

*ESP Working Paper Series*

**The 'Shadow' Education Sector  
in India and Pakistan:  
The Determinants, Benefits  
and Equity Effects of Private Tutoring**

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SPECIAL SERIES  
the Privatisation in Education  
Research Initiative

**2012 No. 38**

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EDUCATION SUPPORT PROGRAM



**OPEN SOCIETY  
FOUNDATIONS**

## About the Privatisation in Education Research Initiative (PERI)

The changing dynamics of education in most countries over the last thirty years obscures an understanding of how the requirements of human rights and economic and social justice are to be met under the new and increasingly pervasive conditions of private, public and private-public provision in education. The Privatisation in Education Research Initiative (PERI) is a multi-annual global initiative supported by the Education Support Program of the Open Society Foundations that seeks to contribute to a better understanding on whether, through what mechanisms, with what outcomes, and for whom the increasing adoption of a widening range educational service regulation and delivery mechanisms might lead to more effective and equitable education systems.

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## Abstract

This research proposes to address several unexplored issues pertaining to the shadow education sector in India and Pakistan. These include looking into questions such as: What is the extent of the private tuition industry in India and Pakistan? Who exactly takes private tuition in the two countries i.e. what is the profile of persons taking tuition? And what are the equity implications of this phenomenon? We address these questions by painting a comparative descriptive picture of the extent of private tutoring in the two countries. Previous studies in other country settings have found factors such as wealth/income, parental education, and existence of competitive examinations at different education levels, regional differences and the quality of state sector education to be important in determining the extent of private tutoring in a country. We are not aware of any studies in India or Pakistan that address this question and we propose to fill this knowledge gap. Using unique data from India and Pakistan, this study explores the extent of the private tutoring industries in the two countries. The existence of a fee-charging shadow sector also has crucial equity implications for instance if it consumes substantial proportions of family income and imposes a heavy burden on low-income families. It is also argued that tutoring exacerbates social inequalities if it becomes accessible only to the rich or to the children of more educated parents or if the quality of tutoring accessed differs by social class.

## I. Introduction

Education is a critical determinant not only of individual productivity and economic success but also of countries' economic progress (Hanushek and Woessmann 2008; Appleton, Atherton and Bleaney 2011). Rapidly increasing enrolments and financial constraints worldwide, however, have put intense pressure on state sector provision of quality education, leading to an emergence of a private sector, which has been absorbing an ever-increasing proportion of children in South Asia (Aslam 2009; Andrabi, Das and Khwaja, 2002; Kingdon 2007). This in turn has raised pertinent questions regarding equity, efficiency and social justice. The emergence of the private sector has been accompanied in many countries by the stealthy evolution of a parallel or 'shadow' education system that provides *paid* supplementary tutoring outside normal school hours (Bray 2009). Large private tutoring industries are now known to exist in economically and geographically diverse countries, such as Cambodia, Egypt, Japan, Kenya, Morocco, Romania, Singapore, the United States and the United Kingdom (Dang and Rogers 2008), and in the transition economies of Azerbaijan, Bosnia and Herzegovina, Croatia, Georgia, Lithuania, Mongolia, Poland, Slovakia and Ukraine (OSI 2006; Bray 2009). There is substantial *anecdotal* evidence of the existence of large-scale private tutoring industries in India and Pakistan. To our knowledge, there have been no substantive studies to date that map out the extent of the shadow education sectors in the aforementioned countries. Using recent, large-scale surveys of children in the two countries, this study improves on the existing anecdotal evidence by providing a quantitative picture of the size, nature and the consequent equity effects of the private tutoring industry in India and Pakistan.

It is surprising how little policy attention has been paid to what some academics now recognise as the 'third important education sector' (Dang and Rogers 2008). The lack of existing evidence is worrying. The option of giving (for the teachers) and receiving (for the pupils) tuition outside of normal school hours changes the incentive structure of the provision of high-quality instruction within the standard school system, which in turn has implications for equity and social justice. The relationship between private tutoring and student achievement is also increasingly gaining policy attention as it calls into question the quality of schooling during usual school hours.

More general research stems from the need to understand the association between educational expenditures and student outcomes, i.e. addressing the question: Does monetary expenditure improve student learning? Studies investigating this link arrive at mixed conclusions. On the one hand, for example, Card and Krueger (1996), Guryan (2003), Greenwald et al. (1996) and Krueger (1999, 2003) present evidence for the effectiveness of public school expenditures. Betts (1996), Hanushek (1986, 2003) and Leuven et al. (2007), on the other hand, cast doubt on these conclusions. More recent studies based on natural experiments or randomisation in developing countries continue to reveal conflicting evidence on the effectiveness of public school inputs (Banerjee and Kingdon 2007; Glewwe et al. 2004, 2007; Jacob and Lefgren 2004; Lavy and Schlosser 2005; Leuven et al. 2007). Studies that focus on private schools (e.g. Catholic schools in the US) seem to agree no more about the impacts of educational inputs. While Evans and Schwab (1995) and Neal (1997) show educational benefits of attending Catholic high school, Altonji, Elder and Taber (2005), Figlio and Stone (1999) and Goldhaber (1996) find no significant differences in test scores between public and private schools. Studies in South Asia report more consistent findings. Kingdon (1996) and Aslam (2009), for instance, show that private school students on average achieve more than their government school counterparts, indicating that in these countries of the region there

may be a link between educational expenditures (or a variety of other factors) and pupils' outcomes.

There is hardly any literature on the causal impact of paid tutoring on student achievement. The few studies that exist report conflicting evidence on the causal impacts of *private tutoring* on student achievement. Dang (2007) and Dang and Rogers (2008) investigate the effect of private tutoring in Vietnam; Ono (2007) explores private tutoring in Japan. These studies usually indicate a strong positive effect of private tutoring on pupils' performance. In contrast, Briggs (2001), Gurun and Millimet (2008) and Kang (2007) examine the impact of private tutoring in the US, Turkey and South Korea, finding negligible effects of tutoring on pupils' educational outcomes. There are no empirical studies, to our knowledge, that address this question for South Asia.

A major reason for the lack of attention to this issue in the literature, particularly in South Asia, has been the shortage to date of quality data that would allow relevant questions to be addressed. In particular, before an understanding of the impact of tutoring on achievement can be reached, it is necessary to ascertain the extent to which private tutoring is a phenomenon in South Asia. The recent availability of quality data for India and Pakistan means that we are now able to take the first step in filling this knowledge gap with solid statistical evidence on the size of this industry, *who* takes tuition and the likely implications tuition will have on social justice and equity. We recognise that the data from both countries have their limitations – they cover only rural areas and provide partial coverage (especially in India). However, the data are rich in variables that have not been available to researchers before, and this allows us to provide a general overview (if not a complete picture) of the shadow tutoring industry in the two countries.

This study proposes to address the following questions:

- 1) What is the extent of the private tuition industry in India and Pakistan?
- 2) Who exactly takes private tuition in India and Pakistan?
  - a. Is it linked to private schooling, or are participation rates high in government schools as well?
  - b. Is it the preserve of the rich, or do all sectors of society undertake tuition?
- 3) What are the factors that underpin the demand for private tuition in India and Pakistan?
- 4) What are the equity effects of private tuition?

We will address these questions by painting a comparative, descriptive picture of the extent of private tutoring in the two countries. Previous studies in other country settings have found factors such as wealth/income, parental education, the existence of competitive examinations at different education levels, regional differences and the quality of state sector education to be important in determining the extent of private tutoring in a country (Bray 2007; Dang and Rogers 2008). We are not aware of any studies in India or Pakistan that address this issue, and we propose to fill this knowledge gap.

The existence of a fee-charging shadow sector has crucial equity implications, for instance if it consumes substantial proportions of family income and imposes a heavy burden on low-income families. It is also argued that tutoring exacerbates social inequalities if it becomes accessible only to the rich or to the children of more educated parents, or if the quality of tutoring accessed differs by social class. The question 'What are the equity effects of private tuition?' will be addressed.

