

Analyzing the Market for Shadow Education in Pakistan: Does private tuition affect the learning-gap between public and private schools?

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Context

- Literature finds a learning-gap between private and public schools in the Punjab, Pakistan with private school students outperforming their public school counterparts.
- These studies do not account for the growing shadow education sector in the country: 17% public school students and 34% private school students take private tuition in the Punjab (ASER, 2012).
- Students taking private tuition outperform those not taking it.
- Is it possible that private tuition rather than a difference in schooling quality is driving the observed learning-gap between public and private schools?

Definition

Shadow education is defined as *extra, paid tuition classes given after-school hours* either one-to-one at the student's home or in larger groups or tuition academies.

Gaps in the Literature

- **Dearth of research** on the supply and demand dynamics of private tuition - a number of questions open to debate specifically in the LDC context
- **Mixed evidence** on the impact of private tuition on academic performance
- Moreover, in the context of Pakistan, the public-private school debate has not been examined in the light of the growing private tuition sector.

Novel study :fills the gap in the literature and reexamines the public-private school quality debate from the private tuition perspective.

Research Questions

Demand Side:

- Is private tuition taken as a substitute to poor quality public schooling?
- Does it supplement help received at home or act as a substitute for such assistance?

Supply Side:

- Who are the main providers of private tuition classes?
- Do the mainstream teachers who provide after-school tuition do so at the cost of in-school teaching?

Research Questions

Academic Performance:

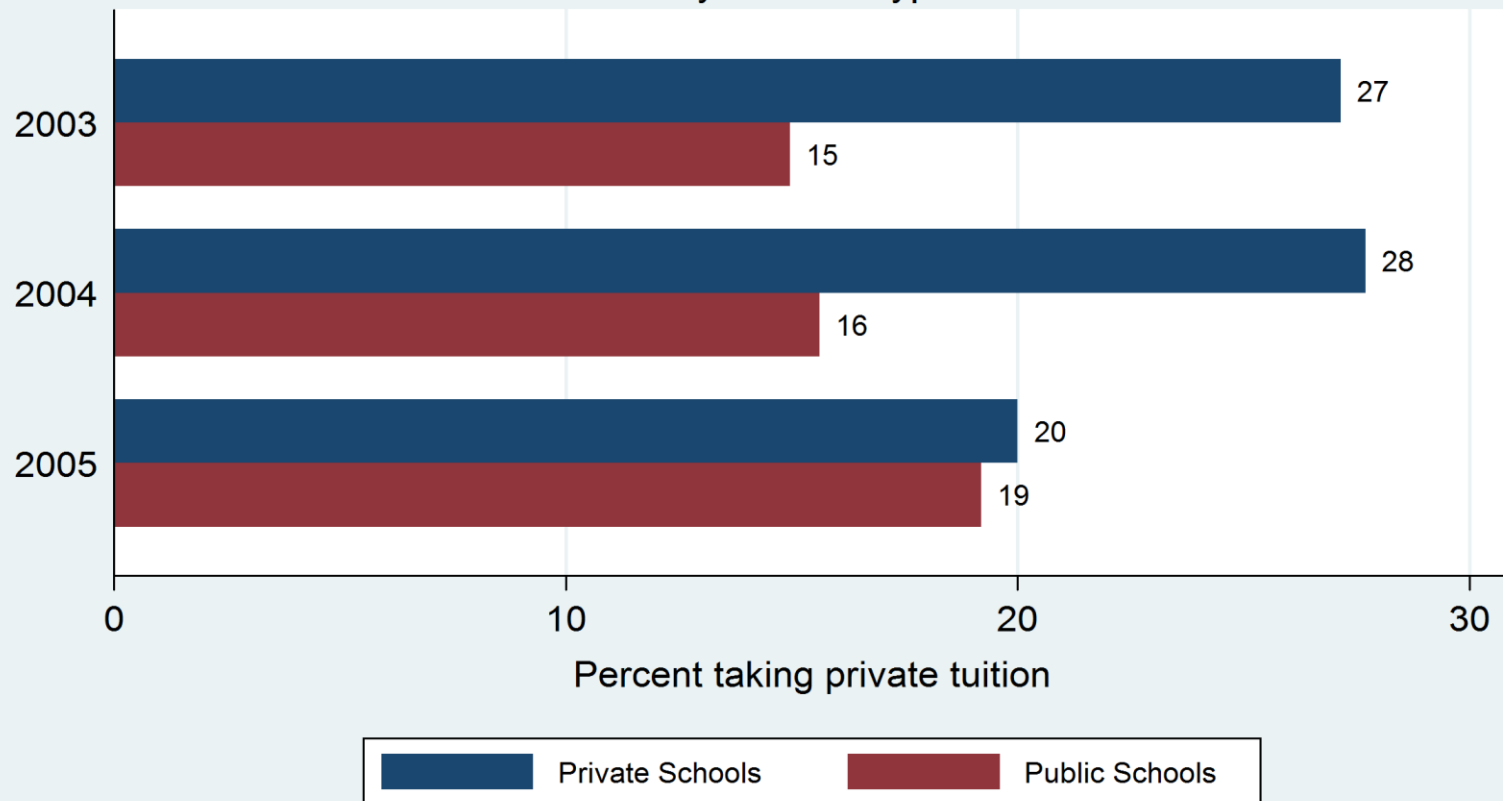
- Does private tuition have an impact on student learning-outcomes?
- Can private tuition explain the learning-gap found between private and public schools and can it be used to bridge this gap?

