

Gender Gaps in Educational Attainment in Less Developed Countries

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CONVENTIONAL WISDOM states that gender gaps in schooling discriminating against females in developing countries generally are large, although probably declining, and favor boys with regard to ever enrolling in school and progressing through school (King and Mason 2001). Presumably in part because of this widespread perception, the United Nations Millennium Development Goals, first enunciated in 2000, emphasize reducing schooling gender gaps that disadvantage girls (United Nations 2009). Many programs directed toward increasing schooling in developing countries, such as the Mexican PROGRESA/Oportunidades conditional cash transfer program (Behrman, Sengupta, and Todd 2005) and the Food for Education program in Bangladesh (Ahmed and del Ninno 2002), give greater incentives for girls to attend school than for boys because of higher enrollments by boys in pre-school. In this article we re-examine recent gender gaps in schooling in the developing world and offer a more nuanced characterization of their nature, which suggests that the developing countries are becoming more like the developed countries, with gender gaps that increasingly favor, rather than discriminate against, females. Our results suggest that observed gender gaps that favor boys are related to the greater likelihood that boys will ever be enrolled in school but that gender differences in grade progression and school dropout favor girls.

Even before policies encouraging preferential investments in female education gained momentum during the 1990s, gender gaps in schooling had begun to close. By the late 1980s, the gross enrollment ratios for primary schooling (that is, the number enrolled irrespective of age as a proportion of the population at primary school ages) had converged for males and females in Latin America and in East Asia and the Pacific, and data suggested that females had lower primary school dropout rates than males in the Philippines, Latin America, and a handful of countries in sub-Saharan Africa (Hill and King 1993; Wils and Goujon 1998). This narrowing of the gender gap

continued throughout the 1990s alongside the expansion of mass education: in general, as enrollment levels within a country increased, the gender gap closed (Wils and Goujon 1998). Recent country studies have highlighted the emergence of a female schooling advantage in locations that previously experienced large gender gaps favoring boys. For instance, in Bangladesh in 2004, females younger than age 15 had higher levels of school participation than males, and, among 15–19-year-olds, females had higher levels of grade attainment (Schuler 2007). Evidence from smaller studies also suggests that a female advantage has been identified in such countries as Nigeria (Smith 2001), Egypt (Tfaily 2006), South Africa (Hallman and Grant 2004), and Thailand (Knodel 1997). Yet most of the studies that report emerging gender gaps favoring girls at least outside of Latin America focus on one country at a time, without systematically considering what patterns prevail in a wide range of less developed countries.

Analyses that track progress toward increasing educational attainment and reducing gender gaps typically rely on several measures, most commonly the primary school completion rate of children slightly beyond primary school age (Bruns, Mingat, and Rakotomalala 2003; Hewett and Lloyd 2005) or the net enrollment ratio, which is the proportion of primary-school-aged children who are currently enrolled in primary school (Bloom 2007). While these indicators are vital for tracking schooling progress, they are less informative about schooling attainment and the emergence of gender gaps over the educational life course if there are gender differentials in grade progression and repetition.

Schooling attainment is a cumulative process, in which individuals move sequentially from grade to grade and from the primary to the secondary level. However, progress through school is less standardized and structured in many less developed countries. Many children are not enrolled in the appropriate grade for their age, had they entered school on time and progressed through school grade-by-grade without delays. Some of these points of potential disruption are largely age-graded, such as the ideal age for entering school and the age at the onset of puberty for girls, whereas others can occur at any point during a child's schooling, such as grade repetition or a temporary withdrawal from school. Depending on the regional context, these disruptions may be highly gender-related. Over the educational life course, these disruptions shape a child's progress through school and influence the likelihood of eventually completing primary and higher levels of school.

We examine how the gender gaps in current school enrollment and grade completion emerge across the educational life course from age 6 to 18 years in six developing-country regions based on Demographic and Health Surveys (DHS) for 38 developing countries. Furthermore, we examine how these age-specific measures have changed over time, comparing the periods 1990–99 and 2000–06. Although we do not directly measure the prevalence of schooling disruptions, gender differences in schooling progress reflect the

differential experience of these events by boys and girls. Our analyses indicate that although males are more likely than females to be currently enrolled in school in the most recent time period in all regions except Latin America and Southeast Asia, girls who have ever attended school have equal or significantly better schooling progress than boys who have ever attended school for all regions and all age groups except for 16–18-year-olds in South Asia and West Asia/North Africa. This phenomenon of widespread female schooling advantage in less developed countries, conditional on ever attending school, has not been acknowledged in the literature. We explore this phenomenon and examine it in contrast to the pattern of female disadvantage in primary school completion rates, as currently reported by the Millennium Project Task Force on Education and Gender Equality (Birdsall, Levine, and Ibrahim 2005).

Data and methods

We use data from the Demographic and Health Surveys to evaluate changes in the gender gap across the educational life course across the periods 1990–99 and 2000–06. The DHS is a representative national survey of reproductive-aged women (aged 15–49). Although the DHS focuses on sexual and reproductive health, fertility, and child health, the household roster collects basic demographic information about all current household residents. In particular, the DHS collects information on the current school enrollment status and most recent grade completed for all resident children. These schooling data have been used elsewhere to examine cross-national trends in educational attainment (NRC-IOM 2005; Hewett and Lloyd 2005).

