

# 3



## The Historical Context

Education transitions in developing countries today are proceeding much faster than those in industrialized countries in the nineteenth and early twentieth centuries. ■

Perhaps in response to the relatively more recent statements of global education goals (such as the Jomtien Declaration in 1990, the Dakar Framework in 2000, and the Millennium Development Goals in 2000), most discussions of change in education begin with very recent or current time frames.<sup>1</sup> Yet some key indicators describing education participation patterns around the world extend back at least to 1960. We begin our historical analysis from that date in order to provide a better understanding of the education transition as a long-term process that is still unfolding.

Clemens (2004) studied patterns of transition in primary enrollment rates between 1960 and 2000 across more than 100 developing countries, and he determined that growth in enrollment rates in these countries since 1960 has been much faster than that which characterized the education transition in industrialized countries in the nineteenth and early twentieth centuries. That does not mean, however, that the transition to universal

education at the primary or basic level will seem fast in absolute terms. A study of 70 developing countries by Wils, Carrol, and Barrow (2005: 8) found that “even in countries with fast-growing educational trends, it takes at least six decades to produce anything close to basic education for all when a country starts from nearly zero. ... A handful of countries, including Jordan, Gabon, and Indonesia, will have made the leap [from 10 percent primary school completion to 90 percent] in about 60 years, whereas the average interval for the 70 countries studied is 88 years.” Of necessity, given their dependence on broad primary participation, large-scale transitions in secondary and tertiary participation require substantial extensions of this already prolonged period.

### The Progression of Enrollment Expansion

Global progression in the expansion of participation in education, though long-term

and slower than desired, remains nothing short of remarkable. The world graph in Figure 3.1 shows massive global expansion of gross enrollment rates between 1960 and 2005. At the primary level, gross enrollment grew from 72 percent to 106 percent; over the same period, the global secondary gross enrollment rate for lower secondary and upper secondary levels combined climbed from 27 to 69 percent, and the tertiary gross enrollment rate expanded from 7 to 31 percent.

In every region of the world (see Box 3.1 for an explanation of the regional groupings), enrollment rates have grown considerably at one or more levels of education since 1960. Over the forty-five-year period (see, again, Figure 3.1), the primary gross enrollment rate in South and West Asia climbed over 70 percentage points (from 40 percent to 111 percent), whereas the rate in sub-Saharan Africa increased about 60 percentage points (from 40 percent to 100 percent), and the Arab States boosted their rates from just under 60 percent to about 100 percent.

Looking at secondary education, gross enrollment rates in the Arab States, in Latin America and the Caribbean, and in the poorer countries of East Asia and the Pacific all climbed nearly 60 percentage points; rates in both South and West Asia and in sub-Saharan Africa rose about 30 points. Perhaps most surprisingly, the countries of North America and Western Europe also added about 60 percentage points to their secondary enrollment rates. At the tertiary level, North America and Western Europe, the richer countries of East Asia and the Pacific, and Central and Eastern Europe each added about 50 percentage points. In the lower-income regions, tertiary participation rates in 2005 exceeded 35 percent only in the transition countries of Central and Eastern Europe, which had well-developed tertiary systems from the communist era. Even so, very appreciable increases occurred in the Arab States, in Central Asia, in Latin America and the Caribbean, and in the poorer countries of East Asia and the Pacific.

In short, at the levels of education that represented for various regions the cutting edge of their expansion efforts, those regions increased their gross enrollment rates by between 50 and 70 points over forty-five years,

### Box 3.1 Regionalization of country-level data

UNESCO has defined and uses eight geographic regions in its presentation of data. The eight regions are: Arab States, Central and Eastern Europe, Central Asia, East Asia and the Pacific, Latin America and the Caribbean, North America and Western Europe, South and West Asia, and sub-Saharan Africa. The UNESCO regional groupings differ from those of other UN agencies and the World Bank.

We use the UNESCO groupings in this volume but make one adjustment to correct for what we see as their major weakness. The UNESCO East Asia and the Pacific grouping aggregates Australia, Japan, the Republic of Korea, New Zealand, and Singapore with lower-income countries, including China. We divide the geographic region into two subgroupings because of marked differences on many measures. For ease of distinction, we refer to them as East Asia and the Pacific–Richer and East Asia and the Pacific–Poorer. The Appendix to the volume shows country members of the UNESCO regional groupings (including our adjustment).

Occasionally, we identify and use other country groupings for special purposes. Reported values are population-weighted in all groupings unless otherwise noted.

or between 1 and 1.5 percentage points each year. Perhaps even more remarkable, virtually every region had substantial enrollment rate gains at more than one level of education. Such rates may seem slow to impatient policy makers, but they are transformational in the far longer history of education's advance.

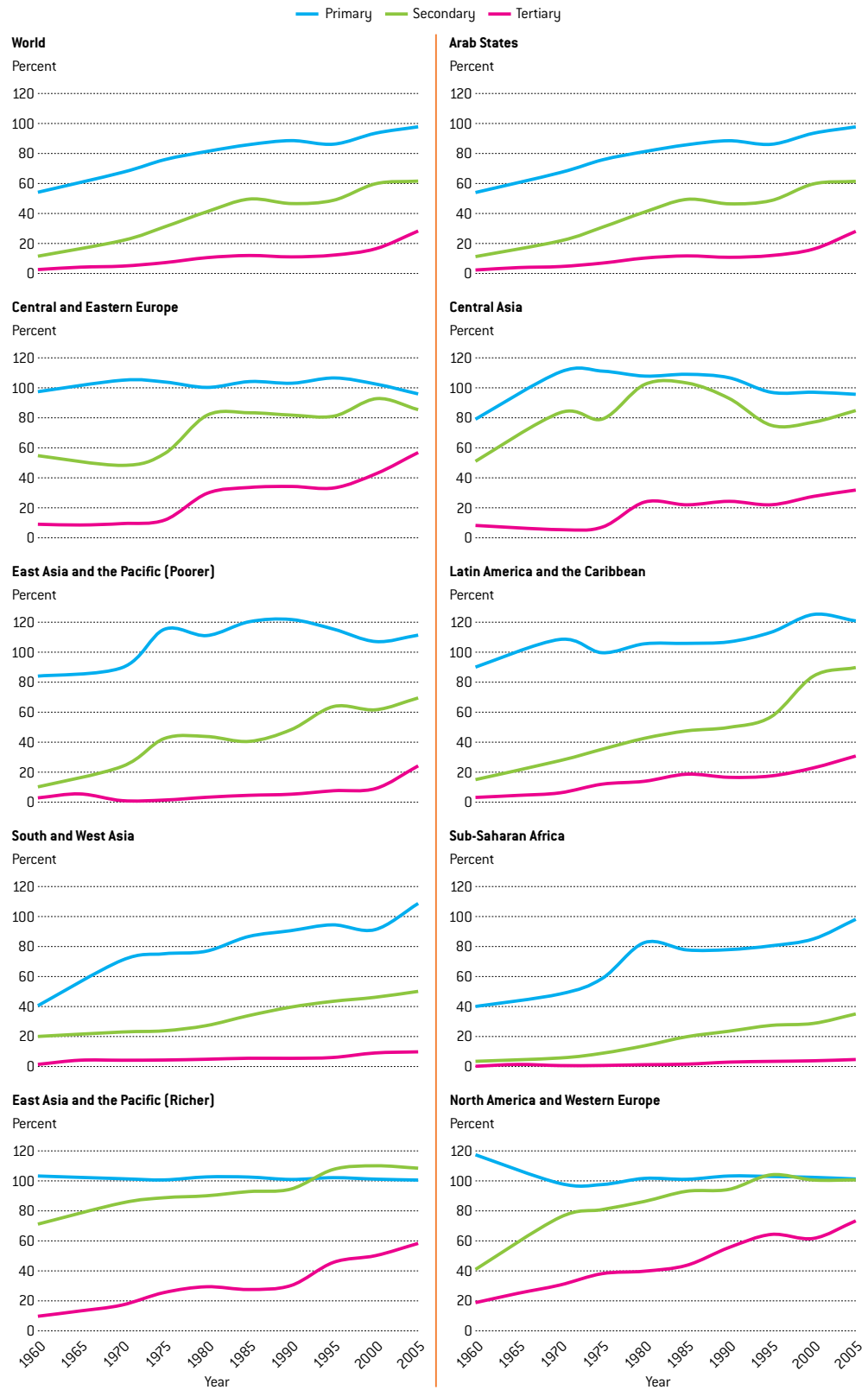
Although increases of those magnitudes in gross enrollment rates clearly show gains in education participation, gross enrollment rates can also present a somewhat exaggerated view of how well school systems are doing. Persistent gross enrollment rates above 100 percent indicate either high entry rates of older students or high repetition rates or both. And when gross enrollment rates are below 100 percent, it is not immediately clear what proportion of the enrollment is due to repetition or entry of overage students and what proportion can be attributed to age-appropriate entry and progression. Therefore, progress toward education goals is more appropriately measured by net enrollment rates. Unfortunately, data series for net enrollment are less extensive and complete (see Box 3.2).

Another important insight from the historical data of Figure 3.1 is that patterns of enrollment

■ *A massive global expansion of enrollment rates has taken place at all levels of formal education since 1960.* ■

■ *Between 1960 and 2005, gross enrollment rates increased 50–70 percentage points at the levels of education that were the focus of various regions' expansion efforts.* ■

**Figure 3.1 Gross enrollment rates by level (1960–2005)**



Source: IFs Version 6.12 using UIS data.

### Box 3.2 Historical data

Many data issues complicate the analysis of historical series.

*Availability of data:* Gross enrollment data are available at the primary, total secondary, and tertiary levels beginning with 1960, but net enrollment data are not available until 1970. With respect to lower and upper secondary levels, even gross enrollment data are not available until 1999 and net enrollment data not at all.

*Data inconsistencies:* Inconsistencies may reflect disruptions as disparate as weather patterns and political turmoil or conflict. At the regional level, however, many reflect intermittent country reporting patterns, resulting in population-weighted regional averages across changing subsets of reporting regional members. For this reason, regional data sometimes suggest impossible situations, such as reported net enrollment rates that are higher than reported gross enrollment rates (e.g., secondary enrollment rates in

the poorer countries of East Asia and the Pacific in 1980 and 2000).

*Distortions in aggregated data:* A number of countries that had not reported previously began reporting in the 1990s, particularly near the end of the decade. Because newly reporting countries are often among those in the earlier stages of education transition, their addition to graphs and tables in recent years can distort the long-term patterns in large regional groupings by introducing a downward bias.

For these reasons, much of our reporting in this chapter, including that in Figure 3.1 and Table 3.1, is based on subsets of those countries in the UNESCO regions that have most consistently reported data over time. For these countries with near-complete data, we interpolate or extrapolate to fill missing values. Appendix 1 identifies countries in these subsets with an asterisk (\*).

■ *Despite extraordinary growth in education participation since 1960, growth patterns have varied within the period in response to multiple systemic forces.* ■

expansion have by no means been consistent across time. Although reporting irregularities complicate the analysis, it appears that a period of rapid growth in primary enrollment rates in developing regions during the 1960s (and for sub-Saharan Africa, the early 1970s) was followed by periods of slowed or no growth in most regions during significant portions of the 1970s and especially the 1980s. Primary enrollment rate growth then accelerated again in the 1990s and early years of the twenty-first century, including rapid gains in sub-Saharan Africa. Subsequent discussion will turn to a consideration of systemic reasons for such variations in patterns.

Table 3.1 shows the growth from 1970 to 2005 in net enrollment rates at the primary and secondary levels. Note that growth in the primary net enrollment rate at the global level was not as great as in the gross rate. The net rate climbed from 72 percent in 1970 to 88 percent in 2005, less than half the gain that Figure 3.1 shows at the gross level. The biggest regional gains were in South and West Asia (59 percentage points to 86 percent in 2005) and sub-Saharan Africa (58 percentage points to 72 percent). However, at the secondary level, the countries of Latin America and the Caribbean increased net enrollment rates by 44 percentage points, and the Arab States gained nearly 50 percentage points.

Still another observation from Table 3.1 is that an advance in rates slows markedly when

net enrollment rates begin to reach or exceed 90 percent—a phenomenon noted by many analysts. Because the final push to universal enrollment requires special attention, we describe a 90 percent net enrollment rate as “nearing universal enrollment” in order to signal that need and 97 percent as “universal enrollment.” In all regions, the last 10 percent of students mainly come from the groups discussed in Chapter 2—poor families, families living in remote locations, and socially excluded groups such as the indigenous populations of Latin America, the scheduled castes of India, or the children of illegal immigrants in the United States. In many cases, these students are also disproportionately female.

Before concluding this section, it is important to consider the disaggregation of secondary enrollment rates to lower and upper secondary levels. An understanding of enrollment patterns at the lower secondary level is particularly important as attention increasingly turns from universal primary to universal basic education. The first year for which UIS provides separate lower and upper secondary enrollment data is 1999; Table 3.2 shows the gross enrollment data for 2000 and 2005. Variability of reporting across years and a short observation period make trend analysis very difficult, but significant progress at the lower secondary level is especially apparent in two developing regions over these recent years (central Asia and the poorer countries of East Asia and the Pacific). Many regions have a considerable

■ *With increasing attention on universal basic education, an understanding of enrollment patterns at the lower secondary level is particularly important.* ■

**Table 3.1 Primary and secondary net enrollment rates (1970–2005)**

	Primary				
	1970	1980	1990	2000	2005
Arab States	61.3	80.9	83.8	82.5	92.9
Central and Eastern Europe	95.1	97.0	91.8	94.8	92.1
Central Asia	no data	no data	no data	85.0	85.7
East Asia and the Pacific (Poorer)	88.1	89.3	97.4	92.6	94.3
Latin America and the Caribbean	77.2	81.1	90.9	92.8	94.7
South and West Asia	59.3	61.6	64.0	79.5	85.9
Sub-Saharan Africa	58.2	55.9	49.0	58.6	71.6
East Asia and the Pacific (Richer)	99.5	101.2	99.7	99.3	99.4
North America and Western Europe	94.3	97.4	96.9	96.4	94.7
World	71.6	86.3	93.2	84.8	88.4
	Secondary				
	1970	1980	1990	2000	2005
Arab States	20.2	38.2	50.8	62.2	69.4
Central and Eastern Europe	41.9	70.9	57.7	85.3	77.8
Central Asia	no data	no data	no data	72.1	79.6
East Asia and the Pacific (Poorer)	33.1	45.2	37.9	49.5	57.8
Latin America and the Caribbean	20.7	16.0	29.2	62.0	64.1
South and West Asia	22.8	27.6	24.2	33.1	28.6
Sub-Saharan Africa	5.8	11.1	8.8	28.1	25.7
East Asia and the Pacific (Richer)	84.7	90.1	94.4	97.3	98.1
North America and Western Europe	56.7	78.1	85.6	88.0	90.7
World	31.6	54.5	54.3	65.2	64.0

Notes: The table includes the subset of countries in each UNESCO region that most consistently reported data (see Box 3.1 and the Appendix to the volume). The 1980 primary value for South and West Asia is an average of 1970 and 1990, and net secondary values for the Arab States and for South and West Asia include statistical estimations to fill holes created by irregular reporting patterns.