Data

- Learning and Educational Attainment in Punjab Schools (LEAPS) panel data for the years 2003, 2004 and 2005
- Rural areas in three districts of Punjab surveyed– Attock, Faisalabad and Rahim Yar Khan
- Sampling Frame: 112 villages randomly selected, 838 schools in total surveyed within these villages
- Data on teachers and students obtained from teacher and household surveys respectively
- Primary school students tested in Mathematics, Urdu and English and the results evaluated using Item Response Theory

Demand for Private Tuition

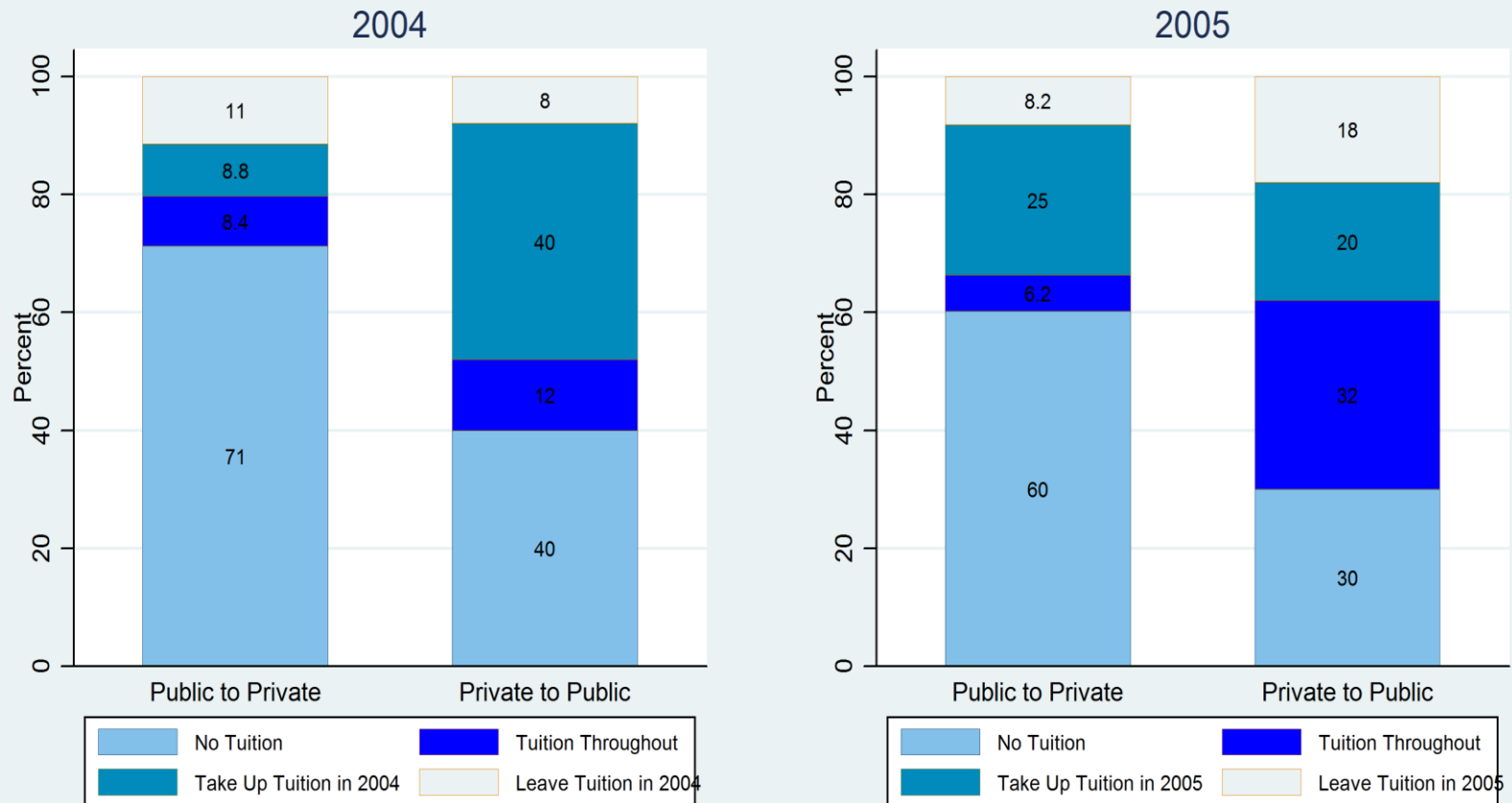
Private Tuition Incidence Over Time By School Type