At least one survey was collected during both of these time periods in 38 developing countries (Table 1). In the event that more than one survey was carried out during a time period, we use the earliest survey conducted during 1990–99 and the most recent survey conducted during 2000–06. Across the set of countries in this analysis, an average of 9.8 years elapsed between the earliest and most recent survey. We present all schooling indicators as regional aggregates weighted by the size of the population of 5–19-year-olds in each country in the regional sample (UNPD 2009). Country-level data are analyzed in linear regressions weighted by the size of the population of 5–19-year-olds in each country to determine the significance of differences by sex within regions. Although the Demographic and Health Surveys have incomplete coverage of world regions, more than 70 percent of the regional population aged 5–19 is represented for South Asia, Southeast Asia, and West/Central Africa (Table 1). Latin America has the lowest level of regional representation (mostly because of the absence of Brazil and Argentina from the sample), with only 20 percent of the regional population in the countries surveyed by the DHS and included in our analytic sample. For Latin America, it is unlikely that this set of countries biases our findings, given the widely documented pattern of high female school attainment throughout the region (e.g., Hill and King

TABLE 1 Sample information, Demographic and Health Surveys

Region	Year of survey		Total population aged 5–19 ^a (thousands)	Percent of regional population represented by DHS
	1990–99	2000–06		
Latin America			32,609	19.9
Bolivia	1994	2003	2,956	
Colombia	1990	2005	13,093	
Dominican Republic	1991	2006	2,832	
Haiti	1994	2005	3,238	
Nicaragua	1997	2001	1,989	
Peru	1992	2004	8,501	
Southeast Asia			118,430	71.5
Indonesia	1991	2002	64,645	
Philippines	1993	2003	26,822	
Vietnam	1997	2002	26,963	
South Asia			461,986	88.9
Bangladesh	1993	2004	49,182	
India	1992	2005	344,547	
Nepal	1996	2006	8,925	
Pakistan	1990	2006	59,332	
West Asia/North Africa			55,727	44.8
Egypt	1992	2005	23,220	
Jordan	1990	2002	1,943	
Morocco	1992	2003	9,925	
Turkey	1993	2003	20,639	
South/East Africa			66,056	56.9
Kenya	1993	2003	12,390	
Madagascar	1997	2003	6,070	
Malawi	1992	2004	4,409	
Mozambique	1997	2003	6,727	
Namibia	1992	2000	727	
Rwanda	1992	2005	3,590	
Tanzania	1992	2004	12,957	
Uganda	1995	2005	10,026	
Zambia	1992	2001	4,046	
Zimbabwe	1994	2005	5,114	
West/Central Africa			94,200	72.4
Benin	1996	2006	2,811	
Burkina Faso	1992	2003	4,674	
Cameroon	1991	2004	6,087	
Chad	1996	2004	3,222	
Ghana	1993	2003	7,563	
Guinea	1999	2005	3,056	
Ivory Coast	1994	2005	6,629	
Mali	1995	2006	4,001	
Niger	1992	2006	4,162	
Nigeria	1990	2003	48,046	
Senegal	1992	2005	3,949	

^aEstimated population aged 5–19 in 2000 (United Nations Population Division 2009).

1993; Wils and Goujon 1998). Our findings are also unlikely to be biased in South/East Africa, even though only 57 percent of the regional population is represented in our analytic sample. For many countries in South/East Africa, the DHS conducted its first survey in 2000 or later; although these countries must be excluded from the current analysis, we find that the recent patterns also hold true in many of these countries, including Ethiopia and Lesotho. The possibility of a bias is greater in West Asia/North Africa. While many oil-rich countries in the region have already achieved the gender-parity targets of the Millennium Development Goals (UNESCO 2005), several excluded countries continue to have large gender disparities favoring boys (e.g., Sudan, Syria, Yemen) and have no nationally representative cross-sectional data against which to compare our findings.

Three of our indicators—the percentage of children ever enrolled in school, mean grades completed among all children, and mean grades completed among children who have ever attended school—are presented for four age groups in each region: 6–9, 10–12, 13–15, and 16–18 years. Two additional indicators, the percentage of children who completed primary school among those who ever attended school and the percentage who entered secondary school among those who ever attended school, are presented only for the two older age groups. These groups are more disaggregated than age groupings selected with the intent to match directly with primary- and secondary-school-aged children that have been often used (e.g., Wils and Goujon 1998), and allow us to view in more detail the progression through the educational life course. When the gender gaps for each of these indicators are compared across the two periods, evidence for an emerging female advantage in schooling attainment surfaces among those who ever attended school, despite the relatively higher enrollment rates for males in many cases. Even in the regions where a female advantage has not appeared, the gender difference formerly strongly favoring boys has closed over time as these regions converge toward gender parity in grade attainment conditional on ever enrolling. This suggests a more nuanced understanding of evolving gender differentials in schooling attainment than is often suggested (e.g., as noted above, in the Millennium Development Goals), with males increasingly falling behind females in schooling attainment among those ever enrolled, as is also occurring in the developed countries (Buchmann, DiPrete, and McDaniel 2008). We document further the nature of evolving gender gaps in schooling enrollment and attainment over time and across regions of the developing world through analysis of the combined DHS data for the 38 countries.