Source: IFs Version 6.12 using UIS data.

distance to go (particularly South and West Asia and sub-Saharan Africa) to reach universal participation in basic education, the level that many see as critical for “full implementation of basic skills,” for support of female choice with respect to family size, and more.

### Gender Balance: Pursuing Parity

The transition to gender parity (typically defined as a ratio of the enrollment rates of girls to boys between 0.97 and 1.03) is also moving

at substantial speed.<sup>2</sup> Figure 3.2 shows regional patterns for primary, secondary, and tertiary gross enrollment rates, and Table 3.3 displays net patterns at the primary and secondary levels. There are reporting anomalies in some regions and years,<sup>3</sup> but the anomalies and apparent distortions do not obscure the overall pattern, which is one of tremendous progress in parity for females between 1960 and 2005.

By 2005, most global regions had achieved apparent gender parity, at least on a regional

**Table 3.2 Lower and upper secondary gross enrollment rates (2000 and 2005)**

	Lower secondary		Upper secondary		Total secondary	
	2000	2005	2000	2005	2000	2005
Arab States	78.4	85.0	47.6	55.7	63.7	71.9
Central and Eastern Europe	92.0	86.5	90.8	87.5	86.4	85.5
Central Asia	80.4	91.4	68.6	71.5	77.1	84.8
East Asia and the Pacific (Poorer)	81.4	93.9	40.8	52.3	62.4	72.6
Latin America and the Caribbean	99.0	101.6	64.5	74.8	83.3	89.4
South and West Asia	58.2	65.2	31.7	37.2	43.9	49.6
Sub-Saharan Africa	33.4	41.2	21.7	25.8	26.6	33.3
East Asia and the Pacific (Richer)	104.8	102.3	120.3	119.0	109.1	107.6
North America and Western Europe	105.6	105.4	96.9	96.9	100.8	100.9
World	76.3	82.5	50.5	56.6	63.1	68.9

Note: The table includes the previously described subset of countries in each UNESCO region that most consistently reported data.

Source: IFs Version 6.12 using UIS data.

basis, in both primary gross and net enrollment rates. Although the Arab States, South and West Asia, and sub-Saharan Africa had not yet reached parity at the primary level, all three were between 0.90 and 0.96 on both gross and net enrollment rates by 2005, reflecting remarkable progress since 1960. At the secondary level, despite the fact that South and West Asia and sub-Saharan Africa were not yet at 0.90 in either gross or net rates, progress was even more dramatic. Progress over the period was most significant in the Arab States, which ended the period with apparent gross parity (0.98) and a net gender ratio of 0.92.

At the tertiary level, the picture is more mixed. In 2005, tertiary enrollment rates were still substantially higher for males than for females in two regions—South and West Asia and sub-Saharan Africa—although movement toward parity in those regions has progressed rapidly (particularly since 1990). One developing region, the poorer-country group in East Asia and the Pacific, was within the defined parity range of 0.97–1.03, and the richer-country group in East Asia and the Pacific, at a 0.96 parity ratio, was all but there. However, in all other regions, the enrollment rates of females exceeded those of males—from a low of 1.07 in Latin America and the Caribbean to a high of 1.27 in North America and western Europe—

creating a reverse gender gap relative to that which motivated the Dakar Framework and MDG gender goals of removing the disparity in the education participation of girls.

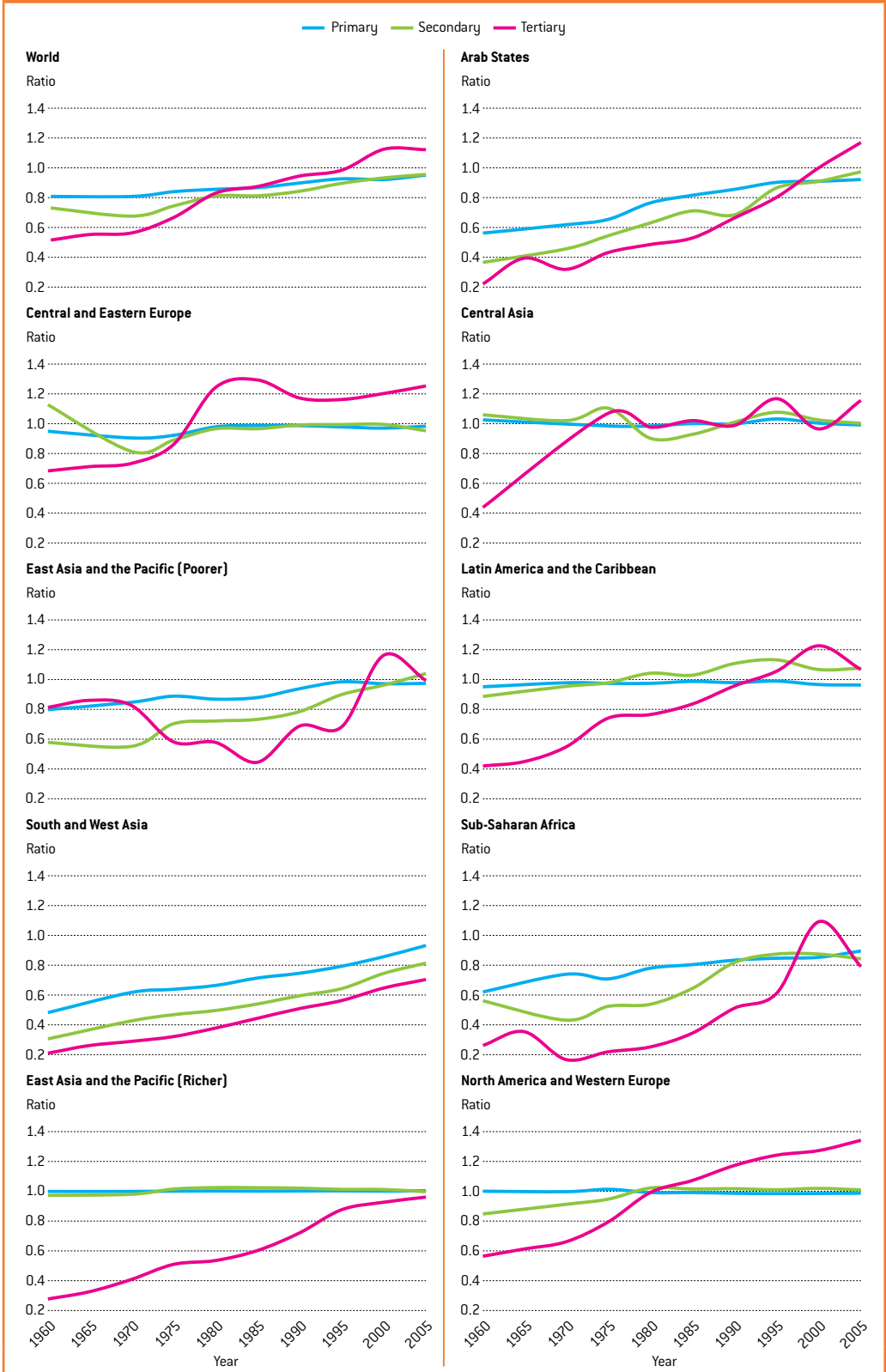
Progress toward gender parity for girls has been significant and real, but in regional aggregations the presence of countries with male gender gaps (or even the presence of large countries or numerous countries close to parity) can mask the presence of other countries in the same regions with low female parity ratios. At the secondary level, for example, the aggregated Arab States had a 0.98 gender parity ratio in 2005, whereas one of the region’s countries—Djibouti—had only a 0.68 parity ratio. At the tertiary level, the East Asia and the Pacific region of poorer countries provides an example: although the 2005 regional parity ratio was 0.99, Cambodia’s gender parity ratio was just 0.47.

Figure 3.3 shows a distribution of reporting countries by region in 2005 according to their gender parity status (that is, the proportion of countries with parity, the proportion with a female parity gap, and the proportion with a male parity gap). Although Figure 3.3 does not indicate the degree of the disparities within countries, the distributions themselves help us understand something about the profile of gender patterns within regions and the extent

■ With respect to gender parity, the overall pattern between 1960 and 2005 shows tremendous progress for females. ■

■ At the tertiary level, the enrollment rates of females exceed those of males in most regions, creating a “reverse” gender gap. ■

**Figure 3.2 Gross gender parity enrollment rate ratios by level (1960–2005)**



Note: Subsets of countries in UNESCO regions that most consistently reported data.

Source: IFs Version 6.12 using UIS data.

**Table 3.3 Net gender parity enrollment rate ratios by education level (1970–2005)**

	Primary				
	1970	1980	1990	2000	2005
Arab States	0.62	0.81	0.88	0.93	0.95
Central and Eastern Europe	1.00	1.00	1.00	1.00	0.98
Central Asia	no data	no data	no data	1.01	1.00
East Asia and the Pacific (Poorer)	0.89	0.91	0.96	0.97	0.98
Latin America and the Caribbean	0.98	0.98	0.99	1.00	1.01
South and West Asia	0.60	0.68	0.77	0.84	0.94
Sub-Saharan Africa	0.72	0.80	0.86	0.91	0.96
East Asia and the Pacific (Richer)	1.00	1.00	1.00	1.00	1.00
North America and Western Europe	1.01	1.01	1.00	1.00	1.01
World	0.80	0.94	0.97	0.93	0.97
	Secondary				
	1970	1980	1990	2000	2005
Arab States	0.46	0.62	0.79	0.87	0.92
Central and Eastern Europe	1.26	1.07	1.07	1.02	0.94
Central Asia	no data	no data	no data	1.03	1.01
East Asia and the Pacific (Poorer)	0.68	0.78	0.88	0.97	1.04
Latin America and the Caribbean	1.04	1.17	1.07	1.06	1.04
South and West Asia	0.44	0.48	0.52	1.04	0.77
Sub-Saharan Africa	0.42	0.66	0.59	0.93	0.87
East Asia and the Pacific (Richer)	1.00	1.03	1.04	1.01	1.02
North America and Western Europe	0.97	1.01	1.02	1.02	1.02
World	0.72	1.00	0.96	1.02	0.99

Note: Subsets of countries in UNESCO regions that most consistently reported data. South and West Asia and sub-Saharan Africa primary values combine data and IFs estimations, and the secondary values in 1980 for South and West Asia and for East Asia and the Pacific (Poorer) are averages of 1970 and 1990 values.

Source: IFs Version 6.12 using UIS data.

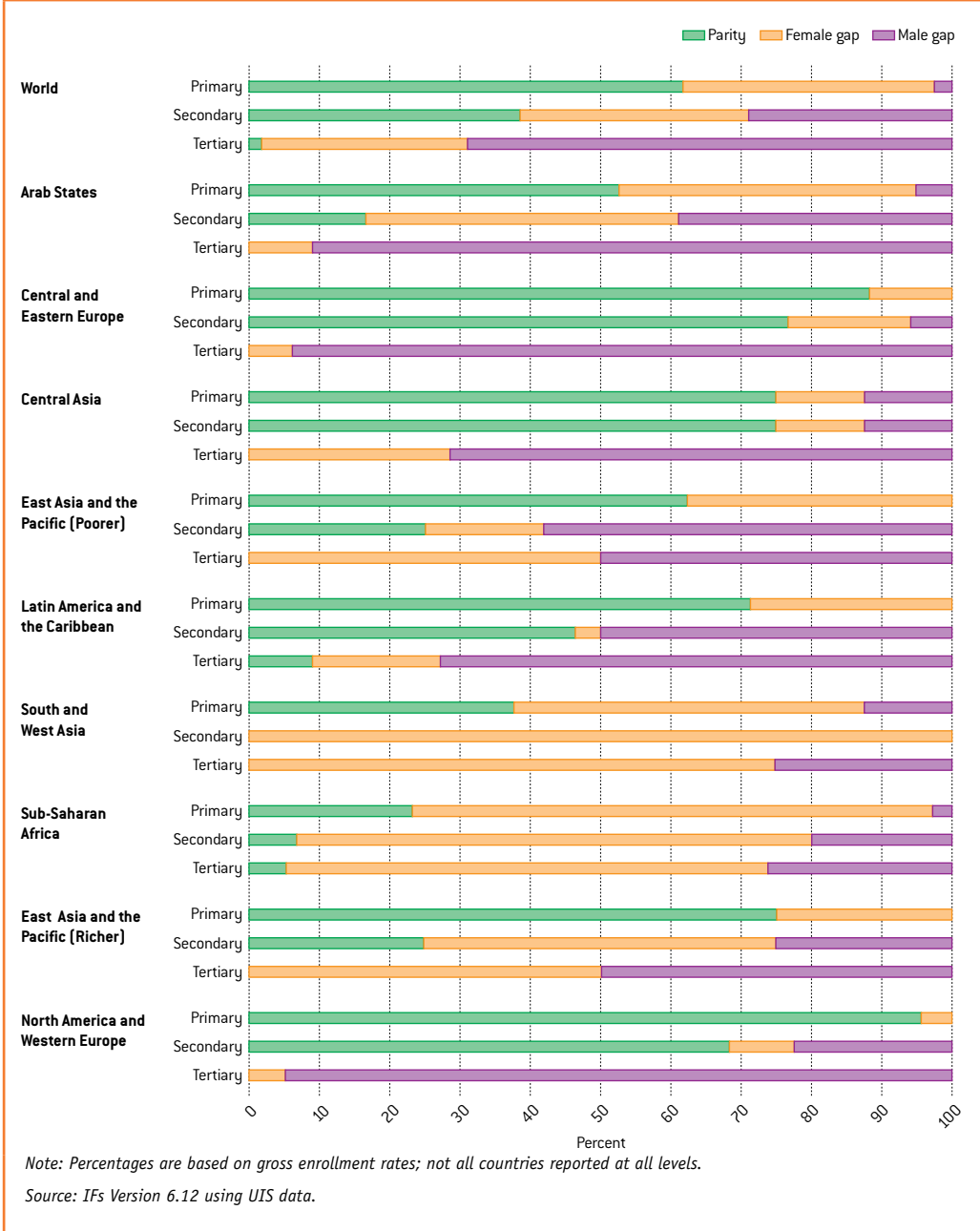
to which regional aggregations are masking individual country disparities.

The patterns of parity and disparity vary dramatically by education level. A majority of countries in 2005 showed parity at the primary level, but a substantial number of countries (38 percent) still showed a female gender gap, whereas male gender gaps were almost nonexistent. At the secondary level, however, only 39 percent of countries reported gender parity, and the sizable proportion of

countries with female and male gender gaps was almost equal (32 percent and 29 percent, respectively). The most dramatic picture is at the tertiary level, where only 2 percent of countries reported parity and a full 69 percent reported male gaps in enrollment rates. Regionally, female gaps across levels were concentrated in the countries of South and West Asia and of sub-Saharan Africa, even though much progress has been made in these regions in terms of enrollment rates.



**Figure 3.3 Percentages of countries with gender parity and gender gaps by education level (2005)**



Male gaps predominated in a number of other regions. The poorer countries of East Asia and the Pacific showed gaps at the secondary level, and the Arab States and Latin America and the Caribbean displayed male gaps at both the secondary and tertiary levels. There was also a high proportion of countries with male gaps at the tertiary level in central and eastern Europe, central Asia, and especially in North America and western Europe.