Source: LEAPS Data 2003 - 2005

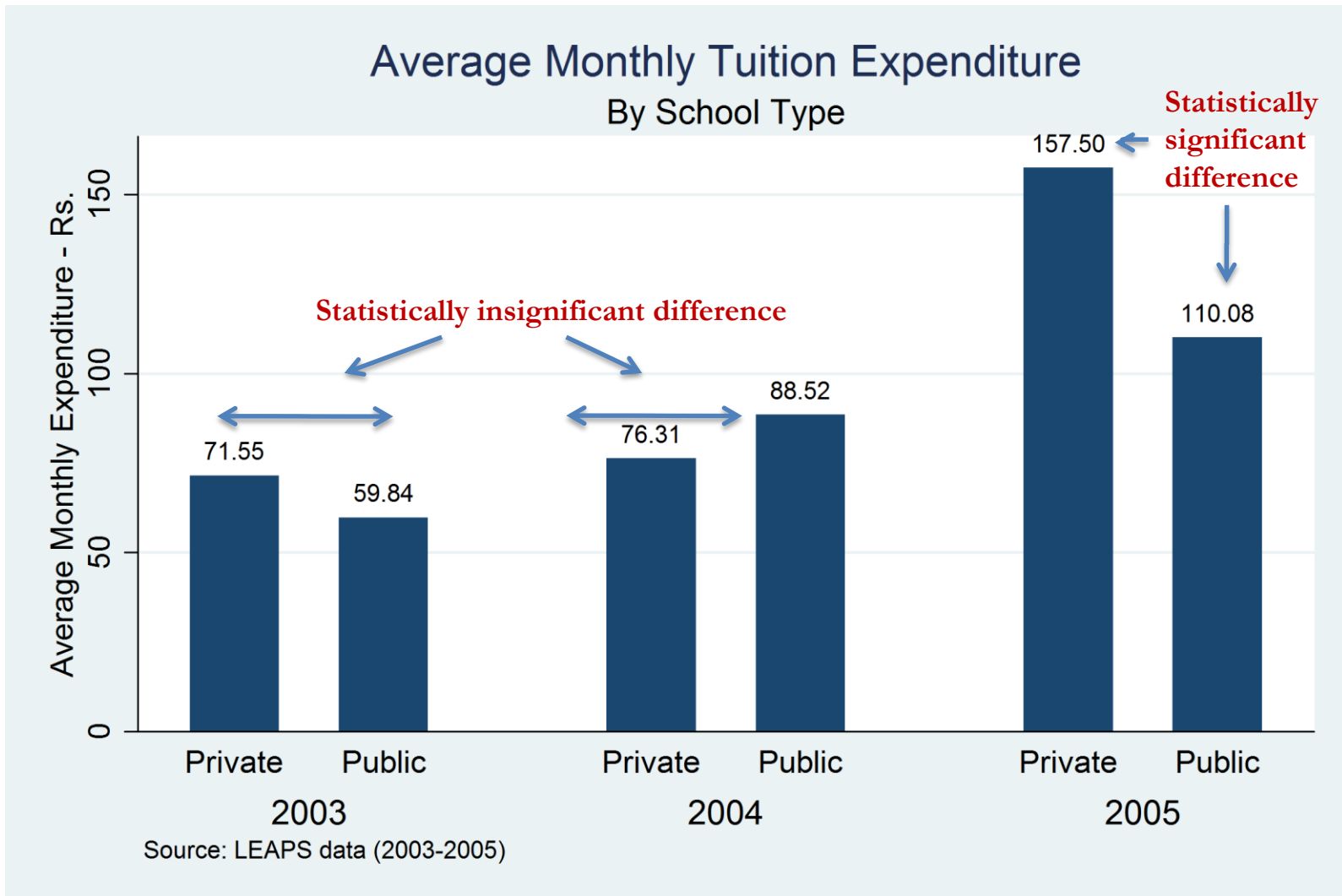
Demand For Private Tuition