Interestingly, in some countries where the shadow education system has been studied, it is believed that private tutoring caters to the needs of students trapped in poor-quality *stateschooling* systems. This premise, however, has no basis in good-quality research in South Asia. Both India and Pakistan have seen a mushrooming of very low-



fee-charging private schools (Aslam 2009). The quality of schooling that these schools provide is often no different from the poor-quality schooling provided by the state sector (Andrabi et al. 2002). There is, therefore, no reason to presume that only government school students will necessarily engage in private tuition-taking activities. Our study will use the data to demonstrate the extent of tuition undertaken across the different school types rather than presume that children in one type of school necessarily undertake private tutoring more often than others.

This paper is organised as follows. Section 2 discusses the data obtained from India and Pakistan. Section 3 gives a picture of the prevalence of private tuition in the two countries. It investigates critical hypotheses, including the extent to which children attending different types of schools in the region take out-of-hours paid tuition and the equity implications of private tuition. Section 4 extends the analysis by underpinning the critical factors affecting demand for private tuition. Section 5 discusses the benefits of private tuition, Section 6 explores its effects, and Section 6 offers some conclusions.

## 2. Data Sources

This study uses *individual level* quantitative data for India and Pakistan that allow us, for the first time, to address issues pertaining to the shadow education systems that prevail in the two countries. For India, the study draws from the SchoolTells survey, a survey of primary schools in two north Indian states: Uttar Pradesh and Bihar. These are two of the most economically and educationally challenged states of India.<sup>1</sup> This survey was designed by Professor Geeta Kingdon of the Institute of Education, and funded by the Spencer Foundation, with the main aim of answering questions regarding the relative effectiveness of regular and contract teachers. The SchoolTells survey was carried out in the 2007–08 school year in 160 rural primary schools across 10 districts of the sample states. It yielded achievement data on over 4 000 students in Grades 2 and 4 and on their teachers and schools. Each school was visited four times in the school year. Students were tested in language and maths at the start and end of the school year, approximately nine months apart. The survey provides an unusually rich source of data, with comprehensive questions on the children's personal details (age, gender, height, illness); family background (caste, religion, parental education, household asset ownership); teachers' characteristics (qualifications, training, gender, age, full-time/contract status, absence rate, and time on task); and a wide range of questions relating to school quality. For the purpose of this report, we use responses to questions about whether the students receive any paid private tuition or not and how much is spent on private tuition in a given year<sup>2</sup>.

For Pakistan, data from the 2010 Annual Status of Education Report (ASER) are used, based on a household- and individual-level survey of rural regions undertaken across 32 districts and 5 provinces— Punjab, Sindh, Khyber Pakhtunkhwa (KP, previously the North West Frontier Province), Balochistan and Gilgit-Baltistan – as well as in Azad Jammu and Kashmir (AJK) and the federal capital, Islamabad. This survey covers more

<sup>1</sup> This is based on both Gross Domestic Product (GDP) per capita rankings of the states as well as the literacy rankings from latest figures available.

<sup>2</sup> To render the Pakistan and India samples comparable, the yearly expenditure on private tuition reported in the data for India have been converted into monthly expenditures by dividing by nine. This was done with the view that children may not take tuition over the entire 12-month period.

than 900 villages and no fewer than 19 000 households, and includes more than 54 000 children, aged 3–16, across the country. The data collection was undertaken in 2010, from September to November. For our purposes, these data are unique as they ask parents/adults in the household information about *all children* aged 3 to 16 within the household questions about the type of school the child is enrolled in (with options ranging from private to madrassah, non-Formal education, NGO or government school) as well as questions pertaining to whether the child takes any paid private tuition and, if so, how much is spent on it per month, in rupees. The questionnaire also includes questions about the household's economic status and parents' education levels. In addition to gathering information about children, parents and the household, basic language, numeracy and English language skills of children aged 5–16 are individually tested.

### 3. The Shadow Education Sector in India and Pakistan

The objective of this section is to provide a picture of the size and nature of the private tutoring sectors of the two countries and a description of the *determinants* of private tutoring, with a particular focus on the equity implications. Using the available data, a *descriptive analysis* provided of the *extent and determinants of private tutoring* in specific parts of the two countries. This analysis investigates the prevalence of and monthly expenditure on private tuition by disaggregating across various dimensions, including age, gender, region/province and school type.

#### 3.1 What is the extent of the private tuition industry in India and Pakistan?

While anecdotal evidence suggests that private tuition is widespread, it is important to expand on such evidence using survey data to substantiate these claims. Table 1 below reports tuition prevalence by age group, for school-aged children (defined as those who are aged between 3 and 16) in rural India and Pakistan. Some striking findings emerge from this table.

Firstly, a large proportion of children of schooling age in both countries seem to be taking paid private tuition. Across Pakistan, almost 16% of rural children take paid tuition. This represents 5 224 children in the sample of 33 290 children aged 3 to 16 in rural Pakistan. The proportion of children taking tuition is even higher in our Indian sample, where nearly a fifth of all children surveyed (i.e. about 20%) were taking private tuition. As our data are drawn from rural samples only, these are likely to be *underestimates* of the true levels, as tuition taking is often more prevalent in urban areas (Bray 2009). In both countries the incidence increases with age, though the effect is more marked in Pakistan than in India, where the incidence rises from 13% for younger children to nearly 20% for the oldest age group in our sample.

Secondly, the amount spent on tuition per month is substantial – on average, parents spend Rs. 293 per month on private tuition in rural Pakistan. This equates to about US\$3.4 per month.<sup>3</sup> This is not an insubstantial amount, given that 60% of Pakistan's population reportedly lives on under US\$2 per day.<sup>4</sup> In India, the average expenditure on private tuition is Rs. 76 per month, which is approximately US\$1.7 per month and, again, not an insubstantial amount.

<sup>3</sup> As on 17 June 2011 ([www.xe.com](http://www.xe.com))

<sup>4</sup> <http://data.worldbank.org/indicator/SI.POV.2DAY>

Thirdly, Table 1 demonstrates that older children are more likely to take private tuition than younger children, and the amount spent on tuition appears to monotonically increase with age.

Later in this report we discuss in more detail the proportion of average household earnings that seem to be spent on private tuition in the region.

**Table 1.** – *Private tuition prevalence by agegroup in rural India and Pakistan, ages 3–16*

| Age group         | Proportion taking tuition | Monthly expenditure on tuition (Indian or Pakistani rupees) |
|-------------------|---------------------------|---|
| <b>India</b>      |                           |   |
| 3–8 years         | 21.9                      | 71  |
| 9–12 years        | 23.2                      | 74  |
| 13–16 years       | 23.9                      | 100   |
| <b>3–16 years</b> | <b>22.6</b>               | <b>76</b>   |
| <b>Pakistan</b>   |                           |   |
| <b>Age group</b>  |                           |   |
| 3–8 years         | 13.3                      | 203   |
| 9–12 years        | 16.2                      | 264   |
| 1–16 years        | 19.7                      | 453   |
| <b>3–16 years</b> | <b>15.7</b>               | <b>293</b>  |

Source: SchoolTELLS (2008) for India and ASER (2010) in Pakistan

Table 2 disaggregates the incidence of tuition and expenditures by province/region where data are available. Again, some striking findings emerge. Disaggregating by region allows a more nuanced picture to emerge, and we find that Punjab and Islamabad (the federal capital) have the highest incidence of tuition taking in the country, with almost 30% of children taking tuition in Islamabad followed closely by 23% in Punjab. Tuition taking is lowest in Sindh, where only about 6% of children aged 3 to 16 take tuition. In India it is evident that children in Bihar are far more likely to take tuition than in Uttar Pradesh. In Bihar, 44% of children in rural areas take private tuition (again, the figure is likely to be higher in urban areas), while in Uttar Pradesh (UP) just 6% of children take tuition. On average, parents in UP spend more on tuition compared to parents in Bihar (Rs. 26 per month more, on average – about US\$0.60). In Pakistan there are also substantial differences in the amount spent, with expenditure varying from 247 Pakistani rupees in the Punjab to nearly 600 rupees in Gilgit (US\$6.80).