Disparity in female enrollment rates has been understood for some time to be the result of culturally based gender roles and cultural values that favor males, and it is reasonable to think the still-sizable female enrollment gaps at the primary level are remaining manifestations of those factors. However, as education proceeds to higher levels, the general pattern shows increasing gaps in male participation rates. In 2005, males had a

higher global primary gross intake rate than females (117 percent compared to 112) but a slightly lower primary survival rate (81 percent compared to 83). Transition rates to the lower secondary level were almost identical (85 percent for males and 84 percent for females), but again, males displayed a lower survival rate (82 percent versus 85).<sup>4</sup> The pattern shifts even more clearly in transition rates to the upper secondary level (59 percent for males and 63 percent for females) and also in upper secondary survival rates in some regions (e.g., 69 percent for males in Latin America and the Caribbean versus 75 percent for females). The relatively small differences in each flow variable accumulate across the levels, to create the very large shift we see in gender gaps between entry to the primary level and participation at the tertiary level.

Varied dynamics might account for the reported male gender gaps. As noted in the preceding paragraph, in most developing regions, there is a pervasive pattern of a smaller proportion of males than females progressing through the last grade of the primary level (that is, a lower survival rate for males), and hence, there is a smaller proportion eligible to proceed to the secondary level. Further, in a number of regions, boys more than girls attend religious schools, and they are not included in UIS reporting if the schools do not provide a state-certified full curriculum. Also, in some regions more boys than girls enroll in vocational and technical programs at the secondary level, but secondary transition and survival data are available only for general secondary programs (although enrollment rate data include all types of secondary programs). And in some countries, boys may be expected to leave school before completing their secondary education in order to enter the workforce, whereas there may be less of an expectation or tradition for girls to do so. At the tertiary level, more males than females may study abroad and thus be disproportionately absent from home-country enrollment statistics. It is possible, too, that males in some countries and regions may not need a tertiary education (or even an upper secondary education) as much as females do in order to find suitable work. More generally, across many regions, girls and women may still be in a tertiary “catch-up” mode, taking advantage of new opportunities

to pursue education (for example, in the United States, adult women have been enrolling as first-time college students in higher proportions than men). Not all of these dynamics suggest that males in the countries displaying male gaps are disadvantaged relative to females in their pursuit of education, but some (particularly the lower survival rates) clearly point to a need for attention to the circumstances of males.

The remaining female gender gaps require attention as well. Despite the tremendous progress noted at the beginning of this section, at least fourteen countries in 2005 remained below a 0.90 gender parity ratio in primary net enrollment, as did at least eighteen in secondary net enrollment. Perhaps the most unexpected finding, given the pervasive male gender gap at the tertiary level, was that the tertiary gender parity ratio fell below 0.90 in thirty countries in 2005, including thirteen in sub-Saharan Africa (eight of which were below 0.50).

### **Understanding the History of Education’s Advance**

Patterns of expansion of participation in education and movement toward gender parity have been irregular and complex. Some effort to understand them in a broader historical context should be helpful in thinking about their further unfolding in coming decades.

#### ***Drivers of advance: The context of change***

Chapter 2 emphasized the close and two-way relationships between education and broader demographic, economic, and sociopolitical aspects of the human development system. Demographic change is among the strongest of the shaping forces. After World War II, the global availability of antibiotics and other health advances gave rise to rapid declines in death rates, particularly in low-income countries. Birth rates fell much more slowly, causing population growth rate surges and huge new numbers of school-age children.

At the same time, through the 1950s and 1960s, the world experienced a “golden age” of global economic growth, partly as a catch-up from the period of the Great Depression and World War II; this provided the resources for growth in education participation rates despite unprecedented numbers of school-age children. However, this extended period of economic

■ *Disparity in female enrollment rates has been understood for some time to be the result of culturally based gender roles and values favoring males.* ■

■ *A variety of factors may contribute to male gender gaps in enrollment rates.* ■

■ *With respect to net enrollment, at least fourteen countries at the primary level and eighteen at the secondary level had a female gender parity ratio below 0.90 in 2005.* ■

■ A “golden age” of economic growth in the 1950s and 1960s provided resources for rising enrollment rates despite unprecedented numbers of school-age children. ■

■ More constrained economic circumstances prevailed in the 1980s. ■

■ Sociopolitical changes also spurred education’s spread. Independence in Africa and much of Asia was one such change, and the Cold War was another. ■

growth helped create a commodity price boom in the 1970s that set the stage for a global collapse of commodity prices in the 1980s. More constrained economic conditions then prevailed for many countries—and especially low-income countries—into the 1990s. For most developing countries, significant economic growth resumed only in the mid-1990s, this time accompanied by even greater attention to the spread of education as a foundation for continued advance.

Critical sociopolitical changes following World War II interacted with these demographic and economic changes. Decolonization spread throughout Africa and much of Asia, and the newly independent societies were eager to advance education. This same period saw the waxing of the Cold War, with impacts on governance systems and development philosophies and mixed consequences for the spread of education. On the one hand, as could be seen in the enrollment rates for central and eastern Europe in Figure 3.1 and Table 3.1, education was a high priority in communist bloc countries. Similarly, competition in the Cold War spurred the expansion of education in the United States, particularly after the Russian launch of *Sputnik*. However, that same competition between superpowers (and their allies) led to involvement in many of the newly independent societies in ways that sometimes compromised their progress even while sometimes assisting in it.

Another ideational force during this historical period was the changing status of women in higher-income countries. The sexual revolution of the 1960s and 1970s and the longer-term move toward nuclear family structures challenged traditional patriarchal patterns and continue today to support more egalitarian gender patterns around the world. Other ideational and structural elements emanated from international financial institutions such as the World Bank and the International Monetary Fund and their programs and policies. Augmented by pushes for deregulation and globalization, these institutions participated significantly in shaping global economies and political choices with respect to government spending and behavior, including programs of fiscal discipline that periodically dampened public spending. And, of course, the global community’s belief in the value of expanding

education, as well as attaining gender parity, has been an ideational force of great power in reshaping global education.

### ***The critical role of demography***

Demography is absolutely central to the ease or difficulty that countries have faced in expanding education participation. UNESCO (2007a: 29) noted that all countries have achieved universal primary education where primary school-age children constitute 12 percent or less of the total population. Yet Fredriksen (1980) reported how dramatically both African and Asian planners underestimated the growth in numbers of school-age children when making their plans in the 1960s for the movement to universal primary education. In Africa, the Addis Ababa plan of 1961 “underestimated (by some 63 percent) the size of the population of primary school age in 1980” (Fredriksen 1980: 7). Thus, although numbers of enrolled students increased dramatically and exceeded the plan numbers by as much as 50 percent, enrollment rates failed to reach anticipated levels. The Asian plan similarly fell short of its goals in part because of a 40 percent increase in the population of children between six and twelve years of age in just a thirteen-year period.

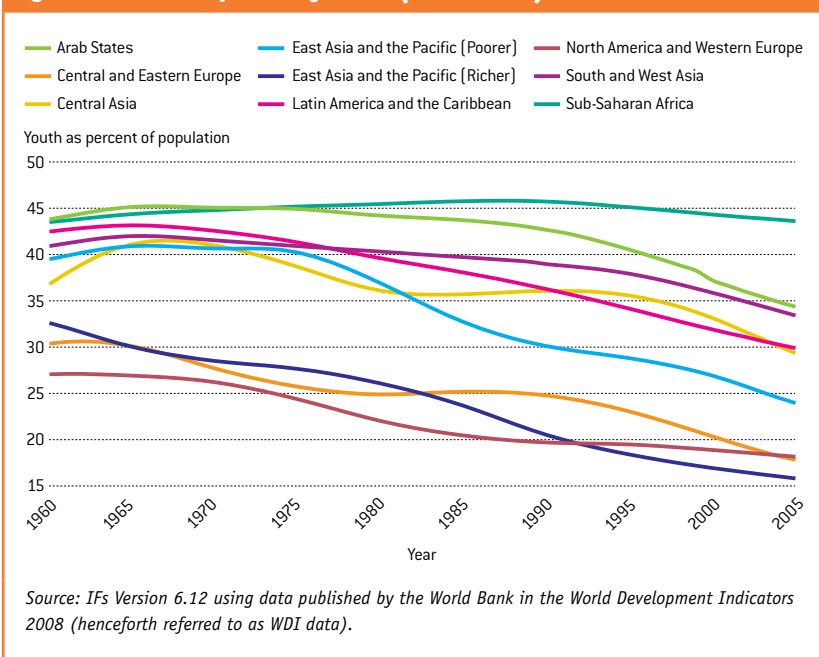
Even more important than the absolute size of the school-age population is its size relative to the adult population. The larger the relative size of the school-age population (expressed as a youth dependency ratio), the greater the demand for public and private resources placed on a relatively smaller adult population. In most countries, the burden of support has lessened, and sometimes dramatically, as the global population growth rate peaked between 1969 and 1971 and then declined. By 1980, the proportion of the population under fifteen was decreasing in all UNESCO regions except sub-Saharan Africa, where it did not begin to decrease until 1987 and 1988 (and then only marginally). In fact, as Figure 3.4 shows, after peaking at 45.8 in 1988, the youth dependency ratio in sub-Saharan Africa in 2005 was still over 43 percent—the same level as in 1960. This situation contrasts with notable declines in the relative size of school-age populations in all other regions, including those that, like sub-Saharan Africa, started the period with very high proportions of school-age children.

Fertility and mortality rates, and patterns in them over time, are the drivers that determine not only the size of the school-age population in a country or region but also the youth dependency ratio. All else being equal, a decrease in the mortality rate of infants and children up to five years old increases the relative size of the youth population, whereas a decrease in fertility rates reduces it. Almost always in demographic transitions, infant and child mortality rates begin to decrease before fertility rates do. In all regions, the mortality rates of infants and young children have declined dramatically since 1960. Despite being just slightly over half what it was in 1960, however, sub-Saharan Africa's child mortality rate in 2005 (140 infants and children per 1,000 live births) was over twice that of the region with the next highest rate (South and West Asia, at 66 infants and children per 1,000 live births). Not surprisingly, then, fertility rates began to decline later in sub-Saharan Africa than in other regions. In 2006, the total fertility rate in sub-Saharan Africa was still 5.3 children per woman, much higher than the 3.2 of the Arab States (the region with the next-highest fertility rate). The good news is that the fertility rate in sub-Saharan Africa has clearly trended downward since about 1980, at which time it was 6.7. In coming years—and in our forecasts—the continuing decline in fertility will lead to acceleration of the decline in the dependency ratio for sub-Saharan Africa.

### Economic level

The level and rate of economic development are also fundamental to education participation patterns, affecting both the demand for education and its supply. Figure 3.5 displays the disruption of economic growth in much of the developing world in the 1980s (sometimes called the lost decade). Per capita GDP fell in the Arab States after 1979 with the collapse of oil prices, coming back only in very recent years to its 1979 level. (Throughout this volume, we use GDP and GDP per capita at purchasing power parity [PPP] because PPP makes GDP and income comparable across countries.)<sup>5</sup> The debt burden incurred by Latin America in the 1970s contributed heavily to its smaller but still significant decline in GDP per capita in the 1980s. Yet it has been sub-Saharan Africa that

**Figure 3.4 Youth dependency ratios (1960–2005)**



has suffered the greatest economic burden. There, the period of independence for most of its countries began with a considerably lower level of GDP per capita than in the Arab States or Latin America and the Caribbean, and after experiencing some early gains, the region suffered through decades without further growth in GDP per capita.

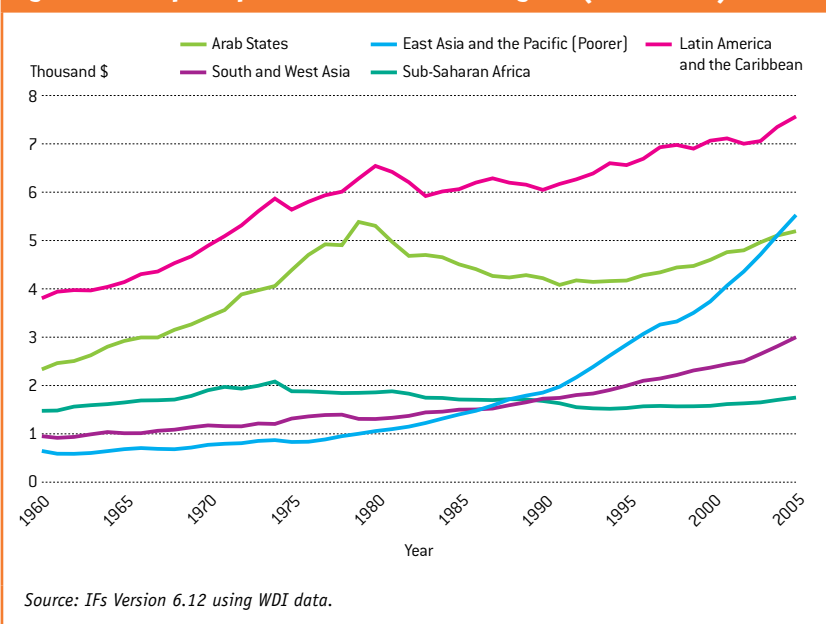
Two other developing regions, the largest of all demographically, experienced less economic disruption in the 1970s and 1980s. Most significantly, the less economically developed countries of East Asia and the Pacific, dominated in size by China, experienced some of the global turmoil of the 1970s but also a spectacular takeoff in economic growth during the 1980s. In still another pattern, South and West Asia—which in the eyes of most observers (and forecasters) in the 1960s and 1970s faced the most challenging burden of poverty and low growth prospects—experienced quite steady albeit slow growth across much of the historical period. Acceleration of growth in India, the region's demographic giant, has begun to move the regional average ahead rapidly in recent years.

Two regions (not shown in Figure 3.5) experienced greater turmoil in the 1990s than the 1980s. The breakdown of communist systems in Central and Eastern Europe and in

Other ideational forces, such as the changing status of women, have also been important factors in education's advance. ■

The size of the school-age population relative to the adult population is central to the ease or difficulty countries face in expanding education participation. ■

**Figure 3.5 GDP per capita at PPP for selected regions (1960–2005)**



Central Asia greatly disrupted their economies, with recovery to 1990 levels coming only recently for most countries.<sup>6</sup>

Unlike demographics, where the effects of changes in fertility rates, mortality rates, and youth dependency ratios have a straightforward impact on the size of school-age populations, the consequences of fluctuations in income levels on enrollment patterns are not always direct. Countries can and sometimes do adjust to economic downturns by decreasing per-student expenditures rather than decreasing enrollment rates or by reallocating funds to education from other public expenditure categories. Similarly, individuals sometimes choose to advance their education during periods of economic downturn in order to be better positioned for the future, although in the midst of poverty this may not be an alternative. In any case, there was not a 1-to-1 correspondence between the widespread disruption of economic growth in the 1980s and changes in enrollment rates. In general (see, again, Figure 3.1), developing regions experienced a flattening of primary gross enrollment rates during the 1980s but continued growth in secondary enrollment rates (again, Central and Eastern Europe and Central Asia are exceptions). At the tertiary level, enrollment rates were either flat or grew

● *The level of economic development of a country affects both the demand for education and the country's ability to provide it.* ●

more slowly in all regions (high-income as well as developing) during the 1980s in comparison with the two previous decades and after 1990.