Private Tuition Take Up and School Switchers



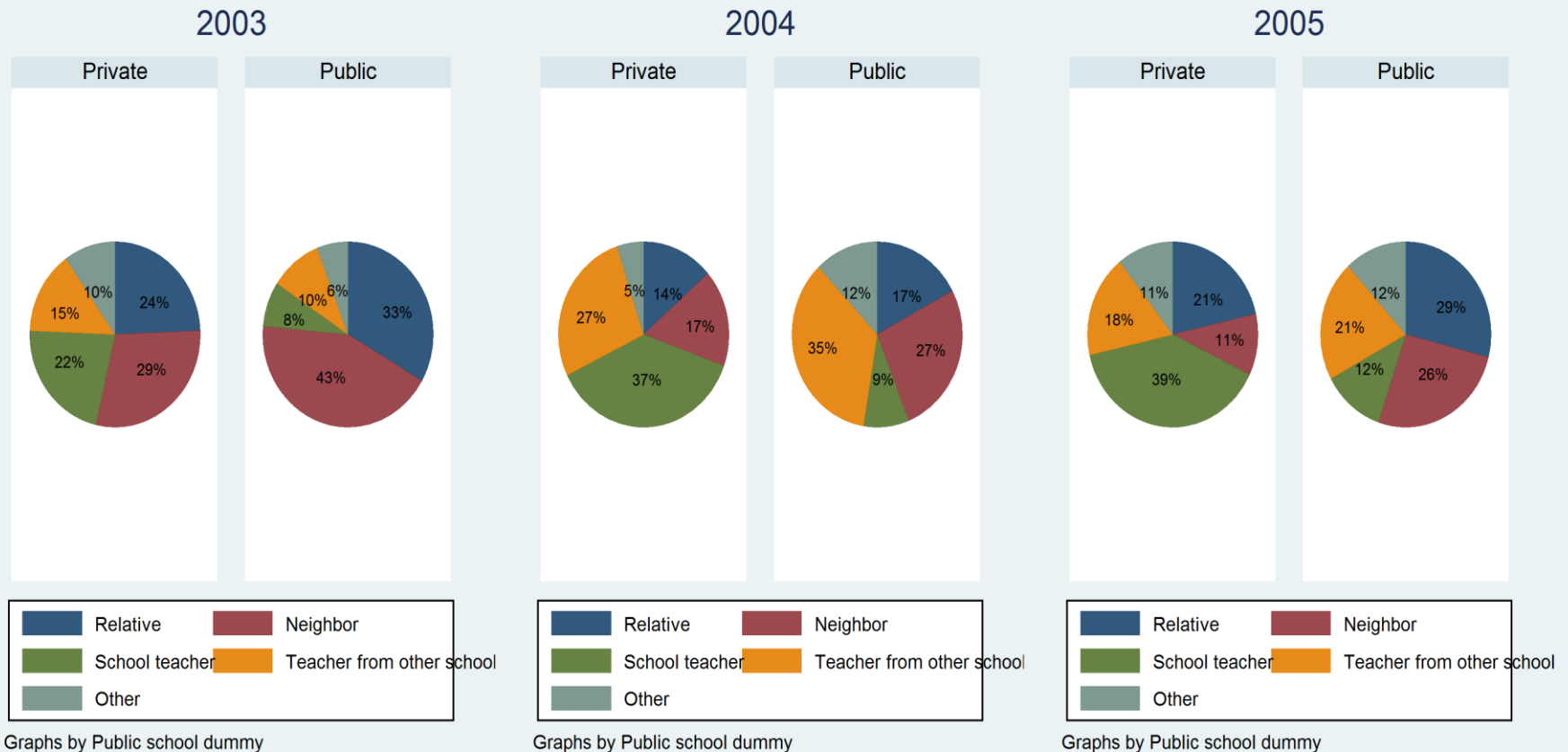
Source: LEAPS data (2003-2005)