**Table 2.** – *Private tuition prevalence by province/region in rural India and Pakistan, ages 3–16*

|                 | Proportion taking tuition | Expenditure on tuition (Rupees/month) |
|-----------------|---------------------------|---------------------------------------|
| <b>India</b>    |                           |                                       |
| Uttar Pradesh   | 6.5                       | 97.4                                  |
| Bihar           | 44.3                      | 71.9                                  |
| India           |                           |                                       |
| <b>Pakistan</b> |                           |                                       |
| Punjab          | 23.0                      | 247                                   |
| Sindh           | 5.6                       | 275                                   |
| Balochistan     | 9.9                       | 276                                   |
| KP (NWFP)       | 9.5                       | 403                                   |
| Gilgit          | 13.1                      | 585                                   |
| AJK             | 9.5                       | 352                                   |
| Islamabad*      | 28.5                      | 432                                   |
| <b>Pakistan</b> | <b>15.7</b>               | <b>293</b>                            |

Source: SchoolTELLS (2008) for India and ASER (2010) in Pakistan

\* Islamabad Capital Territory (ICT) is classified into urban and rural regions. The sample for ASER is drawn from rural ICT

It is clear from these tables that private tuition is quite a widespread phenomenon in the region, though the extent of its utilisation varies both across and within towns and cities. For instance, in Bihar, nearly half of all children take some kind of tuition, compared to just 6% in the Sindh province of Pakistan.

### 3.2 All children are equal, but some are more equal than others

#### 3.2.1. Private schools and private tuition

The expansion of private schooling in India and Pakistan is another recent phenomenon that has changed the dynamics of education provision in the countries. Unconstrained expansion of fee-charging schools is questioned on equity grounds, in that they cater to the elite in urban areas and marginalise the poor. These views, however, have been challenged in both India and in Pakistan. Studies reveal an unprecedented expansion of private schooling rather than just a 'peripheral' role serving only the urban few. Evidence suggests that private schools do not cater only to the urban elite but are also utilised by the poor (see for instance Alderman, Orazem and Paterno 2001; Andrabi, Das and Khwaja, 2002; and Aslam 2009 for Pakistan; Kingdon 1996 for India). There is also evidence that private schools can bridge gender gaps as even rural parents in Pakistan are seen to be willing to send their daughters to private co-educational schools (Andrabi et al. 2002). However, this unimpeded expansion of private schooling has called into question the quality of schooling being imparted to students. Indeed, the poor quality of the government school sector is seen as one of the reasons the private sector has emerged as such a dominant player in the educational field. It is within this context that one can understand the establishment of a 'shadow' education sector: disillusioned by the poor quality of state-provided education and yet unable to undertake the burden of private schooling, parents may turn to a shadow education sector to supplement poor-quality state education with extra studying.

There is, however, no evidence to date to support the view that disillusioned state sector pupils are more likely than private school pupils to turn to private tuition. A crucial aim of this study is to identify to what extent private tutoring in South Asia is a 'complement' to or a 'substitute' for poor-quality state schooling. In other words, we question the extent to which students studying in different types of schools complement their studies (of presumably reasonable quality) with extra tutoring and the extent to which they find they are having to substitute (presumably poor-quality schooling) with private tutoring. This question arises from the premise that private schools provide *relatively* better-quality schooling compared to government schools in the two countries. There is substantial evidence to affirm this claim (see for instance Kingdon 1996 for India and Aslam 2009 for Pakistan). If this is the case, then private school students who take private tuition are most likely complementing the *irrelatively* better-quality schooling with tuition. And students in government schools are presumably 'substituting' poor-quality schooling with tuition in an effort to improve their education. We therefore wish to understand the *extent to which children attending different school types engage in paid out-of-school- hours tutoring*.

We do not presume that private tuition-taking is taken only by children studying in poor quality government schools. Nor do we assume that it is only undertaken by the very rich, i.e. those in the highest income quintiles who can easily afford extra tuition, as a complement to their schooling. As mentioned before, the existence of low-fee-charging private schools is a phenomenon common to both countries. Therefore the prevalence of private tuition by school type is an empirical question, which we hope to

answer using our rich data sources. We distinguish between only two types of schools: government and private. While data exists for other types of schools (such as madrassahs, non-formal education, NFE, or NGO schools), the proportion of children in rural areas reportedly enrolled in these schools was too low to allow for meaningful comparisons. For example, in Pakistan, 70% of rural children aged 3 to 16 were enrolled in government schools and 29% were in private schools. Only 1% were enrolled in madrassahs and an even smaller proportion in NFE and NGO schools. In India, Kingdon (2007) finds that in 2006, 20% of children in rural areas attended private schools, and that these figures are three times higher than the official government statistics. This indicates that disaggregating our sample by ‘private’ and ‘government’ should cover the majority of the school children in the rural samples in the two countries. In urban areas the figures are noticeably higher in official statistics, and the true numbers are likely to be higher still. Thus, in making this comparison, only children enrolled in government and private schools are considered.

To this end, Table 3 disaggregates incidence of and expenditure on private tuition by school type. With the exception of Bihar, the incidence of paid tuition taking appears significantly higher among students in private schools than in government schools. For instance, while almost 27% of all children in Pakistani private schools report taking private tuition, only about 11% of government school students do so. In Uttar Pradesh, while only 4.6% of government school pupils take tuition, 13.5% of private school pupils do so. In Bihar, on the other hand, there is no (statistically significant) difference between government school and private school pupils in their tendency to take private tuition.

**Table 3.** – *Private tuition prevalence by school type in rural India and Pakistan*

|                      | Proportion taking tuition | Expenditure on tuition (Rupees/month)          |
|----------------------|---------------------------|--|
| <b>Uttar Pradesh</b> |                           |  |
| Government           | 4.6                       | 78   |
| Private              | 13.5                      | 121  |
| <b>Bihar</b>         |                           |  |
| Government           | 44.1                      | 72   |
| Private              | 45.7                      | 72   |
|                      | Proportion taking tuition | Expenditure on tuition (Pakistanirupees/month) |
| <b>Pakistan</b>      |                           |  |
| Government           | 10.9                      | 256  |
| Private              | 26.9                      | 329  |
| Other                | 7.5                       | 233  |

**Source:** SchoolTELLS (2008) for India and ASER (2010) in Pakistan

What do these findings signify? Unlike anecdotal evidence suggests, private tuition is not the preserve of students in government schools substituting the poor quality of state schooling with private tuition. However, it may be the case that private school provision is of an equally poor quality when compared to state schooling, resulting in students attempting to complement it with extra tuition. Evidence from Pakistan in fact suggests that the quality of private schooling is often not very different from the inferior-quality state schooling available to the majority of the population, although students in private schools generally fare better in terms of achievement outcomes compared to their government school counterparts (Aslam 2009). That does not, however, explain the large differential in the incidence of tutoring between the two school types in most areas. However, if we consider what is termed the ‘selection effect’ of private schooling—that is, children whose parents have a higher preference for education are more likely

to compensate for deficiencies in the schooling system through private means – then it is quite understandable that children in private schools, which are often still of lower quality than expected by parents, supplement their education to a larger degree than do those in government schools. In addition, parents who send their children to private schools often have increased *ability* to pay for extra tuition. Nevertheless, the minimal difference in Bihar between government and private schools suggests very complicated dynamics that cannot adequately be explored within the scope of this study.

### 3.2.2 Money can buy schooling

In the main, pupils who attend private schools are more likely to have undertaken some private tuition. Previous studies in other country settings have found factors such as wealth/income, parental education, the existence of competitive examinations at different education levels, regional differences and the quality of state sector education to be important in determining the extent of private tutoring in a country (Bray 2007; Dang and Rogers 2008). However, we are not aware of any studies in India or Pakistan that address this question. We first extend our analysis by differentiating pupils on the grounds of household wealth. We do so by creating quintiles of wealth, using data on household possessions. While ideally one would wish for complete data on expenditure and assets, this is seldom available, and where it is available, it is often fraught with reporting bias. We therefore use a simpler method of evaluating wealth differences, by using household assets, following Filmer and Pritchett (1999), who show a very high correlation between asset indices and consumption patterns both internationally and within the South Asia region. For Pakistan, the ASER (2010) questionnaire asked the household head questions about asset ownership for the household. This included asking (and visibly confirming where possible) whether the household lives in a *kuccha* (mud), *semi-pucca* or *pucca* (bricks and mortar) house, and whether there is any electricity and a toilet within the house. The enumerators were also asked to note how many of the following assets the household reported owning: mobile phones, televisions, bicycles, motorcycles, cars and tractors. For the purpose of creating a wealth index, binary indicator variables were created for each of the assets/household indicators. For example, whether or not the household lived in a *pucca* house was given a value of 1 or 0, respectively. Similarly, if the household reported owning a mobile phone (even one), the binary variable denoting mobile ownership equalled 1, and if the household did not own any mobile phone, the mobile ownership variable equalled 0. This list of assets/indicators was then used to assign weights (for example owning a *pucca* house was given a weight of 300 compared to owning a mobile phone, which was given a weight of 5). An identical exercise was carried out using the Indian data. Wealth indices were then created by assigning weights to the different assets owned in the household. A given wealth index was then used to ascribe a quintile to the poorest 20% of the population, the richest 20% and those in between the distribution.

