

A Dime a Day: The Possibilities and Limits of Private Schooling in Pakistan

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Pakistan is severely offtrack in its progress toward the Millennium Development Goals relating to education for all. Its educational performance is poor, both in absolute terms and relative to the average income of the country. With an adult literacy rate of 44 percent (compared to 54 percent for the South Asian average) and net enrollments (for 2001–2) of 51 percent (as compared to 83 percent for India, 90 percent for Sri Lanka, and 70 percent for Nepal), Pakistan struggles to meet the educational needs of its 132 million people. Compounding the problem, more than half the population is below 17 years of age, with the proportion of youth increasing. With less than 60 percent of children enrolled in school, there are already signs of stress. Student-teacher ratios in government schools exceed 35 : 1 and have been rising. School construction has slowed, and less than half of all classrooms have desks for children.

Pakistan has received global attention because of the widespread perception that the stress on its education system is radicalizing more and more young people through madrassa-based religious education. The 9/11 Commission Report exemplified a widely voiced concern: “Pakistan’s endemic poverty, widespread corruption, and often ineffective government create opportunities for Islamist recruitment. Poor education is a particular concern. Millions of families, especially those with little money, send their children to religious schools, or madrassahs. Many of these schools are the only opportunity available for an education, but some have been used as incubators for violent extremism” (2004, sec. 12.2). Previously we have shown that madrassa enrollment in Pakistan is small, accounting for less than 1 percent of overall enrollment in the country, and that religiosity and other household attributes offer inadequate explanations of madrassa enrollment (Andrabi et al. 2006). In this article, using new and hitherto unexamined data sources, we show that the real story in Pakistan is not the growth in religious schooling but

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that in self-owned, nonreligious, for-profit private schools. This rise in private schooling is decentralized, market based, and totally unaided by government subsidies or support. In 2000, 35 percent of children enrolled in school at the primary level were in such private schools, and that percentage has been growing rapidly. Importantly, this growth rate is higher in rural compared to urban areas and high among the poorest segments of the population.

The dramatic rise of private schools, a phenomenon that has reshaped the educational landscape of Pakistan since the mid-1990s, can be attributed to the fact that they charge low fees. A typical private school in a village of Pakistan charges Rs 1,000 (\$18) per year—less than the average daily wage of an unskilled laborer. The only way a school can charge such low fees and stay in business is if it keeps costs low. As teachers' salaries constitute the bulk of educational budgets, lowering the overall cost necessarily involves limiting wages.

This is where the flexibility of the market response becomes evident. In rural Pakistan, employment opportunities and geographic mobility for women are severely limited; in 2001, the labor force participation rate for women was 17 percent, as compared to 80 percent for men. Since women are expected to work close to their homes and in a very limited set of occupations—of which teaching is one—they command far lower salaries than men. Private schools take advantage of this environment. They mostly employ as teachers young, single, moderately educated, and untrained women from the local labor market, who are paid considerably less than male private school teachers. Government schools, however, hire through centralized recruiting in provincial bureaucracies that do not employ a male-female wage differential. With a competitive market for schooling, private schools' low labor costs are indeed passed onto poor consumers in the form of low fees.

This situation leads to an obvious question: Does the lowering of educational standards, training, and salaries by private schools result in a loss of educational quality? The answer is "not necessarily." To the extent that private schools are held accountable by parents, who may monitor teacher behavior and can withdraw their children if performance is poor, lower educational qualifications and training may be compensated by greater teaching "effort," as indicated by lower teacher absenteeism.

The effects of increased teacher effort can be dramatic. In India, for instance, a survey of teachers countrywide found that close to 40 percent were not present at the time of unannounced school visits (Chaudhury et al. 2006). And in Pakistan, Jishnu Das et al. (2006) reported that test scores in private schools are considerably higher than in government schools, even after taking into account the differing characteristics of their children, households, and communities.

The Pakistani private school experience has important implications for the Millennium Development Goals related to education and for the elim-

ination of gender inequalities among students at both the primary and the secondary levels. Most countries have fallen behind the necessary targets to meet these goals, and this trend has prompted renewed calls for greater public investment in schools through school construction, teacher training programs, and cash transfers for children. Meeting the targets is difficult, however, partly because of a global teacher shortage (United Nations 2005). According to UNESCO, an estimated 15 million to 35 million teachers are needed for meeting the Education for All goals.¹ Pakistani private schools have shown one way around this constraint by mobilizing local women as teachers in low-income and rural areas, relying on increased teacher accountability to avoid compromising quality while economizing on scarce resources.

The Pakistani experience also highlights an important but overlooked relationship between secondary and primary schooling: secondary education prepares the next generation of teachers for primary schools. Since teachers in the private schools tend to have been educated in government schools, private schools have appeared wherever government girls' secondary schools were set up a generation ago. Consequently, although government and private schools constitute alternate, substitutable sources of education, they also complement each other in a dynamic context. Private schools have arisen not because of government failures but, in part, because of government success in educating girls.

Because private school growth is constrained by the availability of low-cost teachers, and also by potential demand-side considerations reflecting the size of a village, private schools do not arise everywhere. Rather, they are geographically constrained by the availability of educated women. Furthermore, since available teachers in rural areas are typically educated only to the secondary level, private school provision is generally limited to the primary-schooling market, at least until a cohort of college-educated women is available locally.

Gender matters both for students and teachers but not because of segregation or bias per se. The teacher's gender matters because females are the cheapest source of labor. It is the low cost of female teachers that allows private schools to spring up in villages where such a teacher supply exists, and the private school provision increases the density of schooling in rural areas, thus reducing the distance to school for students. Since girls' enrollment is more affected by longer distances to schools, private schools disproportionately increase female compared to male enrollments.²

Similarly, in India, Michael Kremer and Karthik Muralidharan (2006)

¹ See http://portal.unesco.org/education/en/ev.php-URL_ID=42605&URL_DO=DO_TOPIC&URL_SECTION=201.html.

² See Alderman et al. (1995); Holmes (2003); and Lloyd et al. (2005), on the effect of distance to school on enrollment. Also, we do not discount other effects of female teachers on girls' enrollment, such as parents feeling safer about sending their girls to a female teacher. However, we focus on the cost effect, the innovation of this article.

estimate that 28 percent of the rural population had access to a fee-charging private school in their village.³ And as James Tooley (2001, 13) observes, “Any visitor to the ‘slums’ of any of the big cities in India will be struck by the sheer number of private schools—there seems to be one on almost every street corner or down every alleyway. Some of these confusingly follow what they see as an English tradition and call themselves public schools but they are wholly private in every way and are certainly not elite institutions.”

In this article we first present details on the country context and our data sources. Next, we examine the growth of private-sector schooling in Pakistan. Then we document fees and costs for private schools and examine teacher profiles and wage differentials between public and private schools. We then discuss the limits to private schooling, focusing on the characteristics of villages in which private schools do and do not locate. Finally, we conclude with a discussion of educational policy, caveats, and opportunities for future research in this area.

The Country Context

Pakistan is organized in a federal structure with four main provinces—Punjab, Sind, North-West Frontier Province (NWFP), and Balochistan. These four provinces along with Islamabad, the federal capital, comprise 97 percent of the country’s population. Punjab is the largest province, with 56 percent of the population, and Sind, NWFP, and Balochistan account for 23, 13, and 5 percent, respectively. There are other regions and territories where special constitutional and legal qualifications apply. The Federally Administered Tribal Areas, with 3 percent of the population, have representation in the national assembly, but national laws apply only partially. The northern areas and Azad Jammu and Kashmir enjoy special status, and their population is not counted in population census numbers. Provinces manage the provision of education, although there are recent local government changes aiming to devolve responsibility and authority for provision to the numerous districts within every province.

