

MENA DEVELOPMENT REPORT

The Road Not Traveled

Education Reform in the
Middle East and Africa



THE WORLD BANK

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The Road Not Traveled Education Reform in the Middle East and North Africa



THE WORLD BANK
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Foreword

Education is at the crossroads for the future of the Middle East and North Africa (MENA). It plays a crucial role in promoting poverty alleviation and economic growth, both at national and at household levels. It reflects the aspirations of the people for a successful integration into the global economy in an ever changing world. Various stakeholders in the region regard education as their most important development challenge, and education reform is at the top of the reform agenda of many regional governments.

Education is also a strategic priority for the World Bank in the MENA region and worldwide. The preparation of this report has benefited from the experience accumulated from Bank collaboration with the region in education—a relationship that has lasted for more than 40 years. Tunisia received in the early 1960s the first World Bank loan for any education project. The preparation of this report has also benefited from the support of a network of scholars, practitioners, and opinion leaders, within and outside the region, who applied their knowledge and expertise to the challenge of education in MENA.

This report traces the successes and the challenges facing the development of education to identify promising education reform options for the future. It is grounded in a new paradigm that is expected to increase the effectiveness of reform efforts: It emphasizes the central role of *incentives* and *public accountability* to meet sector goals. Most reforms in the region have attempted to *engineer* changes in the education system: building schools, hiring teachers, and writing curricula. The success of future reforms will require instead changes in the *behavior* of key education actors—teachers, administrators, and educational authorities. This is the road not traveled in the education sector.

Since the early 1960s, the MENA region has registered tremendous gains in terms of more equitable access to formal education. In the 1950s, very few children, particularly girls, were attending formal schools. Now

most countries in MENA register full or close to full enrollment in basic education and secondary and tertiary education rates equivalent to countries in other regions at comparable levels of development. Moreover, the region no longer has severe gender disparities in secondary and tertiary education. As a result, most MENA countries have been able to achieve a significant decline in fertility and infant mortality, as well as a rapid increase in life expectancy. The World Bank is proud of being a partner of the region over the course of this impressive evolution.

Notwithstanding these successes—and the considerable resources invested in education—reforms have not fully delivered on their promises. In particular, the relationship between education and economic growth has remained weak, the divide between education and employment has not been bridged, and the quality of education continues to be disappointing. Also, the region has not yet caught up with the rest of the world in terms of adult literacy rates and the average years of schooling in the population aged 15 and above. Despite considerable growth in the level of educational attainment, there continues to be an “education gap” with other regions, in absolute terms.

In addition, new challenges are on the horizon. First, and most important, the MENA region now has one of the largest cohorts of young people in the world, in proportion to its population. As this cohort works its way through the education system, it will generate unprecedented demands for new learning opportunities and even stronger expectations of better results. Second, globalization has led to a demand for a different mix of skills and competencies, and this will influence the content and nature of what education systems should provide. Finally, MENA countries are already spending a fairly large share of public resources on education—additional demand for better services will require greater efficiencies and a diversification of funding.

Of course education reform alone cannot be the answer for all these challenges. In addition, the right conditions need to be created for education reform to have its full effect. This report examines one of the most critical prior conditions—a well-functioning labor market. In the case of MENA, the relevant labor market extends much farther than the confines of any country or even the region because of important migration trends and opportunities. This report argues that reforms in this area will need to be implemented hand-in-hand with those for the education system proper.

Having succeeded in expanding the education systems to include most eligible children—boys and girls—the MENA region is now ready to travel a new road. While the exact configuration of this new road will not be the same for each country, all countries, irrespective of their initial conditions, will require a shift from “engineering inputs” to “engineer-

ing for results,” along with a combination of incentives and public accountability measures, as well as measures to improve labor market outcomes. It is our hope that this report will serve as an effective guide to these outcomes. In traveling the road ahead, the Bank looks forward to continuing to walk together with the MENA region, in a mutually beneficial relationship.

Daniela Gressani

Vice President, Middle East and North Africa Region
The World Bank

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Abbreviations

CAPMAS	Central Agency of Public Mobilization and Statistics
ELMS	Egypt Labour Market Survey
FDI	foreign direct investment
GCC	Gulf Co-operation Council
GDP	gross domestic product
GER	gross enrollment rate
GNI	gross national income
GPI	gender parity index
ICT	information and communication technology
IEA	International Association for the Evaluation of Educational Achievement
ILO	International Labour Organization
IPA	Index of Public Accountability
ISET	Instituts Supérieurs des Etudes Technologique
KEI	Knowledge Economy Index
LMIC	Lower Middle Income Countries
LSMS	Living Standards Measurement Study
M&E	monitoring and evaluation
MENA	Middle East and North Africa
MoE	Ministry of Education
NCLB	No Child Left Behind
NER	net enrollment rate
NGO	nongovernmental organization
OECD	Organisation for Economic Co-operation and Development
OSCY	out-of-school children and youth
OTRI	overall trade restrictiveness index
PAA	Prueba de Aptitud Academica
PCR	primary completion rate
PETS	Public Expenditure Tracking Survey

PIRLS	Progress in International Reading Literacy Study
PISA	Programme for International Student Assessment
POEA	Philippines Overseas Employment Administration
PPP	purchasing power parity
PTA	parent–teacher association
PTR	pupil-teacher ratio
SAT	Scholastic Assessment Test
SIP	school improvement plan
SMEs	small and medium enterprises
SOE	state-owned enterprise
SSA	school self-assessment
TFP	total factor productivity
TIMSS	Trends in International Math and Science Study
TVET	technical and vocational education and training
UIS	UNESCO Institute for Statistics
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children’s Fund
UPE	Universal Primary Education
USAID	United States Agency for International Development
VET	vocational education and training
WDR	<i>World Bank Development Report</i>
WTO	World Trade Organization

Overview

Education is a powerful force that can speed up economic growth, improve income distribution, facilitate social mobility, and reduce poverty. It can also improve the quality of life for citizens by contributing to longer life expectancy, lower fertility and infant mortality rates, and a more cohesive national identity. However, none of these positive outcomes are automatic. All too often, investment in education generates low returns to the individuals involved and society at large. Thus, while investment in education is a necessary condition for faster development and prosperity, it is by no means sufficient.

This MENA flagship report explores whether past investments in education in the region have generated their maximum *economic* returns, and, if not, why they have failed to do so. Ultimately, the answers to these questions are being sought to help policymakers chart more fruitful strategies in the future.

To this end, the report addresses three concrete questions:

1. How much has the region invested in education over the past four decades, and how much has this investment been translated into higher economic growth, better income distribution, lower poverty, and better quality of life? Also, looking ahead, is the region ready to meet the challenges of the knowledge economy, the emerging youth bulge, and the growing financial constraints on expanding education?
2. If the answer to the first question is that the education systems in the region have not made optimal contributions to development nor are they ready to meet new challenges, the next question is what can policymakers do to reverse this outcome?
3. Finally, since realizing the benefits of education depends on whether society is able to deploy its educated labor force into productive and dynamic activities, the last question has to do with labor markets. In particular, are domestic labor markets and migration providing effective outlets for reaping the benefits of a more educated labor force?

This report focuses on the *economic* rather than the *social* and *cultural* dimensions of education. Its approach in answering the questions raised above is analytical and comparative in nature. Education outcomes in the region are compared with education outcomes in other developing countries. The development impact of investment in education is considered in the context of the large body of literature on the subject. The education reform strategies in MENA are assessed on the basis of a new analytical framework. Finally, labor market outcomes are evaluated on the basis of how well these markets function, given past reform efforts.

The second feature of the report is that it covers all levels of instruction, not just basic, secondary, or higher education. The rationale for this broad coverage is twofold: (i) the link between human capital and economic development depends on progress made by countries at all levels of education, and (ii) all levels of education arguably face similar problems. They all need an efficiently functioning education process, highly motivated and incentivized teachers and schools, and adequate voice mechanisms for citizens to influence education objectives, priorities, and resource allocation.

Finally, although the primary focus of the report is education, it was important to pay special attention to domestic labor markets and migration. After all, this is where the returns to education are determined and its impact on development made.

The organization of the report mirrors the three questions listed above. Part I, chapters 1 through 3, makes the case for education reform by tracing past investments in education in the MENA region, assessing its impact on development, and reviewing the state of readiness of the education systems to meet new challenges. Part II, which comprises chapters 4 through 6, focuses on learning from past education reforms in 14 MENA countries on the basis of a new analytical framework. Finally, part III, chapters 7 through 9, concentrates on labor markets and concludes with a chapter that pulls all of the pieces together.

Primary Findings

The main finding of this report is that the MENA region has made significant strides in the education sector, having started in the 1960s and 1970s from very low levels of human capital accumulation. However, it has not capitalized fully on past investments in education, let alone developed education systems capable of meeting new challenges. The education systems did not produce what the markets needed, and the markets were not sufficiently developed to absorb the educated labor force into the most efficient uses. Thus, the region needs to travel a new road.

The new road has two features: the first is a new approach to education reform in which the focus is on *incentives* and *public accountability*, besides the education process itself; the other feature concerns closing the gap between the supply of educated individuals and labor demand, both internally and externally.

A brief summary of the primary findings is presented in the following paragraphs.

Despite MENA's Heavy Investment in Education, Economic Returns Were Modest

Part I of the report shows that the region invested about 5 percent of GDP and 20 percent of government budgets in education over the past 40 years, and made tremendous gains as a result. Currently, most children benefit from compulsory schooling; quite a few have opportunities to continue their formal education; and learning outcomes are much better than they were before. The region also saw significant improvements in fertility and infant mortality rates as well as in life expectancy, as education spread widely among the population. Despite these improvements, however:

- The region has produced fewer educational outcomes than many competitors, as measured by years of educational attainment in the adult population. The educational achievements are compromised in part by high dropout rates, and by relatively low scores on international tests. Literacy rates remain low and the education systems produce more graduates in humanities than in science.
- The region has not made the best use of its accumulated human capital. Unemployment is particularly high among graduates, and a large segment of the educated labor force is employed by governments. Not surprisingly, the link between human capital accumulation and economic growth, income distribution, and poverty reduction in the region is weak.
- The education systems of the region are not yet fully equipped to produce graduates with the skills and expertise necessary to compete in a world where knowledge is essential to making progress.

Past Education Reforms Failed to Focus on Incentives and Public Accountability

Part II of the report shows that, for good reasons, the region initially focused on establishing mass education systems by building schools, recruiting teachers, producing textbooks, and setting the curriculum. This

early phase also required a government-led management and control structure. As more children were enrolled in school, the quality and efficiency of education came to the forefront. In response, MENA countries experimented with a variety of mechanisms, including decentralization, engaging the private sector in the provision of education, and the adoption of quality assurance programs.

Notwithstanding these experiments, the region on the whole has tended to focus too much on *engineering* education and too little on *incentives* and *public accountability*. No systematic attempts have been made to link the performance of schools and teachers to student results, to put in place effective monitoring mechanisms, or to make information about school performance available to parents and students. The strategy of engaging the private sector does not discriminate by the level of instruction.

A similar point can be made with respect to public accountability. Undoubtedly, the region is becoming more open, the role of civil society is gaining ground over time, and the media is playing an increasingly important role. However, citizens, including parents and students, do not have adequate mechanisms to influence education objectives, priorities, and resource allocation.

Labor Markets Were Unable to Absorb the Growing Supply of Educated Labor Force

Even if education systems are successful in producing a well-trained labor force, their contribution to society and the individuals involved can be compromised if labor demand is inadequate because of low growth, and/or distorted because of government policies. When migration is left to market forces alone, information asymmetry, poor intermediation, and contract enforcement all erode the returns to education as well.

Notwithstanding the reform efforts in the region, especially since the early 1990s, economic growth remains anemic; labor markets are not yet functioning well; and government employment, especially in the oil-producing countries, is absorbing most of the educated population. In regard to migration, no systematic effort has been made by either the hosting or importing countries in the region to facilitate labor mobility or address the problems of market failures. The result is a combination of high open unemployment in most countries in the region, and significant underemployment in many others.

The Road Ahead

Having succeeded in expanding their education systems to include most eligible children—both boys and girls—the countries in the MENA re-

gion is now ready to travel a new road. The new road requires a new balance of *engineering*, *incentives*, and *public accountability* measures. Simultaneously, it requires renewed emphasis on reforming domestic and external labor markets.

The exact form of the new road for each country will not be the same, since some countries have already carried out more education reforms and achieved better results than others. Thus, the reform agenda for each country will differ, depending on initial conditions. However, all countries will need to find a new combination of engineering, incentives, and public accountability, along with measures to improve labor market outcomes.

Introduction

Human capital is considered an important determinant of economic growth and an effective vehicle for reducing inequality and absolute poverty. When countries invest in human capital through education, there is the potential for generating benefits to society that go beyond those acquired by the individuals involved. Available evidence suggests that education is associated with lower fertility rates, healthier and better-educated children, and stronger national identity. Not surprisingly, most developing countries, including those in the MENA region, have committed substantial resources over the last 40 years to expand and improve their education systems.

Attaining the above benefits from investing in human capital through education is not automatic, however. All too often, higher investment in education is not associated with faster economic growth, especially when the system fails to produce the level, mix, and quality of skilled labor required to meet demand or when demand itself is inadequate or distorted. Similarly, poor-quality education effectively erodes its returns, leading to high dropout rates, especially among the poor. Finally, rather than enhancing social cohesion, improving health outcomes, and strengthening the future development capacity of a nation, education is sometimes used by vested interest groups to advance particular causes at the expense of the broader public good.

In light of the uncertainty surrounding the outcomes of investment in education, Part I of this report—The Case for Education Reform in the MENA Region—explores the extent to which MENA countries have been successful in their effort at making education work for development. More concretely, chapter 1 documents MENA's investment in human capital through education over the past 40 years or so, and shows how this investment has affected education outcomes. Chapter 2 explores the extent to which investment in education has been translated into higher economic growth, improved income equality, and lower poverty in the region. Chapter 3 analyzes the state of readiness of the education systems in the region to deal with such new challenges as glob-

alization and the knowledge economy, demographic pressure, and finance of education.

The upshot of the analysis is that MENA countries have committed more resources to education than other developing countries at a similar level of per capita income. As a result, the region was able to improve access to education at all levels of instruction for boys and girls at rates not previously seen in the developing world. The main shortcoming of past efforts lies in the weak link between the improvements in the level, quality, and distribution of human capital and economic growth, income distribution, and poverty reduction. Past investments in education have not generated the maximum benefits to individuals and society. Thus, the case for education reform is compelling. This case is further reinforced by the lack of readiness of most education systems in the region to deal with globalization and the increasing emphasis on knowledge in the development process, the region's enormous youth bulge, and the additional financial resources required to expand higher levels of instruction, having essentially achieved full enrollment at the primary level.

Investment in Education

How much have MENA countries invested in human capital through education over the past four decades? What has been the impact of this investment on the *level*, *quality*, and *distribution* of human capital? What has been the impact on such human indicators as fertility and infant mortality rates as well as life expectancy? How well did the region perform in accumulating human capital compared with other developing countries? These are the questions addressed in this chapter.

The value of reviewing how much or how little countries in the region have invested in human capital through education is that it documents progress made to date. It also situates the region relative to other developing countries, especially in a world of increasing capital mobility. In addition, the review sets the stage for exploring the relationship among human capital and economic growth, income distribution, and poverty reduction in chapter 2.

This chapter is organized into four sections: the first three examine investment in education under three facets of human capital: its level, its quality, and its distribution. The fourth section is devoted to non-economic returns. Although all of these facets of human capital are related to each other, as will be noted occasionally, they are addressed separately for the sake of clarity.

Investment in Education and the Level of Human Capital

A number of measures are effective in gauging a country's effort to increase the level of human capital through education, including public spending,¹ enrollment rates, and the number of years of schooling. A historical and comparative assessment of the effort made by MENA countries along these dimensions is presented in the following paragraphs.

Public Sector Spending on Education

The MENA region does well on spending on education as a proportion of GDP compared to East Asia and Latin America (table 1.1). In the period 1965–2003, MENA governments spent an average of approximately 5 percent of their GDP on education, whereas our sample of East Asian and Latin American countries spent closer to 3 percent. In recent years, the proportion of GDP spent by MENA governments as a whole exceeded those of East Asia and Latin America by about 1.5 percentage points.²

In terms of public expenditure per pupil, MENA countries also spend on average more per student at all levels of education than do our sample of comparator countries. This observation is supported by the figures presented in table 1.2, which are reported in 2000 dollars after adjusting for purchasing power parity (PPP) to reflect differences in the price of a basket of consumption goods across countries.

These figures confirm the strong collective effort to invest in education in the MENA region. However, they also reveal that most MENA countries are placing more public effort *per pupil* into secondary than into primary education and, to a greater extent, into tertiary than into secondary education.³ This pattern of spending favors children in families of higher social class, who are likely to send their children to university. Conversely, if most of the spending were allocated to primary schooling, this would imply greater investment in a broader portion of the population.

Enrollment Rates

The large amount of spending on education as a percent of GDP in the MENA region has successfully increased enrollment. Indeed, net enrollment rates, measured as the percentage of number of pupils enrolled who are of the official age group for a given level of education in that age group, improved significantly over time. If the current level of effort is sustained, the region can catch up with other regions in the near future. More concretely, the majority of MENA countries were able to achieve almost universal enrollment in primary education and even completion of fifth grade as a percentage of the age cohort (table 1.3).

With some exceptions (e.g., Djibouti, Saudi Arabia, and the Republic of Yemen), MENA countries are educating most young people, both boys and girls, at the primary level.

Similar progress has been made with respect to the proportion of the age cohort attending secondary school and university. The data presented in table 1.4 indicate that the MENA region was able to increase

TABLE 1.1

Average of Public Expenditure in Education as a Percentage of GDP, 1965–2003

	1965–74	1975–84	1985–94	1995–2003
Algeria	6.2	6.1	7.2	6.1
Bahrain	—	3.3	4.1	3.6
Djibouti	—	—	3.3	5.7
Egypt, Arab Rep. of	4.7	5.4	4.8	5.6
Iran, Islamic Rep. of	—	5.0	4.2	4.6
Iraq	—	4.4	4.4	—
Jordan	3.2	5.2	6.1	6.4
Kuwait	—	4.1	7.1	6.3
Lebanon	—	—	2.0	2.9
Libya	—	5.2	8.4	—
Morocco	3.4	6.3	5.6	5.9
Oman	—	2.1	3.6	3.9
Qatar	—	3.6	4.0	—
Saudi Arabia	3.6	6.7	7.2	6.3
Syrian Arab Rep.	3.3	5.4	4.3	3.2
Tunisia	6.2	5.2	5.9	6.8
United Arab Emirates	—	1.3	2.0	1.7
West Bank and Gaza	—	—	—	9.5
Yemen, Rep. of	—	—	5.6	5.8
Mean	4.4	4.6	5.0	5.3
China	1	2.4	2.3	2.3
Indonesia	2.6	2.1	1.1	1.2
Korea, Rep. of	2.7	3.6	3.8	3.9
Malaysia	4.1	6.1	5.5	6.2
Philippines	—	1.8	2.4	3.4
Thailand	2.8	3.6	3.6	4.8
Mean	2.6	3.3	3.1	3.6
Argentina	1.9	2.1	2.2	4.1
Brazil	—	3.3	4.1	3.6
Chile	4	4.6	3.0	3.7
Mexico	2.3	4.3	3.7	5.0
Peru	3.7	3.0	3.1	3.1
Mean	3.0	3.4	3.2	3.9

Sources: UNESCO Institute for Statistics through EdStats Data Query System (accessed in June 2006), UNESCO Statistical Yearbooks and Statistical Appendix, except for the following data: Algeria 1995: Ministry of National Education, Ministry of Finance, and National Office for Statistics through Banque Mondiale 2005; Egypt 1990: Ministry of Finance through World Bank 2002b; 1995–1999: Ministry of Finance, Egypt; Lebanon 1998: UNDP 2003. Yemen 1997–1999: Ministry of Finance.

Note: When data are not available in a given year, we used the year closest to that year. Averages are based on data for more than four points, except for the following data: Bahrain 1995–2003: average of 1995, 1996, and 1997. Libya 1975–1984: average of 1975, 1980, and 1984. Syrian Arab Rep. 1995–2003: average of 1995, 1996, and 1997. Yemen 1985–1994: average of 1993 and 1994.

enrollment at the secondary school level by almost threefold between 1970 and 2003; the number was approximately fivefold at the level of

TABLE 1.2

Public Expenditure per Student by Level of Education and Ratio of Expenditure for Secondary/Primary and Tertiary/Primary, 2000

(PPP Constant 2000 International \$^a)

	Primary spending/pupil 1980	Primary spending/pupil 2002	Secondary spending/pupil 2002	Secondary/primary 2002	Tertiary spending/student 2002	Tertiary/secondary 2002
Algeria	493	628	952	1.52	—	—
Bahrain	—	2,620	2,931	1.12	—	—
Iran, Islamic Rep. of	793	738	770	1.04	2,135	2.77
Jordan	—	596	705	1.18	—	—
Kuwait	2,935	2,709	3,336	1.23	—	—
Morocco	436	714	1,831	2.56	3,442	1.88
Oman	—	1,766	2,765	1.57	7,248	2.62
Saudi Arabia	4,278	3,817	3,749	0.98	—	—
Syrian Arab. Rep.	222	477	883	1.85	—	—
Tunisia	482	1,000	1,530	1.53	4,065	2.66
Mean	1,377	1,506	1,945	1.46	4,222	2.48
Indonesia	—	89	173	1.94	480	2.77
Korea, Rep. of	483	2,882	4,173	1.45	885	0.21
Malaysia	486	1,778	2,500	1.41	9,036	3.61
Philippines	241	446	368	0.83	582	1.58
Thailand	219	1,027	728	0.71	2,048	2.81
Mean	357	1,245	1,589	1.27	2,606	2.20
Argentina	745	1,164	1,593	1.37	1,393	0.87
Brazil	592	832	829	1.00	3,779	4.56
Chile	444	1,504	1,480	0.98	1,687	1.14
Colombia	259	1,077	1,106	1.03	1,881	1.70
Mexico	341	1,264	1,420	1.12	4,379	3.08
Peru	383	305	419	1.37	674	1.61
Uruguay	684	585	670	1.15	1,409	2.10
Mean	493	962	1,074	1.15	2,172	2.15

Sources: 2003b, World Bank WDI central database (accessed in June 2006) and UNESCO Institute for Statistics *Statistical Yearbooks*.

Note: When data are not available in a given year, we used the year closest to that year.

a. The international dollar is a hypothetical unit of currency that has the same purchasing power that the U.S. dollar has in the United States at a given point in time, i.e., it means the U.S. dollar converted at purchasing power parity (PPP) exchange rates.

higher education.⁴ Despite this impressive progress, the average level of education among the population is still lower in MENA than in the comparator areas. Admittedly, the region started from a lower base than that found in the countries in East Asia and Latin America. But the fact remains that the average gross enrollment rate in secondary schools in MENA in 2003 was 75 percent, compared to 78 and 90 percent for East Asia and Latin America, respectively. Similarly, the average gross enroll-

TABLE 1.3

Access to Primary School Education: Net Enrollment Rate, Repetition Rate, and Pupils Reaching Grade Five, 1970–2003

(percent)

	1970			1985			2003		
	NER	Repetition	Grade 5	NER	Repetition	Grade 5	NER	Repetition	Grade 5
Algeria	76.6	12.5	85.5	86.0	7.5	93.6	97.1	11.8	94.4
Bahrain	70.6	—	—	96.2	8.6	86.5	96.8	3.2	99.9
Djibouti	—	10.7	81.5	31.3	12.5	91.6	32.9	10.4	—
Egypt, Arab Rep. of	62.8	4.5	80.6	83.7	1.5	97.4	98.3	4.0	98.6
Iran, Islamic Rep. of	60.0	9.1	—	80.9	10.2	83.2	98.5	2.3	87.8
Iraq	55.4	20.6	73.7	93.1	20.8	84.0	87.7	8.0	—
Jordan	78.6	4.1	78.9	94.1	5.4	91.2	101.1	0.5	98.8
Kuwait	60.6	15.6	—	86.7	5.2	—	86.0	2.5	—
Lebanon	—	—	—	77.8	—	—	93.2	10.1	97.6
Libya	85.7	25.8	90.7	96.1	—	—	—	—	—
Morocco	39.1	29.8	65.8	60.7	19.8	68.9	92.0	13.8	75.6
Oman	27.1	9.3	74.0	66.4	11.7	93.5	77.9	0.8	97.6
Qatar	71.9	23.7	96.7	91.1	10.7	98.8	89.8	—	—
Saudi Arabia	32.4	15.2	82.6	50.9	12.4	93.3	53.1	4.2	93.6
Syrian Arab Rep.	69.5	10.9	88.9	94.7	7.5	95.5	98.1	7.5	—
Tunisia	75.6	29.2	67.8	93.1	20.4	86.6	97.2	9.2	96.5
United Arab Emirates	—	15.2	99.7	76.5	5.7	87.9	71.2	2.2	94.7
West Bank and Gaza	—	—	—	—	—	—	86.3	0.2	—
Yemen, Rep. of	—	—	—	51.7	—	—	66.8	5.5	67.3
Mean	61.8	15.8	82.0	78.4	10.7	89.4	84.7	5.6	91.9
China	—	10.0	—	97.4	6.1	86.0	95.0	0.3	99.9
Indonesia	72.4	10.7	59.7	97.2	10.9	84.6	94.3	2.9	92.1
Korea, Rep. of	94.5	0.1	96.3	94.5	—	99.2	99.6	0.2	99.9
Malaysia	88.1	0.0	—	93.7	0.0	98.2	93.2	0.0	98.4
Philippine	96.6	2.4	77.0	96.2	1.8	78.9	94.0	2.2	75.3
Thailand	—	10.3	48.7	75.9	8.3	—	85.8	4.0	—
Mean	66.6	5.6	70.4	92.5	5.4	89.4	93.6	1.6	93.1
Argentina	94.8	11.3	75.2	—	—	—	98.8	6.4	84.3
Brazil	69.8	19.2	27.6	81.2	19.8	37.0	92.9	20.6	—
Chile	90.2	10.4	81.7	87.7	—	—	86.0	2.4	99.0
Mexico	82.6	11.1	68.0	99.6	9.9	76.8	97.8	4.8	92.6
Peru	77.7	17.0	71.0	95.9	14.1	76.0	97.1	7.6	89.7
Mean	83.0	13.8	64.8	91.1	14.6	63.2	94.5	8.4	91.4

Sources: Statistical Appendix and UNESCO Institute for Statistics through World Bank EdStats Data Query System (accessed in June 2006).

Note: When data are not available for a given year, we used data for the year closest to that year. Djibouti: repetition rate in 2003 is only for public schools. West Bank and Gaza: net enrollment rate (NER) is for basic education (from grades 1 to 10).

ment rate in higher education in MENA was only 26.0 percent in 2003, which is about two-thirds of the average for the other two regions. These differences indicate that the level of human capital in MENA is still relatively low.

Moreover, there seems to be a big difference in the path taken by the MENA region in expanding the average level of education among the population compared with the approaches used in East Asia and Latin America. In MENA, expansion was not always through progressive universalization of primary schooling, followed by secondary and then higher education. Nor was it often in response to growing demand and the emergence of new and dynamic sectors. In the Arab Republic of Egypt, for example, the expansion of secondary and higher education was ahead of full enrollment at the lower levels of education. In the majority of MENA countries, expansion took place without a corresponding increase in new job opportunities in the more dynamic sectors of the economy.

The combination of free education at the secondary and higher levels and a policy of guaranteed employment in the public sector has had negative side effects: a demand for higher education that does not correspond to real economic needs and a lowering of demand for technical education because of the nontechnical nature of guaranteed jobs in government.

In contrast to the pattern of expansion observed in the MENA region, the growth of secondary and especially higher education in East Asia, except for the Philippines, has primarily been in response to new and dynamic industrial-sector needs in terms of skilled labor. For example, in China, since 2001, university enrollment has been expanded to nearly 20 percent of the age cohort, following a long period of high growth. Similarly, the Republic of Korea's higher education system did not begin to grow until after almost 15 years of rapid economic growth, and it was mainly supported with private funding.

In Latin America, the expansion of education has had some connection to the demand for labor. In the 1980s, secondary and higher education expanded rapidly, despite the debt crisis, economic recession, and relatively high unemployment. Enrollment at both levels continued to increase in the 1990s, a period of much higher growth. Within Latin America, the expansion of secondary and higher education was in response to demand in Brazil, Chile, Colombia, and Mexico, but was far ahead of economic needs in other countries, such as Peru. In fact, in Brazil and Mexico, university expansion seems to be lagging behind economic needs (Carnoy 2001).

Years of Schooling in the Adult Population

Increased enrollment is expected to increase the average years of schooling over time. By this measure, which is frequently used in growth regressions as a proxy for investment in human capital, the data show that

TABLE 1.4

Gross Enrollment Rates in Secondary and Tertiary Education, 1970–2003

(percent)

	1970		1985		2003	
	Secondary	Tertiary	Secondary	Tertiary	Secondary	Tertiary
Algeria	11.2	1.8	51.4	7.9	80.7	19.6
Bahrain	51.3	1.4	97.2	12.8	98.8	34.4
Djibouti	6.6	—	11.7	—	21.5	1.6
Egypt, Arab Rep. of	28.4	6.9	61.4	18.1	87.1	32.6
Iran, Islamic Rep. of	27.1	2.9	45.0	4.6	81.9	22.5
Iraq	24.4	4.8	53.8	11.5	42.0	15.4
Jordan	32.8	2.1	52.2	13.1	87.4	39.3
Kuwait	63.5	4.0	90.9	16.6	89.9	22.3
Lebanon	41.5	21.0	60.6	27.8	88.7	47.6
Libya	20.8	2.9	58.8	9.2	103.9	56.2
Morocco	12.6	1.4	35.4	8.7	47.6	10.6
Oman	0	—	26.5	0.8	86.4	12.9
Qatar	36.3	4.5	82.3	20.7	96.8	19.1
Saudi Arabia	12.1	1.6	40.1	10.6	67.8	27.7
Syrian Arab. Rep.	38.1	8.3	58.2	17.1	63.2	—
Tunisia	22.7	2.6	38.9	5.5	81.3	28.6
United Arab Emirates	21.8	—	54.7	6.8	66.5	22.5
West Bank and Gaza	—	—	—	—	93.6	37.9
Yemen, Rep. of	—	—	—	—	45.9	13.2
Mean	26.5	4.7	54.1	12.0	75.3	25.8
China	24.3	0.1	39.7	2.9	72.5	19.1
Indonesia	16.1	2.5	41.3	—	64.1	16.7
Korea, Rep. of	41.6	7.4	91.7	34.1	90.9	88.5
Malaysia	34.2	—	53.0	5.9	75.8	32.4
Philippines	45.8	16.8	64.4	24.9	85.9	28.8
Thailand	17.4	3.1	30.5	19.0	77.3	41.0
Mean	29.9	6.0	53.4	17.3	77.8	37.7
Argentina	44.4	13.4	70.2	35.7	86.4	63.9
Brazil	25.9	4.7	35.4	11.3	102.0	22.3
Chile	37.4	9.1	66.9	15.6	89.2	43.0
Mexico	22.5	5.4	56.5	15.9	79.7	23.4
Peru	30.7	10.5	62.8	22.4	91.7	33.4
Mean	32.2	8.6	58.4	20.2	89.8	37.2

Sources: Statistical Appendix and UNESCO Institute for Statistics through World Bank EdStats Data Query System (accessed in June 2006).

Note: When data are not available for a given year, we used the year closest to that year. Libya: Secondary and tertiary gross enrollment rates (GERs) in 2003 are from 2002. United Arab Emirates: Tertiary 2003 data are from 2002. Qatar: Tertiary 1970 data are from 1975. Brazil: Tertiary 1985 data are from 1990.

between 1960 and 2000, the average number of years of education in the adult population (15 years old and over) in the MENA region grew more rapidly than in other regions of the world (see table 1.5). However, by 2000, the region averaged 5.4 years of school attainment, compared to 7.3 and 7.2 years for East Asia and Latin America, respectively. The main

TABLE 1.5

Average Years of Schooling of the Total Population Aged 15 and Over, 1960–2000

	1960	1980	2000
Algeria	0.98	2.68	5.37
Bahrain	1.04	3.62	6.11
Djibouti	—	—	—
Egypt, Arab Rep. of	—	2.34	5.51
Iran, Islamic Rep. of	0.80	2.82	5.31
Iraq	0.29	2.66	3.95
Jordan	2.33	4.28	6.91
Kuwait	2.89	4.53	7.05
Lebanon	—	—	—
Libya	0.97	3.87	—
Morocco	—	—	—
Oman	—	—	—
Qatar	—	—	—
Saudi Arabia	—	—	—
Syrian Arab. Rep.	1.35	3.65	5.77
Tunisia	0.61	2.94	5.02
United Arab Emirates	—	2.87	—
West Bank and Gaza	—	—	—
Yemen, Rep. of	—	0.34	2.91
Mean	1.25	3.05	5.39
Korea, Rep. of	4.25	7.91	10.84
Indonesia	1.55	3.67	4.99
Malaysia	2.88	5.09	6.80
Thailand	4.30	4.43	6.50
Philippine	4.24	6.51	8.21
China	—	4.76	6.35
Mean	3.44	5.40	7.28
Argentina	5.25	7.03	8.83
Brazil	2.85	3.11	4.88
Chile	5.21	6.42	7.55
Mexico	2.76	4.77	7.23
Peru	3.30	6.11	7.58
Mean	3.87	5.49	7.21

Sources: Statistical Appendix and Barro-Lee 2000.

Note: When data are not available in a given year, we used the year closest to that year. Libya: AYS in 1960 are from 1965, and 1980 from 1985. United Arab Emirates: AYS in 1980 are from 1975. Yemen: AYS in 2000 are from 1999. AYS in 1980 for Yemen are for Yemen, N. Arab.

problem for MENA countries, then, is not the growth of the average years of schooling; rather, it is the extremely low initial level of education in most countries in the 1960s and 1970s.

Thus, in 1960, Jordan's adult population had an average of only 2.33 years of schooling, which is lower than the level in every East Asian and

Latin American country on our list except Indonesia. By 2000, Jordan's population had higher average education levels (6.91 years) than Indonesia, Malaysia, Thailand, China, and Brazil—most of which had started in 1960 with higher levels of education than Jordan. The gap between other MENA countries for which we have data and East Asia and Latin America has also been reduced. Even so, the average level of education in MENA in 2000 is still less than it is in East Asia and Latin America by more than one full year.

The number of years of schooling is a popular but inaccurate measure of human capital investment, however, because it assumes that the quality of each year of schooling in each country is the same. It assumes that most countries teach approximately the same academic skills in various grades of primary, lower secondary, and upper secondary schools. These assumptions clearly do not hold, and need to be corrected by one measure of quality or another; this is the subject we turn to next.

Investment in Education and the Quality of Human Capital

Measuring the quality of education is illusive, and can only be approximated by using different indicators. In this section, three such indicators are used: scores on international tests, fields of study in higher education, and literacy rates. Imperfect as these indicators may be, they provide a reasonable “weight” that can be attached to the number of years of schooling in the labor force as an improved measure of human capital investment.

Quality of Secondary Education

A large number of countries in the MENA region, in East Asia, and in Latin America have now participated in one or more international tests of eighth graders (Trends in International Math and Science Study—TIMSS) or 15-year-olds (Programme for International Student Assessment—PISA). The results on these tests capture the relative amount of language and math learned by those who are reaching the end of lower secondary school.

Table 1.6 shows the average math scores for 21 countries in the MENA, East Asian, and Latin American regions.⁵ The results indicate that the average of 401 for the MENA region is modestly below that of Latin American countries (406) but significantly below that of East Asia (466). More broadly, the MENA region scores below the international average of 489,⁶ let alone the top performing country, Singapore, whose average score for TIMSS 1995, 1999, and 2003 is 617.

Within the region, the Islamic Republic of Iran, Lebanon, and Jordan score above the regional average, while Saudi Arabia and Morocco are below the average.

Usually, test scores are adjusted by GDP per capita and gross enrollment rates in secondary schools to take into account the possible effect of higher social class on student performance. Higher GDP/capita is typically associated with a higher average level of family education and resources, and lower gross enrollment rates in secondary school indicate that the education system is more elitist and selective, thus probably contributing to higher test scores. Thus, we would expect to find a positive relationship between test scores and GDP/capita and a negative relationship between test scores and gross enrollment rates.

We estimate such an equation, using the indicators provided in table 1.6 and leaving out the three Gulf States (Bahrain, Kuwait, and Saudi Arabia) because their very high GDP per capita and low scores are not representative of the typical relationship between these two variables. The estimated equation is as follows:

$$\text{Test score} = 351.44 + 0.0116 \text{ GDP/cap} - 0.1163 \text{ GrossSecEnr} + \varepsilon; R^2 = 0.47 \quad (1)$$

(3.78) (-0.15)

The figures in parentheses are the t-values, showing that the estimated coefficient for GDP/capita is significant at the 1 percent level, and the coefficient for gross secondary enrollment is not significantly different from zero, although it has the expected negative sign.

Using this equation, we can predict the test score each country should have if the students do as well as those in other countries of the world that have the same GDP/capita and gross secondary enrollment rates. Table 1.7 ranks the 18 countries in our sample by test score, then uses equation (1) to estimate the predicted value of the test score based on the country's values of the two independent variables. The difference between the actual and the predicted value is the "residual," or the unexplained part of the test score. A positive residual indicates that students in that country do better than GDP/capita and gross enrollment would predict; a negative score indicates the opposite.

It is interesting to note that when we adjust for their GDP/capita and gross secondary enrollment rates, Jordan, Lebanon, and Egypt move down the rank order relative to their rank order in the absolute score. Morocco moves up the rank order. Iran and Tunisia remain essentially at about the level predicted. If the test scores reflect the quality of education systems, as opposed to some other socioeconomic variables we have not accounted for, this implies that MENA's education systems may be

TABLE 1.6

Average Test Scores of TIMSS and PISA, GDP/Capita (2003), and Gross Secondary Enrollment Rate

(percent, 2000)

	Test taken	Approximate average test score	GDP/capita 2003	Secondary gross enrollment 2000
Bahrain	TIMSS 2003	401	17,212	96
Egypt, Arab Rep. of	TIMSS 2003	406	3,731	86
Iran, Islamic Rep. of	TIMSS 95/99/03	420	6,608	77
Jordan	TIMSS 99/03	426	4,081	87
Kuwait	TIMSS 95	392	17,049	89
Lebanon	TIMSS 03	433	4,793	80
Morocco	TIMSS 99/03	362	3,783	40
Saudi Arabia	TIMSS 2003	332	12,495	72
Tunisia	TIMSS 99/03, PISA 03	420	6,765	77
Mean		399	8,502	78
Indonesia	TIMSS 99/03, PISA 2000/03	409	3,175	57
Korea, Rep. of	TIMSS 95/99/03, PISA 2000/03	574	16,977	94
Malaysia	TIMSS 99/03	514	8,986	70
Philippines	TIMSS 99/03	362	4,082	77
Thailand	TIMSS 95/99, PISA 2900/03	478	7,175	82
Mean		467	8,079	76
Argentina	PISA 2000	430	11,436	97
Brazil	PISA 2000/03	398	7,360	108
Chile	TIMSS 99/03, PISA 2000	404	9,706	75
Colombia	TIMSS 95	385	6,331	70
Mexico	PISA 2000/03	429	8,661	75
Peru	PISA 2000	358	4,969	81
Uruguay	PISA 03	453	7,822	98
Mean		408	8,041	86.3
International average	TIMSS 95/99/03	489		
Top performing countries	TIMSS 95/99/03	617		

Sources: TIMSS: <http://timss.bc.edu/>. PISA: <http://www.pisa.oecd.org>. GDP per capita PPP (constant 2000 international \$): World Bank 2005. Secondary Gross Enrollment Rate: Statistical Appendix.

Note: TIMSS is conducted by IEA (International Association for the Evaluation of Educational Achievement). PISA is conducted by OECD (Organisation for Economic Co-operation and Development).

functioning satisfactorily in some countries given their level of economic development, whereas those in other countries fall below this average. In that sense, at the lower secondary level at least, the quality of human capital in some of the MENA countries may also be acceptable.

If we include the three Gulf States for which we have test score data—Bahrain, Kuwait, and Saudi Arabia—this picture changes. The estimated regression line of test scores on GDP/capita and gross secondary enrollment is essentially flat, and the coefficients of GDP/capita and gross secondary enrollment are not significantly different from zero. One reason

TABLE 1.7

Test Scores of TIMSS and PISA Unadjusted, and Adjusted for GDP/Capita Ordered by Residuals

	Test score		Predicted test score ^a	Residual
Korea, Rep. of	574	Malaysia	448	66
Malaysia	514	Thailand	425	53
Thailand	478	Korea, Rep. of	537	37
Uruguay	453	Jordan	389	37
Lebanon	433	Lebanon	398	35
Argentina	430	Indonesia	382	27
Mexico	429	Uruguay	431	22
Jordan	426	Egypt, Arab Rep. of	385	21
Iran, Islamic Rep. of	420	Iran, Islamic Rep. of	419	1
Tunisia	420	Tunisia	421	-1
Indonesia	409	Mexico	443	-14
Egypt, Arab Rep. of	406	Brazil	424	-26
Chile	404	Philippines	390	-28
Brazil	398	Morocco	391	-29
Colombia	385	Colombia	417	-32
Morocco	362	Peru	400	-42
Philippines	362	Argentina	473	-43
Peru	358	Chile	455	-51

Note: Based on regression estimate of test score run on GDP/capita in 2003 and gross secondary enrollment rate, 2000.

for this is that the very high GDP/capita in the three oil states reflects wealth per inhabitant, but it is not the kind of wealth based on higher education and social capital associated with children's higher academic performance in school. Even after a generation of high income from petroleum exports, apparently the academic level in these countries remains low.

Field of Study by Higher Education Students

The proportion of enrollment in university in science and engineering versus humanities and social sciences could be viewed as another index of the "quality" of human capital at the level of higher education. The underlying assumption here is that scientists and engineers are likely to contribute more to economic growth than are social scientists and students of humanity because of the increasing importance of technological innovation and adaptation in the development process.⁷ If this assumption holds, it is instructive to look at the data in table 1.8, which indicate that MENA countries have a high percentage of their university students studying humanities and social sciences. In more than half of the MENA countries, about two-thirds of the students major in those fields. This pattern of enrollment is the opposite of what we observe in East Asia and, to a lesser extent, in Latin America.

TABLE 1.8

Distribution of University Students by Field of Study

(percent, most recent year)

		Education and humanities	Social sciences	Medicine	Scientific, technical, and Engineering	Others
Algeria	2003	16.4	38.2	7.1	18.0	20.2
Bahrain	2002	10.0	50.0	7.0	21.0	12.0
Djibouti	2003	20.0	51.0	0.0	22.0	7.0
Egypt, Arab Rep. Of	1995	35.0	41.2	7.4	10.2	6.1
Iran, Islamic Rep. Of	2003	17.6	27.5	7.3	38.2	9.3
Iraq	2003	30.8	21.3	8.1	24.1	15.8
Jordan	2002	30.0	26.0	10.0	30.0	4.0
Lebanon	2003	21.2	38.8	8.5	25.7	5.8
Libya	1999	30.3	18.3	17.0	30.8	3.6
Morocco	2003	27.6	47.8	3.9	18.3	2.3
Oman	2003	54.2	21.1	2.8	14.0	7.9
Qatar	2003	19.1	48.3	3.9	19.1	9.5
Saudi Arabia	2003	60.7	15.1	4.6	13.6	6.1
Syrian Arab Rep.	1994	29.2	28.2	11.5	25.3	5.8
Tunisia	2002	22.0	27.0	7.0	31.0	13.0
United Arab Emirates	1996	57.8	13.6	1.7	24.1	2.8
West Bank and Gaza	2003	42.4	33.4	5.6	18.1	0.4
Mean		30.8	32.2	6.7	22.6	7.7
China	1994	22.8	9.4	8.9	46.8	12.1
Indonesia	1995	21.3	54.9	2.1	15.1	6.7
Korea, Rep. Of	2002	23.4	20.4	7.3	41.1	7.9
Malaysia	2002	20.0	27.0	4.0	40.0	11.2
Philippine	2002	20.0	31.0	9.0	24.0	16.0
Thailand	1995	12.2	59.7	5.9	17.6	4.7
Mean		19.9	33.7	6.2	30.8	9.8
Argentina	2002	10.0	35.0	10.0	14.0	31.0
Bolivia	2000	26.0	33.0	17.0	16.0	8.0
Brazil	1994	20.5	44.0	9.3	20.1	6.1
Chile	2002	20.0	35.0	9.0	32.0	5.0
Colombia	1996	17.1	43.2	9.1	28.5	2.2
Mexico	2002	15.0	42.0	8.0	32.0	4.3
Peru	1991	13.0	42.1	11.4	24.3	9.2
Mean		17.4	39.2	10.5	23.8	9.4

Sources: UNESCO Statistical Yearbook 1998 and UNESCO Institute for Statistics, Data Centre (accessed on June 2006).

The modest level of student enrollment in science and technology at the level of higher education in some MENA countries is due in part to government restrictions on access to these faculties, as in Morocco and Egypt, for example. In contrast, not as many restrictions are imposed on enrollment in the social sciences and humanities. In Djibouti, Egypt, Morocco, Oman, Saudi Arabia, the United Arab Emirates, and West

Bank and Gaza, more than 70 percent of the students are in the humanities and social sciences. This pattern of enrollment is historically consistent with a policy of absorbing most university graduates into civil service jobs, but is ill suited to a development strategy that draws on private initiatives and dynamic manufacturing and service sectors.

Illiteracy Rates

A third dimension of the quality of human capital is literacy rates among the adult population. By this measure, table 1.9 indicates that, despite the rapid growth of enrollment in primary schools in MENA in the past 20 years, a high fraction of the adult population (one in five adults in 2003) is still illiterate. The level of illiteracy in the adult population, especially among women, sharply distinguishes most MENA countries from most Latin American and East Asian societies. In two countries—Morocco and Yemen—about one-half the population remains illiterate. The total number of illiterates in MENA countries (54 million) represents about 1.5 percent of all the illiterate adults in the world. The 36 million illiterate women in MENA also represent about 2.2 percent of all illiterate women in the world.⁸

Female illiteracy has come down in the MENA region over time, and the rate of change has been rapid and steady. However, given the large gaps that persist between MENA and other comparators, full convergence is still a long way off. Whereas average female illiteracy rates are 30 percent for the MENA region, they are as low as 9 and 12 percent among comparator countries in Latin America and East Asia, respectively. As for the literacy gap between men and women, there is clear evidence of rapid equalization over time. While the ratio of literate females to literate males was only 0.60 in 1980, it had risen to almost 0.83 by 2003. Once again, the rate of progress was faster in MENA than among its comparators.

Several factors account for the gender gap in the MENA region. One factor is social, as the enrollment of boys in schools was historically favored over that of girls. Adult males may also have more learning opportunities to become literate in the workplace. In addition, because women tend to live longer than men, at any given time there are more women who grew up in times of low school coverage in the oldest age cohorts. However, most of the MENA countries have significantly reduced their illiteracy rate since 1980. This in turn has reduced the absolute difference between men and women from 26 percent to 15 percent. The problem of high female illiteracy will gradually be reduced in the MENA region thanks to increasing universal primary education for girls. Nevertheless, Algeria, Egypt, Morocco, and Yemen still have a long way to go in reducing female illiteracy.

TABLE 1.9

Illiteracy Rates of the Population Aged 15 and over by Gender, 1980–2000/04

(percent)

	Illiteracy rate 1980			Illiteracy rate 2003		
	Total	Males	Females	Total	Males	Females
Algeria	63.4	50.5	75.5	30.1	20.4	39.9
Bahrain	28.8	21.6	40.7	13.5	11.5	16.4
Djibouti	—	—	—	—	—	—
Egypt, Arab Rep. of	60.7	46.3	75.3	28.6	17.0	40.6
Iran, Islamic Rep. of	50.3	39.1	61.8	23.0	16.5	29.6
Iraq	—	—	—	26.0	15.9	35.8
Jordan	30.8	17.8	44.6	9.7	4.9	15.3
Kuwait	32.2	27.0	40.6	6.7	5.6	9.0
Lebanon	—	—	—	—	—	—
Libya	47.3	28.8	69.5	18.3	8.2	29.3
Morocco	71.4	57.9	84.5	47.7	34.3	60.4
Oman	63.8	48.6	83.7	18.7	13.2	26.5
Qatar	30.2	28.2	34.6	11.0	10.9	11.4
Saudi Arabia	49.2	35.0	67.7	20.7	12.9	30.7
Syrian Arab Rep.	46.7	27.8	66.2	20.4	14.0	26.4
Tunisia	55.1	41.6	68.8	25.7	16.6	34.7
United Arab Emirates	34.6	32.6	41.0	22.7	24.4	19.3
West Bank and Gaza	—	—	—	8.1	3.3	12.6
Yemen, Rep. of	80.0	61.8	94.5	51.0	30.5	71.5
Mean	49.6	37.6	63.7	22.5	15.3	30.0
China	32.9	21.0	45.7	9.1	4.9	13.5
Indonesia	31.0	20.9	40.6	9.6	6.0	13.2
Korea, Rep. of	—	—	—	—	—	—
Malaysia	28.8	20.0	37.7	11.3	8.0	14.7
Philippines	12.2	11.2	13.2	7.4	7.5	7.4
Thailand	12.5	7.5	17.4	7.4	5.1	9.5
Mean	23.5	16.1	30.9	9.0	6.3	11.6
Argentina	5.6	5.3	6.0	2.8	2.8	2.8
Brazil	24.0	22.0	25.9	11.4	11.6	11.2
Chile	8.6	7.7	9.5	4.3	4.2	4.4
Mexico	18.7	13.7	23.5	9.1	7.6	10.4
Peru	20.6	11.7	29.4	12.3	6.5	17.9
Mean	15.5	12.1	18.9	8.0	6.5	9.3

Source: Statistical Appendix and UNESCO Institute of Statistics (through WB EdStats).

Note: When data were not available for a given year, the data for a year close to that year were used.

Investment in Education and the Distribution of Human Capital

While enrollment and quality of education may increase, access to education can remain limited to high-income groups, to those who live in urban areas, or to boys at the expense of girls. This would lead to un-

equal distribution of human capital, eroding its potential as a mechanism for reducing poverty and enhancing economic growth. The issue addressed in this section is whether or not the region's education strategies favored a more egalitarian distribution of human capital over time. The answer is ambiguous at best; inclusion policies may have diminished over time while gender parity efforts proved effective.

Inclusion Policies

In addition to the high level of public spending and the expansion of enrollment, wide access to education has been assured in most MENA countries through a policy of free education for all that was enacted mostly in the 1950s and 1960s. This policy was generally applied at all levels of education, from basic to tertiary. Education was considered by many countries as a right; this was especially true in the Maghreb countries, Egypt and Syria. As a result of these policies, the region had achieved more equality in the distribution of education in 1970 than had our sample of countries from East Asia and Latin America. As shown in table 1.10, the data indicate that the standard deviation from the mean of years of education in the adult population (15 years of age or older) was only 3.4 in the MENA region, whereas the corresponding standard deviations for Latin America and East Asia were 3.64 and 3.77, respectively.⁹ Between 1985 and 2000, however, both the MENA and non-MENA countries exhibited rising standard deviations from the mean of years of schooling in the adult population. Yet this trend was so strong in the MENA region that the average dispersion of education became more skewed than in the other two regions.

Increasing education inequality in MENA is further supported by additional data on the percentage of enrollment by poor versus nonpoor and rural versus urban populations in primary and secondary education for a sample of countries. The data, shown in table 1.11, are derived from household surveys in the second half of the 1990s. These data are available for only six MENA countries and over time only for Egypt and Morocco. Nevertheless, they reveal that, despite good intentions, the nonpoor and students who live in urban areas tend to have higher access to education at both levels than the poor and those who live in rural areas. The only exceptions are Algeria and Iran, where the data show almost equal access by both groups across geographical locations for primary education.

Why did MENA countries move from a situation of somewhat equal distribution of education to a situation in which distribution has become more skewed over time? The answer can be traced to a number of factors, some of which are structural in nature while others are policy

TABLE 1.10

Distribution of Education, 1970–2000

(standard deviation from the average years of schooling of the population aged 15 and above)

	1970	1975	1980	1985	1990	1995	2000
Algeria	3.11	3.46	3.89	4.38	4.78	4.95	5.03
Egypt, Arab Rep. of	—	3.42	4.24	4.67	5.00	5.13	5.24
Iran, Islamic Rep. of	3.43	3.92	4.28	4.49	4.66	4.90	5.08
Jordan	4.14	4.37	4.93	5.21	5.35	5.37	5.41
Morocco	—	—	—	—	—	—	—
Syrian Arab Rep.	3.23	3.84	4.32	4.65	4.80	4.76	4.77
Tunisia	3.09	3.93	4.34	4.65	4.82	5.01	5.15
Yemen, Rep. of	—	0.90	1.55	2.55	3.29	—	—
Mean	3.40	3.41	3.94	4.37	4.67	5.02	5.11
Korea, Rep. of	4.53	4.55	4.68	4.42	4.03	4.04	4.03
Malaysia	4.00	4.18	4.30	4.44	4.49	4.51	4.55
Philippines	3.81	3.83	3.94	3.93	3.78	3.84	3.71
Thailand	3.30	3.39	3.62	4.01	4.29	4.53	4.71
Indonesia	3.22	3.34	3.47	3.29	4.33	4.45	4.53
China	—	4.43	4.36	4.37	4.36	4.36	4.34
Mean	3.77	3.95	4.06	4.08	4.21	4.29	4.31
Argentina	3.54	3.78	3.72	4.02	3.94	4.04	4.14
Brazil	3.55	3.22	3.41	3.56	3.65	3.73	3.87
Chile	4.04	4.15	4.35	4.43	4.56	4.76	4.90
Colombia	3.04	3.65	3.81	3.95	4.17	4.35	4.50
Mexico	3.67	3.80	4.40	4.51	4.62	4.65	4.64
Peru	4.04	4.07	4.41	4.48	4.58	4.67	4.74
Uruguay	3.98	3.86	4.00	4.05	4.26	4.40	4.53
Mean	3.69	3.79	4.01	4.14	4.25	4.37	4.47

Source: Thomas, Wang, and Fan 2001.

driven. On the former front, standard deviations from the mean tend to increase over time as countries expand their educational systems because, as the average level of education increases from low levels, dispersion increases. Subsequently, as the average level of education reaches into upper secondary school, the dispersion levels off and eventually declines as a ceiling effect (i.e., university graduate education) cuts off the upper end of the distribution. Because MENA countries started from a lower level of school attainment and a more equitable distribution of educational attainment than countries in other regions, such a trend was almost inevitable. On the policy front, it has already been noted that the region allocated higher expenditures per pupil in secondary relative to basic education compared to East Asia and Latin America.

Some countries, like Egypt, also opted to expand secondary and high education before full enrollment in primary schools was completed, although this practice was an exception. Both policy decisions would have

TABLE 1.11

Enrollment Rates for Poor and Nonpoor

(percent)

			Urban		Rural	
			Poor	Nonpoor	Poor	Nonpoor
Algeria	1995	primary	96.0	95.0	89.0	89.0
		secondary	77.0	82.0	59.0	66.0
Egypt, Arab Rep. of	1995	6–15	89.5	98.0	92.9	95.6
		15–19	66.0	83.9	67.2	74.7
	1999	6–15	95.8	98.5	93.5	96.7
		15–19	72.4	84.9	64.7	72.9
Iran, Islamic Rep. of	2001	6–10	99.0	100.0	98.0	98.0
		11–13	92.0	97.0	76.0	84.0
Morocco	1990	7–15	70.7	84.1	34.3	43.2
	1998	7–15	69.4	87.2	36.4	49.8
Tunisia	2000	6–18	79.4	82.2	67.0	70.7
Yemen, Rep. of	1998	10–14	83.0	92.1	59.6	62.0

Sources: Algeria: LSMS (ENMNV), ONS, and staff estimates cited in World Bank 1999; Egypt: World Bank 2002a; Iran: SECH Survey 2001 through World Bank 2006; Morocco: Statistical Office, 1990/91 and 1998/99 LSMS data through World Bank 2001; Tunisia: INS, based on HBCS 2000 through World Bank 2003a. Yemen: estimates based on 1998 HBCS through World Bank 2002c.

Note: Algeria: using upper general poverty line. Morocco: using higher poverty lines (2674 DH in urban and 2384 DH in rural areas). Tunisia: poor and economically vulnerable. Yemen: for the 10–14 age group. Information for the 5–9 age group is not available.

provided more benefit to families in higher social classes than to those at the bottom.

In addition to the factors described above, the region has increasingly relied on the private sector for the provision of education at different levels (table 1.12). While this trend may increase the inequity in the distribution of education, the outcome depends on the strategy adopted by government, especially in terms of the level of education left to the private sector and the nature of public funding. A strategy that relies on the private sector for the provision of education at higher levels with government commitment to providing basic education is likely to be more egalitarian than one that allows greater private sector involvement in basic education relative to higher education. Similarly, a strategy that commits public funding to poor students, even if they enroll in private schools, is likely to be more egalitarian than one that leaves full funding to households irrespective of their ability to pay. On both counts, the MENA region's strategy fares less well than the strategy adopted by the East Asian countries and, to a lesser extent, by the Latin American countries.

More concretely, the information provided in table 1.12 indicates that the MENA countries have allowed greater private participation in the provision of education at all levels over time, whereas other regions decreased their share of private education enrollment in secondary education. For basic education, the average enrollment rate increased from

TABLE 1.12

Private Enrollment Share in Primary, Secondary, and Tertiary Education as a Percentage of Total Enrollment, 1980–2003

	Primary			Secondary			Tertiary		
	1980	1990	2003	1980	1990	2003	1980	1990	2003
Algeria	0	0	0	0	0	0	—	—	—
Bahrain	—	13.2	22.6	—	8.8	15.5	—	—	—
Djibouti	—	8.9	15.5	—	15.7	21.0	—	—	—
Egypt, Arab Rep. of	5.0	5.8	8.0	11.0	3.8	5.5	—	12.5	16.5
Iran, Islamic Rep. of	—	0.1	4.3	—	0.3	5.7	—	—	54.1
Iraq	—	—	—	—	—	—	—	—	6.5
Jordan	6.0	22.9	29.9	19.0	6.1	16.6	—	—	24.7
Kuwait	—	25.0	32.3	—	22.6	27.6	—	—	—
Lebanon	61.0	68.3	64.7	47.0	57.8	51.9	—	—	49.3
Libya	—	—	2.5	—	—	2.8	—	—	—
Morocco	3.0	3.6	5.5	5.0	2.7	4.6	—	1.5	5.1
Oman	—	1.8	—	—	0.7	1.1	—	—	28.7
Qatar	—	23.4	71.8	—	12.3	32.3	—	—	—
Saudi Arabia	3.0	4.1	6.9	20.0	2.8	7.3	—	—	7.4
Syrian Arab Rep.	5.0	3.6	4.2	7.0	5.6	4.1	—	—	—
Tunisia	1.0	0.5	1.0	7.0	12.0	3.9	—	—	0.4
United Arab Emirates	—	32.3	57.6	10.0	20.7	40.6	—	—	—
West Bank and Gaza	—	—	8.4	—	—	4.3	—	—	58.1
Yemen, Rep. of	—	—	1.8	—	—	1.7	—	—	8.7
Mean	10.5	14.2	19.8	12.0	11.5	13.7			23.6
China	0	—	—	0	—	—	—	—	—
Indonesia	21.0	17.6	16.3	49.0	49.2	42.9	—	—	65.2
Korea, Rep. of	1.0	1.4	1.3	46.0	45.2	35.9	—	—	80.6
Malaysia	—	0.3	0.94	—	6.2	5.3	—	—	32.7
Philippine	5.0	6.7	7.3	48.0	36.4	19.7	—	—	65.7
Thailand	8.0	9.6	15.2	13.0	16.2	10.4	—	—	18.5
Mean	7.0	7.1	8.2	31.2	30.6	22.8			52.5
Argentina	18.0	20.0	20.6	39.0	—	27.0	—	—	22.3
Brazil	13.0	14.2	9.9	—	34.8	12.3	—	—	70.3
Chile	20.0	38.8	50.2	24.0	49.0	51.2	—	—	75.3
Mexico	5.0	6.2	8.1	19.0	16.6	15.5	—	—	33.0
Peru	13.0	12.6	15.3	15.0	14.6	21.6	—	—	46.9
Mean	13.8	18.4	20.8	24.3	28.8	25.5			49.6

Sources: UNESCO Statistical Yearbooks, UNESCO Institute for Statistics through WB EdStats, Data Query System and Statistical Appendix.

Note: The following numbers are for the closest years. Egypt: secondary share 1990 is from 1991; Iran: secondary enrollment share 2003 is from 2002; Kuwait: secondary share 1990 is from 1991; Lebanon: primary and secondary shares 1990 are from 1991; Libya: primary and secondary shares 2003 are from 2002; Tunisia: tertiary share 2003 is from 2002. Argentina: primary and secondary shares 2003 are from 2002. Peru: tertiary share 2003 is from 2002.

10.5 percent in 1980 (primarily because of Lebanon) to an average of 19.8 percent in 2003 for most countries in the sample.¹⁰ Changes at the secondary school level during the same period were much more modest, increasing slightly from 12.0 to 13.7 percent. As for tertiary education,

while the information is scant the available information suggests that only a few countries (Lebanon, Iran, and West Bank and Gaza) allowed a significant private sector involvement. A second main observation is that the average rate of enrollment in private schools in MENA in 2003 was higher at the basic level than it was in secondary education. In the same year, enrollment in tertiary education was only modestly higher (about 24 percent) than the average enrollment rate in secondary schools.

The above pattern stands in sharp contrast to that of East Asia and, to a lesser extent, Latin America. East Asia has essentially privatized higher levels of schooling and left primary education almost entirely in the public hands. The pattern of enrollment in private schools in 2003 was 8.2 percent in primary schools, 22.8 percent in secondary schools, and 52.5 percent in higher education. Except in China and Malaysia, a significant fraction of the cost of higher education in East Asia is borne by families. A similar pattern holds for Latin America, although with lower public commitment to primary education than in East Asia. Thus, from both regions, countries like Korea, China, Brazil, and Chile have significantly privatized their higher education systems, either by limiting space at free public universities so that expansion has to take place in fee-charging private universities (as in Korea and Brazil) or by charging high fees at public universities (as in Chile and China).¹¹ In that sense, private education is used as a strategy to mobilize private resources and also to socially stratify educational access.

Gender Parity

Notwithstanding some growing inequality in the distribution of human capital in general, as noted above, the MENA region has made remarkable progress in the last 30 years with respect to closing the gender gap in education. Progress has been steady and rapid, covering all levels of education. As shown in tables 1.13 and 1.14, gender parity for basic education is almost complete. Although the region started with relatively low levels of gender parity, the parity indices for secondary and higher education are not significantly different from the corresponding indices for Latin America and East Asia. The area where more progress is still needed is in relation to illiteracy, which remains significant among the female adult population, as discussed in the section on education quality.

