revealed) for schools does not reflect latent demand
    - widespread cases of justified envy (alphabet sorting)
    - loss of market signals (school management and policymakers)
    - adverse impact on competition and effective governance
- Matching of pupils to schools is noisy
  - inefficiency (study aptitude, spatial location, fields)
  - and inequality (small vs. big towns, by gender)

TRANSITION TO HIGHER SCHOOLING LEVEL: summary

- Pupils-Schools matching affects efficiency and equity
- Transitions to higher educational level (all levels) are associated with **unequal access** to schooling and is source of **growing skills inequality**.
- Unequal access to schooling is boosted by supply gaps.
- Highly skilled (or wealthy) pupils are enrolled by better or more demanding schools and **skill/economic inequality is amplified**.
- Persistent supply gaps are an outcome of administrative barriers on schools expansion/closures.
    - Barriers are based on various, well or poorly grounded policy intensions or interest groups interests.
    - Oversubscriptions more likely in the presence of heterogeneity (quality, type/field, spatially/administrative restrictions.
- Assorted matching between students' skills and differently demanding (study requirements) school leads to higher value added and therefore **higher efficiency**.
- Transitions to higher schooling levels are fostering competition and **efficiency**.
    - Lack of comparative information about legal and effective mechanisms driving pupils-schools matching in most European countries.

HUGE DEMOGRAPHIC DECLINE



Note: Demographic decline not being spread equally across regions, districts, towns multiplies demand/supply discrepancies implies problems:

-Central vs. regional funding scheme

-Cross-border enrolments