For the country’s level of income, the forecasted net-enrollment rate (based on a regression of primary net enrollment on log per-capita income and the square of log per-capita income for 138 countries) is 77 percent. Pakistan’s net enrollment of 51 percent in 2001 is thus far below what one would expect for its level of income. The problem of low overall educational performance is further compounded by large gender, income, and geographical disparities: (a) there is a 20 percentage point difference in gross enrollment rates at the primary level between boys and girls, and in some

³ Geeta Kingdon (1996, 1998) first looked at private schools in the Indian context; more recent contributions include Nirupam Bajpai et al. (2005). Srivastava (2007) also looks at private schools in the Indian state of Uttar Pradesh.

provinces, notably NWFP and Balochistan, this difference increases to 40 percentage points; (b) at the primary level gross enrollment rates for the highest family expenditure decile is twice as high as for the lowest decile; (c) there is a net-enrollment ratio of 45 percent in rural areas compared to 66 percent for the urban areas; and (d) net-enrollment ratios for rural females, at 36 percent, are therefore the lowest for any subgroup of the population (Pakistan Integrated Household Surveys [PIHS], 2001–2; Federal Bureau of Statistics 2003b).

Private education in Pakistan has a long history dating back to before its 1947 independence. Limited data suggest that private schools catered to a niche market and were restricted to big cities from 1947 to 1972 (Jimenez and Tan 1985, 1987). During the period, they were dominated by missionary-run schools or local foundation-based schools imitating the missionary model and were attended by children of the elite. In 1972 private schools were nationalized amid a government program of nationalization of all industry, although the policy was reversed in 1979. As private schools reopened, the schools taken over by the government were gradually returned to the original owners. However, government policy toward private schools was—and still is—one of *laissez-faire*. In contrast with many other countries, Pakistan’s government provides no subsidies in the form of grants to parents or schools. In Pakistan private schools arise and survive purely in response to “market forces.”

The role of private schools is currently being debated in academic, popular, and policy forums (see Rahman 2005; Abbas 2006). A substantial part of this debate is framed in terms of the rising fees and limited access to schools in rural areas. These concerns were articulated in the government’s 2006 policy statement on private schools:

It is argued that because of immense resource requirement, it is difficult for the government to achieve the objective of universalization of primary education. Accordingly, the opening of primary schools in the private sector is considered additionally to the effort of the government towards universalization. This is not a legitimate argument. The participation rates being already higher in urban settlements, it is in the rural areas that more schools are needed. The type of clientele going to these schools would any way participate in education. Thus, their role in universalization remains only marginal. Furthermore, because of the use of English as a medium of instruction, and high fee structure, these institutions are best suited to serve the requirement of elite population. Such a development is contradicted if effort is to be directed towards the development of an egalitarian society. (Ministry of Education 2004)

The popular discussion paints a specific picture of the private sector, whereby private schools (a) charge high fees, (b) locate typically in urban areas, and (c) cater to an “elite population.” Neither this debate nor these characterizations are unique to Pakistan, yet such characterizations would have been more accurate about private schools a generation ago than those of today.

Based on a school-mapping exercise conducted in 1983, Emmanuel Jimenez and Jee-Pang Tan (1985, 1987) found that despite the growth in private schools, educational institutions still did not service large proportions of Pakistan's population. Particularly troublesome was the exclusion of girls in rural areas. Examining tuition and other fees in private schools, Jimenez and Tan argued that private schools were catering only to the rich and concluded that the private education sector would reach "full capacity" at an enrollment of 2.1 million children.

Because Pakistan has changed so much since 1983, it is important to reconsider the impact of private schools using more up-to-date data. Analyzing newly available and hitherto unused data sets, we bring into focus a radically different picture of private schools and foreground this picture in the research, policy, and popular debate.

The Data

We employ four primary data sources gathered by the government, together with data from a comprehensive education survey on learning and educational achievement in Punjab schools (LEAPS), which we collected (Andrabi, Das, Khwaja, et al. 2008). The government sources are the 1998 population census, the Punjab Educational Management Information Systems (EMIS), the census of private educational institutions in Pakistan (PEIP), and the PIHS. In brief, the population census is the decennial census conducted by the Population Census Organization, which provides information on village-level attributes for every village in Pakistan. The census of private educational institutions was conducted by the Federal Bureau of Statistics in 2000 and provides information on all private schools in the country at that time. The data included in the EMIS are collected by the provincial education departments and provide information on public schools; due to data limitations, we use the EMIS for Punjab province only (more on this below). Finally, the PIHS, conducted also by the Federal Bureau of Statistics, is a nationally representative household survey carried out in 1991, 1998, and 2001. We use the 1991 and 2001 data to examine the growth of private schooling across provinces, the rural/urban divide, and income groups and the 1998 data to look at enrollment differences between the rich and the poor in villages with and without private schools.⁴

These data were linked through an extensive matching process so that we could examine school-level attributes in conjunction with village-level data such as population and village infrastructure. There was a 100 percent match between the population census, the census of private schools, and the PIHS since these were collected by the same agency. The EMIS data were collected

⁴ In order to do so, we needed the names of villages where the surveys were conducted. We had access to the list of villages for 1998 but not 2001.

by the provincial government and had a different coding scheme. To match these data at the village level, we used text-matching algorithms followed by a manual match. This process allowed us to match 85 percent of the schools in the EMIS database with the census; for these villages, we then have complete data on both village characteristics and the existence of public and private schools.⁵

In addition to these government data sources, data on teachers' profiles and wages were collected in 2004 as part of an ongoing project—LEAPS. A unique characteristic of these data is the sampling frame, which was constructed in two stages. In the first stage, we stratified the province of Punjab into three regions—north, central, and south—and chose one district from each region.⁶ In the second stage, villages were chosen randomly in each of these districts from a list of villages with at least one private school. The sampling frame allows us to examine variation in teacher's wages across public and private schools in the same village, thus abstracting from differences due to geography, labor market segmentation, or other village-specific features. Across the three districts, our sample consists of 4,880 teachers interviewed in 800 public and private schools in 112 villages.

The Rise of Private Schooling

Fifteen years after Jimenez and Tan's (1987) assessment that the country's private schools could educate 2.1 million children, there are 6.3 million children enrolled in more than 36,000 private institutions. In contrast with the 3,300 private schools found in the four big provinces (Punjab, Sind, NWFP, and Balochistan) in 1983, there were 32,000 such schools in the same four provinces in 2000—an almost tenfold increase in less than 2 decades. Most enrollments in these private schools were concentrated at the primary level, accounting for 75 percent of the total enrollment in private schools. As shares of total enrollment, 18 percent of children in the 5–10 age group, 9 percent of the 11–13 age group, and 4 percent of the 14–16 age group were attending private schools. Since a large fraction of children in all age groups are not enrolled in any type of school, private school enrollments account for 35 percent of enrollment across primary, middle, and high schools.

The boom in private schools happened during the 1990s (see fig. 1). The median year of formation for a private school that was functional in 2000 is 1996; 22 percent of private schools operating in 2000 were formed in 1998, and 50 percent were less than 4 years old (i.e., were formed in or

⁵ The problem is somewhat complicated since there is no standardization of transliteration of village names into English. The same village names can be spelled quite differently in the two data sets.

⁶ The choice of one district each from north, central, and south Punjab follows an accepted stratification in the province, where the southern districts are typically thought to be the least developed, followed by the central area.