Progress has not been even across all countries, however. With respect to primary education, Djibouti and Yemen have yet to close the gender gap. At the level of secondary education, although few countries have attained full secondary enrollment, almost all have attained gender parity.

TABLE 1.13

Gender Parity Index of Gross Intake Rate to Grade 1, Gross Enrollment Rate, and Repetition Rate in Primary Education

(female as a proportion of male)

	1970			1985			2003		
	GIR	GER	Repetition	GIR	GER	Repetition	GIR	GER	Repetition
Algeria	—	0.62	—	0.87	0.81	0.69	0.98	0.93	0.63
Bahrain	—	0.74	—	1.04	1.06	1.04	0.99	1.00	0.75
Djibouti	0.43	0.42	0.85	—	0.70	—	0.83	0.79	1.00
Egypt, Arab Rep. of	0.70	0.65	1.54	0.86	0.81	0.82	0.98	0.95	0.58
Iran, Islamic Rep. of	0.60	0.56	0.62	0.88	0.80	—	1.15	1.10	0.55
Iraq	0.46	0.43	1.07	0.94	0.85	0.85	0.94	0.82	0.72
Jordan	—	0.82	—	1.01	1.01	—	1.01	1.01	0.94
Kuwait	0.82	0.76	0.96	0.98	0.97	0.98	0.99	1.01	0.82
Lebanon	—	0.86	—	—	—	—	0.99	0.96	0.71
Libya	0.85	0.62	0.95	—	0.92	—	—	1.00	—
Morocco	—	0.55	—	—	0.64	0.87	0.95	0.90	0.74
Oman	—	0.16	—	0.99	0.80	0.7	1.02	1.00	0.64
Qatar	0.92	0.85	0.99	1.06	0.97	0.61	1.00	0.98	—
Saudi Arabia	—	0.47	—	0.85	0.78	0.58	1.00	0.96	0.66
Syrian Arab Rep.	0.73	0.62	0.85	0.93	0.88	0.82	0.97	0.95	0.79
Tunisia	—	0.66	—	0.94	0.85	0.88	1.01	1.00	0.67
United Arab Emirates	—	0.63	—	0.97	1.00	0.85	0.99	0.97	0.68
West Bank and Gaza	—	—	—	—	—	—	0.99	1.00	0.84
Yemen, Rep. of	—	—	—	—	—	—	0.77	0.73	0.83
Mean	0.69	0.61	0.98	0.95	0.86	0.81	0.97	0.95	0.74
China	—	—	—	—	—	—	0.98	1.00	0.76
Indonesia	—	0.83	—	—	0.86	—	0.96	0.98	1.00
Korea, Rep. of	1.00	0.99	0.88	1.02	0.94	—	1.00	0.99	—
Malaysia	—	0.89	—	1.01	1.02	—	1.00	1.00	—
Philippines	—	—	—	0.94	0.99	0.99	0.93	0.99	0.54
Thailand	—	0.91	—	—	0.99	—	0.93	0.96	1.03
Mean		0.90		0.99	0.96		0.97	0.99	0.83
Argentina	0.98	1.01	0.79	—	1.01	—	1.00	0.99	0.69
Brazil	—	1.00	—	—	—	—	0.92	0.94	0.96
Chile	1.00	1.00	0.83	—	0.97	—	0.98	0.95	0.62
Mexico	—	0.94	—	—	0.98	—	0.99	0.98	0.66
Peru	0.86	0.87	0.93	—	0.96	—	1.01	0.99	0.94
Mean	0.95	0.96	0.85		0.98		0.98	0.97	0.77

Sources: Statistical Appendix and UNESCO Institute of Statistics (through World Bank EdStats).

Note: Gross Intake Rate (GIR) to grade 1 is the total number of new entrants in the first grade of primary education, regardless of age, expressed as a percentage of the population of theoretical age to primary education.

Only Djibouti, Iraq, Morocco, and Yemen still have significant secondary education gender gaps. Furthermore, for Algeria, Bahrain, Jordan, Kuwait, Lebanon, Libya, Tunisia, the United Arab Emirates, and West Bank and Gaza, the gender gap at secondary levels is smaller than it is at primary levels. Gender parity rates for higher education are even higher

than they are for secondary education in most MENA countries. In fact, only in Djibouti, Iraq, and Yemen does the proportion of male students significantly surpass that of females. In Algeria, Bahrain, Iran, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia, Tunisia, the United Arab Emirates, and West Bank and Gaza, female students outnumber male students. Most countries achieved gender parity during the 1990s.

TABLE 1.14

Gender Parity Index of Gross Enrollment Rate in Secondary and Tertiary Education

(female as a proportion of male)

	1970		1985		2003	
	Secondary	Tertiary	Secondary	Tertiary	Secondary	Tertiary
Algeria	0.41	0.25	0.74	0.47	1.07	1.08
Bahrain	0.72	1.29	0.99	1.70	1.06	1.84
Djibouti	0.37	—	0.62	—	0.69	0.82
Egypt, Arab Rep. of	0.49	0.37	0.70	0.46	0.93	—
Iran, Islamic Rep. of	0.51	0.35	0.66	0.4	0.94	1.11
Iraq	0.43	0.3	0.57	0.6	0.66	0.45
Jordan	0.57	0.49	1.08	0.93	1.02	1.10
Kuwait	0.81	1.16	0.91	1.16	1.06	2.72
Lebanon	0.68	0.32	0.98	—	1.09	1.12
Libya	0.23	0.13	0.94	—	1.06	1.09
Morocco	0.42	0.19	0.67	0.47	0.84	0.87
Oman	—	—	0.49	0.6	0.96	1.37
Qatar	0.72	—	1.10	2.63	0.97	2.86
Saudi Arabia	0.26	0.1	0.65	0.78	0.88	1.50
Syrian Arab Rep.	0.39	0.26	0.70	0.57	0.93	—
Tunisia	0.38	0.25	0.7	0.58	1.05	1.28
United Arab Emirates	0.32	—	1.00	1.96	1.06	3.24
West Bank and Gaza	—	—	—	—	1.05	1.04
Yemen, Rep. of	—	—	—	—	0.49	0.38
Mean	0.48	0.42	0.79	0.95	0.94	1.40
China	0.52	—	0.7	0.44	1.00	0.85
Indonesia	0.51	0.32	0.75	—	0.99	0.79
Korea, Rep. of	0.65	0.34	0.98	0.46	1.00	0.61
Malaysia	0.68	—	1.01	0.8	1.14	1.41
Philippines	0.94	1.28	1.02	—	1.11	1.28
Thailand	0.70	0.62	—	—	1.00	1.17
Mean	0.67	0.64	0.89	0.57	1.04	1.02
Argentina	1.14	0.77	1.13	1.13	1.07	1.51
Brazil	1.03	0.61	—	—	1.11	1.32
Chile	1.15	0.63	1.09	0.78	1.01	0.94
Mexico	0.64	0.26	0.95	0.61	1.07	0.97
Peru	0.77	0.54	0.90	—	1.01	1.07
Mean	0.95	0.56	1.02	0.84	1.05	1.16

Sources: Statistical Appendix and UNESCO Institute of Statistics (through World Bank EdStats).

Investment in Education and Noneconomic Outcomes

In addition to the immediate impact of investment in education on human capital accumulation, this investment also has the potential of contributing to lower fertility and infant mortality rates and longer life expectancy. Such outcomes were observed in other developing countries, especially as education spread among females. Given that MENA countries have also significantly improved their gender parity over the last few decades, we should observe similar trends in the region as well. The data presented below support this prediction.

As shown in figure 1.1, MENA countries started from very high fertility and infant mortality rates and very low life expectancy in 1960 in relation to our comparator countries from East Asia and Latin America. By 2004, the MENA region had caught up with the average life expectancy of East Asia and Latin America and had brought infant mortality rates to levels very close to those of these regions. While fertility rates in MENA are still higher than in the other regions, the average number of children per woman in the region declined from seven in 1960 to three in 2004. Progress in MENA was remarkable; it outpaced the rate of progress elsewhere.

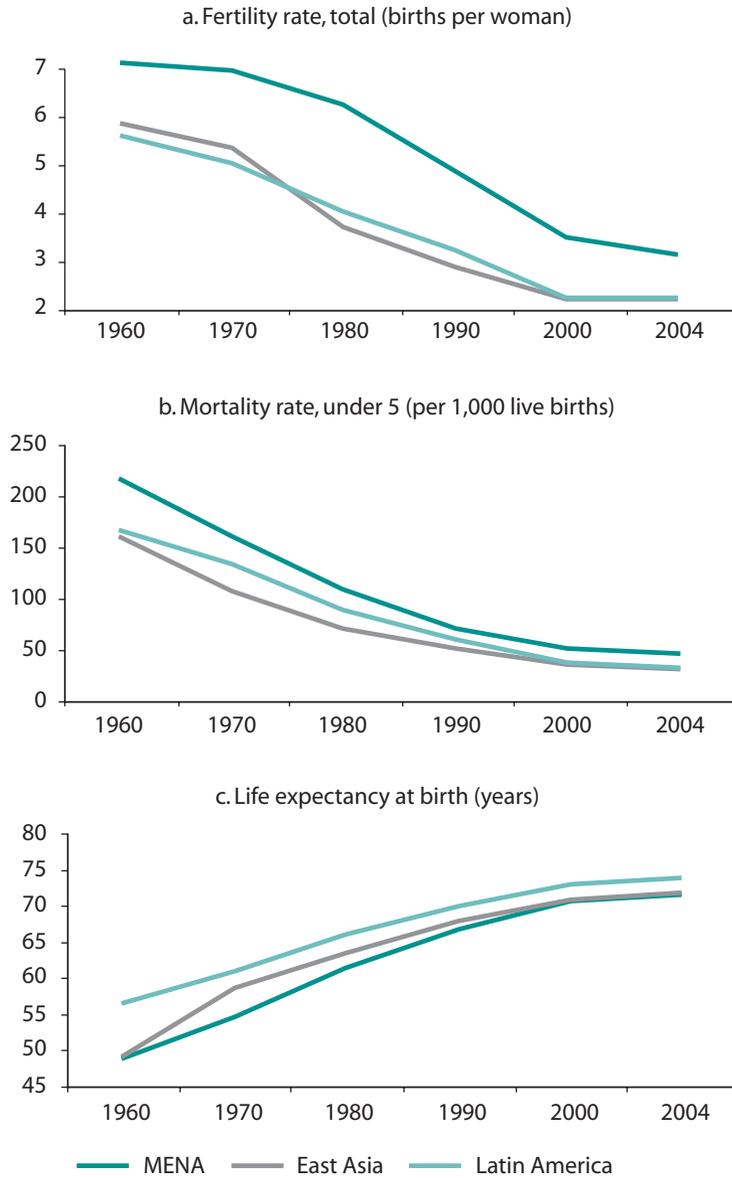
Within the region, however, significant variations remain. For example, Yemen, Djibouti, and Oman still have fertility rates of greater than four, compared with a fertility rate of two in Lebanon, Algeria, and Kuwait. Similarly, life expectancy is only 53 years in Djibouti and 61 years in Yemen, compared with 79 in Tunisia and 75 in Bahrain. Nevertheless, in all of the MENA countries, these indicators have improved over time.

Summing Up

The countries of the MENA region got off to a late start in investing in human capital through formal schooling, but once they began, they generally spent a relatively high percentage of their GDP on education and raised the average level of schooling in their populations relatively rapidly. At present, almost all countries in the region educate their boys and girls at the primary level, and a significant percentage of the relevant age cohorts are engaged in secondary and tertiary education. Literacy rates have been reduced significantly and some countries score relatively well on international tests, especially when the level of income and gross enrollment rates are taken into account. Moreover, most countries of the region were able to achieve gender parity at almost all levels of educa-

FIGURE 1.1

Fertility and Mortality Rates and Life Expectancy, 1960–2004



Source: World Development Indicators 2005.

tion, and to improve fertility and infant mortality rates as well as life expectancy.

Notwithstanding this impressive track record, the region lags behind East Asia and to some extent Latin America in terms of the level, quality, and even distribution of human capital. The average number of years of schooling in MENA is below both regions by more than one year.

The rapid expansion of secondary and higher education was accommodated by employment in the public sector at relatively high wages rather than by increased demand for higher educated labor by a dynamic private sector. In addition, the pattern of public expenditure is biased in favor of students at higher levels of education compared with other regions, which reflects a bias in favor of the socially privileged class.

On the quality of human capital, literacy rates in the region are still low. The problem is especially acute in Yemen, Morocco, Algeria, and Egypt. In addition, because of the very low levels of initial enrollment of women, female illiteracy is even higher. The lagging investment in the education of women may have kept fertility rates from falling as soon historically and as rapidly as in other regions of the world. The picture is somewhat better when quality is assessed on the basis of the academic performance of eighth- and ninth-grade students on international tests. The results rank Lebanon, Jordan, Iran, and Tunisia at the high end, and Saudi Arabia, Morocco, and Kuwait at the low end of the test score range. When adjusted to take into account GDP per capita and gross enrollment rates, Lebanon and Jordan do as well as some of the higher scoring East Asian countries. Even then, however, the scores are much lower in math than, for example, those in Korea or Malaysia. Thus, labor in the MENA region does not have the same human capital as Malaysia or Korea.

As for the distribution of human capital, it has become worse over time in MENA when education equality is measured by the standard deviation of the years of schooling. Starting from a relatively equal distribution in the 1960s and 1970s, the standard deviation of the mean years of schooling is now higher in the region than it is in East Asia or Latin America. Surely more and more children are enrolled in schools in the region and the Gini coefficient is declining in MENA and elsewhere, as will be discussed below, but the relative educational attainment between them has widened. Meanwhile, the allocation of public expenditures seems to favor higher education, and the increasing reliance on the private sector is pursued without a clear strategy as to the level of education left to the private sector or as to how poor students may access private schools.

These generalizations clearly do not apply equally to all countries in the MENA region, which is rather heterogeneous in the degree to which countries have invested in human capital and in their investment strategies. Syria, for example, has invested much less in human capital than, say, Jordan. Morocco seems to spend much more on its secondary education students relative to primary education students than its neighbor Algeria. Given their very high average income per capita, the oil states, such as Bahrain, Kuwait, and Saudi Arabia, all seem to provide, on aver-

age, lower quality education than most other MENA countries. These differences influence the role of human capital in achieving economic growth and the distribution of its benefits in each country. Nevertheless, the region on the whole also exhibits a number of similarities. These include high levels of commitment to investment in education and gender parity, and frequently a policy of guaranteed employment in government. The question we take up next is how much past investments in education have contributed to economic growth, better income distribution, and lower poverty in the region.

Endnotes

1. Unfortunately, information on household expenditure on education over time was not available for most MENA countries.

2. Typically, comparator countries are selected on the basis of a criterion such as per capita income. However, this criterion is not appropriate for MENA countries because they diverge widely in their per capita income. Thus, we opted for a stratified sample of countries from East Asia and Latin America because: (i) these countries seem to share some socioeconomic characteristics with the region (apparently more than countries from SSA or East Europe do), and (ii) they have made some progress on reforming their education systems.

3. The data on secondary and higher education spending in table 1.2 have to be interpreted with some care. The figures only represent the amount the *public sector* spends on all students, which would underestimate spending per pupil in countries with significant *unsubsidized* private secondary education (including Argentina, Brazil, Colombia, Indonesia, Korea, Lebanon, and Philippines) and higher education (Brazil, Chile, Korea, Philippines). Also, it would not take into consideration significant private financial contribution to public university education (Chile).

4. Net enrollment data for secondary school and university are not reported by most countries. Thus, the gross enrollment rates reported in table 1.4 have to be interpreted with caution. They tend to overestimate the proportion of the age cohort attending secondary schools, because repetition rates are high and there are many overage students at that level of instruction. The other problem with these data is that enrollment rates in tertiary include nonuniversity, postsecondary education, which varies from country to country. For example, the proportion of students in university in Argentina in 2001 was about 35 percent, but the total shown in table 1.4 for all post-secondary is 57 percent.

5. Four countries, all in Latin America, took only the PISA test. Eleven countries took only the TIMSS (all of the countries in the MENA except Tunisia fell into this category). In the cases where students only took one test, we used that single score. In the cases where the country participated in various years on the same test, we averaged the scores. To make the PISA score comparable to the TIMSS, we converted the 2000 PISA score to an estimated 1999 TIMSS score using a formula estimated by regressing the 1999 TIMSS score on the 2000 PISA in 17 countries that participated in both tests. We converted the 2003 PISA score to a 2003 TIMSS score with another formula estimated by regressing

TIMSS 2003 on PISA 2003 for 22 countries that took both tests.

The estimated equations are: $TIMSS\ 1999 = 157.2 + 0.7165\ PISA\ 2000 + \epsilon$, and $TIMSS\ 2003 = 111.8 + 0.8084\ PISA\ 2003 + \epsilon$. The intercept term of the TIMSS 1999 equation is significant at the 5 percent level; all other coefficients are significant at the 1 percent level.

In cases where a country participated in both tests, we converted the PISA test score to TIMSS equivalents and averaged the scores.

6. The international average score here is the average of the international average scores of TIMSS 1995, 1999, and 2003.

7. Murphy, Shleifer, and Vishny 1991 show that countries with a high proportion of scientific graduates have higher growth rates than do countries where most graduates come from the humanities.

8. UNESCO Institute for Statistics and Government Development Finance and World Development Indicators central database (accessed in 2006).

9. We also report the Gini coefficients of the number of years of schooling for the same set of countries in table 2.7. As will be seen in chapter 2, the education Gini coefficients tend to decline from very high values in the MENA countries because, initially, a high fraction of the population had zero years of education. Almost all other countries also exhibit declining Gini coefficients. Nevertheless, the average Gini for MENA countries between 1970 and 2000 was still greater than it was in other regions.

10. Algeria (where the private sector is prohibited from providing education at any level) and Tunisia are clear exceptions. In addition, a number of MENA countries (e.g., Syria, Morocco, and Egypt) exhibit a similar commitment to primary education as the countries in East Asia.

11. In Chile, although private education is highly subsidized through a voucher system, private contributions at the primary and secondary levels are significant and, at the tertiary level, represent 70 percent of total spending. Similarly, in Brazil and Argentina, private contributions at primary and secondary levels are large. In Brazil, 72 percent of students in higher education attend private institutions.

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Economic Returns to Investment in Education

The main conclusion of the previous chapter is that the MENA region has invested heavily in education over the past few decades and as a consequence has improved the level, quantity, and quality of human capital. The question to be addressed in this chapter is what the development outcomes of this investment have been. In other words, have improvements in human capital contributed to economic growth, better income distribution, and less poverty in MENA countries?

The discussion is organized in three sections: the first covers the relationship between education and economic growth, the second addresses the relationship between education and income distribution, and the third section examines the relationship between education and poverty. In each section, we elaborate the arguments for the kind of relationship that should exist, explore whether that relationship holds in the MENA region, and offer alternative explanations when it does not.

Education and Economic Growth

Per capita economic growth in the MENA region in the past 20 years has been relatively low, in part because of high population growth rates, and in part because many MENA countries still depend on oil exports for economic growth and oil prices remained relatively low through the 1980s, 1990s, and early 2000s. In addition, the region generally lacks significant dynamic sectors that can compete internationally and is home to large informal labor markets, mainly in low-level services. These characteristics contrast sharply with East Asia and the more dynamic economies of Latin America.

Under these conditions, we would not expect to see a strong relationship in the MENA region as a whole between investment in human capital—especially investment in secondary and tertiary education—and

economic growth. This turns out to be the case. Thus, the MENA experience brings home the idea that investment in human capital does not by itself generate economic growth. Earlier findings about *virtuous circles* in East Asia claiming that high growth rates in that region were driven by investment in education are not incorrect, they are just incomplete. Relatively high levels of human capital in the 1960s and rapid increases since then were undoubtedly important to East Asian growth. In the case of the MENA region, other growth-enhancing policies were not in place, and this has led to less than full realization of the benefits of investment in education.

Investment in Education and Economic Growth: A Broad Perspective

Does investment in education necessarily enhance economic growth? There are compelling reasons that it should, but the empirical evidence does not always support this conclusion.

The Rationale for a Positive Education–Economic Growth Relationship.

Individuals are willing to take more years of schooling partly because they can earn more and get better jobs, on average, with more schooling. For many, more schooling can also be a source of social mobility. Similarly, nation-states and regions are interested in raising the average level of schooling in their population, in part, because they think that doing so will improve productivity, raise the quality of jobs in the economy, and increase economic growth.

The link between education and economic growth in some of the early work on the economics of education was based on the argument that a major effect of more education is that an improved labor force has an increased capacity to produce. Because better-educated workers are more literate and numerate, they should be easier to train. It should be easier for them to learn more complex tasks. In addition, they should have better work habits, particularly awareness of time and dependability. But exactly how education increases productivity, how important it is, and in what ways it is important are questions that have no definite answers. A shortage of educated people may limit growth, but it is unclear that a more educated labor force will increase economic growth. It is also unclear what *kind* of education contributes most to growth—general schooling, technical formal training, or on-the-job training—and what *level* of education contributes most to growth—primary, secondary, or higher education.

One of the clues in support of the conclusion that education does contribute to growth is that countries with higher levels of economic growth

have labor forces with higher levels of formal schooling. Beyond such a *macroeconomic approach* to the relation between education and economic growth, the new growth theories assert that developing nations have a better chance of catching up with more advanced economies when they have a stock of labor with the necessary skills to develop new technologies themselves or to adopt and use foreign technology. In such models, more education in the labor force increases output in two ways: education adds skills to labor, increasing the capacity of labor to produce more output; and it increases the worker's capacity to innovate (learn new ways of using existing technology and creating new technology) in ways that increase his or her own productivity and the productivity of other workers. The first of these emphasizes the human capital aspect of education (that is, that education improves the quality of labor as a factor of production and permits technological development); the second places human capital at the core of economic growth and asserts that the externalities generated by human capital are the source of self-sustaining economic growth—that human capital not only produces higher productivity for more educated workers but for most other labor as well.

This model also sees innovation and learning-by-doing as *endogenous* to the production process, with the increases in productivity being a self-generating process inside firms and economies (Lucas 1988; Romer 1990). Such learning-by-doing and innovation as part of the work process are facilitated in firms and societies that foster greater participation and decision making by workers, since those are the firms and societies in which more educated workers will have the greatest opportunities to express their creative capacity.

The frequent observation that individuals with more education have higher earnings is another indication that education contributes to growth. The education–higher earnings connection reflects a *microeconomic approach* to the relation between education and economic growth. Greater earnings for the more educated represent higher productivity—hence, an increase in educated labor in the economy is associated with increased economic output and higher growth rates. There are instances where higher earnings for the more educated may merely represent a political reward that elites give their members—a payoff for being part of the dominant social class. But it is difficult to sustain an economic system for very long if those who actually produce more are not rewarded for their higher productivity, and if those who simply have political power get all the rewards. One of the reasons that socialist systems in Eastern Europe were unable to sustain economic growth was almost certainly due in part to an unwillingness to reward individuals economically on the basis of their productivity and, instead, to reward the politically powerful with economic privilege.

Mixed Empirical Findings. There are then compelling reasons to believe that education increases productivity and brings about other economic and social attributes that contribute positively to economic growth. The problem is that the empirical evidence demonstrating the education–economic growth relationship shows mixed results, and often rejects the hypothesis that investment in human capital promotes economic growth.

Three types of empirical studies in the literature concern the role of education in production. The first two are microeconomic in nature. They study the relation between education and individual income on the one hand, and education and productivity on the other. Although the results of these studies vary, they essentially show that there exists a positive relation between an individual's level of education, his or her productivity, and his or her earnings (see, among others, Psacharopoulos 1973, 1993; Carnoy 1972, 1995). The third type of empirical analysis seeks to estimate the impact of investment in education on economic growth using econometric techniques. However, it is this attempt to estimate the macroeconomic relation between investment in education and output that produces major contradictions.

The macroeconomic analyses of growth appeared at the end of the 1980s, within a convergence framework. Barro (1990) was the first to show that, for a given level of wealth, the economic growth rate was positively related to the initial level of human capital of a country, whereas for a given level of human capital, the growth rate was negatively related to the initial level of GDP per capita. Convergence, therefore, appears to be strongly conditioned by the initial level of education. Azariadis and Drazen (1990) assume that economic growth is not a linear process; rather, it goes through successive stages in which the stock of physical and human capital enables a country to reach a given growth level. Their results show that the initial literacy rate plays a different role in predicting growth rates at different levels of development. Literacy is correlated with the variations of growth in the least advanced countries, but it does not seem to be related to most developed countries' growth. Mankiw, Romer, and Weil (1992) assume that the level of saving, demographic growth, and investment in human capital determine a country's stationary state. They also find that these different stationary states seem to explain the persistence of development disparities.

These different studies show that the variations of growth rates among countries can be explained partly by the initial level of human capital. But does a higher level of investment in education affect the growth path? The answer to the latter question is predominantly "no."

Barro and Lee (1994) show that the increase in the number of those who attended secondary school between 1965 and 1985 had a positive ef-

fect on growth, but estimates by others do not confirm this result. Using an aggregated production function, Benhabib and Spiegel (1994) and Pritchett (1996) also measure the impact of human capital investment on the rate of economic growth. They use various measurements of human capital, including the number of years of education, literacy rates, and secondary enrolment rates. Whatever the education variable chosen, the associated coefficients appear either as insignificant or as having a negative sign.¹

In conclusion, the empirical tests generally show that education is one of the initial conditions that define the long-term steady state toward which the economy tends: the countries that in 1960 had a higher level of education had a greater opportunity, 40 years later, to reach a higher level of development. On the other hand, despite the diversity of methods and measures of human capital variables, the role of human capital in the convergence process is still not consistently positive. It is unclear that the countries that invested more in education universally experienced a higher growth rate.

Education and Economic Growth in the MENA Region

Against this background, how did MENA countries fare? In particular, was the region able to translate its investment in education into higher economic growth and improved productivity?

Education and economic growth. In his article “Where has all the education gone?” Pritchett (1996) tests the impact of investment in human capital on a panel of 86 countries. The results show that there is no significant effect of education on economic growth. He then tests the same specification distinguishing by geographic area as well. Education is shown to have a positive impact in Asia and Latin America but a negative one in the MENA region. The result is relatively stable whatever the human capital variable used.

Fattah, Liman, and Makdisi (2000) conducted a more complete study of the determinants of economic growth in MENA. They tested the impact of various variables—namely, investment in physical capital, investment in human capital, openness to trade and investment, the overall institutional environment, and external shocks—on economic growth; the results are shown in table 2.1.

They used a set of panel data that includes 86 countries. They show that the coefficients of these variables carry the expected sign and are significant for the entire sample. However, the results for the MENA region indicate that the initial level of education is not a significant determinant of growth (although carrying the right sign).

TABLE 2.1

Cross-Country Growth Regression Results

Sample/variable	Coefficient	t-statistic
Large sample (panel of 86 countries)		
Constant	-1.844	-1.930
Investment rate: INVY	0.132	3.798*
Macro performance: INFL	-0.002	2.310*
Initial wealth: Y60	-0.0003	-4.515
Initial education: PESEN60	0.017	3.350*
Natural resources: SXP	-2.880	-2.304*
Openness: SOPEN	1.245	3.427*
External shock: GPART	0.192	0.555
Volatility: STDG	0.001	0.017
MENA specific		
Investment rate: INVY•MENA	-0.152	-4.483*
Macro performance: INFL•MENA	-0.038	6.646*
Initial wealth: Y60•MENA	0.001	21.908
Initial education: PESEN60•MENA	0.004	0.569
Natural resources: SXP•MENA	-5.010	-3.147*
Openness: SOPEN•MENA	-1.135	-2.650
External shock: GPART•MENA	1.750	4.871*
Volatility: STDG•MENA	-0.220	-2.529
N = 86		
R ² = 0.67		

Source: Fattah, Limam, and Makdisi 2000.

The above conclusion is puzzling in light of the historical patterns of economic growth and investment in education in MENA. On the one hand, the region's GDP per capita growth was positive and rapid in the 1960s and 1970s, and much lower in the 1980s and 1990s (see table 2.2).

The region's earlier track record of per capita economic growth was so impressive that it outpaced the corresponding growth rates in the rest of the world, whereas the region's performance was almost the worst in the latter decades. On the other hand, investment in human capital in the region was much more linear and steady. While the region saw a major increase in investment in human capital during the period of rapid growth in the 1960s and 1970s, investment in human capital continued in the 1980s and 1990s. The earlier investment should have had a positive effect on growth in the 1980s and 1990s, but this positive effect did not materialize. Before attempting to solve this puzzle, we look next at the relationship between investment in education and productivity.

Education and productivity growth in the MENA region. Table 2.3 shows Total Factor Productivity (TFP) growth from the 1960s through

TABLE 2.2

GDP per Capita Growth

(percent, average for the period)

	1960–69	1970–79	1980–89	1990–2003
Algeria	1.7	3.9	-0.2	0.3
Bahrain	—	—	-2.8	2.7
Djibouti	—	—	-6.9	-3.5
Egypt, Arab Rep. of	2.9	4.1	3.3	2.2
Iran, Islamic Rep. of	—	-2.7	-2.9	3.3
Iraq	3.2	6.9	-9.6	—
Jordan	—	11.1	0.1	0.7
Kuwait	-4.8	-3.9	-5.2	-2.0
Lebanon	—	—	-43.7	6.3
Libya	20.5	-1.5	-10.2	1.3
Morocco	2.1	2.8	1.7	1.3
Oman	19.7	2.7	4.5	1.0
Qatar	—	—	—	—
Saudi Arabia	2.1	9.0	-5.8	0.3
Syrian Arab Rep.	3.5	5.3	-0.5	2.0
Tunisia	3.3	4.9	1.0	3.2
United Arab Emirates	—	-4.4	-4.7	-1.4
West Bank and Gaza	—	—	—	-6.4
Yemen, Rep. of	—	—	—	1.4
Mean	5.4	2.9	25.1	0.8
China	0.9	5.3	8.2	8.2
Indonesia	1.5	5.3	4.4	3.2
Korea, Rep. of	5.6	6.3	6.4	5.3
Malaysia	3.5	5.2	3.0	4.0
Philippines	1.9	2.9	-0.4	0.9
Thailand	4.6	4.6	5.4	4.0
Mean	3.0	4.9	4.5	4.3
Argentina	2.6	1.3	-2.1	1.5
Brazil	3.0	5.9	0.9	0.5
Chile	2.0	0.8	2.7	4.0
Mexico	3.5	3.3	0.2	1.4
Peru	2.3	1.1	-1.9	1.3
Mean	2.7	2.5	0.0	1.7

Source: World Bank, *Global Development Finance and World Development Indicators* central database (accessed in August 2005).

1990s, which was calculated by Keller and Nabli (2002) for various regions. TFP growth represents the residual part of the growth rate in output that is not attributable to increases in physical or human capital stock. Thus, TFP growth can be interpreted as an expression of technological progress as well as the efficiency with which capital and labor are utilized.

The TFP growth results go far in helping us understand the economic growth problem in the MENA region. TFP growth increased

TABLE 2.3

Total Factor Productivity Growth by Region, 1960s–1990s

		Growth of GDP per worker	Growth of physical capital per worker	Growth of human capital per worker	TFP growth
Sub-Saharan Africa	1960s	1.8	3.8	0.4	0.1
	1970s	0.6	4.2	0.3	-1.3
	1980s	-0.9	-0.1	0.7	-1.3
	1990s	0.3	0.0	0.5	0.0
East Asia and Pacific	1960s	2.1	1.1	0.8	1.2
	1970s	3.3	5.3	0.9	0.7
	1980s	5.6	6.7	1.0	2.3
	1990s	7.5	7.8	0.6	4.0
Latin America and the Caribbean	1960s	2.9	3.1	0.6	1.3
	1970s	2.9	4.3	0.6	0.8
	1980s	-1.7	0.2	0.9	-2.4
	1990s	0.6	0.6	0.8	-0.1
OECD	1960s	4.4	5.8	0.5	1.7
	1970s	1.8	3.6	1.4	-0.4
	1980s	1.8	2.3	0.3	0.7
	1990s	1.3	2.2	0.5	0.1
South Asia	1960s	2.2	4.0	0.6	0.2
	1970s	0.6	1.9	1.0	-0.7
	1980s	3.6	2.7	0.9	2.0
	1990s	2.9	2.1	0.8	1.6
MENA	1960s	4.6	4.9	0.5	2.4
	1970s	2.6	7.9	1.5	-1.4
	1980s	0.4	2.1	1.4	-1.3
	1990s	0.7	-0.3	1.2	0.0
World	1960s	2.7	3.2	0.6	1.1
	1970s	2.2	4.1	1.0	0.0
	1980s	3.2	3.8	0.8	1.2
	1990s	4.0	4.1	0.7	2.0

Source: Keller and Nabli 2002.

rapidly in the 1960s, as might be expected because of the very high growth rates in that decade. In the following two decades, TFP growth was negative, which reduced per capita growth in the 1970s and 1980s. In the 1990s, TFP growth was no longer negative (zero) and per capita growth was modestly positive.

The key here is that, despite a high rate of investment in both physical and human capital in the 1970s, TFP growth in the MENA region declined compared to the 1960s, whereas in East Asia it rose, and in Latin America it remained the same, with both regions achieving higher growth than MENA during that decade. The rapid increase in investment in the 1960s and 1970s and the corresponding negative growth of TFP in the 1970s were characteristic of most MENA countries. In Egypt, for example, the rate of investment in physical and human capi-

tal increased twofold, but the TFP growth decreased by 25 percent. In Morocco and Algeria as well, the investment rate in physical and human capital doubled, but the TFP growth was negative in the 1970s.

The picture was far worse in the 1980s, particularly for the oil-producing countries. During this decade, the decline in oil prices no longer allowed for high investment in physical and human capital. These investments were sharply reduced (in fact, the growth rates of physical capital stock per capita declined by 75 percent). Keller and Nabli (2002) show that all MENA countries experienced a decline in their TFP growth during the 1980s. The macroeconomic stabilization programs set up at the beginning of the 1990s contributed to a slightly positive TFP growth regionwide (although it was close to zero). Kuwait, Morocco, Oman, and Saudi Arabia are the countries where productivity was still declining in the 1990s.

Thus, regardless of how the impact of investment in education in the MENA region is evaluated, the story is similar: the higher level of investment in education during the last four decades was not associated with higher economic growth or with appreciable gains in TFP growth compared to East Asia and Latin America.

Possible Explanations for the Weak Education–Growth Relationship in MENA

Finding it difficult to accept the notion that an increase in the level of education does not positively affect economic growth, several analysts have attempted to reconcile the contradiction between expectations and some of the empirical findings. Their effort produced a few possible explanations. One of these explanations is related to the heterogeneity of the education–growth relationship from one country to another. Another is related to the quality of education, including the capacity of workers to innovate or adopt new technologies. A third explanation is related to the distribution of education within the active population. A fourth explanation concerns the allocation of workers among different economic activities. From this perspective, growth opportunities are determined to a lesser extent by educational investments than they are by engaging educated workers in jobs that capitalize on their skills.

Which of these explanations is most relevant to the MENA region? While we attempt to answer this question below, the short answer is that most of these explanations are relevant to varying degrees.

A significant relation between education and growth is not universal.

One of the main conclusions of the analyses of the education–growth relationship is the absence of homogeneity across countries. If the eco-

nomic, social, and cultural characteristics of each country modify the micro relation between education and wages, the same characteristics may also modify the relationship between education and growth.

This conclusion is supported by various empirical studies. For example, Lau, Jamison, and Louat (1991) have estimated the impact of primary education on growth in five regions of the world. They found that the effect is positive in the Southeast Asian countries, not significant in Latin American countries, and negative in the MENA and sub-Saharan countries. Azariadis and Drazen (1990) show that the coefficient of human capital in the growth equation is about five times higher in the developing countries than in the developed countries. And Temple (1999) excludes nonrepresentative countries (outlier observations) from the sample of Benhabib and Spiegel (1994) and shows a significant and positive relation between the increase in the level of education and the GDP growth rate.

It is thus incorrect to assume that education has the same impact on growth in all countries. However, this is precisely the assumption made by throwing all countries into the cross-country analyses. Panel analyses have the advantage of being able to take into account country specificities by including a different intercept for each country, but even then, the analysis assumes that the relation between education and growth is the same once these specificities are taken into account.

Given that the analyses that distinguish MENA from non-MENA countries consistently show a weak if not negative relationship between investment in education and economic growth, the search for an explanation for this weakness has to be MENA-specific. It either has to do with characteristics of the education systems of the region or with the way graduates are deployed, as discussed below.

Is quality of education the missing link? The first factor in explaining the weak relationship between education and economic growth is the quality of human capital and the capacity of workers to innovate or adopt new technology. With respect to the *quality of human capital*, most growth regressions use the average years of schooling in the labor force as a measure of the stock of human capital. However, this measure does not capture the variations in the quality of education. It accounts for neither the initial level of educational quality nor for the changes in quality over time of each year of schooling. Moreover, if the average level of education as measured by years of schooling increases, the quality of education is bound to decline as more students from lower-social-class backgrounds are enrolled. This could reduce the impact of the investment in human capital on economic growth. In addition, schooling heterogeneity is usually as important between countries as between individuals.

Thus, cross-country regressions based on the assumption that one year of schooling is the same across individuals and countries fail to take heterogeneity of quality into account.

Recognizing this problem, Hanushek and Kimko (2000) constructed a number of quality indicators on the basis of international tests score. Although not many countries participate in these tests, those that do were found to exhibit a positive correlation between education and economic growth. The findings suggest that differences in the quantity and quality of education among countries could explain 40 percent of the variance in the growth rate. The results obtained by Dessus (2001) are similar to those obtained by Hanushek and Kimko. When the author builds a model in which the payoff to the investment in human capital depends on the quality of education, he finds that a one-standard-deviation increase in the initial level of schooling increases the rate of return to human capital by 0.2 points. Similarly, he finds that a lower pupil-teacher ratio in primary school increases the impact of education on economic growth.

For MENA countries, several studies claim that the low quality of education is one reason why the relationship between education and growth is weak. El Erian, Helbling, and Page (1998) and Ridha (1998) assert that the education systems in the Arab countries focus more on repetition of definitions, and knowledge of facts and concepts, and less on developing critical-thinking and problem-solving capacities. Thus, they are not surprised that the expansion of the average level of education in the labor force did not generate more productivity or rapid economic growth.

To be sure, the data presented in chapter 1 show that the region has made significant progress on the quality of education. Literacy rates of males and females have increased significantly over the past few decades. Student scores on international tests in some MENA countries are not far off those of a number of Latin American countries. And the increased level of education in the MENA region has had a similar impact on the fall in fertility rates and the increase in life expectancy as it did in Asia. Why then would this improvement not have a positive effect on economic growth? The answer probably lies in the *relative* rather than the *absolute* measures of quality of education in a world where capital is mobile and knowledge is key to competitiveness. As noted in chapter 1, literacy rates in MENA are still far below those of other developing countries, fields of study are more focused on the humanities and less on science, and test scores are lower than the comparator averages. Thus, we cannot exclude the low quality of education as one possible explanation for the apparent lack of relationship between human capital investment and economic growth in the region.

Turning to the *capacity of individuals to innovate or adopt new technology*, the argument here is derived from the endogenous growth theory. As noted before, this theory holds that an important contribution of human capital to increases in economic output is in adapting and managing innovation, hence raising the productivity of all labor, whether highly educated or not. Because traditional econometric models focus primarily on the direct impact of education on individual worker productivity, they might not account for this contribution.

Measuring the impact of education on adapting and managing new technologies is not an easy task, however. For Benhabib and Spiegel (1994), the contribution of human capital to technical progress is related more to increasing the capacity to use and adapt foreign technology than it is to the development of local innovation. This result suggests that the impact of education on growth and technological development is strongly related to the country's degree of openness. Gould and Ruffin (1995) support this conclusion. In a more open economy with a literacy rate of 70 percent, the externalities of the human capital could generate 1.75 percent of additional growth annually. The conclusion of Berthelémy, Dessus, and Varoudakis (1997) is even more categorical: they claim that only open economies can benefit from investment in education.

What about the MENA region? Unfortunately, the capacity to innovate or adopt new technologies does not appear to be high. During the 1990s, European or American patents registration by the Arab scientists were zero percent of world total (see table 2.4). High-technology achievements are also fairly rare—activities such as microprocessing in Morocco or Arab language software production in Egypt are quite unusual. If a significant and positive education–growth relation is mainly the product of the development or adaptation of new technologies, the absence of innovation and the low level of foreign direct investment (FDI) in the MENA region are not good signs for a positive impact of investment in education on current and future economic growth.

The distribution of education and economic growth. The absence of a statistically significant relation between education and economic growth may also be a function of the distribution of education, which tends to be excluded from growth regressions. The argument is that the impact of education on productivity will be low if only a small proportion of the population has a high level of education while the majority is illiterate.

To explore this issue, Lopez, Vinod, and Wang (1998) test the impact of different measures of the distribution of years of education on growth. By taking distribution indicators into account, the coefficient of human capital indicators becomes positive and significant. Moreover, the authors find a negative relation between the Gini coefficient of human cap-

TABLE 2.4

Scientific and Technological Capacities in World Regions

(percent of world total, 1995)

	Expenditure on R&D	Scientific publications	European patents	U.S. patents
Arab States	0.4	0.7	0.0	0.0
North America	37.9	38.4	33.4	51.5
Western Europe	28.0	35.8	47.4	19.9
Latin America	1.9	1.6	0.2	0.2
Sub-Saharan Africa	0.5	0.8	0.2	0.1
Japan and NICs	18.6	10.1	16.6	27.3
China	4.9	1.6	0.1	0.2
India and Central Asia	2.2	2.1	0.0	0.0
Others	2.2	2.9	1.3	0.6
World	100	100	100	100

Source: UNESCO 1998.**Note:** Data for expenditures on research and development are for 1994.

ital distribution and the economic growth rate: the larger the disparities in education in the labor force, the smaller the predicted increase in income per capita. Birdsall and Londono (1997) also find supporting evidence to the hypothesis that more equal distribution of education is associated with higher economic growth.

Although none of the countries in the study by Lopez et al. (1998) came from the MENA region, the information provided in chapter 1 indicates that the distribution of education, measured by the standard deviation of the number of years of schooling, has declined over time.² This trend is largely the result of starting from very low levels of educational attainment in the population. For example, in the Arab Republic of Egypt, the average level of education has been increasing rapidly over the past few decades, but the disparity between the proportion of adult illiterates and a bulge of higher education graduates has also increased. This trend seems to hold in other countries in the MENA region, which may help explain the weak contribution of education to economic growth.

The allocation of human capital. Finally, it is possible that the absence of a statistically significant relation between education and growth is the result of the limited opportunities for the educated worker to get a job in dynamic, competitive, and private sector-led sectors in the economy. The lack of such opportunities or of others in fairly efficient public sector corporations reduces the probability that higher-educated labor will develop new technologies or new productive activities that make the engine for economic growth. Government employment is a poor substitute for such activities, as productivity in government jobs tends to be low.

For both reasons, poor allocation of human capital weakens the contribution of investment in education to economic growth.

This hypothesis is validated by a number of studies. According to Pritchett (1996), if a developing country does not have a productive structure to be able to integrate the most qualified people, the macroeconomic output of education strongly decreases. Gelb, Knight, and Sabot (1991) show that a high proportion of graduates employed in the public sector is correlated with significantly lower economic growth. Even in a developed country like Italy, Lodde (2000) shows that the manufacturing sector benefits the most from educated labor.

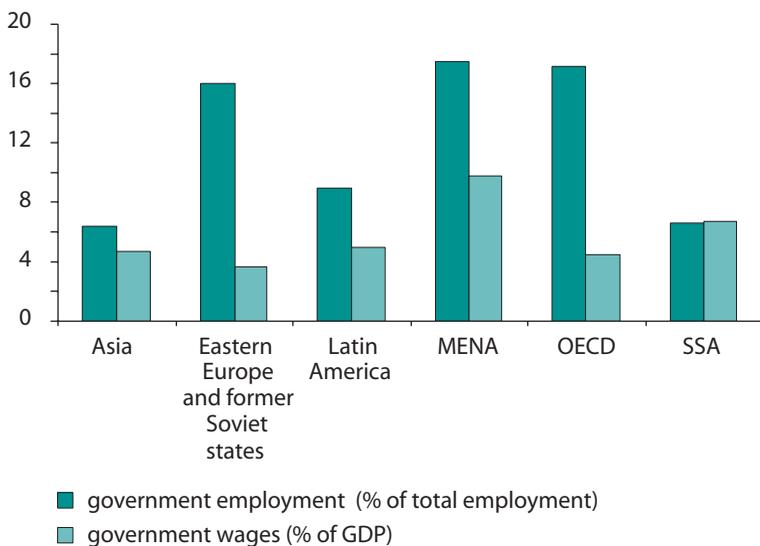
In the MENA region, the allocation of skilled workers among various activities is quite relevant in explaining the lack of a significant statistical relation between educational investment and economic growth. The region suffers from a low level of economic diversification, not only in oil-producing countries, but also in labor-abundant countries like Egypt, the Syrian Arab Republic, and Morocco. So, unlike East Asia and less than most Latin American countries, the MENA region has too small a manufacturing sector for its stage of development. The result is that this economic structure either does not permit the full utilization of the skills of highly educated labor or it only allows their utilization in activities with low payoff.

In addition—and perhaps because of the low level of economic diversification—the region is also characterized by the strong presence of the state as an employer. In the 1990s, the share of public employment in the region was higher than in any other region in the world (see figures 2.1 and 2.2). Governments employed almost 20 percent of *all* workers—somewhat higher than in Eastern European and OECD countries but much higher than in Latin America or in Asia.³ While the percentage of government employment in MENA is comparable to that of the OECD and Eastern European countries, the latter groups of countries pay a much lower fraction in wages relative to their GDP than do the countries of the MENA region.

The dominant role of the public sector as an employer and the advantages associated with working for government (i.e., higher wages than in the private sector, permanent employment, social status, etc.) have had negative effects on the labor market and on students' educational choices in MENA. Many graduates prefer to wait for a government job for as long as ten years rather than accept another job, even in a country like Egypt where the policy of employment guarantee has been abolished for some time. At the same time, there is a strong preference for fields of study that prepare students for administrative careers rather than for private sector jobs. These two effects essentially deprive the economy from benefiting from its investment in education to achieve higher productivity, individual earnings, and economic growth.

FIGURE 2.1

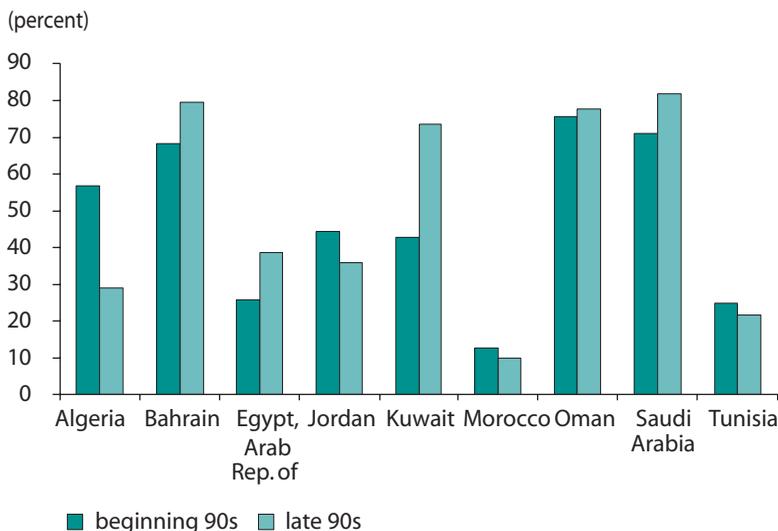
Size of Government around the World by Region, 1990s



Source: Adapted from World Bank 2004.

FIGURE 2.2

Public Sector Employment as a Share of Total Employment in MENA Countries



Source: Adapted from World Bank 2004.

Education and Income Distribution

Turning to education and income distribution, a nation's income distribution is influenced by many factors, particularly the distribution of wealth, both physical (land, physical capital) and human (education, skills). In general, the more equally these assets are distributed, the more likely the fruits of economic growth will also be distributed fairly equally. Furthermore, in societies where a large proportion of assets are owned by the state or the state is able to tax income heavily and distribute those taxes among various income groups through state spending, state incomes and investment policies can play an important role in the way income is distributed.

In addition, the relationship between investment in education and income distribution is part of a more complex relationship between education and economic growth on the one hand and between economic growth and income distribution on the other. This relationship can be positive or negative. For example, if the state invests in education to maximize its economic payoff, this investment may contribute optimally to economic growth. However, if the social rate of return to investment in higher education is higher than it is to primary schooling, this optimal (for growth) educational investment strategy could over time produce greater income inequality, everything else equal. Conversely, the same education investment strategy could contribute to greater income equality, if the rate of return to primary schooling is higher than it is to higher levels of education (Psacharopoulos 1993). Either way, the rates of return themselves are not constant over time. As the economy grows, consumption patterns and technological changes could alter the structure of the demand for labor, hence the pattern of these rates of return. These other forces may increase income inequality even if the educational investment pattern contributes to greater equality.

Thus, the relationship between education and income distribution is conditioned by several factors. The purpose of this section is to explore the nature of this relationship in the MENA region to find out whether or not investment in education contributed to positive changes in income distribution.

Education and Income Distribution: A Broad Perspective

In principle, the distribution of earnings from employment and from labor-intensive self-employment should be closely related to the distribution of education. Early work on income distribution by Kuznets (1956) and Adelman (1961) suggested that at very-low-income, low-average education, mainly agricultural societies, income is more equally

distributed because most workers have very low levels of education and are engaged in subsistence agriculture. Incomes are concentrated at low levels and that concentration dominates the distribution of income. As the level of education rises, the distribution of education becomes more unequal, these societies become more urbanized, and income distribution tends toward greater inequality; this is both because of differences between urban and rural incomes and because of greater income inequality within urban areas, where worker skills and the payoff to skills tend to vary more than they do in rural areas. Finally, according to Kuznets, as average education in societies reaches very high levels, the distribution of education becomes more equal again (now at a high level), and income distribution tends to become much more equal.

Adelman tested Kuznets' "inverted U" theory of income distribution by plotting the Gini coefficients in different countries against their GDP per capita. She showed that countries with very low levels of GDP per capita had, on average, smaller Gini coefficients (greater income equality) than did countries with middle-level GDP per capita. She also showed that countries with high GDP per capita had lower Gini coefficients than did middle-GDP per capita countries.

Yet, Adelman's confirmation of the "inverted U" theory does not seem to hold up in individual or groups of countries over time. Even when economies have gone through major changes in their structure as well as the educational structures of their labor forces, income distribution has changed little. For example, the Republic of Korea has undergone a profound transformation from a substantially rural society in the 1950s to a highly industrialized, high-income, highly educated economy in the 1990s, with little change in income distribution during that period. The changes that have occurred appear to have been more related to government income policies than to production and labor-force structural changes (Nam 1994). Another example that contradicts Kuznets' and Adelman's notion of rising and then falling inequality as economies develop is the United States. Income distribution in the United States became more equal in the 1920s–1940s, then stayed at that level of equality until the early 1970s despite rapid equalization of the distribution of education, then became steadily more unequal from the mid-1970s until the present, even as education distribution continued to equalize (Carnoy 1994).

More broadly, Bourguignon (2005) reviews the empirical literature on the relationship between income distribution and growth. On the impact of distribution on growth, he concludes that good theoretical arguments are available to predict both positive and negative effects, and that the empirical evidence is "inconclusive." On the impact of growth on distribution, he concludes that the results:

“... certainly do not imply that growth has no significant impact on distribution. Rather they indicate that there is too much country specificity in the way growth affects distribution for any generalization to be possible. Indeed, case studies, as opposed to cross-sectional studies, show that distributional changes have very much to do with the pace and structural features of economic growth in the period under analysis.” (Bourguignon 2005 p. 13)

Thus, the arguments about the overall forces that affect distribution have not been resolved. In light of this conclusion, what can be said about the relationship between education and income distribution in the MENA region? In particular, what can be said about the impact on income distribution of such variables as the distribution of years of education in the labor force, changes in the pattern of investment at various levels of education, and changes in the variance of the payoffs (rates of return) to investment in education? These questions are addressed below, following a review of income and education distribution in the MENA region.

The Education–Income Distribution Relationship in MENA

To the extent that education is extended to low-income groups, it enhances their earning capacity. This should improve income distribution, other things being equal. In the MENA region, available data suggest that income distribution improved over time, but no similar improvement, measured by the standard deviation of the average years of schooling, is observed over time.

Income distribution. Table 2.5 shows the Gini coefficients for the MENA region, as well as for East Asia and Latin America. Taken as given, the Gini coefficients for the MENA countries are much lower (more equal distribution) than those in Latin America and about the same as those in the more equal East Asian countries. The MENA region is more egalitarian on average than other regions.

Over time, the data also show that the Gini coefficients are improving in the MENA region and are stable or worsening modestly everywhere else. In Latin America, with the exception of Brazil, which has one of the most unequal income distributions in the world, income distribution in most countries seems to have become more unequal in the 1990s and 2000s. Income distribution in East Asia appears to have been more stable over time, except for China, where it is becoming more unequal starting from a very equal distribution, and for Thailand, where income distribution may be becoming more equal. In several countries of the

TABLE 2.5

Income Distribution, 1960–2003

(Gini Coefficients multiplied by 100)

	1960	1970	1980	1985–89	1990–95	1996–2000	2001–03
Algeria ^c	—	—	40.2	38.7	—	35.3	—
Egypt, Arab Rep. of	42 (44) ^a	38 ^b	32.1	—	32	28.9	34.4
Iran, Islamic Rep. of	—	44 (56) ^b	47.7	—	—	43	—
Jordan ^c	—	—	40.8	36.1	40.7	36.4	—
Morocco	50	49	39 ^c (52)	—	39.2 ^c	39.5 ^c	—
Tunisia ^c	42 (51)	44 (53)	42.7	43	40.2	41.7	39.8
Yemen, Rep. of ^c	—	—	33.6	—	—	33.4	—
Mean	44.7	43.8	39.4	39.3	38	36.9	37.1
China	—	—	30	32	38	40.3	—
Indonesia ^c	33	31 (46) ^b	34 (51)	32	33	—	34.3
Korea, Rep. of ^d	32	33	38	34	31.6	31.6	—
Malaysia	—	50	—	48.4	48.5	49.2	—
Philippines	50	49	—	45	45	46.2	46.1
Thailand	41	42	47	48	46 ^c (49)	41.4 ^c	43.2 ^c
Mean	39	41	37.3	39.9	40.4	41.7	41.2
Argentina	47	44	—	—	—	—	52.2
Brazil	60	61	—	60	60	59.1	59.2
Chile	—	46	53	53	56.5	57.5	57.1
Colombia	52	57	55	—	53.7	57.1	—
Mexico	53	54	51	55	50.3	51.9	54.6
Peru	60	57	49	—	44.9 ^c	46.2	49.8
Uruguay ^e	—	—	42	42	42	44.6	—
Mean	54.4	53.2	50	52.5	51.2	52.7	54.6

Sources: World Bank 2005a, Deininger and Squire 1996. Unless otherwise noted, Ginis are for distribution of individual gross income (before taxes and income and nonincome transfers).

Note: (): figure in parentheses indicates Gini coefficient if distribution based on individual incomes to compare with distribution based on household expenditures for the same year.

a. 1965.

b. 1975.

c. Ginis are for distribution of household expenditures.

d. Ginis are for distribution of household incomes.

e. Gini coefficient is for urban income distribution only.

MENA region, however, the distribution of consumption (and probably income as well) seems to have tended to greater equality in the 1990s.

This conclusion must be qualified, however. The data in table 2.5 represent three different measures of distribution: individual income distribution, household income distribution, and distribution of personal/household expenditures. Gini coefficients of individual income distribution are generally greater than those estimating household income distribution, and the Gini of household income distribution is generally larger than the Gini for the distribution of expenditures—because individuals and households with higher incomes tend to spend a smaller

fraction of their income, expenditure distributions are characterized by less variance than are income distributions.

Most estimates of distribution in the MENA countries use expenditure data, not income data. In some cases, it was possible to compare Gini coefficients for incomes in the same year as the Gini of expenditures. The Gini for income is always higher, and it gives an idea of how high the Gini coefficient would be in the MENA countries if we were measuring the distribution of income rather than expenditures. Thus, although the Gini coefficients for the MENA countries are much lower (more equal distribution) than those in Latin America and about the same as those in the more equal East Asian countries, it is likely that at least some (and perhaps a large part) of the difference in Gini coefficients between MENA and Latin America is an artifact of the use of expenditure data in MENA and of income data in Latin America. For example, in Tunisia, the Gini coefficient for individual income distribution is about 9 points higher than it is for consumption distribution. Tunisian consumption (and probably income) distribution has tended to become more equal—a smaller Gini coefficient—but the Gini coefficient for income distribution is probably about 0.48–0.50 in this period rather than the 0.39–0.41 shown for consumption expenditure distribution. This puts Tunisia at about the middle of Latin American income distributions and at about the same level of inequality as the Philippines, Thailand, or Malaysia; however, it is much less equal than Korea or China.

Notwithstanding the qualifications described above, the mostly cross-section data provided in table 2.6 give additional support to the conclusion that income distribution is relatively more equal in the MENA region compared to other regions. These data measure inequality in terms of the ratio of the income earned by the highest 20 percent of income earners to the lowest 20 percent of income earners in 1995 and 2002. The data only cover seven countries in the MENA region, none of which is from the Gulf States. Although these data suffer from some of the problems noted earlier, the pattern is clearly in favor of the MENA region. In particular, income distribution by this measure is more equal in the region compared to the countries in Latin America. And although some East Asian countries, such as South Korea and Indonesia, enjoy more equal income distribution than most MENA countries, the majority of countries in the region have better income distribution than do Malaysia and the Philippines.

The Distribution of Education

In contrast to the level and trends of income distribution in the MENA region, the distribution of education is becoming less equal

TABLE 2.6

Income Distribution as Measured by Ratio of Income Earned by Highest 20 Percent of Income Earners to Lowest 20 Percent of Income Earners, 1995–2002

	Year	% total income earned by lowest 20% of income earners	% total income earned by highest 20% of income earners	Ratio of income earned by highest 20% to lowest 20%
Algeria+	1995	7.0	42.6	4.7
Egypt, Arab Rep. of+	1999/2000	8.6	43.6	5.1
Iran, Islamic Rep. of+	1998	5.1	49.9	10
Jordan+	1997	7.6	44.4	5.8
Morocco+	1998/99	6.5	46.6	7.2
Tunisia+	2000	6.0	47.3	7.9
Yemen, Rep. of+	1998	7.4	41.2	5.6
Mean		6.9	45.1	6.8
Indonesia+	2002	8.4	43.3	5.2
Korea, Rep. of ^	1998	7.9	37.5	4.7
Malaysia^	1997	4.4	54.3	12.3
Philippines+	2000	5.4	52.3	9.7
Thailand+	2000	6.1	50.0	8.2
Mean		6.4	47.5	8.0
Argentina^	2001	3.1	56.4	18.2
Brazil^	2001	2.4	63.2	26.3
Chile^	2000	3.3	62.2	18.8
Colombia^	1999	2.7	61.9	22.9
Mexico+	2000	3.1	59.1	19.1
Peru^	2000	2.9	53.2	18.3
Uruguay (u)	2000	4.8	50.1	10.4
Mean		3.2	58.0	19.2

Source: World Bank 2005a.

Note: +: Data are for distribution of household expenditures; ^: Data are for distribution of household incomes; (u): Data are for urban income distribution only.

over time. Chapter 1 of this report shows that MENA countries made large investments in education in the 1970s, 1980s, and 1990s. The average education in MENA countries' labor forces increased from very low levels in the 1960s to about two years below the average education in labor forces in Latin American countries. At the same time, however, the dispersion of human capital, measured by the standard deviation from the average years of schooling in the population 15 years old or older during the period 1970–2000, has been rising (see table 1.5).

When we look at the Gini coefficients of the number of years of schooling for the same set of countries (table 2.7), both MENA and non-MENA countries exhibit an improvement over time. Gini coeffi-

TABLE 2.7

Gini Coefficients of the Distribution of Education, 1970–2000

	1970	1975	1980	1985	1990	1995	2000
Algeria	0.816	0.767	0.707	0.655	0.606	0.562	0.518
Bahrain	0.724	0.665	0.631	0.603	0.514	0.481	0.443
Djibouti	—	—	—	—	—	—	—
Egypt, Arab Rep. of	—	0.846	0.788	0.668	0.619	0.562	0.518
Iran, Islamic Rep. of	0.838	0.783	0.727	0.677	0.616	0.556	0.517
Iraq	0.852	0.807	0.732	0.744	0.677	0.622	0.605
Jordan	0.655	0.614	0.613	0.548	0.504	0.468	0.443
Kuwait	0.662	0.712	0.631	0.574	0.544	0.533	0.521
Lebanon	—	—	—	—	—	—	—
Libya	—	0.717	—	0.631	—	—	—
Morocco	—	—	—	—	—	—	—
Oman	—	—	—	—	—	—	—
Qatar	—	—	—	—	—	—	—
Saudi Arabia	—	—	—	—	—	—	—
Syrian Arab Rep.	0.713	0.674	0.617	0.562	0.518	0.481	0.458
Tunisia	0.818	0.758	0.693	0.670	0.616	0.571	0.538
United Arab Emirates	—	0.764	—	—	—	—	—
West Bank and Gaza	—	—	—	—	—	—	—
Yemen, Rep. of	—	0.991	0.957	0.910	0.846	—	—
Mean	0.760	0.758	0.710	0.658	0.606	0.537	0.507
China	—	0.552	0.507	0.493	0.419	0.401	0.383
Korea, Rep. of	0.510	0.389	0.333	0.281	0.210	0.198	0.192
Malaysia	0.547	0.514	0.471	0.454	0.420	0.392	0.379
Philippines	0.432	0.357	0.340	0.332	0.291	0.275	0.255
Thailand	0.425	0.433	0.371	0.400	0.404	0.398	0.391
Indonesia	0.586	0.581	0.505	0.438	0.581	0.536	0.502
Mean	0.500	0.471	0.421	0.400	0.388	0.367	0.350
Argentina	0.311	0.325	0.294	0.317	0.272	0.270	0.267
Brazil	0.540	0.465	0.484	0.482	0.437	0.434	0.429
Chile	0.383	0.387	0.370	0.367	0.368	0.374	0.372
Colombia	0.509	0.459	0.472	0.473	0.485	0.489	0.481
Mexico	0.511	0.498	0.497	0.469	0.384	0.373	0.358
Peru	0.492	0.490	0.414	0.424	0.418	0.359	0.361
Uruguay	0.392	0.348	0.357	0.335	0.343	0.346	0.346
Mean	0.448	0.425	0.413	0.410	0.387	0.378	0.373

Source: Thomas, Wang, and Fan 2001.

coefficients have been declining from very high values because, initially, a high fraction of the population had zero years of education. Thus, more individuals are being educated, even if the variance of years of schooling is increasing in the population. Even then, however, the education Gini coefficients for the MENA region are much higher than those of East Asia and Latin America, indicating more inequality in education in MENA.