### **Sociopolitical context**

Demographic and economic circumstances are two of the three major systems with which education interacts. The third is the sociopolitical context of a country, particularly aspects of the character and quality of the government. We use three measures for which time-series data are reasonably available in order to explore the sociopolitical context within which the education transition is occurring. One is the extent of democracy, another is the perceived level of corruption, and the third is the extent of state stability or instability.

We use estimates and data from a scale developed by the Polity Project (currently at the Center for Systemic Peace and George Mason University) to explore the extent of democracy in the UNESCO regions from 1960 to 2004,<sup>7</sup> and we show them for developing regions in Figure 3.6 (again excluding Central and Eastern Europe and Central Asia because of a lack of data). The Polity Project's 20-point scale runs from most authoritarian or autocratic to most democratic (the highest values), labeling countries in the middle as "anocracies," or having mixed governments. The Arab States have been autocratic throughout the historical period, especially from 1970 to 1985. In fact, most of the developing regions (all but South and West Asia, in fact) experienced periods of relatively greater autocratic and less democratic governance during the early to middle period of the 1960–2004 time horizon (see Huntington 1991 on the retreat of the second wave of global democratization; also Hughes and Hillebrand 2006: 166–167). However, since 1980 and especially since 1990, democratization has advanced around the world.

Again, as with the economic context, we do not see a 1-to-1 correspondence between democratic governance and growth in education participation. In fact, the first of the two periods of greatest enrollment rate growth (roughly 1960 to 1980) corresponds to the period when most developing regions were displaying a decrease in democracy; the second and more recent period of greatest enrollment rate growth corresponds to the recent advance

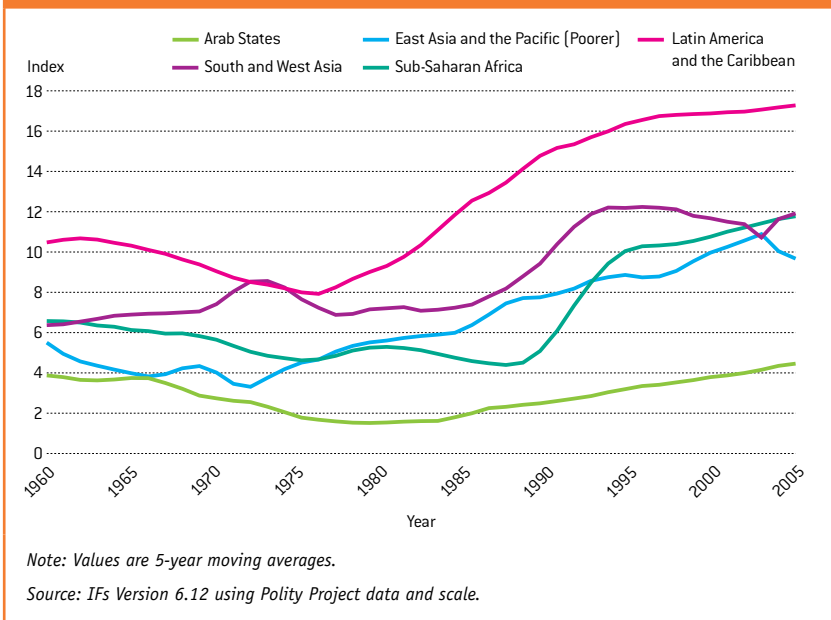
of democratic governance characteristics. We might expect that democracy—with its concern for providing equity, opportunity, and a voice for those who have been excluded—will value education. It seems reasonable that democracy's advance late in the twentieth century, like that of economies, has generally been supportive of education's expansion.

Obviously, democratization is not the only element of sociopolitical context, and for the expansion of education, it might not even be the most important. Although other measures of governance—such as effectiveness, regulatory quality, and lower levels of corruption (Kaufmann, Kraay, and Mastruzzi 2007)—correlate highly with the extent of democratic voice that citizens have, they can also be significantly independent of it (as they are to a considerable degree in Singapore, for example). Transparency International has measured perceived levels of corruption through expert assessments and opinion surveys for over 150 countries since 1995 (Lambsdorff 2008), with estimations going back to 1983 for 54 countries.<sup>8</sup> Though this is one of the longest series of such measures of government performance, the data do not easily allow analysis prior to 1995 because of the much smaller number of countries in earlier estimations.

The Transparency International measure is a 10-point scale, with 10 representing the least corruption. The world average in 2005 was just 3.6 (the North America and Western Europe region was perceived to be the least corrupt, with an assigned score of 7.4). The five developing regions represented in Figures 3.5 and 3.6, as well as Central and Eastern Europe and Central Asia in more recent years, have scored less than 4 points quite consistently and have in aggregate demonstrated little obvious progress. In short, average governance quality as reflected in perceptions of transparency and corruption has been and is poor across most of the developing world, and it does not seem in the aggregate to be related to varying rates of growth in education participation at regional levels.

Still another element of the sociopolitical context that is potentially important to education's advance is political stability and avoidance of domestic conflict. The Political Instability Task Force (formerly the State

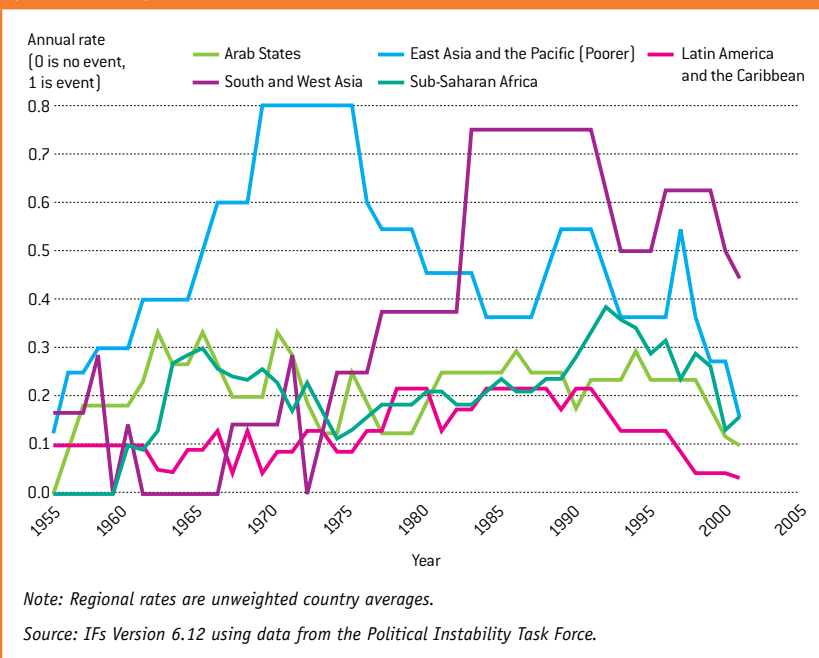
**Figure 3.6 Polity measure of democracy for selected regions (1960–2004)**



Failure Project) has collected and analyzed data on events and magnitudes of internal wars and government failures occurring since 1955 (Bates et al. 2003). These events include revolutionary wars, ethnic wars, adverse regime changes, genocides, and politicides.<sup>9</sup> Figure 3.7 shows the average annual occurrence of one or another of these events in the five UNESCO developing regions of this discussion; a value of 1 in a given year would suggest a disruptive occurrence in each country that year. Such events have occurred quite rarely in North America and Western Europe over the entire period, and they have seldom been seen since 1974 in the richer countries of East Asia and the Pacific; they have been quite common, however, in economically developing regions. These kinds of events marked more than 10 percent of the country-years for Latin America and the Caribbean and 20–25 percent of the country-years in the Arab States and sub-Saharan Africa between 1955 and 2001. In the case of the poorer countries of East Asia and the Pacific, the Vietnam War and its aftermath helped spike the frequency of such events to 80 percent of all country-years in the 1970s, as the Iran-Iraq and Afghan wars nearly did for South and West Asia in the 1980s. On a regional basis, education participation has increased despite these disruptions, but within individual countries, extreme conflict and disruption have often

● **State failure characterized by extreme conflict and disruption is associated with serious disruption of education systems as well.** ●

**Figure 3.7 Extent of political instability in selected developing regions (1955–2001)**



● In general, it is useful to think in terms of multiple, somewhat sequential, and interacting stages of the education transition. ●

● Although there are general patterns to the education transition, there are also variations across regions and among countries within regions. ●

been associated with large-scale disruptions in education participation (e.g., in Afghanistan and Somalia). In many instances of less extreme disruption, enrollment rates have been less obviously affected. Nonetheless, state failure and disruption can hardly be thought to aid education’s advance.

### Exploring Patterns of Participation: Subregional and Cross-Regional Analyses

Despite great fluctuations across time and variations across countries and regions in the forces that drive or impede the rate of advance in education participation, there are general patterns to the education transition. The experience of high-income, middle-income, and increasingly also lower-income countries provides a basis for fairly strong expectations concerning the future unfolding of those patterns. Yet there are significant variations in the patterns as well. Looking at clusters of countries organized by characteristics in addition to (or in place of) geographic regions can help us explore both the general patterns and the variations. It can also help us see more clearly the relationships between demographic, economic, and sociopolitical patterns and the patterns of education’s advance.

In general, it is useful to think in terms of multiple, somewhat sequential, and interacting stages of the education transition. We most often see a pattern whereby enrollment rates at a given level reach a significant threshold or “takeoff” point before enrollment rates tend to rise strongly at the next-higher level. For example, when primary net enrollment rates are below 80 percent, most countries have lower secondary gross enrollment rates that are 30–40 percentage points below their primary rates—but by the time they reach a 90 percent primary net enrollment rate, most countries have a similar or somewhat higher gross enrollment rate at the lower secondary level. But there are significant variations to this pattern. Some countries even more heavily emphasize high levels of primary net enrollment before building substantial lower secondary systems (e.g., Mauritania, Mozambique, Rwanda, Tanzania, and Uganda), and others have lower secondary enrollment rates that largely track levels of primary net enrollment even at relatively early stages of primary expansion (e.g., Ethiopia, Ghana, and Sudan).

Countries also display differing relationships between gross and net enrollment rates within a single level of education. At the primary level, most countries have gross enrollment rates that are no more than 10–20 percentage points higher than their net or of-age enrollment rates. Some, however, are in a catch-up mode and display a much larger spread between the gross and net enrollment rates; most of these are seriously disrupted and/or rapidly transforming societies in which recently expanded access generates demand among older children who previously lacked the opportunity to pursue education. We see a similar pattern and exceptions in the relationship between secondary gross and net enrollment rates.<sup>10</sup>

Overlaying these stages of enrollment growth is the movement toward gender parity, obviously attained no later than the achievement of universality but typically achieved quite a bit earlier. Wils and Goujon (1998: 367) found that gender parity in terms of girls’ participation was approached “at enrollment levels beyond 60 percent for primary and secondary education, and at levels of 20–40 percent for tertiary education.”

### Further analysis of enrollment patterns in sub-Saharan Africa

The preceding tables and figures in this chapter show clear regional patterns, but they also mask tremendous differences among countries within regions. This is particularly true of a region as large and diverse as sub-Saharan Africa. By clustering sub-Saharan African countries in groups based on their primary net enrollment rates, we can begin to explore these differences.

Table 3.4 lists the sub-Saharan countries in three clusters: (1) those with primary net enrollment rates below 60 percent in 2005,<sup>11</sup> (2) those with primary net enrollment rates between 60 and 79 percent that year, and (3) those with 2005 primary net enrollment rates of 80 percent or above.<sup>12</sup>

Figure 3.8 shows different patterns of primary enrollment change in the three clusters. Although the patterns of all three during the 1980s reflect the economic downturn of that period, the high-enrollment group was able to maintain its previous levels, whereas the middle- and low-enrollment groups lost gains from the prior period. The high-enrollment group was also able to climb more steeply as

the world economy improved, and it has now maintained a rapid primary enrollment growth rate for over a decade.

Figure 3.9 extends the story of change by turning to secondary gross enrollment rates for the same sets of countries. All three clusters began the period with extremely low secondary gross enrollment rates—from just 1.2 percent in the cluster of countries with low primary enrollment rates to 7.3 percent in the cluster with high primary enrollment rates. What Figure 3.9 makes clear is the substantial and rapid advance the sub-Saharan African high primary enrollment countries have made in secondary enrollment rates since 1980. For these countries, extrapolation suggests a period of just seventy-five years for the transition from 10 percent to 90 percent gross secondary enrollment—“blistering speed” indeed. The other two groupings also made significant gains in secondary gross enrollment rates during the 1960s and 1970s, but they then experienced prolonged periods of flat rates during the years of economic downturn. For them, the secondary enrollment transition is taking much longer.

Analysis of sub-Saharan African country subgroups helps us see relationships between other variables (e.g., demography) and patterns of education’s advance.

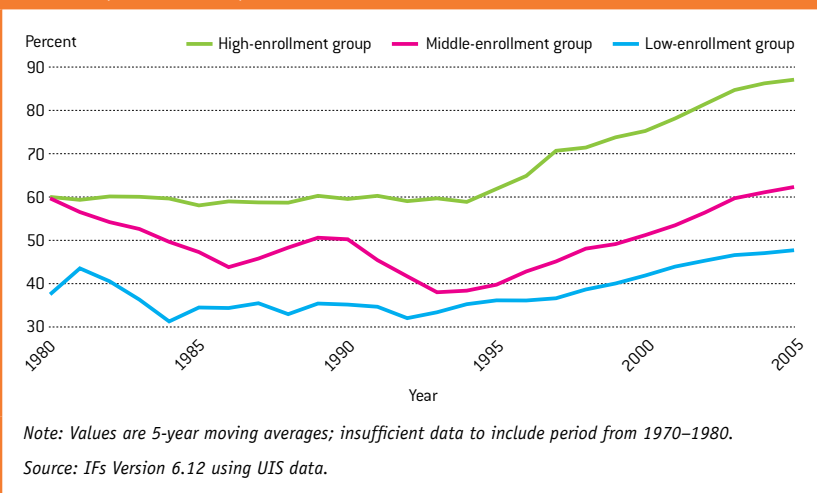
**Table 3.4 Sub-Saharan African countries by primary net enrollment rate (2005)**

Low-enrollment group (below 60 percent)	Middle-enrollment group (60–79 percent)	High-enrollment group (80 percent and above)
Angola	Benin	Botswana
Burkina Faso	Cameroon	Cape Verde
Burundi	Chad	Equatorial Guinea
Central African Republic	Ethiopia	Gabon
Comoros	Gambia	Madagascar
Congo, Dem. Rep. of	Ghana	Malawi
Congo, Rep. of	Guinea	Mauritius
Côte d’Ivoire	Kenya	Namibia
Eritrea	Lesotho	São Tomé and Príncipe
Guinea-Bissau	Liberia	South Africa
Mali	Mozambique	Tanzania, United Rep. of
Niger	Nigeria	Uganda
Sierra Leone	Rwanda	Zambia
Somalia	Senegal	Zimbabwe
	Swaziland	
	Togo	

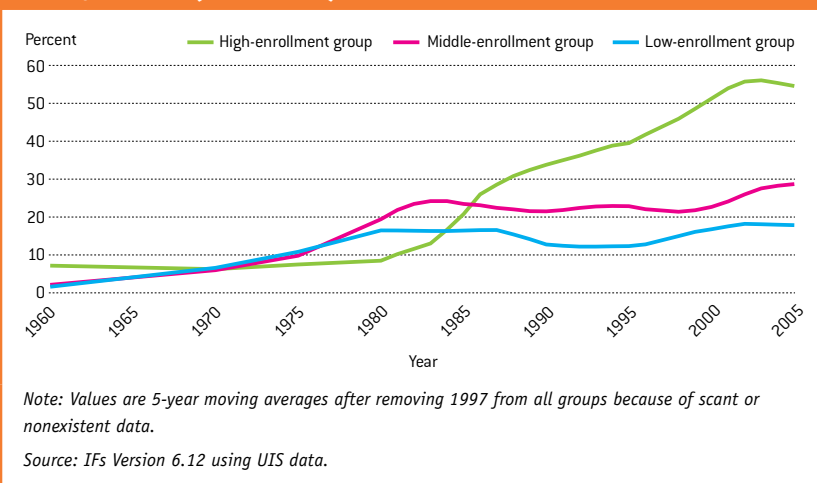
Source: IFs Version 6.12 using UIS data.