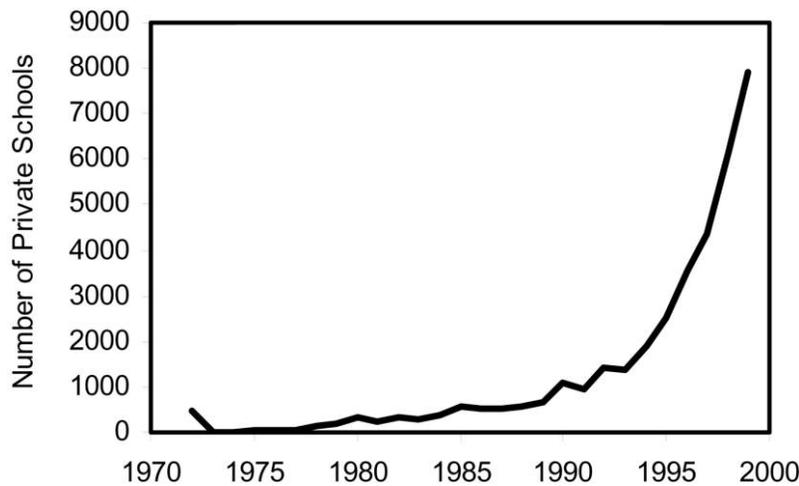


FIG. 1.—Private schools by year of formation. Shows the number of private schools in 2000 that were set up in each of the relevant years. For instance, of all the schools in the country in 2000, 8,000 were set up in 2000, 7,000 were set up in 1999, and only 200 were setup in 1980. The data are from the census of private schools carried out by the Federal Bureau of Statistics in 2001. We omit the last year since the survey was carried out at the beginning of the year.

after 1996).⁷ While the majority of existing private schools formed before 1990 were in urban areas, since then there has been a qualitative shift. Until 1996, there was a steady increase in the rural/urban ratio, which was followed by a leveling off. From 1996 on, an equal number of private schools were created in rural and urban areas every year.

The dramatic increase in the creation of private schools translated directly into a greater enrollment share for the private sector. The four main provinces all registered consistent increases in the share of private schooling in total enrollment between 1991 and 2001, although their specific experiences varied. Punjab and NWFP experienced the largest growth (from 15 to 30 percent and from 4 to 17 percent, respectively), while in Sind (from 16 to 21 percent) and Balochistan (from 4 to 6 percent) the percentage growth was smaller.⁸

The enrollment share of the private sector increased in both urban and rural areas and for both rich and poor households. Between 1991 and 2001, for the poorest decile of per-capita expenditure in rural areas, the share of spending for private schools increased from 0 to 6 percent; for the richest rural deciles the share jumped from 12 to 38 percent. Urban areas reported equally high growth, although from a higher initial level. For the poorest

⁷ Interpreting these figures as the growth rate of private schools in recent years is problematic since data on the age of schools currently existing do not yield information about the school survival rate. Discounting that the numbers in fig. 1 are based on survival rates, it still provides evidence of substantial growth in private schools during the 1990s.

⁸ All enrollment comparisons between 1991 and 2001 are based on enrollment and household consumption expenditure data from the PIHS in 1991 and 2001.

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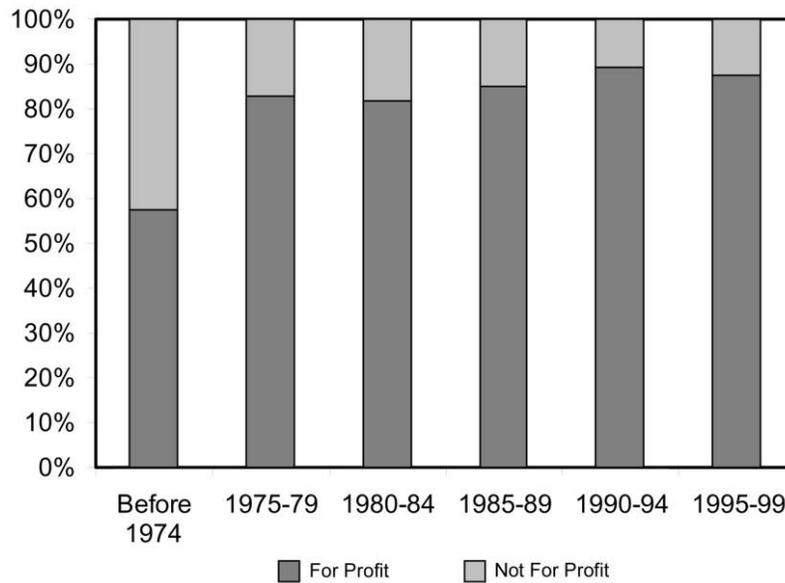


FIG. 2.—Private schools ownership status by year

deciles, the equivalent increase was from 9 to 18 percent, and for the richest, from 52 to 85 percent. By the end of the 1990s, nearly all rich Pakistani children in urban areas, almost a third of the richer rural children, and close to 10 percent of children in the poorest deciles nationally were studying in private schools.

The 1990s saw the single biggest shift in the structure of educational delivery in Pakistan. Contrary to popular belief, religious schooling (ma-drassas) played no role in this structural shift. Secular private schools gained significantly in the share of overall primary enrollment, and their gains were across all provinces, across rural and urban areas, and for both rich and poor households. Nevertheless, toward the end of the 1990s, there were still large areas of the country, such as rural Balochistan and Sind, where private schools had not made any inroads.

What is striking is the small role that the nonprofit sector has played in the rise in private schooling.⁹ The nonprofit sector was much more prominent in the earlier schooling environment (43 percent in schools that existed before the nationalization in 1973), but the nonprofit share declined in recent years (see fig. 2). We also found that the enrollment share of the nonprofit sector in rural areas was only 11 percent, which was smaller than in urban areas, where it was 16 percent. This finding belies the common perception that NGOs, both domestic and foreign, have brought education

⁹ We characterize the nonprofit schools in the PEIP as those run by nongovernmental organizations (NGOs), trusts, and foundations.

into the rural areas. Instead, the explosive growth of the 1990s that has so defined the current educational landscape is largely a self-owned, for-profit phenomenon.

The Private-Schooling Story

The available census and survey data illuminate different facets of the private-schooling story. Taken together, they show a landscape where positive educational outcomes are closely linked to the presence of a private school and where the presence of a private school relies critically on the availability of educated women in the village. A key message emerges: where private schools develop, they are affordable and used by the poor, but private schools do not arise everywhere. Indeed, the same mechanism that ensures their affordability also constrains where they locate.

Schooling Outcomes in Villages with and without Private Schools

As table 1 illustrates, there are significant differences between villages with and without private schools, in terms of schooling outcomes and the relative use of private schools by the rich and the poor. This finding emerges both from the census of private schooling (PEIP 2000) and the PIHS (1998). We present results for the country as a whole (cols. 1 and 2, table 1) and the four main provinces separately (cols. 3–10, table 1). Several features of this comparison are noteworthy.

As expected, private school enrollment is higher in villages with private schools, and in villages both with and without private schools, the rich use private schools more than the poor do. It should be noted that even in villages without private schools, parents can send their children to private schools outside the village. Nevertheless, in all four provinces, the share of private enrollment is twice as high in villages with private schools as compared to those without. In Punjabi villages with private schools, 23 percent of student enrollment is in private schools compared to 11 percent in villages without. For the four main provinces, the share of private schooling among the rich is double that of the poor in villages with private schools and almost four times as high in villages without. The pattern repeats across all four provinces, with the exception of Balochistan, where the size of the sample is too small for meaningful comparisons.