Possible Interpretations of the Weak Education–Distribution Relationship

There are three possible explanations for the weak relationship between the observed improvements in the distribution of income in the MENA region and increased inequality in the distribution of years of education in a more educated labor force. The first is related to the pattern of public expenditure on various levels of education; the second is related to changes in the rates of return on education at different levels; and the third is related to female participation in the labor force. These explanations are taken up in turn.

Changes in the pattern of investment on different levels of education.

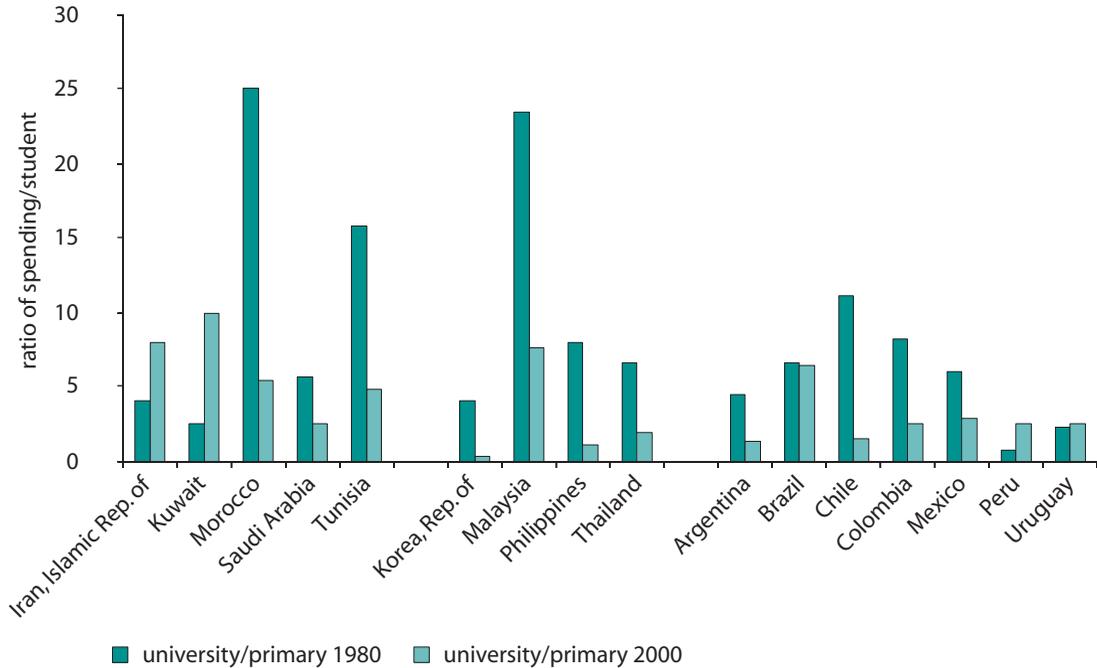
One human capital variable that helps predict changes in income distribution is changes in the pattern of expenditures on different levels of education. A shift in expenditure in favor of higher education tends to worsen income distribution, while a shift in favor of primary education is likely to improve income distribution. This is largely because students (and their parents) who can afford to forgo income (and incur cost) by enrolling in higher education tend to be better off than those who only satisfy themselves with basic education.

To explore what happened in the MENA region, figure 2.3 shows the ratio of public spending per pupil at the level of university relative to the amount spent per pupil in primary school in 1980 and 2000. The data are only available for five MENA countries (the Islamic Republic of Iran, Kuwait, Morocco, Saudi Arabia, and Tunisia), which we compare to a sample of countries from East Asia and Latin America. Although the sample is small, two noteworthy observations can be made. Between 1980 and 2000, almost all countries in the sample outside of the MENA region reduced their spending per student in university relative to basic education. In the MENA region, while Morocco, Saudi Arabia, and Tunisia did the same, Iran and Kuwait moved in the opposite direction during the same period. The second observation is that the average spending per pupil in higher education relative to basic education remained higher in the MENA region than did the corresponding ratio for comparator countries. Given that the distribution of the years of schooling among a more educated adult population in the MENA region has also become more unequal over time, higher spending per student in university relative to primary schools in the region relative to other regions may have diminished the potential equalizing effect of education in MENA.

Changes in the variance of the payoffs (rates of return) to investment in education. What about changes in the relative payoff to different levels

FIGURE 2.3

Ratio of Public Spending per Student in University Compared to Primary School, 1980 and 2000



Source: Author's calculations based on the World Bank WDIs.

of education, which earlier was assumed to be constant? This is probably the most important predictor of how investment in human capital can alter income distribution over time. If the rate of return to higher education increases faster than the rate of return to basic education, those with higher education (and initial higher earnings) will see their earnings go up more rapidly than those with lower levels of schooling (and lower initial earnings). This trend would worsen income distribution, other things being equal.

Table 2.8 presents a set of rates of return for four MENA countries as well as for a sample of countries from Asia and Latin America. Comparing these rates of return across regions suggests that the payoffs to university, while higher than to investment in lower levels of schooling in MENA, are low compared to the corresponding rates in Latin America and East Asia. The low variations in the rates of return to different levels of education in MENA have the effect of equalizing income, even if at low levels of earnings. The second observation is that the rates of return are not rising in MENA countries over time. That also works in the same equalizing direction. The reason for both observations is that MENA countries have on average experienced very low levels of eco-

TABLE 2.8

Private and Social Rates of Return to Education by Level of Education, 1970s–1990s

(percent annually per year of schooling within level)

	Private rate of return			Social rate of return		
	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
Egypt, Arab Rep. of 1988*	5	6	9	—	—	—
Egypt, Arab Rep. of 1998*	5	6	8	—	—	—
Jordan 1997*	3	4	7	—	—	—
Jordan 2002*	2	4	9	—	—	—
Morocco 1991*	8	10	12	—	9	10
Morocco 1999*	5	8	9	—	8	9
Yemen, Rep. of 1997*	3	2	5	—	—	—
Indonesia 1977	—	25	16	—	—	—
Indonesia 1978	—	—	—	22	16	15
Indonesia 1989	—	—	—	—	11	5
Korea, Rep. of 1974	—	20	19	—	16	12
Korea, Rep. of 1979	—	14	19	—	11	12
Korea, Rep. of 1986	—	10	19	—	8	12
Philippines 1971	9	6	10	7	6	8
Philippines 1977	—	—	16	—	—	8
Philippines 1988	18	10	12	13	9	10
Argentina 1985	30	9	11	—	—	—
Argentina 1987	—	14	12	—	12	11
Argentina 1989	10	14	15	8	7	8
Argentina 1996	—	16	16	—	12	12
Brazil 1970	—	25	14	—	24	13
Brazil 1989	37	5	28	36	5	21
Chile 1976	28	12	10	12	10	7
Chile 1985	28	11	10	12	9	7
Chile 1987	—	19	20	—	15	15
Chile 1989	10	13	21	8	11	14
Chile 1996	—	16	20	—	11	17
Colombia 1973	15	15	21	—	—	—
Colombia 1989	28	15	22	20	11	14
Mexico 1984	22	15	22	19	10	13
Peru 1980	—	—	—	41	3	16
Peru 1990	13	7	40	—	—	—
Peru 1997	—	8	12	—	7	11
Uruguay 1987	—	19	18	—	19	16
Uruguay 1989	—	10	13	—	8	12
Uruguay 1996	—	36	12	—	30	10

Sources: Egypt (1988, 1998), Jordan (1997), Morocco (1991, 1999), and Yemen (1997): World Bank 2004 (staff estimates). Jordan 2002: calculations based on HEIS Survey 2002. East Asia and Latin American countries: Allen 2001, CRESUR 2004.

Note: *Males only, simple average of private and public sector rates. All other countries— males and females combined or simple average of male and female rates of return when rates are estimated separately.

conomic growth in the last two decades, as noted earlier in this chapter; this must have dampened the returns to higher education.

Female participation in the labor force. One final possible explanation as to why MENA income distributions may be more equal than those in Latin America when education distribution is becoming less equal over time is that a smaller percentage of the labor force in MENA is female (see table 2.9). Because women generally earn lower incomes than men,

TABLE 2.9

Female Labor Force Participation Rates, 1980–2003, by Country

(percent)

	1980	1990	1995	2000	2001	2002	2003
Algeria	21.4	21.1	24.4	27.6	28.4	29.2	29.9
Bahrain	11.0	17.0	18.9	21.7	22.1	22.5	22.9
Djibouti	—	—	—	—	—	—	—
Egypt, Arab Rep. of	26.5	27.1	28.9	30.5	30.8	31.1	31.4
Iran, Islamic Rep. of	20.0	20.3	23.5	27.0	27.8	28.6	29.4
Iraq	17.3	16.3	18.0	—	—	—	—
Jordan	14.6	17.1	20.4	23.9	24.4	25.0	25.5
Kuwait	13.0	22.8	19.2	21.5	22.3	23.2	23.9
Lebanon	22.7	26.6	28.2	29.3	29.6	29.9	30.2
Libya	18.6	18.4	20.9	23.4	23.8	24.2	24.7
Morocco	33.5	34.5	34.6	34.7	34.9	35.0	35.2
Oman	6.3	10.7	13.7	17.2	18.2	19.1	20.1
Qatar	6.4	11.7	14.5	16.6	17.1	17.5	17.9
Saudi Arabia	7.6	11.4	14.6	17.7	18.6	19.4	20.2
Syrian Arab Rep.	23.5	24.4	25.6	26.9	27.3	27.6	27.9
Tunisia	28.9	29.1	30.5	31.9	32.2	32.5	32.7
United Arab Emirates	5.1	10.7	11.7	13.2	13.6	14.1	14.5
West Bank and Gaza	—	—	—	11.5	11.9	12.4	12.8
Yemen Rep. of	32.5	29.7	29.2	28.6	28.7	28.8	28.9
Mean	18.2	20.5	22.2	23.7	24.2	24.7	25.2
China	43.2	45.0	45.2	45.1	45.1	45.1	45.0
Indonesia	34.8	38.1	39.2	40.5	40.8	41.0	41.2
Korea, Rep. of	38.7	39.3	40.3	41.4	41.1	40.9	40.7
Malaysia	33.7	35.0	36.3	37.6	37.9	38.1	38.4
Philippines	34.7	36.5	37.2	37.9	38.1	38.2	38.3
Thailand	47.6	47.2	47.0	47.1	47.1	47.0	47.0
Mean	38.8	40.2	40.9	41.6	41.7	41.7	41.8
Argentina	27.6	28.5	30.9	33.3	33.9	34.5	35.1
Brazil	28.4	34.8	35.2	35.5	35.5	35.5	35.5
Chile	26.3	29.9	31.8	33.6	34.1	34.6	35.1
Colombia	26.2	36.0	37.7	39.1	39.3	39.5	39.7
Mexico	26.9	30.0	31.7	33.8	34.0	34.2	34.4
Peru	23.9	27.5	29.6	30.9	31.2	31.5	31.8
Mean	26.6	31.1	32.8	34.3	34.7	35.0	35.3

Source: The World Bank, *Government Development Finance* and *World Development Indicators* central database (accessed in August 2005).

as more women enter the labor force, this may make income distribution more unequal, particularly if the women who enter the labor force are the less educated. On the other hand, if most women who work have higher levels of education, this may actually equalize income distribution, because it drives down the average levels of income among the top 20 percent of income earners.

In MENA countries, a much higher percentage of women with higher education compared to those with lower education participate in the labor force, and this difference in participation is greater than it is in Latin America or East Asia. Thus, if anything, women's participation in the labor force in MENA countries tends to make income distribution stay more equal than in other regions.

Education and Poverty Reduction

Finally, consider the relationship between education and poverty. Here, conventional wisdom has it that economic growth is the key to a successful poverty-reduction strategy. This view is well articulated in the 2000–2001 World Development Report, *Attacking Poverty*, which states that:

“Growth is essential for expanding economic opportunity for poor people—though this is only the beginning of the story of public action... The question is how to achieve rapid, sustainable, pro-poor growth. A business environment conducive to private investment and technological innovation is necessary, as is political and social stability to underpin public and private investment. And asset and social inequalities directly affect both the pace of growth and the distribution of its benefits.” (p. 38)

Although growth is considered only a necessary but not a sufficient condition for poverty reduction, the emphasis in the above view is clearly placed on growth and its determinants.

In a departure from conventional wisdom, Burguignon (2005, p. 2) argues that, although the relation among poverty, economic growth, and income distribution varies across countries and with different development levels and income distribution, “An arithmetic identity links the growth of the mean income in a given population with the change in distribution—or in ‘relative’ incomes—and the reduction of absolute poverty.” In other words, poverty reduction is a byproduct of the interaction between the rate of growth of the mean income of the population and the change in the distribution of income. Clearly, the emphasis here

is placed equally on economic growth and income distribution rather than on growth and how distribution may impact it.

Bourguignon's argument has important implications for exploring the role that investment in education may have played in reducing poverty in the MENA region, which is the subject of this section. It suggests that the best way of proceeding is by looking at how education may have affected economic growth and distribution. In addition to reiterating the salient points of these discussions, this section also shows how education may have affected poverty through its influence on population growth in MENA.

Trends in Poverty Reduction

What is the level of poverty in the MENA region? What happened to poverty in the region over time? And how does the region compare with other developing countries?

The answer to these questions is that the region did well, both in terms of reducing poverty over time and in comparison with other regions.

The data provided in table 2.10 show an interesting pattern. Over the last 20 years, East Asia and the Pacific (dominated by the data from China) has had the largest proportion of persons with low incomes (i.e., those living on less than \$1 or \$2 per day) of the three regions; however, it also registered the greatest decline in the proportion of low-income earners during this period. In 1981, Latin America and MENA had much lower proportions than East Asia of low-income persons. However, these proportions hardly changed in Latin America, so that the East Asian figures, which had been much higher in 1981, had sharply reduced the gap with Latin America by 2001. MENA did better in the last two decades. The proportion of the population in that region living on less

TABLE 2.10

Share of People Living on Less than \$1 and \$2 per Day by Region, 1981–2001

(percent)

	1981	1984	1987	1990	1996	2001
East Asia and Pacific						
< \$1 per day	57.7	38.9	28.0	29.6	16.6	14.9
< \$2 per day	84.8	76.6	67.7	69.9	53.3	47.4
Latin America and the Caribbean						
< \$1 per day	9.7	11.8	10.9	11.3	10.7	9.5
< \$2 per day	26.9	30.4	27.8	28.4	24.1	24.5
MENA						
< \$1 per day	5.1	3.8	3.2	2.3	2.0	2.4
< \$2 per day	28.9	25.2	24.2	21.4	22.3	23.2

Source: Table 2.5, World Bank 2005.

than \$1 per day dropped to about 2 percent in 2001, and those living on less than \$2 per day fell below the Latin American proportion, even though this represented a small decline compared with 1981.

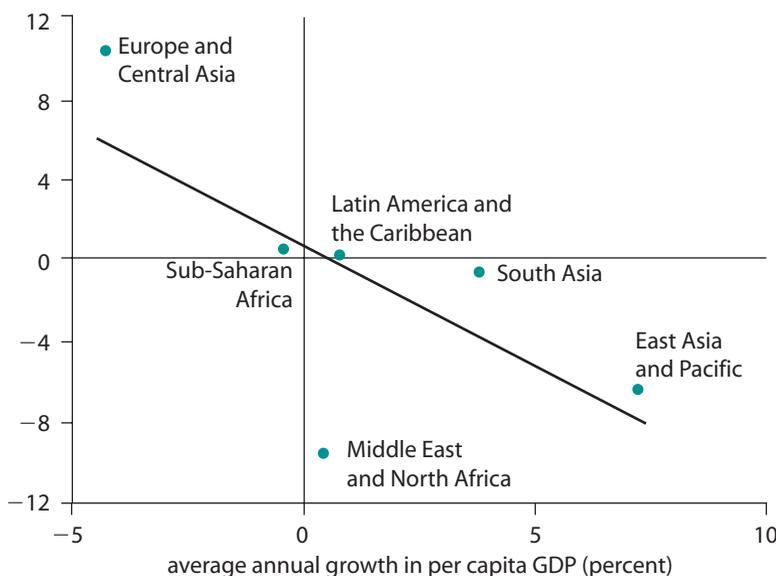
Figure 2.4 depicts the changes in poverty reduction against per capita GDP growth rate by region in the 1980s and 1990s. It shows that MENA, Latin America, and East Asia all had positive per capita growth in these two decades, but that East Asia's was much higher. It also shows that poverty reduction in Latin America was much lower during this period than it was in East Asia, as might be expected (see trend line). Yet MENA's rate of poverty reduction was not far from East Asia's, despite MENA's much lower rate of growth of per capita GDP.

Table 2.11 provides additional data on poverty rates in the 1990s, in this case by country within regions. Reported poverty rates in this table are measured in terms of each country's national definition of poverty, so they should be interpreted with some care. Nevertheless, once again the data suggest that, generally, poverty rates are lower in East Asia and MENA than in Latin America, and are declining within the countries in the region that have had more rapid rates of growth. For example, in MENA, the poverty rate rose in Morocco in the 1990s because of a very slow rate of growth (GDP per capita increased only 7 percent in the entire decade), but it fell in Egypt, where the growth rate was higher (a 22

FIGURE 2.4

Economic Growth and Poverty Reduction by Region, 1980–2000

(percent)



Source: Adapted from World Bank 2001 (figure 3.3).

TABLE 2.11

Proportion of Population under Poverty Line, 1990s

	National population below the poverty line		Urban population below the poverty line	
	1995	1998	1995	1998
Algeria	22.6	12.2	14.7	7.3
Egypt, Arab Rep. of	22.9	16.7 (1999)	22.5	—
Jordan	15.0 (1991)	11.7 (1997)	—	—
Kuwait	—	—	—	—
Morocco	13.1 (1990)	19.0	7.6 (1990)	12.0
Tunisia	7.4 (1990)	7.6 (1995)	3.5 (1990)	3.6 (1995)
Yemen, Rep. of	—	41.8	—	30.8
Mean	16.2	18.2	18.6	13.4
China	6.0 (1996)	4.6	<2 (1996)	<2
Korea, Rep. of	—	—	—	—
Malaysia	15.5 (1989)	—	—	—
Philippines	40.6 (1994)	36.8 (1997)	28.0 (1994)	21.5 (1997)
Thailand	18.0 (1990)	13.1 (1992)	—	10.2 (1992)
Mean	20.0	18.2		
Argentina	—	—	28.4	29.9
Brazil	23.9 (1996)	22	15.4 (1996)	14.7
Chile	19.9 (1996)	17	—	—
Colombia	60.0	64.0 (1999)	48	55.0 (1999)
Mexico	10.1 (1988)	—	—	—
Peru	53.5 (1994)	49.0 (1997)	46.1 (1994)	40.4 (1997)
Mean	33.5	38.0	34.5	35.0

Source: World Bank 2005.

Note: < 2: less than 2.

percent increase in GDP/capita for the decade). Jordan and Algeria's poverty rates fell despite low economic growth in the 1990s.

Education, Growth, and Poverty Reduction

The positive influence of economic growth on poverty reduction is supported by several studies. For example, Chen and Ravallion (2002) show that economic growth is highly correlated with “absolute poverty”—that is, per capita consumption and a reduction in the percentage of the population living on less than \$1 per day. In some countries, growth is associated with much more poverty reduction than in others. On average, however, every additional percentage of growth in average household consumption in the 1980s and 1990s across 65 developing countries reduced the share of people living on less than \$1 per day by about 2 percent (World Bank 2001, figure 3.3).

The positive effect of economic growth on reducing poverty is also evident from historical trends. In Europe and the United States, long-

term economic growth since the beginning of the nineteenth century reduced poverty in 180 years from levels near three-quarters of the population to under 15 percent in the United States and far less in other countries (Bassanini and Scarpetta 2001). China's rapid growth since 1980 has reduced the proportion of the population living on less than \$1 per day from 64 percent in 1981 to 17 percent in 2001, and the population living on less than \$2 per day from 88 percent to 47 percent (World Bank 2005, table 2.5). Korea eliminated poverty in one generation through extraordinarily rapid and sustained economic growth.

If higher growth can substantially reduce poverty, how can investing in education contribute to higher economic growth? This issue was discussed earlier in the chapter, and the conclusions are mixed. Investment in human capital *should* contribute to growth, and probably does. Yet, because investment in education takes place in young people, and the payoff to such investment occurs over a long period of time, it is difficult to show with available data the effects of educational investments in more recent years (the 1980s, for example), when secondary and higher education expanded rapidly in Latin America and the MENA countries. Initial levels of education in the 1960s show a significant influence on later growth rates, so according to these empirical estimates, MENA countries, which had very low educational levels in the 1960s, were predicted to have much lower growth rates than East Asia in the 1980s and 1990s.

That's not the whole story, however. Investing in education apparently contributes much more to growth when those who are educated have the opportunity to use their education in more productive activities. In MENA, these opportunities have been more limited than in East Asia, for example, mainly because there has been less investment in manufacturing, high-value-added agriculture, and high-value-added services in MENA than in East Asia. A high fraction of the highly educated individuals in MENA are employed in the public sector, whereas in East Asia, a high fraction works in manufacturing and high-value-added services.

Education, Income Distribution, and Poverty Reduction

Why does MENA have poverty rates that are as low as or lower than those of East Asia and Latin America when its economic growth rates have been no higher than, say, Latin America's, and much lower than East Asia's? One answer is that, "For a given rate of growth, the extent of poverty reduction depends on how the distribution of income changes with growth and on initial inequalities in income, assets, and access to opportunities that allow poor people to share in growth." (World Bank 2001, p. 52)

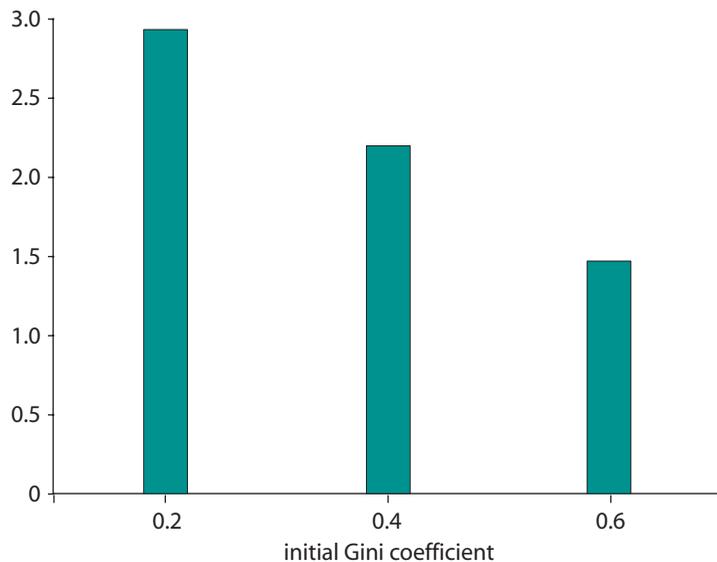
In general, the more equal the initial distribution of income, the more poverty is reduced for a given rate of economic growth (figure 2.5). Because MENA countries such as Algeria, Egypt, Iran, Jordan, Morocco, and Tunisia have income distributions with a Gini coefficient of about 0.35–0.45, whereas many East Asian economies (other than Korea and Indonesia, and perhaps China) are closer to 0.45–0.50 (see table 2.5), this alone could explain a difference of a few percentage points of annual reduction in poverty for each percentage of per capita income growth. Further, because East Asian countries have had per capita economic growth rates that are even greater than this (about 6 percent higher than the average MENA per capita growth rate in 1980s and 1990s), this has more than offset the income distribution effect. The main point, however, is that more equal income distribution in the MENA countries probably has had a positive effect on poverty reduction—enough so that poverty rates are low in MENA despite slower economic growth rates than in East Asia, and much lower than in Latin America despite similar growth rates in that region.

A recent report on poverty reduction and social development in the MENA region (World Bank 2005) makes the point this way:

The move from a statist toward a market-oriented economic system carries implications for economic growth and social develop-

FIGURE 2.5

Average Annual Reduction in Incidence of Poverty Associated with 1 Percent Increase in Average per Capita Consumption



Source: Adapted from World Bank 2001 (figure 3.6).

ment. At some risk of oversimplification, it might be argued that market-oriented systems are better at producing economic growth but worse at ensuring equitable social development in terms of poverty reduction and improvements in access to education and health. If so, one would expect higher growth and poorer social development performance in MENA to have resulted from the ongoing transition in economic regimes. As it turns out, however, the opposite has happened. Economic growth collapsed in the region during the 1980s and has been quite low during the 1990s. At the same time, poverty and social development indicators, and especially the latter, have been more robust than could have been expected on the basis of the weak growth performance alone. This suggests the successful operation of an activist social policy that sought to protect social development objectives despite low growth and associated fiscal constraints (World Bank 2005, p. 1).

As economies grow, income distribution may change, and this too changes the reduction of poverty rates over time. Bourguignon (2005) shows that the effect on poverty of a change in income distribution can be sizable. This effect is large both when countries with relatively unequal income distributions reduce income inequality and when countries with relatively lower levels of income inequality become more unequal. The question of concern here is what the role of education is in effecting the changes in income distribution, and thus poverty, in the MENA region.

As noted above, the effect of education on income distribution varies with the pattern of investment across levels of education and changes in the rates of return to different levels of education. In most countries, the rates of return to primary and secondary education declined in the 1980s and 1990s, whereas the rates of return to higher education increased. This probably has had the effect of offsetting any increases in income equality resulting from equalizing the distribution of education in a society. Thus, even as young people from lower-income families increased their average level of education relative to the education of youth from higher-income families, the payoff to lower-income youth fell on the education they received compared to the payoff to the higher levels of education taken by youth from higher-income families.

With respect to the MENA region, the overall contribution of increasing the average level of education in the population does not seem to have contributed much to greater income equality. Surely, many countries in the region expanded educational attainment rapidly in the 1980s and 1990s, and tended to expand from the “bottom”—that is, investing first in universal primary education, then expanding secondary educa-

tion, and so forth. This pattern of expansion must have contributed to more equal distribution of education among those in the labor force, and possibly to improved income distribution, hence to poverty reduction. However, this equalizing force was dampened by the low rates of return on education and their change over time. The payoffs to higher education in MENA countries were lower than they were in Latin America and East Asia, and the changes in these payoffs to higher education in the region during the 1980s and 1990s were relatively small. One exception to the above pattern of expansion was Egypt, where heavy investment in higher education in the 1980s preceded full enrollment of children in primary schools. This may have contributed to making income distribution more unequal (still at a relatively moderate Gini coefficient) in the late 1990s, but even so, the effect was small.

Other factors besides education can and do influence income distribution and poverty. One of these factors is direct income support to the poor by the state, and indeed, governments in many countries, such as Egypt and Jordan in the MENA region and Taiwan and China in East Asia, have actively pursued redistributing income through various mechanisms (although Chinese redistribution policies are on the wane). These policies seem to have had a much more direct effect on reducing poverty than educational investment policies because they directly affect the incomes of lower-income families rather than depending on the indirect effects of educational investment (and changing market returns). The influence of “Arab socialism” in Algeria, Egypt, and Syria continues to be important. In addition, the oil countries essentially guarantee natives an income floor, including state-provided health services and other family benefits.

Education, population growth, and poverty. Investment in women’s education can have a positive effect on equalizing incomes and reducing poverty through lowering fertility rates in lower-income families and through increasing family incomes, possibly more at lower income levels than at higher income levels. Because MENA countries delayed investment in education—especially women’s education—far longer than Latin American or East Asian countries did—the MENA region is generally characterized by much higher fertility rates (table 2.12) and population growth rates (figure 2.6). Because lower-income families tend to have more children than higher-income families, these higher fertility rates have three effects:

- They increase poverty rates, because lower-income families need more resources to maintain their larger numbers of children;
- They increase the costs of education, because lower-income families with more children have fewer resources and fewer resources per child

TABLE 2.12

Fertility Rates, 1962–2003

(number of children per women of child-bearing age)

	1962	1972	1990	1997	2003
Algeria	7.4	7.4	4.5	3.5	2.7
Bahrain	7.2	6.2	3.8	3.3	2.3
Djibouti	6.9	6.7	6.0	5.5	5.2
Egypt, Arab Rep. of	7.1	5.5	4.0	3.6	3.1
Iran, Islamic Rep. of	7.3	6.5	4.7	2.8	2.0
Iraq	7.2	7.1	5.9	4.7	4.1
Jordan	—	—	5.4	3.9	3.5
Kuwait	7.3	6.9	3.4	2.9	2.5
Lebanon	6.4	4.9	3.2	2.5	2.2
Libya	7.2	7.6	4.7	3.8	3.3
Morocco	7.2	6.9	4.0	3.1	2.7
Oman	7.2	9.3	7.4	4.8	4.0
Qatar	7.0	6.8	4.3	2.8	2.5
Saudi Arabia	7.3	7.3	6.6	5.7	5.3
Syrian Arab Rep.	7.5	7.7	5.3	4.0	3.4
Tunisia	7.2	6.2	3.5	2.4	2.0
United Arab Emirates	6.9	6.4	4.1	3.5	3.0
West Bank and Gaza	—	—	—	5.5	4.9
Yemen, Rep. of	7.6	7.7	7.5	6.4	6.0
Mean	7.1	6.9	4.9	3.9	3.4
China	7.6	4.9	2.1	1.9	1.9
Indonesia	5.4	5.4	3.1	2.8	2.4
Korea, Rep. of	5.4	4.1	1.8	1.6	1.5
Malaysia	6.7	5.2	3.8	3.3	2.8
Philippines	6.6	5.5	4.1	3.6	3.2
Thailand	6.4	5.0	2.3	1.9	1.8
Mean	6.3	5.0	2.8	2.5	2.3
Argentina	3.1	3.2	2.9	2.6	2.4
Brazil	6.2	4.7	2.7	2.3	2.1
Chile	5.3	3.6	2.6	2.3	2.2
Mexico	6.8	6.5	3.3	2.6	2.2
Peru	6.9	6.0	3.7	3.1	2.7
Mean	5.6	4.8	3.0	2.6	2.3

Sources: World Bank, Global Development Finance and World Development Indicators central database (accessed in February 2006).

to invest in the education of their children, putting increased pressure on state resources to provide them a given quality of education;

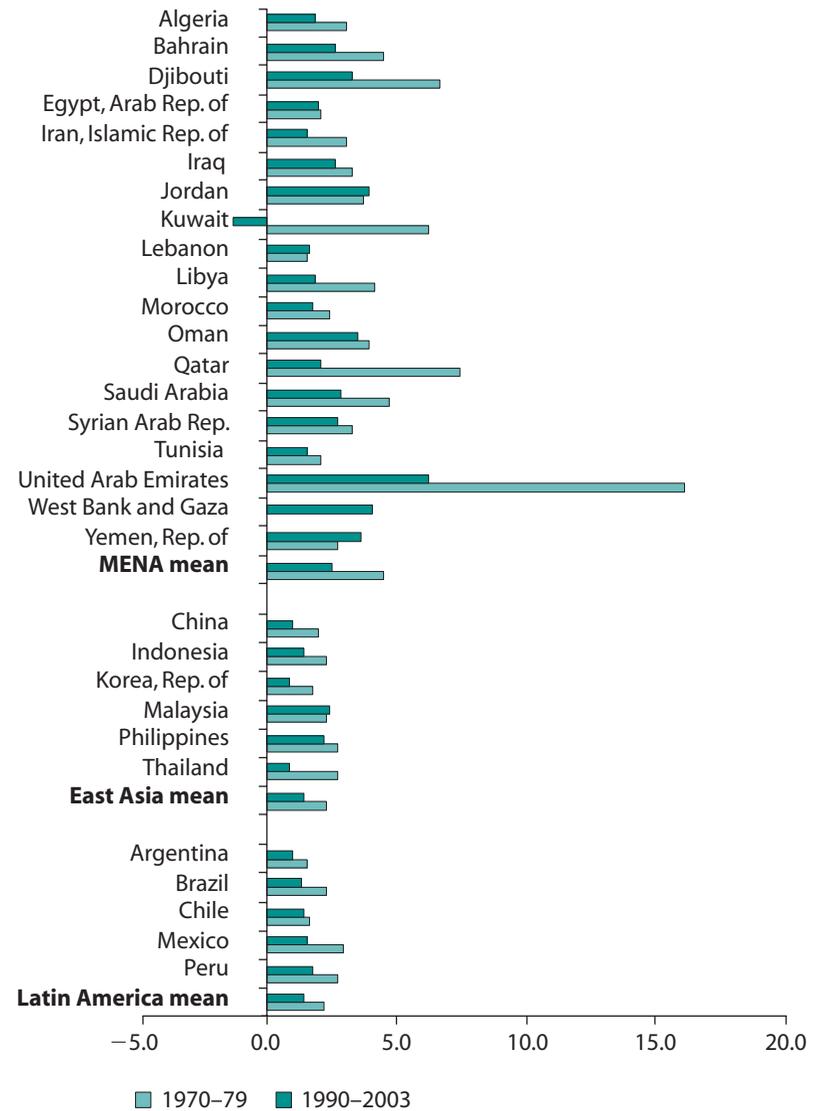
- They raise the cost of programs of direct intervention in poverty reduction.

The good news for the MENA region is that the trends of gender parity in education and women's participation in the labor force have improved over the last few decades. By now, gender parity in education has

FIGURE 2.6

Population Growth Rate by Country and Region, 1970–79 and 1990–2003

(percent)



Source: World Bank, *Global Development Finance* and *World Development Indicators* central database (accessed in August 2005).

almost been achieved by most countries in the region. Simultaneously, women’s participation in the labor market is on the rise, especially among the educated. Not surprisingly, women’s fertility rates declined from an average of 7.1 children in 1962 to 3.4 in 2003. While the most recent fertility rates for the region are still higher than those of East Asia

and Latin America, the gap is all but vanishing. These developments are likely to contribute to poverty reduction in the future.

Summing Up

This chapter has argued that the relationship between human capital and economic growth is highly conditioned by the quality and distribution of education in the labor force and the economic structure of each country. Investing in more and better-distributed education in the labor force helps create conditions that could lead to higher productivity and higher economic growth, but this is by no means sufficient. It is also necessary to adopt policies that lead to the creation of diversified, dynamic, and competitive sectors capable of absorbing the more educated labor force to translate human capital into higher economic growth. The evidence supports the view that countries that combine both do better on average than those that do one without the other.

The story of the MENA region is simply one of catching up on both fronts. There are exceptions but, as discussed in chapter 1, most MENA countries have yet to reach the level and quality of human capital of the more dynamic economies in the developing world. In addition, most countries in the MENA region have yet to develop economically into modern, industrialized productive structures capable of absorbing a significant fraction of the labor force into high-productivity jobs. Short of making a leap forward in both areas, further investment in education is likely to go unrewarded.

As for the relationship between education and income distribution, it has been shown that income distribution in the MENA region is somewhat more equal than it is in many other developing countries, and may have become more equal in several key MENA countries over the past 15–20 years. The analysis of education and economic growth earlier in this chapter provides some clues as to why this might be the case. A very high fraction of university graduates is employed in the public sector in MENA, and only a small fraction is employed in the private sector. This pattern contrasts starkly with East Asia and some countries of Latin America, where a significant fraction of the more educated is employed in rapidly growing manufacturing or financial and business services. These sectors usually reward higher education with greater earnings than a public bureaucracy does.

Another, related reason is that the expansion of education in the population in MENA has been rapid compared to job growth. Given that there are relatively few job opportunities outside government for secondary and university graduates, the expansion of education has pro-

duced a large surplus of graduates, high unemployment, and long waits for government jobs. This means that rates of return to higher education are probably not rising, as they are in East Asia and Latin America. These low rates of return to higher education in MENA are likely the main factor in explaining the somewhat more equal income distributions in MENA countries in comparison with East Asia and Latin America.

In addition, income distribution may have remained somewhat more equal in the MENA region than in Latin America because the participation of women in the labor market in MENA over the past 20 years has tended to include the better educated, whereas in Latin America and East Asia, a much higher proportion of the growth in female employment has been among less-educated women entering the manufacturing sector. Because these women are near the bottom of the income scale, this tends to make income distribution more unequal in Latin America and East Asia relative to MENA.

Finally, neither growth rates nor education appear to have contributed to the low poverty levels of MENA countries. Growth rates were very modest in the last two decades and the returns to education were low. Rather, the main reasons for low poverty rates in MENA seem to be: (1) relatively moderate and somewhat declining inequality of income distribution, so whatever growth rates in GDP per capita occurred, they contributed to higher consumption per capita for the poor, and thus lower poverty rates; and (b) income support programs, especially for poor families.

A third factor is the increase in women's education and participation in the labor force. These trends appear to have contributed to lower fertility and population growth rates across a wide range of groups including lower-income families. Beside reducing the cost of government welfare and the cost of providing education, lower fertility and population growth rates could diminish the negative distributional impact of diverging rates of return on higher relative to lower education that are often associated with the deployment of the educated labor force into the more dynamic sectors of the economy.

Endnotes

1. In the 1990s, new econometric tools introduced a temporal dimension into cross-country estimates. These panel analyses (Knight, Loayza, and Villanueva 1993; Islam 1995; Judson 1995; Berthelémy, Dessus, and Varoudakis 1997; Bassani and Scarpetta 2001; and Dessus 2001) start with the results obtained by Mankiw, Romer, and Weil 1992 (MRW) and show how the integration of a temporal dimension modifies the results. The results are mixed as well.

2. Measured by Gini coefficients, the distribution of education has improved in MENA as well as elsewhere, but MENA has consistently fallen below other regions, as discussed below.

3. There are wide variations within MENA, however. The Moroccan administration employs only 10 percent of the working population, but Egypt and Jordan employ approximately 35 percent. The situation is more extreme in the oil-producing countries, where more than 70 percent of the working population is employed by the state.

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New Challenges Facing the Education Sector in MENA

So far, we have argued that the impact on development of the considerable education progress recorded in the region has been less than expected in terms of economic growth, the promotion of equality, and reduction of poverty. How much of this outcome is the consequence of particular characteristics of the region's education systems and how much is due to weak linkages between education and labor markets is difficult to discern. We nevertheless conclude that the continuing gap between education and development outcomes may lead policy makers to consider *alternative paths of educational development* in the future.

Furthermore, the conditions under which education systems contribute to economic and social development have changed and this also argues for considering alternative paths of education development. The "road not traveled for education reform" in the MENA region also refers to the fact that education systems must now travel over new and relatively unexplored terrain. Education systems have a tendency to spawn a new set of challenges for every problem resolved. Once everyone is in school, we must ensure that they do not drop out. Once they remain seated, we must make sure that they learn something. Once they appear to be ready to learn, we must make sure that the material is useful for their future and ours. Thus, some aspects of the new terrain that education systems must cross have been shaped by the education system itself.

In this context, MENA countries have succeeded in providing most eligible children with educational opportunities, thus narrowing gender, rural, and socioeconomic gaps in access to schooling. This has led to strains resulting from the maintenance costs of the established education apparatus; new demands for instruction at post-compulsory levels of education; and the consequent costs of ongoing inefficiencies: dropouts, low graduate employment, and ambivalent learning outcomes. Essentially, the question facing education authorities in many MENA countries is: What do we do now that we have almost reached education for all?

Whatever policy makers decide in answering this question, they need to take into account several new challenges. First and foremost are *globalization* and the increasing importance of *knowledge* in the development process. Since education is the main source of knowledge creation, the task is clear: the education systems must be changed to deliver the new skills and expertise necessary to excel in a more competitive environment.

Second, the clientele to be served by the education system has also changed. On the one hand, the number of eligible students seeking post-compulsory education is expected to increase considerably over the next decades, leading to added pressure on the education system to offer diversified educational opportunities. On the other hand, for reasons associated with globalization and the knowledge economy, a greater swathe of the population will need to obtain fundamental as well as specific skills: the education systems will need to become more effective in transmitting skills and competencies to all.

Finally, facing these new challenges will be costly. Thus, MENA countries will have to consider not only how education will be delivered but also how it will be paid for if they are to succeed. These three challenges are discussed below.

Globalization, Education, and the Knowledge Economy

Globalization poses challenges for the development of education systems in the MENA region. This section examines how globalization has changed the role of human capital formation in development. It explores the international trends in education that have developed as a consequence, while examining the degree to which education systems in MENA countries have adopted these trends.

Globalization and the Knowledge Economy

Whether framed as the cause of or the panacea for today's social, political, and economic ills, *globalization* is a phenomenon that changes the fundamentals of any development strategy. The authorities may avoid the phenomenon or fully embrace it—and both tacks have their reasonable adherents—but they cannot ignore its impact on policy making in every sector of the economy. Education is no exception.

One of the most important consequences of this overall trend is that *knowledge* (including education, skills, information, and know-how) and its renewal and application have become critical factors for sustaining competitiveness and economic growth. For many developing countries, an abundant supply of low-wage, unskilled labor used to be a route to rapid

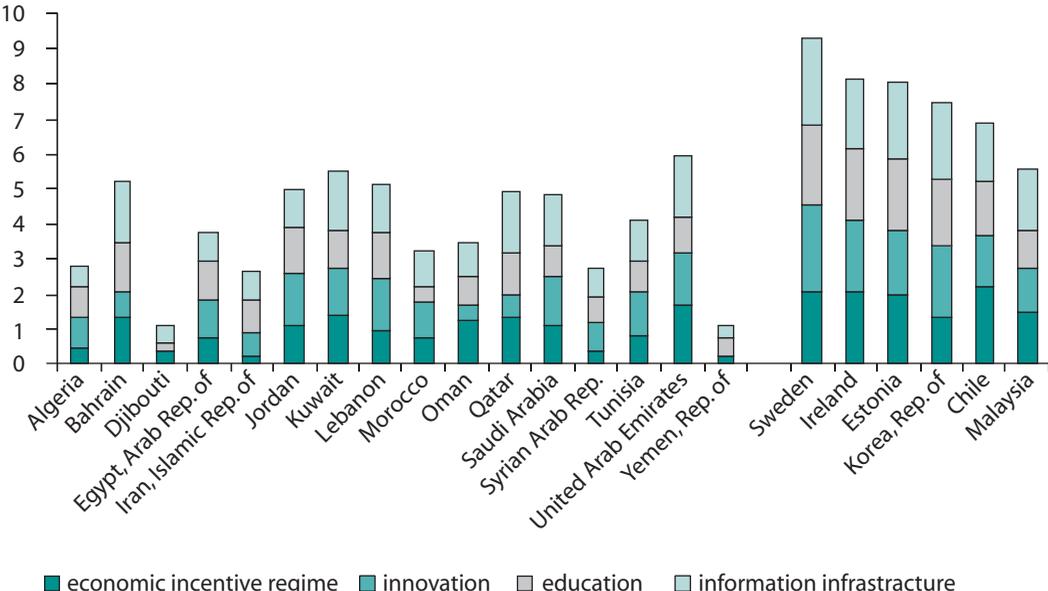
growth and national prosperity, but this is no longer so. In today’s world, characterized by intense global competition and rapid technological change, the key to prosperity is a well-educated, technically skilled workforce producing high-value-added, knowledge-intensive goods and services; in addition, they must be employed in enterprises that have the managerial capacity to find, adapt, and adopt modern, up-to-date technology and sell sophisticated goods and services in local and global markets.

To measure the extent to which economies possess this kind of knowledge, the World Bank has developed a Knowledge Economy Index (KEI) using four indicators. The indicators attempt to capture whether: (i) an economic and institutional framework that provides incentives for the efficient creation, dissemination, and use of knowledge to promote growth and increase welfare is in place; (ii) an educated and skilled population that can create and use knowledge has been established; (iii) an innovation network composed of firms, research centers, universities, consultants, and other organizations that can tap into the growing stock of global knowledge, adapt it to local needs, and transform it into products valued by markets (good and market effects) has developed; and (iv) a dynamic information infrastructure that can facilitate the effective communication, dissemination, and processing of information has been put in place.¹

Figure 3.1 presents the KEI “scores” of some MENA and non-MENA countries. It shows that MENA countries mostly fall below the

FIGURE 3.1

Knowledge Economy Index with the Breakdown of Index of Four Pillars



Source: World Bank “Knowledge for Development” (accessed in May 2006). http://web.worldbank.org/WBSITE/EXTERNAL/WBI/WBI_PROGRAMS/KFDLP/0,,menuPK:461238~pagePK:64156143~piPK:64154155~theSitePK:461198,00.html.

middle range on the index. They also fall below the scores obtained by OECD countries, most of the transition economies, and some East Asian countries. The contribution of education and human resources to the overall index is most significant in Bahrain, Jordan, Kuwait, and Lebanon. It is most modest in Djibouti, Morocco, and the Syrian Arab Republic. Thus, while the entire region needs to improve all components of the knowledge economy index, the latter group of countries needs to pay particular attention to the development of their education systems.

Education and the Knowledge Economy

For a country or a region to be competitive, the education system must be capable of providing two types of services. First, it must be able to produce the broadest possible human capital base. If knowledge is increasingly recognized as key to competitiveness, it follows that, the more people have a fundamental level of instruction, the better.² Second, if a country or region's "knowledge" endowment is to be ever elastic and growing, an individual's knowledge base must also continuously change and expand.

The notion of *lifelong learning* has the potential of meeting these objectives, at least from a technical point of view. Lifelong learning involves: (i) a formal education that provides all individuals with opportunities to acquire a fundamental level of instruction, however defined within national contexts; (ii) multiple opportunities for individuals to continually renew their knowledge, skills, and competencies; and (iii) an institutional set-up to quickly and smoothly adapt and respond to the changing educational demands of individuals, firms, local and regional political actors, and the international environment (World Bank 2003). Below, we discuss each of these characteristics from the perspective of international experience and the education systems of MENA.

A fundamental level of instruction for all. Levy and Murnane (2004) have identified a range of skill levels, each requiring a more extensive use of cognitive skills and decision-making capacity, which are usually needed in any productive process:

1. **Expert thinking:** solving problems for which there are no rule-based solutions, e.g., diagnosing the illness of a patient
2. **Complex communication:** interacting with humans to acquire information, to explain it, or to persuade others of its implications for action

3. **Routine cognitive tasks:** mental tasks that are well described by logical rules, e.g. maintaining expense reports
4. **Routine manual tasks:** physical tasks that can be well described using rules, e.g. counting and packaging pills
5. **Nonroutine manual tasks:** physical tasks that cannot be well described as following a set of “If-Then-Do rules”—instead, they require optical recognition and fine muscle control.

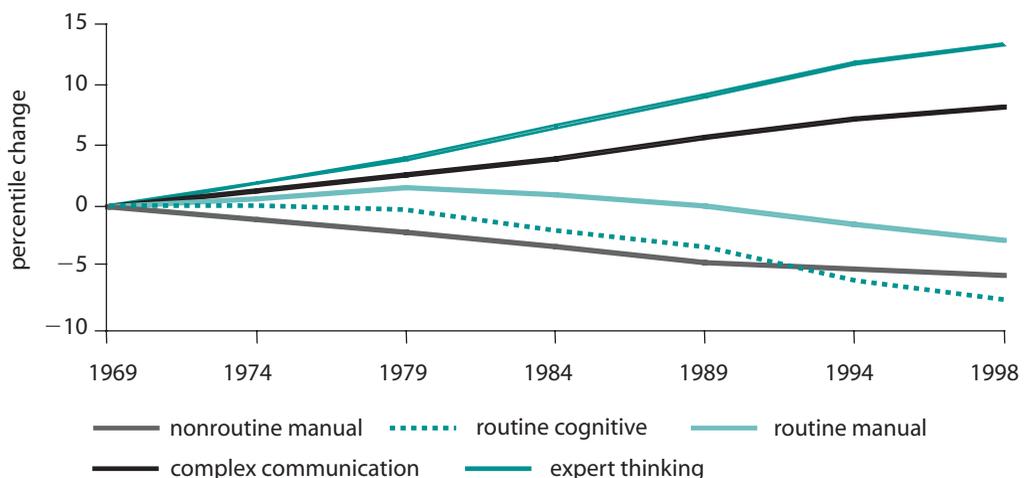
According to Autor, Levy, and Murnane (2003), the need for “expert thinking” and “complex communication” has grown, while the need to conduct more routine tasks has declined in most OECD countries (as illustrated in figure 3.2 below).

There are several implications of this trend. First, the configuration of subjects taught in school may need to change: certain academic areas previously reserved for more elite education opportunities must be made available to a wider range of students. Second, the kinds of competencies needed have changed, with a growing emphasis on *transversal skills* that enable citizens to better adapt to an evolving labor market, society, and polity.

With respect to the *range of subjects*, literacy and numeracy remain the foundation of all education systems: in a knowledge economy, the ability to communicate and analyze requires a solid mastery of these basic skills. However, the fundamental subjects now also include the teaching of science and foreign languages.

FIGURE 3.2

Demand for Job Skills is Changing Rapidly



Source: Autor, Levy, and Murnane 2003.

Science and technology have been promoted in many school systems because scientists, engineers, and technicians are considered the principal cadre of the knowledge economy. In addition, science and technology are thought to help teach complex problem-solving skills and practical knowledge that are essential to functioning in the labor market.

Similarly, there is growing demand for acquiring more than one foreign language in a more globalized world. To meet this demand, many countries and schools are adopting school curricula with teaching of at least two foreign languages (World Bank 2005). The acquisition of another language clearly expands the opportunity for an individual to work “borderless.” It is also a useful marketing and practical tool to increase one’s potential in the labor market.

In most MENA countries, while foreign languages are increasingly being taught, the composition of post-compulsory education programs continues to favor humanities and arts over scientific fields of study. As noted in chapter 1, on average, about two-thirds of university students in MENA countries major in these fields. This is higher than the averages of East Asia and Latin America. In Djibouti, Morocco, Oman, Saudi Arabia, and West Bank and Gaza, students in education, humanities, and social sciences are 71 percent, 75 percent, 75 percent, 76 percent, and 76 percent of university students, respectively.

As for *transversal skills*, pedagogical reforms implemented worldwide have emphasized two main ideas: (i) the introduction of inquiry-based learning and (ii) the adaptation of teaching to the learning capacity of individual students. Workers are expected to act more like professionals, taking responsibility for making decisions without turning to hierarchical structures. This in turn requires new sets of competencies.

In the late 1990s, several MENA countries adopted pedagogical reforms with many of the characteristics discussed above (e.g., student-centered learning, competency-based curricula, and focus on critical thinking). Despite these efforts, there is little evidence of a significant shift away from a traditional model of pedagogy. The main activities in the classrooms in MENA continue to be copying from the blackboard, writing, and listening to the teachers (El-Haichour 2005). Group work, creative thinking, and proactive learning are rare. Frontal teaching—with a teacher addressing the whole class—is still a dominant feature, even in countries that have introduced child-centered pedagogy. In the Arab Republic of Egypt, for example, teacher behavior in first- and fifth-grade classrooms was found to be as follows:

“Findings on use of interactive approaches to teaching are still mixed. Text books are the primary and only instructional material in the class for about 80 percent of all teachers. While teachers use

lessons plans and know the content, they do not use teaching materials when they are available. Observers reported that 98 percent of the students were paying attention to teachers and 90 percent seemed interested, but interactive learning was limited. While all Egyptian schools have a multimedia room, 56 percent of the classes do not use it.” (World Bank 2002)

The individual needs of the students are not commonly addressed in the classroom. Rather, teachers teach to the whole class, and there is little consideration of individual differences in the teaching–learning process. More specifically, current pedagogical practices lack support for weak students, although Tunisia, Jordan, and the Islamic Republic of Iran appear to be making additional investments in this area.

Finally, the few countries that have attempted to introduce higher-order cognitive skills as a pedagogical objective have not been successful in changing teacher practice in this regard. In 1995, a rare research study having a focus on education quality in the MENA region (Valverde, Schmidt, and Bianchi 1995) showed that students were instructed in how to learn and retain “answers to fairly fixed questions in problem situations with little or no meaningful context,” and that the education system mainly rewarded those who were skilled at being passive knowledge recipients. Although relatively out of date, many of the findings of this research appear to still hold: higher-order cognitive skills such as flexibility, problem-solving, and judgment remain inadequately rewarded in schools.

Thus, many MENA countries have introduced the kind of pedagogical innovations that have shown promise in other parts of the world; however, they are all in an early implementation phase. The overall philosophy and emphasis of these reforms are similar to those found elsewhere, but they have not yet found their way into the classroom.

Continuous learning for all and multiple paths to make this occur. Traditional education systems are usually portrayed as a pyramid, with the base as the compulsory education system. Subsequently, a subset of students is selected to continue their education at each higher level of instruction. To address the growing demand for education for the purposes of social mobility, individual levels of education have usually become stratified, with different sorts of secondary or higher education made available to students of different ability. Those who “fall off” the stairs of the pyramid are sometimes reclaimed by vocational education programs and other nonformal education endeavors. Usually, those who finish one level of instruction without meeting the requirements of the next are expected to join the workforce. Formal education is essentially a one-shot opportunity.

With the need for the continual renewal of skills and expertise, several elements of this traditional model are being modified to adapt to the demands of a knowledge economy. Although this has implications for compulsory education, with a new emphasis on educational success for all, the adoption of a lifelong learning paradigm is essentially a call for *the transformation of post-compulsory education*. Secondary, higher, and vocational education are increasingly expected to respond to the exigencies of competitiveness.

To achieve these objectives, post-compulsory education is developing the following characteristics: (i) a diversification of course offerings and more individualized learning; (ii) a greater possibility for transfer between and within levels of instruction to shape the education path to the specific interests and capabilities of the student; (iii) opportunities for continued learning for all by providing multiple entry points; (iv) a pattern of encouraging alternation between workplace and study; and (v) links with representatives of productive sectors to help formulate research agendas, academic programs, and individual course offerings.³

In many MENA countries, post-compulsory education is growing rapidly. However, this growth has not been accompanied by the flexibility depicted above. Once a decision is made regarding which field of study a student will pursue, there is no turning back. Typically, in MENA, decisions concerning one's path of instruction are decided at the lower secondary level and thus at a relatively young age. This translates into rigidities throughout the system: students at the upper secondary level can rarely change tracks or disciplinary emphasis. At the university level, reorientation during the academic year is not granted in any country in the region. Furthermore, there is a strong difference in the courses of studies offered at four-year universities and other tertiary education institutions. In fact, there are few opportunities for students to transfer from one four-year institution to another. Finally, it is rare for vocational education students to pursue studies at universities. Most countries have some tertiary education options in technical and vocational fields, although these are restricted to a narrow range of students (see box 3.1 for some examples).

In the above context, *secondary education* has become the gateway to lifelong learning, because it defines the interface between compulsory and noncompulsory education. Traditionally, the purpose of secondary education has been to select students for higher education. This has shifted to the preparation of students for a wide array of post-secondary learning opportunities, as well as for the workplace. Consequently, secondary education is no longer an institution of selection, but one responsible for preparing all youth for adult life—and, as discussed above, successful adulthood in a knowledge economy requires skills

BOX 3.1**Flexibility of Vocational Education and Training (VET) Systems in Selected MENA Countries**

Jordan—Jordan’s education system is one of the region’s most flexible, providing pathways between academic and vocational streams. Only those attending applied secondary schools (6 percent of students) are not provided the option of continuing education at the tertiary level.

Syria—Regulations limit the flexibility of the VET system. There are no options for reentering the formal school system or for lifelong learning. One recent study referred to vocational education in Syria as a “second-best type of education with only tenuous links to more promising career streams.” Fifty percent of students are tracked into vocational education following the final exams in primary school.

West Bank and Gaza—Graduates of vocational education have the option of pursuing tertiary education at community colleges and between 15–20 percent do so. Those who have participated in vocational training at the secondary level, however, are denied this option due to the lack of theoretical content in the curriculum.

Yemen—The education system of Yemen does not offer higher education at either community colleges or universities to vocational secondary students. Instead, vocational students either enter the labor market directly—the only option for those in vocational training—or continue with post-secondary technical education for up to three years more.

Source: Luinstra 2006.

and competencies that are markedly different from those of the past. Below are some examples of current international trends in secondary education:

- More emphasis on procedural knowledge (know-how) than declarative knowledge (“knowing about specific topics”)
- Expansion of course offerings (wide range of interdisciplinary studies) to maximize student potential and limit early specialization
- For instructors, more emphasis on teaching “learning knowledge” rather than subject-related knowledge (about classroom management, pedagogy, and evaluation and the school as a learning and knowledge-producing institution)
- Entrance examinations to secondary education are disappearing or are being used for counseling and orientation, rather than selection.

No country in the MENA region is currently engaged in an overall reform of this level of instruction along the lines discussed above. Although enrollments are expanding quickly, and most countries are faced with high dropout rates at this level of instruction, there has been no systematic attempt to develop a new approach to providing secondary education. Notions such as blurring the boundaries between vocational and general studies, greater emphasis on pedagogy over subject expertise on the part of teachers, the development of interdisciplinary course offerings, and continuous orientation of secondary school students have not yet been introduced systematically in MENA countries. Rather, all MENA countries continue to introduce initiatives to orient secondary students into vocational programs and rely on examinations to control access to and successful exit from secondary education.

Internationally, *tertiary (higher) education* is no longer confined to the production of elites, but has become the hub of the knowledge economy. As indicated above, the creation and adaptation of knowledge to local productive processes is the key to competitiveness, and tertiary education is the principal facilitator of this process. As a consequence, the following trends in tertiary education are observed:

- Institutions of tertiary education provide opportunities to gain additional skills and knowledge throughout one's professional life
- Development of different delivery models (community colleges, open universities, e-learning, etc.) to accommodate a more diverse clientele
- Growth in demand for degrees and credentials with international recognition
- Quality-assurance mechanisms to evaluate and accredit courses, programs, and degrees offered by various educational providers (both public and private)
- Emergence of "transdisciplinarity," organizing research and training around the search for solutions to complex problems rather than traditional academic disciplines
- Greater autonomy, with more freedom for tertiary education institutions to diversify revenues
- Increased partnership between universities and regional economic actors for the purpose of creating and adapting knowledge to increase competitiveness.

Against this background, there are some positive developments in the MENA region with regard to tertiary education. Some countries are granting universities greater autonomy, allowing them to reorganize

their curricula, introduce new types of programs for different populations (e.g., skills upgrading, alternative paths of study), and sometimes introduce fees for specific training opportunities. However, the degree of implementation of these changes varies widely among countries, with Jordan and Iran having gone the furthest.

In addition, a number of countries have introduced quality-assurance mechanisms, especially in light of the increasing number of tertiary academic institutions.⁴ Six MENA countries have so far initiated a national system for quality assurance, all within the past six years. While the quality-assurance mechanisms in certain countries (Egypt, Oman, Saudi Arabia, and West Banka and Gaza) evaluate and accredit both private and public institutions, other quality-assurance systems (Jordan, Kuwait, and United Arab Emirates) target only private institutions.⁵ Due to the infancy of these systems, the effectiveness of the quality-assurance mechanisms in the MENA region has yet to be assessed.

Technical and Vocational Education and Training (TVET) has traditionally been the “poor cousin” of the education family. In a knowledge-based economy, however, TVET’s role is quickly changing. Rather than the dead-end repository of school failure, TVET has become the revolving door for skill renewal and requalification. The key components for a successful TVET program include:

- An open and flexible structure, where access does not prevent students from continuing their education, even at formal levels
- Integration of technical/vocational and general education (introducing more academic subjects in TVET and more practical subjects in general education)
- Effective guidance for students and workers
- Programs for entrepreneurship and self-employment
- Quality assurance through a well-established national qualifications framework, assessment system, and accessibility of data
- Involvement of economic actors in the planning and evaluation process

In the MENA region, pre-service VET programs have been relatively unsuccessful in linking training with employment. Furthermore, as pre-service VET is usually the reserve of those who have not done well in compulsory education, many students do not have a firm grasp of the basic skills necessary to learn more challenging technical competencies. Also, pre-service VET largely fails to put students on a clear pathway to further education and training options.

Essentially, then, the components of post-compulsory education in MENA are only linked to each other in a linear fashion, and thus the objectives and content of each are dictated by the needs of subsequent levels of instruction, rather than the needs of students, the economy, and society.

Lifelong learning institutions. Lifelong learning must encompass all aspects of the education system so that expanding human capital needs can be addressed through innovation, adjustments, flexibility, and quick reorganization. This view stands in stark contrast with a more traditional notion of education systems that compartmentalize the different components of education: formal versus nonformal, compulsory versus non-compulsory, elite versus mass, and so forth.

To create and maintain this alternative vision of the relationship among education systems, society, and the economy requires a concerted effort to blur the boundaries between education institutions and to harness the education system to the ever-changing and complex demands of a host of stakeholders (including research institutions, employers, local authorities, and international economic actors). As a consequence, nations need to develop an institutional setup to develop the relationships necessary for the production of human capital in a knowledge economy. Some characteristics of lifelong learning that facilitate partnerships beyond the boundaries of the education system include:

- The establishment of a national framework for lifelong learning with institutional vehicles that link the education sector to economic and social actors
- The development and adaptation of national standards and other quality-assurance mechanisms (including certification and accreditation) in collaboration with economic, social, and political stakeholders outside the education system
- Improvement in articulation between different types of learning and recognition of informal learning
- Deepening linkages between education institutions and the labor market, with better signaling, partnerships, and collaborative teaching and learning endeavors with local, national, and international employers
- Development of a legal regulatory framework that creates a level playing field between public and private providers and provides information about institutional performance
- Diversification of the sources of finance to support a more complex and comprehensive lifelong learning education system.

Few MENA countries have developed lifelong learning. Education systems in most MENA countries only allow limited opportunities for individuals to obtain more skills and acquire more knowledge after completing their formal degree or beginning to work. Lifelong learning is only articulated among national objectives in a handful of countries. Only 5 out of 16 UNESCO National Reports for MENA countries mention the importance of lifelong learning in their national objectives and strategies (UNESCO 2004). Even then, the term “lifelong learning” is defined within the framework of formal education, and is linked to adult illiteracy, teacher training, or continuous education in the form of e-learning.⁶ In Egypt, for example, the term is used to refer to the opportunity for teachers to obtain practical specialized certificates that will lead to promotion. In Jordan, it is used to refer to the provision of professional development programs to school staff.

In sum, then, globalization and the emergence of the knowledge economy have given education a new purpose as a powerful force for the creation and adaptation of knowledge. As a result, many countries around the world have adopted lifelong learning, with its diverse components, to reorient their education systems to equip their populations with the skills and expertise to compete globally. Some MENA countries have begun to follow suit but have not gone far enough, while others have yet to start the process.

Demographic Changes in MENA and Education

MENA’s demographic profile and demographic changes will pose a significant challenge for education in the coming decades. This challenge takes on two specific dimensions. The first is related to the exceptional “youth bulge” (15–24 year olds), which will place added pressure on the education system to accommodate new students. The second is a byproduct of current enrollment and retention trends, which have resulted in high levels of dropouts and out-of-school youth. Both challenges are elaborated below.

The Impact of the “Youth Bulge” on the Demand for Education

MENA has one of the largest “baby boomer” cohorts in the world. The current “youth bulge” is due to the high fertility rates in the past. Although population growth rates are expected to decline in the future, the demand for education will increase as this bulge works its way through the system.