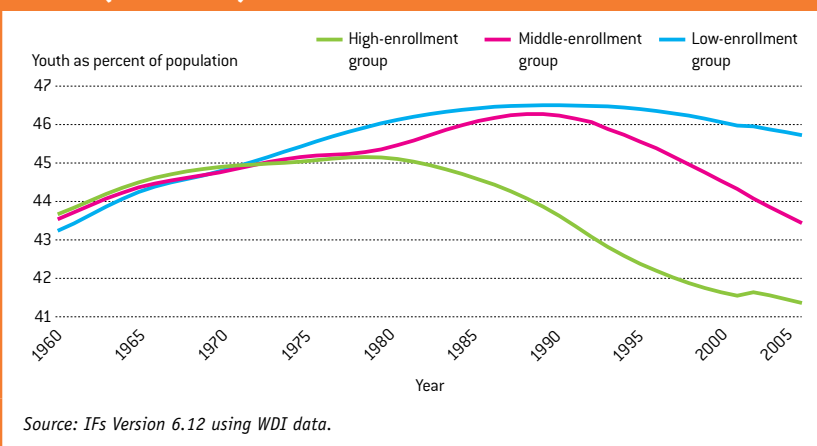
**Figure 3.8 Primary net enrollment rates in sub-Saharan African country clusters (1980–2005)**



**Figure 3.9 Secondary gross enrollment rates in sub-Saharan African country clusters (1960–2005)**



**Figure 3.10 Youth dependency ratios in sub-Saharan African country clusters (1960–2005)**



Perhaps most remarkable, the primary high-enrollment country cluster has been able to expand its secondary enrollment rates consistently and dramatically for some twenty-five years, including throughout the economic downturn of the 1980s. However, the apparent reversal of growth in this group's enrollment rates in the most recent years is of concern. Neither recent demographic trends nor recent economic trends seem to explain this slowing. Some of the apparent change in pattern results from year-to-year differences in the subset of countries reporting. However, inspection of individual country patterns also reveals a general flattening and even, in some cases, a modest decrease in rates. It may be that a period of consolidation is following a long period of sustained growth, hopefully to serve as a plateau or platform from which further growth will ensue.<sup>13</sup>

The gains made by sub-Saharan African countries in bringing children into school at the primary level and now increasingly into the secondary level are quite extraordinary given their demographic, sociopolitical, and economic circumstances. With respect to demographics, children and youth under fifteen years of age accounted for 37 percent of the world's population in 1960 but 43.5 percent of sub-Saharan Africa's population. Today, the child and youth dependency ratio, worldwide, is 28. In sub-Saharan Africa, it remains over 40 percent—specifically, 41.5 percent in the primary high-enrollment cluster, 43.6 percent in the middle-enrollment cluster, and 46.2 percent (higher than in 1960) in the low-enrollment cluster (see Figure 3.10).

Although the dependency ratios remain absolutely high in all three groups, there are differences among them, explained in large part by differing changes in fertility rates. In 1960, the total fertility rate of all groupings was 6.6–6.7 children per woman. By 2005, the fertility rate in the high-enrollment group was 4.7, and in the middle-enrollment group it was 5.3. In the low-enrollment group in 2005, it was still over 6.3 children per woman. As a result, the youth dependency ratio of the high-enrollment group peaked earlier and at a lower level than that of the other two groups, whereas the youth dependency ratio of the low-enrollment group peaked highest and latest. Preparing to

look forward in subsequent chapters, we note that all three country subgroups now exhibit a promising downward movement in dependency ratios. It appears that the middle-enrollment group, in particular, may be poised for some educational “lift.”

Looking at other elements in the context of education’s advance across the three clusters, we see that in 1960, the primary high-enrollment group enjoyed an average GDP per capita almost twice that of the low-enrollment group; at that time, the GDP per capita of the low-enrollment group was almost twice that of the middle-enrollment group. Although all groups (especially the high-enrollment cluster) grew somewhat until the mid-1970s, none exhibited economic advance between that time and the end of the century. In fact, the low-enrollment group has lost ground since the mid-1970s, falling below the GDP per capita of the middle-enrollment group in the early 1990s, and found itself in worse condition in 2005 than in 1960 (e.g., its GDP per capita was \$980 in 2005 compared to \$1,516 in 1960).

In terms of sociopolitical context, the democracy level of the primary high-enrollment group (as measured by the Polity Project scale discussed earlier) was higher in 1960 than that of the other two, and it remained roughly stable through the 1970s and 1980s even as the two other groups became more authoritarian. All three groups have benefited from substantial democratization since the late 1980s, and all have been at or above the midpoint on the Polity Project scale for a number of years. However, all three groups have experienced fairly regular political instability or conflict on a consolidated measure of events using the data of the Political Instability Task Force. Interestingly, however, the countries in the middle- and high-enrollment groups have benefited from a decline in the rate of such events since the 1990s, whereas the low-enrollment group has experienced a rather marked increase. With respect to perceptions of corruption (as measured by the Transparency International scale referred to earlier), all three groups are perceived (on average) as being corrupt, with the primary high-enrollment group somewhat less so.

It remains very difficult to sort out the causality in all of these relationships, but it does appear that differences in demographic patterns

significantly influenced the pace of education change in the three sub-Saharan African groups since the mid-1950s, and that the high-enrollment sub-Saharan African countries are now benefiting from a virtuous cycle linking demography, education, the economy, and the sociopolitical environment. Various data also suggest that countries in the middle-enrollment group are possibly on the threshold of a similar cycle. Quite different prospects for the coming years are likely across the three country clusters.

### **Beyond sub-Saharan Africa: Primarily secondary concerns**

Although completion of the transition to universal primary education remains an issue not only for sub-Saharan Africa but also for a relatively small number of other countries, the central struggle of countries outside sub-Saharan Africa is now most often that of raising enrollment rates at the secondary level—and particularly at the lower secondary level for the completion of basic education. Having considered sub-Saharan Africa in the preceding section, we can look at Table 3.5 for a list of the twenty-seven countries outside sub-Saharan Africa with low- and middle-

■ *Sub-Saharan African countries have made large gains in bringing children into primary school, and they are increasingly doing so at the secondary level as well.* ■

■ *Quite different prospects for the coming years are likely across the three sub-Saharan African country clusters.* ■

**Table 3.5 Countries outside sub-Saharan Africa with low and middle lower secondary gross enrollment rates (2005)**

<b>Low-enrollment group: below 60 percent (SSA excluded)</b>	<b>Middle-enrollment group: 60–79 percent (SSA excluded)</b>
Afghanistan	Bangladesh
Bhutan	Ecuador
Cambodia	Honduras
Djibouti	India
Guatemala	Indonesia
Haiti	Israel
Iraq	Morocco
Lao PDR	Nepal
Mauritania	Nicaragua
Myanmar	Paraguay
Pakistan	Timor-Leste
Papua New Guinea	Trinidad and Tobago
Solomon Islands	
Vanuatu	
Yemen	

Source: *IFs Version 6.12 using UIS data.*

■ **The central struggle of developing countries outside sub-Saharan Africa is now most often that of raising enrollment rates at the secondary level.**
■

■ **In countries with low or “middle” enrollment rates at the lower secondary level, the picture is one of progress but also of slow rates of growth.**
■

level lower secondary enrollment rates in 2005, arranged in two categories: (1) those with lower secondary gross enrollment rates below 60 percent, and (2) those with lower secondary gross enrollment rates between 60 and 79 percent.

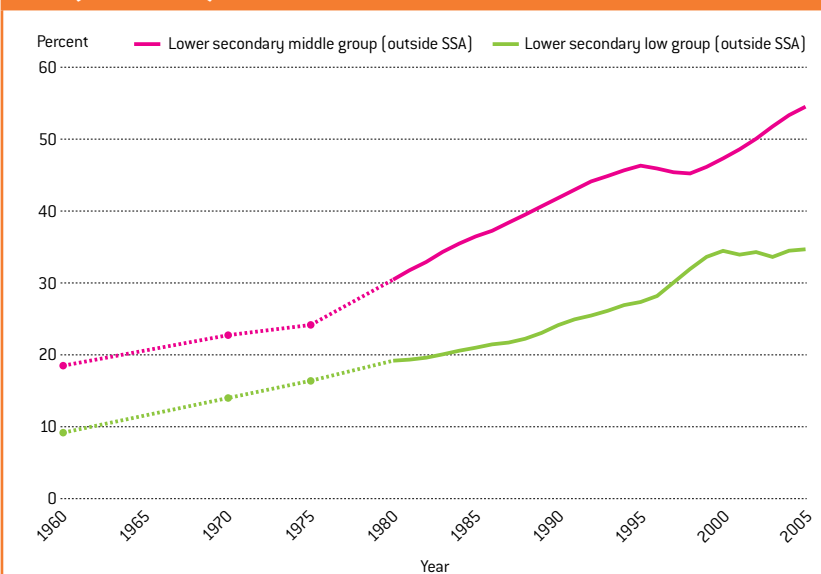
Relatively speaking, countries in the Arab States and the poorer countries of East Asia and the Pacific are predominant in the low-enrollment cluster, and Latin American and Caribbean countries are significantly represented in the 60–79 percent enrollment cluster. South and West Asian countries are evenly represented in the two groups. Because we do not have an extended time series for lower secondary enrollment rates, Figure 3.11 shows the historical pattern of these countries in total or “all-of-secondary” gross enrollment rates.

As with the sub-Saharan African groupings of primary low- and middle-enrollment rate countries, the picture here is one of progress but also of slow rates of growth. Over a period of 45 years, the gross enrollment rate in countries with low enrollment rates at the lower secondary level only rose from 9 percent to 34 percent, and the middle-

enrollment group rose from 18 to 53 percent. By extrapolation, those rates suggest 10–90 percent secondary enrollment rate transition periods of 190 and 119 years, respectively. These countries historically have had the slowest pace of secondary enrollment rate growth in the world except for the primary low-enrollment cluster in sub-Saharan Africa.

Given complex bidirectional relationships, in trying to understand the difference in educational performance between these two country sets we cannot talk so much about “drivers” as about “concomitants” in demographic, economic, and sociopolitical patterns. For example, the child and youth dependency ratios of the two groupings in the early 1960s were nearly identical, at 41–43 percent. The dependency ratio for the middle-level lower secondary enrollment group then began to decline in the 1960s, whereas it stayed high in the low-enrollment group until the late 1980s—another twenty-five years—before beginning a steep decline. Certainly, the additional population proved a handicap for the expansion of education in the low-enrollment group. Economically, the low-enrollment group actually had a small edge in GDP per capita at PPP throughout the 1960s and until the mid-1980s, but the group has experienced essentially no growth since 1980, even as the midlevel group has more than doubled its GDP per capita. Although there has been only a limited difference between the groups on perceptions of corruption, the midlevel group began the 1960s with a slightly higher level of democracy, and the gap has expanded (albeit erratically) over time, reaching about 6 points on the 20-point Polity Project scale by the early part of this century. And though both groups have experienced considerable conflict and instability on a consolidated measure of such events using the data of the Political Instability Task Force, the incidence has been higher in the low-enrollment group. Between the mid-1960s and the mid-1990s, the members of the low-enrollment group experienced, on average, a probability of about 0.5 of having some adverse event occur in any given year, compared to about half that probability in the middle-enrollment group. In

**Figure 3.11 Secondary gross enrollment rates in countries outside sub-Saharan Africa with lower secondary low- and middle-enrollment rates (1960–2005)**



Note: Data are very spotty until 1980 and so are shown with a dashed line. After 1980, values are 5-year moving averages after removing 1997 in the low-enrollment group because of inconsistent data.

Source: IFs Version 6.12 using UIS data.

short, the context for education's development (and human development more generally) improved in the middle-level enrollment group over time in what appears to be a positive feedback dynamic.

### Education Spending

Another critical element of the education transition lies in patterns of financing. Total societal spending on education relative to the size of the economy tends to rise as countries become wealthier (or less poor), and spending per student at different levels of education changes in relatively consistent ways. Certainly, no given level of expenditures assures quantitative advances in education, much less educational quality. At the same time, however, it is difficult to imagine the success of the education transition without trained and appropriately compensated teachers, adequate infrastructure for education (e.g., schoolrooms and transportation systems that bring students to them), sufficient instructional materials, and more. In short, though expenditure patterns can be and often are inefficient, some significant level of expenditures is obviously essential.

### Public spending: Global patterns

Two measures of education spending frame the discussion of total public spending levels: (1) public spending as a percentage of GDP, and (2) public spending as a percentage of total government spending.<sup>14</sup> In our analyses and forecasts, we focus on the first measure because it puts education spending in the context of total societal resources. Within that context, education is a "superior good" in economic terms, and societies spend greater portions of income on superior goods as they become more well-to-do. Thus, in general, education spending as a portion of GDP rises with GDP per capita. Education funding as a portion of total government spending is also a useful measure of societal commitment. In distinction from education spending as a percent of GDP, however, education funding as a portion of total government spending tends to decrease as societies become richer because total government spending, especially on transfer payments and health, rises even faster than that on education.

Globally, governments spent approximately \$1.5 trillion on formal education in 2005, or about 4.8 percent of GDP. Figure 3.12 shows that there is tremendous variation in the percentage of GDP spent on education by country but also confirms a tendency for that spending to increase with GDP per capita.