Ever-enrollment

In the course of tracking progress toward universal primary school completion, the policy literature has focused on gross enrollment ratios and completion

rates calculated from data provided by the UNESCO Institute for Statistics (UIS) (e.g., Bruns et al. 2003; Birdsall et al. 2005; Bloom 2007). Although these data have been collected from national ministries of education and reflect the entirety of school enrollment for a given country, the data are primarily organized by sex and grade of enrollment and do not permit more detailed evaluations by age. In regions where a significant proportion of children are behind grade-for-age in enrollment, a problem related to the prevalence of delayed school entry or grade repetition, the gross enrollment ratios and completion rates are distorted indicators of schooling attainment. These delays often differ by sex, which further exaggerates measured gender differences in schooling attainment; evidence presented by others, such as Knodel and Jones (1996) and Ahuja and Filmer (1996), suggests that boys experience higher levels of grade repetition, which will inflate their gross enrollment ratio.

Data from the Demographic and Health Surveys show that the gender gap in school ever-enrollment favoring boys has narrowed, but not necessarily disappeared, in all regions and at almost all ages (Table 2). Figure 1 constructs a time trend in ever-enrollment by graphing the percentage of children ever enrolled in school by the approximate year in which each age group was 10–12 years old for each survey round. Children aged 10–12 at the time of the survey are shown at the mean survey date for each period. Older children are graphed at the approximate year when they would have been 10–12 years old; 6–9-year-olds are omitted from these figures, given the high prevalence of delayed school entry in many of these regions. Particularly notable is the female advantage in school ever-enrollment at all ages in both time periods in Latin America and in the most recent time period in Southeast Asia (Figures 1a and 1b). In both of these regions, school enrollment has become nearly universal for both boys and girls, with more than 95 percent of all children in the sampled countries having ever attended school in the 10–12-year-old age group and above. This pattern has been recognized for more than a decade (e.g., Wils and Goujon 1998; Hill and King 1993) and remains extremely stable.

Also interesting is the substantial narrowing of the gender gap in ever-enrollment in South Asia and West Asia/North Africa over this interval (Figures 1c and 1d). Although the ever-enrollment levels for both boys and girls improved substantially over this interval, larger increases in female ever-enrollment closed the gender gaps. In South Asia, an additional 23 percent more boys than girls had ever enrolled in school among children who were 10–12 years old in the late 1980s, whereas by the most recent time observation, the difference had narrowed to 4 percent. Likewise, in the sample of countries from West Asia/North Africa, the difference in male and female ever-enrollment narrowed over the same interval from 15 percent to less than 4 percent.

While the gender gap has also narrowed in South/East Africa and West/Central Africa (Figures 1e and 1f), a different pattern is apparent. For both time periods, there is a notable deficiency in enrollment for children aged

TABLE 2 Percentage of children who ever attended school, by age, sex, region, and period

Region and period	6–9 years		10–12 years		13–15 years		16–18 years	
	Male	Female	Male	Female	Male	Female	Male	Female
Latin America								
1990–99	78.7	79.8	94.0	95.0	96.2	97.3	96.0	96.0
2000–06	74.2	76.3	95.4	96.2	97.4	98.1	97.4	97.9
Southeast Asia								
1990–99	70.5	73.0	97.8	97.9	98.6	97.5	98.2	97.2
2000–06	81.1	81.9	98.0	98.6	98.7	99.0	98.4	98.6
South Asia								
1990–99	70.0	57.1	81.6	65.2	81.2	62.7	79.3	55.4
2000–06	77.9	75.7	91.1	85.9	90.8	84.0	88.8	77.7
West Asia/North Africa								
1990–99	75.9	67.7	92.3	82.3	92.4	83.1	92.3	77.7
2000–06	86.6	85.0	98.0	94.3	96.8	91.1	95.1	86.1
South/East Africa								
1990–99	54.3	54.4	84.7	83.1	89.5	85.1	90.3	82.8
2000–06	59.4	61.5	90.0	89.9	92.2	91.2	92.1	88.1
West/Central Africa								
1990–99	49.2	43.5	68.4	55.4	70.3	58.0	70.8	56.8
2000–06	53.6	49.0	74.0	65.7	76.0	67.9	77.0	61.1

Bold indicates that female ever-enrollment is higher than male ever-enrollment in this age group.

NOTE: Data are population-weighted averages for each region.