It is clear from Table 4 that the incidence of private tutoring increases with ability to pay. Children belonging to the richest income groups in rural Pakistan are almost five times as likely as those in the poorest quintiles to be taking private tutoring. Notably, however, there is very little difference in the *amount* spent on tuition across the different income quintiles. Persons in the poorest quintiles spend on average Rs. 287 per month compared to Rs. 352 per month spent by those in the richest quintile. This is a striking finding, because it suggests that while the incidence of tuition-taking changes depending on how rich or poor you are, the financial burden for the poor is not very different from that of the rich.



**Table 4.** – Private tuition prevalence by income quintile in rural India and Pakistan, ages 3–16

| Income quintile | Proportion taking tuition | Expenditure on tuition (Rupees/month) |
|-----------------|---------------------------|---------------------------------------|
| <b>India</b>    |                           |                                       |
| 1 = poorest     | 18.1                      | 69                                    |
| 2               | 20.0                      | 70.4                                  |
| 3               | 21.1                      | 73                                    |
| 4               | 25.2                      | 76                                    |
| 5 = richest     | 31.8                      | 90                                    |
| <b>Pakistan</b> |                           |                                       |
| 1 = poorest     | 5.5                       | 287                                   |
| 2               | 9.6                       | 233                                   |
| 3               | 14.0                      | 241                                   |
| 4               | 19.9                      | 292                                   |
| 5=richest       | 27.6                      | 352                                   |

Source: SchoolTELLS (2008) for India and ASER (2010) in Pakistan

In India, the proportion of children taking tuition also increases with household wealth, and while expenditures increase, the average increase in expenditure between the poorest and the richest groups is just Rs. 21.3 (about a third more). To some extent, as in Pakistan, this reflects the heavy burden faced by the poorest persons in rural areas in educating their children.

**Table 5.** – What proportion of rural household income is spent on private tuition?

| Region          | Average monthly income (2004/2005 prices)* | Average monthly income in 2010 prices† | Average monthly expenditure on private tuition per child (aged 3–16) in 2010 | Average household size** | Proportion aged <16 in rural areas | Average number of children aged <16 | Average estimated monthly household expenditure on tuition | Expenditure as share of HH income (if all children aged 3–16 take tuition) |
|-----------------|--|--|--|--------------------------|------------------------------------|-------------------------------------|--|--|
|                 | (a)  | (b)                                    | (c)  | (d)                      | (e)                                | (f)                                 | (g)  | (h)  |
| Punjab          | 9488                                       | 16604                                  | 247  | 7.0                      | 0.44                               | 3.1                                 | 766  | 4.6  |
| Sindh           | 10413                                      | 18223                                  | 275  | 6.1                      | 0.46                               | 2.8                                 | 770  | 4.2  |
| Balochistan     | 8849                                       | 15486                                  | 276  | 6.8                      | 0.47                               | 3.2                                 | 883  | 5.7  |
| KP/NWFP         | 9395                                       | 16441                                  | 403  | 8.0                      | 0.48                               | 3.8                                 | 1531   | 9.3  |
| <b>Pakistan</b> | <b>9685</b>                                | <b>16949</b>                           | <b>293</b>   | <b>6.9</b>               | <b>0.45</b>                        | <b>3.1</b>                          | <b>908</b>   | <b>5.3</b>   |

Source: Pakistan Statistical Yearbook (2007), Government of Pakistan, Statistics Division, Federal Bureau of Statistics; \* Pakistan Statistical Yearbook (2007); † Column (b) shows column (a) figures inflated to 2010 prices using the Wholesale Price Index for Pakistan reported in Pakistan Statistical Yearbook (2007); Column (c) estimates based on ASER (2010) data; \*\* Average household size and proportion of persons aged <16 as based on 1998 Census estimates reported: <http://www.census.gov.pk/HousingIndicators.htm>; Column (g) = (c) x (f); Column (h) = (g)/(b)x100

One of the means of benchmarking the burden that private tutoring places on rural families is to compare the ratio of expenditure on private tuition per family with the per capita income. Table 5 does this for Pakistan. Because the latest monthly income figures disaggregated by province/region are available in 2004/2005 prices, column (b) inflates these figures to 2010 prices using the Consumer Price Index. Per capita income is estimated using the average household size reported in the 1998 Census, and proportion of persons below the age of 16 is estimated using the 1998 Census estimates. Assuming that all persons in the household take private tuition allows us to compute a very rough lower bound of the expenditure on private tuition as a share of household income. The estimates show that almost 5% of household income is spent on private

tutoring alone. Given that government schooling is not ‘free’, with households incurring significant expenses on travel costs, uniform and books, etc., this figure is not insubstantial. Moreover, keeping in mind that the average monthly income estimates are for both rural *and* urban areas and that rural incomes are presumably substantially smaller than urban incomes, the estimates reported in column (h) are likely under-estimates. Quite a substantial share of family income in rural areas appears to be diverted towards the shadow education sector in Pakistan.

The analysis so far has shown that the incidence of private tuition increases with the ability to pay. However, quite a large proportion of lower income families in both India and Pakistan choose to engage in extra tuition, suggesting that it is not just the preserve of the rich. Furthermore, the amount spent by low-income families on private tuition is not significantly less than that spent by wealthier families, indicating that it imposes a substantial burden on low-income families in the two countries.

### 3.2.3 Gender bias in private tuition provision

Gender bias in education expenditure is well documented in the South Asia region (Kingdon 2005; Aslam and Kingdon 2008). To fully understand the nature of private tuition in the region, we need to disaggregate our data by gender, to try to evaluate gender bias in both the taking of private tuition and also the relative expenditure on private tuition. We move beyond a simple discussion of gender bias in private tuition by considering the two factors separately, before aggregating them for an overall estimate of the gender bias. We build on the literature evaluating private schooling in Pakistan, which finds that at primary school level there is a pro-male gender bias in the decision to enrol children in private schooling. However, once the decision to attend school has been made there is not necessarily a bias against girls in terms of the amount spent on their schooling (Aslam and Kingdon 2008). It is suspected that a similar mechanism may be at work in the decision to allocate household expenditure to private tuition. Table 6 shows the proportion of children taking private tuition and their relative monthly expenditure by gender.

**Table 6.** – Gender bias in private tuition

| Age group         | Proportion taking tuition |             |             |                  | Monthly expenditure on tuition |            |            |                  |
|-------------------|---------------------------|-------------|-------------|------------------|--------------------------------|------------|------------|------------------|
|                   | All                       | Male        | Female      | t-test (b) – (c) | All                            | Male       | Female     | t-test (f) – (g) |
| <b>India</b>      |                           |             |             |                  |                                |            |            |                  |
| 3–8 years         | 22.1                      | 23.6        | 20.2        | ***              | 72                             | 73         | 69         | *                |
| 9–12 years        | 23.4                      | 25.5        | 20.9        | ***              | 75                             | 78         | 69         | ***              |
| 13–16 years       | 24                        | 25.6        | 22.1        | ***              | 100                            | 113        | 83         | ***              |
| <b>3–16 years</b> | <b>22.7</b>               | <b>24.5</b> | <b>20.7</b> | <b>***</b>       | <b>76</b>                      | <b>80</b>  | <b>71</b>  | <b>***</b>       |
| <b>Pakistan</b>   |                           |             |             |                  |                                |            |            |                  |
| 3–8 years         | 13.3                      | 13.3        | 13.4        |                  | 203                            | 205        | 201        |                  |
| 9–12 years        | 16.2                      | 16.3        | 15.9        |                  | 264                            | 265        | 262        |                  |
| 13–16 years       | 19.7                      | 19.6        | 19.9        |                  | 453                            | 461        | 439        |                  |
| <b>3–16 years</b> | <b>15.7</b>               | <b>15.8</b> | <b>15.5</b> |                  | <b>293</b>                     | <b>301</b> | <b>281</b> | <b>***</b>       |

Source: SchoolTELLS (2008) for India and ASER (2010) in Pakistan

It is interesting to note that while there seems to be a pro-male bias in both the decision to take private tutoring and the expenditure thereon in the Indian sample, in Pakistan there appears to be bias only in the expenditure. That is to say that in Pakistan males and females are taking private tuition in roughly equal proportions, but households



are spending more on the tuition for boys than for girls in the older age group. For the younger age groups (3–9 and 9–12) there appears to be very little differential treatment in Pakistan, in terms of either the decision to undertake private tuition or the monthly expenditure on tuition. As before, it is quite possible that these average figures mask gender bias in certain states, so we further disaggregate by state/province in Table 7.