Population growth and the youth bulge in MENA from 1950 to 2050.

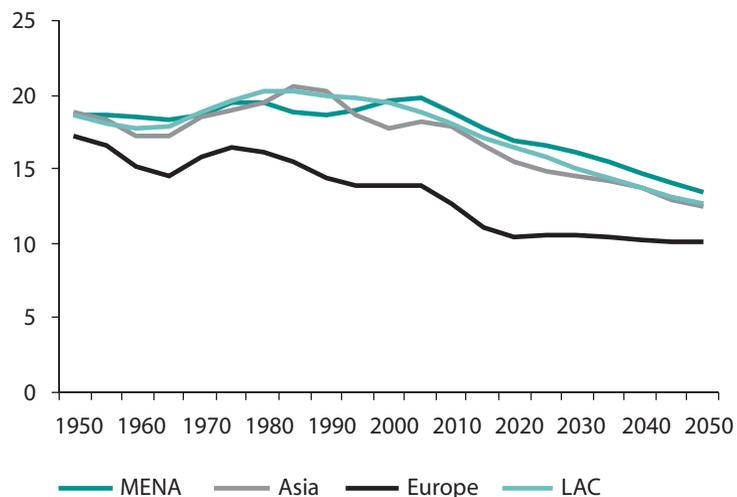
The MENA region has experienced a unique population growth pattern over the past 50 years. The total population increased 3.7 times during this period, from 100 million in 1950 to approximately 380 million in 2000. No other region of the world has grown as rapidly, and some estimates suggest that total population in MENA will reach 600 million by 2025 (Yousef 1999).

MENA's population growth is primarily the product of past fertility rates (rather than in-migration). During the 1960s, fertility rates were about seven children per woman; at such rates, the population typically doubles every 20–30 years. Fertility rates have gradually declined since the early 1980s, and so the population growth rates declined as well. However, the percentage of youth in the population in MENA will continue to be higher than in other regions of the world for decades (figure 3.3).

Currently, the population of 15-to-24 year-olds accounts for 21.5 percent (approximately 70 million) of the regional population, while another 45 percent is less than 15 years of age (U.S. State Department 2005). The region's population pyramid, shown in figure 3.4, indicates that the youth population represents an overwhelmingly large share in the total population. The “baby boomers” are set to join the adult population and can be expected to affect the region over the next 60 years. As this “bulge” works its way through the population, the profile of human capital they bring with them will ultimately determine how each country in the region will develop in economical, social, political, and cultural terms.

FIGURE 3.3

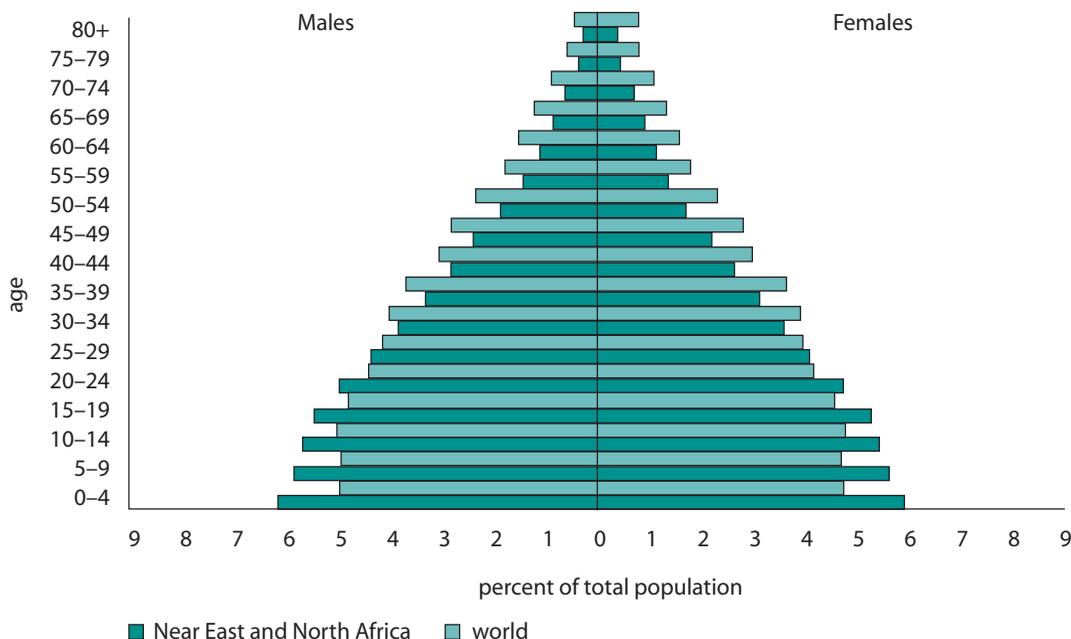
Percent of Youth Population by Region, 1950–2050



Source: UN Population Division 2006. <http://www.un.org/esa/population/unpop.htm>.

FIGURE 3.4

Population Pyramid of MENA and the World, 2002



Sources: U.S. Census Bureau 2002. Global Population Profile.

The impact of demographic changes on the demand for education.

MENA’s “baby boom” will affect demand for education in two ways. The first and most obvious is the increase in the demand for formal education. Countries that decide to raise the enrollment rates for different levels of instruction will face a steep rise of demand because of the “demographic bulge,” along with a steep rise in the cost of meeting this demand. The second is related to the demand for different educational outcomes, as per the above discussion on the knowledge economy. In sum, an increasingly large number of youth will require educational opportunities that do not yet exist in either quantitative or qualitative terms.

Likely increases in demand for education were projected for the approximate age group for the primary, secondary, and tertiary levels of instruction (6–11 years old, 12–17 years old, and 18–23 years old, respectively) during the period 1950–2050 in each MENA country. From this exercise, MENA countries can be categorized into three groups: the first group has seen or will soon see the size of its primary education cohort peak. Lebanon’s primary school cohort reached its highest level in 1975, well before others in this group; Algeria, Lebanon, and Kuwait reached this benchmark in the mid-1990s and Bahrain, Iran, and Jordan are expected to reach this point by 2010. For the second group—Libya, Morocco, Saudi Arabia, and Syria—this cohort will reach its maximum size

around 2020–2030. Finally, the primary education cohort in Djibouti, Iraq, Oman, Qatar, United Arab Emirates, and Yemen will continue to grow until 2050. (See figure 3.5 for the projections of the age group 6–11 years old for selected countries.)

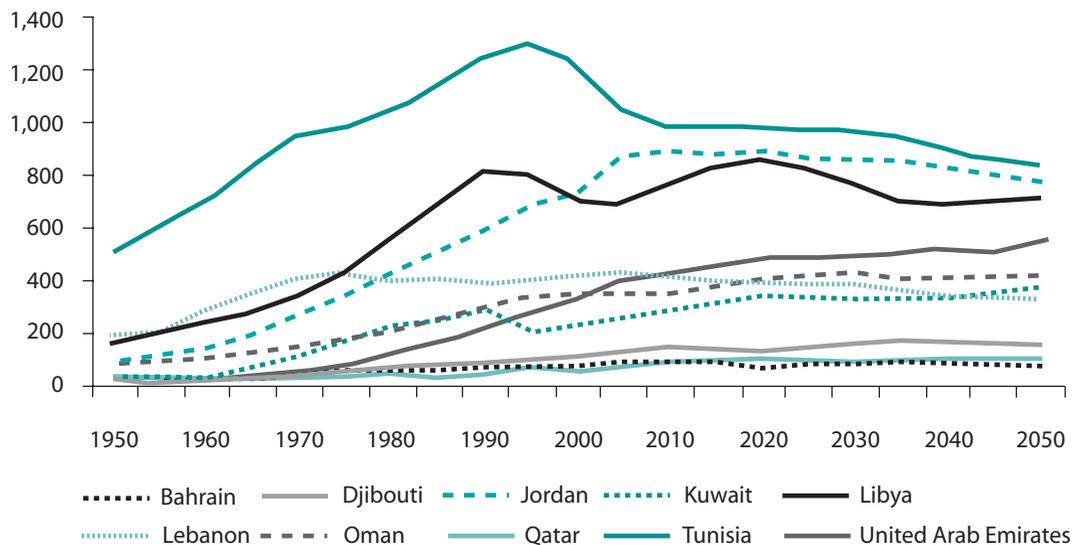
The same patterns will occur with a time delay of approximately 6 years for secondary education and 12 years for tertiary. For the first group of countries, the size of the secondary education cohort will have peaked by 2000 and the tertiary education cohort by 2035. For the second group of countries, the size of the secondary education cohort will peak in 2035 and the tertiary education cohort in 2045.⁷

We have also projected the enrollment demand that will result from the demographic trends and countries’ enrollment targets. The results for primary education suggest that countries in the first and second group are presently able to accommodate projected demand without a significant expansion of capacity, particularly as most have already reached 100 percent GER (gross enrollment rate) and have or will soon have a declining clientele at this level. Most countries in the third group, however, have not yet attained a 100 percent primary GER and will thus need to continue establishing capacity over the next 20 years. Many countries in this group also have primary education cohorts that will continue to grow.

In contrast, virtually all MENA countries will need to address a substantial jump in demand for secondary and tertiary education as they fac-

FIGURE 3.5

Changes in the Age Group (6–11) Population in Selected MENA Countries, 1950–2050



Source: UN Population Division (2006). <http://www.un.org/esa/population/unpop.htm>.

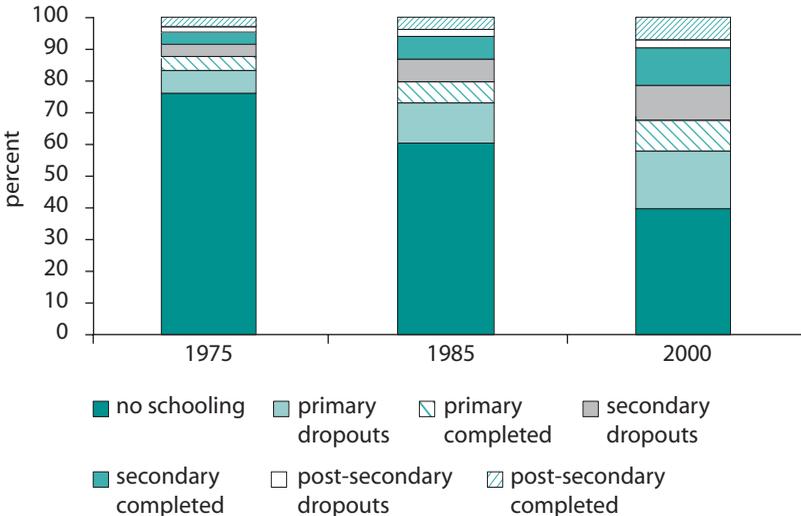
tor in both targeted enrollments rates and the expected growth of the relevant cohort. Only Tunisia has already developed the capacity to meet all secondary education demand, according to our estimations and projections. For countries in the first and second group, secondary education enrollments are expected to peak by 2025–2035 and tertiary education by 2040.

These trends translate into a tremendous growth in the number of students that will need to be accommodated at secondary and tertiary levels over the next 30 years. It is expected that the secondary education population in the region will increase by one-third during this period, and the tertiary education population will more than double.

Educational attainment and out-of-school youth and adults. As noted already, the MENA region has made considerable progress in bringing students to school, with evident impact on the education profile of the adult population (figure 3.6).⁸ The proportion of the adult population with no formal education declined by 40–50 percent over the last 30 years in the countries surveyed.

The decline in the proportion of adults who have not been to school has created two new cohorts. First, within our sample of countries, the proportion of adults who have at least completed primary education increased from approximately 10–20 percent in 1970 to 40–60 percent

FIGURE 3.6
Education Attainment in the Population in MENA (Weighted Average), Age 25 and Above, 1975, 1985, and 2000



Source: Barro and Lee (2000).

today. At the same time, the proportion of adults who dropped out of primary school has risen to 15–25 percent of the overall adult population from MENA average of 9 percent in 1970.

A similar dynamic occurred for the adult population who went on to enroll in secondary or tertiary education. On average, the countries in our sample have increased the share of the adult population with some secondary and tertiary education from 10–15 percent in 1970 to 40–50 percent in 2000. However, a significant proportion of those who went on to post-compulsory education did not complete the level of instruction in which they were enrolled. In 2000, approximately one-half of those who had some post-compulsory education dropped out before obtaining their degree.

Thus, the human capital profile of MENA's adult population is quite mixed. On the one hand, the overall level of instruction of the adult population has improved considerably. On the other, education systems have evidently produced a substantial amount of school failure along the way.

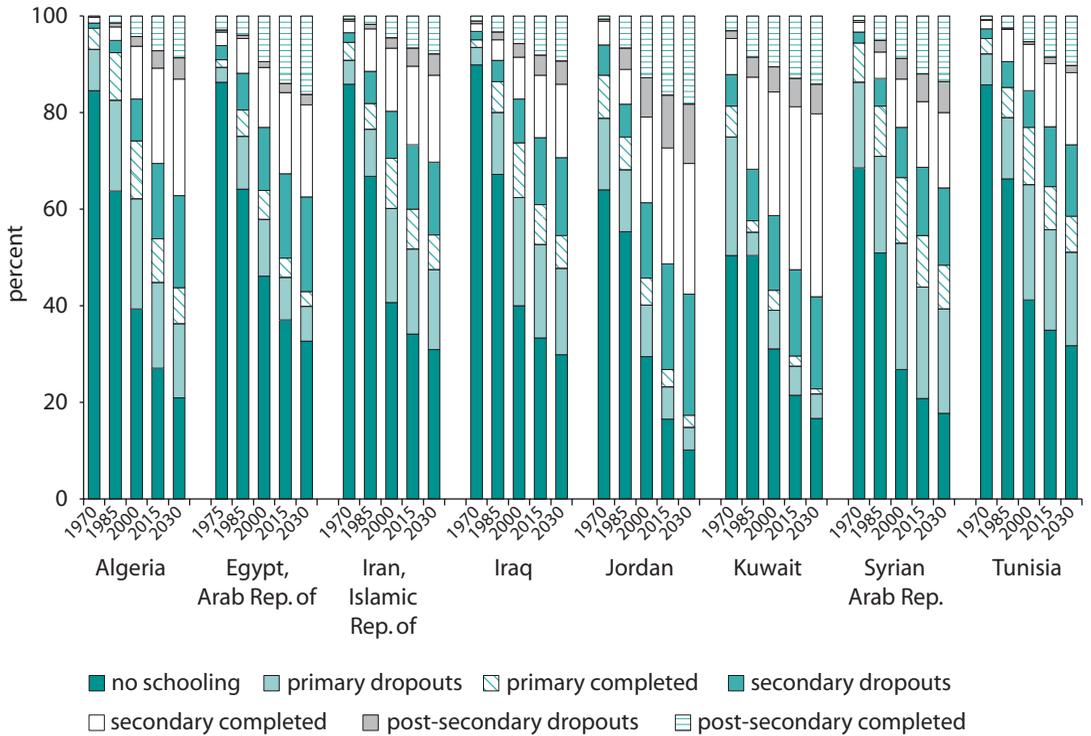
Does this matter? Those who drop out of school, particularly at post-compulsory levels, did obtain a certain amount of knowledge and skills. They can contribute to and participate in the economy and society with a fundamental level of instruction. However, with one-third of the adult population who go through their lives as school dropouts, MENA countries and their citizens must be losing some of the investment they made in education. The diploma in MENA, as in most of the world, has a “credentialing” value to the individual: (i) it signals to employers that a person has reached a particular level of competence, and (ii) it allows many to access continued opportunities of instruction. Without the diploma, an individual's options are more limited, and the probability of exclusion increases, particularly within a global labor market.

Education attainment in the adult population in 2015 and 2030. The possible education attainment profile of the adult population was calculated for 2015 and 2030, taking into account the current rates of educational access, internal efficiency, and changes in the demographic profile of the population. The results for eight MENA countries are shown in figure 3.7.

Overall, we expect the adult population profile to continue to show higher levels of education attainment over the next 25 years. There will be a greater proportion of adults with some post-compulsory education, replacing unschooled adults and those with some or only primary education. For most countries, the proportion of unschooled and primary dropouts will decline from 50–60 percent in 2000 to 30–40 percent in 2030 and the proportion of post-compulsory degree holders will consequently increase. However, the proportion of secondary and tertiary

FIGURE 3.7

Education Attainment of Adult Population for Selected MENA Countries, 2030



Source: Miyajima 2006.

dropouts will also grow by 10 percent by 2030. Overall, by 2030, 25 percent of the population will have dropped out of (or never attended) school, the same as in 2000. However, in 2030, secondary and tertiary dropouts will outnumber primary dropouts.

Out-of-school children and youth: an old and new challenge. Out-of-school children and youth (OSCY) are persons ages 6 years and up to about 20 years of age who should be in compulsory schooling, but are not. Overall, about 15–20 percent of school-aged children and adolescents are currently out of school because they: (i) have never attended school; (ii) have not completed primary school; and/or (iii) have not attended or completed compulsory secondary school.

About 9 million children—nearly 5 million children ages 6 to 10 and another 4 million children ages 11 to 15—were out of school in 1995. By 2015, these numbers are projected to increase to 7.5 million and 5.6 million, respectively, for a potential total of more than 13 million children and youth who are of school age and who will not be in school. Only significant policy shifts can turn around this serious situation of OSCY in MENA.

The prevention of school failure and dropout is the ideal “cure” for OSCY. The cost of training and reintegrating children for a return to schooling is considerably more expensive than retaining children in the formal school system. Fortunately, there are a variety of ways to help keep children in the school system, such as:

- Supporting remedial education that can address a dramatic loss of school time, if systems (including trained counselors) are put in place in time to reduce school dropout
- Redistributing qualified teachers to ensure a higher quality of education and to reduce difficulties in reaching schools given (at times) security and closure impediments
- Increasing the age limit for students to attend or complete their schooling
- Allowing married girls (or young women with children), who may have been prevented from attending school out of sociocultural considerations, to stay or be reintegrated in school
- Encouraging schools to manage dropout reduction through meetings with teachers and parents.

However, such remedial actions do not deal with the stock of OSCY, who are often poor children, rural children, children who speak nonmajority languages, mainly girls and young women, children with disabilities, children who have serious health and sanitation problems, or children caught up in conflict zones of violence. They also have no or minimum access to basic social and economic services. Furthermore, many OSCY start working at a young age, and may be malnourished, sick, disabled, living on the streets or in orphanages, or resorting to crime and delinquency. If they also have no compulsory education, they become a drain on economic development, while creating the possibility of increased political alienation and greater tensions between generational and social groups. These “last-mile” populations also include the *most disadvantaged and vulnerable* in the region. Reaching these children and adolescents requires innovative, multisectoral policies and programs that are low-cost and effective, and build on the strengths and interests (i.e., demand) of families and communities.

Education Finance

From the previous sections of this chapter, we draw two main conclusions: first, demand for post-compulsory education will grow quite ex-

tensively as current trends in the demographic profile of MENA countries and in school enrollments make their impact felt. This demand will increase even more if countries adopt the notion of lifelong learning that encourages all adults to continue to seek new skills and knowledge. Second, the nature of education is expected to change in fundamental ways as more students are expected to succeed, and succeed at higher levels of achievement.

The consequence of this trend is clear: MENA will require the development of more educational opportunities. Assuming that current cost trends continue, we expect the overall cost of education to increase significantly over the next decades. How will MENA pay for this, and how will the region ensure that the fiscal pressure does not lead to deterioration in quality? These are the questions and trade-offs that policy makers will face in the future.

In an attempt to answer the above questions, the rest of this section examines the current spending patterns on education. The implications of the demographic trends and emphasis on quality are also explored, in terms of financing. On the basis of both, suggestions are proffered to address the financial constraints of going forward.

Sources and Structure of Funding Education: A Historical Perspective

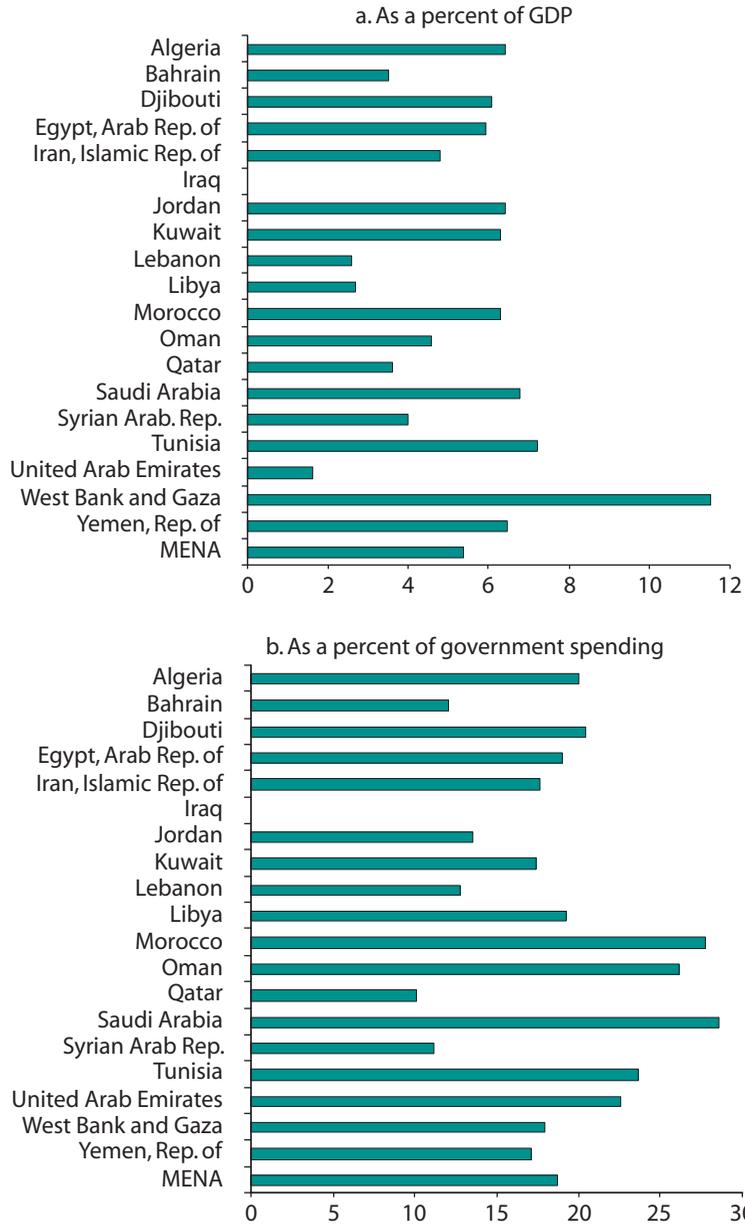
To better understand the possible options for funding future education opportunities, it is useful to look at how much governments in the MENA region contribute to education, how much the private sector provides, and how much it costs per student at each level of instruction.

The weight of public and private expenditures. As discussed in chapter 1, MENA countries on average spend approximately one-fifth of total public expenditures on education and a relatively high percent of GDP (figure 3.8). Most countries, rich and poor, allocate more than 20 percent of their budget to education, including, for example, Saudi Arabia, United Arab Emirates, Tunisia, Libya, and Algeria, on the one hand, and, Yemen, Morocco, and Djibouti on the other. A similar number of countries allocate less than 15 percent of their budget to education, including Oman, Jordan, Lebanon, Bahrain, Kuwait, Syria, West Bank and Gaza, and Qatar (in some of them, however, the private sector is more active, as will be discussed below).

Historically, spending on education increased faster than economic growth. Changes in economic growth were usually followed by a change in spending for education in essentially the same direction, but education spending almost always outpaced economic growth and was somewhat

FIGURE 3.8

Public Spending on Education in MENA, Most Recent Year during 1999–2003



Source: Statistical Appendix.

protected during periods of declining GDP. In Saudi Arabia, for example, education spending as a proportion of overall spending tripled from 1970 to 2000: neither economic growth nor the price of oil had much impact on this trend. In Algeria, economic constraints did appear to dampen spending on education, but education spending was at the highest levels (in the region 29 percent of public spending and 10 percent of GDP in 1980) before any decline.

Eventually, spending on education was brought down to 20 percent of government spending, but only 10 years after the 1986 plunge in oil prices. These examples indicate that spending on education in the MENA region, as in much of the world, is dictated by social demand for education rather than by the immediate state of public finances. Education remains a priority and a relatively protected public expenditure in most countries in the region. However, it would be difficult for most countries to increase spending beyond 20–25 percent.

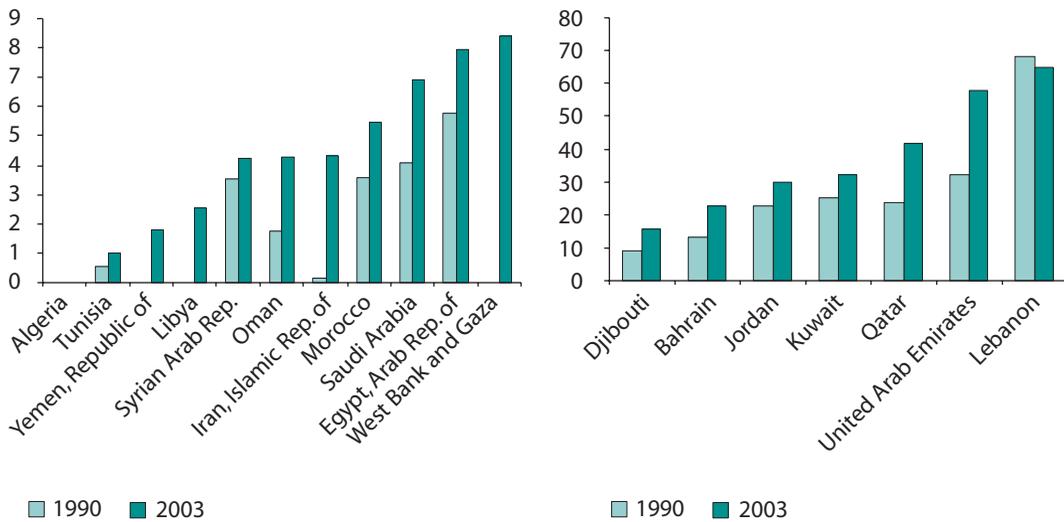
The contribution of nonpublic resources to education. The nongovernment financial contribution to education is difficult to discern in MENA, as few data are available. However, there is a widespread belief that this contribution is modest. In part, this is because enrollment in private education tends to be very low in some countries, for example, in Tunisia, Algeria, Yemen, and Libya (see figure 3.9). Although this pattern is changing and some countries have traditionally had large private enrollment (e.g., Lebanon), low private enrollment suggests that governments carry most of the financial burden of education.

In addition, most governments in MENA have followed a policy of essentially free education at all levels of public instruction. Usually, university students pay a symbolic fee, which covers an insignificant proportion of outlays. With the youth bulge and the expected increase in demand for secondary and tertiary education, *this is a crisis in the making*. Policy makers need to devise education funding strategies to sustain quality and meet rising demand.

This is not to suggest that household expenditure on education is insignificant. In Tunisia, for example, where private education is almost nonexistent, household expenditure on education has increased as a proportion of GDP from 0.5 percent in the 1980s to 1.4 percent today (Tunisia Institute of National Statistics). A similar trend most probably holds in other countries, especially in countries like Egypt where private tutoring is reaching new heights. To the extent that such a phenomenon is widespread, there is room for mobilizing some funding from households without necessarily increasing their financial burden. However, carrying out this policy shift constitutes a political challenge—specifically, the demand for mechanisms to address the needs of poor students.

FIGURE 3.9

Evolution of the Proportion of Private Primary Education in 1990 and 2002



Source: Statistical Appendix.

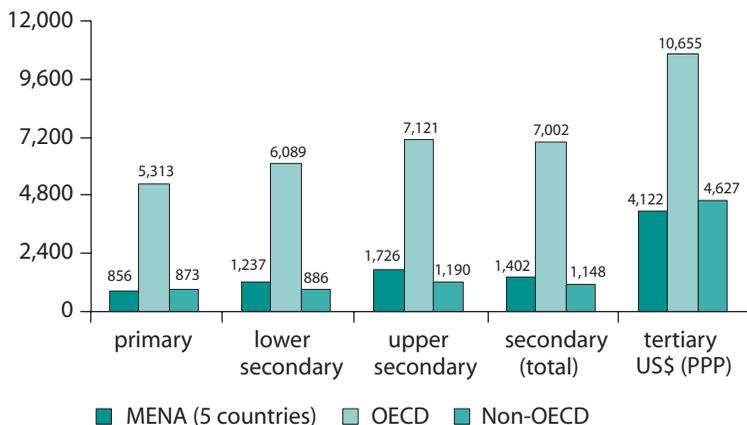
Unit cost at different levels of education. Looking at the absolute unit cost of a student at different levels of education in PPP U.S. dollars suggests that MENA countries' spending per pupil is comparable to that of middle-income countries, and significantly below that of OECD countries (figure 3.10). This observation is based on a sample of the following MENA countries: Algeria, Morocco, Tunisia, Egypt, and Jordan. If the sample were to include oil-rich countries, the comparison would have revealed higher unit costs in MENA.

The above conclusion is reinforced when we consider spending per pupil as a proportion of GDP per capita. In this case, we find that MENA countries, represented by the same sample as above, spend more than any other group, including OECD countries (see figure 3.11). The difference is relatively modest at the primary and lower secondary levels, but is substantial at the upper secondary and tertiary education levels. Indeed, *MENA countries spend approximately 50 percent more than the middle countries chosen for comparison on upper secondary education and twice as much as OECD countries for tertiary education, in terms of GDP per capita.*

In the 1970s and 1980s, capital expenditure accounted for one-quarter of total expenditures on education in the MENA region. This was a period of rapid expansion and construction of school infrastructure. From 1990, this percent was brought down to less than 13 percent, which is not much different from the share of capital in total expenditures in developing countries. Thus, the high unit cost in MENA is

FIGURE 3.10

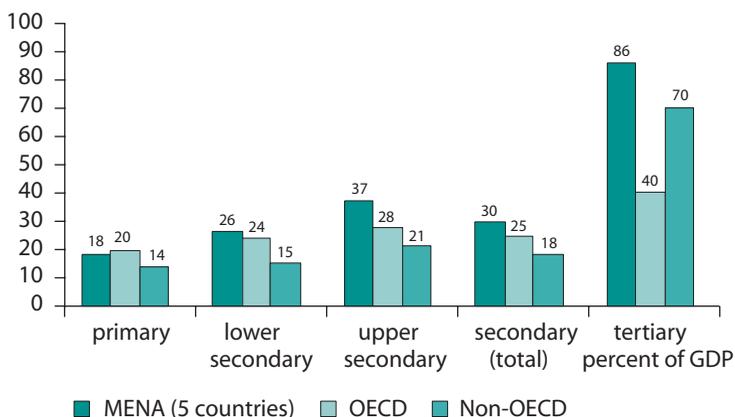
The Absolute Value of Average Costs per Student in MENA and Non-MENA Countries, US\$ (PPP)



Sources: OECD countries and Jordan: Education at a Glance (2005); Algeria and Tunisia: national source (2004).

FIGURE 3.11

Spending per Pupil as a Proportion of GDP per Capita in MENA and Non-MENA Countries, Percent

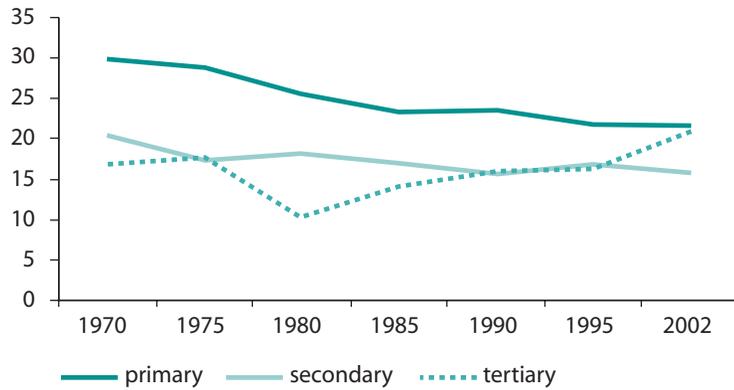


Sources: OECD countries and Jordan: Education at a Glance (2005); Algeria and Tunisia: national source (2004).

driven primarily by salaries, which are determined to a large extent by student–teacher ratios.

These ratios, shown in figure 3.12 for the period 1970–2002, clearly point out a reduction in the number of pupils per teacher in primary and secondary education, but an increase in the ratio in tertiary education

FIGURE 3.12

Pupil–Teacher Ratio by Level of Education, 1970–2002

Source: Statistical Appendix.

since 1980, following the massification of higher education in several MENA countries.

Overall then, we can make the following observations:

- The region spends a much higher amount per pupil relative to its per capita income than both developing and developed countries, particularly at the level of tertiary education.
- The region has steadily reallocated resources from primary to secondary and tertiary education, but not enough to offset the increased enrollment at higher levels of instruction.
- Much of the financing burden falls on the government budget, with households probably spending large sums of money that are not well documented.

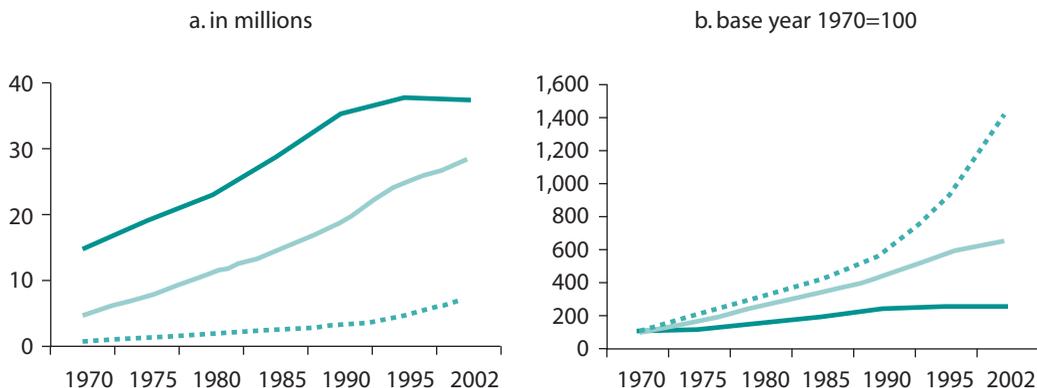
Thus, the region is likely to increasingly face a resource constraint in financing education, unless alternative policies are adopted.

Expansion of Secondary and Post-Secondary Education

In addition to the high unit costs relative to per capita income, the region will experience a significant expansion in post-secondary education in the future. Figure 3.13 shows the changes in the actual number of students in primary, secondary, and tertiary education as well as their index over the period 1970–2002. These trends indicate that the region has essentially stabilized enrollment in primary education, but there has been a rapid increase in the number of students in both secondary and post-secondary levels of instruction.

FIGURE 3.13

Historical Enrollment of Students in Primary, Secondary, and Tertiary Education

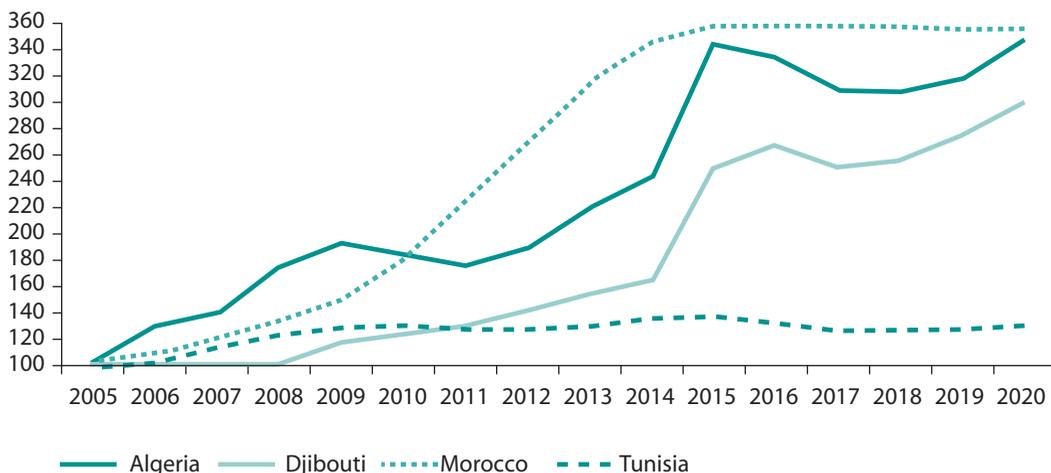


Source: Statistical Appendix.

These trends are likely to persist in the future. During the next decade in particular, the development of secondary education will continue and accelerate the pressure on the expansion of post-secondary education. These projections, shown in figure 3.14, hold for a sample of countries, including Morocco, Algeria, and Djibouti. The only exception is Tunisia, where enrollment is likely to stabilize shortly.

FIGURE 3.14

Projection of the Number of Students Completing Secondary School in Selected MENA Countries



Sources: Algeria: World Bank (2005) Étude sur la restructuration du post-obligatoire; Djibouti: Ministry of Education; Morocco: author's calculation and World Bank (2004) Étude sur l'enseignement collégial; Tunisia: World Bank (2006) Étude sur le financement de l'enseignement supérieur.

To be sure, the region is expected to continue to transfer some resources from primary to higher education, given that almost all countries have succeeded in achieving full enrollment at the level of basic education. But these savings, if overdone, could compromise the quality of education at this basic level of instruction and are not likely to be enough to meet the cost of expanding higher levels of education. After all, the expansion of higher levels of education is more expensive, as shown in the previous section. In addition, there is an increasing emphasis on the quality of education, which also requires resources. Moreover, public funding is already at relatively high levels, both as a share in the government budget and as a percent of GDP. Thus, there is limited room for increasing public funding for education without compromising other expenditure items or risking increasing fiscal deficits. All of these factors suggest that MENA countries are left with very few choices. In addition to seeking alternative ways for funding education (e.g., cost sharing, student loans, outsourcing of hostels and catering services), the other option is to improve the efficiency of the education system itself.

The Trade-off

To meet the expansion in demand for higher education and to maintain quality, the region faces a trade-off. The easy option for policy makers would be to continue to expand the education system with no change in the funding strategy. However, this option would be to the detriment of the quality of education and its contribution to economic development. Alternatively, meeting the increase in demand, especially at the tertiary level, could be accomplished by mobilizing private funding while ensuring that those who are qualified but cannot afford the costs of education have access to government funding. Such a strategy would be consistent with the international trends noted in chapter 2.

Summing Up

Even if past investments in education generated maximum returns in terms of economic growth, greater equality, and reduced poverty, the MENA region would still need to reshape its education systems to face up to a number of new challenges. The most glaring ones relate to globalization and the increasing importance of the knowledge economy in the development process, the youth bulge and out-of-school children and adults, and financing requirements.

With respect to globalization and the knowledge economy, the education systems in the region must produce competent and flexible human

capital to be able to compete. Lifelong learning and coping with out-of-school children and adults are no longer a luxury but a necessity. Both challenges require a shift in what is taught in schools and how it is taught, to enable students to acquire the necessary fundamental and transversal skills and to upgrade these skills over time.

Similarly, the region confronts the pressure of a youth bulge never before seen in the region or elsewhere. The baby boomers resulting from very high fertility rates in the past few decades will soon put enormous pressure on governments to expand the education system for decades to come. The bulk of the increase in demand will be at the secondary and tertiary levels of instruction, which tend to be more costly than primary education to provide.

Finally, meeting the above challenges requires financing, which is difficult to secure on the basis of the current patterns of expenditure and sources of funding. The challenge here is to find ways to mobilize resources without compromising equity and the quality of education.

Meeting the above challenges is fundamental to the ability of the education systems in the region to meet the aspirations of the population for a better life. The question we deal with in succeeding chapters is how policy makers may meet those challenges.

Endnotes

1. <http://web.worldbank.org/WBSITE/EXTERNAL/WBI/WBIPROGRAMS/KFDLP/0,,menuPK:461238~pagePK:64156143~piPK:64154155~theSitePK:461198,00.html>.

2. The term “fundamental level” is used to refer to that minimum set of skills, competencies, and knowledge sets necessary to provide value added to economies. This fundamental level is always open to discussion, but at the very least includes numeracy and literacy in a national language.

3. A transformation of post-compulsory education does not entail an upending of the structure of education systems. The traditional levels of instruction—secondary, higher, vocational—continue to exist, albeit with new ways of functioning.

4. There were only 11 institutions of higher education in the region before 1950. Today, there are more than 200 universities, of which 76 are private higher institutions (UNESCO 2006).

5. Egypt: PAD for Higher Education: Mid-term Review of Higher Education Project (June 2005); Oman: http://inqaah.org/members_view_all.cfm?mID=3&sID=22; UNESCO (2003) Higher Education in Arab Region 1998–2003.

6. The team surveyed UNESCO National Reports from 2003 for 14 countries of the MENA and GCC countries.

7. On average, MENA countries have 100 percent primary gross enrollment rate (GER), 75 percent secondary GER, and 15 percent tertiary GER. It is ex-

pected that most countries will pursue an expansion of access equal to approximately 90 percent secondary GER and 40 percent tertiary GER over the next 20 to 40 years.

8. The calculations in this section are based on data collected by Barro and Lee (2000), which report the level of educational attainment throughout the world. Using this information, we report the trends in nine MENA countries: Algeria, Bahrain, Arabic Republic of Egypt, Iran, Iraq, Jordan, Kuwait, Syrian Arabic Republic, and Tunisia.

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Introduction

Part I of this report argued that while education systems in the MENA region have made considerable progress in providing a greater proportion of eligible citizens with educational opportunities, they have fallen short in key areas. First, their contribution to economic growth, income equality, and poverty reduction is not commensurate with the high level of investments made in education. Second, and equally important, they do not appear to be well positioned to address the new economic and social changes occurring in the region and globally. These conclusions bring us to the heart of this report: what reform path of the education systems should be followed to maximize the returns from education and meet these new challenges?

Part II addresses this question in three chapters. Chapter 4 proposes a new analytical approach to education reform, focusing not only on improving the technical relationships between the inputs and outputs of education (education engineering) but also on the incentives facing the actors involved (teachers, schools) and on the public accountability of policy makers to citizens. Chapter 5 traces the reform path taken by the MENA countries so far, with the objective of finding out whether they are converging with the path proposed by the analytical approach over time. Finally, chapter 6 applies the analytical approach to a sample of 14 MENA countries to find out whether or not the more successful among them in terms of educational outcomes do have education systems that exhibit modern education engineering processes, incentives that are better aligned with education outcomes, and stronger public accountability than poor performers. The purpose of this analysis is to see if actual experiences render support to the analytical approach, enabling us to propose a new road for the region to travel in the future.

The analysis indicates that education reforms in the MENA region are trending in the right direction. Having gone through an initial stage of establishing their education systems by means of building schools, set-

ting the curriculum, hiring teachers, and a command and control structure, some countries are beginning to experiment with measures to motivate the actors involved (e.g., creating parents' associations and increasing private sector involvement in education) and to enhance greater public accountability (e.g., through decentralization). However, some countries have not even begun this process. Moreover, past reform efforts tend to be partial and frequently ineffective. In cases where education outcomes were relatively good, the countries were found to possess education systems that exhibited better engineering, incentives, and public accountability than the rest of the sample. Thus, both the analytical framework and the actual experiences suggest that the region needs to make a shift in the way education reforms are designed and implemented. The road to be taken is also spelled out in some detail.

Analytical Framework

If past investment in education in the MENA region has not generated the maximum economic returns to individuals and society, it's reasonable to ask why it has not done so. Answering this question requires an analytical framework on which past education reform efforts can be assessed and future reforms can be drawn. Without such a framework, *it is hard not to bark up the wrong tree, if (one) thinks there is only one*, as the old Punjab proverb says.

Deciding on the appropriate framework is not straightforward, however. There are at least three perspectives. One is based on the assumption that the problem of the education system at all levels is *technical* in nature. This means that the system is not sufficiently well managed and funded, thus cannot provide the appropriate quantity, quality, and mix of educational inputs (e.g., schools, teachers, textbooks) to obtain the best educational outcomes. Another is based on defining the problem in *motivational* terms. In this case, the problem can be seen as a principal-agent problem, in which policy makers (the principals) need to overcome a problem of information asymmetry and align the incentives of the teachers/schools (the agents) with desired educational outcomes. A third perspective attributes the problem to a lack of public accountability, which prevents parents and students from exerting influence on educational objectives, policies, and resource allocation to maximize the returns to investment in education.¹

The analytical approach followed in this chapter and the rest of this report is a composite of all three perspectives.² Indeed, the key argument made here is that successful education reforms require: (i) reforming the education process itself, (ii) motivating the actors involved, and (iii) giving parents/students the opportunity to contribute to the formulation of education policies. Conversely, education reforms are not likely to produce the desired level, quality, and mix of human capital if policy makers focus too much on one perspective and neglect the others. Thus building schools, training teachers, and improving the curriculum are all necessary but insufficient conditions for reforms to succeed. Developing

mechanisms to monitor the performance of teachers/schools and establishing links between their performance and rewards (pecuniary or non-pecuniary) can bring reforms closer to achieving their objectives. Equipping parents and students with mechanisms to demand better education policies (e.g., through voting or decentralization) is another building block toward maximizing the returns on investment in education.

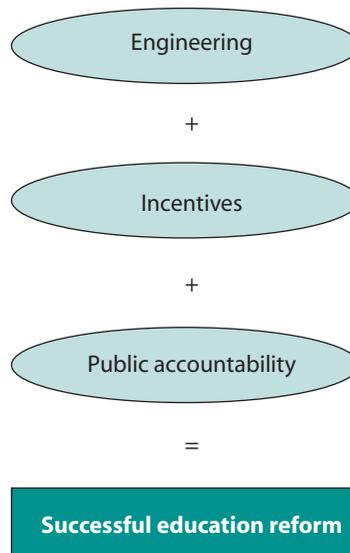
To elaborate the above arguments, the remainder of this chapter is structured as follows. The following section discusses the rationale behind each of the three building blocks of the analytical framework. Next, we discuss possible links between the conceptual framework and reform instruments. Finally, we explore the applicability in principle of the approach to different levels of education and different countries, followed by a summary of the key points made.

Three Building Blocks

As asserted in the introduction, successful education reforms require better *engineering* of education, better *motivation/incentives*, and improved *public accountability*. These three building blocks, shown in figure 4.1, arguably add up to successful education reforms. While partial reforms can be beneficial, they are not likely to generate the highest returns from investment in education. A discussion of each of these components of reform is presented below.

FIGURE 4.1

The Three Building Blocks of the Analytical Framework



Engineering

The *engineering* of education is equivalent to viewing the provision of education like a production function of any firm. Thus, simplistically, it takes a classroom, a teacher, a textbook, and the like to educate a student. The quantity, quality, and mix of these inputs determine educational outcomes. When outcomes are not satisfactory, the engineering perspective suggests increasing the quantity of inputs, improving their quality, or changing their mix by means of more resources and better management.

In practice, most education reforms seem to focus on better engineering. Frequently, education policy makers request larger allocations of resources from the ministry of finance to build schools, maintain existing facilities, train teachers, and pay wages. They devote significant time and effort to improving the curriculum, planning the expansion of the education systems, and developing new methods of testing and examination. In essence, they are engaged in improving access to and the technical efficiency of education by means of more funds and better management.

Better engineering of education has its virtues. Improving access to education and its technical efficiency are prerequisites to improving education outcomes. For policy makers, engineering also has the merit of producing visible results, as it is easier, for example, to point out that schools have been built than it is to show that the behavior of schools or teachers has changed. In addition, better engineering may be a reasonable way of proceeding at an early stage of developing the education system, when the majority of the population lacks access to education.

These virtues are offset by several shortcomings, however. In particular, this perspective fails to motivate the providers of education to do the best they can because of the weak link between rewards and achievements, information asymmetry, and poor monitoring devices. It fails to equip parents with mechanisms to monitor school performance or to give them the option of choosing a provider, and it does not give parents and students mechanisms for exerting influence on education policies. Thus, reforms that focus on engineering alone cannot be expected to generate as many benefits as possible.

Incentives

Unlike the engineering perspective, the incentives (or industrial organization) perspective involves focusing on motivation rather than on technical coefficients. Guided by the industrial organization literature, incentives here go beyond rewarding schools/teachers in the form of pecuniary or nonpecuniary benefits. Instead, the problem is framed as a principal-agent dilemma.³ The principals (politicians or bureaucrats) are interested

in particular outcomes (say, access to quality education), but they have to rely on the agents (teachers or schools) to achieve these outcomes. However, agents may have different objective functions than the principals. They also have an informational advantage, as they know more about what goes on in the schools and classrooms than the principals. Thus, they can charge what is referred to in the literature as “information rent,” knowing that the principals cannot fully monitor their performance because it is too costly to do so. To resolve these problems, the industrial organization literature suggests designing implicit or explicit contracts with provisions that align the incentives of the agents with those of the principals, while simultaneously reducing the information rent.

Reforms along the line recommended by the industrial organization approach are gaining ground in developing countries. Realizing that additional resources do not necessarily lead to improved education outcomes, policy makers are increasingly attempting to link the rewards of schools/teachers to student achievements. Some of them are creating avenues for parents to participate in school activities to ameliorate the monitoring problem. Others are encouraging private sector provision of education, thus increasing competition and giving parents a choice of provider. And a few are making information about the performance of schools available to the public. The underlying premise of all these measures is that the performance of schools and teachers will change for the better if they expect their resources and income to dwindle and their career development prospects to diminish if students do badly.

The perspective of incentives is an important complement to the engineering perspective. Aligning the incentives of the providers with desired outcomes motivates them to exert more effort to deliver better education outcomes. As a result, x-efficiency (slacking less) improves, leading to more and better education outcomes from the same level of resources. Involving students/parents in school activities may also lead to better resource allocation, thus improving allocative efficiency as well.

Against these major advantages, the application of the industrial organization perspective is demanding, in part because it involves changing the behavior of individuals and organizations. Other difficulties follow from the inherent imperfections of contracts, especially in the education sector, where outputs are difficult to measure, attribution of results to different factors are hard to establish, and information asymmetry is severe.

Public Accountability

Public accountability is the third building block in the analytical framework. This component is concerned with the ability of parents/students to influence the formulation of education objectives, policies, and re-

source allocation, either at the national and/or local levels.⁴ The premise is that if the majority of the beneficiaries have a way of persuading policy makers to improve education policies, education outcomes will improve. Conversely, if education is designed to serve the interests of only a few in a society, the benefits from investment in education will be narrowly distributed.

According to the World Development Report 2004, strengthening the voice of citizens can be achieved in two ways: the first involves improvements in the electoral process itself, which is complex and time-consuming. The second involves taking measures to make public institutions/politicians more accountable to citizens, for example, through carefully designed decentralization, or by making information about resource allocation and education outcomes available to the public.

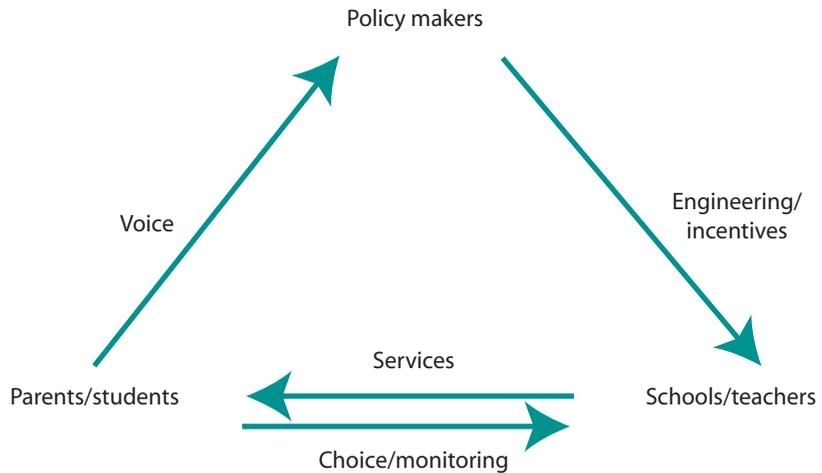
The benefits from greater public accountability can be huge. Holding policy makers accountable to citizens has the potential of improving the distribution of education among the population. It also has the potential of bringing about a more rational allocation of resources. Further, it can be an important vehicle for ensuring that education is serving the broader objectives of society. Against these benefits, public accountability is much harder to introduce, especially in less-than-democratic societies. Although some reforms are still feasible in such cases, they need to be designed with the prevailing constraints in mind.

Three Actors and Three Relationships

Schematically, the components of the framework described above involve three actors and three explicit or implicit contractual relationships (see figure 4.2). The three actors are the policy makers, the schools/teachers, and the parents/students. The three contractual relationships are between: (i) the policy makers and the schools/teachers, (ii) the schools/teachers and the parents/students, and (iii) the parents/students and the policy makers.

The policy makers (as the principals) provide the schools/teachers (the agents) with the rules of the game for better engineering and incentives. The schools/teachers provide the education services to students (or their parents), who may or may not have a choice of provider and may or may not be in a position to monitor school performance. Finally, the parents/students, as citizens, may or may not be able to influence policy makers with respect to the objectives of education, the policies governing its delivery, and the associated allocation of resources, depending on the prevailing political and institutional regime.⁵ The best-case scenario of course is one in which all three relationships are working in the same direction, so that the engineering of education, the incentives for the ac-

FIGURE 4.2

Three Actors and Three Contractual Relationships

tors involved, and the accountability of policy makers are all aligned to improve educational outcomes.

These relationships are complex, dynamic, and context-specific. They cannot be changed by a single act, overnight, or through one unique route. Their complexities are compounded by a number of factors. To mention but a few, it is difficult to measure all education outcomes accurately, especially with respect to such objectives as building national identity. Even where outcomes are measurable, it is difficult to establish causality. For example, when a student performs well, is it because of the teacher's method of instruction, the genes of parents, the parents' socioeconomic background, or something else? Further, the relationships between education inputs and outputs are not always clear. For example, does a class size affect student scores, and if so, in what way?

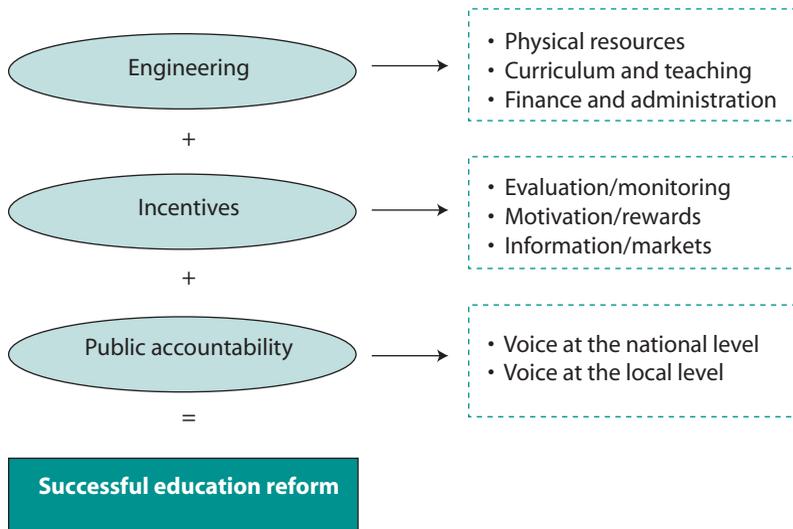
Notwithstanding these difficulties, there is extensive information about how some of these problems may be tackled. A brief discussion of some of the reform instruments as they relate to the three building blocks is presented below.

From Concepts to Instruments

Broad concepts become useful in practice when they are translated into instruments that have a high probability of working. This section attempts to translate our concepts into instruments without pretending to fully prescribe what ought to be done in any given context. The discussion is organized around the main concepts behind the three building blocks of the analytical approach (as shown in figure 4.3).

FIGURE 4.3

The Three Building Blocks of the Analytical Framework



Possible Instruments for Better Engineering

Better engineering requires that students have access to appropriate physical resources (schools, classrooms, and other infrastructure), a modern curriculum, and well-trained teachers. The provision of these inputs requires adequate and efficient allocation of financial resources and effective management. Where resources are insufficient to meet the demand for education and management is ineffective, better engineering is a prerequisite for improving education outcomes.

Physical resources. Consider first the issue of physical resources. To learn, students need access to schools, a decent-sized classroom, and well-functioning infrastructures. These inputs require resources that some governments in developing countries cannot afford, especially in light of the growing number of students and the persistence of a policy of free education for all. And frequently, available resources are not managed efficiently. A large fraction of the resources may be allocated to overhead and a small fraction to inputs related to teaching. Teachers' salaries, low as they may be, can be so large as to leave very limited resources for acquiring all other inputs. Also, some countries allocate a large chunk of the education budget to higher education, even when most children have not yet been enrolled in basic education.

Inadequate and/or inefficient allocation of resources means that some children do not have access to schools at all, or have access to a low level of instruction and an inappropriate learning environment. Poor chil-

dren, in particular, are more vulnerable, as they tend to drop out proportionally more than the well-off and because they typically do not go on to acquire higher education. Thus, the first order of business in any education reform is to make sure that physical resources are provided for students to learn. This may require mobilizing additional resources, for example, by charging user fees to students with the ability to pay, reallocation of the current budget among different inputs, or encouraging private provision of education.

Curriculum and teaching capacity. If the physical resources provide the means for learning, the curriculum and teaching methods provide *what* learning takes place and *how* it is accomplished. Well-designed curricula and qualified teachers are key ingredients to the efficient functioning of education systems. Here again, the education systems of most developing countries tend to suffer on both counts. Teaching methods tend to emphasize repetition and memorization rather than creative thinking and lifelong learning. National examinations harmonize equitable access to higher education, but may also lead to “teaching to the test” and even “manipulation” of the results (Levitt and Dubner 2006). Teachers are not always well trained, and if they are, they do not always transfer their training to the students in the classroom. Absenteeism is not a rarity either, especially in remote areas.

Clearly, this is another critical reform area if better engineering of education is to contribute to better education outcomes. Updating the curriculum and improving the training of teachers are important ingredients going forward. For all of these reform areas, there is a growing body of accumulated knowledge and experience to draw upon.

Management. The management of resources (physical and human) differs according to whether education is provided by public or private schools. The role of the government is also different in each case.

For public schools, the nature of the problem is relatively well known. Typically, public schools have limited resources or limited control over the resources they have. Headmasters rarely select their teachers and they cannot fire them. Key decisions, including the allocation of resources across different classes of expenditures, are essentially centralized. Salaries are basically determined on the basis of seniority. To remedy these problems, the standard solution is “give schools more autonomy in return for greater accountability.” But, as will be discussed below, it takes more than such a broad statement for the management of public schools to be more effective. Issues of evaluation, compensation, and monitoring need to be addressed if the shift to a new paradigm of autonomy-accountability is to bring about positive results.

As for the private sector, the motivation to make a profit is likely to lead the owners to do what it takes to achieve this objective. The key issue for the government is one of protecting the public interest and reducing cream-skimming, both of which require government intervention. In the case of the private sector's involvement in education, the intervention consists of providing and enforcing a regulatory regime to ensure that certain standards are met. These standards could pertain to access, the curriculum, infrastructure, or accreditation. In parallel, the government could also provide funding to qualified but poor students to enroll in private schools, as has been tried, for example, by Chile, Colombia, Côte d'Ivoire, the Czech Republic, and Bangladesh in the form of voucher schemes.

Other forms of engaging the private sector include *contracting out* such services as the publication of public school textbooks and school maintenance. These services lend themselves to contracting out because the outcomes are easy to measure and the costs can be identified without difficulty. If contracting out is conducted through an open bidding process, it could generate cost savings to government and possibly better quality services in the public schools.

In most countries, education is provided partly by the government and partly by the private sector. Thus, reforms need to move on two parallel tracks, one for improving the management of public schools and the other for improving the regulatory environment for the private provision of education. Where countries seem to differ is in the level of education where private provision is encouraged. The recent trend in Asia and to a lesser extent in Latin America is for the government to focus on the provision of basic education, leaving a large chunk of higher education to the private sector on equity grounds.

Possible Instruments for Better Incentives

Better incentives require aligning the objectives of the actors involved with better education outcomes. This can be done through multiple channels. One channel involves evaluating and monitoring schools/teachers. Another is related to linking the compensation of schools/teachers to student achievements. A third is related to the role of parents and markets in this process. Clearly, all of these channels are linked and none of them would work alone. Evaluation without rewards is not likely to change the behavior of schools and teachers for the better. Nor would evaluation fully substitute for effective monitoring, say by inspectors or parents.

Evaluation/monitoring. Evaluating and monitoring the performance of schools and teachers are not easy, though. Schooling involves conveying

skills, attitudes, and values. Some of these elements are difficult to measure. While testing is a reasonable proxy, it only captures part of what a good school is supposed to do. Further complicating the process is the fact that the relationships between inputs and outputs in the education process are not linear. For example, the allocation of more resources does not guarantee better outcomes. Nor does reducing the class size necessarily improve test scores. In addition, it is difficult to monitor the performance of teachers. In part, this is because the teaching process itself requires that teachers have the autonomy to assess student knowledge of material, provide the necessary feedback, and adjust the method of instruction to the characteristics of students or the nature of subject matter. In addition, the teaching process takes place inside the classroom, where only students can observe teachers.

Even if mechanisms to evaluate the performance of schools/teachers are found, there is a problem of attribution. As noted earlier, the performance of students depends on a host of factors other than schools and teachers. These other factors include the characteristics of the child's parents, the child's nutrition, and the influence of peers. Thus, a student may score well in a particular school, but much of the credit may belong to the influence of the parents or peers. In another school, a student may score badly despite the serious effort made by the school/teachers. Judging the first school to be better than the second is obviously the wrong conclusion.

These problems are not without possible solutions, however. One way of assessing the performance of schools, rather than the composition of its population, is to track the *changes* in student performance in the same school over time. The scores are likely to reveal the contribution of the school rather than reflect the characteristics of the students and their parents, essentially because the structure of the student body tends to remain roughly constant for a period of time. Alternatively, the *level* of school performance could be compared with the performance of other schools, after adjusting for differences in the socioeconomic background of the student body in each of them. Imperfect as they may be, these comparisons are better than no evaluation at all. Moreover, the process can be strengthened through better monitoring mechanisms, for example, through the participation of parents/students in school activities, as will be discussed below.

Rewards. Evaluating the performance of schools/teachers without offering a system of financial and nonfinancial rewards is not likely to change their behavior. But creating such a system is easier said than done.

In public schools, as noted already, compensation and career development are typically based on seniority rather than performance. Salaries are

frequently too low to secure a decent standard of living, which contributes to the proliferation of private tutoring. Both excellent and mediocre performers receive similar treatment, demoralizing the morale of good teachers. And absenteeism may go unnoticed or without any penalties.

One way of addressing these problems in public schools is by emulating some of the practices of successful private schools. These practices involve according headmasters the flexibility to hire and fire teachers, compensating them on the basis of performance, and setting salaries at competitive levels. Because they are located at the schools, headmasters are better positioned to monitor the performance of teachers and get feedback from students and their parents. To avoid favoritism and poor judgments by headmasters, the ministry of education could set the rules

BOX 4.1

Teacher Incentives Work, but Not Always

A random evaluation of the state of the education system in Andhra Pradesh in India indicates positive results for the performance-based pay program implemented for primary education teachers. Students in affected schools scored significantly higher than those in other schools—by 0.19 and 0.12 standard deviations in math and language, respectively (Muralidharan and Sundararaman 2006). Spillover effects were also observed in other subjects.