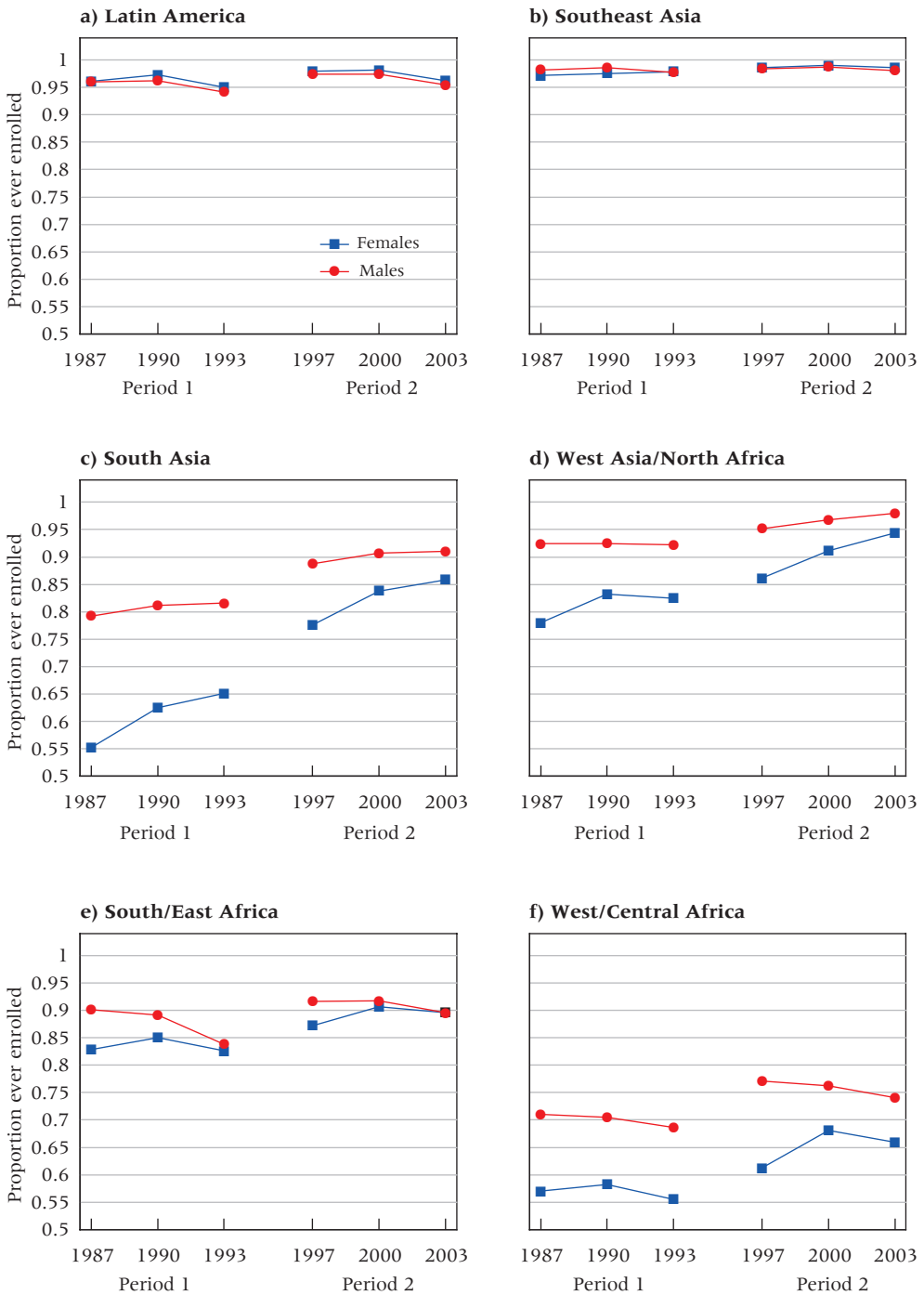
SOURCE: Demographic and Health Surveys.

10–12. In both of these regions, delayed school entry is a significant problem, in that a non-trivial number of children begin school after age 10. Nonetheless, in South/East Africa, the gender gap for 10–12-year-olds in 2000–06 has largely closed, with a nearly equal and in some instances (ages 6–9) a larger percentage of girls ever enrolled in school than boys, although this difference is not statistically significant (Table 2). Given the low enrollment rates related to delayed enrollment, it is unclear whether more boys than girls will eventually enter school, although it is probable that more than 90 percent of both boys and girls will ever enroll. Ever-enrollment levels remain substantially lower in West/Central Africa than in any of the other regions; approximately 75 percent of boys have enrolled in school as compared to 65 percent of girls. Although the gender gap has generally narrowed over time, it is converging at a point substantially below universal enrollment and at a lower level than in other regions, as previously noted by Hewett and Lloyd (2005).

Mean grades attained

Throughout the less developed world, gender gaps in schooling attainment have been narrowing over the past two decades (Birdsall et al. 2005; Bruns et

FIGURE 1 Proportion ever enrolled in school, at approximate year when age group was 10–12 years old, by region and sex, selected years, 1987–2003



al. 2003; Wils and Goujon 1998). Figure 2 and Table 3 present the mean number of grades completed by boys and girls in each region and time period by three-year age groups, an age disaggregation that allows one to observe how gender gaps in educational attainment accumulate across the educational life course. Table 4 is similar to Table 3, but presents the mean grades completed conditional on having ever attended school.

Similar to our findings for ever-enrollment, we find that for each age group in both time periods in Latin America and for each age group except 16–18-year-olds in 1990–99 in Southeast Asia, females have equal or higher mean grades completed than males (Figures 2a and 2b). In Latin America, both male and female 16–18-year-olds gained more than an entire grade on average from 1990–99 to 2000–06, whereas in Southeast Asia gains to the oldest age group were smaller but favored females. Because school ever-enrollment is almost universal for both boys and girls at all ages 10–12 years and above in these two regions, there is very little difference between the levels of schooling attainment at the population level and conditional on having ever enrolled in school (Tables 3 and 4).