**Table 7.** – Gender bias in private tuition, by state/province

|                        | Proportion taking tuition |             |             |                  | Expenditure on tuition (Rupees/month) |            |            |                  |
|------------------------|---------------------------|-------------|-------------|------------------|---------------------------------------|------------|------------|------------------|
|                        | All                       | Male        | Female      | t-test (b) – (c) | All                                   | Male       | Female     | t-test (f) – (g) |
|                        | (a)                       | (b)         | (c)         | (d)              | (e)                                   | (f)        | (g)        | (h)              |
| <b>State</b>           | <b>India</b>              |             |             |                  |                                       |            |            |                  |
| Uttar Pradesh          | 6.58                      | 7.6         | 5.4         | ***              | 97                                    | 105        | 84         | ***              |
| Bihar                  | 44.3                      | 46.2        | 42          | ***              | 71                                    | 74         | 69         | ***              |
| <b>India</b>           |                           |             |             |                  |                                       |            |            |                  |
| <b>Province/region</b> | <b>Pakistan</b>           |             |             |                  |                                       |            |            |                  |
| Punjab                 | 23.0                      | 23.4        | 22.5        |                  | 247                                   | 249        | 245        |                  |
| Sindh                  | 5.6                       | 5.9         | 5.1         |                  | 275                                   | 290        | 242        | **               |
| Balochistan            | 9.9                       | 9.9         | 10.0        |                  | 276                                   | 319        | 180        | ***              |
| KP (NWFP)              | 9.5                       | 9.7         | 9.1         |                  | 403                                   | 430        | 354        | *                |
| Gilgit                 | 13.1                      | 14.4        | 11.1        | *                | 585                                   | 541        | 671        | *                |
| AJK                    | 9.5                       | 10.5        | 8.2         | *                | 352                                   | 332        | 380        |                  |
| Islamabad              | 28.5                      | 28.3        | 28.8        |                  | 432                                   | 445        | 413        |                  |
| <b>Pakistan</b>        | <b>15.7</b>               | <b>15.8</b> | <b>15.5</b> |                  | <b>293</b>                            | <b>301</b> | <b>281</b> | <b>***</b>       |

Source: SchoolTELLS (2008) for India and ASER (2010) in Pakistan

While in India the pro-male gender bias is apparent for both factors in both sample states, in Pakistan there is very little gender bias in terms of taking private tuition in the provinces. The exceptions to this are Gilgit and AJK, where a slight pro-male gender bias does exist, with boys being 2–3% more likely to take private tutoring than girls in these states. When we disaggregate relative expenditure by province, we do find gender differences, though they are not always pro-male. In Gilgit, while boys are more likely to take tuition, when girls take tuition they spend relatively more than boys, by some 130 rupees per month. A similar situation exists in AJK. This suggests that gender bias in household expenditure is a very complicated dynamic, and influenced by local conditions. However, these figures are just descriptive, implying correlations between gender and taking tuition, while the differences may in fact be the product of other, unobserved factors, such as household wealth or maternal education. To fully evaluate gender bias, we need to move beyond mere description, as we do in Section 4.

#### 4. A model of who takes private tuition

The natural question that follows from the discussion above is: Are these factors just correlations, driven by unobserved factors? Are private school children more likely to take tuition, because they are rich? So far we have presented univariate tabulations, which do not take into account additional factors. While these suggest that some groups are more likely to take tuition than others, it is inadvisable to rely on these cross-tabulations alone. However, it is possible to arrive at more meaningful and nuanced conclusions by undertaking some basic empirical analysis, looking at the key determinants of private tutoring. This is done by estimating probit models that present the decision

to take private tuition as a binary number (1 and 0) and by controlling for other mitigating factors (covariates). Among the covariates of interest are the child's age, the current class in which he or she studies, gender, parental education, wealth, and whether the child studies in a government or private school.

We estimate our model separately for each country, as the descriptive statistics have shown there to be important differences (especially in terms of gender) between the countries. Table 8 reports the estimates for all persons in the Pakistani sample and separately for those belonging to the poorest and the richest income quintiles.<sup>5</sup> Of the factors determining whether a child will take tuition or not, age and gender are clearly important. Older children and those studying in higher classes are more likely to take tuition, possibly reflecting the fact that school work becomes more intense with age and class progression. Male children are significantly more likely to take private tuition, although there are differences between the rich and the poor. Male children in richer households are more likely to take private tutoring, while there is no gender bias in the poorest quintile. This is surprising, considering that the poorer households would have to pay more as a percentage of their income for tutoring, so one would expect decisions to be more financially based, and that tuition would therefore be limited to boys only. The fact that the opposite is true suggests that this hypothesis needs revisiting. Children of more educated mothers are more likely to take tuition and again this is particularly evident in the richest class. Among all the factors, wealth is one of the largest determinants of tuition taking; the rich are significantly more likely to take tuition compared to the poor. The smaller coefficients on wealth at each end of the continuum (that is, in the richest and the poorest quintile), when compared to the average coefficient, suggest wealth has a stronger impact on tuition for those who are in the middle of the distribution, which in turn suggests that (relatively) middle-class aspirations may be driving the demand for tuition.

**Table 8.** – *Determinants of private tuition in rural Pakistan, ages 3–16*

| Dependent variable: Private tuition=1 if taking tuition, 0 if not | All                |         | Lowest wealth group |         | Highest wealth group |         |
|---|--------------------|---------|---------------------|---------|----------------------|---------|
|   | Marginal effect    | z-value | Marginal effect     | z-value | Marginal effect      | z-value |
| Age 9–12  | 0.011<br>(2.04)    | **      | 0.005<br>(0.82)     |         | 0.028<br>(1.62)      |         |
| Age 13–16   | 0.044<br>(5.99)    | ***     | 0.025<br>(2.04)     | **      | 0.068<br>(3.36)      | ***     |
| Current class   | 0.004<br>(6.81)    | ***     | 0.001<br>(1.68)     | *       | 0.005<br>(3.00)      | ***     |
| Male  | 0.015<br>(3.78)    | ***     | 0.002<br>(0.47)     |         | 0.027<br>(2.29)      | **      |
| Mother's education (years)  | 0.005<br>(9.85)    | ***     | 0.003<br>(3.45)     | ***     | 0.010<br>(6.97)      | ***     |
| Government school   | -0.123<br>(-24.00) | ***     | -0.049<br>(-4.50)   | ***     | -0.146<br>(11.72)    | ***     |
| Wealth index*1000   | 0.328<br>(15.31)   | ***     | -0.055<br>(-2.61)   | ***     | 0.066<br>(3.52)      | ***     |
| Observations  | 30937              |         | 4265                |         | 5924                 |         |
| Pseudo-R <sup>2</sup>   | 0.116              |         | 0.223               |         | 0.10                 |         |

**Note:** \*,\*\* and \*\*\* denote significance at the 10%, 5% and 1% levels respectively; z-values are denoted in brackets

**Source:** ASER (2010)

<sup>5</sup> It is possible to show this table with estimates for each quintile rather than the poorest and richest. This has not been done owing to space constraints, but estimates are available from the authors on request.

In India, we find there is no difference in the probability of taking tuition between those in the youngest age group (aged 3–8) and those in the middle age group (9–12). However, those in the highest age group are 13% more likely to be taking private tuition than those who are younger. This, however, does not hold for the poorest quintile, where there are no differences across age groups. There is evidence of gender bias, even after we control for other mitigating factors. Boys are 14% more likely to be enrolled in tuition than girls, though it is of interest that this ‘gender effect’ is higher (at 19%) for poorer children than for richer ones (at 1%). This is the opposite of the case in Pakistan, where gender bias appears to increase with wealth.