There are counter-examples, however. Even a significantly large bonus to teachers doesn't necessarily produce positive outcomes in student learning, as shown in Mexico's Carrera Magisterial Program. Despite attractive rewards, no direct causal link was found between this scheme and teacher performance (McEwan and Santibanez 2005). Although student learning was evidently improved, particularly in rural areas, the results were also mixed (Lopez-Acevedo 2004).

In Kenya, a teacher incentive program that awarded a nonmonetary bonus to teachers resulted in short-term success. Students' test scores improved largely due to the teachers' focusing on "teaching to the test," which increased test-preparation sessions. This positive change was only observed during the duration of the program.

These cases show that teachers do react to incentive programs, but there are no guarantees that these reactions are either positive or lasting. Indeed, the conclusion of a comparative study in seven countries in Latin America (Vegas and Umansky 2005) is that there are many types of teacher incentives, and a variety of incentive schemes that are worth exploring, to affect the behavior and capacity of teachers to perform their tasks well. According to the authors, it is crucial to have careful design, a clear framework, and guidelines and objectives suitable for each country's context.

Sources: Lopez-Acevedo (2004); Muralidharan and Sundararaman (2006); Vegas and Umansky (2005).

of the monitoring and evaluation and hold the headmasters accountable for measurable results.

The Role of Parents and Students. Parents and students could play a positive role in improving the performance of schools if they had a *choice* of provider and if they had mechanisms to *monitor* school performance. The choice of provider presumably would put pressure on schools to perform better, but that would only work if:

- Parents had a real choice, in the sense that the cost of shifting from one school to another was possible without incurring excessively high transaction or transportation costs,
- Parents had reliable information about school performance that was provided by the government or independent agencies, and
- Public schools were affected by failing to attract and retain students.

As for the role of parents in monitoring school performance, clearly they are in a better position to do so than bureaucrats at the central government. They interact with the schools frequently, either directly or indirectly through their children. They also have the desire to ensure that their children are getting a good education. For both reasons, their active involvement in schools can contribute to improved performance. But that is also likely to work only if:

- Their involvement does not encroach upon teacher autonomy,
- This involvement is not captured by a subgroup of parents, and
- Schools are made responsive to the representatives of parents.

Possible Instruments for Better Public Accountability

Even if the education process is efficient and the incentives of the actors involved are aligned with desired results, education outcomes may still be suboptimal. For example, the objectives of education may be set to serve the narrow interests of the ruling elite, or the demand for unproductive but high-paid jobs. Education policies may be formulated to achieve these narrow objectives, and resources may be allocated accordingly. As a result, society may allocate significant resources to education, but the majority of the population may not necessarily reap their benefits, or the lucky ones who have access may not get the education they want or need.

These concerns are not academic. On the contrary, different groups in society typically want education to achieve distinct and possibly contradictory objectives. The World Bank Development Report 2004 phrases the problem this way:

BOX 4.2**Report Cards and School-Self Assessments Strengthen Parental Involvement and Community Mobilization**

Under the No Child Left Behind (NCLB) initiative, the United States developed a report card system that profiles schools. Variations of the system have been adopted in other countries around the world. While their impact varies from one country to another, a USAID study concludes that their success depends on: (1) the capacity of participants to benefit from the collected information, (2) the quality of the information system, and (3) the political will to implement the recommendations. The study adds that the bottom-up approach is more effective than the top-down approach in strengthening community participant in decision making (Cameron et al. 2006).

One successful example in a developing country is that of the School Self-Assessment (SSA) system in Namibia. In this case, the system helped mobilize parents to participate in school activities and management in the process of developing and implementing school improvement plans (SIPs). The SSA system is a comprehensive tool to assess school performance, covering school climate, school management, professional development, school planning, teacher attitude, and classroom management. Gillies (2004) reports that the SSA approach works well in helping parents identify issues and seek ways to make practical contributions.

Sources: Cameron et al. (2006); Gillies (2004).

“Poor parents see education as an opportunity for their children to lead better lives, but they may also want education to reinforce traditional values. Elites may want universal education but often promote public spending on higher education for the benefit of their own children. Urban and business coalitions may favor more education because it increases the productivity of their workers, or industrialists may quietly oppose ‘too much’ education because it makes workers restive. Politicians may want to deliver on promises of universal schooling while also using the education system to provide patronage jobs. Teachers and their unions want high-quality universal education but also higher wages.”

To reconcile the conflicting demands on education, each society needs to find mechanisms through which different groups can voice their concerns and a process by which these concerns are taken into account. Whether these mechanisms are proposed by the ruling elite or in response to pressure from citizens, they can be at the national or regional/local levels.

Voice at the national level. Democracy is probably the best instrument for reaching consensus about the objectives of education in a given society. It also provides a forum for reconciling differing views about the best modes of education delivery. And through parliamentary debates, it has the potential of allocating resources to serve the interests of the majority of the population. Although democracy, like markets, is imperfect, Churchill famously said: “Democracy is the worst form of government except all the others that have been tried.”

Appealing as the above assertion may be, it is nevertheless true that even less-than-democratic rulers need legitimacy and the consent of their citizens to stay in power. Thus, populist leaders may attempt to build consensus about education objectives and education policies by creating reform commissions or holding large conferences for different stakeholders. They may push for constitutional changes that guarantee free education for all, or allocate resources to remote areas to gain popular support. The problem with these mechanisms of public accountability is that there are no assurances that the leaders would adopt them, nor that they would work as well as a democracy.

Voice at the sub-regional level. If the political regime is such that public accountability mechanisms cannot be established at the national level, it does not mean that society has to wait until full democracy is achieved. Indeed, it may be possible to inject levels of public accountability at the sub-regional level with potentially positive effects on education outcomes. A carefully designed decentralization of decision making to the local level could empower citizens to have voice over issues related to education policies, resource allocation, or even school management.

The converse is not out of the question, however. It is indeed possible that decentralization could erode public accountability if it reduces the consistency of education policies across states while giving citizens no voice. The absence of local elections and lack of representation of citizens on local councils essentially means that decentralization may give local politicians a free hand in making decisions without being accountable to anyone. This could make things worse. Thus, decentralization is a potentially useful instrument for enhancing public accountability, but its usefulness depends on the way it is designed and implemented.

Applicability of the Approach across Levels of Education and Countries

The discussion thus far has not been focused on any particular level of education—preschool, basic, secondary, or higher education. Nor has there been any differentiation between countries on the basis of their

level of development, education achievements, or resource availability. The question addressed in this section is whether the combination of better engineering, incentives, and public accountability is applicable across different levels of education and countries.

Applicability across Levels of Education

Admittedly, different levels of education are intrinsically distinct from one another. For example, what needs to be done to improve the curriculum and infrastructure in preschool is not the same as what is needed at the level of secondary schools. Similarly, what is required to motivate a high school teacher may not necessarily be the same thing that will motivate a university professor. Nor can the participation of parents in school activities be applied to basic education and university in the same way; at a minimum, students in higher education are mature enough to play that role themselves.

Notwithstanding these differences, the framework presented in this chapter is applicable to all levels of education. Successful education reforms, regardless of sector, need to combine measures to improve the education process, the incentives of the actors involved, and public accountability. The details of these reforms need to be tailored to the specific level of education under consideration, but the three dimensions of the analytical framework can be used as the essential building blocks of the reform package.

Applicability across Countries

Here too, it is true that no two countries are exactly alike. One country may be ahead of the other in terms of education achievements and institutional capacity to implement reforms. The two countries may also differ in their level of economic development and resource availability. Nevertheless, both countries need to design their education systems to provide students with education infrastructure. They need to motivate their teachers and headmasters. And they need to engage their citizens in the process of setting the objectives of education and allocating resource to meet these objectives. Thus, both countries are likely to find the approach relevant, at least as a way of thinking about the design of their reform strategies.

The above argument does not mean that all countries need to do exactly the same thing—far from it. A country's history and institutional features and the nature of its political regime are clearly important determinants of the reform strategy. So are the other factors. The trick is to find a good match between the country's distinct characteristics and the recommended reform approach.

BOX 4.3**Well-balanced Reform Approach: Successful Case of Bogotá in Colombia**

Bogotá, population 7 million, is the capital of Colombia. With a school-aged population of 1.6 million, of which 47 percent are from low-income families, the city has undertaken a series of reforms showing important achievements in a short period of time. The city made remarkable progress in reaching out to the most vulnerable populations and providing them with basic social services (education, health, and social protection). For instance, the net enrollment rate increased at a rate of 6 percent per year between 1998 and 2002. This resulted in 98 percent GER and 89 percent NER (primary and secondary combined) in 2002. With an increase in public expenditures for social sectors (from 1.6 percent of GDP in 1991 to 7 percent of GDP in 2000), a number of strategies and programs were implemented, which translated into improvement in students' learning outcomes. Basic competencies assessment for third, fifth, seventh, and ninth grades in 2003 showed an improvement in math score of 30 percent and of 7.6 percent in language, compared to the scores in 2001.

The Bogotá example has an interesting balance of good engineering, incentives, and accountability, which has contributed to these results.

Engineering for Results:

- **Demand-side intervention:** Subsidies were provided for the children from low-income families to encourage their attendance at private schools. Programs to provide school lunches and transportation services were also implemented.
- **More effective use of public resources and improved linkage and relevance to the demand from the labor market:** A joint program involving various industries was developed to define competencies and skills for the students that would increase their employability upon completion of secondary education. Public resources such as museums, government offices, and industry facilities were encouraged to work as public learning centers. A major investment was made in the development of a library network covering 70 percent of the entire school population, and providing library resources to 40 percent of the adult population. This particular initiative brought the attention of the Bill & Melinda Gates Foundation, which awarded the city the "Access to Learning Award" in 2002.

Incentives:

- **Monitoring and evaluation system:** A set of indicators was developed to measure the access to and quality of education. It covers a wide range: (1) NER and GER for primary and secondary education; (2) public and private enrollments; (3) the subsidized populations in private schools; (4) the number of children supported by special

programs (subsidies); (5) the labor skills and competences linked in the curriculum; (6) the provision of special education; (7) in-service teacher training; (8) literacy programs; (9) partnerships with the private sector; (10) the number of library network users; and (11) the availability of textbooks and books per student. This M&E was used mainly by teachers and school principals, who received special training to interpret results and who introduced corrective measures when needed. The results were published on the Internet, which was made available through the library network.

- **Teacher incentives:** Aiming at promoting teacher incentives, an Excellence Award and a network of Centers of Excellence were established.
- **Corrective measures and special support for low-performing schools:** As a crucial element of the M&E, special support programs were provided to 90 primary and 46 secondary schools in partnership with universities and NGOs.

Accountability

- **Expanded M&E to improve public accountability and community participation:** Started in education sector, the M&E initiative was broadened and a massive public campaign was launched to monitor how various development objectives were being fulfilled. Initiated by the government of the city, the media, and leading NGOs, this campaign was called “Bogotá, how are we doing?” The indicators were established to cover various sectors, such as education, health, public services, housing, environment, public transportation, use of public spaces, security, public administration, finances, and economic development. Using indicators designed for each sector, monitoring was conducted by the public on a quarterly basis. Data were collected through the interviews, workshops, and focus groups assessment. The results were published and broadcast by the local newspapers, TV programs, and official journals. The program also had a profound impact on the quality of life of citizens overall: this campaign contributed to raising awareness among policy makers and citizens about better governance and public accountability.

Subject and grade	Test scores 2002–2003		Test scores 2005–2006	
	Grade 5	Grade 9	Grade 5	Grade 9
Math	52.7	57.2	57.7	61.4
Reading	58.2	60.6	60.1	65.3
Science	49.3	56.2	51.9	59.3

Since 2002, this approach has been brought up to a national scale, under a program called “The Education Revolution”; it has been having a strong impact on education outcomes, as shown in improved test scores.

Sources: El Tiempo, November 9, 2006; Martin and Ceballos (2004): Georgetown University, COLOMBIA Program. www.georgetown.edu/sfs/programs/clas/Colombia.

Summing Up

This chapter proposed an analytical framework that we intend to use in the next two chapters to assess past education reforms in the MENA region. If the approach is validated empirically, then we have a way of thinking about designing effective education reform strategies in the region, and possibly elsewhere.

The proposed approach is made of three pillars: better engineering of education, better motivation of the actors involved, and better public accountability of policy makers to citizens. Better engineering involves providing the necessary level and mix of inputs to achieve the objectives of education by means of effective management and adequate resources. Better incentives go beyond compensation to issues of evaluation, monitoring, and information. Finally, better public accountability involves giving parents/students voice to influence educational policies and resource allocation.

In addition to introducing some of the possible instruments to bridge the gap between these broad concepts and actual reforms, it was argued that the proposed approach is relevant across levels of education and countries. Although the differences on both counts are real, it is argued that all countries need to devise an education reform strategy that matches their own distinct characteristics with sets of reforms that cover the three components of the analytical approach. Partial and isolated reforms may lead to some improvements in performance, but integrated reforms are likely to be more successful. This is the key hypothesis that will be explored in the next two chapters.

Endnotes

1. A fourth and fully coherent framework for delivering social services, including education, to the poor has been developed in the World Bank Development Report (2004), in which the term *accountability* is used as a unifying theme to address the complex links between the key actors involved.

2. As discussed first in Galal (2003).

3. This literature has traditionally been applied to the regulation of monopolies, but it can certainly be applied to education as well. For a more sophisticated exposition of the incentive theory, see, for example, Laffont and Tirole 1993.

4. Two points are in order. The first is related to the definition of public accountability in this chapter, which is different from the way the term accountability is typically used in the education literature. For example, Levin (1974) defines accountability as: "... a closed loop reflecting a chain of responses to perceived needs or demands...[it] is continuous and dynamic when the linkages are tight and information is generated and transmitted freely (p. 375)." Alexander (2000) focuses on performance-based accountability, in a context where resources ought to

be used efficiently in a budget-restricted environment. And Benveniste (2002) emphasizes student assessments. These definitions fit into the incentive framework rather than public accountability in the current analytical approach.

The second point concerns the beneficiaries of education. The focus here is on the immediate beneficiaries of education, namely, students and their parents. However, other citizens (including civil society groups) do care about education too and could play an important role in enhancing public accountability.

5. In that sense, the approach adopted here is similar to that of the World Bank Development Report (WDR) 2004. In both instances, the three actors and their relationships are similar. However, the two approaches differ significantly in terms of their focus. The WDR focuses on how to strengthen accountability, defined broadly, in the relationships among politicians, providers, and clients. The current approach focuses on the elements that will improve the delivery of education services to their beneficiaries and society. While the two approaches overlap in many of the recommended reform areas, each brings additional insights on its own.

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The Road Traveled Thus Far in MENA

Has the MENA region adopted education reforms that combine measures to improve the engineering of their education systems, along with measures to improve the incentives facing the main actors involved and enhance public accountability? Has their reform approach evolved over time? What were the justifications for the approach they adopted historically? Finally, what are the implications of these actions for the course to be taken in the future? These are the questions to be addressed in this chapter.

In addressing these questions, we focus on the nature and trend of MENA's reform programs *over time*, rather than on the *variations* of these reform programs (as reflected in the current features of their education systems) among countries. These variations will be taken up in the next chapter, when we attempt to explain why some countries did better than others. In that sense, the analysis in this chapter aims primarily at identifying the road historically taken by the MENA region, with a view to finding out whether the region needs to change course.

The upshot of the analysis, on the basis of both *qualitative* and *quantitative* review of all major reform episodes in the region over the past few decades, is that the countries of the MENA region have attempted to achieve similar objectives and have broadly followed a similar path to achieve these objectives. Typically, MENA countries initially attempted to ensure that eligible children were enrolled in school, thus using education to enhance their national identities. Subsequently, the focus shifted to the quality and efficiency of education, both of which remain the principal preoccupation of most policy makers in the region today. Throughout, their reform path was dominated by an engineering approach to education, with limited attention being paid to the use of incentives and public accountability. This feature is changing and the region has begun to experiment with new types of education reform, but these experiments are partial and concentrated in a few countries. Thus, the time is ripe for considering alternative paths to reform.

The remainder of this chapter is organized in two main sections, followed by a summary of the key points made. The first section provides a qualitative review of the reform path taken by MENA countries. The second section provides a quantitative account of all reform measures (under the headings of engineering, incentives, and public accountability), mapped against different education objectives (equity, quality, efficiency, and national identity), different levels of education (from preprimary to tertiary), and over time.

The Path Taken So Far: A Qualitative Story

Education reform programs in the MENA region were often initiated in tandem with major political events. Independence was the obvious start in most countries, but other political events also played a role. The unification of Yemen, the formation of the new state in Djibouti, the rise of the Baathist regime in Iraq, the revolution in Iran, and the formation of the Palestinian Authority all heralded new education reform programs in these countries. Major crises were sometimes the opportunity to set out new reform programs, such as in Kuwait after the Gulf War in 1991. Sometimes, more subtle political changes prompted reform: parliamentary elections in Morocco provided the opportunity for a new reform program in 2000, entitled the Charter of Education and Training.

Whenever reforms were initiated, they were typically launched through a political or legal act that bound government and citizens to a coherent set of sector priorities and outcomes, defined in more or less precise terms (e.g., a government white paper or an executive decree). Government would use these documents as a framework for planning sector changes, allocating and prioritizing resources, and measuring their success.

Although not all education objectives were emphasized at the same time, most countries pursued the following: enhancing national identity, expanding enrollment to eligible children and adults in formal education, and improving the quality and efficiency of delivering education services. In the majority of cases, national identity and mass education were a priority in the wake of independence. Countries placed a high premium on forging a common heritage and understanding of citizenship, and used a certain reading of history, the instruction in a particular language, and the inclusion of religion in the education curriculum as a way of enhancing national identity. Mass education was pursued by initiating and accelerating the building of schools, recruiting teachers, and attracting students, along with a special effort at including specific groups such as girls, rural children, children of particular ethnic groups, and the disabled into the education system.

As time went by, the quality and efficiency of education came to the forefront. Today, these two objectives remain the most important pre-occupations of policy makers in the region. To ensure that students learn enough or learn something useful, countries have attempted to reduce repetition and dropout rates, increase graduation rates, and improve the allocation of resources. They have also attempted to improve *students' academic achievement* such that a greater proportion of the students are mastering the pedagogical objectives set by the education system.

In the process of trying to achieve the above objectives, most MENA countries encountered similar challenges. They all had to: (i) establish a mass national education system; (ii) create demand for formal education, and manage demand subsequently; and (iii) provide nonformal education for adults. A description of how MENA countries attempted to meet these challenges, through the lens of the analytical approach presented in chapter 4, is presented below.

Establishing a Mass National Education System

Following independence, most MENA countries faced the daunting task of setting up a new national mass education system. To quickly develop the human capital base necessary for a modern nation-state and create a nation of citizens bound by a common heritage, culture, and political ideals, authorities turned to the education system.

In most MENA countries, European colonial powers had put in place schools restricted to children of European settlers and a very limited number of nationals; these were usually based on mass education systems of the metropole. In addition, a substantial network of education facilities that provided religious instruction existed throughout the region. More or less structured, depending on country and history, these education systems had been in place for centuries: “Koranic schools” provided religious instruction to children; religious universities helped form the religious and sometimes political elite of many countries (Kijima and Vollmer 2006). Thus, developing the key components of the new mass education system required the mixing and matching of old and new components. This constituted the most important challenge facing the education authorities throughout the region during the early reform periods, mostly in the 1950s and 1960s.

Each MENA country faced this challenge with a particular configuration of engineering, incentives, and public accountability reform measures. The first act in all cases was related to *public accountability*. Every country in the region codified access to free education as a right of, and compulsory for, all citizens at independence. In virtually every constitu-

tion and basic law in the region, education figured prominently, as illustrated by a few examples in box 5.1.

The second act undertaken by almost all MENA countries under this rubric of reform was the orchestration of official events that bring together members of different constituent groups to discuss and validate the government's education reform program. This was, in fact, the most frequent vehicle of *public accountability* identified in the region. The degree to which participants were truly representative, actually influenced reform programs, or were able to critique past reforms varied from country to country. However, most governments recognized the advantage of providing a venue to gauge difficulties in meeting reform objectives and to solicit support.

BOX 5.1

Education in the Constitutions of Selected MENA Countries

Country	Excerpt from the constitution
Algeria	<u>Article 53</u> . The right to education is guaranteed. Education is free within the conditions defined by the law. Fundamental education is compulsory. The state organizes the educational system. The state ensures equal access to education and professional training.
Egypt, Arab Rep. of	<u>Article 18</u> . Education is a right guaranteed by the state. It is obligatory in the primary stage and the state shall work to extend obligation to other stages. The state shall supervise all branches of education and guarantee the independence of universities and scientific research centers, with a view to linking all this with the requirements of society and production. <u>Article 20</u> . Education in the state educational institutions shall be free of charge in its various stages. <u>Article 21</u> . Combating illiteracy shall be a national duty for which all the people's energies should be mobilized.
Iran, Islamic Rep. of	<u>Article 3</u> . The government of the Islamic Republic of Iran has the duty of directing all its resources to the following goals: ... (3) free education and physical training for everyone at all levels, and the facilitation and expansion of higher education. <u>Article 30</u> . The government must provide all citizens with free education up to secondary school, and must expand free higher education to the extent required by the country for attaining self-sufficiency.
Jordan	<u>Article 6</u> . The government shall ensure work and education within the limits of its possibilities, and it shall ensure a state of tranquility and equal opportunities to all Jordanians. <u>Article 20</u> . Elementary education shall be compulsory for Jordanians and free of charge in government schools.
Lebanon	<u>Article 10</u> . Education is free insofar as it is not contrary to public order and morals and does not interfere with the dignity of any of the religions or creeds. There shall be no violation of the right of religious communities to have their own schools provided they follow the general rules issued by the state regulating public instruction.
Morocco	<u>Article 13</u> . All citizens shall have equal rights in seeking education and employment.
Syrian Arab Rep.	<u>Article 37</u> . Education is a right guaranteed by the state. Elementary education is compulsory and all education is free. The state undertakes to extend compulsory education to other levels and to supervise and guide education in a manner consistent with the requirements of society and of production.
Yemen, Rep. of	<u>Article 37</u> . All citizens have the right to education. This right shall be guaranteed by the state, through the establishment of different schools and educational and cultural institutions.

Source: El-Haichour 2005 and <http://www.oefre.unibe.ch/law/icl/index.html>.

Although most consultations were ad hoc events, most countries have institutionalized the process through the creation of specialized commissions whose mandate is to monitor the implementation of educational reforms. These commissions had different configurations: some were emanations of political parties in power; some consisted of political and social personalities chosen by the executive; others were inter-ministerial commissions. In most cases, these commissions provided the analytical work to be discussed and validated during national conferences; in some instances, they continued to function (more or less regularly) as monitoring agencies of reform efforts.

To establish a national mass education system, each country also needed to create a new institutional framework for education provision. With few exceptions (i.e., Lebanon), MENA countries adopted a highly centralized education system with the government assuming all key functions: policy making, financing, and service delivery. Thus, “command and control” typified the organization of education in most MENA countries. Schools and universities were the property of the state; schoolbooks and other materials were produced by the Ministry of Education; and, most importantly, teachers were civil servants. Ministries’ responsibilities have included training and employing teachers; designing curricula and syllabi; producing and delivering textbooks; developing national exams; preparing meals; setting educational policy; and regulating educational practice. Detailed curricula—including the number of hours to be spent learning specific subject areas—were delineated for each year of schooling.

Typically, MENA countries also established a professionally trained body of inspectors who visited schools on a regular basis and filed reports to a central authority. These reports would have a direct impact on the career paths of teachers, school directors, and other staff. The establishment and maintenance of these corps can be considered a form of *incentives*-type measures, as they exist to enforce the “contract” between education ministries on the one hand, and schools and teachers on the other. However, they essentially constituted the enforcement arm of the command and control governance structure of most MENA education systems. MENA’s centralized education systems have managed teachers and school activities through standardized plans and schedules, including detailed curriculum guides, policy handbooks, instructions, standard forms, and lesson plans for all the teachers in each grade to follow as well as detailed guidelines about other aspects of educational practice. The inspectors’ job was to ensure compliance.

In addition, of course, MENA countries have undertaken a number of *engineering* endeavors. The most obvious was the construction and equipment of new schools and facilities. Planning and public works divi-

sions of education ministries would identify sites and take responsibility for contracting entrepreneurs for the construction and equipment of facilities. As demand for schooling grew, ministries began using more sophisticated planning techniques to determine where and how to build schools (e.g., school maps, revised construction norms). A key innovation was the development of a “girl-friendly” educational environment at compulsory education levels: countries built separate latrines for boys and girls, boundary walls, and schools placed within walking distance to most households. Also, considerable effort was made to distribute inputs throughout the education system: textbooks, teaching guides, didactic supports, pedagogical equipment, etc.

In every country in our sample, curriculum development and change were a key engineering endeavor during all periods of reform. In the earlier phases, curriculum reforms identified the basic knowledge sets for each level of instruction. Pedagogical practices were often “traditional” in nature, focusing on memorization of school subjects and lecturing to large groups of students (Zafeirakou 2006). In addition, curriculum reforms evidently involved a revision of social studies curricula to reflect the new political and social realities. Finally, curriculum reforms had two other components: the instruction of Standard Arabic and the place given to religious education within the curriculum. Arabization, which, as discussed in box 5.2, was carried out with varying degrees of success, was particularly important in the Maghreb countries. As for religion, the proportion of time allocated to the study of religion was as high as 13 percent in the 1950s and 1960s, but that percent has later come down to 9 percent today (Meyer et al. 1992).

MENA countries faced an acute shortage of teachers while trying to expand access to compulsory and noncompulsory education. Teacher training facilities for primary and secondary teachers were established hurriedly in many countries and accelerated programs to prepare teachers were often developed (Chapman and Miric 2006). The expansion of the higher education system has also faced an acute shortage in instructors, made even more chronic because the production of doctorates could not keep up with demand.

Attracting qualified individuals to the teaching corps often represented a key challenge. The principal approach adopted throughout the region was to offer teachers a civil servant status, thus ensuring relatively stable conditions of employment. In addition, promotion schemes have been based on seniority and qualifications, thus ensuring a stable path of professional development to teachers (Chapman and Miric 2006).

Although teachers have usually been centrally recruited and assigned to schools, most countries have found it particularly difficult to attract teachers to rural areas. As a consequence, many countries put bonuses in

BOX 5.2**Different Paths to Arabization in the Maghreb Countries**

Arabization in the Maghreb countries was a challenging task. The translation and localization of textbooks; development of support materials, such as dictionaries, guides, and references; and pre-service and in-service training of teachers required a monumental effort that took different paths in the Maghreb countries.

Tunisia adopted a pragmatic incremental approach. Given the number of qualified Francophone nationals—few as they were—and the absence of qualified Arabized teachers to teach scientific subjects, policy makers maintained French both as a foreign language and as a medium of instruction for math and science in primary education. Humanities and social sciences were Arabized incrementally, initially in primary and subsequently in secondary education.

The bilingual education policy adopted by Tunisia helped ease the pressure on the state for the hasty training of teachers to keep pace with high enrollment rates, and allowed the country, initially, to use existing French textbooks and support materials for scientific subjects. In the late 1970s, the decision was made to Arabize the entire primary curriculum, but it was only in the early 1990s that the decision was made to extend Arabization to all subjects in post-primary education, except vocational, professional, and technical tracks. At the university level, French was maintained as the language of instruction in technical institutes and sciences faculties.

Morocco followed a different route to Arabization, which hastily covered different disciplines and grades in primary education in the early stage of the process. Owing to the absence of qualified teachers, especially in math and science, the authorities had to recruit a large number of underqualified teachers. By the early 1960s, 50 percent of the teaching force in primary education were themselves graduates of primary education.

A new policy was adopted in the mid-1960s: all subjects were Arabized in the first and second grades, while French was maintained as the language of instruction of math and sciences in the third, fourth, and fifth grades. French was also maintained as the language of instruction for math and sciences in both lower and upper secondary schools. To meet the demand for secondary education in the 1970s, Morocco had to import French-speaking teachers from countries such as France, Romania, and Bulgaria to teach math and sciences, and Arab teachers to teach humanities and social studies (Merrouni 1996). By 1989, Arabization of all subjects across all grades in both primary and secondary education was accomplished. However, Morocco maintained French as the language of instruction of scientific subjects in technical and professional secondary schools, and in technical institutes and faculties of sciences at the university level.

(Box continues on the following page.)

BOX 5.2 (CONTINUED)

Algeria followed a more aggressive approach to Arabization, largely in reaction to the French attempt during the colonial era to forge a new identity for the Algerian population. Thus, upon independence, Arabic became a compulsory subject for all grades across all education cycles, and gradually all the subjects were Arabized, starting with the first grade and moving up the ladder. Textbooks were also translated from French to Arabic. Initially, graduates of the religious and private schools—often with little subject matter and pedagogical training—were recruited. Math and sciences proved to be a challenge, in particular as the Francophone teachers of math and sciences were converted to language teachers, after brief professional training.

In response to the shortage of Arabophone teachers, Algeria, between 1967 and 1970, created 12 teacher training institutes and increased that number to 51 by the 1980s. Arab teachers' trainers (mostly from Egypt) were also recruited, although their expertise was not always suited to the Algerian education system (Bennoune 1988, p. 250). The challenge was substantial, particularly as the Arabization process was extended to technical subjects at postbasic education.

Source: Houcine 2005.

place to offset the hardship of particular teaching posts, including housing and travel allowances; the ability to request reassignment after a shorter posting; special benefits for families; etc. To encourage greater success for girls in school, countries often targeted the recruitment of female teachers and instituted special benefits for female teachers, such as maternity leave. Aggregate data indicate that the feminization of the teaching profession in the MENA region has been rising since 1980 and reached around 50 percent in the 1990s (Ayyash-Abdo 2000).¹ However, wide disparities in the number of female teachers exist across the MENA region (i.e., Lebanon has 72 percent females versus Djibouti with 20 percent). And the shortage of teachers is more acute in nonurban areas.

When faced with an insufficient cadre of qualified teachers at all levels, MENA governments have generally resorted to the following recruitment options: (i) *unqualified teachers*, who were given permanent civil service positions; (ii) *contract teachers*, who lacked necessary credentials but were typically hired by local schools for a fixed term to offset a temporary teacher shortage; or (iii) *expatriate teachers*, generally qualified teachers imported from other countries.

In sum, then, the challenge of creating a mass education system in the wake of independence in the majority of MENA countries was by no means an insignificant task. It involved massive construction of schools, the development of new curricula, and the creation of a large teaching

capacity. To carry out this ambitious program, it was necessary for the government to take the lead and to rely on a command and control structure. There was too much focus on engineering and too little focus on incentives and public accountability.

Promoting and Managing the Demand for Education

While the preceding discussion was concerned with the supply side of formal education, we now turn to the demand side. Here too, the MENA countries encountered many challenges, which they attempted to address. Chief among these initially was the low demand for education, and subsequently the management of demand once a large number of students were enrolled.

Because of the level and prevalence of poverty in many MENA countries, the opportunity cost of sending children to school was often high for many parents.² Typically, in-kind resources such as free lunches, textbooks, other materials, scholarships, boarding facilities, etc. were provided to students to offset the cost of schooling. During later reform periods, these measures were tailored for specific populations. For example, incentives (e.g., canteens and boarding facilities, targeted programs providing free learning materials and meals to students) were put in place to send girls to school or to reduce the direct and indirect costs of education for poorer families. As it was believed that the opportunity cost for sending girls to school was higher than for boys, these demand-side measures were often couched as strategies to reduce the gender gap.

Also at the early stage of education reform, many MENA governments put in place a number of measures to promote the demand for higher education. These measures were often in response to the belief that newly independent countries lacked the high-level technicians and professionals necessary for rapid development. The measures included government scholarships and other forms of subsidies and, frequently, employment guarantees in public jobs.

Gradually, there was a shift in these policies. After racing to enroll as many students as possible in the mass national education system, MENA countries were later faced with the perceived problem of an overexpansion of higher education. High graduate unemployment rates and the skyrocketing costs of higher education led many MENA authorities to consider ways to dampen demand for this level of instruction. As a consequence, many MENA countries closed the higher education system to working adults and limited the number of times a student could repeat grades at both the secondary and tertiary levels. In addition, many countries rolled back the incentives and benefits put in place during earlier reform phases. More parsimonious distribution of scholarships, study

abroad opportunities, and student assistance were expected to dampen demand and high costs were very common. Thus, mounting budgets and overcrowding led many MENA countries to introduce tighter restrictions on access to government scholarships and other forms of subsidies, and linking family income and geographic distance to eligibility to student support services. Some governments also introduced other conditions—such as academic performance—for maintaining access to these benefits. Overseas scholarships often became more limited to students pursuing fields of study not provided in the home country.

The most common response, however, was to increase the number of students oriented to terminal vocational training at the secondary education levels. Students have generally been tracked into vocational or general education streams, usually on the basis of scores on an exam, following the completion of basic education. The proportion of students tracked into vocational streams varies across countries in the region, but most select about one-third of secondary students. Once in the vocational stream, students largely remain in the path that provides practical skills for a particular career. Very few are given the option of pursuing higher education at the university level. Most have some option for tertiary education in technical and vocational fields, although even those opportunities (i.e., for community colleges) are restricted for some students whose secondary vocational training is very narrow.

The outcome of this set of policies has been mixed. Demand for tertiary education is high and growing very quickly. It contains a promise (not always kept) for social mobility and thus efforts to dampen demand by closing the door through structural or economic means have often led to considerable resistance on the part of students and parents. Many of the protests concerning education policy in the region have been registered in the area of higher education benefits.

In addition, parents and students have viewed secondary vocational education with suspicion and reluctance: for example, facilities have tended to be underenrolled in Algeria, the Islamic Republic of Iran, Morocco, Tunisia, the Arab Republic of Egypt, and the Syrian Arab Republic. More a sign of failure than opportunity, vocational secondary education in most MENA countries has registered high levels of unemployment and little relationship between the training received and the employment obtained by those lucky enough to find jobs. The fact that few countries allow vocational education students to continue their education or transfer to other parts of the education system has certainly served as a further disincentive (Luinstra and Yamasaki 2006).

Fundamentally, this problem, like so many others, has been addressed as an engineering problem. Here, however, we see the evident limitation of such an approach. “Exit” (i.e., parents and students “voting with their

feet” and avoiding secondary VET) and protest are, in effect, less institutionalized vehicles of public accountability; however, they usually have serious unintended consequences.

Thus, MENA countries went through a cycle of initially taking measures to encourage enrollment in primary education and to democratize enrollment in tertiary education. The first objective was achieved for the most part, but the second proved elusive in light of the low level of job creation for university graduates. Governments had to roll back some of the benefits to enrolling in higher education, but this is not a viable solution going forward. The next phase of education reform will need to address the challenges highlighted in chapter 3, namely the increasing importance of the knowledge economy in economic development, the region’s enormous youth bulge, and the growing resource constraints to financing the demand for quality education.

Creating National Literacy Campaigns

Realizing that formal mass national education systems could not address all educational requirements, most MENA countries initiated ambitious nonformal adult educational programs targeting those who had not benefited from formal instruction. Unlike formal education, these programs were by their very nature a discrete and remedial endeavor that had a beginning (many illiterate adults and unschooled overage youth) and an end (a fully educated population). Of course, this depends in part on the success of formal education systems to provide all eligible children with compulsory education opportunities. In this regard, these campaigns usually held one or both of two objectives: reintegration of those who never benefited from compulsory schooling and those who left prematurely.

The MENA authorities would typically launch an official high-profile and intensive *campaign* managed through a specialized unit or agency to coordinate efforts to provide youth and adult literacy classes. National councils and commissions and regional committees would be established to draw up strategies and action plans; to oversee, supervise, and coordinate implementation; and to monitor activities and evaluate results. In most MENA countries, literacy campaigns have usually been launched within two types of contexts. First, some international gatherings have adopted adult literacy as one of its principal planks and MENA participants have used this to energize and motivate renewed literacy efforts (e.g., Dakar Education for All conference of 1990; Hamburg conference of 1997). Second, many countries have initiated literacy campaigns as part of a wider political program, usually following a change of regime (e.g., Algeria 1963, Iraq 1980, Iran 1979, and Syrian Arab Republic 1965). It is usually under this second context that we find military con-

scripts and recent graduates (sometimes recruited under the banner of “volunteers”) working as literacy instructors.

Although education ministries figured prominently among providers in most countries, coordinating agencies usually worked across many line ministries (labor, agricultural, industry, health, etc.) to conduct literacy classes with different groups of adults. Furthermore, a common characteristic of these campaigns has been the use of a temporary corps of instructors, often made up of recent university or secondary school graduates or military conscripts. Finally, and of particular importance for this analysis, most programs also relied on nongovernmental institutions for the provision of literacy classes: NGOs, local associations, and mosques.

The use of religious organizations, particularly local mosques and local religious institutions (e.g., Koranic schools), for the provision of ancillary educational services is a trend of particular note in the MENA region (Kijima and Vollmer 2006). In the case of Saudi Arabia, for example, the success of this approach helps explain why adult literacy rates are relatively high, considering the continued low level of primary enrollment.

Reliance on service providers to implement nonformal education increased as many countries focused their literacy campaigns on specific segments (e.g., rural, women) of the illiterate adult population. Programs in Algeria, Egypt, Iran, Morocco, and Yemen that targeted women all used NGOs, local mosques, and local associations as conduits to provide these services.

Compared to formal educational provision, *incentives* have been more common for adult literacy and other nonformal educational endeavors. We speculate that two factors may have contributed to governments’ decision to delegate implementation to outside providers. First, unlike with formal education, the target population is not clearly delineated: their numbers, location, and specific training needs are not particularly easy to discern. Thus, it would appear that in such cases, a more nimble, demand-driven institution (which is also capable of creating demand) would be more effective. Second, nonformal education in general and literacy training in particular is often considered a discrete activity that would be undertaken for a set number of students over a given period of time. Such an activity is much more amenable to contracting because there is no need to establish a permanent relationship with the service provider.

Facing the challenge of large adult illiteracy rates, MENA countries devised programs to address this challenge. These programs aimed at reintegrating those who never benefited from compulsory schooling and those who left permanently. They were pursued through a combination of government and NGOs, with the latter proving to be of particular use

as adult illiteracy programs are discrete acts that require closeness to clients. Most countries in the region made significant progress in reducing illiteracy, but the problem is still significant in some countries like Yemen, Morocco, and Egypt.

The Path Taken So Far: A Quantitative Story

The above qualitative analysis is informative, but does not provide concrete answers to some of the questions posed at the outset of this chapter. For example, even if it is clear by now that MENA countries have relied on engineering measures to meet the challenges they faced, especially at the early stage of establishing a mass education system, it is not clear whether their approach has evolved over time, whether this approach was applied equally across different levels of education, or whether it was modified to meet different education objectives. This section attempts to answer these questions quantitatively. As it turns out, our findings do not contradict the broad conclusions of the qualitative analysis and actually add a few more insights.

The methodology we used to trace reform measures, along with the limitations of the data, is explained in annex 5.A at the end of this chapter. Suffice it to note here that:

- In compiling the information, we attempted to account for all reform programs in all countries of the region from 1960 to the present. We drew on all documents and analyses we could find at both the national and international levels.
- As a result of this massive search, we found 34 education reform programs in 14 countries: Algeria, Djibouti, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Morocco, Saudi Arabia, Syrian Arab Republic, Tunisia, Yemen, and West Bank and Gaza.³ The number of reform measures we identified for all 14 countries exceeded 900, averaging 65 measures per country. The reform programs (or waves of reforms) were typically initiated in the 1950s and 1960s, followed by one or more subsequent reform waves.
- We also coded all reform measures by the components of the conceptual framework (engineering, incentives, and public accountability) as well as by education objectives (equitable access, educational outcomes, and national identity), levels of education (from preprimary to tertiary), and phases of reform (roughly covering the 1950s through the 1970s, then the 1980s through the mid-1990s, and mid-1990s until now).

The data set we compiled has a number of limitations. For example, although we have attempted to collect as much information as possible about reform in every country in the region, we recognize that individual measures and even whole chapters of reform may have escaped us. Another example is that not all measures are equally important from the point of view of their impact on educational outcomes. Thus looking at the trend in the number of reform measures can be misleading. Notwithstanding these limitations, we are confident that we have assembled one of the most complete depictions of education reform in the MENA region to date.

So what does the data set reveal? The analysis provides a number of insights about the reform path taken by the MENA region thus far. The most salient features of this path are highlighted under a number of observations below.

Observation 1. Reforms in the MENA Region Were Dominated by the Engineering Perspective across All Levels of Education

Of the total number of reform measures, 82 percent on average were of the engineering variety, while the average number of measures for incentives and public accountability was only 9 percent each (see table 5.1). Countries focused their attention on building schools, training teachers, and providing textbooks without paying enough attention to motivations and public accountability. This observation lends support to one of the predictions of this report, namely, that the region may not have achieved the desired level of educational outcomes in part because the approach the MENA countries followed did not combine the full range of reform measures to achieve this objective.

This observation applies to all levels of education, from preschool to

TABLE 5.1

Distribution of Reform Measures by Levels of Education, Percent

Level of education	Engineering	Incentives	Public accountability	Total
Early childhood/preprimary ed.	93	7	0	100
Basic education	76	11	14	100
Secondary ed. (upper secondary)	81	8	11	100
Higher ed.	69	15	16	100
Voc./tech. ed.	94	2	5	100
Nonformal learning	93	7	0	100
Literacy	67	15	18	100
Average	82	9	9	100
Standard deviation	12	5	8	

Source: MENA Education Reform Database.

higher education. It also applies to formal and nonformal education. In all cases, the majority of reform measures fall under the engineering column (as can be seen in table 5.1). The two minor exceptions relate to higher education and literacy programs. In these two cases, the number of measures under the incentives and public accountability columns is somewhat higher than the average for other levels of education. Even then, however, the deviation is quite modest and does not reverse the main observation made above.

Observation 2. Reforms in the MENA Region Were Dominated by the Engineering Perspective, No Matter What the Objective Pursued

The pattern observed above persists when the reform measures are depicted against different education objectives (i.e., equitable access, efficiency, and national identity). On average, the number of measures under the engineering approach is above 75 percent, while the incentive-type measures average only 9 percent and the public accountability measures 13 percent (table 5.2).

Notwithstanding the low level of variability in the number of measures under different reform components and the obvious domination of engineering measures, table 5.2 also points out that certain types of reforms seem to correlate more with certain objectives than with others. For example, quality seems to correlate more with incentives than other objectives. This finding suggests that achieving better quality requires more motivation than access, for example. Similarly, public accountability measures seem to correlate more with the objectives of equity and national identity. This points to the close link between, say, allocation of resources and voice.

TABLE 5.2

Distribution of Reform Measures by Objectives of Education, Percent

Broad objectives	Engineering	Incentives	Public accountability	Total
Access	76	10	15	100
Equity	73	9	18	100
Efficiency	88	9	4	100
Quality	75	15	10	100
National identity	79	2	19	100
Average	78	9	13	100
Standard deviation	6	5	6	

Source: MENA Education Reform Database.

Observation 3. Over Time, MENA Reform Programs Exhibit a Modest Shift in Focus from Engineering toward Incentives and Public Accountability

Notwithstanding the difficulties in identifying specific phases of reform, counting the reform measures over time reveals a consistent pattern. As shown in table 5.3, the proportion of engineering measures is on the decline, going down from 82 percent in the early phase of reform to 72 percent in the most recent period. At the same time, the percent of the measures under incentives is going up, from 6 percent in the early phase of reform to 15 percent more recently. No discernible change is observed with respect to public accountability measures, which remained fairly stagnant over time.

These trends also hold across different levels and types of education (table 5.4). The notable exceptions concern early childhood education and vocational training. In the first case, the region began to pay more attention to early childhood education in the second phase of reform, while paying less attention to vocational training over time. Otherwise,

TABLE 5.3

Distribution of Reform Measures by Type of Reform over Time, Percent

Types of measures	Phase one	Phase two	Phase three	Average	Standard deviation
Engineering	82	79	72	79	5
Incentives	6	11	15	10	5
Public accountability	12	10	13	11	2
Total	100	100	100		

Source: MENA Education Reform Database.

TABLE 5.4

Distribution of Reform Measures by Sector over Time, Percent

Level of education	Phase one	Phase two	Phase three	Average	Standard deviation
Early childhood/ preprimary ed.	0	1	3	1	2
Basic education	39	38	33	37	3
Secondary ed. (upper secondary)	29	30	34	31	3
Higher ed.	20	17	21	19	2
Voc./tech. ed	9	9	5	8	3
Nonformal learning	1	1	1	1	0
Literacy	2	4	2	2	1
Total	100	100	100		

Source: MENA Education Reform Database.

the bulk of the reform effort has consistently gone to basic and secondary education.

The additional point to make with respect to the evolution of objectives over time is that the reform programs tended to place considerably more emphasis on equitable access (50 percent) than educational outcomes (33 percent) in the earlier phase of reforms (see table 5.5). Subsequently, the reform programs tended to reverse these proportions. National identity measures were considerably more important in earlier reform phases than in later periods, given that, once achieved, no major new effort was necessary.

What these observations collectively suggest is that the MENA countries have relied heavily on the engineering perspective to improve equitable and efficient access to education and to build national identity. This emphasis may have been justified at the early stage of educational development: at that time, the state probably needed to take the leading role in establishing a mass education system to serve the interest of a newly independent state. This massive project required “engineering” everything from a new education structure and administration to new curricula and textbooks to a new professional teacher corps and administrative staff. All of these tasks were to have a distinctive national “mark” that would reflect political priorities at the time. A command and control system may have also been the best way to manage the entire process.

The problem is that the world has changed since then, with the advancement in technology, demographic transitions, and increasing emphasis on competitiveness of individuals and nations, but the approach to education reform in MENA has not changed as much as needed. What the data show is that most MENA countries have yet to rely more systematically on injecting strong elements of incentives into their education

TABLE 5.5

Distribution of Reform Measures by Objective and Reform Phases, Percent

Broad objectives	Phase one	Phase two	Phase three	Average	Standard deviation
Access	45	23	11	28	17
Equity	5	11	6	8	3
Efficiency	17	21	29	21	6
Quality	16	35	52	32	18
National identity	17	10	1	11	8
Total	100	100	100	100	0
Average	20	20	20	20	10
Standard deviation	15	10	21	10	5

Source: MENA Education Reform Database.

reforms as well as giving parents/students mechanisms to participate in the formulation of education objectives, policies, and resource allocations.

Summing Up

In some sense, there is nothing particularly surprising about the objectives or sequencing of MENA reform programs. As with most post-independence countries, attention gradually shifted from equitable access to quality and efficiency over time, reflecting new challenges that have emerged as a consequence of previous successes. The relatively high importance given to national identity formation during earlier reform programs, or subsequent to major regime changes, would not appear to be inordinate. Moreover, the apparent shift of emphasis from basic education to secondary is also predictable, considering that most countries have reached or are close to reaching universal access.

Also, there is nothing surprising about the fact that MENA countries tended to rely heavily on the *engineering* perspective at the early stage of developing their education systems. What is surprising is that they have not as yet gone far enough in the direction of relying more systematically and coherently on measures of incentives and public accountability. The engineering approach probably served the region reasonably well earlier, when it was necessary for the government to take the lead on establishing a new education system, with a new structure and administration, new curricula and textbooks, a new professional teacher corps and administrative staff, and a command and control apparatus. However, the expectations from education have changed over time, for both internal and external reasons. The strong preference for the engineering perspective is starting to show its limits and strains. The path taken so far is no longer what is needed going forward. Thus a shift in orientation is needed. Exactly what that means requires looking at the successful and less successful cases with a view to learning from experience. This is the subject of the next chapter.

Annex 5.A

Education Reform Data in MENA: 1960–present

To track the evolution of reforms in the MENA region quantitatively over time, one needs a framework to guide and organize the collection of information. In addition, one needs a consistent set of data about reforms, which is not readily available as, for example, information about educational inputs and outcomes.

In regard to the first requirement, the conceptual framework presented in chapter 4 provides one way of guiding and organizing the information. For the second requirement, it was necessary to mount a major effort to compile and code information about the reform programs in the region on the basis of various documents and analyses. The result of this effort is a massive data set that is considered one of the most important contributions of this report. This data set is referred to in the rest of the report as the “MENA Education Reform Database.” The way this information was collected and coded, along with its possible limitations, is explained below.

Data Collection and Categorization

In compiling information about reform programs and reform measures in the MENA region, we attempted to account for all reform programs in all countries of the region from 1960–present. We drew on all documents and analysis we could find at both the national and international levels. As a result of this massive search, we found 34 education reform programs in 14 countries. The list of the countries in our sample, in alphabetical order, is as follows: Algeria, Djibouti, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Morocco, Saudi Arabia, the Syrian Arab Republic, Tunisia, Yemen, and the West Bank and Gaza.⁴ The reform programs, identified by country, by year, and by number of reform measures, are shown in table A.1.

The principal unit of analysis in this exercise is the *reform measure*, which is typically part of a larger reform program. The number of reform measures that we identified for all 14 countries exceeded 900, averaging 65 measures per country.

The reform programs (or waves of reforms) were scattered over the period, typically starting in the 1950s and 1960s, followed by one or more subsequent reform waves.

To organize the data in a way that helps conduct subsequent analysis, all reform measures were coded under: reform objectives, reform phases, reforms by sector, and by the components of the conceptual framework.

Coding the data by objectives involved listing them under three headings: increasing *equitable access*, improving *educational outcomes*, and shaping *national identity*. These three subheadings turned out to capture most of the objectives pursued by the countries in the region.

Coding the data by phases of reform was trickier. Not all countries initiated their education reform programs at the same time, nor did they move into subsequent phases in a synchronized manner. Thus, it was difficult to decide on exact dates for these phases. Nevertheless, further scrutiny of the data suggested that most countries have had two to three reform episodes. The first episode began immediately after independence and was driven by the need to establish a national system of education. This episode took place mostly in the 1950s and 1960s. The second phase of reform started around the early 1980s, with increasing concerns for efficiency and growth. More recently, starting in the mid-1990s, some countries embarked on a third wave of reform, in which the emphasis was increasingly being placed on the quality of education and the integration of elements of incentives and public accountability into the reform efforts.

Finally, the reform measures were coded under the three components of the analytical framework: *engineering*, *industrial organization*, or *public accountability*. Under each of these components, the reforms were further classified under a number of headings. Under engineering, the subcategories were: pedagogy, teaching capacity, structure and flow of education, expansion of capacity, and promotion of the demand for education. Table A.2 provides an illustration of these subcategories by actual examples from a sample of countries. Similarly, the reform measures under *industrial organization* were further classified under the following subcategories: monitoring, staff performance, school performance, and competition. Actual examples of measures under these subcategories are illustrated in table A.3 by actual examples. Finally, the measures under public accountability were further categorized under the following subheadings: information, binding laws, voice mechanisms, and advocacy. These measures are also illustrated by actual examples in table A.4. The choice of all subheading/subcategories was the result of an interactive process between the concepts advanced in the analytical framework and the reform measures observed by looking at the data.

Limitations of the Data Set

Although much effort has been devoted to the data-collection exercise, the data suffer from a number of limitations. The main ones are the following:

- Although we have attempted to collect as much information as possible on reforms in the individual countries in the region, we recognize that individual measures and even whole chapters of reform may have escaped us: this is particularly the case for reform programs that were initiated without international involvement or where little documentation was made public by the authorities.
- Even when we found the data, it was not always easy to determine the category under which a particular measure should fall. For example, when the government makes information about school performance or resource allocation available to the public, is this action intended to give parents a choice (part of the industrial organization) or a measure to enhance public accountability (thus public accountability)? Whenever we encountered something like this, the measure was placed under the category indicated in the reform program itself.
- Clearly, not all measures are equally important from the point of view of their impact on educational outcomes. Thus, looking at the trend in the number of reform measures can be misleading. To reduce this bias, we have tried to concentrate on the most significant policy changes (e.g., a complete curriculum reform rather than the replacement of a single textbook).

Notwithstanding these limitations, we are confident that we have assembled one of the most complete depictions of education reform in the MENA region to date. We believe that careful use of the data can provide valuable insights for a better understanding of the reform effort in the region. Furthermore, we hope that this data set will spur further research and policy analysis by others.⁵

TABLE A.1

The MENA Education Reform Database

Country	Reform name	Year	Number of measures
Algeria	Basic Education Reform		41
	Higher Education Reform (independence)	1962	
	Executive order No. 76–35 of April 16, 1976	1976	34
Djibouti	La Commission de Nationale de Réforme du Système Éducatif a été installée le 13 mai 2000	2000	11
	Education Reform (postindependence)	1978	23
	Loi d’Orientation du système éducatif	1999	30
Egypt, Arab Rep. of	National Education Reform (independence)	1952	33
	National Education Reform	1978	38
	Secondary and Higher Education Reform	1997	31
Iran, Islamic Rep. of	National Education Reform	1960	23
	Islamic Revolution: Education Reform	1979	78
	2nd Education Reform	1999	31
Iraq	Education Reform (independence)	1958	10
	Education Reform	1970	29
	Education Reform	1980	8
Jordan	Education Reform (independence)	1960	18
	Education Reform (post-6-day War)	1970	45
	Education Reform for the Knowledge Economy	2000	25
Kuwait	Education Reform (postindependence)	1960	26
	New Reform (post–Gulf War)	1991	13
Lebanon	Education Reform (postindependence)	1941	14
	Education Reform (post–civil war)	1990	24
Morocco	Education Reform (postindependence)	1956	33
	National Education Reform	1985	47
	The National Education and Training Charter	2000	29
Palestine	UNRWA period	1950	9
	Education Reform of the Palestinian Authority	1994	31
Saudi Arabia	Education Reform	1953	11
	Education Reform	1985	9
Syrian Arab Rep.	Education Reform (postindependence)	1958	13
	Education Reform	1990	12
Tunisia	Education Reform Act of November 9, 1958	1958	25
	Education Reform Act of July 29, 1991	1991	19
	Education Reform Act of 2000	2000	27
Yemen, Rep. of	Preunification reforms in Yemen Arab	1970	28
	Basic Education Development Strategy (BEDS)	1991	34
Total			918

Source: MENA Education Reform Database.

TABLE A.2

Examples of Engineering Measures

Engineering measures	Examples
<p>Pedagogy:</p> <ul style="list-style-type: none"> • Curriculum • Textbooks • Teaching methods and tools • Examination <p>Teaching capacity:</p> <ul style="list-style-type: none"> • Recruitment • Deployment • Qualifications (including training) <p>Structure of education and student flow:</p> <ul style="list-style-type: none"> • School planning • Flow of students (e.g., years of completion, prerequisites for entry, and rules of continuation) <p>Expansions of capacity:</p> <ul style="list-style-type: none"> • Construction • Equipment <p>Management:</p> <ul style="list-style-type: none"> • Managerial autonomy • Information systems • Training of administrators <p>Finance:</p> <ul style="list-style-type: none"> • Reallocation of resources • Mobilizing additional resources <p>Promoting Demand:</p> <ul style="list-style-type: none"> • Incentives for disadvantageded students to access school or advance to higher levels of education 	<p>Tunisia introduced competence-based approach in school curriculum in 2000, and revised textbook accordingly.</p> <p>Yemen introduced the annual comprehensive achievement tests in grades 9–12 in the 1990s.</p> <p>In Algeria, Arab teachers replaced French teachers between 1962 and 1967.</p> <p>In 2000, Djibouti launched in-service training on competence-based pedagogy.</p> <p>Since 2003–04, Algeria shifted from the 6+3 primary and lower secondary cycles to 5+4 cycles.</p> <p>In 1998, the Arab Republic of Egypt reduced the number of years from four to three years in Al-Azhar secondary schools to align with the public secondary school system.</p> <p>Yemen constructed five new public universities in the 1990s to add to the existing two.</p> <p>In the 1980s, Jordan constructed science labs and libraries in rented and government-owned facilities to improve the teaching of science.</p> <p>In the late 1990s, the Arab Republic of Egypt adopted legislation to increase autonomy at universities.</p> <p>In the late 1980s, Jordan introduced information system to improve decision making at the central and governorate levels.</p> <p>Since 1990, the Arab Republic of Egypt shifted resources from higher education to basic and secondary to meet EFA commitments.</p> <p>In Djibouti, high school students contributed to school cooperatives for the purchase of textbooks and teaching materials in the 1980s.</p> <p>In 2001, West Bank and Gaza created the Student Revolving Loan Fund (SRLF).</p> <p>Since 2000, food subsidies were provided to encourage Djiboutian families to enroll girls in school.</p>

Source: MENA Education Reform Database.

TABLE A.3

Examples of Incentives

Incentives	Examples
<p>Monitoring:</p> <ul style="list-style-type: none"> • Local community participation in school • Inspection <p>Evaluation:</p> <ul style="list-style-type: none"> • Evaluation <ul style="list-style-type: none"> – Schools – Teachers – School directors – Administrators • Accreditation <p>Rewards:</p> <ul style="list-style-type: none"> • Pecuniary • Nonpecuniary • Resource allocation (e.g., cash or non-cash transfers to schools) <p>Competition:</p> <ul style="list-style-type: none"> • Private provision of education • Choice of school • Contracting out of services 	<p>Since 1990, Yemeni communities participate in school activities through the fathers' and mothers' councils and school management committees.</p> <p>In 2001, Tunisia increased the number of inspectors to monitor and supervise teaching staff.</p> <p>In 2000, Tunisia implemented the School Performance Indicator System to evaluate the performance of individual schools to better target educational interventions.</p> <p>In 2000, the Jordanian Higher Education Accreditation Council was established along with methods to conduct internal and external evaluation of university programs.</p> <p>Djibouti established a rewards system to schools based on performance indicators since 2000. Rewards include donation of equipment.</p> <p>In the 1970s, the Arab Republic of Egypt promoted teachers based on seniority and on the inspector's report on the teacher's performance.</p> <p>The Islamic Republic of Iran has allowed establishment of private schools since 1990.</p> <p>In Jordan, services were contracted out to the private sector since 2000 (e.g., development of curricula and pedagogical tools, teacher trainings, and installation of ICT equipment).</p>

Source: MENA Education Reform Database.

TABLE A.4

Public Accountability Measures and Examples

Public accountability	Examples
<p>Voice mechanisms:</p> <ul style="list-style-type: none"> • At the local level <ul style="list-style-type: none"> – Decentralization – Local elections – Participation in local councils • At the national level <ul style="list-style-type: none"> – Consultation – Democratic reform <p>Information:</p> <ul style="list-style-type: none"> • Information about test scores • Information about school performance • Information about resource allocation <p>Binding commitments by the government:</p> <ul style="list-style-type: none"> • Free education for all • Promotion of girls' education • Minority education 	<p>Since 2000, educational reforms in Yemen are developed through a consultative process (including teachers, community leaders, members of parliament and the Shoura Council, the private sector, and academics).</p> <p>In 1979, strikes were organized by Algerian students to speed up Arabization.</p> <p>In the 1990s, Yemen developed annual school surveys and disseminated the results to stakeholders.</p> <p>Moroccan universities are evaluated since 2000, with the intention of making the results public to all stakeholders, including the parents and students.</p> <p>In 1963, the Algerian constitution declared free education as a right for all citizens.</p> <p>In 1981, Kuwait passed a law to eradicate illiteracy and allow illiterate adults to enroll in literacy programs.</p>

Source: MENA Education Reform Database.

Endnotes

1. This is lower than the proportion of female teachers in industrialized countries, where females represent 62 percent of the teaching force (UNESCO 1996).
2. The demand for education is a more complex phenomenon than what has just been mentioned. Indeed, education policies and household behavior interact in a variety of ways to determine educational outcomes (Behrman and King 2001). Moreover, cognitive and noncognitive skills that are formed early account for gaps in subsequent school performance (Carneiro and Heckman 2003). Thus, any reform of the education system ought to take this vast literature into account, although the topic is not explored in any detail in this report.
3. For the rest of the MENA countries, we could not find sufficiently detailed information about reform programs over a long enough period.
4. For the rest of the MENA countries, we could not find sufficiently detailed information about reform programs over a sufficiently long period.
5. Our plan is to make this data set available for others to use in pursuing further research on reform in the MENA region.

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Why Some MENA Countries Did Better than Others

While the MENA region as a whole may have focused too much on the engineering of education and too little on incentives and public accountability, this observation does not apply equally to all countries. MENA countries vary among themselves in the reform approach they followed, as well as in the education outcomes they have been able to achieve. The purpose of this chapter is to attempt to explain these variations in outcomes by exploring whether countries that performed well had education systems that exhibit better engineering of education, incentives more aligned with outcomes, and greater public accountability than those that performed less well. We chose to focus on the current features of the education systems as our explanatory variables because these features reflect all past reform efforts. Furthermore, they enable us to avoid the problem of missing or mis-specified information about reform episodes in the past.

Notwithstanding the limitations of a small sample, the bottom line of the analysis is that countries like Jordan, Kuwait, and Lebanon possess education systems that exhibit better engineering, more aligned incentives, and greater public accountability than countries like Djibouti, Iraq, Morocco, and Yemen. Correspondingly, Jordan, Kuwait, and Lebanon are relatively more successful in providing more equitable access and higher-quality education to their population than the latter group of countries. This conclusion holds even when countries vary in the level of per capita income, as the performance of Jordan and Lebanon relative to that of Saudi Arabia illustrates. In addition, while a conflict can have a damaging effect on education, this conclusion is not inevitable, as the experiences of Lebanon and the West Bank and Gaza demonstrate.

To elaborate the above conclusions, the rest of the chapter is organized as follows. The first section assesses education outcomes for a sample of 14 MENA countries, with the objective of ranking their performance in relation to one another. The sample covers, alphabetically, Algeria, Djibouti, Arab Republic of Egypt, the Islamic Republic of Iran,

Iraq, Jordan, Kuwait, Lebanon, Morocco, Saudi Arabia, Syrian Arab Republic, Tunisia, West Bank and Gaza, and Yemen. The second section explores whether the better-performing countries possess education systems that exhibit relatively better engineering, more aligned incentives, and greater public accountability than the least performers. Finally, the chapter concludes with a summary of the main points made.

Variations in Education Outcomes among MENA Countries

The first step in attempting to explain the relative success of MENA countries in achieving education objectives is to measure how much progress they have made in relation to one another. Variations in education outcomes are essentially the dependent variable that we will attempt to explain in the next section, drawing on our 14 case studies.

To this end, we first outline the methodology we use to construct a composite index of the performance of each country. Next we apply this methodology to assess the performance of the education systems in achieving the following objectives: access, equity, quality, and efficiency. Finally, we add it all up to reach an overall relative ranking of the performance of the education systems of the countries in the sample.