The use of private schools by the poor, however, has as much to do with their availability as with their cost and location. Where there are private schools in the village, a sizable fraction of the poor use them: in Punjabi villages with private schools, the share of private schooling in total enrollment for the poorest third of students is 15 percent, and among the richest third of students it is 29 percent. For the country as a whole, the percentage of private enrollment for the poor in villages where there are private schools

TABLE 1
COMPARING VILLAGES WITH AND WITHOUT PRIVATE SCHOOLS

	All Four Provinces' Villages		Punjab Villages		Sind Villages		NWFP Villages		Balochistan Villages	
	With a Private School (1)	Without Private Schools (2)	With a Private School (3)	Without Private Schools (4)	With a Private School (5)	Without Private Schools (6)	With a Private School (7)	Without Private Schools (8)	With a Private School (9)	Without Private Schools (10)
Fraction enrolled	.58* (.02)	.41* (.01)	.61* (.02)	.46* (.02)	.41* (.05)	.31* (.02)	.55* (.03)	.42* (.03)	.56* (.02)	.41* (.03)
Fraction females enrolled	.50* (.02)	.29* (.01)	.56* (.03)	.35* (.02)	.28 (.05)	.20 (.02)	.42* (.04)	.24* (.03)	.50* (.05)	.26* (.05)
Fraction males enrolled	.66* (.02)	.52* (.01)	.67* (.02)	.55* (.02)	.55 (.08)	.42 (.03)	.68 (.03)	.59 (.04)	.65* (.02)	.54* (.03)
Private share as fraction of enrollment	.20* (.01)	.07* (.01)	.23* (.02)	.11* (.02)	.05 (.03)	.02 (.01)	.16* (.02)	.05* (.01)	.06 (.03)	.01 (.01)
Public share as fraction of enrollment	.91* (.01)	.78* (.01)	.75* (.02)	.87* (.02)	.91* (.03)	.97* (.01)	.83* (.02)	.92* (.01)	.91 (.03)	.98 (.01)
Private share as fraction of enrollment (poor)	.13* (.02)	.03* (.01)	.15* (.02)	.50* (.01)	.02 (.02)	.00 (.00)	.07 (.04)	.02 (.01)	0 obs.	0 obs.
Private share as fraction of enrollment (middle)	.16* (.02)	.07* (.02)	.20 (.02)	.12 (.03)	.05 (.02)	.02 (.01)	.08 (.02)	.04 (.01)	.24* (.05)	.00* (.00)
Private share as fraction of enrollment (rich)	.26* (.02)	.11* (.02)	.29 (.02)	.18 (.03)	.06 (.04)	.04 (.01)	.24* (.03)	.09* (.03)	.05 (.01)	.03 (.01)

SOURCES.—Pakistan Integrated Household Survey, 1998, and Private Educational Institutions in Pakistan, 2000.

NOTE.—NWFP = North-West Frontier Province; obs. = observations; standard error of the mean is in parentheses; fraction enrolled figures use the given population ages 5–15. In terms of consumption, the poor, middle, and rich are, respectively, the lowest, the middle, and the top third of all households of the national rural population.

*Difference is significant at the 5% level.

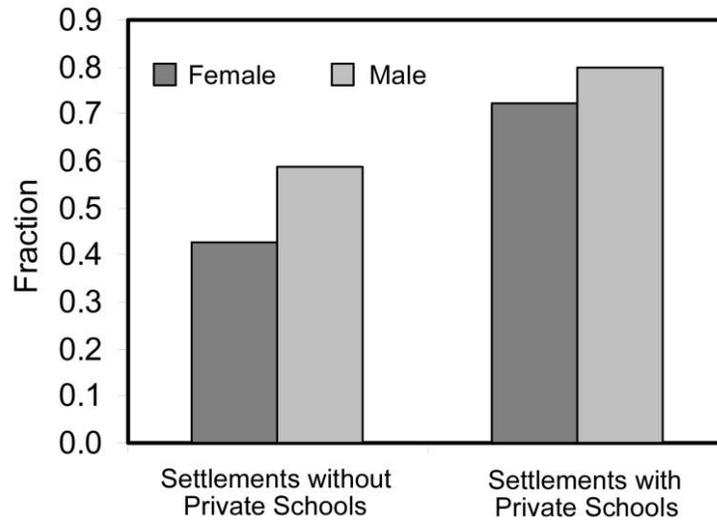


FIG. 3.—Male and female enrollment ratios based on a census of schooling choice carried out among 80,000 households under the Learning and Educational Achievement in Punjab Schools (LEAPS) study. A settlement is a distinct geographically separable subset of a village. There are 215 delineated settlements in 112 villages in the LEAPS sample.

(13 percent) is greater than the share of private enrollment (11 percent) for the rich in villages where they are not.

Finally, our data reveal that the village presence of private schools is strongly associated with greater female enrollment. In both Punjab and NWFP, there are differences of nearly 20 percentage points in overall female enrollment in villages with private schools compared to those without. Comparing the gender ratios of private and public schools shows a dramatic impact of private schools in reducing the gender gap; the share of female enrollment in private schools is consistently 3–5 percentage points higher than it is in government schools, in educational data from all available sources.¹⁰

The LEAPS data provide further evidence for the association between enrollments and the availability of private schools. These data allow us to look inside villages and contrast enrollment patterns available in settlements with and without private schools.¹¹ Figure 3 shows male and female enrollment in settlements with and without private schools for the 112 villages in the survey. There is a 21 percentage point increase in male enrollments and a 29 percentage point increase for female enrollments in settlements with private schools compared to those without.

¹⁰ The difference using the PEIP census and EMIS numbers is 37 vs. 42 percent in 1999–2000 and 40 vs. 44 percent in PIHS 2000 data.

¹¹ Using geographical markers, we divided every village into “settlements”; for the sample of 112 villages, there are 215 settlements.

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TABLE 2
DETERMINANTS OF STUDENT ENROLLMENT

	(1)	(2)	(3)
Female	-.163 (.012)**	-.166 (.003)**	-.182 (.003)**
Private school in settlement	.164 (.020)**	.076 (.004)**	
Interaction: female × private school in settlement	.081 (.014)**	.081 (.004)**	.096 (.004)**
Monthly expenditure:			
Rs 2,500–5,000	.078 (.016)**	.074 (.003)**	
> Rs 5,000	.110 (.021)**	.120 (.003)**	
Age	.147 (.007)**	.143 (.002)**	.146 (.002)**
Age ²	-.008 (.000)**	-.008 (.000)**	-.008 (.000)**
Illiterate head	-.242 (.012)**	-.202 (.002)**	
Constant	.073 (.044)*	.139 (.012)**	.131 (.011)**
Fixed effects	None	Village level	Household level
Observations	147,704	147,704	149,938
R ²	.18	.12	.09

SOURCE.—Learning and Educational Achievement in Punjab Schools, 2003: Household Survey.

NOTE.—Dependent variable = child enrollment dummy variable. Results are from an ordinary least squares regression. Robust standard errors are in parentheses. Errors are clustered at the village level. Observations are all children ages 5–15. Omitted categories for dummy variables are household has illiterate head, monthly expenditure is below Rs 2,500, no private school in settlement, and child is male.

*Significant at 10%.

**Significant at 1%.

Table 2 presents our analysis of the determinants of enrollment and the effect of school presence.¹² The first two columns present differences between households located in settlements with and without private schools; the first column is a cross-section regression, while the second column introduces village-level fixed effects that allow us to look at effects of settlements controlling for all observable and unobservable village-specific influences. As expected, enrollment increases sharply with age, but the increase tapers off (the negative coefficient on the square term in age). Also as expected, the income and education of the household significantly increase enrollment levels for children.

Of particular importance are the effects on enrollment of being female and of having a private school in the settlement and the differential effect of being a female in a settlement with a private school. This difference is captured by the interaction term (female × private school). The presence of a private school in the settlement significantly increases enrollments for boys, by 16.4 percentage points, but has a much larger effect on girls, as seen by the additional interaction term of 8.1 percentage points. Put another way, in settlements without private schools, females are 16 percentage points less likely to be enrolled compared to boys. When there are private schools in the settlement, the enrollment by all children increases, but female enroll-

¹² The results presented here are from an ordinary least squares (OLS) regression and thus should be thought of as coming from a linear probability model. Using a nonlinear framework such as logistics or a probit regression does not change any of the results. We keep the OLS version because of ease of interpretation and use of fixed effects.

ment increases more so that the overall gender gap decreases to about 8 percentage points.