Although female disadvantages in schooling attainment persist in South Asia and West Asia/North Africa (Figures 2c and 2d), the increases in the

TABLE 3 Mean grades completed, by age, sex, region, and period

Region and period	6–9 years		10–12 years		13–15 years		16–18 years	
	Male	Female	Male	Female	Male	Female	Male	Female
Latin America								
1990–99	1.1	1.2	3.3	3.5	5.1	5.3	6.6	7.0
2000–06	1.2	1.3	3.9	4.1	6.1	6.5	7.9	8.4
Southeast Asia								
1990–99	1.2	1.3	4.0	4.1	6.2	6.3	7.7	7.6
2000–06	1.3	1.3	4.2	4.4	6.6	6.9	8.3	8.7
South Asia								
1990–99	1.2	1.0	3.3	2.6	5.1	3.9	6.4	4.3
2000–06	1.1	1.1	3.7	3.5	5.9	5.5	7.2	6.3
West Asia/North Africa								
1990–99	1.1	1.0	4.0	3.6	6.1	5.4	7.5	6.1
2000–06	1.1	1.1	4.1	4.0	6.5	6.2	8.2	7.3
South/East Africa								
1990–99	0.5	0.5	2.2	2.3	3.9	3.9	5.3	5.0
2000–06	0.6	0.6	2.3	2.5	3.9	4.2	5.5	5.5
West/Central Africa								
1990–99	0.7	0.6	2.3	1.9	3.7	3.1	4.9	3.9
2000–06	0.7	0.7	2.4	2.2	4.1	3.7	5.8	4.6

Bold indicates that females have higher mean grades completed than males in this age group.

NOTE: Data are population-weighted averages for each region.

SOURCE: Demographic and Health Surveys.

mean grades completed by females were approximately twice as large as those experienced by males. In both regions, there was very little difference in the schooling attainment of girls relative to boys through the 13–15-year age group, with the gender gap favoring boys subsequently widening for 16–18-year-olds. That the gender gap favors boys within this age group has received significant attention in the academic and policy literature, where such patterns have been attributed to gender-related differences in the transition from primary to secondary school or to the gender-related risk of leaving school for marriage or following puberty. However, when we examine Table 4, showing the mean grades completed conditional on ever enrolling in school, a radically different picture emerges. Not only is there virtually no gender difference in schooling attainment at these ages, but females actually have significantly higher grades completed than males at every age group through 13–15 years old, even if the advantage is not substantively large. Although these regional aggregates may mask female disadvantages at some local levels, as well as larger advantages at other local levels, it is clear that on average females who are able to enter school progress through school at approximately the same pace as or faster than boys.

Whereas the age and sex patterns of ever-enrollment for South/East Africa and West/Central Africa are relatively similar, albeit at different levels of enrollment, there are large differences in schooling attainment (Figures 2e and 2f). In South/East Africa, females have equal or marginally higher mean grades completed than boys in both time periods and at all ages, except for 16–18-year-olds in 1990–99. In contrast, the gender gap favoring boys remains relatively wide in West/Central Africa except for 6–9-year-olds; despite relatively substantial increases in schooling attainment, female attainment in the most recent time period lagged behind male attainment levels from a decade earlier. However, when we examine schooling attainment conditional on having ever enrolled in school (Table 4), these gender differences disappear. For the most recent time period in West Africa, the mean grade completed by females is significantly higher than that of males, although the difference is not substantial and suggests a pattern closer to parity. This contrasts to the female disadvantage that was present in the earlier time period for the age groups 13–15 and 16–18. Likewise, in South/East Africa, a clear female advantage for most age groups (and equality in the others) is present at both time periods, indicating that similar to Latin America and Southeast Asia, females in this region achieve better progress through school than males.

Even more surprising than the pattern of gender equality that emerges within every region once schooling attainment is measured conditional on ever-attendance is the near universality of this pattern across countries within each region in the most recent time period. Within Latin America and Southeast Asia, every country in our sample follows this pattern in