Methodology for Ranking Countries

In constructing the composite index of education outcomes by country, we took the following considerations into account:

- The extent to which countries were successful in achieving access, equity, quality, and efficiency in the provision of education to their population. The rationale for including all four objectives is that a country may, for example, do well on expanding access, but only to a small segment of the population. This outcome would be inferior to another, in which a country was able to improve access to most of its population. A similar point can be made if one country was able to provide good quality education, while another was able to provide the same level of education quality but more efficiently.
- The extent to which progress was made at different levels of education, including primary, secondary, and tertiary. After all, we are interested in assessing the overall performance of the education system, because it is progress on all fronts that affects the level, quality, and mix of human capital a country can use to pursue its development objectives.

- The extent to which countries were able to reach high levels of educational attainment today as well as the progress they made over time. This is because not all countries in the sample started from the same level of education attainment. A snapshot of the current standing of countries will not credit some of them for the effort they exerted and the resources they allocated to catch up with today's better performers.

To construct the index, we relied on a number of proxies. The indicators used to assess access are the average of net enrollment rates for primary education and gross enrollment rates for secondary and tertiary education. For quality, we averaged literacy rates and TIMSS scores. For equity, we averaged an index of gender parity (at all three levels of education) and the Gini coefficients of the average years of schooling. For efficiency, we used primary school completion rates as a proxy for internal efficiency.¹ The choice of indicators was dictated in most cases by the availability of information for the entire sample. Even then, it was necessary to estimate some missing data, using extrapolation or similar techniques.

To add up these indicators, we needed two things: a way of adding indicators with different denominators, and a set of weights to reflect the relative importance of achieving each objective now and over time. To make it possible to add indicators with different denominators, we normalized all indicators such that they had values between zero and one. As for weights, we opted for attaching equal weights to the four objectives of education, as well as equal weights for the level of achievements today versus progress made over time. Admittedly, our choice of weights is imperfect, as different countries may legitimately attach different values to achieving different education objectives, and these weights may also change over time. However, any attempt on our part to assign unequal weights to different objectives would have involved differential treatment of countries, with no solid foundations on our part to do so.

Performance Building Blocks

Before presenting the overall performance of each country in the sample relative to the others, we look first at the variations in relative performance with respect to enrollment, equity, efficiency, and quality.

Expanding enrollment. As noted in chapter 1, MENA countries have made tremendous progress in expanding education opportunities to a greater proportion of their citizens. Enrollment rates grew at all levels of education. Today, almost all countries can boast quasi-full enrollment at the primary level and an acceptable level of access at the secondary. Al-

though university enrollment tends to be lower than comparable countries outside the region, these rates have also been growing steadily.

Notwithstanding this success, not all countries in the sample were able to reach the same levels of enrollment or to proceed at the same pace. Indeed, there are large variations among countries, as illustrated in figure 6.1 and discussed below.

With respect to *primary education enrollment*, MENA countries today have an average net enrollment rate (NER) of 83 percent. However, Djibouti scores only 33 percent, whereas Iran scores 99 percent.² Primary NERs grew 29 percentage points since 1970. Half of the countries in our sample (Algeria, Arab Republic of Egypt, Jordan, Lebanon, Morocco, Syria, and West Bank and Gaza) currently have NERs above 90 percent. The NERs for Kuwait and Iraq are around 85 percent and for Yemen and Djibouti, 67 and 33 percent, respectively (see figure 6.1.a for details).

The majority of MENA countries in the sample accelerated access to primary education over a period of one decade, following 1970. However, some countries experienced more erratic growth patterns. Algeria took from 1975 to 1990 to expand access from 77 percent to 97 percent NER. Jordan and Iraq experienced temporary setbacks in enrollment rates before recovering and continuing their paths of growth in 1995. Morocco presents an interesting case, with enrollments reaching 62 percent in 1980, dropping to 52 percent by 1990, and then accelerating to full enrollment by the end of the century. Finally, Kuwait had relatively better-performing education systems until the 1990 Gulf War. Since then, it has slowly tried to recapture its position and currently has a primary NER of 86 percent.

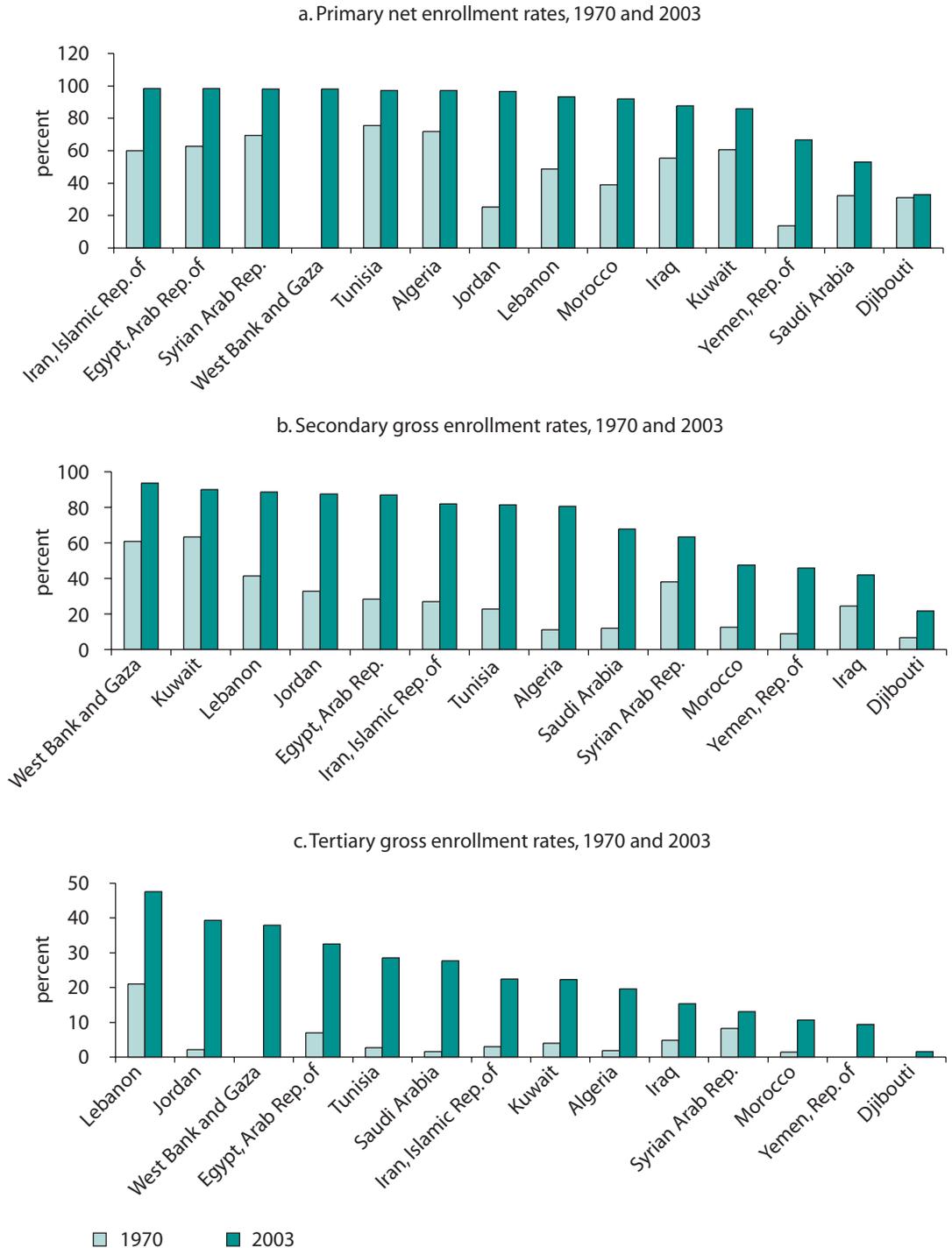
As for *secondary education*, gross enrollment rates today range from 22 percent for Djibouti to 94 percent for West Bank and Gaza (figure 6.1.b).³ On average, these countries' secondary GERs today have reached 2.5 times higher than those in 1970, from approximately 27 percent to 70 percent. Secondary GERs for the Arab Republic of Egypt and Jordan are 85 percent or more. Tunisia and Algeria are next to these top performers, with a rate of about 80 percent. On the other hand, four countries in our sample (Djibouti, Iraq, Morocco, and Yemen) still have secondary enrollment rates below 50 percent.

Most countries experienced a relatively smooth progression for this level of instruction. However, Kuwait experienced an erratic growth of its secondary education: its 90 percent GER in 1985 was halved after the Gulf War and then recovered through the 1990s. Iraq also experienced an unusual trend: its GER went up from 24 in 1970 to 57 in 1980 then went down to 42 in 2003.

Finally, with respect to *higher education*, the GERs span from 2 percent in Djibouti to 48 percent in Lebanon (see figure 6.1.c). The average

FIGURE 6.1

Primary Net Enrollment Rates and Secondary and Tertiary Gross Enrollment Rates, in 1970 and 2003



Source: Statistical Appendix.

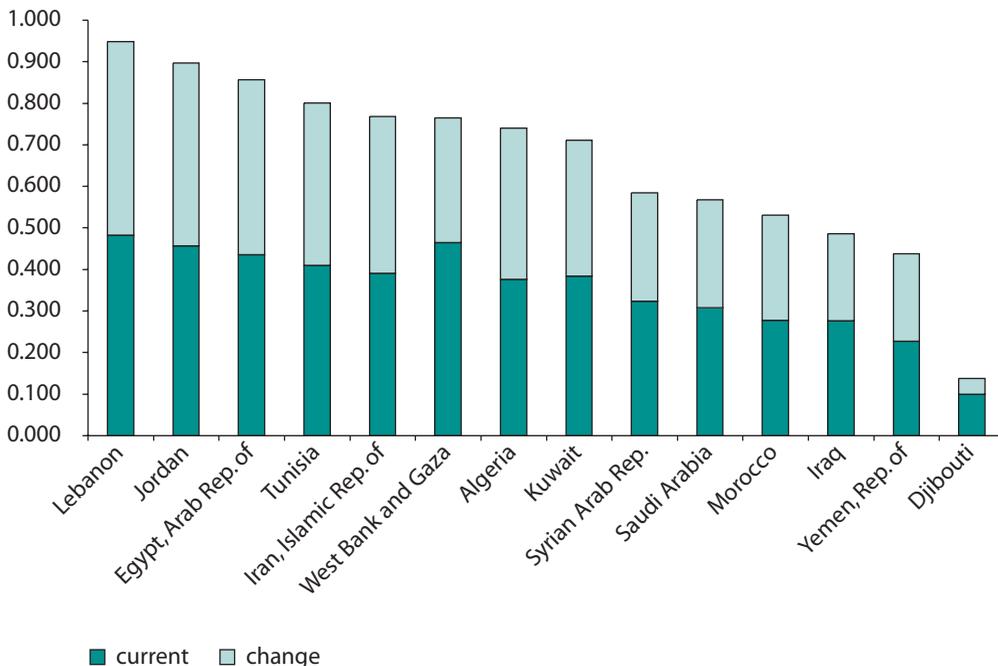
higher education for the region has quintupled from 5 percent in 1970 to 24 percent today. Lebanon was the first country to attain enrollment rates over 15 percent (in 1970), followed by the Arab Republic of Egypt and Syria (in 1980). By 1990, Jordan and Kuwait had surpassed this benchmark. Algeria, Iran, Saudi Arabia, Tunisia, and West Bank and Gaza joined these ranks by 2000. Most of these 14 countries started to accelerate enrollment in universities during the 1990s, almost doubling GERs from approximately 13 percent to 20 percent. Again, Iraq and Syria have recorded the slowest rate growth of higher education in the region.

On access overall, figure 6.2 shows that Lebanon, Jordan, Arab Republic of Egypt, and the West Bank and Gaza did particularly well in comparison with Djibouti, Yemen, Iraq, and Morocco. The rest of the countries fell in the middle. Although the variance is relatively small at the level of basic education, it goes up significantly at higher levels of education.

Equity. For many countries that had invested heavily in ensuring education for all, it became increasingly apparent that reaching the last children out of primary school required special attention. In most countries,

FIGURE 6.2

Integrated Index for Access



Source: Statistical Appendix.

women and the rural poor did not share the benefits of the modern education system to the same degree as men and the urban population. As a consequence, addressing inequitable access for girls and rural populations to the basic education level became a growing priority for most MENA governments. The results show that this is also an area where considerable progress has been made throughout the region, although there are significant variations among countries. These variations are explored below under two headings: gender parity and Gini coefficients of the distribution of the average years of schooling in the adult population.

Starting with *gender parity* (shown in figure 6.3), today, all countries but Algeria, Djibouti, Iraq, Morocco, and Yemen have a gender parity index (GPI)⁴ above 0.95 at the level of *primary education* (figure 6.3.a). On average, gender parity rates were 0.61 in 1970 and began to significantly rise for most countries during the 1990s. Typically, female primary enrollment rates lagged behind male rates, with male rates surpassing 100 percent before the gender gap began to decline. However, in Jordan, gender parity was reached before full primary enrollment. For Kuwait, Syria, and Tunisia, it took more than 15 years for the gender parity rate to surpass 0.95, after the 95 percent primary GER was exceeded.⁵ Iraq's primary education gender gap has remained unchanged since 1985, with an about 0.85 GPI.

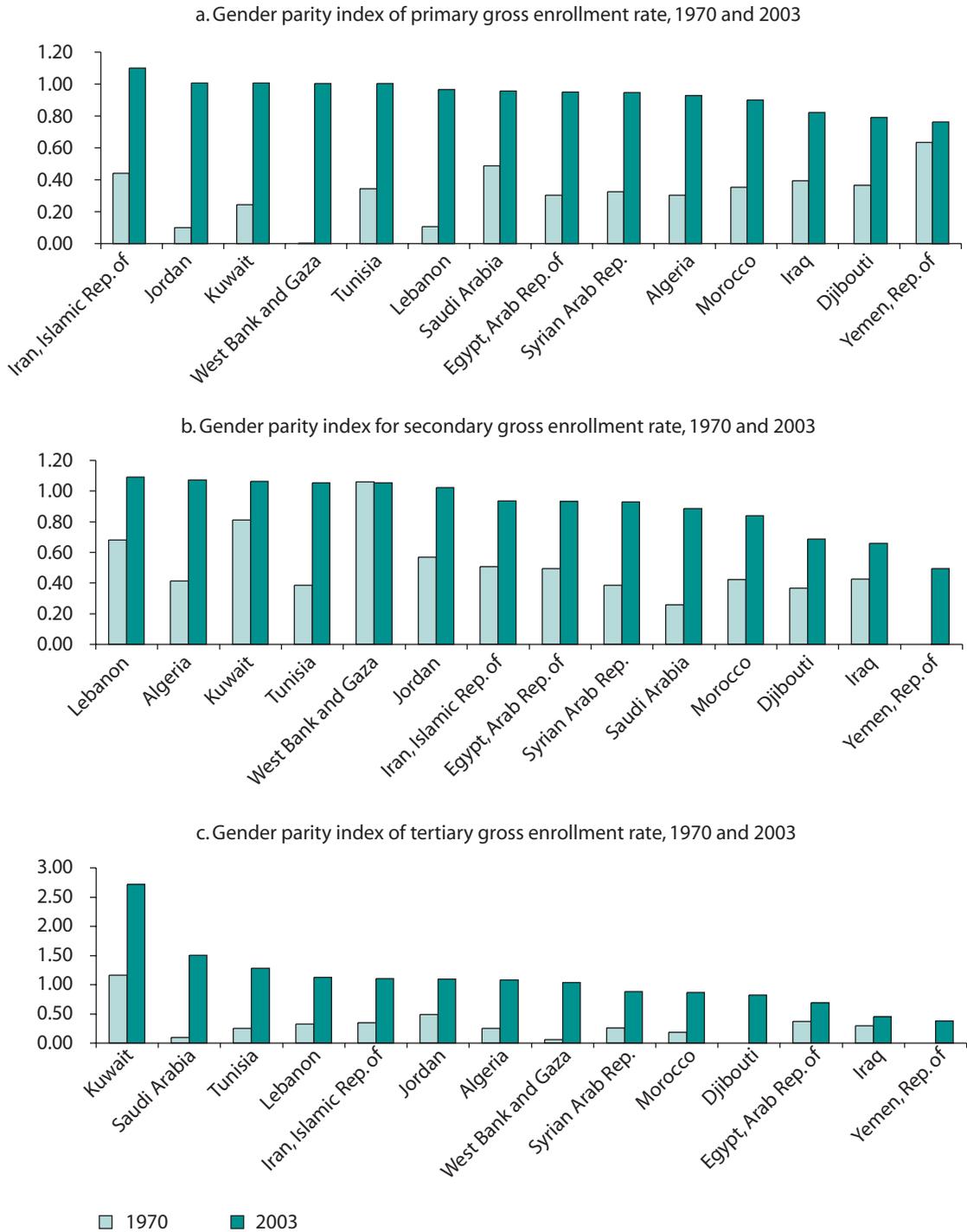
Although few countries have high rates of *secondary enrollment*, most have reached gender parity at this level of instruction (figure 6.3.b). However, Djibouti, Iraq, Morocco, and Yemen have secondary education gender parity rates below 0.95. For Algeria, Egypt, Iran, Kuwait, Lebanon, and Tunisia, the gender gap for secondary education is *smaller* than for primary. On average, these 14 countries have increased their secondary education gender parity from 0.48 in 1970 to 0.91 today. Most countries witnessed a steady increase of gender parity over this period. However, Lebanon achieved secondary education gender parity earlier, in the 1970s. Egypt, Iran, Saudi Arabia, and Tunisia did not close the secondary education gender gap until the late 1990s.

Gender parity rates for *higher education* are even higher than for secondary education in most MENA countries (figure 6.3.c). In fact, only in Djibouti, Iraq, Morocco, and Yemen do the proportions of male students significantly surpass those of females. Most countries had achieved gender parity by 1990. In Iran, Jordan, Lebanon, Saudi Arabia, Tunisia, and West Bank and Gaza, female students outnumber male students by a significant margin.

Turning to the distribution of the average years of schooling in the population, figure 6.4 shows that all the countries substantially improved their education Gini coefficients, going from 0.77 in 1975 to 0.54 in 2000 on average.⁶ Jordan and Syria currently have the most equal edu-

FIGURE 6.3

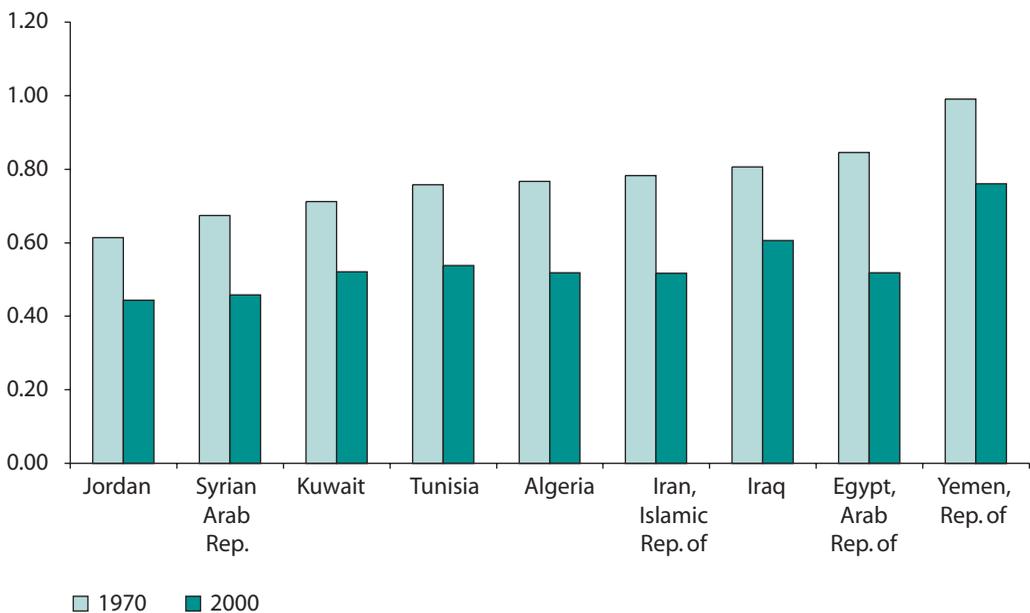
Gender Parity Indices of Primary, Secondary, and Tertiary Gross Enrollment Rates, in 1970 and 2003



Source: Statistical Appendix.

FIGURE 6.4

Gini Coefficients of Average Years of Schooling, 1975 and 2000



Source: Statistical Appendix.

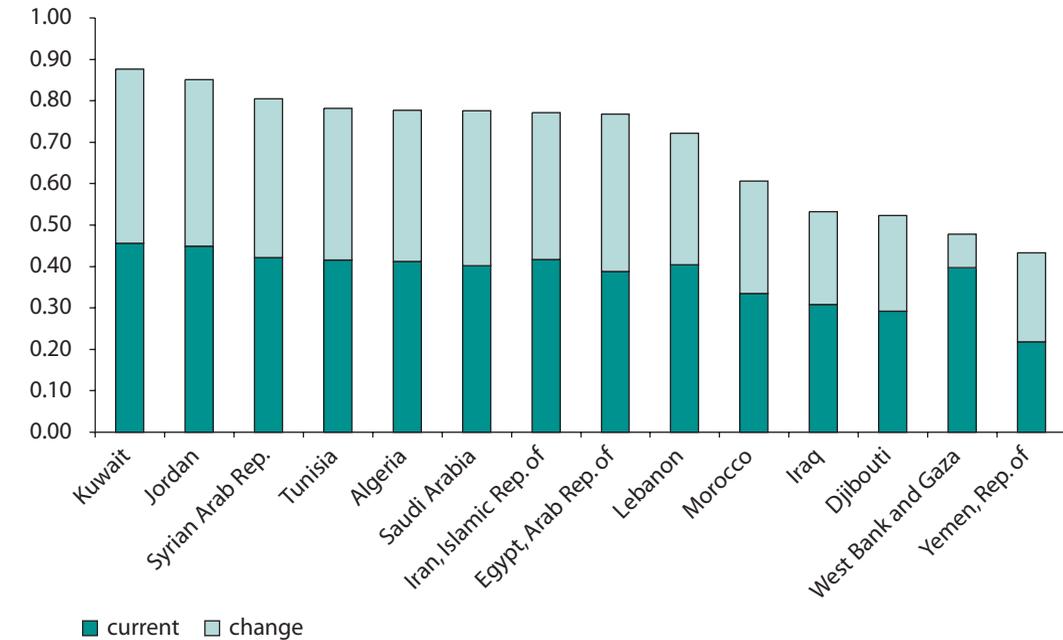
education distribution in the region, with education Gini coefficients of about 0.45. The second-best-performing group includes Algeria, Egypt, Iran, Kuwait, and Tunisia, whose coefficients range from 0.52 to 0.54. In contrast, Iraq and Yemen still have high Gini coefficients of above 0.6.

Averaging the indices for the gender parity and education Gini coefficients, the variations are greatest between the top and bottom performers (see figure 6.5). Jordan, Kuwait, and Syria have the most equitable education systems, while Djibouti, Iraq, West Bank and Gaza, and Yemen have the worst. The difference between middle and top performers is very modest, with the exception of Morocco.

Efficiency. Because of the difficulty in measuring the impact of educational efforts on student learning, sector efficiency is used as a proxy to measure this impact. Within the broad category of efficiency, *internal efficiency* captures the ability of the system to produce graduates of education systems. *External efficiency* reflects the ability of the education system to address human capital needs in society, defined in macro or micro terms.⁷ Of these two measures of efficiency, we focus on internal efficiency. External efficiency will be dealt with in chapters 7 and 8 in the context of addressing the link between education and domestic labor markets and migration.

FIGURE 6.5

Integrated Index for Equity



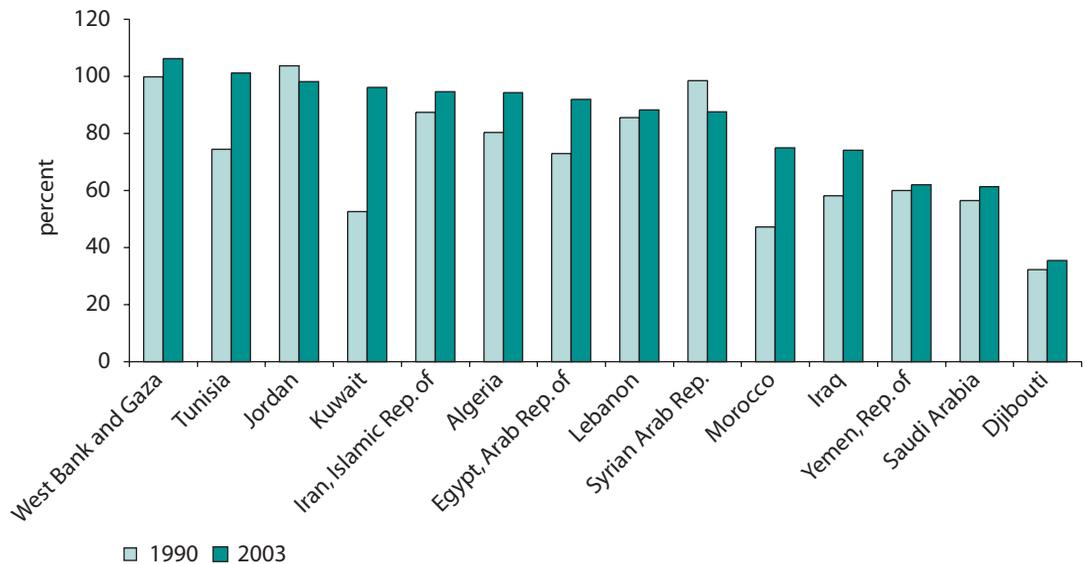
Source: Statistical Appendix.

Our efficiency index is based on *primary completion rates* (PCRs), which measure the number of students who complete primary school divided by the number of children in grade one.⁸ Completion rates in the region range from 36 percent in Djibouti to 106 percent in the West Bank and Gaza.⁹ The MENA 14 countries' average completion rate has grown gradually, from 72 percent in 1990 to 83 percent today (see figure 6.6 for more details).

Beside PCRs, we also had information about primary and secondary repetition rates, which are given in the Statistical Appendix. These rates vary a great deal from one country to another, ranging, for example, from under 1 percent in Jordan to 14 percent in Iraq and Morocco for primary education. Greater variations do exist with respect to repetition rates in secondary education, ranging from 1 percent in Jordan to 27 percent in Algeria in 2000. Notwithstanding the high costs of repetition rates, we decided not to include repetition rates in the index of internal efficiency. This is because these indicators tend to be policy driven rather than based on knowledge acquisition. Countries could change the criteria for repeating a grade or institute automatic promotion between grades simply to increase internal efficiency. Also, while repetition rates tend to be driven by student achievement, countries could change the

FIGURE 6.6

Primary Completion Rate, 1990 and 2003



Source: Statistical Appendix.

Note: PCR in 1990 for Kuwait is actually for 1991.

threshold because of the limited space available at the subsequent grade or education level. In these instances, repetition rates would not capture internal efficiency per se, but, rather, policy decisions.

Quality. Measuring the quality of education can be approached from two perspectives. First, it can be construed as *fundamental quality*: how many students have attained the basic skills (however defined) to successfully complete their courses of instruction and productively participate in the national labor market, polity, society, etc.? Second, it can be taken to reflect an education system's production of *excellence*: how many students from a particular country have entered into "world-class" research universities; or how many national universities produce "world-class" research or technicians/professionals?¹⁰

In chapters 2 and 3, we argued that investing in *fundamental levels of instruction* should be a priority for countries interested in participating in the global knowledge economy; however, *fundamental* quality is not only about basic skills or basic education. At both the compulsory and post-compulsory education levels, the transmission model of pedagogy (e.g., encouraging memorization) is being eclipsed by more focus on communication, analytical, critical, and organizational skills. Furthermore, there are currently no standardized measures of excellence. One of the Arab

Human Development Reports discusses the number of patents, academic prizes, articles written in refereed journals, etc., and these are reasonable proxies for excellence. However, these data are too sparse at national levels and over time to rank countries using this indicator.

Consequently, our analysis here focuses on *fundamental* quality, which we measure using two indicators: literacy rates in the adult population and international test scores for math and science. Literacy rates provide limited insights into the complex understanding of quality discussed above, but they give a broad measure of the learning outcomes of MENA education systems. International test scores, based on sample-based student achievement, are only available for eight MENA countries in recent years, but they present an important insight into the relative capacity of countries to transmit knowledge and skills to students of basic education.

On average, *adult literacy rates* among these countries have doubled since 1970 (from 38 percent to 72 percent).¹¹ Adult literacy rates (shown in figure 6.7.a) today range from 29 percent for Djibouti (estimation) to 93 percent for Kuwait. Algeria, Iran, Saudi Arabia, and Tunisia have made the most progress in raising adult literacy over the last 35 years. Egypt and Morocco have increased their adult literacy rates the least over the same period.¹²

The 2003 TIMSS scores provide a slightly different perspective than the literacy measures on educational quality.¹³ The scores are given in figure 6.7.b for all countries in the region that participated in the most recent TIMSS. The most notable observations are the following: first, the average for MENA countries is far below the world average, and far below a top performer like Singapore. Within the region, Morocco and Saudi Arabia scored particularly low on math tests, while Kuwait, West Bank and Gaza, and Jordan scored the best overall.

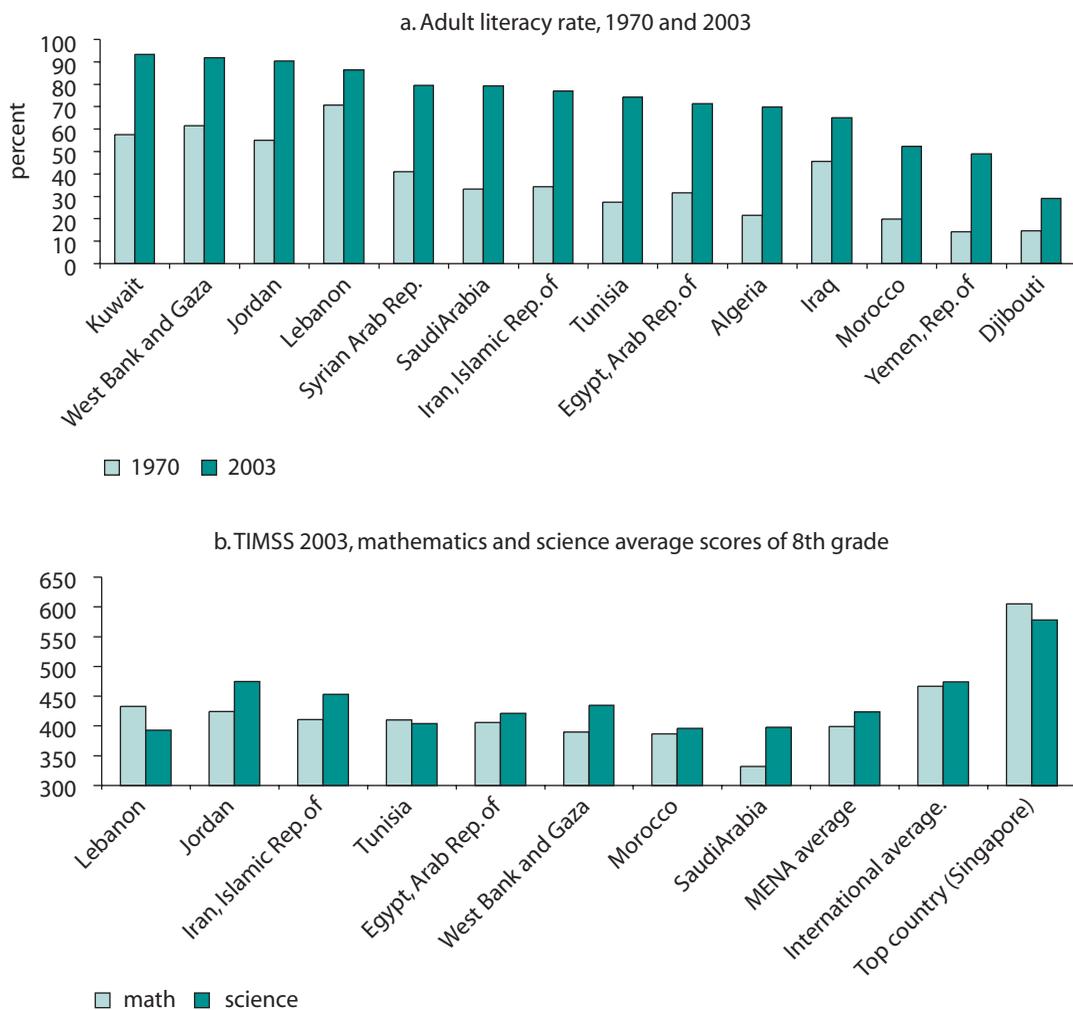
Averaging the scores for the adult literacy rates and TIMSS indices, Kuwait, West Bank and Gaza, and Jordan score particularly high, while Iraq, Morocco, Yemen, and Djibouti score particularly low (figure 6.8). Lebanon and Saudi Arabia rank higher on the literacy measures compared to their relative position on TIMSS. The Arab Republic of Egypt has a relatively modest level of adult literacy rates, but scores above average on TIMSS.

Adding It All Up

It is difficult to ascertain which countries in the sample did better than the others on the basis of achieving a single objective, given that not all countries have made the same progress in meeting all objectives, and given that they started from very different initial positions. Figure 6.9 depicts the results when all partial indices are added together for each

FIGURE 6.7

Adult Literacy Rates and TIMSS 2003 Mathematics and Science Average Scores



Source: Statistical Appendix.

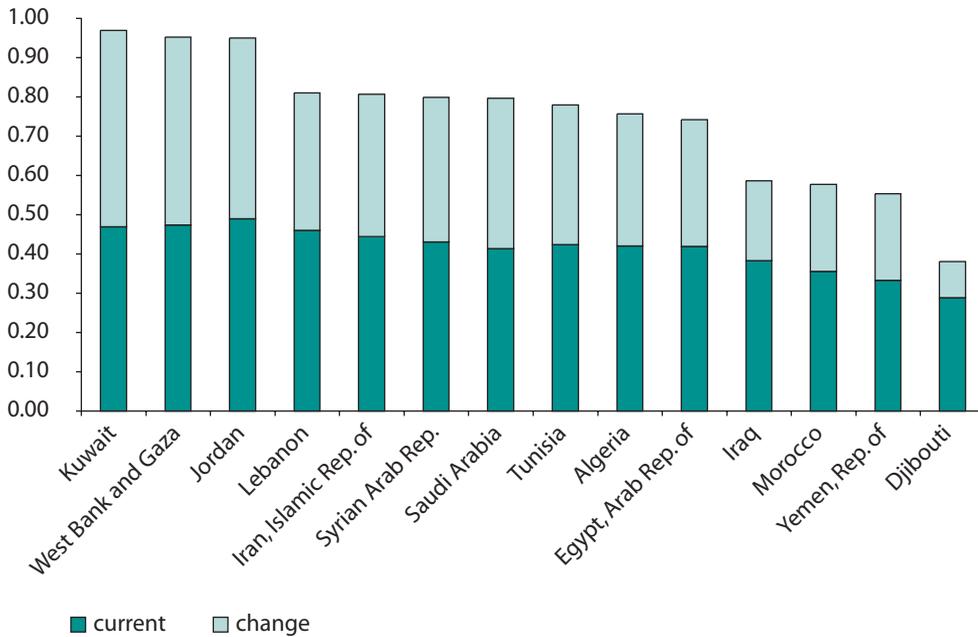
Notes: Adult literacy rates in 1970 were estimated for Djibouti, Iraq, Lebanon, and West Bank and Gaza; adult literacy rate in 2003 was estimated for Djibouti.

country, as well as the contribution of achieving each of the four objectives of education to the overall score. These results are relatively robust, given that we draw on a large number of indicators and apply the same methodology across all countries. In addition, they are not very sensitive to any particular variable.¹⁴

Clearly, the difference in ranking is most visible between the top performers (Jordan and Kuwait) and the least performers (Djibouti, Yemen, Iraq, and Morocco) in the sample. The average performers, especially Tunisia, Lebanon, Iran, Egypt, West Bank and Gaza, and Algeria, tend

FIGURE 6.8

Integrated Index for Quality



Source: Statistical Appendix.

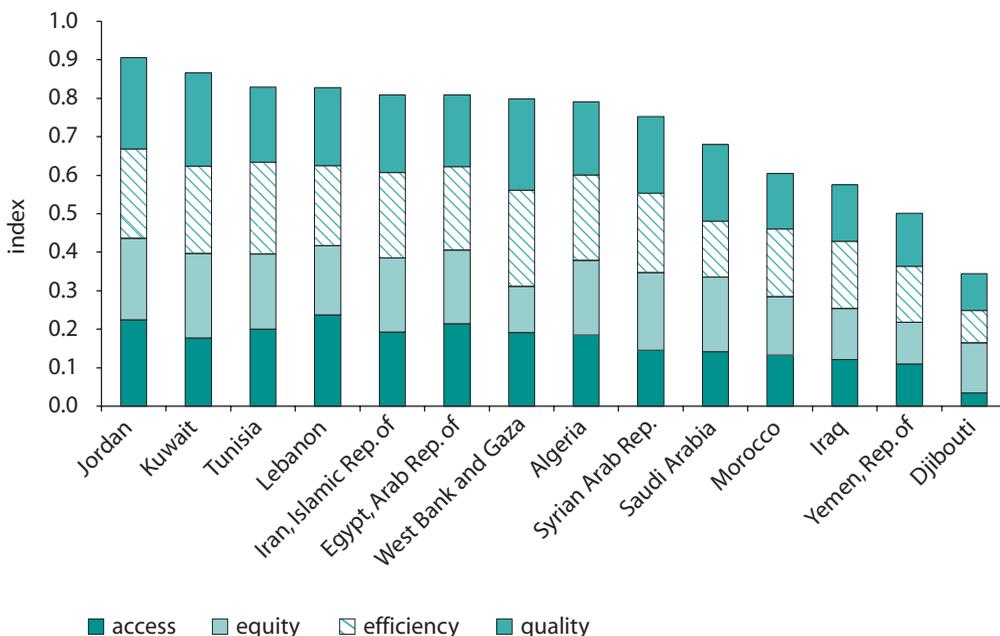
to closely track the top-performing countries. This result suggests that it would be useful to focus the analysis in the next section on contrasting the features of the education systems of the top- and least-performing countries, where most of the variations in performance are observed.

Beyond the simple ranking of countries, three observations can be made on the basis of the analysis thus far: first, each group of countries faces slightly different challenges. The top performers have achieved relatively high levels of equitable access to education. Having reduced adult literacy rates and attained reasonable levels of academic achievement for a large segment of the population, these countries are now poised to engage in strategies to take on a new generation of education reforms. The key challenges they face include retention at higher levels of instruction; greater external efficiency; and higher levels of instructional quality—for all.

The middle performers seem to have their own specific mix of education achievements and challenges. For example, whereas the Arab Republic of Egypt has reached universal primary education and reduced the gender gap at all levels of instruction, literacy levels remain relatively low and the quality of education could be improved. Algeria and Syria are plagued with high dropout rates that limit their ability to develop

FIGURE 6.9

Integrated Index for Access, Equity, Efficiency, and Quality



Source: Statistical Appendix.

post-compulsory levels of instruction. Saudi Arabia presents an unusual mix of relatively high rates of literacy accompanied by low levels of primary enrollment. Thus, this group is in a position to consolidate past achievements and tackle whatever unique problems each country faces.

As for the least performers, they stand out as having relatively low levels of primary completion rates and, consequently, low literacy levels and relatively little access to post-compulsory education. This group of countries is still working to establish the full complement of a mass education system. Djibouti and Yemen need to improve access and gender equity in basic education. Morocco needs to speed up its reform effort—which started in the mid-1990s after a period of slowdown from the mid-1970s—with a special focus on reducing adult literacy and improving access to post-compulsory education. Iraq presents a special case, with all the challenges facing a nation in an intense conflict.

Second, five countries in the sample have experienced large-scale political conflicts since the 1960s. Yet, they have been able to retain their positions as top or middle education performers. Despite the Six-Day War for Jordan, the civil war in Lebanon, the Iran-Iraq War for Iran, and the Gulf War for Kuwait, these countries were able to protect their education systems. For the Palestinians, who have experienced perennial

conflict, reaching some relatively high levels of educational development in the region is a considerable accomplishment. This observation suggests that conflicts cannot be fully blamed for low progress on education reform and low achievements.

Third, success in meeting education objectives does not always correlate with per capita income. Surely, countries with relatively high per capita income such as Kuwait perform relatively better than poor countries like Djibouti or Yemen. However, it is also true that countries like Algeria and Saudi Arabia, with relatively high per capita incomes, perform less well than countries with lower per capita income like Jordan or Tunisia. Thus, financial resources may be necessary for improving education, but the availability of resources is by no means a sufficient condition.

Contrasting Education Outcomes with the Features of Education Systems

Is there a relationship between education reforms and education outcomes in the MENA region? This is a difficult question to answer. Attribution in the education sector has always been difficult to ascertain, particularly at the national level (rather than at a school or classroom level, which also has its problems). Finding a clear link between reform measures and an increase in access, student achievement, the usefulness of what is taught, and the equity with which education is provided is confounded by several factors. First, most reforms take a long time to roll out in the education sector: curriculum changes, teacher upgrading, or promotion of private schools usually takes at least five years to fully implement, let alone produce their full effect on outcomes. Second, countries may introduce reforms, but the quality of these reforms may not necessarily improve the acquisition of knowledge. If, for example, evaluation systems of teachers and schools are introduced without performance-based rewards, these evaluation systems are not likely to be effective. Nor would making information about school performance available to the public be useful if citizens had no mechanisms to express their concerns. Third, education reforms take place in a context, which does not remain constant over time. Thus, education outcomes may improve, but this may have little to do with education reforms; rather, a positive external shock or a political turnover may be the relevant factor. Finally, the business of establishing meaningful correlations, let alone causations, requires a large sample, consistent cross-section or time-series data, and formal techniques to process these data. Unfortunately, our sample is too small and the data on reform measures are too imperfect to permit this kind of analysis.

Notwithstanding these confounding factors, much can be learned from contrasting the education outcomes obtained in the previous section with the current features of the education systems in our sample. The justification for focusing on the features of the education systems today, rather than on education reforms over time, is that past reforms must by definition have impacted the way the education systems function at present. The additional merit is that we avoid the problem of missing information about particular reform elements or reform episodes, either because these reforms were not documented or the information not made public. In addition, by looking at the education systems comprehensively, we are likely to capture how the different components of the system hang together. While the intervening factors cannot be systematically taken into account, this shortcoming is compensated for by the insights that an in-depth analysis of case studies provide. Having said that, we recognize that one cannot use the findings of a few case studies for *prediction* of what is likely to happen elsewhere, but one can certainly use them for *prescription* of what ought to be done going forward.

The rest of this section is structured around answering the following questions: did the top-performing countries in the region engineer their education systems better than the rest of the sample? Do they adopt better incentives to motivate the actors involved in the education process? Did they exhibit more public accountability toward their citizens?

Did the Top-Performing Countries Engineer Their Education Better?

Increasing equitable access to education, improving its quality, and enhancing its efficiency require, as a prerequisite, a well-engineered education system. In exploring whether MENA countries that performed relatively well have engineered their education systems better than the rest of the sample, we were guided by the discussion in chapter 3. For the purpose of the analysis in this section, we focus on four engineering features: pedagogy, teaching capacity, structure of education and flow of students, and resource mobilization. In each case, we make a qualitative judgment about the relative success of each country on the basis of relevant numerical indicators and expert opinion. Countries that meet best practice are given a dark circle, those that do not an empty circle, and countries that have gone halfway or whose reform is too recent are given a half dark circle.

The overall results of this investigation, which are elaborated below, are shown in table 6.1. Suffice it to note at the outset that Jordan and Kuwait seem to have education systems that are judged to possess better engineering than those of Morocco, Iraq, Yemen, and Djibouti. The

TABLE 6.1

Engineering Features of the Education Systems in Selected MENA Countries

Country	Pedagogy	Teaching capacity	Structure and flow	Resource mobilization
Jordan	●	●	●	●
Kuwait	○	●	●	●
Tunisia	●	○	◐	○
Lebanon	●	○	○	●
Iran, Islamic Rep. of	◐	●	●	●
Egypt, Arab Rep. of	◐	○	○	◐
West Bank and Gaza	○*	○	●	●
Algeria	○	●	○	○
Syrian Arab Rep.	○	◐	○	○
Saudi Arabia	○	◐	○	○
Morocco	○*	N/A	●	○
Iraq	○	●	○	○
Yemen, Rep. of	○	○	◐	○
Djibouti	○	◐	●	◐

Source: Education Reform Database.

Note: ● = high, ◐ = medium, ○ = low, * administered since 2003, N/A = not available.

countries in the middle tend to exhibit mixed features. This conclusion suggests that better-engineered education systems are capable of producing relatively better education outcomes.

Pedagogy. The recent pedagogical approach in primary and secondary schools emphasizes: (i) *inquiry-based learning*, privileging skills acquisition to rote memorization; (ii) *student-based learning*, ensuring greater success for all students enrolled, with greater individualized instruction; (iii) *multiple-chance learning*, allowing students to continue to pursue their education, with possibilities of transferring between programs; and (iv) *emphasis on technology, science, and foreign languages*. The question is whether the better performers in our sample of MENA countries adopted these recommended practices, while the least performers did not.

On the basis of available information, the answer seems to be yes. Jordan, Tunisia, and Lebanon have gone the furthest in student-centered pedagogy, while Morocco, Iraq, Yemen, and Djibouti have not even begun the process. The better-performing countries have officially engaged in a pedagogical reform effort that was inspired by recent international trends. They have adopted pedagogical innovations in their curriculum and textbooks; in their in-service teacher training; and in equipping schools with Internet connections and computers. Some countries in the middle also initiated similar pedagogical reforms, such as Iran and the Arab Republic of Egypt, as illustrated in box 6.1.

BOX 6.1**Summary of Pedagogical Reforms in Tunisia, Jordan, Iran, and Egypt**

Tunisian pedagogical reform is inspired by the Competency Based Approach that has been popular in many OECD countries. Consequently, it is attempting to shift away from the topic/information-based curriculum it had adopted for years to a new curriculum that focuses on knowledge (*savoir*), skills (*savoir faire*), and attitudes (*savoir être*) with specific emphasis on the core skills of reading, writing, and numeracy. Each unit of the curriculum embodies learner-centered activities that integrate these three types of competencies. The new curriculum is also characterized by the introduction of English at the eighth grade of basic education to expand the multilingual skills of the Tunisian students. The adoption of the new curriculum has been followed by the design and production of a new generation of textbooks, assessment handbooks, and subject guides that embody the objectives of the curricula and its implementation in specific subject matter. The new competency-based curriculum has been generalized at the primary level and is being adopted in upper basic and secondary education.

Jordan is another MENA country that has been at the forefront of curriculum reform in the region. These reforms have targeted core subject areas such as Arabic, math, science, and English. Jordan also introduced a new subject stream—Information Management—to prepare secondary students for positions in e-commerce, information management, computer-based accounting, etc. The emphasis in the new curricula is both on subject-matter skills and other transferable skills that are necessary for success in the private sector, including communication, team work, analysis and synthesis of information, self-directed learning, etc. The preparation of students for the knowledge economy represents the key strategic lens through which the reforms of the curricula and textbooks have been undertaken in Jordan. In addition, Jordan stands as one of the first MENA countries to have put the investments in information and communication technologies in schools as an integral component of its plans to transform into a knowledge-based economy: equipping all public schools with computers and Internet connections. Jordan's Ministry of Education (MoE) is expected to become the single largest user of information technology (IT) in the country—larger than all other users combined (World Economic Forum 2002).

Iran's education system has recently undergone pedagogical reforms. Since the 1990s, active and cooperative methods of teaching and learning have been introduced in Iranian schools. This concept was further developed since 2004 when the MoE declared its intention to advance pedagogical reform by adopting *student-centered approaches* in teaching and learning and *active methods* of learning in groups. Similar to other countries, the

(Box continues on the following page.)

BOX 6.1 (CONTINUED)

pedagogical reform agenda includes changes in school curricula and textbooks, the evaluation system, the syllabus, the development of education standards, and the introduction of IT in the classrooms.

Egypt has also been active in implementing pedagogical reforms. Egypt has embarked on a grand mission to redesign the curriculum so that the learning objectives revolve around competencies and skills that promote problem solving and lifelong learning. In addition, the use of IT is a large agenda both in teacher training and usage as a pedagogical tool in classrooms. Revision and further development of curriculum is also an important intervention. A common curriculum in selected core subjects for both technical and general schools was implemented in addition to new electives to promote flexibility in school curriculum and to foster student-centered learning.

Source: Zafeirakou 2006.

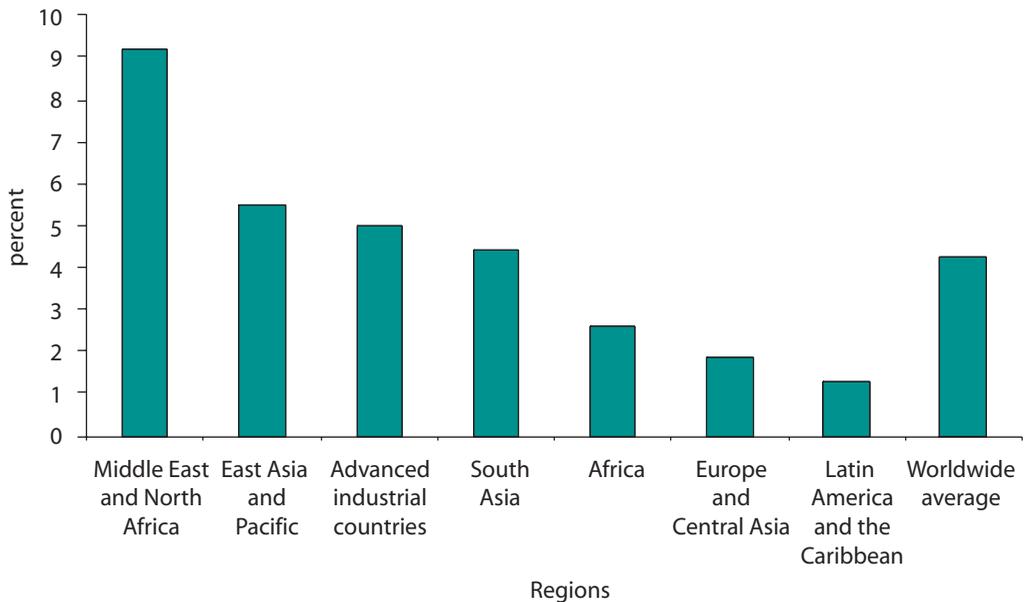
In contrast to these pedagogical innovations, the remaining countries continue to adopt an outdated pedagogy. Typically, curricula and textbooks are centrally developed to ensure that they are the same for all students of each grade. There is a predominance of Arabic language, history, and religion subjects in the curriculum over math, sciences, and technology. As noted in figure 6.10, the average percentage of total instructional time allocated to religious education in Grades 7 and 8 is much higher in MENA than in other regions of the world. The philosophy of the curricula and syllabi in nonreforming MENA countries emphasize memorization and standardization.

As for the use of information and communication technology (ICT) in education, progress internationally has been impressive. ICT has increasingly been employed in the management of the education systems, in distance learning, and as a pedagogical device. Large investments have been made in these activities with generally positive results, as explained in box 6.2.

In the MENA region, the introduction of ICT into the education sector has not generally been accompanied by a clear strategy to ensure optimal impact and usage. The emphasis has been on investment in hardware and software with little attention being given to ancillary support services (such as training, maintenance, and monitoring). Other preconditions for success, along the lines of those listed in box 6.2, are rarely met. Jordan, Tunisia, and Algeria represent exceptions in some respects. For example, Jordan and Tunisia declared ICT a key pillar in their development strategy. Algeria created a national center in 2003 to facilitate

FIGURE 6.10

Average Percentage of Total Instructional Time Allocated to Religious Education and Morals in Grades 7 and 8, by World Regions, 2000



Source: Adapted from Benavot paper (2004).

the study, research, and consultation to diffuse pedagogical innovations of the usage of ICT in education. However, it is not evident that any country in the region has put in place all it takes to maximize the use of ICT in education.

Teaching capacity. Teachers play a prominent role in the education system. Their capacity to transmit knowledge to students in the classroom is fundamental to the success or failure of the entire system. This capacity is basically derived from teachers' skills in pedagogical methods and competency in particular subject matter. These skills presumably correlate with education, training, and experience. Thus, in the recruitment of new teachers, policy makers tend to rely on such indicators as: (i) minimum level of education needed to teach in academic institutions and schools; and (ii) pre-service and in-service education (continuous education). Once hired, policy makers make decisions that influence teaching capacity in the classroom, including the deployment of teachers at different levels of education and teaching locations.

So, is it true that better-performing countries have more qualified teachers than the rest of the sample? This question turned out to be difficult to answer. The only systematic data on teacher qualifications were

BOX 6.2**Information and Communication Technologies and Education**

Countries around the world have invested heavily in equipping schools and faculties with computers, labs, networks, and software to ensure that students have “hands-on” opportunities to master ICT. Also, computer sciences, information technology, programming, etc. have become typical additions to course offerings at every level of instruction.

The use of ICT to improve education is observed in three areas. First is in the management of education systems to improve the quality of administrative activities and processes, including human resource management, student registration, monitoring of student enrollment and achievement, and planning. Although research is scant, the introduction of technology in these areas appears to have had a positive impact, permitting more school autonomy, better monitoring, more efficient resource allocation, and greater transparency.

Second, ICT has been used in distance education. Education through correspondence is a well-established tradition. With the new technologies, however, the avenues for learning from home have multiplied exponentially, making education an international commodity. Quality control, certification, and equivalency have become hot-button issues as more education opportunities are made available online.

Third, ICT has been harnessed as a pedagogical device. Sometimes this has been through a melding of distance and traditional education (e.g., instruction in the classroom via television, radio, the Internet, or through the use of presentational equipment and software), as a passive means of conveying information. Sometimes it serves as a hands-on tool used directly by students through interactive software, etc. The impact of these experiments has been mixed. While some studies show little improvement in

compiled by UNESCO, but each country’s definition of qualified teachers differs. No systematic information was available on pre-service or in-service training for most MENA countries. It also turned out that all countries in the sample have a high percent of qualified teachers (above 90 percent) in primary education. More variations were observed for the qualification of teachers in secondary schools. For this reason, we ended up characterizing the teaching capacity of the countries in our sample using the latter indicator.

By this measure, two top-performing countries, Jordan and Kuwait, have more than 90 percent of the teaching force equipped with the qualifications necessary to teach in high school. However, Tunisia and Lebanon do not.¹⁵ At the other end of the spectrum, Iraq, and to a lesser degree, Djibouti have a relatively high percentage of qualified teachers in secondary schools. Among the middle performers, Iran and Algeria do well,

student learning (Sakellariou and Patrinos 2004), others show positive learning outcomes (Kothari 2004).

Global expenditure on ICT in education is also increasing faster than other categories of educational spending (OECD 2001). To make this expenditure effective, the literature suggests that:

- Information and communication technology should be explicitly incorporated into national policies and school curricula, reflecting a thorough analysis of its costs and benefits.
- Teachers require appropriate training and support to effectively assimilate computer technology into the teaching and learning processes and in their administrative duties.
- The organization of instruction time and teaching and learning strategies must be sufficiently flexible to allow for the most effective use of ICT in the classroom.
- The cost and sustainability of ICT need to be carefully calculated, and such analysis must include adequate technical support.
- The introduction of ICT needs to be accompanied by a change of school culture that encourages information sharing among students, schools, and other educational institutions and organizations, both nationally and internationally.
- ICT and distance education cannot be a substitute for good-quality and teacher-led education.

while Egypt, Syria, and Saudi Arabia have about 80 percent of their teaching force in secondary education with minimum qualifications. Overall then, it is difficult to discern any pattern for the relationship between teachers' qualification and education outcomes, although this may rather be a matter of definition of who is considered qualified in a given context.

What is more apparent, though, is that the region is likely to meet an acute shortage of qualified teachers in the future. According to the UNESCO, the majority of countries in our sample will face a challenge recruiting the number of qualified teachers they will need to meet demand in 2015 (table 6.2). The challenge is more visible for Egypt, Saudi Arabia, Iraq, and Morocco. Given that Egypt was historically able to export teachers to neighboring countries like Saudi Arabia, the expected shortage in both countries indicates that a serious effort is needed to ensure that the region does not face major bottlenecks in the future.

TABLE 6.2

Primary Teacher Stocks, Flows, and Additional Teachers Needed to Reach UPE by 2015

(in 000)

Country	Primary teacher stocks			Primary teacher flows, 2004–15	
				Teachers to fill vacancies due to attrition (6.5%)	Total number of teachers needed for UPE and attrition
	2004	2015	Difference		
Jordan	39**#	44	4.9	29.9	34.8
Kuwait	12	17	4.4	10.2	14.6
Tunisia	59#	47	–12	27.1	27.1
Lebanon	32	29	–3.4	18.3	18.3
Egypt, Arab Rep. of	355**#	424	68.9	277.6	346.5
West Bank and Gaza	14	20	5.8	12.1	17.9
Algeria	170	157	–13	104.2	104.2
Syrian Arab Rep.	125**	125	–0.1	88.9	88.9
Saudi Arabia	204	341	137	186.6	323.6
Iraq	211	265	53.4	167.6	221.1
Morocco	148	158	10.4	109.0	119.3

Source: UNESCO Institute for statistics.

Note: The projected teacher stock for 2015 is based upon the estimated primary school-age population in 2015 plus 10% or half the current rate of repetition all together divided by a pupil-teacher ratio (PTR) of 40:1 (or the current PTR if it is below the benchmark).

Data refer to 2003.

**UIS estimates.

Structure and flow. The structure of education and flow of students refer to the rules governing how the system is organized, how students move from one level of education to another, what choices they have, what subjects they study, and the timetable of schooling. Thus, it refers to the number of years in a particular cycle of education, for example, five or six years of primary education, two or three years of lower-secondary education, and three or four years of upper-secondary education. It also refers to the rules concerning the administration of exit or admission exams. Finally, it refers to decisions about increasing or decreasing school days and hours, the introduction of new academic subjects and fields of study (for example, information technology), or the creation of an academic department in higher education that did not exist before.

Among these elements of the structure and flow, the global trend is one of eliminating exit examinations in basic education and increasing transferability between academic fields and diversification of choices in post-compulsory education. With respect to exit examinations at the end of basic education, the problem is that such exams tend to cause bottlenecks and prevent a sizable number of students from entering secondary education, limiting advanced studies to a privileged few. It also encourages teaching to the test and the proliferation of private tutoring. Initially these exams were believed to provide opportunities for social mo-

bility so that all could be part of the country's elite in the process of state building. However, very soon urban upper-class students gained an edge because they were supported by families and private tutors (Massialas and Jarrar 1991). Thus, many countries have eased their promotion policies by abolishing this exam system.

Transferability between academic fields and diversification of choices in post-compulsory education are also on the rise. Students are increasingly allowed to pursue various subject areas and still remain competitive and flexible in their areas of interest. They are allowed to transfer between different types of institutions, whether from secondary education to vocational or technical education to higher education. Transferability is believed to expand the opportunities for students to gain various skill sets for future employment. In short, it is increasingly recognized that rigid systems are costly both to the individuals and to society.

In contrast to these trends, several MENA countries continue to retain exit exams in basic education, permit very limited transferability of students between fields of knowledge, and offer very limited choices in post-compulsory education. Egypt, Algeria, Syria, and Saudi Arabia continue to administer exit examinations at the level of basic education, limiting student enrollment in secondary education and promoting private tutoring. (The proliferation of private tutoring and its adverse impact on the poor are illustrated by the example of Egypt in box 6.3.) Among the better-performing countries, Jordan, Kuwait, and Tunisia abolished the exam system in basic education, but so did Morocco, Djibouti, and Yemen. It is interesting to note that, in the latter three cases, easing the promotion policy has not increased the transitional rate to secondary education, which suggests that expanding enrollment at this level of instruction takes more than abolishing exit exams.

Although student choices at the level of post-compulsory education may have increased in MENA in recent years, transferability between different types of academic institutions remains limited in the majority of cases. Very few students have the option of pursuing higher education at the university level after pursuing vocational and technical education, with some exceptions. Jordan and Tunisia, for example, developed non-formal vocational training programs that are more responsive to employers' training needs. The two countries are also developing alternative formal post-secondary education options to better meet labor market needs through short-track (usually two-year) technology, business, and other trade-oriented schools. One example of this is Tunisia's *Instituts Supérieurs des Etudes Technologiques* (ISETs).

At the university level, some countries have focused on adopting the (License, *Maîtrise*, *Doctorat*) 3–5–8 degree cycles that are being standardized throughout Europe. This change aims to: (i) increase gradua-

BOX 6.3**Private Tutoring in Egypt**

Private tutoring in Egypt has shifted from being a remedial activity into a prevalent feature of the education system. This trend holds to varying degrees across all levels of education and different income groups.

According to the Egypt Human Development Report (2005), 58 percent of surveyed families stated that their children take private tutoring. According to CAPMAS (2004), households spend on average around 61 percent of total education expenditure on private tutoring, up from 44 percent in 2000. Private tutoring exists across levels of education, but reaches its maximum intensity in secondary education.

Both poor and nonpoor households alike seek private tutoring for their children. According to a UNDP survey (1997), 51 percent of poor students take private lessons while this figure goes up to 60 percent for the rich. The rich spend more. According to CAPMAS (2004), per-household expenditure of the richest quintile on private tutoring is more than seven times that of the poorest (see the table below).

Share of education expenditure and private tutoring to average household expenditure by quintile, 2004

	Education expenditure	Private tutoring
Poorest quintile	5	2
Second quintile	6	3
Third quintile	7	5
Fourth quintile	9	6
Richest quintile	16	10
All Egypt	9	6

Private tutoring seems to be the product of three factors, according to Assaad and Elbadawy 2006:

- The system restricts entrance to higher education through a one-time examination. Because the exam score is critical for a student's career path and future earnings, families are willing to invest in tutoring as a form of intergenerational wealth transfer.
- The growth in school-age population has undermined the quality of education reflected in a very high class density and poor classroom teaching quality. This has intensified competition for seats in the general secondary stream and in universities and increased the demand for private tutoring.
- Finally, teachers' salaries are very low. This creates a strong incentive to make more income through private tutoring, which can earn them on average 10 times their governmental salary.

Sources: Assaad and Elbadawy 2006; Egypt Human Development Report 2005; CAPMAS 2004; UNDP 1997.

tion rates in universities, as it provides students more flexibility to craft their own degree programs, and (ii) provide visibility and eventually equivalence between MENA and European universities. Tunisia, Lebanon, Algeria, and Egypt are in the process of making this transition.

Resource mobilization. Historically, most MENA countries expanded access to both compulsory and noncompulsory education by means of public resources. Education was provided essentially free of charge at all levels. The education authorities both planned and executed the construction of schools, the recruitment and payment of instructors, the establishment of curricula, and examinations and the provision of teaching materials. As budget constraints became more binding over time, some MENA governments became more aware of the need to promote the efficiency and financial sustainability of the education system. To this end, some countries have attempted to diversify the revenue base through charging fees and encouraging private provision of education, while others have not.