**Table 9.** – *Determinants of private tuition in rural India, ages 3–16*

| Dependent variable: Private tuition=1 if taking tuition, 0 if not | All                 |         | Lowest wealth group |         | Highest wealth group |         |
|---|---------------------|---------|---------------------|---------|----------------------|---------|
|   | Marginal effect     | z-value | Marginal effect     | z-value | Marginal effect      | z-value |
| Age 9–12  | 0.0458<br>(1.49)    |         | 0.00235<br>(0.04)   |         | 0.0637<br>(1.03)     |         |
| Age 13–16   | 0.130<br>(2.94)     | ***     | 0.0426<br>(0.49)    |         | 0.206<br>(2.43)      | **      |
| Male  | 0.144<br>(5.03)     | ***     | 0.189<br>(3.72)     | ***     | 0.108<br>(1.89)      | *       |
| Mother’s education (years)  | 0.0254***<br>(5.97) |         | -0.0156<br>(-1.54)  |         | 0.0599***<br>(8.62)  |         |
| Government school   | -0.250<br>(-5.88)   | ***     | -0.320<br>(-3.33)   | ***     | -0.335<br>(-4.86)    | ***     |
| Wealth Index  | 0.0450<br>(10.20)   | ***     | 0.0433<br>(1.47)    |         | 0.0183<br>(1.50)     |         |
| Bihar   | 1.447<br>(45.80)    | ***     | 1.506<br>(25.75)    | ***     | 1.276<br>(20.51)     | ***     |
| Observations  | 12112               |         | 4239                |         | 2572                 |         |
| Pseudo-R <sup>2</sup>   | 0.21                |         | 0.21                |         | 0.19                 |         |

**Note:** \*, \*\* and \*\*\* denote significance at the 10%, 5% and 1% level respectively; z-values are denoted in brackets  
**Source:** SchoolTells (2008)

An additional year of maternal education increases the probability of taking tuition by 2.5% on average, but again this is driven by strong effects in the richer quintile. Wealth has a strong effect, but only in absolute terms (when we look at the impact of wealth on tuition in the sample as a whole). When we look at relative wealth within a wealth group, the impact disappears. In all cases, children in Bihar are noticeably more likely to attend private tuition than pupils in Uttar Pradesh, as was highlighted in the raw data. Government school pupils are far less likely to undertake tuition, all other factors held constant. Within the whole sample, government school pupils are 25% less likely to take tuition than their private school counterparts. This increases to 32/33% for the highest and lowest wealth quintiles.

## 5. What are the benefits of private tuition?

From the analysis so far, it is apparent that the private tutoring phenomenon is quite prevalent in rural India and Pakistan. It is also more commonplace among private school students (except in rural Bihar in India), and it is largely the preserve of the rich.

This sub-section attempts to unravel the extent to which private tutoring impacts student learning. To do so, we take advantage of the rich ASER data from Pakistan, and

the SchoolTells data from India, which test children in both mathematics and reading. By doing so, we aim to unravel some of the equity implications of tuition-taking further.

For Pakistan, we estimated probit models of the link between private tuition (controlling for variables such as age, gender, etc.) and the likelihood of a child completing ‘higher-level’ learning. As already mentioned, ASER (2010) data tested children’s mathematics and language capabilities (Urdu, Pushtoor Sindhi, depending on the region). The mathematics tests were aimed at all 5–16 year olds and tested the child’s ability to answer mathematics questions at certain levels. Students were coded as being at ‘beginner’ if they could not identify any three digits from 0 to9; level ‘0–9’ if they could identify single-digit numbers; ‘11–19’ if they could identify double-digit numbers; ‘subtraction’ if they could conduct Grade 2–level subtraction and ‘division’ if they could conduct Grade 3–level division successfully. Similarly, in the language test students were coded at ‘beginner’ level if they could not identify any three letters from the alphabet, ‘letter’ level if they could successfully identify letters from the alphabet, ‘word’ level if they could identify words, ‘sentence’ level if they could read a sentence fluently and ‘story’ level if they could successfully read a story. For the purposes of our analysis, we re-coded the achievement level scores to mean:

1. The child was coded at ‘higher’ language level (equals 1) if he or she could read a story, and 0 if not;
2. The child was coded at ‘higher’ mathematics level (equals 1) if he or she reported at ‘division’ level, and 0 if not.

Probit estimation was made, with ‘higher’ levels in language and mathematics and dependent variables and various covariates including private tuition as independent variables. The results of these estimations are recorded in Table 10 below. The most striking finding is that the most significant effects of taking tuition on learning occur in reading: children in the poorest and richest quintiles appear to benefit equally. For instance, taking tuition increases the likelihood that a child in the poorest quintile will be at ‘story’ level by 14%. The effects on reading are particularly significant among the poorest students studying in government schools, who are almost 20% more likely to be at ‘story’ level than the poorest children in government schools who do not take private tuition. The differences are less marked among the rich.

Less dramatic findings emerge for mathematics achievement. Poor children in government schools taking private tuition are almost 7% more likely to be at ‘division’ level in mathematics achievement than poor students in government schools who do not take private tuition. There are no significant findings relating to mathematics achievement in the private sector.

For India, we take advantage of the the SchoolTELLS dataset, which tested children in mathematics and reading ability. We create a measure of percentage correctness on the tests, then standardise<sup>6</sup> the scores for comparison across subjects and states. Table 11 records the estimated effect of private tuition on achievement (in terms of standard deviations of marks) for the whole sample, and then for government and private school pupils separately. We begin with a standard Ordinary Least Squares (OLS) analysis, which treats all children as being drawn randomly from the population. A limitation of this is that it doesn’t account for the fact that children’s choice of schools is not randomly, and generally the school has a large, unobserved influence on outcomes and tuition taking.

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<sup>6</sup> To standardise, we changed the percentage correct score to a ‘z-score’, where the average child in the sample got a score of 0, and the sample had a variance of 1. To do so, we subtracted the average score for the sample from the individual’s score, and then divided this by the standard deviation of the group.

By moving to a ‘school fixed effects’ (SFE) estimate in column (2), we can eliminate these unobserved effects by comparing children within the same school. Our final column (3) shows the results from an SFE value added model, which introduces the students’ test scores at the start of the year in order to look at the specific effect of tuition within that year on learning gains, relative to those who do not take tuition. This again eliminates biases stemming from learning in earlier years, and makes our estimate even ‘cleaner’ than the other models (i.e. the OLS and SFE models in columns 1 and 2).

**Table 10.** – *Impact on ‘higher-level’ learning of private tuition: marginal effect of attending private tuition in Pakistan*

| Marginal effect of private tuition on: |                      | Being at ‘story’ level in reading test | Being at ‘division’ level in maths test |
|--|----------------------|--|---|
| All students                           | All                  | 0.062<br>(7.91)***                     | 0.031<br>(5.15)***                      |
|  | Lowestwealth group   | 0.140<br>(4.89)***                     | 0.063<br>(3.17)***                      |
|  | Highest wealth group | 0.120<br>(2.79)**                      | 0.017<br>(1.26)                         |
| Government school students             | All                  | 0.097<br>(8.67)***                     | 0.054<br>(6.31)***                      |
|  | Lowestwealth group   | 0.196<br>(4.87)***                     | 0.069<br>(2.86)**                       |
|  | Highest wealth group | 0.069<br>(2.90)**                      | 0.051<br>(2.53)**                       |
| Private school students                | All                  | 0.024<br>(2.07)**                      | 0.004<br>(0.48)                         |
|  | Lowestwealth group   | 0.073<br>(1.52)                        | 0.072<br>(1.66)*                        |
|  | Highest wealth group | 0.023<br>(1.08)                        | -0.011<br>(-0.67)                       |

**Note:** Probit estimation controls include: child age (years), gender, current class (years), mother’s education (years completed), wealth index and a government school dummy (equals 1 if in government school, 0 if not) for the pooled sample. ‘Poorest’ denote all children in first quintile and ‘richest’ are all in the 5th quintile; \*, \*\* and \*\*\* denote significance at the 10%, 5% and 1% level respectively; z-values are denoted in brackets