FIGURE 2 Mean grades completed by age, sex, region, and period

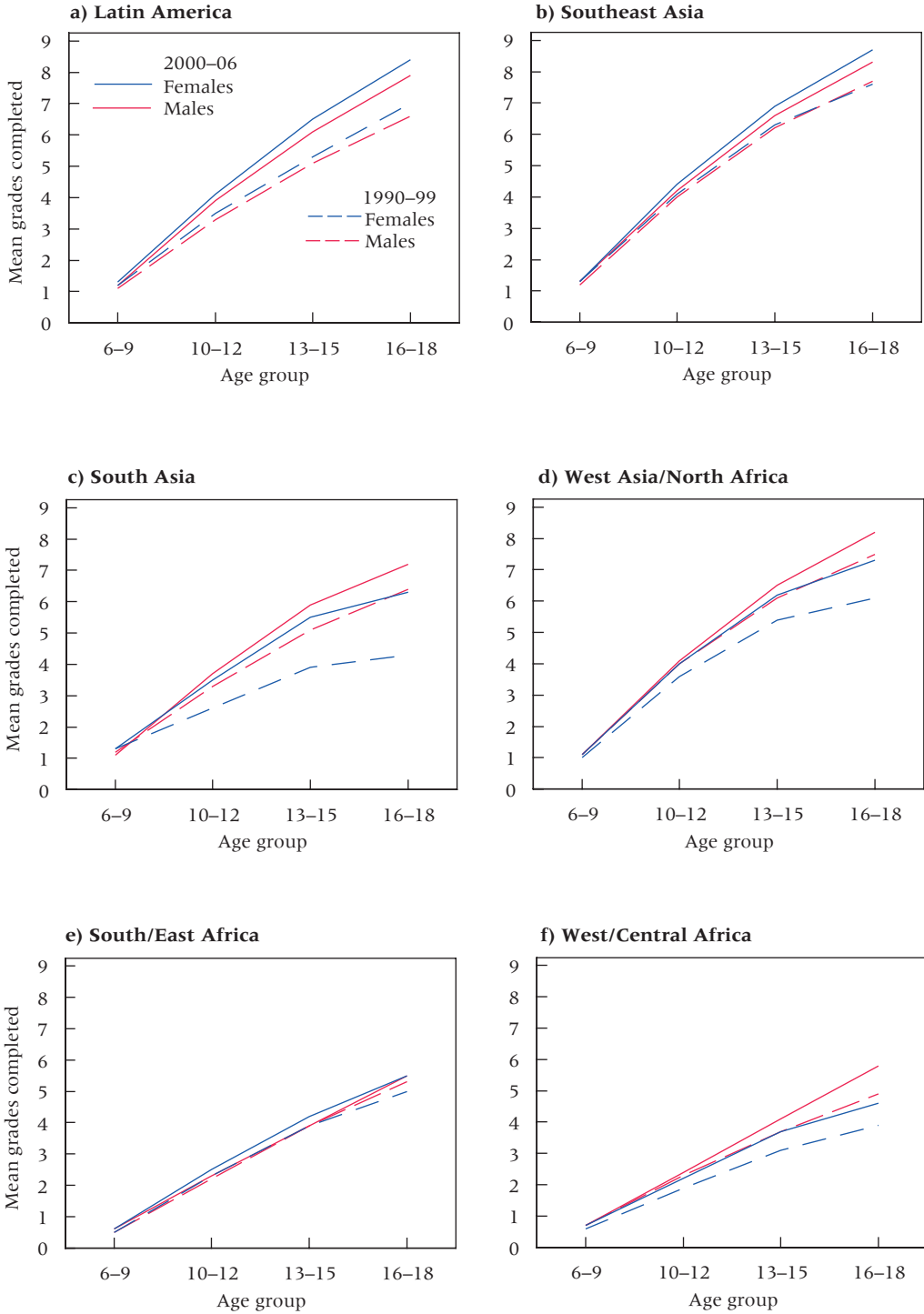


TABLE 4 Mean grades completed, conditional on having ever attended school, by age, sex, region, and period

Region and period	6–9 years		10–12 years		13–15 years		16–18 years	
	Male	Female	Male	Female	Male	Female	Male	Female
Latin America								
1990–99	1.4	1.5	3.4	3.6	5.2	5.4	6.9	7.2
2000–06	1.7	1.7	4.0	4.2	6.2	6.6	8.1	8.6
Southeast Asia								
1990–99	1.7	1.8	4.1	4.2	6.3	6.5	7.9	7.8
2000–06	1.6	1.6	4.3	4.5	6.7	7.0	8.5	8.8
South Asia								
1990–99	1.8	1.8	4.0	4.0	6.3	6.3	8.0	7.7
2000–06	1.5	1.5	4.0	4.1	6.5	6.6	8.1	8.1
West Asia/North Africa								
1990–99	1.4	1.5	4.3	4.3	6.6	6.5	8.1	7.8
2000–06	1.3	1.3	4.2	4.2	6.7	6.8	8.6	8.5
South/East Africa								
1990–99	1.0	1.0	2.5	2.7	4.3	4.6	5.9	5.8
2000–06	1.0	1.0	2.5	2.7	4.2	4.5	6.0	6.2
West/Central Africa								
1990–99	1.3	1.3	3.3	3.3	5.2	5.1	6.8	6.6
2000–06	1.3	1.3	3.3	3.3	5.3	5.4	7.4	7.3

Bold indicates that females have higher mean grades completed than males in this age group.

NOTE: Data are population-weighted averages for each region.

SOURCE: Demographic and Health Surveys

2000–06, with the sole exception of 6–9-year-olds and 16–18-year-olds in Bolivia. Even more remarkably, the pattern is present for every country in South/East Africa except Mozambique, every country in West Asia/North Africa except among 13–18-year-olds in Turkey, and every country in South Asia except Nepal. Greater heterogeneity is present in West/Central Africa. In that region, among 10–12-year-olds, gender equality in schooling attainment exists in only six of 11 countries; however, these countries represent roughly 75 percent of the population of young people across the countries in our sample for the region.

Primary school completion and the transition to secondary school

Mean grades completed conditional on ever attending school by age groups is an aggregate measure that might disguise greater heterogeneity at more distinct schooling milestones, such as the likelihood of completing primary school or progressing to secondary school. It is possible that female advantages early in primary school attainment are offset by disadvantages at these transitions or at the secondary level. Recent literature that monitors international

progress toward achieving the Millennium Development Goals of “Education for All” has noted that despite gains in educational attainment throughout the 1990s, a large male advantage in primary school completion remains in regions such as South Asia, West Asia/North Africa, and sub-Saharan Africa (e.g., Birdsall et al. 2005; Bruns et al. 2003). In light of our findings that a female advantage in schooling attainment is emerging in these regions, the remainder of our analysis focuses on gender differences in primary school completion and the transition to secondary school among those children who have ever attended school.