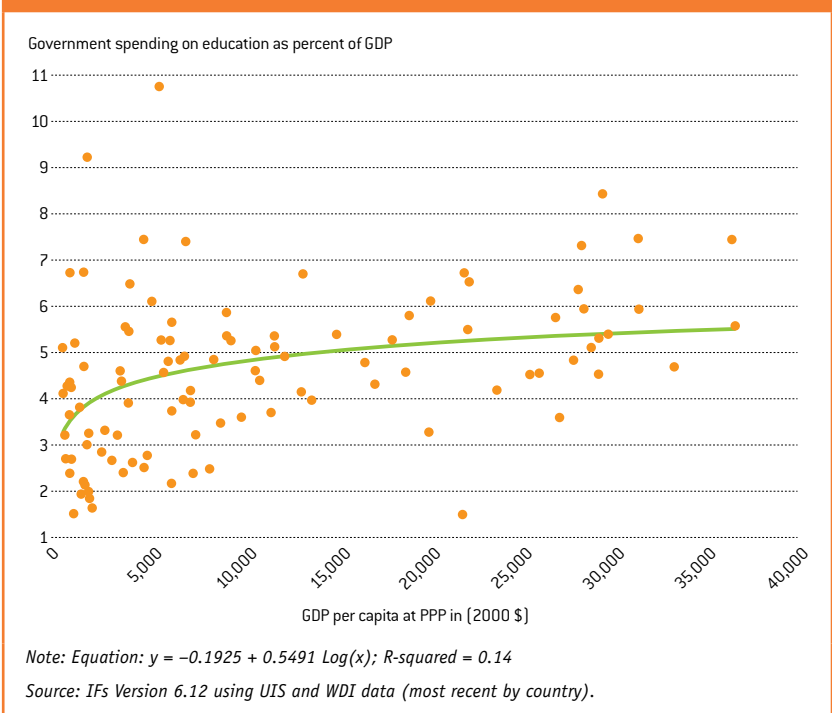
The tendency to increase education spending as a portion of GDP with increases in GDP per capita has helped boost the spending ratio over time, since GDP per capita has increased in almost all regions over the past several decades. Figure 3.13 shows patterns for the period from 1970 to 2005 for countries in four World Bank income categories.<sup>15</sup>

Two patterns stand out in Figure 3.13. The first, true throughout the period, shows that the higher the country income category was, the greater the portion of GDP the countries committed for education. The second is a trend toward convergence, such that the differences in public funding by country income levels diminished quite markedly over time. In fact, the difference between upper middle-income economies and high-income economies had all but closed by 2005 as the result of two things: (1) an increase of almost 40 percent in the

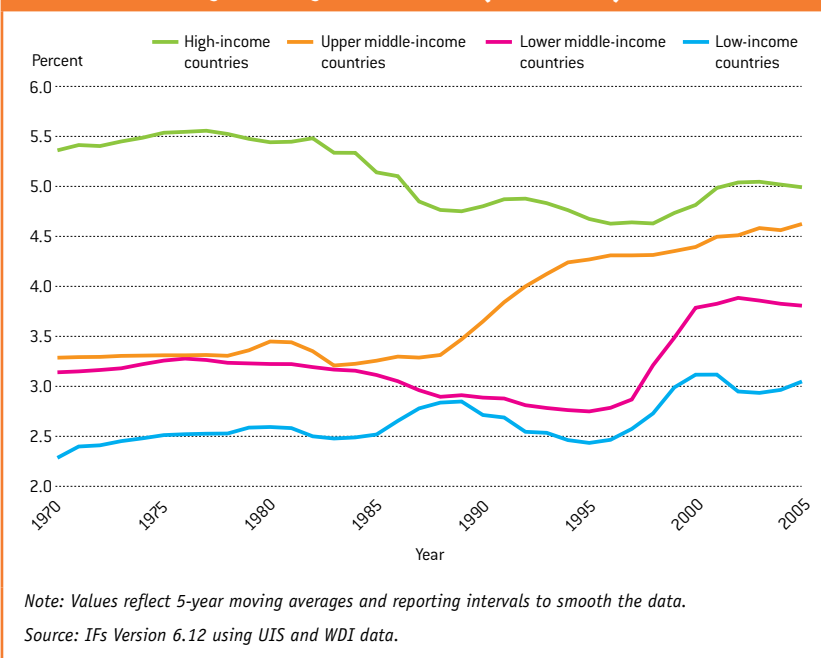
■ **Total societal spending on education as a share of GDP tends to rise as countries become wealthier (or less poor).** ■

■ **In 2005, governments spent about \$1.5 trillion on formal education, or about 4.8 percent of global GDP.** ■

**Figure 3.12 Public spending on education as a function of GDP per capita at PPP**



**Figure 3.13 Public expenditures on education as a portion of GDP by World Bank country economy classification (1970–2005)**



portion of GDP spent on education by the upper middle-income countries over the period, and (2) a slight decrease in the proportion spent by high-income economies as their proportion and absolute number of school-age children declined. Low-income economies also increased the proportion of GDP spent on education by one-third over the same period. The least growth in public expenditures as a proportion of GDP has occurred in the lower middle-income economies, which include China, India, and Indonesia.<sup>16</sup>

External assistance has also supported rising spending in some countries. Between 1999 and 2004, commitments of aid from donor countries more than doubled, from \$1.3 to \$3.3 billion (UNESCO 2007a: 42). Although that amount is minuscule in the scope of global spending, it can be extremely significant for the very poorest countries.<sup>17</sup>

For all developing countries, it is likely the flat to declining expenditure rates in the 1980s were related, at least in part, to the global debt crisis of that period and the constraints it placed on spending. Near the end of the twentieth century, spending stabilized or climbed again in all country income groups. Many expected an economic dividend from the end of the Cold War, which resulted in a decline between

1990 and 2000 of more than 1 percent in GDP directed to the military in poor countries and something closer to 2–3 percent for the richest. That fact may account for part of the increase in education spending near the end of the century. Another portion almost certainly reflects somewhat faster economic growth around the world relative to the 1980s, as well as some success in dealing with the spending constraints associated with the debt crises following the oil shocks of the 1970s. Almost certainly, the increasingly obvious emergence of the global knowledge economy also helps explain the upward movement after the mid-1990s.

Turning to allocations of expenditures across levels, approximately 5 percent of global public education expenditures are at the preprimary level, 30 percent at the primary level, 40 percent at the secondary level (split quite equally between lower and upper secondary levels), and just over 20 percent at the tertiary level (the high share of tertiary reflects the higher per-student cost of tertiary education and the high tertiary enrollment rates in high-income countries). Behind these global averages are wide ranges.

### Public spending: Regional patterns

Table 3.6 helps us see the considerable regional variation that lies below the pattern tied to income levels. Because of oil revenues, spending on education in the Arab States was already relatively high for a developing region in 1970, and it has since, with fluctuations, climbed higher. Three developing regions (Central and Eastern Europe, Latin America and the Caribbean, and sub-Saharan Africa) increased the share of GDP going to education by 1.0–2.2 percentage points from 1970 to 2005, bringing them into the range of 4–5 percent of GDP, similar to the spending range of high-income countries. Sub-Saharan Africa in particular consistently increased its share of GDP going to education over the period, demonstrating a quite extraordinary shift from 2.9 to 5.1 percent of GDP.<sup>18</sup> South and West Asia increased its share during the period also but much more modestly.

Perhaps unexpectedly, the East Asia and the Pacific poorer-country group not only began the period with the lowest level of GDP committed to education but also remained at essentially

■ Differences in public funding for education by country income levels have diminished quite markedly over time. ■

the same level throughout the period. In part, this situation may reflect the fact that eight of the nineteen countries in the region (including China and Indonesia, the two largest countries) continued to charge tuition for public primary education at least as recently as 2006 (UNESCO 2007a: 112). However, in recent years, China has announced a plan to significantly increase the portion of its economy committed to education.<sup>19</sup> Central Asia is the other developing region exception to increased proportional resources to education; its public funding for education has fallen dramatically in the postcommunist era, which does not bode well for the future development of human potential.

The Dakar Framework for Action, agreed upon at the World Education Forum in 2000, declared that “no country shall be thwarted from meeting the [Education for All] goals due to a lack of resources” (UNESCO 2007a: 3). It seems highly improbable that expenditure shares of GDP in the 1–3 percent range, which characterized about thirty countries between 2000 and 2005, are adequate to provide universal primary education (much less good-quality primary education) with even modest attention to other levels of education. The push in recent years for higher intake and completion rates has strained the economic resources of low-income countries, and some have been unable or have failed to

respond with public support. For a sense of the contrast, note that the lower secondary low-enrollment rate countries discussed earlier spend, on average, less than 2.5 percent of their GDP on education, whereas the African countries with high primary net enrollment rates average over 5 percent.

### Public spending per student

We turn now from aggregate public spending to public spending per student, typically expressed as the public expenditure for one year of education for one student as a percentage of GDP per capita. Spending per student relative to GDP per capita is a useful comparative measure because salaries, which vary with GDP per capita, on average make up 75 percent of total education spending from preprimary through upper secondary levels.<sup>20</sup> Other current spending (e.g., for instructional materials) is on average 15 percent of the total, and capital spending constitutes the balance.

Table 3.7 provides a picture of how public per-student expenditure patterns varied by level and global region in 2005. We see, for example, that high-income regions spent, on average, about 20 percent of GDP per capita to educate each primary student, whereas some developing regions spent a considerably smaller portion of GDP per capita on each primary

■ The push in recent years for higher intake and completion rates has strained the economic resources of low-income countries. ■

■ Per-student expenditures vary widely across countries and education levels. ■

**Table 3.6 Public spending on education as a percentage of GDP (1970–2005)**

	1970	1980	1990	2000	2005
Arab States	3.8	3.2	4.8	5.0	4.0
Central and Eastern Europe	3.6	3.5	3.8	3.8	4.6
Central Asia				3.3	2.5
East Asia and the Pacific (Poorer)	2.2	2.2	2.0	2.3	2.1
Latin America and the Caribbean	3.2	3.2	3.1	4.3	4.8
South and West Asia	2.9	3.3	3.4	4.0	3.4
Sub-Saharan Africa	2.9	3.7	4.9	4.8	5.1
East Asia and the Pacific (Richer)	3.0	4.0	4.1	3.8	3.7
North America and Western Europe	5.9	6.0	4.8	5.0	5.3
World	4.9	5.0	4.4	4.5	4.8

Note: Used estimation and 5-year moving averages for East Asia and the Pacific (Poorer) to adjust for missing data for China in 2000 and 2005 and for Indonesia in 2000; excluded Central Asia in 1990 and earlier because of much missing data.

Source: IFs Version 6.12 using UIS and WDI data.

**Table 3.7 Public expenditures per student as percent of GDP per capita at PPP (2005)**

	Primary	Secondary	Tertiary
Arab States	17.0	26.0	66.9
Central and Eastern Europe	17.3	21.7	19.7
Central Asia	8.5	9.1	10.6
East Asia and the Pacific (Poorer)	8.6	8.8	17.5
Latin America and the Caribbean	14.7	14.9	32.8
South and West Asia	9.0	16.4	55.8
Sub-Saharan Africa	14.6	26.3	175.5
East Asia and the Pacific (Richer)	20.8	21.9	17.4
North America and Western Europe	19.8	24.0	27.4
World	14.1	19.0	46.2

Source: *IFs Version 6.12 using UIS and WDI data.*

■ **Societies in relatively early stages of expanding a particular education level generally face high cost structures at that level.** ■

■ **Education systems around the world frequently display a complex intermingling of public and private auspices and funding.** ■

student. We also see from Table 3.7 that public per-student expenditures tend to rise across the levels of education, and dramatically so in some developing regions.

One of the burdens experienced by countries struggling to expand education is that costs per student tend to be higher at low rates of enrollment than at high rates of enrollment. In Table 3.7, the expenditures per student at the tertiary level in sub-Saharan Africa illustrate that pattern most vividly. Reasons for this phenomenon include the costs associated with building new physical and administrative infrastructures and the costs of employing teachers. Teachers may be especially expensive in the absence of a well-developed system (secondary or above) for teacher preparation, as demand for their services frequently outstrips supply when an education system is in the early stages of expansion. Thus, societies that are still in relatively early stages of building their primary systems and that do not have significant secondary systems generally face high cost structures.

As GDP per capita rises, enrollment rates at all levels tend to rise as well. Because growth in GDP per capita pushes per-student spending up even as increases in enrollment rates push per-student expenditures down, the patterns of spending per student, especially for low- and middle-income societies, can be greatly varied. However, as societies become

wealthier and enrollment rates reach quite high levels, public spending per student tends to stabilize. Higher enrollment levels suggest both economies of scale and experience in education delivery, either or both of which can mitigate continued increases in per-student costs. We can see in Table 3.7 that the two countervailing forces (the upward pressure of income growth versus the downward relief from enrollment rate growth) are still very active at the tertiary level.

### The Role of Private Education

Private education plays a perhaps surprisingly large role in many global regions, and in some parts of the developing world it is playing a growing role. Data concerning private education are limited—especially with respect to its change over time—but we have at least some sense of its extent and of the distinctions between private auspices and private funding.

#### Private enrollment

UNESCO (2007a: 46) distinguishes between public and private education “according to whether a public agency or a private entity has ultimate control over the institution, regardless of the source of funds.” Most countries now provide data that distinguish the relative proportions of students in public and private schools at the primary and secondary levels (see Table 3.8). The percentages of enrolled students in private institutions in 2005 reflect very different regional patterns both within and across the levels.<sup>21</sup> The very high secondary percentage in South and West Asia especially reflects the prevalence of private upper secondary education in the region (e.g., in recent years over 90 percent of secondary students in Bangladesh and over 50 percent in India).

#### Private spending

As the UNESCO distinction between public and private institutions on the basis of auspices rather than funding suggests, education systems around the world frequently display a complex intermingling of public and private auspices and funding. Particularly in developing regions, public funds frequently support, in whole or in part, the education costs of students in private schools.<sup>22</sup> In fact, whereas local communities, individuals, or private entities manage both

types, UNESCO (2007a: 46, 48) distinguishes between “government-dependent private schools” and “independent private schools” based on the proportion of government funding they receive. In some countries, many of the independent private schools are affiliated with religious organizations, whereas many of the government-dependent private schools have been established specifically to increase capacity in education systems.

The complex connections between public and private auspices and funding undoubtedly create opportunities in many instances for the expansion of education and for education that is responsive to the needs of local communities. At the same time, a heavy reliance on private institutions can also be an indication of public systems that are not performing adequately (see Box 3.3).

Just as enrollment in a private institution does not necessarily indicate family responsibility for costs (particularly at the primary level), neither does enrollment in a public institution necessarily indicate that students and families pay no tuition. Despite the Dakar Framework’s stipulation regarding free and compulsory primary education, thirty-five countries still officially levied private tuition fees at public primary schools in 2006, and other countries may have unofficially required them as well (UNESCO 2007b: 112). However, thirteen other countries abolished tuition fees at the primary level between 2000 and 2006.<sup>23</sup>

UIS reporting of the private funding of education began with 1999 data. The reporting remains extremely spotty; in 2005, only 47 of the 207 countries in the UIS database included any private funding data, and many of those provided only partial data (e.g., aggregated across all levels or specified for some levels but omitted at others). However, it is clear that for some countries, private funding is substantial.