Demand for Private Tuition



Demand For Private Tuition

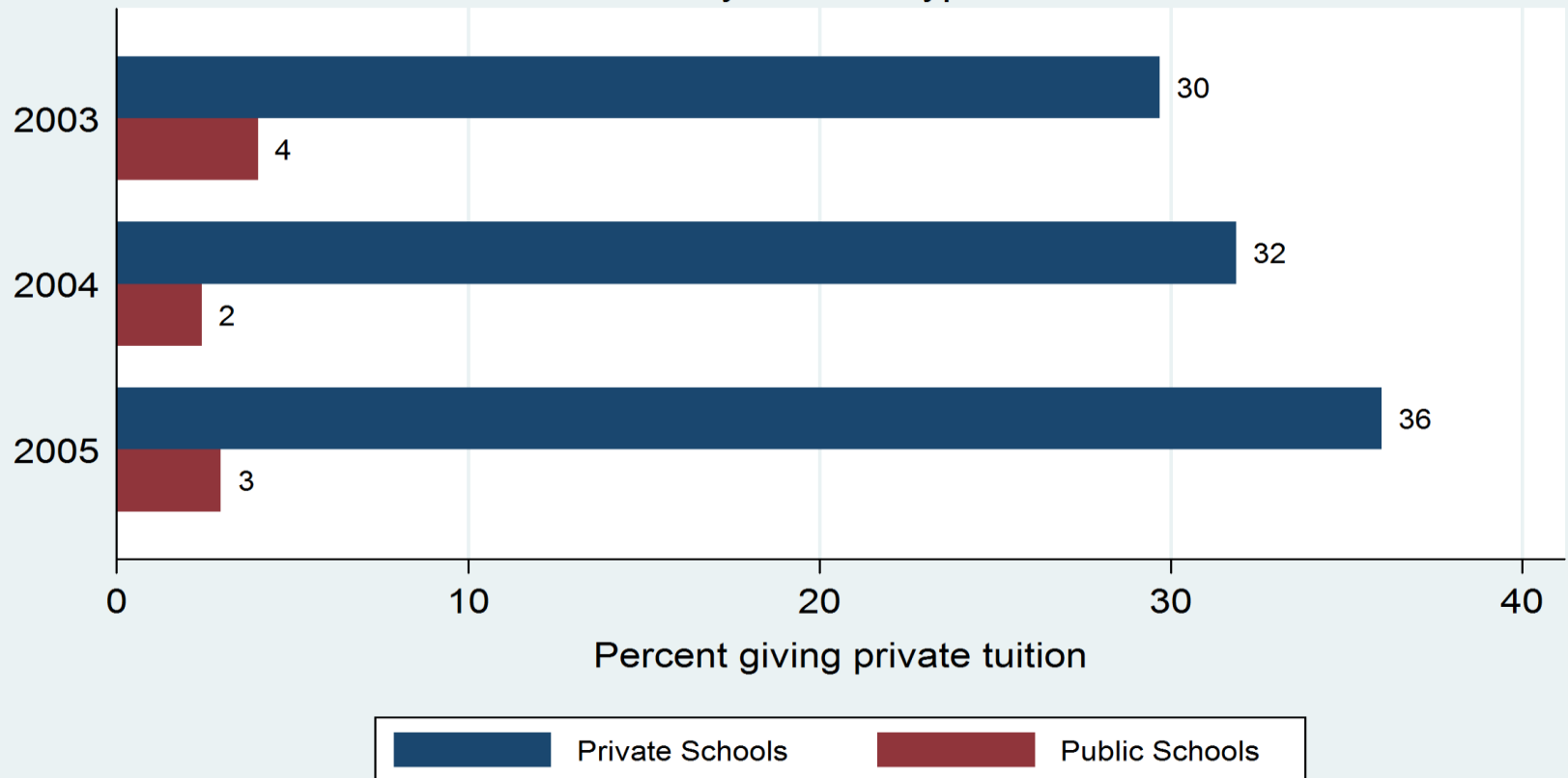
Who Provides the Private Tuition?