Within our sample, the better-performing countries have increasingly relied on households to contribute to the cost of publicly provided education through the payment of fees. The same countries have also encouraged private provision of education, especially at the tertiary level. This group includes Jordan, Kuwait, and Lebanon. Tunisia is an exception, where the government continues to take full responsibility for the provision of education. By comparison, none of the least-performing countries in our sample have initiated any systematic effort at mobilizing private funds for financing education. Iraq, Syria, Yemen, and Djibouti hardly charge any fees, nor do they have private education systems. The rest of the sample has a mixed record. While Iran, the West Bank and Gaza, and Egypt have moved in the direction of the top performers, Algeria, Syria, and Saudi Arabia have not.

In addition to these broad patterns, some countries in the region are experimenting with novel initiatives to mobilize resources, although the application of these experiments is not systematic and remains limited in scope and coverage. These experiments include expanding educational opportunities through community partnerships and delegating education provision to nongovernmental actors. With respect to expanding educational opportunities through community partnerships, the initiatives typically consist of either a matching of funds for school construction or in-kind contributions to establish the needed schools (e.g., state construction/community cession of land, state materials/local labor). Djibouti, Egypt, Iran, Morocco, and Yemen have all engaged in such experiments to increase primary enrollments, particularly in rural areas, or of girls. In other cases, the government would delegate the provision of cer-

tain education services, such as adult nonformal education or preschools services, to NGOs in return for providing training, learning materials, and stipends for instructors, or in the form of a block grant.

Did the Top Performers Align Incentives with Better Education Outcomes?

Besides the engineering of education, motivating the actors involved in the provision of education is vital to improving education outcomes. As explained in chapter 4, aligning incentives with better outcomes involves the evaluation and monitoring of performance of schools/teachers, and linking this performance to pecuniary and nonpecuniary rewards. But all this will work only if schools are given sufficient autonomy in operating decisions.

Against this backdrop, the question addressed in this section is whether the top performers in our sample of 14 MENA countries were more successful in aligning incentives and granting managerial autonomy to schools than the rest of the sample. In answering this question, a distinction is made between public and private providers of education, as the two face very different sets of incentives. Our main conclusion, as will be elaborated below, is that the top performers rely to a much larger extent on the private sector for providing education than do the least performers. Indeed, Jordan, Kuwait, and Lebanon are leading the region on engaging the private sector in education. Otherwise, both the top and least performers essentially do not provide public schools sufficient autonomy, nor do they hold them accountable through appropriate evaluation, monitoring, and rewarding mechanisms.

Does this mean that the only way to align incentives with better education outcomes is to rely on the private sector for the provision of education? The answer is *no*. There are world-class public education institutions. Private provision of education does not guarantee equitable access to education; rather, it may lead to cream-skimming and rejection of low-performing students. Moreover, the quality of regulation of private schools is as important to good outcomes as the motivation to maximize profit. Thus, a balance is needed between engaging the private sector, preferably at the level of tertiary education, while injecting elements of evaluation, monitoring, and rewards in public schools, coupled with greater school autonomy. In some ways, this is the road not traveled as yet by almost all MENA countries.

The rest of this subsection is organized as follows. First we discuss the degree to which schools are given autonomy in managing resources and activities. Next, we discuss the extent to which our sample of countries addressed issues of evaluation, monitoring, and rewards successively.

School autonomy. A key feature of recent reforms in developed and developing countries to improve education quality in public schools is school autonomy. Many responsibilities are transferred from the central authorities to schools, including program design and implementation, recruitment, supervision and evaluation of teachers, and sometimes revenue diversification. In return for greater autonomy, schools are held accountable for results. In a fundamental way, the principal (the central government) is changing the contract with public schools, so that the latter are held accountable for results rather than adhering to prespecified processes. International experience seems to support the notion that school autonomy matters for good education outcomes, as demonstrated in box 6.4.

To explore the extent of autonomy in public schools in our sample, we constructed a table that traces key managerial decisions by who makes them. The results, shown in table 6.3, indicate that none of our sample countries, successful or not, has delegated much of the operating decisions to schools. It is of course legitimate that ministries of education retain the decisions pertaining to the development of education plans, the allocation of resources according to national priorities, and the appointment, evaluation, and rewarding of school directors. The problem is that they tend to do “more.” Ministries of education tend to appoint, evaluate, and remove teachers. They decide on salaries and promotions. They design and oversee exams and in-service training. In other words, they make most of the managerial decisions, leaving schools with very little autonomy. Not surprisingly, schools are not held accountable, either.

The story is quite different in *private schools*, which typically enjoy a high level of operational autonomy, subject to the overall guidance of a board of trustees. The board of trustees sets the rules of the game, appoints, evaluates, rewards, and removes top management, and allocates resources according to expansion plans, leaving operating decisions to the school/university director. Private provision of education is also governed in most countries by government regulations to ensure equitable access for all and to maintain certain minimum standards regarding the curriculum, school infrastructure, and the like.

Historically, the private sector played a modest role in the provision of education in the MENA region, but this picture has changed over time. Egypt, for example, changed the regulations in 1992 to make it easier to establish private universities. Even Morocco, Tunisia, and Algeria have all recently loosened controls over private education as well. Lebanon, Kuwait, Iran, Jordan, and West Bank and Gaza were already ahead of the pack in allowing private provision of education. By now, almost all countries in the sample have some private involvement in education. However, the variance is large, going from 68 percent in basic education in Lebanon to only about 1 percent in Tunisia.

BOX 6.4**School Autonomy Matters: Examples from International Experiences**

A growing number of countries around the world are moving toward granting more autonomy to schools. Research has shown that decentralization to the school level has a positive impact on student performances. The following examples from Latin America illustrate this point.

El Salvador: Positive

El Salvador's EDUCO reform found that parents in EDUCO schools participate more actively in school affairs and establish more direct relationships with teachers than parents in traditional public schools. This greater local participation has had a positive effect on education outcomes. Controlling for school and student characteristics, one study found that students in EDUCO schools did not perform worse on achievement tests despite the fact that they come from poorer families, and that students' absence owing to teacher absences are significantly lower in EDUCO schools (Jiminez and Sawada 1999).

Brazil: Positive

While school councils and the direct transfer of resources are not significantly related to better student performance, the election of school directors was found to be positively associated with higher test scores in Brazil. This is based on an analysis of three components of the education reform and the impact of each innovation on educational performances.

Nicaragua: Positive

The results of a study conducted in 1991 on Nicaragua indicate that school autonomy—especially in decisions related to staffing and monitoring of teacher activities—improves student performance (King and Ozler 1998). Moreover, math and language scores were significantly higher in schools where teachers felt more empowered and influential in decision making.

Source: King and Guerra 2005, "Education Reform in East Asia: Policy, Process, and Impact." *East Asia Decentralizes*. World Bank Publication.

With the growing involvement of the private sector in education, all MENA countries have had to put in place a regulatory regime. As shown in table 6.4, these regulations deal with the curriculum, owners' qualifications, fees, graduation certification, teachers' qualifications, registration of school, and reporting of basic information. Some countries, including Egypt, Iran, Lebanon, and Morocco, even provide subsidies to

TABLE 6.3

Locus of Decision Making in Basic and Secondary Education

	Group 1			Group 2			Group 3		
	Jordan	Tunisia	Lebanon	Iran	Egypt	Algeria	Morocco	Yemen	Djibouti
Policy									
National strategy	▲	▲	▲	▲	▲	▲	▲	▲	▲
Action plan	▲	▲	▲	▲	▲	▲	▲	▲	▲
Planning									
Creation and closure of primary schools	N/A	▲■	▲	▲	▲■	▲■	▲■	▲■	N/A
Establishment of input and infrastructure norms	N/A	▲	▲	▲	▲	▲	▲	▲	▲
Finance									
Resource allocation	▲	▲	▲	▲■-	▲	▲	▲	▲	▲
Human Resource Management									
Selection of primary and secondary school directors	▲	▲	▲	●	▲	■*	▲	▲■	▲
Recruitment of teachers	▲	▲	▲	■	▲	▲	▲	▲	N/A
Management of in- and pre-service training	N/A	▲■**	N/A	■	▲	▲■	▲	▲■	▲
Establishment of teacher responsibility	▲●	N/A	▲	■	▲	▲■	▲	▲	N/A
Supervision of teachers	▲■	■	▲●	●	■	■●	■	▲■	■
Pedagogy									
Definition of curriculum and textbook content	▲	▲	▲	▲+	▲	▲	▲	▲	▲
Setting standards and exam management	▲	▲	▲	▲	■	▲	▲■	▲■	■

Note: ▲ = central ministries; ■ = provincial and regional administration; ● = schools; N/A = not available.

* In Algeria, primary school directors are appointed at the regional level, but secondary school directors are appointed by the ministry.

** In Tunisia, pre-service training for teachers is administered by the ministry, but in-service training is administered regionally.

- In Iran, resources are determined by the central ministry, but the allocations to schools are determined at the regional level.

+ In Iran, curriculum is determined by the ministry, but curriculum for pre-primary education is determined regionally.

these institutions. Moreover, countries differ in terms of the areas covered by the regulation. For example, in Lebanon, one of the pioneers in private education in the region, all regulations are technical in nature, covering the curriculum, graduation certification, registration of school, and reporting of basic information. On the other hand, Egypt and Iran include provisions regarding fees, reflecting a greater concern for equity.

All in all, *public schools* enjoy limited autonomy, especially in the areas of human resources and pedagogy. This observation applies almost equally to all countries in our sample, whether or not they are top performers. However, MENA countries differ a great deal in the extent to which they rely on the private sector to provide education services. Given that the private providers typically enjoy greater autonomy than their counterparts in public schools, and given that school autonomy matters,

TABLE 6.4

Regulations Affecting Private Schools, mid-1990s

Country	Regulations affecting private primary and secondary schools		
	Permitted	Regulated	Subsidized
Jordan	Yes	C	No
Kuwait			
Lebanon	Yes	CGR	Yes
Tunisia	Yes	CRT	No
Iran, Islamic Rep. of	Yes	CEF	Yes
Egypt, Arab Rep. of	Yes	CF	Yes
West Bank and Gaza	Yes	–	–
Algeria	Yes (since 2000)	n/a	n/a
Syrian Arab Rep.	Yes	–	–
Saudi Arabia			
Morocco	Yes	C	Yes
Iraq	–	–	–
Yemen, Rep. of	Yes	No	Yes
Djibouti			

Sources: UNESCO 1995 & 1998; Palestinian Central Bureau of Statistics and Ministry of Education 1996; Egypt Five-Year Development Plan 1997; International Encyclopedia of Education 1994; Yemen Statistical Yearbook 1997; World Bank 1994 and 1997.

Note: C = curriculum; E = owners' qualifications and/or physical status of building and grounds; F = fee levels; G = graduation certification; t = teachers' qualifications; r = registration of school and reporting of basic information.

it is not surprising that the better performers in our sample have greater private sector involvement in education than do the rest of the sample.

Evaluation, monitoring, and rewards. Even if MENA countries were to have provided schools with sufficient autonomy, that would not have been enough to assure better-quality education. Accountability is the other side of the coin. To enhance accountability, it would have been necessary for the principal (the central government for public schools and owners/board of trustees for private schools) to establish mechanisms to evaluate the performance of schools/teachers, to monitor their performance in the interim period, and to reward them for achieving better results. These mechanisms are important for both public and private providers alike. The main difference is that the private sector does have a built-in mechanism (profit) to trigger interest in creating and enforcing these mechanisms. For public schools, it will take a conscious effort on the part of policy makers to institute such mechanisms. The question is whether MENA countries have moved in this direction, and whether the top performers are doing better than the other countries in the sample.

To answer these questions, we constructed a table summarizing what the MENA countries are doing on evaluation, monitoring, and rewards,

both in public and private schools. The results are shown in table 6.5. Two main observations regarding the way the table is constructed for both the public and private sector schools are in order before proceeding further. For *public schools*, the following criteria were used to assess their evaluation, monitoring, and rewarding systems:

- Evaluation was judged on the basis of whether the country participates in international tests (e.g., TIMSS) and whether it has a national accreditation system. The two yardsticks clearly do not measure the performance of schools or teachers directly, but they can be taken to reflect a country's concern for quality.
- Monitoring was judged on the basis of whether the country has effective parents' associations and a system of inspection.
- Rewards were judged on the basis of whether the country links the performance of schools/teachers to any kind of reward, be it resources, pecuniary payments, or career development.

For *private schools*, evaluation, monitoring, and rewards were judged simply on the basis of the percent of student enrollment in private institutions at all levels of education in a given country. The higher the private sector involvement, the better the incentive system. The presumption is that private providers are interested in attracting the best teachers they can find and rewarding them according to market conditions.

TABLE 6.5

Industrial Organization Features of the Education Systems in Selected MENA Countries

Countries	Public			Private		
	Evaluation	Monitoring	Rewards	Evaluation	Monitoring	Rewards
Jordan	●	N/A	○	●	●	●
Kuwait	●	N/A	○	●	●	●
Tunisia	●*	○	○	○*	○	○
Lebanon	●*	N/A	○	●*	●	●
Iran, Islamic Rep. of	●	●	○	●	●	●
Egypt, Arab Rep. of	●*	●	○	●*	●	●
West Bank and Gaza	●*	○	○	●	●	●
Algeria	○	○	○	○	○	○
Syrian Arab Rep.	○	○	○	○	○	○
Saudi Arabia	○*	N/A	○	○*	○	○
Morocco	○*	○	○	○*	○	○
Iraq	○*	○*	○	○*	○	○
Yemen, Rep. of	○	○	○	○	○	○
Djibouti	○	○	○	○	○	○

Source: MENA Education Reform Database.

Note: ● = high; ● = medium; ○ = low; * administered since 2003; N/A = not available.

Meanwhile, they are also interested in monitoring and evaluating their performance to keep their students from going to another school. Because parents are also paying for education, they are expected to strengthen the capacity of schools in monitoring the performance of teachers.

Based on the above, our broad conclusion is that three of the top-performing countries (Jordan, Kuwait, and Lebanon) are also those that have relatively better evaluation, monitoring, and rewarding in public schools and greater private sector participation. Tunisia—whose success may be attributed to good engineering rather than more aligned incentives—is an exception. In contrast to the top performers, Morocco, Iraq, Yemen, and Djibouti hardly have any private sector providers. As will be discussed below, they have some evaluation and monitoring mechanisms, but like the rest of all countries in the sample, have no performance-based reward systems.

To discuss some of these issues in the context of public schools, consider *evaluation* first. As noted already, none of our countries have a system of assessing individual schools or teachers. However, some of them have opted to participate in international assessment tests of student achievements. Three of the top performers, Jordan, Tunisia, and Lebanon, have participated in TIMSS. In contrast, only one of the least performers, Morocco, participated. Iraq, Yemen, and Djibouti have yet to join other countries in assessing their students' achievements in math and science against similar students elsewhere. Among the average performers, Egypt, Iran, and West Bank and Gaza participated in the 2003 TIMSS.

In addition to participation in international assessment tests of student achievements, some countries in the sample developed their own national assessments of students (or quality assurance systems). Going beyond end-of-cycle examinations, Jordan and Tunisia began to introduce assessments of student learning outcomes for planning and accountability purposes. Jordan has instituted learning assessments that target grades three, six, and nine. Similarly, Tunisia is putting in place a national assessment system, focusing principally on languages, math, and science; and targets the fourth, sixth, eighth, and tenth grades. Similar initiatives are also reported for Egypt, Yemen, and Morocco, but these initiatives are at an early stage of implementation.

Turning to *monitoring*, all countries in the sample have a highly centralized system of inspection, conducted by the central ministry. In principle, such a system could help in monitoring school performance, but in reality it is considered by most observers as a mechanism for verifying compliance with ministry directives. A similar view is held with respect to parent-teacher associations (PTAs). Most countries have adopted this

system in the hope that parents would help monitor school performance because they have a stake in the outcomes and because they are in touch with the schools almost daily through their children. However, PTAs are also seen by many to be a matter of formality rather than an effective instrument for monitoring school performance.

Finally, when it comes to *performance-based rewards*, there is very little to say. For all countries in the sample, public school teachers and university professors receive salaries according to a pre-specified civil service code and are promoted fundamentally on the basis of seniority. Acquiring a higher degree during their tenure or obtaining in-service training may make some difference for the level of compensation and/or career development, but there are no clear and predictable links between these rewards and student achievements. Some countries compensate teachers in the form of higher salary or free housing (or both) for working in rural areas or in more challenging schools, but this differential treatment is clearly not linked to performance either.

A similar observation holds with respect to schools. In particular, we could not find any case in the MENA region where schools are systematically accorded more resources or greater autonomy when their students perform better over time or better than other schools after taking their socioeconomic conditions into account. Ironically, Tunisia accords more resources to the least-performing schools to enable them to catch up with better-performing schools, possibly creating perverse incentives. What we could find is a school block grant that is given on the basis of a proposal prepared by the school or university to meet certain outcomes, such as enrolling children in rural areas or girls in schools.

Do the Top-Performing Countries Exhibit Stronger Public Accountability?

Public accountability is the third leg in the analytical framework that, together with engineering and incentives, is supposed to explain the variations in education outcomes presented at the beginning of this chapter. The premise of this section is that countries that give their citizens more voice broadly and education-specific voice mechanisms in particular are expected to have better education systems and better education outcomes than those that do not. Voice provides a vehicle for different stakeholders to reconcile their conflicting demands on education and for citizens to influence public policies regarding education objectives, priorities, and resource allocations. These mechanisms can be proposed by the ruling elite or in response to pressure from citizens, but in either case their effect can be positive. The question is whether this premise holds in our sample of 14 MENA countries.

The short answer is that it does. As will be elaborated below, our top performers, especially Jordan, Kuwait, and Lebanon, enjoy relatively higher public accountability than do our least-performing countries, save Morocco. The citizens of our middle-performing countries, including Iran, Egypt, and Algeria, enjoy moderate levels of public accountability. Morocco and Tunisia represent a glaring exception to this conclusion, with Morocco ranking high on public accountability but low on education outcomes, while Tunisia ranks low on public accountability and high on educational outcomes. These cases serve as a reminder that it takes a combination of good engineering, aligned incentives, and public accountability, or a reasonable combination thereof, to attain good education outcomes. Below, we explore the relationship between public accountability and educational outcomes, followed by a discussion of some voice mechanisms.

Political accountability and education outcomes. The importance of public accountability for better delivery of social services is well established in the literature by now (see, for example, MENA World Bank report on Governance 2003, and World Bank World Development Report on Making Social Services Reach the Poor 2004). Greater public accountability is associated with open societies, greater transparency, and opportunities for contestability. These virtues allow citizens to become actively engaged in monitoring service delivery and induce policy change. They also have the effect of making service providers and government officials more accountable for the quality of services and for implementing the right policies for the benefit of citizens.

To explore this premise, we rely on an Index of Public Accountability (IPA), which was constructed for the MENA region by the World Bank Governance Report (2003). The IPA assesses how well citizens can access information, hold their leaders and public officials accountable for their decisions and actions, and become involved in selecting and replacing those in authority. The IPA is calculated using 12 indicators. These indicators include measures of political rights, civil liberties, freedom of the press, combined polity score, regulation of executive recruitment, competitiveness of executive recruitment, openness of executive recruitment, executive constraints, regulation of participation, competitiveness of participation, democratic accountability, and transparency and accountability.

Plotting the IPA against our index of education outcomes shows a positive correlation between the two variables (figure 6.11). Among the top performers in our sample, Jordan, Kuwait, and Lebanon rank highest on the index of IPA relative to their neighboring countries. Iran, Egypt, and Algeria rank in the middle on both the public accountability

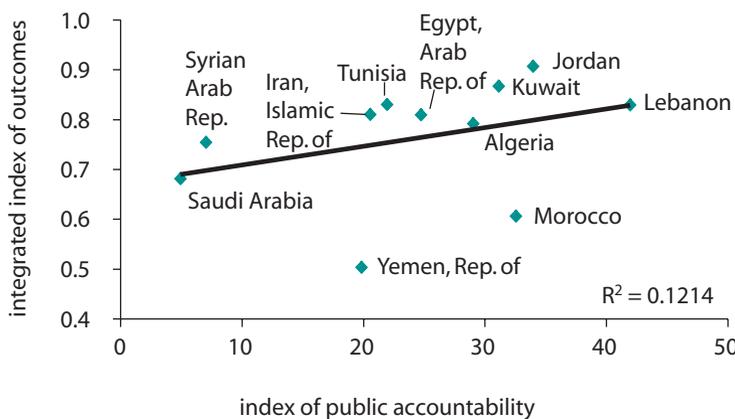
index and the education outcomes index. Yemen ranks low on both indices. As noted before, two exceptions stand out: Morocco and Tunisia. Morocco ranks high on public accountability but achieves modest educational outcomes, while Tunisia ranks low on public accountability but achieves high educational outcomes. The best way to explain this anomaly is that Tunisia has made effective use of the other components of the analytical framework, especially the engineering of education.

Voice mechanisms. Clearly, more open societies provide a wider range of voice mechanisms to citizens than do less open societies. Nevertheless, all rulers need legitimacy and the consent of their citizens to stay in power. Thus, they, on their own or in response to pressure from citizens, may initiate constitutional changes to make education a right for all citizens. They may decide to decentralize the provision of education to sub-national levels, as a first step toward democratization, and as a way of allowing citizens to exercise some influence over education policies. And they may change the rules governing information disclosure and make collected information about school performance, national and international test scores, and resource allocation available to the public. These decisions commit the executive branch to meeting certain objectives and/or provide citizens with mechanisms for expressing themselves.¹⁶ The question is whether MENA countries have attempted to do this, and whether there are variations across our sample of countries.

Consider first the provisions related to education in the constitutions of some MENA countries. This is one area where most nations in the region have made clear commitments, although the nature of these commitments varies. The constitutions of Algeria, Egypt, Iran, and Syria not

FIGURE 6.11

Educational Outcomes and Political Accountability



Source: MENA Education Reform Database.

only guarantee the right of education to all citizens, but also to be provided free of charge. Jordan and Lebanon's constitutions also guarantee the right of education for all, but no commitment is made that education will be provided by the state for free. These constitutional commitments were made typically in the wake of independence from colonial powers and have put pressure on governments to deliver. In recent years, however, most countries are increasingly relying on the private sector for the provision of education and private tutoring is mushrooming, both of which are turning free education gradually into a "false entitlement."

Next, consider decentralization. It was argued in chapter 4 that a carefully designed decentralization to local states could empower citizens if it is paired with free local elections and representation of citizens on local councils. If not, decentralization could erode public accountability. It further reduces the consistency of education policies across states while giving citizens no effective voice. Thus, decentralization is a potentially useful instrument for enhancing public accountability, but its usefulness depends on the way it is designed and implemented.

In the MENA region, more and more countries are increasingly adopting programs of decentralization of decision making to subnational governments. The delegation of responsibilities covers many areas of service delivery, including education. However, there are no systematic assessments of the effectiveness of decentralization in the region. Thus, we cannot ascertain its value from the point of view of enhancing public accountability.

Finally, consider information, which is fundamental to public accountability. Indeed, it is almost impossible to see how accountability could be enhanced in the absence of relevant information about different aspects of education. Even if the media were fully independent, NGO associations and advocacy groups unrestricted, and citizens able to express themselves freely, the lack of information would prevent them from holding politicians accountable for outcomes. The examples of how information can change policies are numerous. From the WDR on making services reach the poor, making the information available about the resources allocated to schools and how much actually reached them in Uganda caused a strong reaction from citizens and led to a shift in favor of schools.

In the MENA region, information disclosure acts leave much to be desired and NGO laws are restrictive, but there are signs that things are changing for the better. Civil society is now playing a more active role in several areas, including education. Newspapers, television shows, and the Internet regularly feature education debates, sometimes with scathing analysis of government efforts. Also, a number of independent institutes and academics are conducting and disseminating research on education

issues. One example of this is the Arab Human Development Report (2003) on knowledge in the region. Notwithstanding this progress, more reforms are needed to make information more available in a timely fashion and to strengthen the role of civil society.

Summing Up

The purpose of this chapter was to find out whether the more successful countries in the MENA region have education systems that exhibit better features of education engineering, stronger alignment of incentives with education outcomes, and greater political accountability than those who lagged behind. Although our sample is too small to make generalizations and the model ought to be tested using a large global sample, the findings from our 14 case studies suggest that the predictions of the model hold.

The analysis from MENA countries over the period 1970–2003 further reveals a number of noteworthy observations:

First, there are significant variations in outcomes among countries. Jordan, Kuwait, Tunisia, and Lebanon were relatively more successful in providing access to reasonable-quality education for most of their populations than were the rest of the countries in sample. The challenge facing this group of countries is to go beyond creating a mass education system for all to a modern education system capable of coping with increased globalization and technological innovations worldwide. At the other end of the spectrum, Djibouti, Yemen, Iraq, and Morocco lag behind considerably. The main challenge facing this group of countries is one of expanding the coverage of quality education at all levels and eradicating illiteracy. Finally, there is another group of countries in between, which includes Iran, Egypt, West Bank and Gaza, Algeria, Saudi Arabia, and Syria. The challenge facing this group is mixed, depending on each country's initial conditions.

Second, the more successful countries seem to have education systems that exhibit a good mix of engineering, incentives, and public accountability. This observation lends some support to the analytical framework and suggests that it can be used for prescription of future reform efforts in the region, and possibly elsewhere. However, there were exceptions. The contrast between Tunisia and Morocco was highlighted, with Morocco enjoying greater public accountability but low educational outcomes and Tunisia representing the counter case. This suggests that suboptimal solutions are feasible with potentially positive results.

Third, and finally, more countries are increasingly relying on the private sector for the provision of education at all levels. While this move resolves some

of the incentive and monitoring problems in schools, its success requires a strong regulatory regime and a special attention to issues of equity. It should also be recognized that the role of the private sector in education is likely to remain limited into the foreseeable future. Thus, no country can afford to slack in its effort at reforming public schools.

Endnotes

1. Unfortunately, a consistent time series and cross-section data on measures of external efficiency were not available for the countries in our sample.
2. NER is defined as the ratio of the number of children of official school age (as defined by the national education system) who are enrolled in school to the population of the corresponding official school age.
3. GER is defined as the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education.
4. "Gender parity rate" equals GER for girls divided by GER for boys.
5. Gross enrollments do not correct for overage of children in primary education (due to repetition or late starting age). As a consequence, countries with high gross enrollment rates and low gender parity rates usually have a substantial number of overage boys enrolled in primary school.
6. Education Gini coefficients, as an analogue to Deaton's definition, measure the ratio to the mean (average years of schooling) of half of the average schooling deviations between all possible pairs of people (Thomas, Wang, and Fan 2001).
7. There is also allocative efficiency, which is concerned with how much education can be produced with a given amount of resources. However, comparable data on this measure are scarce, especially for the whole sample over a sufficiently long period.
8. Because of data limitations, we were not able to include completion rates at the secondary or tertiary levels.
9. It is possible to have a completion rate of more than 100 percent when students who graduate outnumber students in the first grade, typical of countries with a declining 6-year-old population.
10. There are potential links between the two types of quality: a country with a broad base of skilled adults may produce more excellence. There may be trade-offs, too: should a country invest in upgrading a university or creating a research center or would resources be better used to expand literacy among out-of-school youth?
11. Adult literacy rate is the percentage of people ages 15 and above who can, with understanding, read and write a short, simple statement on their everyday life.
12. We also have information about youth literacy measures, which focus on the 15- to 24-year-olds. This information is given in the Statistical Appendix.
13. TIMSS is designed to help countries all over the world improve student learning in mathematics and science. It collects educational achievement data at the fourth and eighth grades to provide information about trends in performance over time together with extensive background information to address concerns

about the quantity, quality, and content of instruction (<http://timss.bc.edu/timss2003.html>).

14. We tested the effect of deleting one variable at a time to see if the ranking of countries changed, but found no evidence of reversal. Indeed in no case did the top performers change position with poor performers. Some countries in the middle sometimes came ahead of others within the same grouping.

15. According to the UNESCO institute of statistics database 2006, Lebanon surprisingly has a very low percentage of teachers with minimum qualifications at all levels of education, including primary (60 percent), lower-secondary (approximately 75 percent), and upper-secondary (approximately 35 percent). How much of this is due to the country's definition of qualified teachers and how much is a reflection of weak teaching capacity could not be verified.

16. When voice cannot be expressed within an institutional framework, it is sometimes expressed in an extralegal manner (e.g., student demonstrations, protests by parents by not sending their kids to school). Such practices are not unheard of, for example, in Egypt, Jordan, Yemen, and Morocco.

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Introduction

Part I of this report and other studies (e.g., World Bank Regional Poverty Report 2006) concluded that the MENA region has realized significant returns to education on the social front, but modest economic returns. The vast and steady expansion of access to education in the last few decades has contributed to reduced rates of fertility, healthier lives, and longer life expectancies. However, the economic returns to investment in education have been more elusive, particularly at the macroeconomic level.

In searching for ways to enhance the contribution of education to economic development, Part II of the report focused on the education systems themselves. It concluded, on the basis of a new analytical framework and a historical and comparative assessment of the education systems in the region, that future education reforms must now travel a new road. The main features of the new road involve greater emphasis on incentives and public accountability, besides improving the education process itself to achieve lifelong learning. Part III of the report complements the analysis of Part II and puts all the pieces together. It focuses on the demand for labor (both domestic and external), and how the characteristics of the labor markets in the region may be changed to maximize the rewards of investment in education to the individuals and society. It also draws the road ahead for MENA countries.

The underlying premise of chapters 7 and 8 is that labor market characteristics determine the payoffs from investment in education. Functioning labor markets tend to allocate human capital into activities that are most growth-enhancing (e.g., dynamic manufacturing sectors) (Pissarides 2000). They can also positively affect equity, depending on the way labor markets affect the allocation of employment and earnings across income groups. Finally, with the poor often deriving most of their monetary income from wage labor, job creation for this particular group of individuals can have a direct positive effect on poverty reduction. Conversely, labor market distortions would have the opposite effects.

Thus, a well-functioning labor market is fundamental to maximizing the returns from investment in education.

To explore the above assertions, chapter 7 deals with domestic labor markets, while chapter 8 deals with external labor markets or migration. The rationale for differentiating between the two markets is twofold: (i) these markets are distinct in the way they function, thus in the way their failures can be corrected, and (ii) the MENA region is characterized by strong complementarities in factor endowments across countries, with some enjoying excess capital and others excess labor. One consequence of the latter point is that MENA countries could benefit significantly from coordinating among themselves a set of measures to facilitate and improve the temporary mobility of labor across their borders. Together with the analysis of Part II, the findings of Part III are an attempt to suggest a road map for the future in MENA.

The result of the analysis of the labor markets within MENA countries and across their borders is that these markets are not conducive to maximizing the economic returns from education. Within countries, the demand for labor is generally insufficient or distorted, thanks to low economic growth, the dominant role of the government as an employer, and the relatively high cost of doing business. As a result, productivity and the returns to education are low. Across countries, labor mobility is hampered by asymmetry of information about job seekers and job opportunities, weak contract enforcement, and lack of coordination among governments to resolve these problems. Failing to correct these problems also erodes the benefits from education both to the migrants and to the labor-exporting and -importing countries. Accordingly, to reap the full benefits of better-quality education, complementary reforms are necessary to enhance the demand for decent work and to allow more productive use of human capital, both within and across countries. These reforms are not only important for improving the returns on past investment in education, but also to ensure that the right education choices are made in the future. The road map, chapter 9, is simply a compilation of the key lessons we have learned throughout the report.

Education and Domestic Labor Markets

Individuals and governments invest in education expecting, among other things, to obtain higher economic returns. Individuals make schooling decisions with an eye on the types of employment choices and earnings they will garner over their working lifetime. Governments expect a more educated workforce to contribute to higher rates of economic growth and improved productivity, leading to improved living standards for all. However, these expectations may go unfulfilled if the labor markets do not fully absorb the educated workforce and allocate them to their most productive uses. This chapter explores the role of domestic labor markets within MENA countries in this process.

The main hypothesis presented in this chapter is that high economic payoffs from education are determined by the outcomes in the labor market. Low demand for labor, because of low job-creating growth and a growing labor force, effectively leaves some of the educated unemployed. The structure of the labor market determines how much human capital is put into growth-enhancing activities and how much into others. With the poor often deriving the majority of their monetary income from wage labor, lack of jobs for the poor has strong adverse consequences for poverty reduction and equity goals. If education is to make its strongest contribution to economic goals, then a well-functioning labor market is fundamental.

The upshot of the analysis is that labor market outcomes in most MENA countries are weak, with much of the educated left unemployed or employed in low-productivity jobs. At the most basic level, this outcome is the product of an increase in labor supply, especially of the educated and female workforce, at a pace greater than the region's capacity to create new productive jobs. At the policy level, the region has yet to create the necessary conditions to maximize the economic contribution of education to society. The most critical reforms concern public sector employment policies, the private sector development agenda, and the informality of a large segment of economic activities.

The remainder of the chapter is organized as follows. This first section discusses labor market outcomes, focusing in particular on unemployment on the one hand and productivity and returns to education on the other. The next section reviews the role of the imbalances between the supply of and demand for labor in explaining the low returns to education. The third section is devoted to a discussion of key labor-market policies, and the chapter concludes with a summary of the key points made.

Education and Key Labor Market Outcomes in MENA

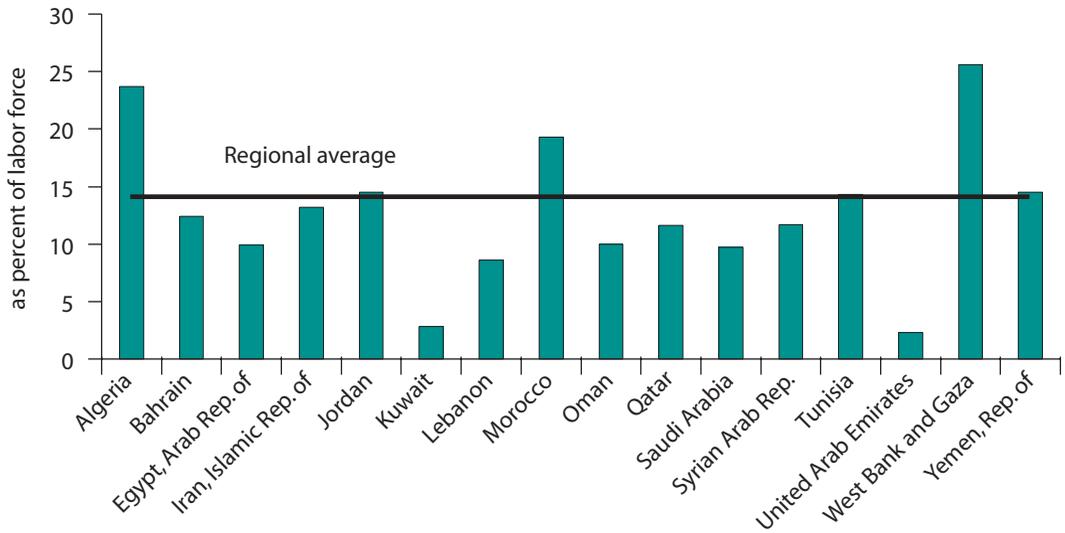
The poor micro and macro returns to education in MENA reflect two key labor-market outcomes: unemployment and low productivity/returns to education. From an economic perspective, unemployment, especially of the educated labor force, is an outright waste of investment in education.¹ Low productivity, and thus low private returns and real wages, is the result of a suboptimal use of investment in education. On both counts, the MENA region scores low. As a result, the economy-wide returns from education are also low.

Levels and Trends of Unemployment

Unemployment in the MENA region averages 14 percent higher than every other region of the world except Sub-Saharan Africa (figure 7.1). The problem affects virtually every country in the region, even several oil-exporting Gulf economies, which traditionally had to import expatriate laborers to supplement the national workforce. In a few countries, the unemployment rate reaches close to 20 percent or higher, including Algeria (23.7 percent),² Morocco (19.3 percent), and the West Bank and Gaza (25.6 percent). And as unemployment increased, the gap between the labor force and the labor force actually contributing to growth increased. Over the 1980s and 1990s, unemployment in the region doubled from about 8 percent to 15 percent. From a growth-accounting perspective, increasing unemployment levels result in increasing the share of laborers not actually contributing to productive activities, thereby lowering economic growth and the returns to education.

Exacerbating the loss of human capital in MENA is the fact that unemployment has disproportionately impacted those with higher levels of education, with considerably higher probability of being unemployed for those with more than secondary education (see table 7.1 and figure 7.2). In the Arab Republic of Egypt, for example, while those with a secondary education or greater make up only 42 percent of the labor force, they account for 80 percent of the unemployed. In Algeria, while only about

FIGURE 7.1

Unemployment in MENA, 2004*

Source: World Bank data.

Note: * or most recent year available post-2000.

20 percent of the labor force has completed more than secondary education, they account for almost twice that proportion of the unemployed. And in Morocco, while those with a secondary education or greater account for only 16 percent of the labor force, they make up almost 30 percent of the unemployed.

Although the MENA region is not alone in the pattern of high unemployment among younger, more educated workers, MENA's educated youth unemployment has been steadily increasing. And in some countries, like Egypt, the problem is not new. The rate of unemployment among secondary school graduates in the 1970s was about 20 percent, and among the higher educated, 10 percent (Fergany 2000). Thus, the factors behind this problem have persisted for almost 30 years: (i) expansion of higher education, promoted in this case by guaranteed employment in the public sector up until recently; (ii) a high proportion of students who major in humanities and literature; and (iii) a slow rate of industrialization.

The other facet of the unemployment problem in MENA is that it is structural in nature in several countries. Thus, disequilibrium in the labor markets of countries such as Algeria, Morocco, and Egypt differs from frictional or cyclical unemployment in countries such as Jordan and Tunisia or the oil-producing MENA countries. In these latter countries, the unemployment rates for secondary and particularly university-

TABLE 7.1

Distribution of the Labor Force and the Unemployed in Selected MENA Economies, by Education

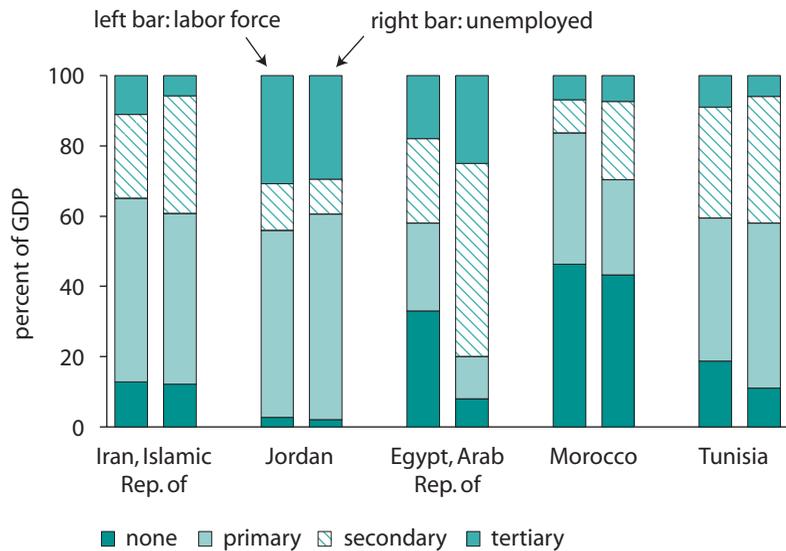
Country	Proportion of labor force with secondary education or above	Proportion of unemployed with secondary education or above
Egypt, Arab Rep. of ^a	42.0	80.0
Bahrain ^b	24.9	59.0
Morocco ^c	16.4	29.6
Iran, Islamic Rep. of ^d	35.0	39.2
Jordan ^e	45.1	43.6
Algeria ^f	20.0	37.8
Oman ^g	15.4	39.7
Tunisia ^h	42.6	42.5

Sources and Note: a: Galal 2002 (1998 data). b: Labor force: *World Development Indicators*; Unemployment: World Bank, 2003d. c: Labor Force: Boudarbat 2005; Unemployment: World Bank 2003d. d: (1994 data) Economics Research Forum, Economic Trends in the MENA region 1998. e: (2003 data) Jordan Department of Statistics. f: Labor Force: U.S. Library of Congress Federal Research Division Country Studies. g: Labor force: *World Development Indicators* (1996 data); Unemployment: World Bank 2003d (1996 data). h: World Bank 2004.

educated are generally lower than for those with primary education, so acquiring more education reduces the probability of unemployment. However, in countries where the problem is structural in nature, acquiring more education increases the probability of unemployment.³

FIGURE 7.2

Distribution of the Labor Force and the Unemployed in MENA by Education



Sources and Note: Jordan data for 2004. Jordan Department of Statistics; Egypt data for 1998. Galal 2002; Morocco data for 2000. Boudarbat 2005; Tunisia data ranges from 1997–2001. World Bank 2004a; Iran data from 1994 (unemployment) and 1999 (labor force). Various sources.

The Low Productivity–Low Returns Trap

Even when the region was able to employ its educated labor force, these individuals were not fully deployed to their most productive uses. Thus, at least a fraction of the employed finds itself caught up in a low productivity–low return to investment in education trap. Low productivity leads to low returns to education, and low returns to education lead to low investment in education, thus low productivity, and so on.

The above argument is supported by the results of Total Factor Productivity (TFP), which were discussed in chapter 2 on the basis of Keller and Nabli (2002). These results point out that the MENA region began in the early 1960s a two-decade trend of massive public investment in infrastructure, health, and education. This investment paid off. Economic growth was the highest in the world in the 1960s, averaging 6.3 percent per year (4.2 percent per year per laborer). In addition, TFP growth was also high. By the 1970s, the underlying conditions spurring growth were massive increases in the rate of physical capital accumulation per laborer of more than 50 percent, and an almost doubling of the rate of human capital accumulation per laborer. However, TFP declined dramatically, bringing down growth on a per-laborer basis on average by 1.6 percentage points a year. Between the 1960s and 1970s, TFP growth fell by an average of 3 percentage points a year, with the most serious declines observed in oil producers. In the 1980s, international oil prices slumped in the wake of global overproduction, and the region witnessed slow or even negative per-laborer growth rates. Most of the non-oil economies saw TFP growth turn negative. With eroding macroeconomic balances and growing debt burdens, investments and TFP declined further. Only in the 1990s did productivity growth in MENA stop its decline, but even then, total productivity growth remained below world averages.

Consistent with TFP changes is the pattern (and trend) of private rates of return to education in the MENA region. In general, almost all studies confirm that education yields positive returns, but the estimates across countries differ markedly. The average rates of return to an additional year of schooling range anywhere from 5 percent in developed countries to as high as 29 percent in developing countries (Trostel, Walker, and Woolley 2002; Psacharopoulos 1994). Other studies have put the range of estimates within a narrower band of between 8–15 percent (Card 1999, 2000; Pritchett 1999).

For the MENA region, estimates of the private rates of return are available only for a number of countries. The results shown in table 7.2 were obtained using the same estimation technique—a two-stage Heckman procedure for estimation. These results indicate that the rates of return to education in the region range from a high of almost 15 percent

(for primary school completion among females in the private sector in Jordan) to a low of minus 11 percent (for lower-secondary school completion among females in the private sector in Egypt), but generally fall in the range of between 1–11 percent, where about 90 percent of the observations lie.

Because of the range of estimates across schooling levels, across gender, and across countries is wide, it is not immediately apparent whether the MENA region suffers from poor private returns to education. However, taking into account the structure of the labor force by level of edu-

TABLE 7.2

Private Rates of Return to Schooling in MENA Countries, by Gender and Sector

(% per additional year completed)

Education level/description	Egypt, Arab Rep. of. 1998	Morocco 1999	Jordan 1997	Yemen, Rep. of 1997	Syrian Arab Rep. 2002	Tunisia 2001
Primary						
Male public	6.4	6.1	3.5	2.7	0.6	
Male private	3.6	3.4	2.0	2.7	1.0	2.7
Female public	5.3	10.5	-3.9	5.1	2.2	
Female private	7.2	9.4	14.7	8.0	1.3	3.0
Lower secondary						
Male public	4.9	8.2	2.9	2.7	1.2	
Male private	4.4	6.3	5.5	2.7	2.5	3.3
Female public	8.2	13.4	5.2	3.7	4.9	
Female private	-11.2	10.0	9.8	7.4	1.2	2.8
Upper secondary, general						
Male public	8.8	8.8	2.8	2.2	2.4	
Male private	7.3	7.7	6.0	2.2	3.8	5.5
Female public	9.7	12.1	4.6	3.9	6.0	
Female private	-1.5	11.0	10.4	12.1	2.9	5.5
Upper secondary, vocational						
Male public	7.2	6.8	3.8	3.3	4.4	
Male private	5.0	5.8	3.2	3.3	3.9	
Female public	9.6	11.9	4.3	4.3	8.2	
Female private	4.9	11.3	8.6	10.7	4.9	
University						
Male public	8.8	8.9	4.6	3.8	6.9	
Male private	7.3	9.5	10.2	5.2	8.5	10.1
Female public	10.7	12.8	6.8	4.4	9.6	
Female private	10.9	9.3	12.9	6.8	7.2	10.5

Sources: World Bank 2003d, 2004a; Huitfeldt and Kabbani 2005.

Note: Derived from regressions that control for potential experience and potential experience squared, urban-rural location, and part-time and casual work status in the private sector. Regressions for Tunisia not calculated separately for public versus private sector workers, with public sector employment included as a control variable. Returns to education for Tunisia calculated for differing educational completion levels: primary incomplete (appears under primary), primary complete (appears under lower secondary), secondary (appears under upper secondary, general), and postsecondary (appears under university). Yemen and Tunisia regressions control for age and age squared instead of potential experience and potential experience squared. The regressions for Syrian Arab Republic do not control for urban and rural location or for part-time and casual work status in the private sector. All regressions control for sample selection using the Heckman 2 stage procedure, except for the Morocco and Tunisia regressions.

cation, the range of the average returns narrows significantly, from a low of about 4.4 percent in Tunisia to a high of about 8 percent in Morocco,⁴ and averaging 5.5 percent for the MENA economies as a group. These returns also fall considerably below the average rates of return to schooling observed in a sample of middle- and lower-middle-income countries employing similar estimation techniques (table 7.3). For a small sample of lower- and middle-income economies, the average rates of return using similar estimation techniques fall in the range of between 8–13 percent, and average about 9.4 percent for the group, about 70 percent higher than the average educational returns observed in MENA countries.

Over the past two to three decades, there is also evidence of declining returns to education within the region (table 2.8). Multiple-year data on the returns to education exist for three economies in MENA: Morocco, Tunisia, and Egypt. In Morocco, the private rates of return to education, which averaged almost 16 percent in 1970 (Psacharopoulos 1994), had fallen to 11.7 percent by 1991, and even further, to 7.9 percent by 1999 (World Bank 2003d). In Tunisia as well, the private rates of return, which averaged 8 percent in 1980, fell to 4.4 percent by 2001 (Psacharopoulos 1994). Only in Egypt have the rates of return to education appeared stable, with only a marginal decline between 1988 and 1998 (from 5.7 percent in 1988 to 5.5 percent in 1998), according to World Bank (2003d).

TABLE 7.3

Rates of Return to Education across a Sample of Countries

Region/country	Year of observation	Average rate of return to schooling
Latin America		
Mexico	2000	8.8
Argentina	2002	11.4
Brazil	1996	12.9
Mean		11.0
Europe and Central Asia		
Russian Federation	2000	8.5
Hungary	1998	11.2
Czech Republic	1997	9.4
Slovak Republic	1997	8.4
Mean		9.4
Asia		
China	2001	10.2 ^a
India	1995	7.5
Mean		8.9

Sources: Mexico: Rodriguez-Oreggia 2004. Argentina: Giovagnoli et al. 2005; Brazil: Sachsida et al. 2002; Russia: Vernon 2002. Hungary: Campos and Jolliffe 2004. Czech and Slovak Republics: Filer et al. 1999; China: Zhang et al. 2005; India: Kingdon 1998.

Note: a. urban only.

Also consistent with the track record of TFP changes in the region is the observation that real wages stagnated or declined over time. Information on real wages is available from the 1960s to the present for the manufacturing sector (which employs between 20–35 percent of workers) for several MENA countries (see figure 7.3).

On the basis of this information, it is apparent that, since 1985, real wages in manufacturing have declined on average by 2.6 percent a year (weighted by manufacturing employment in 1995). Real wages in most countries in the region have correlated with the oil boom/bust cycle, generally downward. The decline in real wages was particularly strong in Egypt, Jordan, Algeria, and Kuwait.

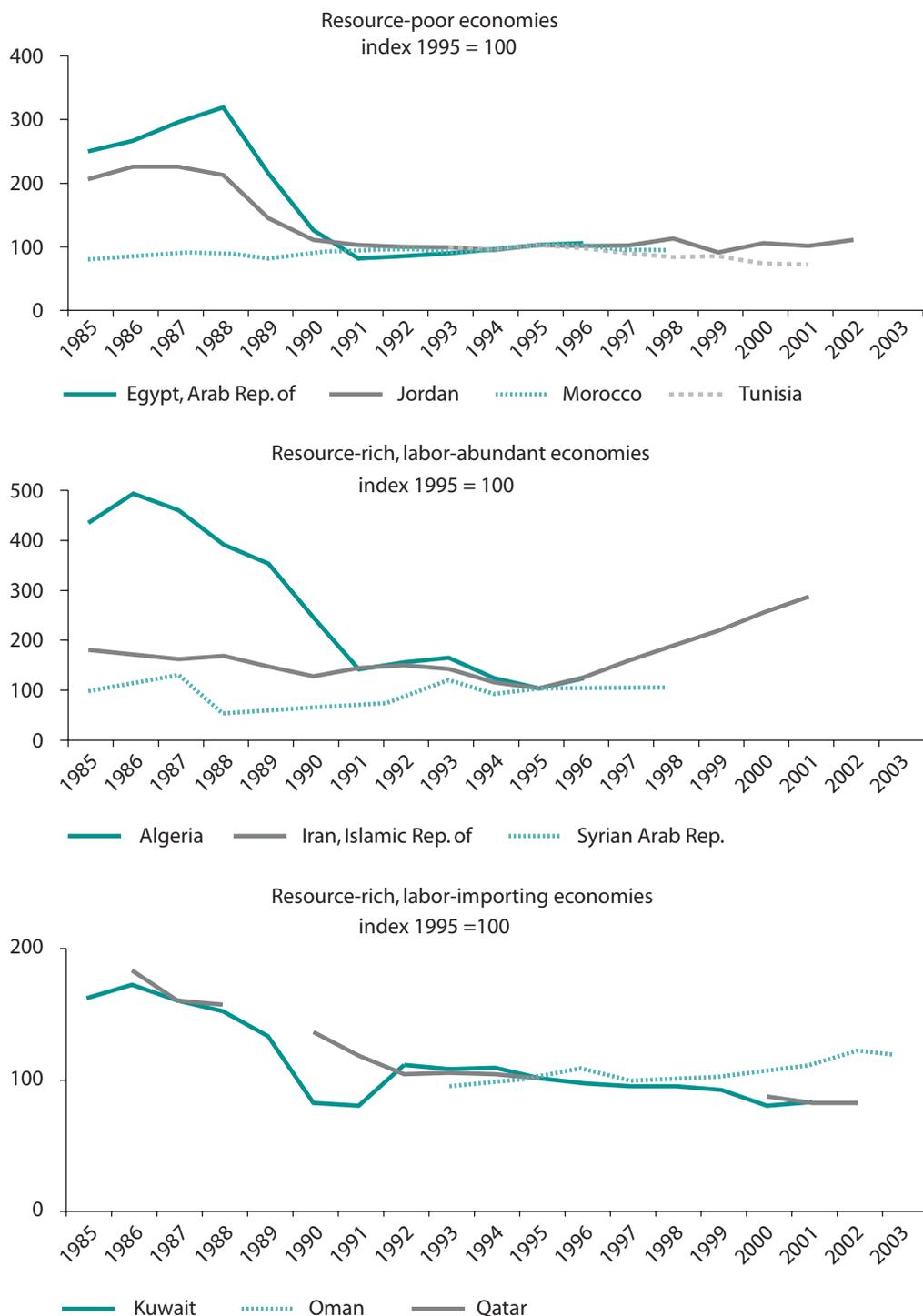
Economy-Wide Returns

Because of the high rates of unemployment and low productivity/private returns to education in the region, the economy-wide impact of investments in education has also been modest. Without repeating the analysis provided in earlier chapters, it is worth reiterating the main conclusions:

- *Economic growth was anemic* in the last few decades, despite a rapid expansion of education.⁵ Over the period 1960 to 1990, the average level of education for the adult population in the MENA region rose by an average of 5 percent a year,⁶ a rate not matched by any other region of the world. The following decade, however, with more and more educated laborers entering the workforce, economic growth in the region averaged only 0.5 percent a year on a per-laborer basis, the lowest schooling/growth relationship in the world.
- *Changes in inequality were marginal*, notwithstanding the dramatic expansion of access to basic and secondary school in MENA over the last three decades. The level of inequality in the region was higher in the 1970s than in the 1990s, but with a range of inequality measures between 0.34 and 0.44 consumption Gini coefficients, the region's income distribution is better than it is in most countries in Latin America and Sub-Saharan Africa.
- *Poverty levels were essentially stagnant*, also despite increased access to education by the poor in most MENA countries. Having made enormous progress on poverty reduction in the earlier period of development, the region has made little progress in the last 15–20 years. Prior to 1985, household surveys for Egypt and Tunisia indicate that poverty rates declined between 1965 and 1985, in Tunisia, from 51 percent in 1965 to only 16 percent by 1985, and in Egypt, from 82 percent in 1975 to only 53 percent by 1985 (measured by poverty

FIGURE 7.3

Real Wages in Manufacturing in MENA, 1985–2003



Source: UNIDO.

headcounts at \$2 per day PPP, World Bank 2006). However, the region's average poverty rate fluctuated between 20 and 25 percent in the 1990s.

Population Growth, Employment Creation, and Education Expansion in MENA

At some basic level, the labor market outcomes described above are the product of imbalances between the supply of and demand for labor. On the supply side, the labor force in the MENA region has grown more rapidly than it has in East Asia or Latin America for several decades, mainly because the MENA region has continued to have more rapid population growth than those other regions. Nevertheless, the employment of women in the MENA region lagged behind other regions, attenuating labor force growth in the past. Now that has also changed, contributing to even more rapid labor force increases in the 1990s.

On the demand side, the region was able in the 1960s and 1970s to achieve relatively rapid economic growth at a time of lagging female participation in wage labor, which made it possible to absorb population growth into employment. But by the 1990s, unemployment in MENA was the highest of any region in the world. Increased education in the labor force had little impact on reducing these rising unemployment rates; indeed, higher educated youth in some countries, such as Morocco and Algeria, had among the highest unemployment rates in the region—about 70 percent (see Carnoy et al. 2004; World Bank 2004). Furthermore, high unemployment rates are contributing to the pressure on MENA governments to expand secondary and higher education, if nothing else to delay youth entry into the labor force.

The rest of this section elaborates these two sides of the story, drawing on a recent World Bank document (2003d), and focusing on the link between education and the supply of and demand for labor.

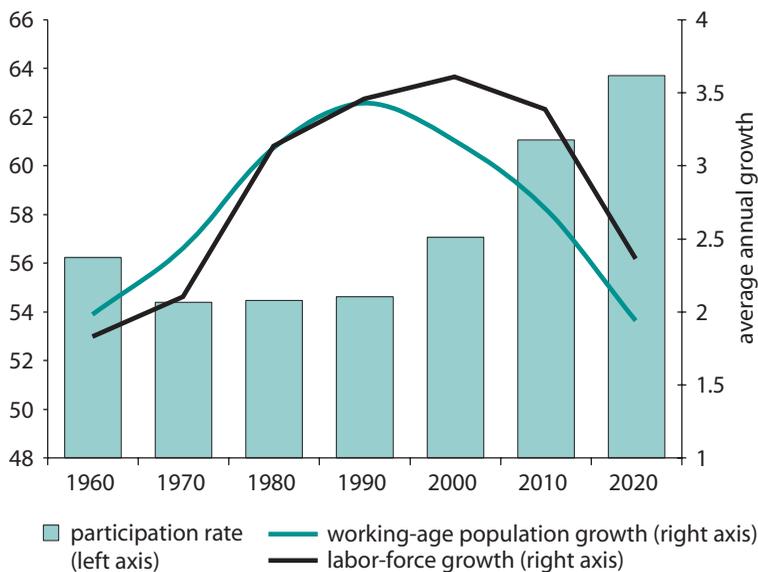
Labor Supply and Demand

Like other regions, the MENA region is going through a demographic transition (figure 7.4). As noted in chapter 3, this process started four decades ago, and is characterized by a rapid reduction in fertility rates. However, the decline in fertility rates began later in the MENA countries than it did in East Asia or Latin America, and fertility started out at a higher level in 1960, so MENA's fertility rates remain considerably higher than those of other regions. Among the East Asian countries, only Malaysia and the Philippines still have high fertility levels, and among

FIGURE 7.4

Dynamics of Labor Supply in MENA Countries, 1950–2020

(percent)



Source: World Bank 2003e.

our sample of Latin American countries, Peru remains the only country with high fertility rates. In almost all MENA countries, women still have more than 2.5 children during their child-bearing years. This lag in the region is due to a host of factors, including a delay in achieving universal basic education for women, low investment in birth control measures, and low levels of participation of women in the wage-labor force.

As a result of these demographic trends, growth in the labor force in the MENA region has exceeded growth in other regions of the world since the beginning of the 1980s. In the 1970s, the labor force increased by more than 3 percent per year, equal to the growth in Latin America and far higher than the 2.4 percent annual increase in East Asia. East Asia's labor force growth dropped sharply by the 1990s to about 1 percent per year, and Latin America's to 2.4 percent, whereas MENA's rates continued to rise to 3.5 percent. These rates started to decline in the 1990s, but will remain above 3 percent for some time (World Bank 2003d).

Women's labor-force participation in the MENA countries has been historically higher in agrarian societies such as Egypt, Morocco, and Yemen, but in general, has lagged behind other regions. Yet in the 1990s, women's labor-force participation began to increase rapidly (table 7.4). An important factor in this increase is the investment in women's education. As in the case of males, the average education of women in the

TABLE 7.4

Female Labor Force Participation Rates, 1980–2004

(percent)

	1980	1990	1995	2000	2001	2002	2003	2004
Algeria	21.4	21.1	24.4	27.6	28.4	29.2	29.9	30.7
Bahrain	11.0	17.0	18.9	21.7	22.1	22.5	22.9	23.3
Djibouti	–	–	–	–	–	–	–	–
Egypt, Arab Rep. of	26.5	27.1	28.9	30.5	30.8	31.1	31.4	31.7
Iran, Islamic Rep. of	20.0	20.3	23.5	27.0	27.8	28.6	29.4	–
Iraq	17.3	16.3	18.0	–	–	–	–	–
Jordan	14.6	17.1	20.4	23.9	24.4	25.0	25.5	26.1
Kuwait	13.0	22.8	19.2	21.5	22.3	23.2	23.9	24.7
Lebanon	22.7	26.6	28.2	29.3	29.6	29.9	30.2	30.4
Libya	18.6	18.4	20.9	23.4	23.8	24.2	24.7	25.1
Morocco	33.5	34.5	34.6	34.7	34.9	35.0	35.2	35.3
Oman	6.3	10.7	13.7	17.2	18.2	19.1	20.1	21.0
Qatar	6.4	11.7	14.5	16.6	17.1	17.5	17.9	18.4
Saudi Arabia	7.6	11.4	14.6	17.7	18.6	19.4	20.2	21.0
Syrian Arab Rep.	23.5	24.4	25.6	26.9	27.3	27.6	27.9	28.2
Tunisia	28.9	29.1	30.5	31.9	32.2	32.5	32.7	33.0
United Arab Emirates	5.1	10.7	11.7	13.2	13.6	14.1	14.5	–
West Bank and Gaza	–	–	–	11.5	11.9	12.4	12.8	13.2
Yemen, Rep. of	32.5	29.7	29.2	28.6	28.7	28.8	28.9	29.0
Mean	18.2	20.5	22.2	23.7	24.2	24.7	25.2	26.1
China	43.2	45.0	45.2	45.1	45.1	45.1	45.0	45.0
Indonesia	34.8	38.1	39.2	40.5	40.8	41.0	41.2	41.4
Korea, Rep. of	38.7	39.3	40.3	41.4	41.1	40.9	40.7	40.5
Malaysia	33.7	35.0	36.3	37.6	37.9	38.1	38.4	38.6
Philippines	34.7	36.5	37.2	37.9	38.1	38.2	38.3	38.5
Thailand	47.6	47.2	47.0	47.1	47.1	47.0	47.0	46.9
Mean	38.8	40.2	40.9	41.6	41.7	41.7	41.8	41.8
Argentina	27.6	28.5	30.9	33.3	33.9	34.5	35.1	–
Brazil	28.4	34.8	35.2	35.5	35.5	35.5	35.5	35.5
Chile	26.3	29.9	31.8	33.6	34.1	34.6	35.1	35.5
Colombia	26.2	36.0	37.7	39.1	39.3	39.5	39.7	39.9
Mexico	26.9	30.0	31.7	33.8	34.0	34.2	34.4	34.6
Peru	23.9	27.5	29.6	30.9	31.2	31.5	31.8	32.1
Mean	26.6	31.1	32.8	34.3	34.7	35.0	35.3	35.5

Sources: The World Bank, GDF, and WDI central database (August 2005).

MENA population began at very low levels in the 1960s, but increased more rapidly than in some other regions, such as East Asia, where women's participation rates were already quite high in the 1960s and 1970s, and more rapidly than Latin America since 1990.

Economic Growth and Employment Growth

The rapid growth in the population and labor-force participation in the MENA region was not associated with sufficient job-creating growth to absorb the increase in the supply of labor. Begin-

ning in the 1990s, MENA countries' demographic expansion outran their capacity to create employment. Lower growth rates in the 1980s and 1990s led to high unemployment in many MENA countries. Thus, a combination of high population growth and increased participation of women in the wage-labor force, together with insufficient job creation, resulted in higher unemployment, especially in Algeria, Morocco, Syrian Arab Republic, Jordan, and Tunisia.

Given the age pyramid and the level of economic activity in the MENA countries, to keep the employment situation from getting worse, about 34 million jobs will have to be created between now and 2020—11 million in Egypt, 4 million each in Syria and Morocco, and 3 million in Algeria (Femise 2003). According to Keller and Nabli (2002), outside of the Gulf States, only Egypt and Tunisia are capable of creating enough jobs to absorb the increases in their active populations. In part this is due to lower population growth in those countries in the 1990s, but it is mainly the result of higher growth in key economic sectors. In Algeria and Jordan, economic growth rates would have to be, respectively, 4 and 3 percentage points higher than they were at the beginning of the 2000s.