For the countries reporting a total private funding figure in 2005, private funding was 1.6 percent of GDP. In comparison with the global public funding average of 4.8 percent of GDP, this suggests that private support for education might be as high as 25 percent of total education funding (although countries with large private shares are probably more likely to report). For the countries reporting private expenditures by education level,

**Table 3.8 Enrollment in private institutions as percent of total enrollment (2005)**

	Primary	Secondary
Arab States	16	15
Central and Eastern Europe	1	2
Central Asia	1	1
East Asia and the Pacific (Poorer)	12	21
Latin America and the Caribbean	13	21
South and West Asia	17	40
Sub-Saharan Africa	11	13
East Asia and the Pacific (Richer)	3	21
North America and Western Europe	11	14
World	8	16

Note: Values are 5-year moving averages.

Source: IFs Version 6.12 using UIS data.

private funding, on average, represented 0.1 percent of GDP at the primary level, just over 0.2 percent at the secondary level, and about 1.2 percent at the tertiary level. Clearly, at least for the countries reporting, tertiary education receives the bulk of private funding, consistent with the social value that governments place on providing basic education and with the increasing private value attributed to higher education.

■ **Thirty-five countries still officially levied tuition fees at public primary schools in 2006.** ■

**Box 3.3 Public responsibility and private education: A perspective from the field**

*Too often dysfunctionality characterizes public systems of formal education. In response, private players step in to meet the demand for quality education, resulting in an indiscriminate mushrooming of unregulated private schools as well as teacher training institutions. This movement towards privatization as a direct consequence of a dysfunctional public system of education is likely to reduce the share of state funding in elementary education, thereby institutionalizing prevalent inequities in terms of access to quality education. This too often results in the slow but sure erosion of state responsibility and the failure to create sustainable systemic provisions for basic education.*

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Maulana Azad Centre for Elementary and Social Education  
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■ The limited data available suggest that private funding for education might be as high as 25 percent of total education funding in some regions. ■

■ The education levels of adult populations fundamentally shape social change. ■

The geographic pattern of the countries reporting private funding clearly seems to suggest that it is concentrated in higher-income countries and regions.<sup>24</sup> However, all thirty-five of the countries still charging tuition for public primary education in 2006 were in developing regions of the world, and private funding data for only four of them are included in the UIS database. Obviously, there are a number of countries in developing regions where private funding is contributing to education but is not yet included in administrative reporting to UIS.

The very spotty reporting not only makes it hard to determine the extent of private funding but also makes it hard to know how it is used. If such funding has been necessary in order to create capacity for rapidly expanding access, the dynamics and outcomes are very different than if it is used primarily to provide higher quality education for those who can afford to pay to attend elite schools. In the first case, as capacity is built and government resources increase, tuition fees can reasonably be abolished. In the second case, a two-tier system is created that perpetuates social distinctions and unequal opportunities.

It is important to note that IFs forecasts of costs and resources for expanded participation

in education are forecasts of public sources only. The discussion of the IFs education model in the next chapter describes some of the implications of this approach, which is made necessary by the sparse data on private funding.

### Adult Populations: Education Attainment

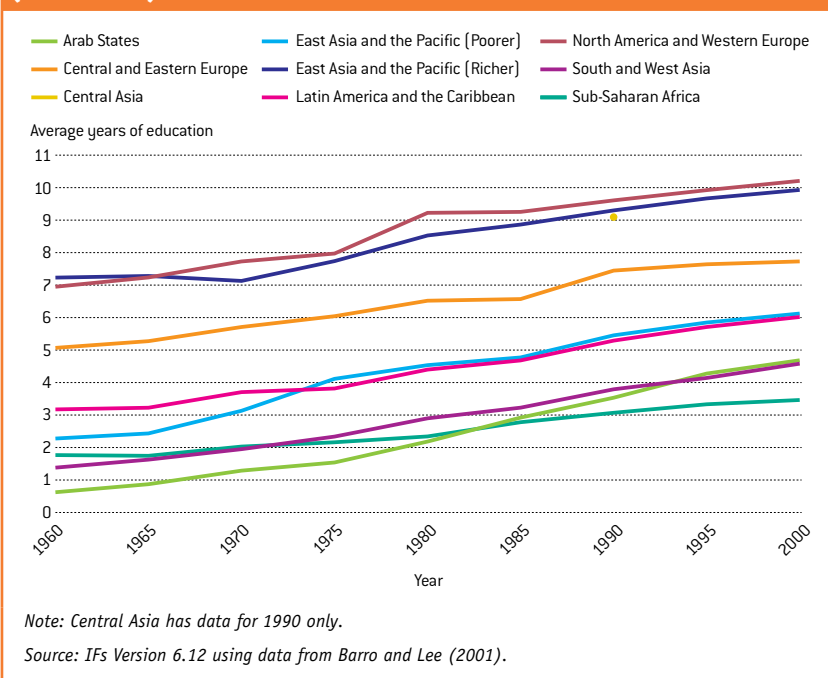
Students in school become adults in the workforce and in society more broadly, and the education levels of the adult population fundamentally shape social change. The education level of women in their childbearing years affects fertility rates, education of those in the workforce affects economic productivity, and education of voters of all ages has important implications for the stability of democracy. Hence, an understanding of education attainment has great importance for us.

The transition of adult populations to high levels of education attainment lags well behind the transition in participation rates of school-age children. Given the very low rates of participation in formal education among today's older adults in many countries—as well as life spans that encompass multiple generations—the playing out of the education transition across a country's adult population requires more than a century. Wils (2002: 3), for example, estimated that the “rise from 10 percent adult literacy to 90 percent takes from 60–100 years” and that the “rise from 10 percent adult primary education (and even less secondary) to 90 percent secondary education among adults takes about 150 years or 7 generations.”

### Average years of education

As discussed in Chapter 2, one of the most common measures of education attainment is the average years of education completed by those age twenty-five or older or, alternatively, of those age fifteen or older.<sup>25</sup> We use fifteen or older in this analysis in order to see changes in education attainment with less of a time lag and also because adult roles and responsibilities to work, family, and community frequently begin before age twenty-five. Barro and Lee (2000, 2001) and Cohen and Soto (2001, 2007) have compiled such information, most often using census survey data supplemented by estimations from UNESCO enrollment data.<sup>26</sup> Despite using

**Figure 3.14 Average years of education in population age 15 and older (1960–2000)**



similar data sources, the two teams arrived at somewhat differing results due to differences in methodology. Although both datasets are in the IFs historical series, we primarily use the Barro and Lee dataset in analyses because it includes separate measures for males and females, allowing the representation of levels of education attainment by age and sex.

Figure 3.14 shows the growth, since 1960, of average years of education completed by those fifteen years of age and older across the UNESCO country groupings. The figure suggests distinct sets of regions. First, the richer countries of East Asia and the Pacific and North America and Western Europe stand well apart from all other regions, maintaining over time their absolute lead in education years. (It is noteworthy that the richer East Asia and the Pacific region had an education stock level similar to that of North America and Western Europe already in 1960, early in the development surge of Japan and ahead of the development surges of the Republic of Korea and Singapore.) Second, South and West Asia, sub-Saharan Africa, and the Arab States stand out as the regions whose adults have had the fewest years of education throughout the period. Yet the Arab States, which began the historical period with the lowest average years of education, have progressed most rapidly.

With the exception of the Arab States, all regions have advanced roughly in parallel—albeit from very different starting points. The result is that the absolute difference in number of average years across regions has not changed much since 1960. However, in addition to average years increasing in every region, there has been some relative convergence in positions. In 1960, the relative distance between the region with the highest average education years and the region with the lowest was a ratio of over 7:1 for North America and Western Europe compared to the Arab States. In 2000, the greatest distance was a ratio of 4:1 for North America and Western Europe compared to sub-Saharan Africa.

#### **Adult education by completed level**

Table 3.9 adds to the description of education attainment by displaying the proportions of adult populations that had completed different levels of education across the same time period. Most fundamentally, the progress in nearly all regions at all levels suggests that a global education revolution, not just a global education transition, is under way. Yet it is also striking that, at the beginning of the twenty-first century, less than 50 percent of the population fifteen years of age and over in the Arab States, South and West Asia, and

● **Average years of education have increased substantially in all regions since 1960; progress has been most rapid in the Arab States.** ●

● **Although change is rapid nearly everywhere, the advance of education attainment across the life spans of adult populations is in its early stages.** ●

**Table 3.9 Completed education by level in population 15 years of age and older (1960–2000)**

	Primary			Secondary			Tertiary		
	1960	1980	2000	1960	1980	2000	1960	1980	2000
Arab States	6.4	20.4	42.2	0.9	5.7	15.2	0.1	1.2	3.3
Central and Eastern Europe	60.7	76.3	84.1	13.0	17.0	28.8	1.8	3.9	8.7
Central Asia									
East Asia and the Pacific (Poorer)	24.4	44.1	59.3	3.2	10.5	17.9	0.7	0.8	2.5
Latin America and the Caribbean	27.4	37.8	49.9	5.8	11.0	19.6	0.9	2.0	4.8
South and West Asia	10.6	24.6	37.2	0.8	7.4	11.2	0.1	0.7	2.0
Sub-Saharan Africa	14.3	18.1	27.3	1.8	1.9	4.5	0.2	0.3	0.9
East Asia and the Pacific (Richer)	70.1	78.1	87.0	28.2	31.1	44.8	2.6	7.5	12.0
North America and Western Europe	73.3	82.0	85.5	18.1	24.0	50.5	3.6	7.5	15.1
World	39.0	46.5	55.9	9.0	12.0	21.1	1.2	2.4	4.8

Note: No data are available for Central Asia.

Source: IFs Version 6.12 using data from Barro and Lee (2001).

■ In 2000, even in North America and Western Europe, only 50 percent of adults had completed a secondary education. ■

sub-Saharan Africa had a primary education (and just 50 percent in Latin America and the Caribbean); that less than 20 percent in these regions and in the poorer countries of East Asia and the Pacific (and just 20 percent in Latin America and the Caribbean) had completed a secondary education; and that in all developing regions, 5 percent or less had completed a tertiary education. Although change nearly everywhere is rapid, the advance of education attainment across the life spans of adult populations remains in its early stages (note, for example, that in 2000, only 50 percent of all adults in North America and Western Europe had completed a secondary education).

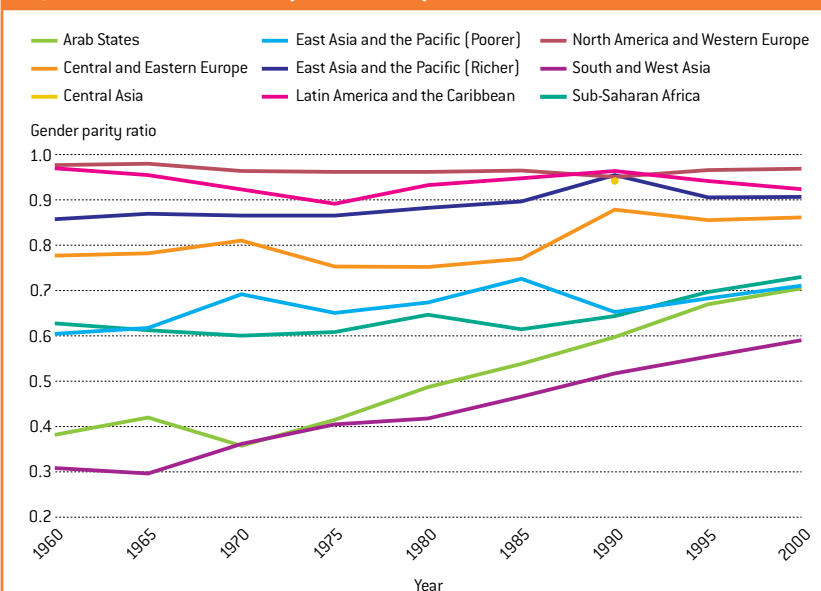
### Gender balance of adult education attainment

Figure 3.15 demonstrates that rough gender parity, as measured by average years of education, has characterized adult populations in Latin America and the Caribbean and in North America and Western Europe for a long period. Among the other regions, the two with the least parity in 1960 (the Arab States at .38 and South and West Asia at .31) have progressed most rapidly since that time.

The differences in most regions between the gender balance patterns among adults shown in Figure 3.15 and those in current student populations (see, again, Figure 3.2 and Table 3.3) are striking. The gender ratio for years of education in South and West Asia among individuals fifteen and older was only 0.59 in 2000, compared to gender parity values above 0.90 for enrolled students at the primary level, over 0.80 at the secondary level, and 0.74 (with a rapid rise in recent years) at the tertiary level. Education among adults in the transitional fifteen to twenty-four age category is also now quite quickly moving toward gender parity.

Whereas Figure 3.15 shows changes in gender parity indices of education attainment across time in global regions, Figure 3.16 shows how that relationship looks across countries in recent years and how it relates to the total level of education in a population. Overall, it appears that the gender balance for education in the adult population begins to reach equality when that population has about eight to ten years of education. The substantial contemporary movement toward gender parity in enrollments should, however, steadily reduce that level and shift upward the left-hand tail of the curve in Figure 3.16. The current gender patterns of adult education levels are, in essence, legacies of generations of imbalance in access to school.

**Figure 3.15 Gender parity ratio of average years of education in population 15 years of age and older (1960–2000)**



Note: Removed 1970 from Latin America and the Caribbean; data for Central Asia are available only for 1990.

Source: IFs Version 6.12 using data from Barro and Lee (2001).

### Literacy

The standard definition of literacy is the portion of the population “who can, with understanding, read and write a short, simple statement on their everyday life” (UNESCO 2007b: 233). Not surprisingly, literacy is highly correlated with average years of education. By the time an adult population has attained an average of eight to nine years of formal education, its literacy rate will generally be over 90 percent.<sup>27</sup> However, literacy also can be acquired in other ways. Similarly, because of differences in education quality and in learner abilities, school participation is not a guarantee of literacy.<sup>28</sup>

What is clear, however, is that global literacy is advancing rapidly.<sup>29</sup> Figure 3.17 shows the progression of adult literacy by UNESCO region between 1970 and 2005. Three regions now have literacy rates of 97 percent or above: Central and Eastern Europe, Central

Asia, and North America and Western Europe. Three more are approaching universal literacy, with rates between 90 and 94 percent: the poorer countries of East Asia and the Pacific (demographically dominated by China), the richer countries of East Asia and the Pacific, and Latin America and the Caribbean. The remaining three developing regions—the Arab States, South and West Asia, and sub-Saharan Africa—have much lower literacy rates but have progressed almost linearly, in each case climbing above 60 percent. And differences in literacy rates across regional groupings of countries have narrowed markedly since 1970, from a range of 28 to 95 percent at that time to a range of 62 to 99 percent in 2005.