Source : LEAPS Data 2003 - 2005

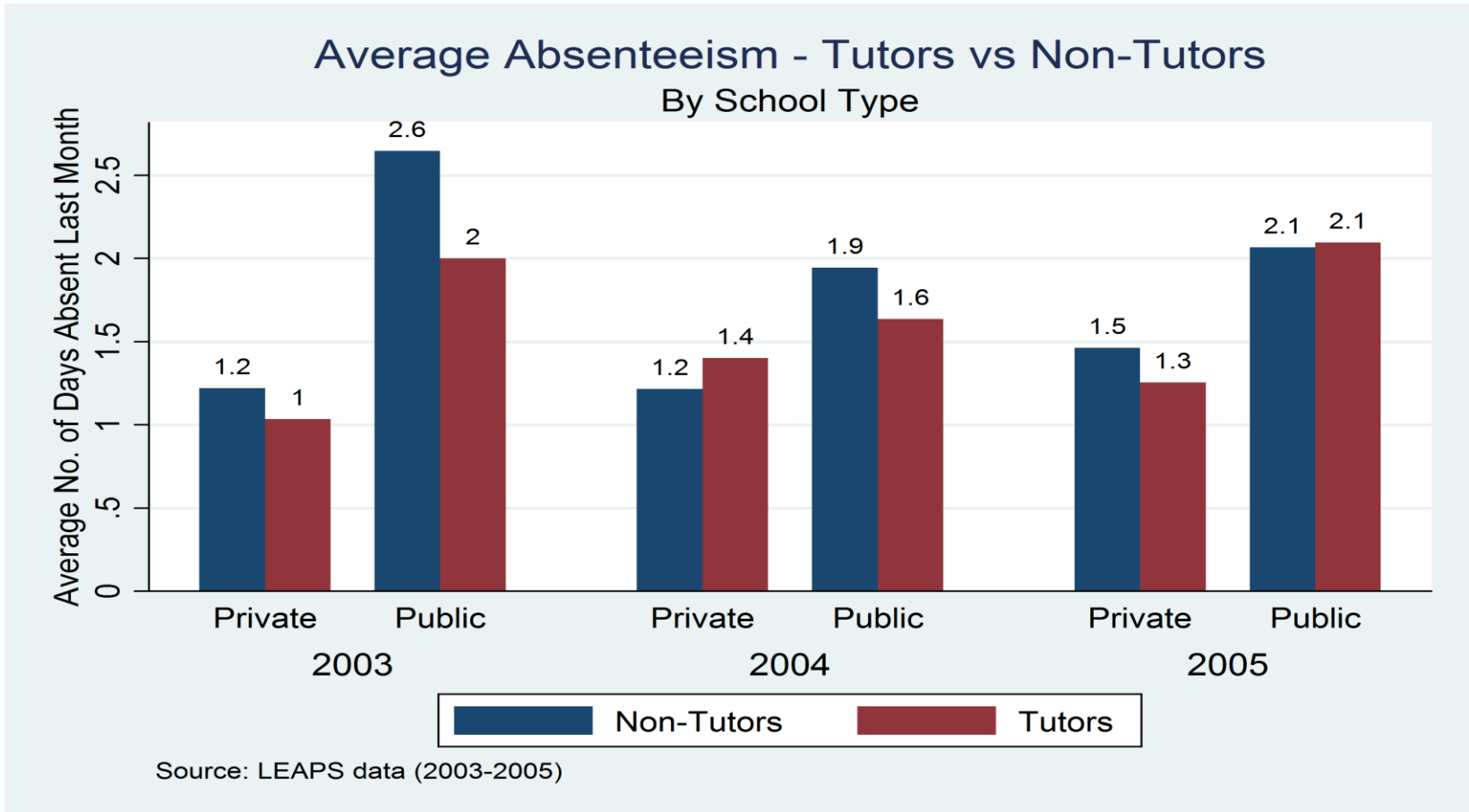
Supply For Private Tuition

Private Tuition Incidence Over Time By School Type



Source: LEAPS Data 2003 - 2005

Supply For Private Tuition



No statistically significant difference in absenteeism between tutors and non-tutors

Methodology

Demand Equation:

$$P_i = \beta_0 + \beta_1 \text{pubschool}_{it} + \beta_2 \text{hhldwealth}_{it} + \beta_3 \text{age}_{it} + \beta_4 \text{age}^2_{it} + \beta_5 \text{female}_{it} + \beta_6 \text{helathome}_{it} + \beta_7 X_{it} + \beta_8 W_{jt} + a_i + \varepsilon_{it}$$