Following Hanan Jacoby and Ghazala Mansuri (2006), the next column (col. 3, table 2) repeats the same regression with household fixed effects. That is, we look at the differential effect of school presence for girls and boys in the same household—doing so allows us to identify the benefit of school presence for girls, while controlling for unobserved household-level omitted variables (e.g., households that care less about schooling may be located in settlements without schools). The gender penalty of nonschool presence is strong and significant: compared to a boy in the same household, a girl in a settlement without a private school is 18 percentage points less likely to be enrolled, but this gap decreases to 9 percentage points in a settlement with such schooling options.¹³ Private schools increase enrollments more for girls than for boys. Where they exist they are also used by the poor. The key to the use of private schools by the poor lies in their affordability.

Private School Fees

Earlier studies based on small samples have shown that private schools charge very low fees. Alderman et al. (2001) document that private school fees are affordable even for the poor in the urban areas of Quetta and Lahore, where the schools charge an average of Rs 85 per month. Our countrywide data show that fees are low for all the provinces in Pakistan, as well as for rural and urban regions within each province.

Table 3 presents median and mean fees for private schools in the four main provinces, using data from the census of private schools.¹⁴ The highest median annual school fees, both in urban and rural areas (Rs 1,757 and Rs 1,265, respectively), are for schools in the province of Balochistan. Punjab, with more than 50 percent of the country's school-age population, reports the lowest median annual fees in urban and rural regions (Rs 828 and Rs 600, respectively). In rural areas, the median annual fee roughly translates

¹³ These results contrast with the discussion in Lloyd et al. (2007), who argue that the establishment of private schools does not increase girls' enrollment because they tend to be located where girls' enrollments were high to begin with. There are several problems with their interpretation. Their evidence that private schools do not lead to higher girls' enrollment is drawn from only 12 villages, of which only five do not have a private school in the second wave of their survey. They find no contemporaneous difference in female enrollments between the villages with and without private schools, which is not consistent with the nationally representative data in table 1. In their randomized treatment-control study, Harold Alderman et al. (2001) show that the setting up of a private school leads to a 20 percentage point increase in female enrollment, which is very close to the numbers in table 1. The argument that private schools locate in villages with higher girls' enrollment does not hold in larger samples either. Table 7 will look at private school locations in villages with girls' primary schools and with girls' primary and secondary schools, based on data from 26,000 villages in Punjab province. We will argue that only the second type of school increases the likelihood of private school existence in the village. This has more to do with the availability of teachers than students, particularly since 90 percent of private schools in rural areas cater only to the primary sections.

¹⁴ We eliminate a small number of NGO schools that are subsidized by donors and may charge lower fees.

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TABLE 3
ANNUAL FEES FOR SELF-OWNED (For-Profit) PRIMARY SCHOOLS

Province	Region	Median (Rs)	Mean (Rs)	Interquartile Range (Rs)	Number of Schools
NWFP	Urban	1,232	1,439 (1,360)	844	547
	Rural	1,152	1,249 (1,276)	600	1,167
Punjab	Urban	828	1,176 (3,112)	622	4,290
	Rural	600	723 (943)	403	3,897
Sind	Urban	1,208	1,947 (3,079)	1,126	1,325
	Rural	1,080	979 (541)	720	77
Balochistan	Urban	1,757	1,833 (948)	1,200	61
	Rural	1,265	1,293 (734)	669	42
All Pakistan	Urban	960	1,426 (3,492)	866	6,397
	Rural	751	892 (1,000)	638	6,001

SOURCE.—Private Educational Institutions in Pakistan, 2000.

NOTE.—NWFP = North-West Frontier Province; standard error of the mean is in parentheses.

to \$1.50 a month, or less than a dime a day. Thus, these school fees are even affordable for someone living at the dollar-a-day poverty line established as a global benchmark. Based on expenditure data from the PIHS, the mean tuition fee in Punjab represents only 1.7 percent of the average household expenditure in rural areas and 2.1 percent in urban areas. A family with four children in an urban area will spend 8.4 percent of their household budget on school tuition fees if all their children are enrolled in an average private school.¹⁵ The consistently higher mean compared to the median shows that the distribution is skewed to the left, with a high concentration of schools charging lower than average school fees. The maximum interquartile range, which shows the range of fees between the schools at the seventy-fifth and twenty-fifth percentiles of the fee distribution, is Rs 1,200 (urban Balochistan); in rural regions, 50 percent of all schools are concentrated in a tight band of just Rs 638.00.

It is striking that provinces with more schools report lower median fees (see table 3). If the establishment of private schools had responded to greater local demand for quality education, we would observe the opposite relationship; that is, private schools would arise where parents were willing to pay more for education. In such a case the establishment of private schooling would be positively correlated with fees. In contrast with that possibility, the data are more consistent with the alternative hypothesis, whereby the existence of private schools is constrained not by the demand for such schooling but, rather, by the availability of teachers. Private schools arise where teachers are available. Since the presence of private schools is a response to the availability of inexpensive teachers, fees are lower in areas where more teachers are available.

¹⁵ Note that total expenditure in schooling includes more than just tuition fees; thus, these numbers represent an underestimate of the total costs of schooling.

TABLE 4
TEACHER CHARACTERISTICS PUBLIC AND PRIVATE SCHOOLS

	Public Mean	Private Mean	Difference of Means
Log of salary (Rs)	8.63 (.01)	6.99 (.01)	1.65 [106.92]
Gender (fraction male)	.5708 (.01)	.2377 (.01)	.33 [23.31]
Age (years)	38.6 (.16)	25.2 (.17)	13.4 [57.70]
Marital status (fraction single)	.15 (.02)	.77 (.02)	.63 [-17.71]
Origin (fraction local)	.25 (.01)	.52 (.01)	.27 [-19.12]
Education:			
Fraction Matric and below	.36 (.01)	.41 (.01)	.06 [-4.21]
Fraction FA/FSc	.19 (.01)	.36 (.01)	.17 [-13.06]
Fraction BA/BSc	.26 (.01)	.19 (.01)	.07 [6.08]
Fraction MA/MSc	.19 (.01)	.04 (.04)	.15 [16.20]
Training:			
Fraction no training	.06 (.00)	.71 (.01)	.65 [-46.37]
Fraction PTC/JV/SV	.44 (.01)	.15 (.01)	.29 [21.45]
Fraction CT	.22 (.01)	.08 (.01)	.15 [13.50]
Fraction BEd and above	.28 (.01)	.06 (.01)	.21 [18.71]
Teaching experience:			
Fraction < 1 year	.06 (.00)	.21 (.01)	.15 [-15.19]
Fraction 1–3 years	.05 (.00)	.39 (.01)	.34 [-29.00]
Fraction > 3 years	.88 (.01)	.40 (.01)	.49 [35.61]

SOURCE.—Learning and Educational Achievement in Punjab Schools, 2003: Teacher Roster.

NOTE.—Standard error of the mean is in parentheses; z - and t -statistics are in brackets. Matric = secondary school; FA and FSc = higher secondary school; BA = bachelor of arts; BSc = bachelor of science; MA = master of arts; MSc = master of science; PTC = primary teacher certificate; JV = junior vernacular; SV = senior vernacular; CT = certificate in teaching; BEd = bachelor in education.

Teachers (and Their Wages) in Private Schools

Table 4 offers a first look at the importance of teachers in the private-schooling story. The first row in the table compares salaries in the private and public sectors using data on 4,890 teachers in the 800 public and private schools of the LEAPS study. The difference in pay between a teacher in a private and a government school is staggering. An average female teacher in a government school earns Rs 5,897 per month, which is not very different from the earnings for an average male (Rs 6,408). Among private schools, though, male teachers earn merely Rs 1,789 per month, while females earn just Rs 1,069.

Two factors create these huge salary differences between the public and private sectors: differences in teacher characteristics and differences in the returns to their characteristics. Teacher characteristics in the public and private sector are clearly very different, as can be seen from table 4. Private schools hire teachers who are predominantly female, younger, and unmarried. Private school teachers are also twice as likely to come from the village in which they are employed, are less educated, and are far less likely to have received any preservice or in-service teacher training.