Table 5 indicates the percentages of males and females who completed primary school in each region, conditional on having ever attended school. In this analysis, we use the definition of primary school completion provided by the Demographic and Health Surveys. The grade at which primary school ends varies from country to country, both within and across regions. Although this variation means that the exact number of grades defining primary school completion is not entirely comparable across countries and among regions, this definition acknowledges both the social significance at-

TABLE 5 Percentage of children who completed primary school, conditional on ever-enrollment, by age, sex, region, and period

Region and period	13–15 years		16–18 years	
	Male	Female	Male	Female
Latin America				
1990–99	61.2	63.6	74.6	78.6
2000–06	66.0	70.6	81.0	85.6
Southeast Asia				
1990–99	72.9	78.4	86.5	85.7
2000–06	83.2	87.6	90.3	93.6
South Asia				
1990–99	60.1	59.7	79.1	73.9
2000–06	82.4	83.2	89.4	88.8
West Asia/North Africa				
1990–99	85.3	84.6	88.4	87.8
2000–06	88.1	88.5	90.8	89.8
South/East Africa				
1990–99	15.6	18.8	46.3	48.0
2000–06	14.5	18.3	42.9	48.0
West/Central Africa				
1990–99	46.0	44.9	71.7	68.5
2000–06	45.2	47.8	76.9	75.4

Bold indicates that females have higher primary school completion rates than males in this age group.

NOTE: Data are population-weighted averages for each region.

SOURCE: Demographic and Health Surveys

tached to primary school completion and the generally greater availability of primary schools relative to secondary schools in less developed countries.

Similar to the findings discussed earlier, we detect very little evidence of discrimination against females in the level of primary school completion among young people who have ever attended school. For 13–15-year-olds, the level of primary school completion among females is equal to, if not higher than, that of males in every region for 2000–06. The only exceptions for 1990–99 are in West Asia/North Africa and West/Central Africa, although in each of these regions male primary completion is higher than female primary completion by less than one percentage point, a minor difference. The gender differences in primary school completion among 16–18-year-olds mirror the differences in mean grades attained presented in Table 4, such that the female primary school completion level was significantly greater than that of males in Latin America, Southeast Asia, and South/East Africa in 2000–06 and for the first and the third of these regions in 1990–99. Although 16–18-year-old males had higher primary school completion levels than females in South Asia, West Asia/North Africa, and West/Central Africa in 2000–06, the gaps are much smaller in 2000–06 than in 1990–99 for South Asia and West/Central Africa. These conclusions contrast with those of Birdsall et al. (2005) and Bruns et al. (2003), in that the gender difference in primary school completion rates virtually disappears when we examine the rates conditional on having ever attended school. By the most recent time period, all regions had at a minimum achieved parity in primary school completion levels, with a clear trend toward an emerging female advantage in all regions. We believe that gender differences in school entry account for most of the gender difference in schooling attainment favoring males that is observed at the population level.

Levels of primary school completion increased between 1990–99 and 2000–06 in all regions except South/East Africa. Conditional on having ever attended school, there was a marginal decline in the percentage of females who had completed primary school and a larger decline in primary school completion by males in this region for both 13–15- and 16–18-year-olds. Although primary school completion has stagnated at a level significantly lower than what is found in the other regions, it is notable that the largest female advantage in primary school completion is found among 16–18-year-olds in South/East Africa. Given that this female advantage appears to be driven by young men falling behind, this pattern may be cause for considerable concern regarding schooling for boys (also see Hewett and Lloyd 2005).

Although fewer young people have entered secondary school than have completed primary school, the trends toward narrowing gender gaps and an emerging female advantage in the transition to secondary school are evident in the most recent time period (Table 6). Among 13–15-year-olds who ever attended school, a higher percentage of females than males entered secondary school, with the exceptions of South Asia and West Asia/North Africa

TABLE 6 Percentage of children who entered secondary school, conditional on ever-enrollment, by age, sex, region, and period

Region and period	13–15 years		16–18 years	
	Male	Female	Male	Female
Latin America				
1990–99	46.2	47.3	60.3	64.5
2000–06	55.0	59.7	72.6	77.4
Southeast Asia				
1990–99	51.0	54.6	66.7	62.4
2000–06	68.4	73.2	76.0	80.1
South Asia				
1990–99	42.9	41.5	69.1	62.3
2000–06	70.6	70.4	80.8	77.7
West Asia/North Africa				
1990–99	68.3	62.2	71.0	63.3
2000–06	81.8	81.1	84.5	77.4
South/East Africa				
1990–99	6.1	7.4	21.6	20.4
2000–06	7.5	9.7	26.9	28.7
West/Central Africa				
1990–99	23.4	23.7	46.6	41.0
2000–06	35.1	36.1	65.9	62.6

Bold indicates that the percentage of females who entered secondary school is higher than the percentage of males in this age group.

NOTE: Data are population-weighted averages for each region.

SOURCE: Demographic and Health Surveys

where no significant gender differences were found. The regional patterns for 16–18-year-olds were similar to the primary completion levels, with a female advantage still present at older ages in Latin America, Southeast Asia, and South/East Africa in 2000–06 while in that time period male advantages on the order of three to eight percentage points are found in the other three regions.

Larger percentages of young people entered secondary school in the most recent time period relative to the earlier period in all less developed world regions. Despite stagnation in primary school completion rates in South/East Africa, the percentage of young people who entered secondary school increased in this region between 1990–99 and 2000–06. Nonetheless, the gains in secondary enrollment levels, conditional on ever-enrollment, were smaller in South/East Africa than they were in any of the other regions.