Supply Equation:

$$GP_i = \beta_0 + \beta_1 \text{pubschool}_{it} + \beta_2 \text{salary}_{it} + \beta_3 \text{age}_{it} + \beta_4 \text{age}^2_{it} + \beta_5 \text{absenteeism}_{it} + \beta_6 \text{experience}_{it} + \beta_7 \text{contract}_{it} + \beta_8 \text{localteach}_{it} + \beta_9 \text{decisionmaking}_{it} + \beta_{10} X_{it} + a_i + \varepsilon_{it}$$

Estimation Strategy : **Random Effects Probit Model**

Methodology

Impact on academic performance – Equations estimated separately for public and private schools*

$$\text{Engscore} = \beta_0 + \beta_1 P_{it} + \beta_2 X_{it} + \beta_4 W_{it} + a_i + \varepsilon_{it}$$

$$\text{Urdu score} = \beta_0 + \beta_1 P_{it} + \beta_2 X_{it} + \beta_4 W_{it} + a_i + \varepsilon_{it}$$

$$\text{Mathscore} = \beta_0 + \beta_1 P_{it} + \beta_2 X_{it} + \beta_4 W_{it} + a_i + \varepsilon_{it}$$

Estimation Strategy : **Fixed Effects Model with Child and Year Fixed Effects**

*Sample includes only those students who did not switch school over time in order not to confound the impact of private tuition on academic performance with the effect of switching between school types

Main Findings – Demand Side

Is private tuition taken as a substitute to poor quality public schooling?

- » Private school students are more likely to take private tuition compared to their public school counter-parts (post-estimation probabilities of **15.7%** and **36.2%** for public and private school students respectively).
- » Insignificant effect of basic infra-structure index and negative significant impact of STR on the probability of taking private tuition.

Conclusion : Not a substitute for poor quality public schooling, rather used as a complement to formal schooling.

Does it supplement help received at home or act as a substitute for such assistance?

- » Negative significant impact of receiving help at home on private tuition uptake

Conclusion: Parents lacking the knowledge or the time to help their children at home send them to private-tuition classes

Main Findings – Supply Side

Who are the main providers of private tuition classes?

- » Private school teachers are more likely to provide private tuition
- » Contract teachers have a greater probability of giving private tuition classes

Conclusion: Private tuition is more of a private school phenomenon with private school students most likely taking tuition from their mainstream school teachers.

Do the mainstream teachers who provide after-school tuition do so at the cost of in-school teaching?

- » No statistically significant difference in the observable characteristics such as experience and absenteeism of tutors and non-tutors.