The returns to characteristics are also different. Table 5 presents multivariate regressions of (log) teacher wages on observed characteristics including age, education, teacher training, gender, and place of residence (whether

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TABLE 5
HOW ARE PRIVATE SCHOOLS DIFFERENT? DETERMINANTS OF TEACHER COMPENSATION

	Public Schools (1)	Private Schools (2)	All Schools (3)	All Schools (4)
Female	.022 (.017)	-.333 (.052)***	.023 (.019)	.025 (.020)
Local	-.058 (.018)***	-.231 (.037)***	-.066 (.024)***	-.065 (.025)**
Interaction:				
Female × private			-.291 (.053)***	-.275 (.047)***
Local × private			-.143 (.049)***	-.082 (.044)*
Private			-.721 (.045)***	-.797 (.045)***
Education:				
FA/FSc	.151 (.028)***	.191 (.030)***	.159 (.022)***	.145 (.020)***
BA/BSc	.333 (.037)***	.414 (.044)***	.333 (.030)***	.312 (.027)***
MA/MSc or above	.502 (.055)***	.637 (.078)***	.475 (.039)***	.475 (.038)***
Training:				
PTC/JV/SV	.757 (.120)***	.032 (-.032)	.256 (.044)***	.252 (.044)***
CT	.680 (.110)***	.065 (.038)*	.186 (.037)***	.193 (.036)***
BEd or above	.738 (.113)***	.245 (.039)***	.278 (.042)***	.274 (.040)***
Experience:				
1-3 years	.131 (.064)**	.079 (.023)***	.135 (.031)***	.117 (.027)***
> 3 years	.337 (.060)***	.118 (.027)***	.217 (.034)***	.210 (.032)***
Age	.059 (.014)***	.030 (.007)***	.038 (.009)***	.040 (.008)***
Age ²	.000 (.000)**	.000 (.000)***	.000 (.000)***	.000 (.000)***
Constant	5.843 (.253)***	6.592 (.121)***	6.931 (.172)***	6.926 (.155)***
Fixed effects	None	None	None	Village level
Observations	2,596	1,956	4,552	4,552
R ²	.53	.47	.83	.85

SOURCE.—Learning and Educational Achievement in Punjab Schools, 2003: Teacher Roster.

NOTE.—Dependent variable = log teacher salary in rupees (\$1 = Rs 60.20). Robust standard errors are in parentheses. Errors are clustered at the village level. Omitted categories for dummy variables are male; public school; not teaching in home village; education, Matric (secondary school) and below; no training; and experience < 1 year. FA and FSc = higher secondary school; BA = bachelor of arts; BSc = bachelor of science; MA = master of arts; MSc = master of science; PTC = primary teacher certificate; JV = junior vernacular; SV = senior vernacular; CT = certificate in teaching; BEd = bachelor in education.

*Significant at 10%.

**Significant at 5%.

***Significant at 1%.

local or not). The first two columns show how different characteristics are compensated by public and private schools, respectively, while the third column examines differences between public and private school compensation through interaction terms. Since the LEAPS data are based on a sampling scheme that guarantees multiple schools in every village, we can also look at the difference among teachers in the same village. The fourth column looks at differences within villages through a fixed-effect regression at the level of the village.

Salaries for public school teachers strongly related to education and training but not to the gender of the teacher. Private-sector salaries also are associated with a teacher's education level but are not related to teacher training, and females are paid considerably less. Surprisingly, there are few differences in the estimated coefficients in specifications with and without geographical controls (col. 3 vs. col. 4, table 5). Using these regressions for the public and private sectors, table 5 highlights the separate roles of characteristics and the returns to those characteristics.

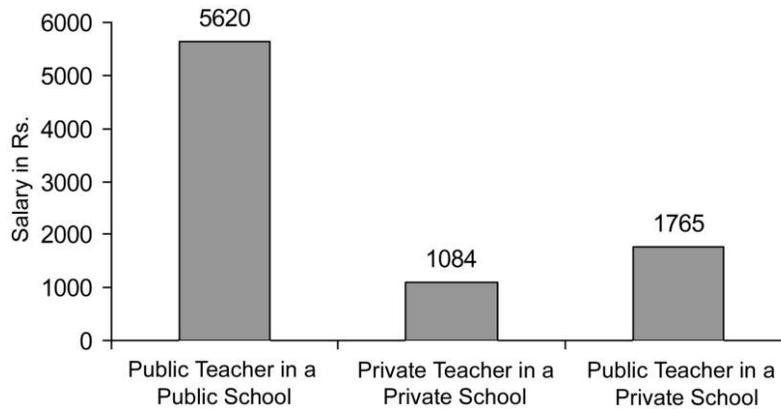


FIG. 4.—Decomposition of the private/public school wage gap based on a census of 4,830 teachers in 810 public and private schools carried out as part of the Learning and Educational Achievement in Punjab Schools surveys. The first bar shows the average wage of a public school teacher; the second shows the average wage of a private school teacher. The third bar presents the wage a teacher with the characteristics of a public school teacher would earn if he or she were to move to a private school. This predicted wage is based on a regression of private school wages on gender, whether the teacher is local, age, training, education, experience, and absenteeism.

Figure 4 presents the predicted value of teacher salaries under a simulation based on the equations of tables 4 and 5. We imagined, as a thought experiment, moving teachers from the public sector and paying them the salary that would be associated with their characteristics in the private sector. That is, we use the estimated coefficients from column 1 in table 5 to predict what private-sector salaries would be for teachers with characteristics observed in the public sector. The figure plots the average pay of teachers in the public sector (the first bar), teachers in the private sector (the second bar), and teachers in the private sector assuming they had the same characteristics as teachers in the public sector. The difference between the first and the third bar reflects differences in salaries arising from differential returns in the two sectors. The difference between the second and the third bar reflects their different characteristics.

There would be a dramatic decrease in a public teacher's salary if she were to move to the private sector. The average salary for the public-sector teacher would fall from Rs 5,620 to Rs 1,765. This is because the private sector values teacher training less than does the public sector; it does not compensate experience at the same level as does the public sector, and private schools pay female teachers much less. The remaining difference with the average salary in the private sector, Rs 1,084 versus Rs 1,765, is because of differences in teacher characteristics. Public-sector teachers are more educated, and they are rewarded for it with higher wages.¹⁶

¹⁶ This is the familiar Oaxaca-Blinder decomposition in the labor economics literature. As is well understood, choosing the correct reference group affects the interpretation of the decomposition. If

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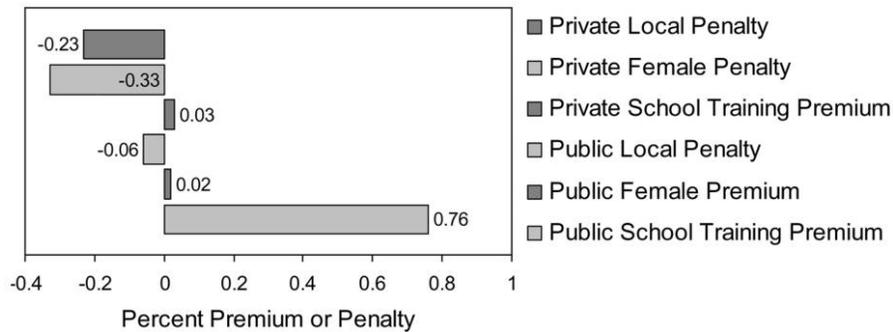


FIG. 5.—Public/private wage premiums and penalties based on a census of 4,830 teachers in 810 public and private schools carried out as part of the Learning and Educational Achievement in Punjab Schools surveys. Plots the coefficients presented in table 5, which explain wages in the public and private sector as a function of training, gender, residence, education, age, and experience. Positive numbers are premiums; negative numbers are penalties.