**Source:** ASER (2010)

**Table 11.** – *Standardised impact on maths and reading scores of private tuition: marginal effect of attending private tuition, India*

| Marginal effect of private tuition on: |                       | OLS                | SFE                 | SFE value added     |
|--|-----------------------|--------------------|---------------------|---------------------|
|  |                       | (1)                | (2)                 | (3)                 |
| Government school pupils               | All                   | 0.259***<br>(6.87) | 0.201***<br>(11.33) | 0.0956***<br>(7.38) |
|  | Lowest wealth group   | 0.291***<br>(4.47) | 0.197***<br>(5.48)  | 0.150***<br>(5.70)  |
|  | Highest wealth group  | 0.173***<br>(2.27) | 0.251***<br>(5.19)  | 0.104***<br>(2.80)  |
| Private school pupils                  | All                   | 0.167*<br>(1.90)   | 0.148**<br>(2.46)   | -0.0163<br>(-0.35)  |
|  | Lowest wealth group + | 0.278<br>(1.19)    | -0.425<br>(-1.31)   | -0.247<br>(-0.91)   |
|  | Highest wealth group  | 0.199<br>(1.48)    | 0.194**<br>(2.07)   | 0.0380<br>(0.55)    |

**Note:** Estimation controls include: child age (years), gender, current class (years), mother’s and father’s education (years completed), wealth index, health status, and teacher quality indicators. See appendices for full tables; + of the private school pupils in the lowest wealth group, only 10% take tuition (given the small sample size of this group, estimations should be taken with caution); \*, \*\* and \*\*\* denote significance at the 10%, 5% and 1% level respectively; t-values are denoted in brackets

**Source:** SchoolTELLS (2008)

The results show that pupils who take private tuition score higher on average than those who do not. The results are presented for government school pupils and for private school pupils. Notably, children who take tuition in government schools score, on average, 0.25 SD higher than those who don't. The size of these estimates decreases as we move to more stringent models, and we find no gain in value-added scores for those in private schools who undertake tuition. For instance, among 'all' pupils in the government school sample, the size of the OLS coefficient is 0.259, which declines to 0.201 in the SFE model (column 2) and becomes less than half the size, at 0.0956, in the SFE value-added model (column 3). However, the fact remains that although the size of the coefficient declines, the overall sign of the effect remains unchanged – pupils taking private tuition score higher than those who do not, even in the most stringent model (column 3). The school-year equivalent that is added for someone who takes tuition is higher for those from low-income groups in government schools, increasing the learning trajectory by 0.15 SD. This effect is higher for those from low-income groups than for those from high-income groups (0.10SD).

To help contextualise this abstract statistic notion, Table 12 shows the average gain from taking private tuition when compared to the average learning gain over the school year. (Children in the sample were tested at the start and at the end of the school year). The average gain is given as a percentage of the learning gain over the year, so a figure of 73.5% shows that taking private tuition gives the equivalent benefit of being in school for nearly  $\frac{3}{4}$  of a school year.

**Table 12.** – Standardised impact on maths and reading scores of private tuition: marginal effect of taking private tuition compared to learning gains over school year, India

|                                      | All   |       | Lowest wealth group |               | Highest wealth group |       |
|--------------------------------------|-------|-------|---------------------|---------------|----------------------|-------|
|                                      | OLS   | SFE   | OLS                 | SFE           | OLS                  | SFE   |
| <b>Government schools</b>            |       |       |                     |               |                      |       |
| Yearly gain                          | 0.252 | 0.260 | 0.234               | 0.233         | 0.275                | 0.283 |
| Tuition effect                       | 0.259 | 0.201 | 0.291               | 0.197         | 0.173                | 0.251 |
| Tuition as percentage of yearly gain | 102.8 | 77.3  | 124.4               | 84.5          | 62.9                 | 88.7  |
| N                                    | 14959 | 14959 | 3424                | 3424          | 1959                 | 1959  |
| <b>Private schools</b>               |       |       |                     |               |                      |       |
| Yearly gain                          | 0.310 | 0.344 | 0.371               | 0.352         | 0.334                | 0.321 |
| Tuition effect                       | 0.167 | 0.148 | <b>0.278</b>        | <b>-0.425</b> | <b>0.199</b>         | 0.194 |
| Tuition as percentage of yearly gain | 53.9  | 43.0  | <b>74.9</b>         | <b>-120.7</b> | <b>59.6</b>          | 60.4  |
| N                                    | 1803  | 1803  | 187                 | 187           | 629                  | 629   |

**Note:** Estimates are taken from regressions as shown in Appendix A1. Numbers highlighted in bold are not statistically significantly different from zero

**Source:** SchoolTELLS (2008)

The first thing to notice is the fact that government school pupils appear to benefit more from taking tuition than their private school counterparts, with an average tuition effect of 0.2 SD being found for government school pupils, compared to 0.14 SD for private school pupils. It is also far lower as a percentage of the yearly gain in scores. However, it is interesting to note that a government school pupil who takes tuition will 'catch up' on average as much as a private school pupil who also takes tuition over the school year (0.46 SD compared to 0.49 SD), while a government school pupil who does not take tuition will be 0.08 SD behind private school pupils. Unfortunately, the small sample size for private school pupils from the lowest wealth group hinders comparisons,



as our estimates are usually insignificant. However, if we assume this is due to the small sample size and take the results from the pooled OLS regression, then the learning gain for private school pupils, at 75%, is much smaller than that for government school pupils of similar wealth status, who gain 125% of a school year. It is evident that the relative learning gains for pupils from low wealth groups in private schools is higher than those from higher wealth groups, while the opposite is true for pupils in government schools.

In all estimations, the learning gains from taking tuition, as a percentage of yearly learning gains, is higher in government schools than it is in private schools, reflecting the higher learning achievement in private schools. Private school pupils also gain less, in absolute terms, from tuition than government school pupils.

In both countries, we find that private tuition has beneficial effects on all pupils, but the main beneficiaries are government school pupils. Within government schools, it is the poorest section who gain the most, these pupils being far more likely to reach higher reading or mathematics levels (in Pakistan), or to gain the equivalent of 85% of a school year (in India). Such large learning differences between those who take tuition and those who don't suggest that while there may be equity concerns, if the poorest are simply priced out of the private tutoring market, those who are able to take tuition can compensate for the low-quality schooling provided in government schools.

## 6. What are the equity effects of private tuition?

The existence of a fee-charging shadow sector has crucial equity implications for users and non-users, for instance if it consumes substantial proportions of family income and imposes a heavy burden on low-income families. It is also argued that tutoring exacerbates social inequalities if it becomes accessible only to the rich or to the children of more educated parents, or if the quality of tutoring accessed differs by social class. There are also important implications from the point of view of providers, the role school teachers play in providing the extra tuition at a cost, and the impact this tuition has for classroom teaching in general. The option of giving (for the teachers) and receiving (for the pupils) tuition outside of normal school hours changes the incentive structure of the provision of high-quality instruction within the standard school system, which in turn has implications for equity and social justice. It seems that parents in rural India and Pakistan are turning to private tutoring more frequently than was thought. Also, given that our data are from rural areas, tuition in urban areas of the region is likely to be much more prevalent. The findings from the above analysis seem to suggest that while private tutoring is not necessarily just the preserve of the rich in rural Pakistan, being richer does increase the likelihood that a child will take private tuition. Moreover, the above analysis has clearly shown that private tuition imposes a significant burden on relatively low-income families. There are also elements of gender differentiated treatment apparent in the uptake of private tuition emerging from the empirical analysis, especially in India where in general a pro-male bias prevails in the decision to enrol a child in private tutoring as well as in the decision of how much to spend on enrolment. This suggests that private tutoring in India and Pakistan is capable of exacerbating already existing and deeply entrenched social inequalities.

In both countries we also find that while private tuition has favourable effects on learning and achievement for all pupils, the main beneficiaries are government school pupils. Within government schools, it is the poorest students who gain the most, being far more likely to be at a higher reading or mathematics level (in Pakistan) or to gain

the equivalent of 85% of a school year (in India). It is the poor who are also least likely to be able to afford private tuition when faced with poor-quality schooling in state schools and hence who are priced out of the private tuition market. They are, however, also the most likely to *benefit* from any extra paid tuition in terms of achievement gains.