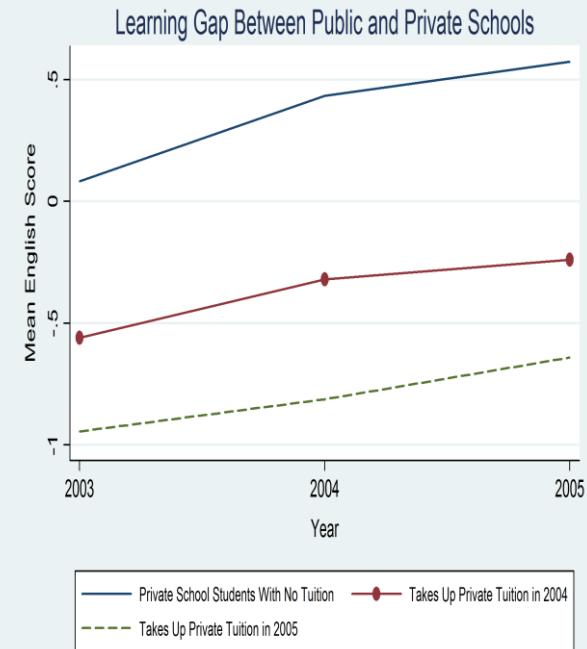
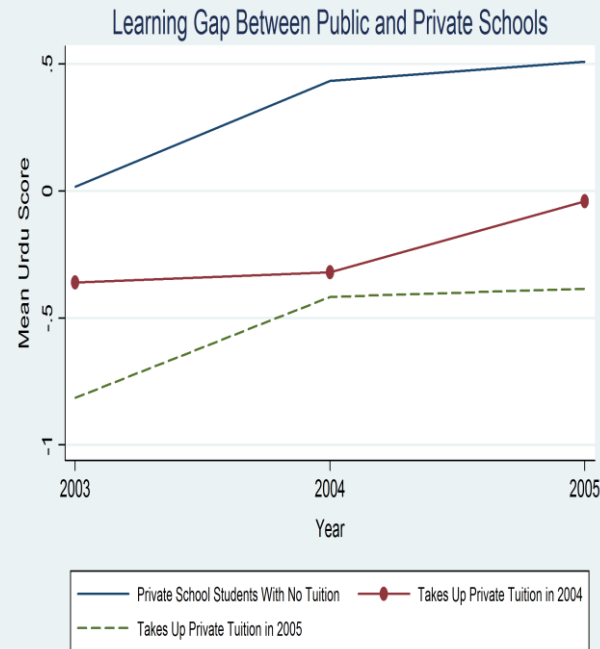
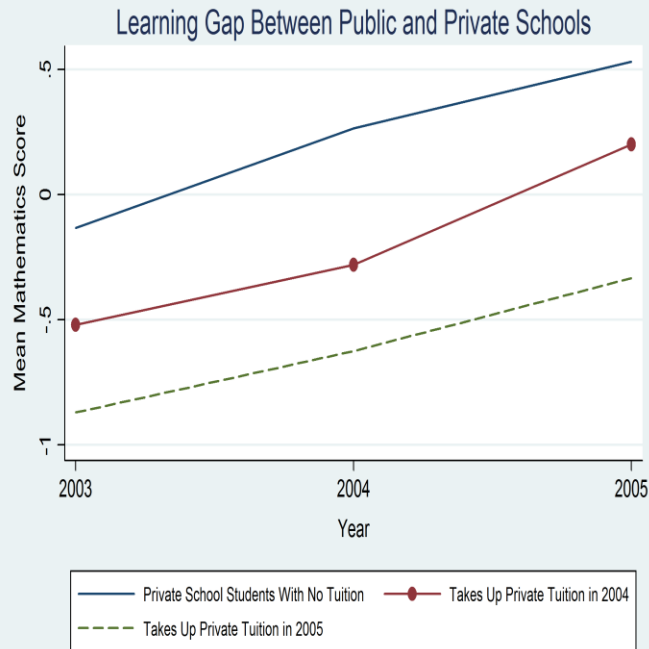
Conclusion: Mainstream teachers providing tuition do not shirk during school hours. Mainly use private tuition to supplement their income from formal teaching (contract teachers and private school teachers earn considerably less than permanent and public school teachers)

Main Findings – Learning Gap

	(1) UrduScore	(2) EnglishScore	(3) MathsScore
<u>Public Schools</u>			
Private Tuition	361.9* (186.4)	-111.4 (175.7)	334.8* (189.6)
Constant	-481.2** (230.9)	-408.0* (244.0)	-280.0 (256.8)
Observations	1,146	1,146	1,146
R-squared	0.115	0.086	0.106
Number of childcode	551	551	551
<u>Private Schools</u>			
Private Tuition	-38.76 (249.3)	348.8* (201.7)	192.6 (232.1)
Constant	-750.3** (293.7)	-749.0** (308.0)	-436.8* (255.5)
Observations	431	431	431
R-squared	0.199	0.138	0.220
Number of childcode	215	215	215

Source: Authors' estimation using LEAPS data (2003-2005)
 Other independent variables suppressed (including time effects) suppressed
 Robust Standard errors in parentheses (clustered at the village level)
 *** p<0.01, ** p<0.05, * p<0.1

Main Findings – Learning Gap



Conclusion:

-For Mathematics and Urdu, the learning-gap between public and private schools is not explained by private tuition but it can be bridged by providing more of such tuitions to public school students.

- For English, much of the learning-gap may be explained by private tuition. It could be due to the quality of English tuitions available to private school students. Similar quality tuitions provided to public school students may bridge this gap.

Limitations of the Study

- The study is based on primary schools in rural areas – likely to underestimate the incidence of private tuition and its effect on academic performance.
- The study does not account for the type of tuition given (one-to-one or in larger groups or academies).
- The study does not account for the subject for which the tuition is taken.

Concluding Remarks

- The study establishes positive learning effects of private tuition, specifically for public school students
- Sheds light on the private-public school education quality debate from the private tuition perspective and suggests that private tuition can help bridge the learning-gap between public and private schools.
- Further research is needed to examine the differences, if any, in the types and quality of tuition taken by private and public school students and to analyze whether these different types of tuition have different effects on academic performance.

Thank you!