Figure 5 helps us to appreciate differences in returns for the private and public sector for three particular characteristics—teacher gender, origin, and training. The horizontal axis shows the salary penalty (negative) or premium (positive) associated with these characteristics in the two sectors. After controlling for observed characteristics, female teachers earn very slightly more in the government sector, but they earn 33 percent less in the private sector. In both types of schools local teachers are paid less, but the penalty in the private sector (23 percent) is much larger than in the government sector (6 percent). Finally, the public sector cares a lot about formal preservice teacher training, while the private sector does not. Teachers with a Primary Teacher Certificate (PTC) earn 76 percent more in the public sector but only 3 percent more (not significant) in private schools.

We can conclude that private schools have kept their costs low through basing hiring decisions on and linking pay with local labor market conditions. Compensation in the government and private sectors is calculated in very different ways. Teachers in the government sector are paid on the basis of a pay scale that rewards experience and training but does not respond to local labor market conditions. In contrast, the private sector values teacher education but also compensates teachers because of their other available options in the labor market. With fewer employment options, women are restricted to the village in their job search, so they are paid less.¹⁷ Bringing a teacher

we perform the reverse experiment of moving a private-sector teacher to the public sector, her salary would increase from Rs 1,084 to Rs 1,895, primarily because the public sector values teacher training and most private-sector teachers are not trained.

¹⁷ The data from the LEAPS survey are corroborated by data from the wider labor market beyond that of teachers. Analysis based on household surveys shows that men receive four times as much as women when they have primary education and two times as much when they have secondary education (World Bank 2005). That educated women cost less is in large part due to different constraints on labor mobility of men and women (World Bank 2005).

from outside the village means that the school has to pay more for travel, so nonlocal teachers are paid more.

Statistics illustrate the limited employment opportunities for rural Pakistani women. In 2001, the labor force participation rate for women in rural Pakistan was 16.5 percent, as compared to 72 percent for men. More important, 80 percent of rural women worked in the agricultural sector, while only 8 percent worked in the service provision sector in which education is included (Federal Bureau of Statistics 2003).

We might speculate on why the market-based hiring by private schools does not value preservice teacher training. There is evidence to suggest that neither teacher competency nor students' academic performance is related to teacher training. It seems plausible that the private school owners do not value training because training adds no value to teachers. If this is indeed the case, then there are two factors accounting for the growth of private schools in Pakistan. First, they hire teachers whose characteristics do not bring them high salaries in the labor market. Private school teachers are overwhelmingly women and are less educated than teachers in the public sector. If private school teachers had the same characteristics as those in the public sector, the market would reward them with a 63 percent increase in salaries (instead of the 518 percent increase experienced by teachers in public schools). Second, private schools react optimally to local labor market conditions. Women and local teachers are paid substantially less in the private sector but not in the public sector.

Where Have Private Schools Located?

The very factors that explain the growth of private schools also suggest limits for their potential spread. Private schools need a large number of children in the catchment area. They also need a supply of potential effective teachers—local women with, at minimum, a secondary school education. A matched database that combines village characteristics and the presence of private schools allows us to examine village-level variables that increase the likelihood of the presence of a private school.

Private schools appear to have located across the four main provinces in villages with larger populations and better infrastructure (see table 6). Villages where there are private schools are nearly three times the size of those with only public schools. Private schools also develop in villages with better infrastructure. Across the four provinces, 74 percent of houses in villages where there are private schools report an electricity connection, compared to 44 percent in villages where there are not private schools. The same pattern is apparent for piped water supply. Finally, one useful measure of village wealth is the fraction of houses with *pakka* (permanent construction rather than mud or thatch). In villages with private schools, 60 percent of houses are

TABLE 6
VILLAGE ATTRIBUTES: VILLAGES WITH AND WITHOUT PRIVATE SCHOOLS

	All Four Provinces' Villages		Punjab Villages		Sind Villages		NWFP Villages		Balochistan Villages	
	With a Private School	Without Private Schools	With a Private School	Without Private Schools	With a Private School	Without Private Schools	With a Private School	Without Private Schools	With a Private School	Without Private Schools
Number of settlements	6,942	36,556	5,253	19,285	388	5,391	1,238	5,937	63	5,943
Mean population	4,465* (54.0)	1,502* (9.6)	4,051* (54.2)	1,518* (11.5)	4,921* (301.8)	2,539* (35.6)	6,102* (158.8)	1,212* (21.1)	4,038* (692.6)	797* (19.6)
Fraction literate adults	.428* (.002)	.281* (.001)	.455* (.002)	.350* (.001)	.255* (.007)	.213* (.002)	.375* (.004)	.242* (.002)	.285* (.019)	.143* (.002)
Fraction permanent houses	.596* (.004)	.361* (.002)	.646* (.004)	.452* (.002)	.183* (.011)	.123* (.002)	.536* (.009)	.565* (.004)	.079 (.004)	.077 (.003)
Fraction houses with water	.152* (.003)	.088* (.001)	.125* (.003)	.076* (.001)	.130* (.010)	.100* (.002)	.268* (.008)	.151* (.004)	.320* (.004)	.050* (.002)
Fraction houses with electricity	.736* (.003)	.435* (.002)	.762* (.003)	.513* (.003)	.407 (.017)	.425 (.005)	.741* (.008)	.414* (.004)	.539* (.004)	.213* (.005)
Average household size	7.10* (.01)	6.67* (.01)	6.99* (.01)	6.78* (.01)	5.56* (.04)	5.45* (.01)	8.06* (.04)	7.76* (.02)	6.23 (.24)	6.36 (.03)
Village area	2,755* (63.5)	2,209* (26.8)	2,109* (43.4)	1,523* (20.5)	8,337* (659.9)	4,302* (109.7)	3,807* (198.7)	2,371* (92.3)	3,914 (800.8)	2,619 (82.6)

SOURCES.—Population census, 1998, and Private Educational Institutions in Pakistan, 2000.

NOTE.—Standard errors of the mean are in parentheses.

*Difference is significant at the 5% level.

TABLE 7
PUBLIC-PRIVATE COMPLEMENTARITY

	Villages with Private Schools (%)	Number of Educated Women per Village	Number of Educated Women per 1,000 Population
Does not have girls' primary or secondary school	.12	12.27	12.9
Received girls' primary only in last 20 years	.13	12.41	16.2
Received girls' primary and secondary in last 20 years	.31	27.71	18.8

SOURCES.—Population census, 1998; Punjab Educational Management Information Systems, 2000; and Private Educational Institutions in Pakistan, 2000.

permanent constructions, compared to only 36 percent in villages without private schools.

Village size and wealth are not the unique determinants of private school location, however. Private schools also tend to be located in villages in which women with secondary education live. In the case of Punjab, increasing the percentage of educated older females in the village by 1 standard deviation increases the number of private schools in a village by half (0.51) a standard deviation. The likelihood of a village having a private school nearly triples when a village has a public secondary school for girls (compared to a village that does not). However, the likelihood is not significantly different when the village has only a girls' primary school (see table 7). Private schools have overwhelmingly located where the government set up secondary schools in the last 20 years.¹⁸

Caveats and Discussion

Private schools have effectively used less educated and low-paid young women to serve as primary teachers. This formula may not be replicable at the secondary and higher-secondary levels since the required skills for teachers at these levels are not locally available in most of rural Pakistan. To expand to this level, private schools will be forced to hire teachers from outside the village, which will dramatically increase salary costs. Since the affordability of private schools originates from low labor costs, it will be compromised at the secondary level. Therefore, the spread of private schools, controlling for population size, infrastructure, and other demand-related variables, is constrained both geographically—they will first come up in villages where there

¹⁸ In Andrabi, Das, and Khwaja (2008) we tested this prediction using an instrumental variables strategy and confirmed that the prior construction of a girls' secondary school increases the likelihood of a private school by almost three times, and furthermore, such construction is associated with a decline in teachers' wages in private schools. Further, the instrumental variable strategy in this article allows us to make a causal statement on the impact of government school placement.

is a ready stock of educated women—and by the availability of trained teachers at the local level.