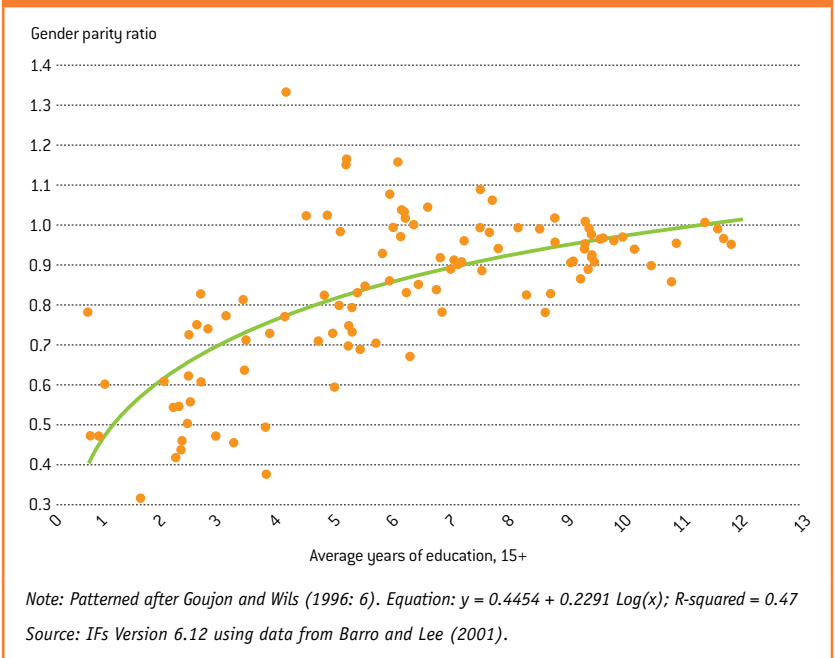
One of the most interesting aspects of the global education and literacy transition is going to be the relationship between the rapid transformation of education levels and human development systems more generally. Although the promise of more educated and literate populations is great, there will be challenges as well, including possible conflicts between more-educated younger generations and less-educated older generations; in addition, some countries (especially very poor ones) may not have the systems in place to take advantage of more educated populations (EPDC 2005: 6–7). Chapter 8 returns to these and other “forward linkages” or implications of education.

### Conclusion

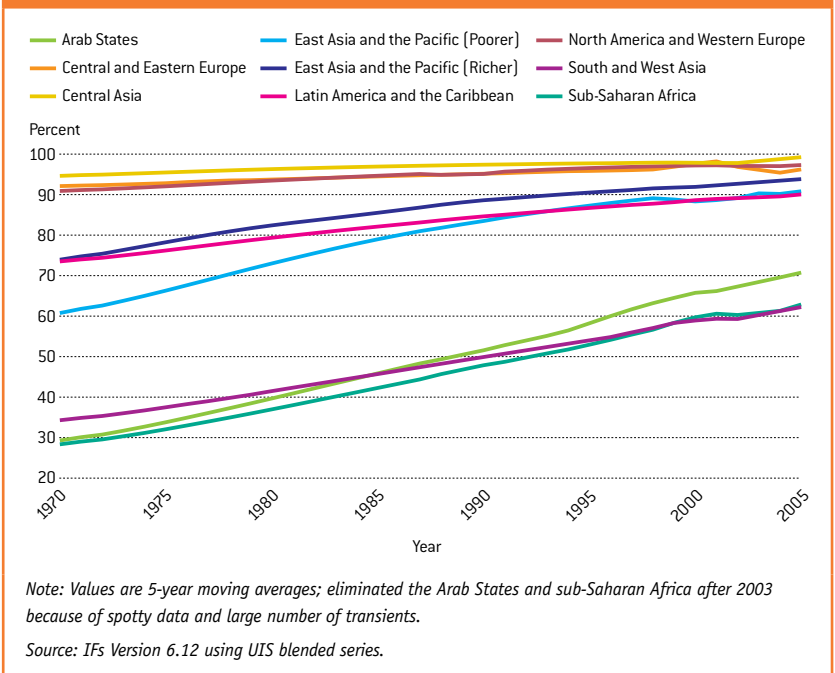
What is referred to as the education transition is actually a set of interrelated transitions, the first of which is an increase in education participation or student flows. The 1960s and 1970s were a period of especially rapid growth in student enrollment rates and numbers. Many countries struggled to maintain those gains during the 1980s and the first half of the 1990s, but increases in enrollment rates have accelerated again in recent years.

Ultimately, the transition that matters most is in the level of education attainment within adult populations. The transition of societies from low to high levels of education attainment is an especially slow process with at least a century-long scale; more realistically, it is a process that occurs across centuries. By historical standards, the transition in adult education attainment is dramatically under

**Figure 3.16 Relationship of gender parity ratio to average years of education of population 15 and older (2000)**



**Figure 3.17 Literacy rates of population age 15 and older (1970–2005)**



way around the world, reflecting the outcomes of great increases in school participation rates since the mid-1960s.

A third transition is that involving gender parity. The transition from low to equal participation rates for females has

- *Global literacy is advancing rapidly, and differences in literacy rates across regional groupings of countries have narrowed markedly.* ■
  
- *Although the promise of more educated and literate populations is great, education and literacy create challenges as well.* ■

been progressing rapidly and is substantially accomplished at lower levels of education in most of the world. There is, however, much work to do in completing that transition. And an emerging concern is an increase in reverse gender imbalance. The enrollment ratio of girls to boys now exceeds 1.03 in a number of countries at the secondary and tertiary levels, and especially at the tertiary level in upper middle-income and high-income countries.

Most fundamentally for this volume, although all of these interacting education transitions have been playing out at a significant pace, there is obviously much more to come. At least three sets of circumstances cause us to raise the question of a possible or probable slowing of progress.<sup>30</sup> The first is that some slowing of progress over time occurs because of saturation effects—countries typically have difficulty achieving the final step from 90 percent to 97–100 percent, especially when there are children who are especially hard to reach or who are socially excluded due to remote location, extreme poverty, physical or mental handicaps, or ethnic and religious divisions.

Domestic economies and educational budgets may also be a factor in slowing enrollment rate growth over time. The very success of education advance to date has carried with it increasing expenditure burdens for low-income countries, particularly as increased numbers of students have completed primary education and now demand the opportunity to pursue secondary education. Expenditures of low-

income countries on education as a portion of GDP have grown and are now much closer to the level of high-income countries than they were in 1970. In the process, the headroom for further expansion of spending has almost certainly been reduced, at the same time as the need to address quality issues—which often translates into higher per-student costs—is attracting widespread attention. The result for many countries may well be increased constraints on rates of enrollment growth, exacerbated in many cases by country-specific circumstances as divergent as droughts and armed conflicts.

Third—and framing the economic issues more broadly—the condition of the global political economy cannot help but affect much that happens in all countries and especially in lower-income ones. The financial crisis of 2008 and the major global downturn that it produced could continue to constrain public and private resources for education for several years.

There is at least one piece of good news for the future—demography. Perhaps the most significant factor in limiting growth in enrollment rates in many low-income countries and regions in recent decades was the surge in school-age children, not just in absolute numbers but also as a proportion of the overall population. However, current demographic trends, if they continue, should serve to facilitate rather than constrain education’s advance. Even in the sub-Saharan Africa subset of countries with the highest fertility rates, the youth dependency ratio is beginning to decline.

1 Some longer-term historical reviews of global educational change do exist. They include Meyer et al. (1977); Fredriksen (1980); Wils and Goujon (1998); Clemens (2004); Wils, Carrol, and Barrow (2005); Bloom (2006); and Lutz et al. (2007).

2 The relatively straightforward measure of comparative female-to-male enrollment rates is obviously only one indication of the extent of

gender parity in education. A volume edited by King and Hill (1993) covered many other aspects of the gender gap and analyzed the forces that perpetuate gender disparities and the broader socioeconomic implications of such disparities. More recently, Unterhalter (2003) critiqued the use of comparative female-to-male enrollment rates as an inadequate measure of the extent of

true educational parity and suggested evaluative approaches more congruent with a human capabilities framework. Lewis and Lockwood (2006) also adopted a broader perspective to evaluate recent progress toward gender parity, focusing on multiple sources of exclusion and strategies for addressing them.

- 3 One such anomaly is seen in Central and Eastern Europe, where gender parity in secondary net enrollment appeared to decrease in 2005, whereas, in fact, parity ratios were overstated in earlier years because Turkey—with a 0.85 ratio in 2005—was missing from prior years' data.
- 4 At the secondary level, the only transition or survival flow rate provided by UIS is the transition to secondary (in actuality, the transition to lower secondary). However, UIS provides grade-by-grade enrollment numbers from which the IFs team calculates lower secondary survival rates and upper secondary transition and survival rates.
- 5 We also consistently use 2000 constant dollars throughout the volume.
- 6 Many of the countries of Central and Eastern Europe and of Central Asia did not exist within the configuration of the former Soviet Union, Czechoslovakia, and Yugoslavia. Because it is difficult (and sometimes impossible) to analyze them prior to the 1990s, they are absent from a number of the longer historical series in this chapter.
- 7 The Polity Project scale is not as well-known or widely used as the Freedom House measure of freedom (which we use in Chapter 8 to explore forward linkages from education), but we use it here because of the availability of data and estimates over a long historical period. Ted Robert Gurr initiated the Policy Project, and Monty G. Marshall now directs it. Its data are available at <http://www.systemicpeace.org/polity/polity4.htm>.
- 8 The Transparency International Corruption Perceptions Index (CPI) and reports based on it are available at [http://www.transparency.org/policy\\_research](http://www.transparency.org/policy_research).
- 9 Information about the project and data are available at <http://globalpolicy.gmu.edu/ptif>. As with the Polity Project measure of extent of democracy described earlier, we use the Political Instability Task Force measures of political instability here because of the long time series of the data. In Chapter 8, we turn to the more widely known Fund for Peace failed state index to establish a forward linkage between education and political stability.
- 10 We refer here to secondary enrollment rates that combine the lower secondary and upper secondary levels into total secondary enrollments. At the separate lower and upper secondary levels, only gross enrollment data are currently available.
- 11 Outside UNESCO's sub-Saharan African grouping, only Djibouti (physically in Africa), at 34 percent, was below 60 percent primary net enrollment in 2005.
- 12 Within the fourteen countries in the higher-enrollment group, seven had net primary enrollment rates of 90 percent or above in 2005; the highest rate was 96 percent in São Tomé and Príncipe.
- 13 All three sub-Saharan African country groupings are showing some gains in tertiary gross enrollment rates. In 1970, the tertiary enrollment rate in the high primary education grouping was 1.8 percent, and it was less than 0.2 percent in the medium and lower education groupings. By 2005, the respective rates were 7.5, 4.3, and 3.0.
- 14 UNESCO (2007a: 8–14) discussed the two measures and their relationship.
- 15 Some authors begin their analysis of education expenditure patterns in 1960 (e.g., Coombs 1985: 139–143). However, data are available for just 71 countries that year, compared to 126 in 1970. We use the later date in Figure 3.12 because the magnitude of composition changes in the country sets presents an exaggerated view of change during the decade of the 1960s. In fact, despite regional goal-setting for education expansion, increases in school-age populations, and increases in enrollment rates, education expenditures as a percent of GDP in the low-income and lower middle-income countries reporting in both 1960 and 1970 show little change. The average expenditures of the eighteen low-income countries went from 1.7 percent of GDP to just 1.8 percent over the decade, and for the lower middle-income countries (sixteen reporting), the average changed only from 2.6 percent of GDP to 2.8 percent. Far larger changes occurred in the higher income groups. For the ten upper middle-income countries, the average went from 1.8 percent of GDP to 2.9 percent, and for the twenty-five high-income countries reporting both years, the average went from 4.0 to 5.3 percent of GDP.
- 16 Both China and Indonesia have historically allocated smaller than average percentages of GDP to education (about 2.0 percent). Neither country reported in 2000, thereby artificially inflating the 2000 value for lower middle-income countries. In 2005, Indonesia reported 2.9 percent (a significant increase from its earlier rates), but China again did not report, so the lower middle-income group value presumably remains inflated in 2005, although to a lesser extent than in 2000.
- 17 Birdsall, Levine, and Ibrahim (2005: 34) indicate that bilateral official development assistance for education rose from about 1 percent of the GDP of developing countries in the 1970s to as much as 4–6 percent by the late 1990s. That rise seems improbable, given that it would have required \$3.6 billion simply to cover 4 percent of the GDP of sub-Saharan Africa. The numbers probably refer to Least Developed Countries (LDCs) only, for which 4 percent of GDP in 2000 would have been a bit below \$3 billion.
- 18 In fact, a number of countries with lower public spending patterns were absent from the 2005 data; the real shift was very substantial but almost certainly not as great as these data suggest.
- 19 See, for example, the first page of the March 1, 2006, edition of *China Daily*, available at [www.chinadaily.com.ca/english/doc/2006-03/01](http://www.chinadaily.com.ca/english/doc/2006-03/01).
- 20 This figure is calculated from UIS data that report expenditures by category combined across all levels of education from preprimary through tertiary.
- 21 UIS does not include enrollment in private versus public tertiary institutions in its published data series.
- 22 To the extent that public funds are allocated directly to private schools, UIS reflects them in public expenditure data (i.e., both education expenditures as a percent of GDP and education expenditures per student as a percent of GDP per capita include such support).
- 23 The thirteen countries, identified in the 2008 Education for All Global Monitoring Report, were Yemen (Arab States); Cambodia, Timor-Leste, and Vietnam (East Asia and the Pacific); and Benin, Burundi, Ghana, Kenya, Lesotho, Madagascar, Mozambique, United Republic of Tanzania, and Zambia (sub-Saharan Africa). The reference here is specifically to tuition fees, and does not reflect fees far more commonly levied for such things as books, uniforms, and transportation costs.
- 24 By region, the countries that reported private funding in 2005 were distributed as follows: Arab States—1; Central and Eastern Europe—9; Central Asia—1; East Asia and the Pacific (Poorer)—1; Latin America and the Caribbean—6; South and West Asia—1; Sub-Saharan Africa—1; East Asia and the Pacific (Richer)—4; and North America and Western Europe—17.
- 25 Analysts sometimes define educational attainment in terms of education level undertaken but not necessarily completed, and such a definition was used by Wils in estimating the transition period from 10 percent primary participation to 90 percent secondary participation, cited earlier. However, our analysis focuses on completed activity.
- 26 Barro and Lee (2000) have at least one data point for each of 142 countries and complete datasets at five-year intervals from 1960 to 2000 for 109 countries. Cohen and Soto (2001) include 95 countries for the same time period and also provide forecasts to 2010.
- 27 The relationship between years of education and literacy rates, which is generally logarithmic, has an R-squared of over 0.8.
- 28 For many years, UNESCO relied on country reports of education attainment levels as a proxy for literacy, but it has recently shifted to estimates based on self-reporting in household surveys because of the multiple paths to literacy and because of other issues associated with the former proxy measure. We much appreciate the explanations of the change in methodology in personal communications from José Pessoa of the UIS.
- 29 To get a general sense of the progression of literacy over time, we have blended the two UNESCO series in the IFs database by adjusting the earlier series to be compatible with values from the more recent series. Specifically, we have used the ratio of values from the newer series to the older one (in the same year when possible or as extrapolated from the older data when necessary) to adjust all country-years of the older data when new and old values for the same year differ by more than 2 percentage points.
- 30 It is not unusual for a period of consolidation to follow periods of sustained progress and growth more generally, even in the absence of specifically identified constraints. Such periods of consolidation often serve as a plateau or “takeoff point” for a subsequent growth cycle.