Discussion

We find strong evidence that despite lingering gender gaps in school entry favoring boys, girls on average in less developed regions progress through

school on pace with or faster than boys and have equal or greater schooling attainment than boys. Not only are these patterns fairly ubiquitous, but the examination of change between 1990–99 and 2000–06 suggests that if these patterns continue on the same trajectories, female advantages in schooling attainment conditional on ever-enrollment will increase. This is consistent with the trajectory of gender gaps in developed regions, such as in the United States, where in recent decades young women have consistently had higher secondary school completion rates and, more recently, higher college completion rates, than young men (Buchmann and DiPrete 2006).

One could argue that girls' schooling attainment is the same as, if not greater than, boys' because they are a more selective group. Girls who attend school may come from households with more resources and/or greater preferences for girls' schooling. However, as female school attendance increases, one would expect the effects of selectivity to weaken, whereas we find that the pattern of gender equality or female advantage in mean grades completed becomes stronger over time. It is also remarkable that the greatest female advantages in schooling attainment are found in Latin America and Southeast Asia, the regions with near universal school enrollment. Therefore, we do not believe that selectivity is responsible for this pattern.

Furthermore, gender differences in schooling are well documented for certain subpopulations, particularly in rural areas or among ethnic and linguistic minorities (Lewis and Lockheed 2006; Birdsall et al. 2005). Evidence suggests that the magnitude of socioeconomic differences in schooling attainment is systematically greater than the magnitude of gender differences (Knodel and Jones 1996; Eloundou-Enyegue, Makki, and Giroux 2009) and that socioeconomic differences often magnify existing gender gaps in schooling (Lewis and Lockheed 2007). However, this does not change the fact that, among children who have ever attended school, the schooling attainment of the average girl is now equal to or greater than that of the average boy in most regions of the developing world.

Girls' grade attainment still lags behind that of boys in the most recent time period for 16–18-year-olds in South Asia and West Asia/North Africa. However, levels of primary school completion are near equality for 13–18-year-olds in these regions. While a male advantage in the transition to secondary school exists for 16–18-year-olds in West Asia/North Africa, levels of secondary school entry are near equality in South Asia among young people who have ever attended school. This suggests that, to the extent to which schooling inequalities are present in these regions, they only emerge at the post-primary level.

The evidence presented in this article suggests that international policies and programmatic attention may be better off focusing on getting girls into school in the first place rather than on programs that encourage girls to stay in school preferentially over boys. Programs that have targeted female school

continuation might have played some role in reinforcing recent changes in female schooling, although data from 1990–99 presented in Table 4 suggest that this pattern toward gender equality or one favoring girls was already widespread at that time. Given that our evidence suggests that gender gaps favoring boys in the schooling attainment of older students are strongly related to past gender gaps favoring boys in school entry rather than related to school dropout, programs designed to provide basic education for children, particularly females who initially missed the opportunity to enroll, are essential.

Although our findings for 38 countries in six less developed regions suggest that female students progress through school at the same pace as or faster than their male peers, there is little doubt that gender bias remains. Schooling attainment, as measured by grades of school completed, does not necessarily accurately reflect the learning outcomes of children, particularly in contexts of social promotion to the next grade level and large variations in school quality and in family background. These differences may have implications for gender differences in learning despite the same level of schooling attainment if girls are likely to attend different types of schools than boys, tend to take different classes than boys, are treated differently than boys in the same classes, or are treated differently outside of school than boys are. Our analysis does not address such possibilities because the data that we use do not permit us to do so. But the issues we just noted are important. Nevertheless we believe that such possibilities do not detract from the fact, documented above, that gender gaps favoring males of the sort that have been most emphasized in the literature have been declining, eliminated, and, in most regions, reversed to favor females. If anything, the data raise concern about male students. Table 4 documents that older female students had substantially larger improvements in grade attainment than did male students, suggesting that the emerging female advantage in schooling attainment is often accompanied by stagnating male attainment.

This pattern of improving female progress through school over the past decade may reflect a global shift in the competing pressures on the labor and time of young men and women. Out-of-school adolescents have more highly gender-related labor patterns than do students, reflecting both labor market discrimination against women and gender-differentiated expectations about who performs domestic labor (Lloyd, Grant, and Ritchie 2008). It is possible that the global fertility transition has reduced the household need for young women's domestic labor. As families reduce the number of children born, there may be less demand for young women to supervise their younger siblings, lowering the opportunity cost of girls' continued school enrollment. In contrast, markets that prefer male labor do not exert similar claims for girls' time, creating different pressures on boys' and girls' school progress (Colclough, Rose, and Tembon 2000). Furthermore, in contexts where labor

markets and cultural traditions are gender biased, young women may be aware that education might be the only opportunity to increase their status in society (Mukudi 2002).

Finally, it is interesting to speculate on the social and demographic implications of emerging female schooling advantages in less developed countries. We agree with previous findings and recommendations that closing or reversing the gender gap in schooling so that it favors girls may well increase female labor force participation particularly in better-paying formal-sector jobs, prolong the duration of such female labor force participation, prompt women to marry later and reduce fertility, shift the balance of power toward females at the household and broader political levels, and increase investments in the human resources of future generations.

Note

Figures in this article are available in color in the electronic edition of the journal.

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