Most debates on private versus public schooling have focused on the relationship between private and public enrollment, where increasing enrollments in one sector is seen as the source of decline in the enrollment share of the other sector. As stated earlier, in our data, it is clear that villages with private schools show greater overall enrollment. That is, private schools are bringing new students into the educational net; they are not just taking them away from government schools.

There is another interesting angle to the relationship. The success of private schools in Pakistan is based on their overwhelming reliance on locally based teachers who are female and who have secondary education. But where do these women come from in the first place? Pakistan's case adds a temporal dimension to the debates on public versus private schooling, introducing complementarities between the two sectors. Girls educated in today's public secondary schools will become tomorrow's private school teachers. Viewed in this light, a first priority should be the creation of a cohort of educated women in every village who can serve as catalysts in the process of educational development. Dynamic complementarities between the public and private sectors suggest that a first large investment—a push to create cohorts of secondary-educated women—could lead to self-sustaining growth in educational provision through private schools. Alternatively, to alleviate the constraints of low-cost teachers, it has to become easier for nonlocal women to break into the village labor market. Educational policy in Pakistan needs to take into account the segmented nature of labor markets and the dynamic complementarities that exist between public and private schools.

Our focus on the supply constraints limiting the expansion of education and the central role of women as teachers is not new. In the United States there has been an extensive debate about the relationship between changing educational quality and the exit of women from the teaching profession. Two reasons—the opening up of alternative employment options and increased unionization—have been advanced as potential explanations for this compositional change in the teaching workforce. As women's participation in the labor force in Pakistan increases, it is likely that similar patterns will emerge. Pakistan at this stage presents a fascinating glimpse of an environment that many higher-income countries witnessed 50 years ago.

There are important questions left unanswered in this study. First, we recognize that correlations are not evidence of causation. Our ongoing research in this area mentioned above focuses more centrally on establishing causality of the linkages discussed here. Second, to the extent that private schools save on costs by hiring moderately qualified local female teachers, are they compromising on quality?

We are pursuing this second issue in detail in ongoing work, but here

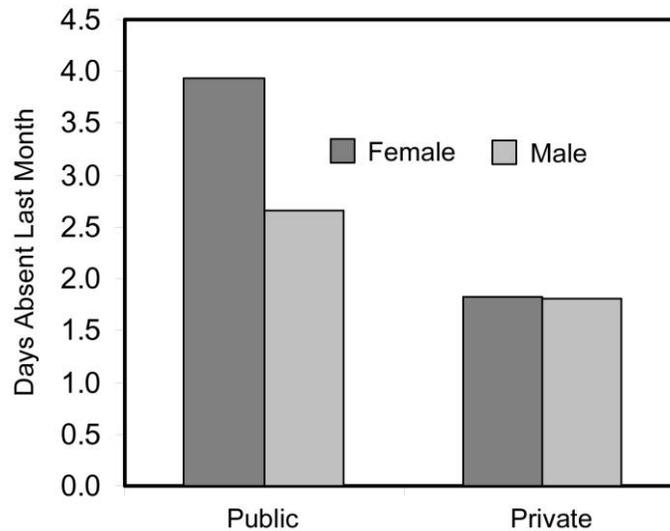


FIG. 6.—Teacher absenteeism, by school type, based on a census of 4,830 teachers in 810 public and private schools carried out as part of the Learning and Educational Achievement in Punjab Schools surveys. Absenteeism data reported by the head teacher or the school owner show the number of days absent in the previous month.

we present two preliminary results. When we plot absenteeism for government and private schools for male and female teachers,¹⁹ private schools teachers are considerably less frequently absent than government school teachers in a given month (see fig. 6). Government school female teachers are absent more than twice as many days (4 vs. 1.8) in a month than their private school counterparts. If what really matters for primary schooling is that the teacher puts in effort, the more consistent presence of female teachers at private schools may more than compensate for their lower qualifications since a primary school teacher who has a higher level of formal education will have less impact if she shows up for work less often. Effort, of course, can be assessed beyond attendance, and the extent to which qualification, effort, or both contribute to teacher effectiveness remains an important research topic more generally.

Our ongoing LEAPS work, based on testing more than 12,000 third grade children in three rural districts in Punjab, provides some evidence that increased effort may indeed overcome the problems of poor educational qualifications and training. For instance, Das et al. (2006) study performance in public and private schools for the subjects of Urdu, English, and mathematics using item-response scaled scores, where the mean of the distribution is 500, and the standard deviation is 150 (see fig. 7). The difference between public and private schools is large—perhaps one of the largest public-private gaps

¹⁹ See Banerjee and Duflo (2005) on the importance of absent teachers.

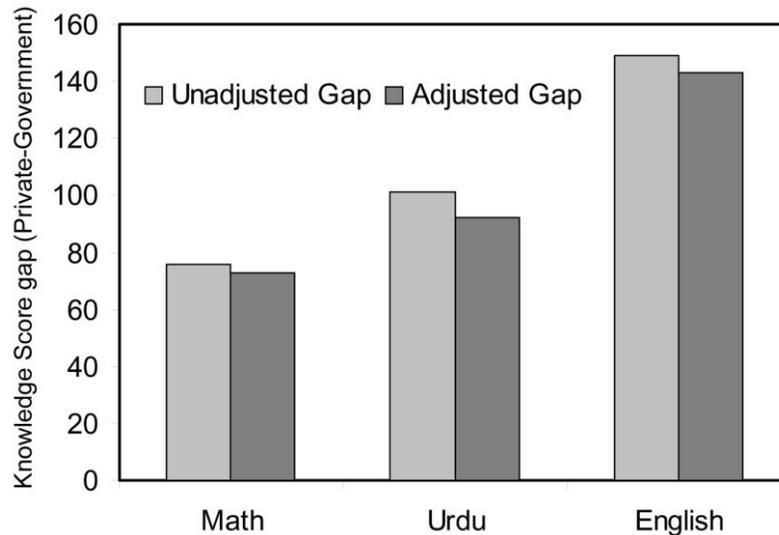


FIG. 7.—Knowledge score advantages of private over government schools, by subject

found in the research literature. In English, for instance, the gap is almost 150 points, which is to say that the average child in the private sector performs better than the top third of children in the public sector. Furthermore, the adjusted scores, which control for parental education, wealth, child's age, and child's gender, show a gap that is almost as large.

These observed quality differences in schooling need to be embedded within the context of school choice in rural Pakistan. Can poor, illiterate parents judge the difference between a good and a bad school? How do parents make decisions when offered more schooling choices? Answering these questions is essential because any educational policy that expands the educational space and does not take into account the dynamic of school choice is subject to essentially a version of the Lucas critique—that parental reaction to any policy could lead to policy ineffectiveness.²⁰

We also need to worry about the equity implications of private schooling. There is a growing concern in Pakistan that private education leads to the emergence of two classes—the English medium-trained elite and the vernacular Urdu medium-taught masses. This point has been raised numerous times in the popular press, by academics and by politicians.²¹ Although we cannot answer this question fully, LEAPS and PIHS data suggest that the rise of private schooling in rural areas is likely to bring rural and urban areas

²⁰ The Lucas critique in macroeconomics refers to how economic policy can be made ineffective if it does not take into account behavioral responses of agents that anticipate and react to the policy change (see Lucas 1976).

²¹ See Najam (1998) and the *News*' March 24, 2004, report on Imran Khan's views on education (<http://www.jang.com.pk/thenews/>).

closer in terms of quality education, while at the same time increasing disparities within rural and urban areas.

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