## 7. Conclusions

The South Asia region comprised the largest global proportion of primary-school-age children out of school – some 36 % – in 2001/2002.<sup>7</sup> Despite progress in increasing access in recent years, a large proportion of children are still not attending school in India and Pakistan. These countries also suffer from the problem of poor-quality schooling, and many studies report the discrepancies in the schooling quality available and the resultant learning differences among graduates. Some schools lack the most basic facilities while others are on par with some of the best schools in the developed world. It is thus hardly surprising that one finds a proportion of school graduates barely able to read and write and another who can compete internationally at any forum.

It is within this context that the ‘shadow’ education sector has evolved. The lack of policy documents, government statistics and research reports regarding this education sector is surprising as well as alarming. Surprising because this report has shown convincing evidence to suggest that private tuition taking is more widespread a phenomenon than was previously believed in the region. The data has also shown differences in the taking of private tuition among the rich and poor, and in terms of gender, in rural India and Pakistan. Private tuition has already raised some concerns regarding the exacerbation of existing social inequalities. The findings of this report suggest that there are far-reaching consequences of these social inequalities. Children in government schools taking private tuition and especially those belonging to the poorest classes appear to perform better than those who do not take private tuition. This hints at the hugely inferior learning that the poorest children in some government schools in rural India and Pakistan are receiving. It suggests that private tutoring appears to compensate for poor-quality schooling for these children. This, however, comes at a cost, and considering how low rural incomes are, especially among the poorest families, one wonders at the feasibility of this solution in the two countries’ education systems.

Part of the explanation for the rise in private tutoring in the two SAR countries may rest on the poor quality of schooling that is provided to students in school. This may be because of several factors, including poor facilities, out-dated curriculums or untrained and even uninterested and incompetent teachers. It is harder, however, to reconcile many of the differential findings (such as differences in the taking of tuition by gender or by school type) on the basis of variations in schooling quality alone. An alternative explanation for the rise in private tuition is based on the argument that teacher salaries in India and Pakistan are lower compared to salaries of persons in other professions and with similar educational qualifications, which is cited as a reason teachers turn to giving private tuition to supplement their incomes. Kingdon (2010) and Aslam, Kingdon and Rawal (2011) argue that this is not entirely based on convincing evidence in the South Asia region. Their analyses suggest that teacher salaries in India and Pakistan are not only equivalent to those in other professions but have risen *more* in real terms than salaries of persons in other professions. Teachers often receive three to five times

<sup>7</sup> UNICEF/UNESCO Institute for Statistics



as much (and even more in certain regions/states) as multiples of per capita GDP in India and Pakistan.

Salary increases are intended to improve the quality of public services delivered to citizens. The pay-rises are premised on higher salaries attracting better individuals into teaching and also on the idea that higher salaries motivate higher effort while in service, as per efficiency wage theory. However, Kingdon (2010) argues that salary increases unrelated to performance are not necessarily efficiency enhancing. In order for higher pay to lead to higher effort, it must be the case that the threat of dismissal is credible, if a worker is found to be shirking (e.g. if a teacher is found to be chronically absent). However, it is well known that in general, in most South Asian countries, government school teachers are hired ‘permanently’ and are therefore virtually un-sackable, which means that they can get away with a relatively high degree of shirking, and, indeed, evidence suggests high absenteeism among teachers in both countries. There is also the possibility that teachers are able to create a need for private tutoring either by encouraging their students to take it (from them or others) or by not putting in enough effort while teaching in class, which may indirectly lead to the need for extra help outside the classroom. Thus, lax governance and accountability structures surrounding the teaching profession, especially in government schools, is a relatively convincing argument for the rise of private tutoring industries in the two countries. However, it is again difficult to explain the heterogeneity in usage (by gender and school type for instance) on the basis of any of these arguments, suggesting a very complex interplay of factors that give rise to the demand and the supply of paid private tutoring in India and Pakistan.

Regardless of the *reason* for the rise of the shadow education sector in the two countries, it is prominent and has been documented to be large. The consequent implications for equality and social justice are numerous, ranging from issues of why a person chooses to pay extra for tuition when “free” government education apparently exists, to the question of which pupils can access paid tuition and how it impacts their learning and other educational outcomes. Even more broadly speaking, there is now almost universal agreement that what is learnt (in school and out of it) matters as much as, if not more than, the years of schooling acquired. There is evidence that cognitive skills have economically large effects on individual earnings and on national growth. This literature is summarised in Hanushek and Woessmann (2008), and appears quite conclusive. This evidence suggests that the socioeconomic implications of this neglected educational phenomenon – private tutoring – could be potentially dramatic. Further work is needed to investigate many of the broad ideas briefly touched on in this report.

8. Appendix

**A1: Achievement production function – School Fixed Effects, all students (India)**

|              | (1)                   | (2)                   | (3)                  | (4)                  |
|--------------|-----------------------|-----------------------|----------------------|----------------------|
|              | zscore                | zscore_v4             | zscore               | zscore_v4            |
| class        | 0.730***<br>(42.76)   | 0.0874***<br>(6.58)   | 0.754***<br>(19.95)  | 0.105***<br>(3.55)   |
| subject      | 0.0851***<br>(6.93)   | 0.0460***<br>(5.09)   | 0.144***<br>(5.66)   | 0.0735***<br>(3.91)  |
| surveynumber | 0.286***<br>(22.98)   | 0.00511<br>(0.56)     | 0.254***<br>(9.96)   | 0.00279<br>(0.15)    |
| child_age    | 0.0441***<br>(8.19)   | 0.00171<br>(0.43)     | 0.0348***<br>(3.07)  | 0.0238***<br>(2.83)  |
| child_male   | 0.204***<br>(16.34)   | 0.0680***<br>(7.35)   | 0.274***<br>(9.97)   | 0.131***<br>(6.39)   |
| childheight  | 0.00643***<br>(8.01)  | 0.000249<br>(0.42)    | 0.00385***<br>(2.36) | 0.000375<br>(0.31)   |
| ill_last3mon | -0.0768***<br>(-6.12) | -0.0362***<br>(-3.92) | -0.0531**<br>(-2.00) | -0.0125<br>(-0.65)   |
| fa_edys      | 0.0155***<br>(9.17)   | 0.00509***<br>(4.06)  | 0.0127***<br>(3.51)  | 0.00932***<br>(3.48) |
| mo_edys      | 0.0216***<br>(9.11)   | 0.0127***<br>(7.20)   | 0.0256***<br>(3.92)  | 0.000567<br>(0.12)   |
| logasset     | 0.0548***<br>(6.88)   | 0.0151**<br>(2.57)    | 0.00495<br>(0.11)    | 0.0230<br>(0.67)     |
| tuition      | 0.210***<br>(11.58)   | 0.0885***<br>(6.61)   | 0.200***<br>(5.30)   | 0.148***<br>(5.28)   |
| age_tea      | 0.00209*<br>(1.85)    | 0.00360***<br>(4.33)  | 0.00696***<br>(2.99) | 0.00470***<br>(2.74) |
| male_t       | -0.0457**<br>(-2.49)  | -0.0139<br>(-1.02)    | -0.00286<br>(-0.07)  | 0.00888<br>(0.30)    |
| ba           | 0.0538***<br>(2.62)   | 0.0195<br>(1.29)      | 0.100**<br>(2.35)    | 0.0221<br>(0.71)     |
| ma           | 0.107***<br>(4.35)    | -0.0406**<br>(-2.24)  | 0.0807<br>(1.42)     | -0.00310<br>(-0.07)  |
| first_div    | 0.00686<br>(0.35)     | 0.0252*<br>(1.73)     | 0.0290<br>(0.75)     | 0.0506*<br>(1.77)    |
| para_t       | 0.150***<br>(5.72)    | 0.0280<br>(1.45)      | 0.158***<br>(2.88)   | 0.0528<br>(1.31)     |
| zscore_prior |                       | 0.863***<br>(138.89)  |                      | 0.829***<br>(60.74)  |
| _cons        | -2.127***<br>(-20.95) | -0.0679<br>(-0.89)    | -1.966***<br>(-9.23) | -0.471***<br>(-2.98) |
| N            | 16762                 | 15725                 | 3611                 | 3404                 |

Source: SchoolTELLS (India)

## 9. References

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