Looking at the employment elasticity in MENA superficially suggests that the standard critique of low employment creation—overly physical capital-intensive economic development—does not apply to the MENA situation. Economic growth is considered “capital intensive” when the employment elasticity is less than 0.4 and “labor intensive” when the elasticity is greater than 0.8. As table 7.5 shows, however, the employment elasticity (percentage change in employment relative to percentage change in GDP) in MENA during the period 1990–2004 was 1.1. This means that for every 1 percent increase in GDP in the 1990s, employment increased by 1.1 percent, which is higher than the employment capacity of any region in the world. However, this apparent employment “efficiency” masks an unusually high rate of public sector employment growth in MENA countries. Given the relatively low GDP growth rates in many MENA countries in the 1990s and early 2000s, the strategy of absorbing active population growth in public employment is unsustainable. Moreover, this average conceals significant variations across countries, with Algeria, Jordan, and Saudi Arabia doing much worse than the rest of the sample. In addition, in all cases, the regional average for MENA falls far below the employment elasticity in all regions of the world, save Europe and Central Asia.

The Asian miracle of the 1970s and 1980s was aided by the rapid demographic transition (fertility decline) in those countries. This resulted in a relatively large fraction of the population that was economically active and a favorable dependency ratio (the proportion of economically

TABLE 7.5

Employment Elasticity of Growth in MENA versus Other Regions, 1990–2004*

Country	Employment growth (%)	GDP growth (%)	Time period	Worker productivity growth (%)
Algeria	4.2	2.5	1990–2004	1.7
Iran, Islamic Rep. of	3.0	4.2	1990–2002	0.7
Egypt, Arab Rep. of	2.9	4.3	1992–2003	0.7
Morocco	2.1	2.6	1990–2001	0.8
Tunisia	3.0	5.0	1989–2000	0.6
Jordan	5.9	5.1	1990–2001	1.2
Syrian Arab Rep.	3.7	4.6	1991–2002	0.8
Saudi Arabia	5.7	2.7	1990–2000	2.1
MENA	3.5	3.9		1.1
East Asia and Pacific (inc. China)				0.1
East Asia and Pacific (exc. China)				0.5
Latin America and Caribbean				0.7
Europe and Central Asia				0.3
South Asia				0.2
High income/OECD				0.3
World (exc. China)				0.4

Sources: MENA employment growth: World Bank staff estimates from country sources; GDP: World Bank World Development Indicators; Employment outside of MENA economies: World Development Indicators, International Monetary Fund International Financial Statistics online.

Note: * = Or closest year available.

active population to inactive population, e.g., children and older people who were not working). This promoted a high savings rate that accompanied high economic growth rates. In the MENA region, by comparison, the process started later and is likely to last much longer. As a result, the “population gift,” when the economically active population bulges and lower fertility rates produce fewer children, will be spread out over a longer period, and might create a smaller positive effect on growth. In effect, the continuing of a relatively high proportion of youth (less than 15 years old) in the population may limit savings and capital accumulation.

Labor-Market Policies

Beyond structural imbalances in the labor market, the low returns to education are affected by various government policies that either diminish the prospects of job creation or lead to low productivity among workers. Among these government policies, the most glaring in the MENA region relate to public sector employment, private sector development policies, and the informal sector. These policies are discussed in turn below.

Public Sector Employment

A major influence on labor-market outcomes today is the legacy of public sector employment and employment intervention stemming from the region's state-led and redistributive models of economic and social development. Beginning in the 1950s and 1960s, as MENA governments nationalized major assets and took direct control of economic production, public sector employment emerged increasingly as a primary engine for job creation during the 1970s and 1980s. In Egypt, employment in the public sector doubled from 16 percent in 1960 to 32 percent by 1981 (estimated on the basis of Assaad 1997). In the Islamic Republic of Iran, in just a 10-year period, public sector employees increased from 19 percent of the employed population in 1976 to 32 percent in 1986 (Amuzegar 2004). In the oil-producing economies of the Gulf, the influence of the public sector on national employment was the greatest. In Kuwait, between 1975 and 1985, the public sector increased its absorption of nationals from 76 percent to 92 percent of all employees. Public sector employment in oil-producing countries provided a means for both distributing oil and oil-related wealth throughout the economy.

Under state ownership, workforce regulations included job security guarantees, social security programs, high public sector wages with generous nonwage benefits (such as family allowances), sharp restrictions on firing, and other job-stabilizing policies (World Bank 2003d). The rise of the public sector in employment became a key factor in segmenting labor markets, with an employment structure skewed toward women and educated groups. In the oil-producing economies of the Gulf Co-operation Council (GCC), it also contributed to severe labor-market segmentation along national-expatriate lines.

Despite a few attempts made to reduce the size of the public sector in the region (Morocco and Jordan are notable examples), MENA economies maintain some of the highest levels of public sector employment in the world. The public sector is estimated to account for 18 percent worldwide excluding China (World Bank 2005b). Public sector employment ranges from a low of 10 percent of employment in Morocco to a high of 93 percent in Kuwait, and averages more than 70 percent among the GCC relative to nationals (table 7.6). The share of public sector wages to current expenditure in the region is also much more significant than elsewhere.

MENA's exceptional public sector employment levels have impacted the region's returns to education through four main channels: first, they have reduced the productivity of MENA's human capital base. The majority of the region's civil service employment has not been in the health and education sectors but in government administration. In fact, some

TABLE 7.6

Public Sector Employment in MENA

(percent)

	Public sector as a share of total employment, 2000	Public sector wages and salaries as a share of current expenditure, 2004
MENA	29	38
Algeria	29	31
Bahrain	28	64
Egypt, Arab Rep. of	29	29
Iran, Islamic Rep. of	28	38
Jordan	44	28
Kuwait	93	41
Libya	66	
Morocco	10	51
Saudi Arabia	79	
Tunisia	22	63
East Asia and Pacific	34	
China	36	
Korea, Rep. of	5	16
Philippines	5	
Latin America and the Caribbean	13	
Brazil	12	25
Colombia	8	15
Ecuador	14	46
Guatemala	15	
Mexico	16	19
OECD	14	
Canada	18	8
Germany	12	
Japan	8	
Spain	15	
United Kingdom	19	
United States	15	8
World	27	
World (excluding China)	18	

Source: World Bank 2005b.

10.5 percent of employment in the MENA region is in government administration. That compares with 4.2 percent in Eastern Europe and the Former USSR, 4 percent in Asia, 4 percent in Africa, and 5.4 percent in Latin America and the Caribbean (see Keller and Nabli 2005).

A body of research on public sector employment argues that human capital in the public sector, especially within the administrative civil service, may not significantly contribute to economic growth, and in fact, may actually reduce economic growth if government workers use some of their powers to generate rents for themselves (see Pritchett 1999). The degree to which the region's exceptional public sector employment

has lowered MENA's growth is not entirely clear, but a recent study estimated that the loss of GDP growth in the MENA region between 1985–1995 strictly due to public administration employment was some 8.4 percent—or close to 1 percentage point per year (Pissarides 2000).

Second, the distorted wages and generous nonwage benefits offered by the public sector have resulted in unrealistically high wage expectations that have exacerbated the unemployment problem. This has become particularly apparent as the fiscal situation in the MENA region changed and public sector job growth slowed down. The queuing for public sector jobs despite diminished job opportunities in Egypt is clear evidence that reservation wages remain high (Assaad 2002). Also, unemployment is generally concentrated among youths with intermediate levels of education (eligible for government employment) and is more limited among workers with low levels of education (generally ineligible for government employment). This pattern suggests that a significant part of this unemployment is the result of high job expectations by workers with some formal education and a low valuation of these credentials by the private sector (World Bank 2003d).

An offshoot of the region's public sector employment has been more indirect intervention of subsidizing employment in the private sector. This has been a particularly important labor-market development in the oil-producing GCC economies, where a large share of the workforce is composed of expatriate labor. As governments have been less able to absorb national labor-force entrants and with national unemployment levels growing, a few GCC economies have adopted strategies of subsidization of national employees in the private sector, further preserving the high wage expectations of national laborers.

Third, the lure of public sector employment has influenced the returns to education by directly influencing educational choices. Until recently, public sector employment was almost a guarantee in the region for persons with higher or intermediate education. As a result, laborers in the region have often sought educational credentials for the sole purpose of securing public sector employment. By rewarding educational credentials in public employment with higher wages, governments in the region have encouraged investment in types of human capital that are not necessarily designed to prepare students to meet the requirements of a modern market economy, but to meet the needs of growing bureaucracies. As a result, individuals in the region have often sought higher degrees to better their chances for public sector jobs, but with little attention to content or quality.

Fourth, public sector employment policies have contributed to significant labor-market segmentations in the region, further lowering the overall productivity of laborers. Labor-market segmentation involves

labor markets where identical workers (from the standpoint of productive abilities) receive different wages or employment opportunities based on other nonmarket characteristics, and where crossover capacity is limited.

The public versus private sector labor-market segmentation runs along several lines, but particularly along education and gender lines. Many of the regional governments explicitly or implicitly ensured employment for secondary levels of education and higher. Thus, those who could complete intermediate levels of education were generally eligible for public sector jobs, while those with lower levels of education were generally ineligible. However, the public sector also emerged to be an attractive source of employment for women. A recent World Bank report (2003c) points to a variety of barriers—both economic discrimination and social norms that underlie a range of civil, commercial, labor, and family laws and practices in the region—that have given rise to this preference. A consequence of barriers to entry in the private sector—both occupational segregation and wage discrimination—has been that substantial proportions of women (a much greater proportion than males) tend to seek refuge in the public sector, where wage setting and hiring take place according to more standardized procedures.

MENA's labor-market segmentation extends beyond the public and private sector divide, however. There is a strong degree of segmentation between the formal and informal sectors (discussed further below), and, particularly among the oil-importing economies of the GCC, between national and expatriate workers. GCC countries are highly dependent on a large expatriate labor force, reflecting the small (but rapidly growing) size of the domestic workforce and the limited domestic supply of adequate skills. In most GCC countries, expatriate workers now account for about three-fourths of the total workforce (Fasano and Iqbal 2003). The wage and benefit differential between expatriate laborers and nationals is tremendous.

Whatever the sources of these lines of segmentation, the consequence has been that workers have been unable to move to jobs that make the fullest use of their skills, which has lowered the productivity of the region's workforce as a whole. Without being able to draw on all of its talents and human capital, MENA's output per laborer has lagged behind that of other regions.

Poor Private Sector Development Policies

While subsidies, credit, and fiscal and exchange-rate policies may have worked together to lower the employment-creating capacity of growth in the past, the fundamental impediment to employment creation in the region has been the shortage of growth itself, a reflection of the lack of

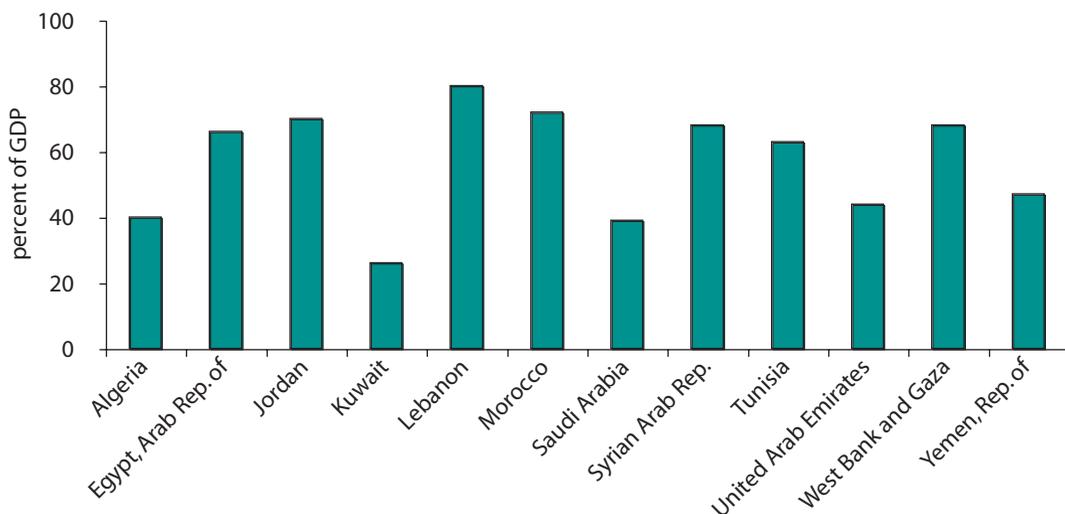
a dynamic and competitive private sector. If the region is to achieve higher employment growth and higher wages, it needs to substantially increase output growth (and productivity), especially by the private sector. Periods of buoyant GDP expansion are almost invariably associated with rising job numbers, while slow-downs bring about higher unemployment (Boltho and Glyn 1995). For the region to increase economic growth, however, it needs to change the engines of growth themselves.

At present, the formal private sector remains underdeveloped in MENA, still emerging from a culture of decades of state-led growth and industrialization. On average, the private sector accounts for less than 50 percent of GDP in the region (figure 7.5). Private sector activity is concentrated in a small number of large firms that have benefited from protective policies, along with a number of microenterprises that account for much of employment but have little access to formal finance, markets, or government support programs (World Bank 2004a). Many policies, taken together, have limited the ability for a stronger private sector to emerge in MENA and be a source of investment and job growth. A host of cumbersome and costly business and regulatory procedures, underdeveloped financial sectors, and insufficient trade exposure have all hindered the creation and functioning of a dynamic and competitive private sector.

Regulatory barriers to private sector investment. Since the late 1980s, most MENA countries have attempted to expand private sector activity.

FIGURE 7.5

Private Sector Contribution to GDP, Early 2000s



Source: World Bank 2005b.

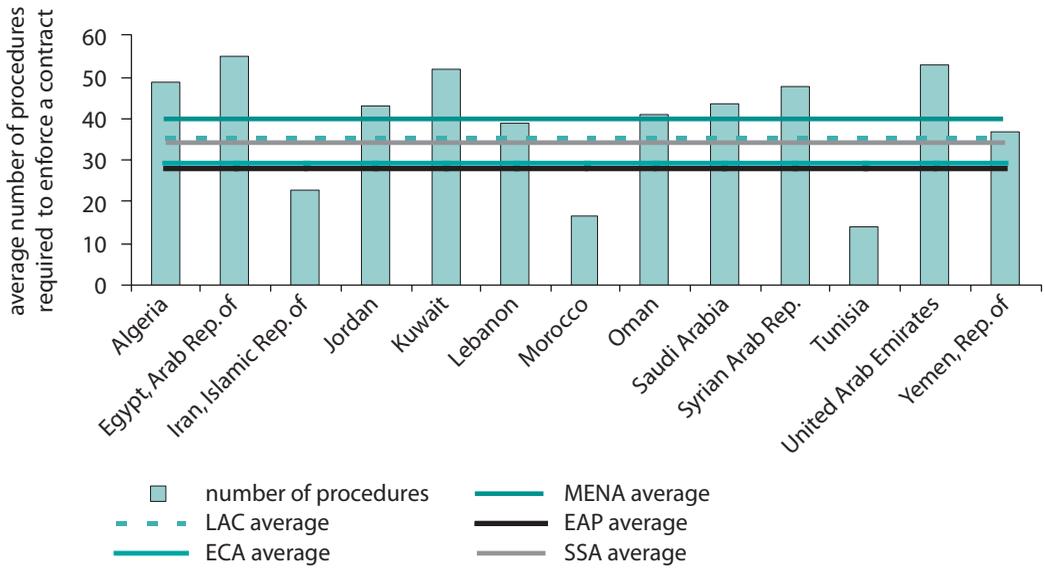
Success has been thwarted, however, by a cumbersome and costly business and regulatory environment—including arbitrary and distorted policies favoring the large number of state-owned enterprises, and bureaucratic behavior that increases costs and uncertainties for businesses—that is not conducive to private business activity.

The World Bank's Doing Business Indicators database, compiled on the basis of surveys of businesses regarding the major impediments to conducting business within countries, points to many areas that stand out as particularly burdensome for the region. Firm start-ups and operations are significantly hindered by the time and financial costs of regulatory and administrative barriers. Minimum capital requirements in MENA are almost five times the world average and well above any other region of the world (World Bank 2005b). These high costs are all the more burdensome, considering the underdeveloped state of the banking and financial sectors. Much of the region's private sector still has limited access to market finance. Banks dominate the financial system, but in general they play a limited role in financial intermediation. Much of the banking sector remains primarily in government hands and is inextricably linked to state-owned enterprises (SOEs), subject to government intervention in its lending and credit allocation policies to SOEs. This intervention has led to a crowding out of the private sector from places where it is permitted to operate (World Bank 2005b). The legal systems also hinder private sector business. Contract enforcement mechanisms are particularly taxing for businesses in the MENA region. On average, MENA businesses must go through 40 procedures to enforce a contract, about one-third higher than the world average and higher than in any other region of the world (see figure 7.6).⁷

Although a number of regulatory policies have impeded the growth of the private sector, a major challenge to the region's development of a strong and competitive private sector is also fundamental weaknesses in governance. Some of these governance weaknesses impact private sector development through the quality of services that businesses receive from the public sector. In areas such as the efficiency of the bureaucracy, the rule of law, the protection of property rights, the level of corruption, the quality of regulations, and the mechanisms of internal accountability, MENA countries have lower levels of quality of administration in the public sector than would be expected given their income levels (figure 7.7). Moreover, the private sector is impacted by the way in which policies are made—whether those in the private sector are able to access information to formulate policy choices, whether they can mobilize for changes, and whether they can contest policies that are poor. In this regard, countries across the region exhibit a pattern of limited government accountability and inclusiveness.

FIGURE 7.6

Contract Enforcement Procedures, 2004

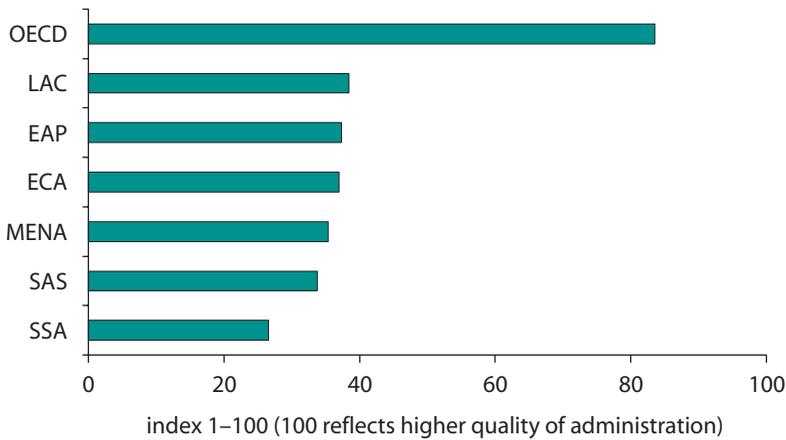


Source: World Bank 2005b (using Doing Business Indicators, World Bank).

Note: MENA = Middle East and North Africa; ECA = Europe and Central Asia; SSA = Sub-Saharan Africa; LAC = Latin America and the Caribbean; EAP = East Asia and Pacific.

FIGURE 7.7

World Bank MENA Index of Quality of Public Sector Administration 2004, by Region



Source: World Bank 2005b.

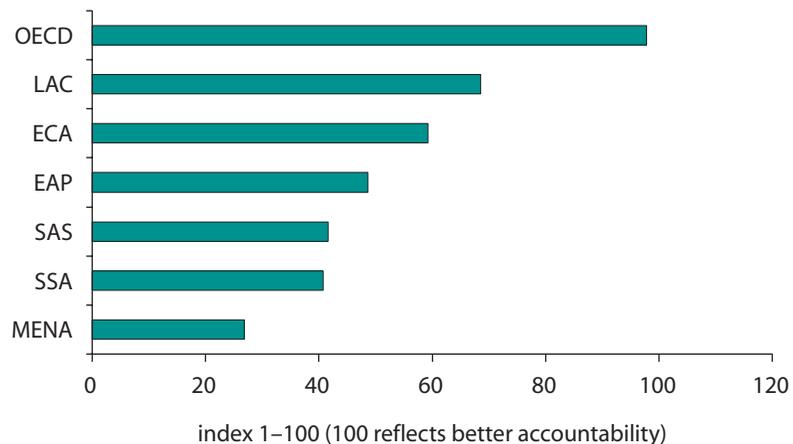
Note: MENA = Middle East and North Africa; EAP = East Asia and Pacific; ECA = Europe and Central Asia; OECD = Organisation for Economic Co-operation and Development; SAS = South Asia; SSA = Sub-Saharan Africa.

In the World Bank's report on Governance in the MENA region (2003b), public sector accountability in MENA was evaluated through a comprehensive index that measured areas such as openness of political institutions and participation, respect for civil liberties, transparency of government, and freedom of the press, and this *public sector accountability* index has been updated each year (figure 7.8). The index suggests that public sector accountability in MENA is the worst in the world. Creating a better environment for private business will not only require policy change, but improved governance as well, including changes in the role of government and strong improvements in its effectiveness.

Labor regulations. Restrictive labor regulations have also impacted private sector development and employment creation in the region. Minimum wage legislation and restrictions on hiring and firing are widespread in the region. According to the Doing Business indicators, restrictions for hiring in MENA are generally less problematic than in other lower-middle income economies (although hiring procedures remain intensely restrictive in Morocco and Tunisia). However, MENA countries do have particularly onerous procedures for firing workers. An index estimating the ease of *firing* workers (from World Bank 2005a) finds that businesses in MENA countries, on average, have more difficulty than every other region of the world except Sub-Saharan Africa and South Asia (figure 7.9).

FIGURE 7.8

World Bank MENA Region's Index of Public Sector Accountability 2004

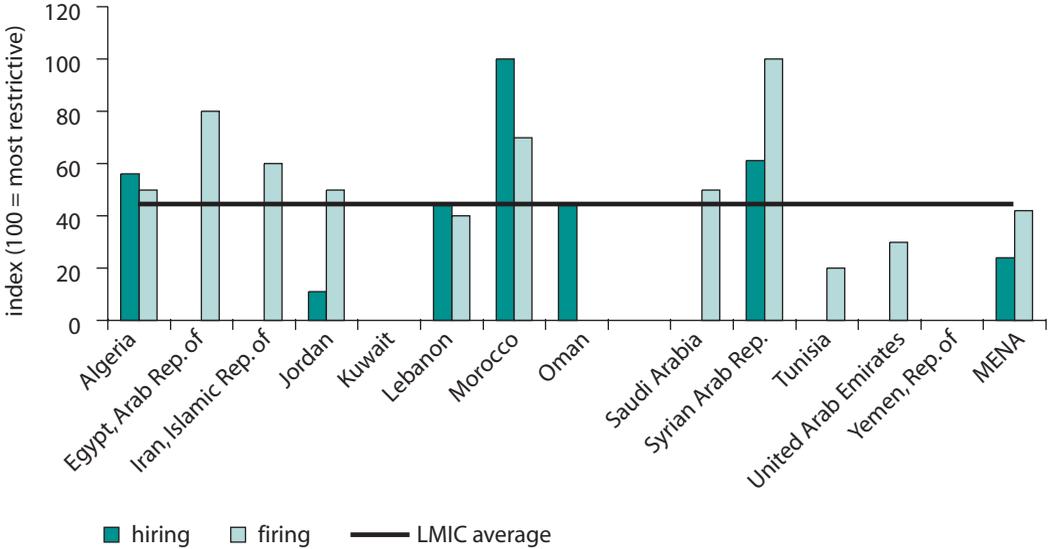


Source: World Bank 2005b.

Note: MENA = Middle East and North Africa; EAP = East Asia and Pacific; ECA = Europe and Central Asia; OECD = Organisation for Economic Co-operation and Development; SAS = South Asia; SSA = Sub-Saharan Africa.

FIGURE 7.9

Difficulty with Hiring and Firing in MENA



Source: World Bank 2005a.

However, restrictive labor regulations appear to be far less onerous an obstacle to employment creation in MENA than are general constraints to operating a business. In almost all of the investment climate assessments undertaken within the region, labor regulations rank far below other obstacles to investment and productive operation of firms. In Syria, for example, labor regulations ranked as the eleventh (out of 11) in terms of the most severe constraints on the business environment. While about 34 percent thought labor regulations severely impacted the business climate, other issues ranked far more serious among investors. In Algeria, only 13 percent of firms evaluated labor regulations as a major constraint to operation, ranking twelfth out of 13 possible constraints. Far more burdensome have been anticompetitive practices (which 60 percent of firms report as a severe constraint), lack of access to financing (52 percent of firms report as a severe constraint), and the cost of financing (46 percent of firms report as a severe constraint).

In the GCC economies, on the other hand, labor regulation (for both domestic and foreign workers) is a critical constraint to development, as perceived by small and medium enterprises (SMEs). This reflects the significant efforts by GCC economies to compel firms to hire nationals, rather than low-wage expatriates, through a variety of inducements and regulations. In Oman, issues related to the labor market come on top of the constraints mentioned by SMEs. In particular, 41 percent of them mention labor regulation regarding expatriates as a major or a severe

constraint to the development of their firms, and about 35 percent mention both the regulations associated with and skills of Omanis as a major or severe problem. The problems are mostly related to the lack of the availability of qualified Omanis within the quota system, constraints resulting from restriction in hiring expatriates, and the excessive difficulties associated with dismissing nonperforming employees.

Insufficient trade exposure. The region has not opened itself up to one of the greatest sources of employment creation—trade; the region's trade-to-GDP growth from 1980–2000 was about half of the world's pace (World Bank 2003a). Trade expansion, especially in the form of rising exports of manufactured goods, has been one of the major sources of job creation for trade-liberalizing economies, but a legacy of inward-oriented development policies and hesitancy to reform have limited the job-creating opportunities for MENA workers.

The body of empirical research that indicates the employment-creating capacity of outward orientation is large. Outward orientation can impact the returns to education through two distinct paths. Firstly, greater openness unleashes new private investment, which directly raises economic growth, thereby increasing jobs (and thus increasing the returns to education in the labor force). Trade expansion has been particularly job-creation intensive in the case of exports of manufactured goods.

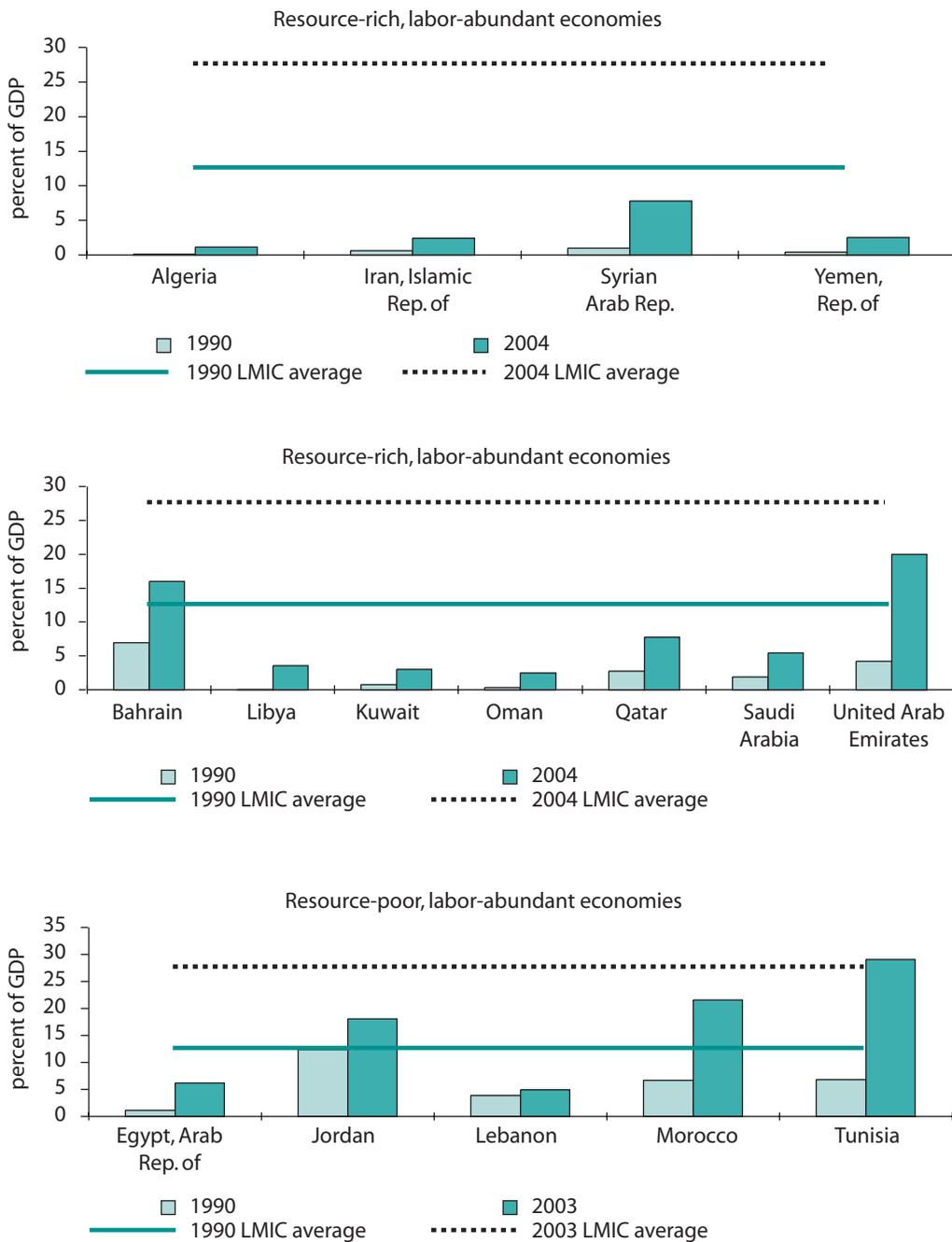
In addition to pure employment creation, openness raises the impact that human capital has on economic growth through the skill demands of trade. Openness fosters competition, encourages superior technologies, increases the demand for high-skilled labor, and promotes learning by doing. Openness obliges industries to confront their inefficiencies. To compete successfully, industries must adapt, thereby creating demand for new skills and trades to do so.

The MENA region's historical models of development have discouraged outward orientation. Heavy import protection, excess consumption of goods and services not traded internationally,⁸ and overvalued and uncompetitive exchange rates have all provided strong disincentives to the growth of trade. As a result, MENA's exports are dominated by oil, with only the small number of resource-poor and labor-abundant economies having fairly well-established non-oil-export sectors (figure 7.10). Few countries in the region have experienced the dynamic growth in non-oil exports that characterizes world trends. The entire MENA region, with a population close to 320 million, has fewer non-oil exports than Finland or Hungary, countries with populations of 5 and 10 million, respectively (Muller-Jentsch 2005).

Although MENA countries have sought to pursue trade more vigorously (particularly through bilateral and regional trade accords), disin-

FIGURE 7.10

Non-oil Exports as a Proportion of GDP, 1990 and 2003



Source: World Bank 2005b.

centives to trade prevail. Tariffs remain high: averaging more than 15 percent, tariffs in MENA countries are higher than in any other region of the world but South Asia. Nontariff barriers also remain an important impediment to greater trade. The actual level of overall trade restrictiveness in the region is typically twice as high when one accounts for the region's nontariff barriers. And, unlike tariffs, nontariff barriers are not transparent or predictable, and therefore strongly suppress trade and investment. Based on overall trade restrictiveness indices (OTRI), a few countries including Morocco, Algeria, and Tunisia have trade policies that are among the most restrictive in the world today (table 7.7).

Growing Informalization

The inability of the private sector to create enough jobs has given rise to a significant expansion of informal sector jobs in MENA. The informal sector, in its broadest sense, consists of both employment and production that falls outside of formal regulation or the tax net or to some degree escapes formal regulations. The sector is generally viewed as residual—a

TABLE 7.7

Overall Trade Restrictiveness Index (OTRI) for MENA and Other Developing Countries, 2001

	OTRI-tariff	OTRI-w/NTB
Algeria	16.3	46.5
Bahrain	8.2	8.8
Egypt, Arab Rep. of	44.0	67.8
Jordan	12.7	24.4
Lebanon	5.5	14.2
Morocco	25.4	50.9
Oman	10.1	15.6
Saudi Arabia	6.7	10.8
Tunisia	24.9	36.7
Mean	17.1	30.6
Chile	6.8	11.5
Czech Rep.	4.0	5.0
Estonia	1.1	2.3
Hungary	6.1	11.3
India	30.0	39.9
Kenya	13.7	14.4
Poland	10.8	15.2
Romania	11.9	15.8
South Africa	7.2	8.9
Australia	4.7	11.6
Average for all OTRI countries	10.7	18.1

Source: Adapted from World Bank (2005b).

place where workers excluded from formal employment could easily engage in subsistence activities.

From surveys of informal sector work, certain generalizations emerge. As noted by Charmes (2000), the informal sector represents: ease of entry; small scale of activity; self-employment, with a high proportion of family workers; little capital and equipment; labor-intensive technologies; low skills; low level of organization with no access to organized markets, to formal credit, to education and training or services and amenities; cheap provision of goods and services; and low productivity and low incomes according to some analysts, including Charmes. In countries in which the informal sector accounts for a large segment of employment, both worker productivity and the returns to education will necessarily be lower than in economies with a larger formal sector.

In recent years, the above views about the informal sector have changed somewhat. While the possibility of an informal sector that is inefficient and has low productivity is still there, it has been pointed out that the informal sector also consists of entrepreneurs who are self-employed and who provide a large number of urban jobs in developing countries across a wide range of industries, occupations, and working situations. Small and microenterprises are not just owned by a majority of the world's working people—these enterprises build markets, expand trade, manage natural resources, fight poverty, generate employment, strengthen communities, support families, and feed most of the world's children.⁹ Further, as noted by Assaad, the informal sector facilitates labor-market flexibilization, allowing employers to tap into an adaptable workforce during periods of expansion and lay off workers during periods of slump (Beneria and Floro 2004). Thus, it is not always clear whether informalization of workers necessarily works in opposition to productivity growth, and the issue can only be settled empirically.

The story in the MENA region does not appear to favor the view that increasing formalization is consistent with higher returns to education. To begin with, the size of the informal sector is, as in most regions and countries, uncertain but large. Informal employment in 1998 was estimated to be about 6.5 million in Egypt, or about 40 percent of total employment (Avirgan, Bivens, and Gammage 2004). Research from the 1980s estimated informal employment in Algeria at about 25 percent of employment, in Morocco, about 57 percent, and in Iran, about 44 percent.¹⁰ Thus, informal employment, representing a large share of the region's job opportunities, is an important element to understanding labor-market outcomes in MENA.

Informalization has also risen in the region despite evidence of a declining wage premium for formal sector work. In Egypt, for example, between 1988–98, real wages in the formal sector fell by twice the rate of

those in the informal sector (Avirgan, Bivens, and Gammage 2004). Over about the same period, however, the proportion of nonagricultural workers lacking either a formal contract or social security coverage increased by about 5 percentage points. In 1998, about 33 percent of employed workers in Egypt had neither formal contracts nor social security, up from 28 percent in 1990 (Wahba, Jackline 2000).

Equally important, the increase in informalization has disproportionately affected workers with more education. While the probability of informalization for workers with less-than-intermediate education as a whole increased from about 47 percent to 54 percent, the probability for informalization for workers with secondary education or above has increased from about 13 percent to 20 percent (a more-than-50-percent increase) (table 7.8). In addition, one of the key indicators that the informalization in Egypt has been of the “refuge” variety, rather than driven by entrepreneurship, is the correlation between informality growth and unemployment growth. Workers with the highest rise in unemployment rates (with intermediate and higher-than-intermediate, but below university, education) also experienced the greatest rise in probability of informal sector employment. Evidence, also from Egypt (Galal 2005), based on in-depth field surveys of informal enterprise suggests that formalization into an improved business environment would be beneficial to the economy, entrepreneurs, and workers.

Thus, although it is not clear what the implications of informalization *per se* might be in general, increasing informalization in MENA does not appear to be associated with higher productivity and higher returns to education. Moreover, informalization in MENA reflects both difficulties in operating a business in the formal environment and the overall deterioration of labor-market opportunities. The rising education of the informal sector mirrors the rising education of the labor force overall.

TABLE 7.8

Growth in Informal Sector in Egypt by Education, 1990–1998

Highest level of education completed	Probability of informality 1990	Probability of informality 1998	Probability of unemployment 1988	Probability of unemployment 1988	Increase in informality probability (%)	Increase in unemployment probability (%)
Illiterate	61.8	67.2	1.8	1.9	9	6
Read and write	35.0	41.6	3.0	3.6	19	20
Less than intermediate	40.4	47.9	5.9	4.1	19	–31
Intermediate	17.1	28.8	15.9	18.5	68	16
Higher than intermediate	12.0	16.0	10.3	14.7	33	43
University	7.9	9.6	8.2	9.6	22	17
Post-graduate	8.7	4.3	1.6	0.8	–51	–50
Total	28.3	32.5	5.4	7.9	15	46

Sources: Staff estimates from Wahba 2000; Assaad 2000.

Summing Up

The MENA region can be characterized by two separate but mutually reinforcing labor-market features that have lowered the economic returns to investment in education. Rising unemployment has meant fewer workers (who are potentially employable) are contributing to productive activities, and lower (than average) productivity of those employed has meant further reduction in the productive capacity of the labor force.

Modest labor-market outcomes in MENA stem partially from structural imbalances between the supply of and demand for labor. On the supply side, demographic transition in the MENA region lagged behind other regions, partly because investment in education in MENA, especially of girls, was initiated later than elsewhere. The region now enjoys a demographic gift, but the increasing participation of women in the labor force, especially the educated among them, is contributing to rapid increases in the supply of labor. On the demand side, the rapid economic growth of the 1960s and 1970s made it possible to absorb the growing population into employment. Since the mid-1980s, however, economic growth has faltered while the expansion of education has continued. As a result, a mismatch between the supply of and demand for skilled (and unskilled) labor is growing, leading to rising rates of unemployment in the region and low returns to investment in education.

Beyond supply and demand imbalances, several policies seem to have played less than a positive role in determining labor-market outcomes, thus diminishing the returns to investment in education. A legacy of public employment led to a suboptimal use of labor and created expectations that could not be fulfilled. Excessive and costly regulations constrained the growth of an efficient and dynamic private sector, thus lowering the capacity of countries in the region to create productive jobs. As a result, the informal sector has been on the rise, absorbing some educated individuals who cannot afford to be unemployed. Further, outside labor-market policies, macroeconomic, and structural policies were not always consistent with taking advantage of trade opportunities. Not surprisingly, the economic returns to education were not as high as might have been expected and hoped for.

These conclusions have one major implication for the education reform agenda: education reform in and of itself will not be sufficient to produce better development outcomes. To reap the full benefits of better-quality education, complementary reforms to enhance the demand for decent work and to create more productive uses of the human capital resulting from investing in education are necessary. These reforms are not only important for improving the returns on past educational investments, but also for ensuring that the right educational choices are made in the future.

Endnotes

1. Cross-country growth estimations inherently assume that more schooling directly raises the level of human capital employed by firms engaged in value-producing activities. The rising rates of unemployment in MENA over the last two decades mean that an increasing portion of the region's investment in education is sitting idle.
2. Unemployment in Algeria was close to 30 percent in 2002. With rising oil revenues and as part of the country's Economic Recovery Program, however, large-scale temporary employment schemes have dramatically lowered the rate of official unemployment (to 23.7 percent currently), although the longer-term sustainability of these jobs is questionable.
3. A number of policies, such as incorporating more youth into higher levels of education, lengthening military service, and shortening work weeks, have been put in place to reduce unemployment, but none of these have really worked. To the contrary, they seem to have done little more than postpone dealing with the unemployment issue realistically and creating underemployment.
4. Calculated where data are available for distribution of labor force by education: Egypt (average returns 5.5), Morocco (average returns 7.9), Jordan (average returns 5.6), and Tunisia (average returns 4.4).
5. Not including the recent dramatic upturn in growth as a result of the surge in oil prices.
6. Measured by the growth of the average educational attainment of the population ages 15 and above, from Barro-Lee educational attainment database.
7. World Bank 2005b.
8. Excess consumption of goods and services not traded internationally has bid up their prices and made them more profitable than traded goods.
9. International Labour Organization SEAPAT Programme on the Informal Sector.
10. Forum, Vol. 3. No. 1. March 1996.

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Education and Migration

When domestic labor markets cannot fully absorb an increasing level of educated labor force, migration is an important channel for resolving local market imbalances with potentially large benefits to the individuals and nations involved. Labor movement is particularly important for the MENA region because one of the region's main characteristics is excess labor in a subgroup of countries (such as the Arab Republic of Egypt, Lebanon, Jordan, and Morocco) and excess capital in another (such as the Gulf Co-operation Council (GCC) countries).¹ A similar point can be made about labor-abundant countries in the South versus capital-rich countries in the North. This situation creates an opportunity for a mutually beneficial exchange between the two groups of countries, provided that market failures across borders are addressed and national migration policies are not biased against migration.

In this chapter, it is argued that, despite the significant level of migration in MENA, a host of factors has limited the full realization of its potential benefits. In addition to political factors, which are beyond the scope of this report, migration is adversely affected by widespread market failures (most visibly information asymmetry and imperfect contracts) and national migration and labor policies at both ends of the exchange. Historically, governments in the region tended to focus on the liberalization of trade in goods and services by joining the World Trade Organization (WTO) or signing regional free-trade agreements. No similar effort was made to liberalize or coordinate labor movement overseas, although the benefits from labor mobility can be more substantial than those from the movement of goods and capital because of the huge differential in the wage rates for similar skills across countries.² Thus, there is room for enhancing the returns to education through migration. This potential can be realized through labor mobility agreements among MENA countries (or a subset of countries) and through reforms of national migration policies that stand in the way of greater and more efficient labor mobility.

To elaborate this argument, the remainder of this chapter is structured as follows. The first section reviews the level, composition, and prospects of migration within MENA and between MENA and developed countries. The following section examines the net economic impact of migration on both the sending and receiving countries. Finally, the last section explores the factors that may have inhibited more migration in MENA, followed by a summary of the key points made as well as some policy options going forward.

The Nature of International Migration in MENA

To place the region in an international perspective, the United Nations Population Division estimated the world migrant population in 2005 at between 185–192 million people—up from 175 million in 2000—and almost 3 percent of the world's population. In 2000, the MENA region hosted around 18 million migrants, 6 percent of the region's total population (table 8.1). In addition, MENA countries have increasingly contributed to the migration flows to Western Europe and North America.

The pattern of migration in MENA reflects the diversity of countries in the region. There are broadly three types of labor markets/economies: (i) economies that import labor (mainly the Gulf States); (ii) economies that export labor to other Arab countries (such as Arab Republic of Egypt and Yemen); and (iii) economies that export labor to Europe (mainly the Maghreb countries). In some cases, labor-exporting economies export workers both to Arab and Western countries such as the United States, and countries in Europe and Australia. In others, like

TABLE 8.1

International Migration Trends, 2000

Region	Total population (000) 2000	Migrant stock		Net migration (average annual)	
		Stock (000) 2000	Percent of population	(000)	Rate per 1,000 pop. 1995–2000
World	6,056,715	174,781	2.90	0.00	0.00
More developed regions	1,191,429	104,119	8.70	2,321.00	2.00
Less developed regions	4,865,286	70,662	1.50	–2,321.00	–0.50
Least developed countries	667,613	10,458	1.60	–306.00	–0.50
MENA					
MENA : Gulf States	310,825	18,546	6.00	–123.00	–0.40
MENA: non-Gulf States	28,609	9,630	33.70	130.00	4.50

Sources: UNDP 2002, International Migration 2002, UN.

Note: MENA Gulf States are Saudi Arabia, Kuwait, United Arab Emirates, Bahrain, Oman, and Qatar. MENA non-Gulf States are Algeria, Arab Republic of Egypt, Jordan, Iraq, Islamic Republic of Iran, Lebanon, Morocco, Tunisia, Syrian Arab Republic, West Bank and Gaza, and Yemen.

Jordan and Lebanon, they both export and import workers. The net migration figures by country over the period 1970–2000 are shown in table 8.2. A discussion of the trend, composition, and prospects of intraregional migration, extraregional migration, and the prospects for migration in MENA in the future is outlined below.

Intra-Regional Migration

The MENA region has been a theater for huge labor flows. After the oil boom of 1973, the oil-exporting Gulf States found their development plans constrained by labor shortages and embarked on importing large numbers of workers from neighboring countries. As a result, the stock of migrant population as a proportion of the population in the GCC underwent significant transformation (table 8.3). At peak, these countries imported 90 percent of their labor force. During the 1970s and 1980s, Arab neighboring countries were the main labor exporters to the GCC, especially Egypt, Yemen, and the West Bank and Gaza. By the end of the 1980s and in the 1990s, the demand for labor shifted from Arab workers to Asian nationals. More recently, the high unemployment rates among the nationals of the GCC countries have prompted a shift in policy in favor of nationals.

TABLE 8.2

Net Migration in Selected MENA Countries, 1970–2000

(thousands)

Country	1970	1980	1990	2000
Algeria	−200.06	6.22	−70.00	−184.88
Bahrain	−5.64	31.53	17.82	30.00
Djibouti	25.00	77.00	87.48	20.28
Egypt, Arab Rep. of	−150.17	−750.00	−550.00	−500.00
Iran, Islamic Rep. of	−8.74	172.14	212.18	−456.00
Iraq	−5.93	−48.47	−620.84	138.75
Jordan	287.83	−79.79	75.22	35.00
Kuwait	141.89	154.63	174.07	347.00
Lebanon	−60.00	−285.00	−320.00	−30.00
Libya	67.97	122.20	10.00	10.00
Morocco	−217.74	−208.98	−175.00	−300.00
Oman	−5.00	75.00	9.00	−40.00
Qatar	30.95	37.53	61.04	30.00
Saudi Arabia	190.29	870.09	1,120.00	75.00
Syrian Arab Rep.	−15.00	−125.00	−45.00	−30.00
Tunisia	−144.52	−16.72	−23.00	−20.00
United Arab Emirates	56.17	395.70	240.00	566.98
West Bank and Gaza	−283.63	−13.08	−10.96	10.58
Yemen, Rep. of	−275.00	−75.00	−50.00	−50.00

Sources: The World Bank, GDF, and WDI Central (April 2005).

TABLE 8.3

International Migration in MENA, 1970–2000

(percent of population and in thousands)

Country	1970		1980		1990		2000	
	Percent	Stock	Percent	Stock	Percent	Stock	Percent	Stock
Algeria	1.20	168.90	1.00	185.00	1.10	274.00	0.80	250.10
Bahrain	18.10	37.90	31.00	103.50	34.40	173.20	38.00	254.30
Djibouti	1.40	2.20	13.50	40.40	12.00	58.80	4.20	28.10
Egypt, Arab Rep. of	0.60	203.50	0.50	188.90	0.30	175.60	0.30	169.10
Iran, Islamic Rep. of	2.50	703.50	2.70	1,064.40	7.00	3,809.10	3.60	2,321.50
Iraq	0.00	2.10	0.20	22.00	0.50	83.60	0.60	146.90
Jordan	35.30	531.60	37.20	810.30	36.20	1,146.50	39.80	1,945.20
Kuwait	62.80	467.50	70.10	964.20	73.40	1,560.10	50.60	1,107.70
Lebanon	7.30	191.20	8.10	241.80	14.70	532.60	14.60	634.00
Libya	6.20	122.20	10.20	310.60	10.60	457.50	10.90	569.80
Morocco	0.80	127.60	0.40	70.10	0.20	41.30	0.10	25.70
Oman	5.50	40.00	16.40	180.00	27.70	449.90	28.30	681.70
Qatar	57.10	63.40	68.60	157.00	71.20	345.40	70.00	409.40
Saudi Arabia	5.30	302.90	19.30	1,804.40	26.70	4,220.50	25.40	5,254.80
Syrian Arab Rep.	5.90	367.80	6.20	543.20	5.90	710.60	5.60	902.70
Tunisia	1.00	51.40	0.60	38.00	0.50	38.00	0.40	37.90
United Arab Emirates	28.40	62.40	70.70	737.10	87.70	1,555.80	59.20	1,922.00
West Bank and Gaza	..	88.30	..	976.10	59.90	1,180.80	56.10	1,664.60
Yemen, Rep. of	0.80	53.80	0.90	74.90	0.90	107.20	1.40	248.10

Source: United Nations Population Division 2002.

Note: Migration stock is the number of people born in a country other than that in which they live and also includes refugees. International Migration Stock (% of population).

Despite the drive to “nationalize” the workforce, foreign workers still constitute the majority of the labor force in the GCC. In 2002, 8 million out of the 12–13 million workers were expatriates, and one-third of all foreign workers were Arabs. The importance of non-nationals to nationals is clear if one looks at the share of expatriates in total employment (table 8.4). In 1995, total employment in the GCC was around 9.6 million, compared to 2.9 million in 1975. The share of nationals fell from 61 percent in 1975 to 26 percent in 1995 despite the increase in the employment of nationals from 1.7 to 2.5 million during the same period. The growth rate of employment of foreign workers was much higher than that of nationals—6.2 percent annually compared to 1.9 percent (Girgis 2002). Saudi Arabia was the largest importer of labor, accounting for about 72 percent of all non-nationals in the GCC in 1975 and 56.4 percent in 1995. In 2002, Saudi Arabia hosted around 7 million expatriates (Kapiszewski 2004).

The pattern of migration by origin in the GCC has also changed over time, as noted above. The proportion of Arabs among expatriates declined from 72 percent in 1975 to less than 30 percent in 2002, accord-

TABLE 8.4**Foreign Labor Force in the Gulf States, 1975–2000**

(percent of total labor force and thousands)

Country	1975		1985		1995		2000	
	%	Foreign workers (000)						
Bahrain	36.70	22.00	57.90	98.90	60.00	135.80	...	...
Kuwait	81.80	249.20	85.70	574.50	83.40	876.60	81.90	1,004.80
Oman	31.10	70.00	51.80	191.10	64.20	430.30	64.30	552.50
Qatar	83.00	57.00	76.50	76.70	82.10	179.00	....	....
Saudi Arabia	25.20	484.80	62.70	2,722.50	63.50	4,581.00	55.80	4,003.40
United Arab Emirates	84.00	234.20	90.60	784.20	89.80	977.00	89.80	1,217.50
Total Gulf States	39.00	1,171.10	68.20	4,447.80	74.00	7,179.70	....	39.00

Source: Girgis (2002).**Note:** Bahrain's figures are for 1971, 1985, and 1991 respectively.

ing to Kapiszewski (2004), and as shown in table 8.5 for previous years. The biggest drop occurred in Saudi Arabia and Kuwait. In Saudi Arabia, the foreign population in 1995 was 6.26 million, of which 38 percent were Arab migrants and 53.4 percent Asians. The Asian population outnumbered Arab migrants by about 1 million. The highest concentrations of foreigners in Saudi Arabia, in descending order, are from India, Egypt, Pakistan, Philippines, Bangladesh, and Yemen. On the other hand, Kuwait was known to have been one of the GCC nations with a strong Arab presence, but that trend changed too after the 1991 Gulf War. During the 1990s, the number of Arabs in Kuwait dropped by 33.6 percent, while the number of Asians rose by about 50 percent. Arabs accounted for 45.5 percent of the total foreign population in Kuwait in 2000 (Girgis 2002).

TABLE 8.5**Share of Arabs in Total Foreign Population in the Gulf States, 1975 and 2002**

(percent)

	1975	2002
Bahrain	22	10
Kuwait	80	34
Oman	16	11
Qatar	33	25
Saudi Arabia	91	37–43
United Arab Emirates	26	10
Total Gulf States	72	25–29

Source: Kapiszewski (2004) in IOM Arab Migration in a Globalized World.

Data on the skill composition of Arab and Asian workers are available for Kuwait (table 8.6). These data show that between 1989 and 2000, Arabs dominated the upper echelons of skill categories—technical, managerial, and clerical—while Asians dominated services, agriculture, and production-related jobs, with the mid-skills category—sales—evenly shared by Arabs and Asians. In spite of the large decline in the number of Arab workers in 2000 and the substantial increase in the number of Asians, Arabs still held the majority of high-skill occupations while Asians held the bottom three categories. Jobs in sales seem to have swung toward Arabs in 2000. The picture that emerges, assuming that Kuwait in 2000 is representative of the Gulf region, is that Asian migrant workers are hired in all occupations but with a distinct bias toward low-skill categories. The opposite is true for Arabs (Girgis 2002).

Turning to the exporting countries, the main ones, as expected, are non-oil-producing, most notably Egypt and Yemen, but also Jordan, West Bank and Gaza, and Syrian Arab Republic. Some countries, like Jordan, export workers to the Gulf, but also import workers from neighboring countries like Egypt. Within this group, Egypt has been the largest labor exporter, sending about 10 percent of its labor force to other MENA countries. Egypt exported mainly educated skilled workers to the GCC and uneducated workers to Iraq and Jordan. According to the estimates of the Central Agency of Public Mobilization and Statistics (CAPMAS) in 2000, the number of Egyptian temporary migrants in other Arab countries was just less than 2 million (table 8.7). Saudi Arabia hosts almost half of the Egyptian temporary migrants, who account for around 40 percent of the foreign labor.

Egyptian temporary migration flows comprise both highly skilled and unskilled persons. During the early 1970s, many Egyptian workers were employed in construction. Since then, the percentage of scientists and technicians has increased and the share of production workers has declined. Table 8.8 shows that more than 40 percent of Egyptian migrants

TABLE 8.6

The Distribution of the Labor Force by Arab and Asian Origin in Kuwait, 1989 and 2000

	1989			2000		
	Arab %	Asian %	Total thousands	Arab %	Asian %	Total thousands
Technical, managerial, clerical, and government	75	22	180	61	34	176
Trade, services, agriculture, unclassified	31	69	350	19	81	401
Production	43	56	253	32	68	428
Total	45	54	783	32	67	1,005

Source: Girgis 2002 in The World Bank, MENA Development Report, Unlocking the Employment Potential in the Middle East and North Africa—Toward a New Social Contract, 2004.

TABLE 8.7**Temporary Egyptian Migrants by Receiving Country, 2000**

(thousands and percent)

Country	Thousands	Percent
Bahrain	4.00	0.20
Libya	65.60	3.50
Iraq	226.90	11.90
Jordan	190.60	10.00
Kuwait	12.50	0.10
Lebanon	332.60	17.50
Oman	15.00	0.80
Qatar	25.00	1.30
Saudi Arabia	923.60	48.60
United Arab Emirates	95.00	5.00
Yemen, Rep. of	22.00	1.20
Total	1,912.70	100.00

Source: Ministry of Manpower and emigration, Contemporary Egyptian Migration 2003.

in the region are skilled workers. However, unskilled laborers have been replaced by Asians workers to a greater extent than skilled workers. Regarding the distribution of Egyptian migrants by occupation and country, the Gulf States and Libya absorb highly skilled Egyptian workers, while Jordan, Iraq, and Lebanon tend to employ unskilled Egyptian workers. Based on the work permits granted to Egyptians by occupation (table 8.9), Egyptian migrants in the Gulf States are more skilled than those in Jordan, Lebanon, and Iraq.

Although data on the educational background of migrants are scarce, the data put together in table 8.10 suggest that labor-importing countries in the region absorb a wide range of skills. In Saudi Arabia, for example, 40 percent of the expatriates in the labor force do not have a primary degree (i.e., are either illiterate or can just read and write),

TABLE 8.8**Occupation of Egyptian Migrants in Arab Countries, 1985 and 2002**

(percent)

	1985	2002
Scientists, managerial, and technicians	20.70	43.40
Clerical work	8.80	1.50
Sales and service	18.50	12.70
Agriculture	8.90	8.60
Production	43.00	33.80

Source: Ministry of Manpower and Emigration in CARIM.

TABLE 8.9

Work Permits Granted to Egyptians in Some Arab Countries by Occupation, 1985–2002

(percent)

Country	Scientists and technicians	Managers	Clerical workers	Sales and services	Agriculture	Production workers	Total
Bahrain	27.20	5.50	24.30	24.30	0.00	33.70	100.00
Iraq	2.60	0.00	1.50	1.50	33.00	62.90	100.00
Jordan	1.40	0.00	1.70	1.70	31.90	62.90	100.00
Kuwait	53.50	1.10	21.50	21.50	0.20	14.10	100.00
Lebanon	0.00	0.00	2.30	2.30	21.10	76.60	100.00
Libya	57.00	9.00	0.00	0.00	0.00	34.00	100.00
Oman	52.90	8.10	4.10	4.10	1.40	31.50	100.00
Qatar	51.50	1.90	6.10	6.10	1.00	37.40	100.00
Saudi Arabia	40.50	0.40	0.30	20.60	7.10	31.10	100.00
United Arab Emirates	41.10	4.00	2.90	2.90	0.90	50.10	100.00
Yemen, Rep. of	69.10	18.10	1.10	1.10	0.00	7.70	100.00
Total	39.00	2.40	12.70	12.70	8.60	35.80	100.00

Source: Ministry of Manpower and Emigration in CARIM.

but the rest hold intermediate or higher education. Similar observations can be made about Bahrain, where the share of the foreign population with no primary degree in the total population was about 30 percent in 2001.³ The data for Jordan, which cover both foreign labor force and return migrants by educational background in the mid-1990s, show that Jordan, as mentioned above, tends to export better-educated workers (mainly to the Gulf States) and import less-educated labor (from Egypt and Syria). Similarly, Egypt exports both educated

TABLE 8.10

Distribution of Migrants by Educational Level in Selected MENA Countries, Various Years

(percent)

Educational level	Saudi Arabia: foreign labor force in 2002	Bahrain: foreign population in 2001	Jordan: foreign labor force in 1994	Jordanian return migrants in 1994	Egyptian migrants abroad 1994–2000
None	12.51	14.90	22.95	5.74	15.40
Read and write	29.25	15.64	9.19	4.65	18.70
Primary	12.31	9.59	12.73	10.42	7.80
Intermediate	14.65	15.46	15.62	27.39	4.20
Secondary	12.51	18.19	16.08	30.19	32.70
Diploma	4.50	4.22	13.32	10.30	—
University	14.26	10.67	5.98	10.66	21.20
Unknown	0.00	11.34	4.15	0.64	—
Total	100.00	100.00	100.00	100.00	100.00

Sources: Saudi Arabia: Population Census 2002; Bahrain: Population, Housing, Buildings, & Establishments Census 2001; Jordan: DOS, Population and Housing Census 1994, Vol. 2, 1997 in CARIM; Egypt: Ministry of Manpower and Emigration in CARIM.

(to the GCC) and uneducated workers (to Jordan, Lebanon, and Iraq). Thus, overall, the data suggest that migration in MENA is only somewhat selective by education.

Emigration from MENA

After intraregional migration within MENA, the second-highest migratory destination is OECD countries; this is especially true for Northern African countries (Algeria, Morocco, and Tunisia). These countries have a long history of emigration to Europe—in particular with France—connected with their colonial ties. Postwar reconstruction in France resulted in high demand for foreign labor and consequently high migration streams from the Maghreb for almost three decades (1945–75). By the mid-seventies, however, economic recession in Europe had led to a fall in demand for foreign labor and new restrictions on immigration, whereby only family reunion migration was permitted, were introduced.

In 1970, there were nearly 1.2 million Maghreb nationals in Germany, Belgium, France, Netherlands, Sweden, and Switzerland. By the beginning of the 1990s, Italy and Spain had also become popular destinations for North Africans. By 1990, there were nearly 2.1 million North Africans in eight European countries. These figures exclude undocumented migrants, but do not entirely reflect patterns of migration, as they include natural increases among the resident Maghrebian population. Table 8.11 shows the recent change in migration patterns in Europe. The North African population in the old European destinations (France, Belgium, and the Netherlands) has fallen as a percent of foreign population.

TABLE 8.11

Population from North Africa in Selected EU Countries

(thousands, unless otherwise stated)

Source country	Belgium		France		Italy		Netherlands		Spain	
	1985	2001	1982	1999	1985	2000	1985	2001	1985	2001
Algeria	10	8	805	478	...	...	...	...	...	14
Morocco	124	107	441	504	3	160	123	104	9	235
Tunisia	6	4	191	154	4	46	3	1	..	...
Egypt, Arab Rep. of	...	...	...	...	7	33	...	...	..	...
Total	140	119	1437	1136	14	239	126	105	9	249
Total foreign population	846	862	3714	3263	423	1388	690	668	293	1109
North Africa as % of total foreign population	17	14	39	35	3	17	18	16	3	22

Sources: Johansson de Silva, S., and Carlos Silva-Jauregui (2004) and OECD (2003) Trends in International Migration 2003.

At the same time, Italy and Spain have experienced a huge increase in the number of North African migrants they host. Moroccans comprise the largest migrant nationality among North Africans in Europe and in France in particular. Table 8.12 shows the main OECD destinations for Moroccans. Another important aspect of emigration from Northern African countries to Western Europe is the educational composition of migrants. Based on OECD (2005) immigrants and expatriates database, the majority (more than two-thirds) of Moroccans in Europe have low education.

Although most international migration from the MENA region takes place between the Maghreb and Europe, emigration from the Mashreq countries has picked up momentum in the wake of the fall in demand for labor in the Gulf. Emigration from Egypt to Europe, for example, has been on the rise, with 30 percent of all Egyptian migrants now residing in OECD countries. According to CAPMAS estimates, the total number of Egyptians abroad is 2.7 million; 1.9 million are in other Arab countries, and 0.8 million are in OECD countries. About 80 percent of Egyptian migrants to the West are concentrated in the United States (39 percent), Canada (13 percent), Italy (10 percent), and Greece (7 percent), as shown in table 8.13. Italy has become the main destination of Egyptian permanent migrants since the early 1980s. A substantial migratory trend from MENA—not only from Egypt but from other MENA countries, in particular Lebanon—has been toward the United States, Canada, and Australia.

Unlike migration within MENA, migration from Egypt to the United States, Canada, and Australia is highly selective. This is also apparent in the case of migrants from other Arab countries to those OECD countries, as seen in table 8.14. At least half of the immigrants to Canada from MENA have high education. In addition, figure 8.1 shows the occupation of MENA emigrants in the United States, where migration from

TABLE 8.12

Moroccan Migrants in Main OECD Countries, 2002

Country	Thousands	Percent
Belgium	214.90	9.14
France	1,025.00	43.62
Germany	100.00	4.26
Netherlands	276.70	11.77
Italy	287.00	12.21
Spain	222.90	9.49
Other OECD	223.50	9.51
Total	2,350.04	100.00

Source: Ministère des Affaires étrangères et de la Coopération, Maroc 2002- CARIM.

TABLE 8.13**Egyptian Migrants in OECD Countries, 2000**

Permanent migration	Thousands	Percent
Australia	70.00	8.50
Austria	14.00	1.70
Canada	110.00	13.35
France	36.00	4.37
Germany	25.00	3.03
Greece	60.00	7.28
Netherlands	40.00	4.85
Italy	90.00	10.92
Spain	12.00	1.46
Switzerland	14.00	1.70
United Kingdom	35.00	4.25
United States	318.00	38.59
Total	824.00	100.00

Source: Ministry of Manpower and Emigration, Contemporary Egyptian Migration 2003.

MENA to the United States is highly selective, in 2000. Egypt has the largest proportion of its emigrants engaged in management and professional occupations while Morocco has the lowest, but it is still more than a third of its total emigrants.

Prospects for the Future

From the above discussion, it is clear that labor migration has been an important source of MENA's employment creation. However, the prospects of migration as a vehicle for supplementing domestic labor

TABLE 8.14**Immigrants (Aged 15 and Over) in Canada by Country of Birth and Level of Schooling, 2001**

(percent, unless otherwise stated)

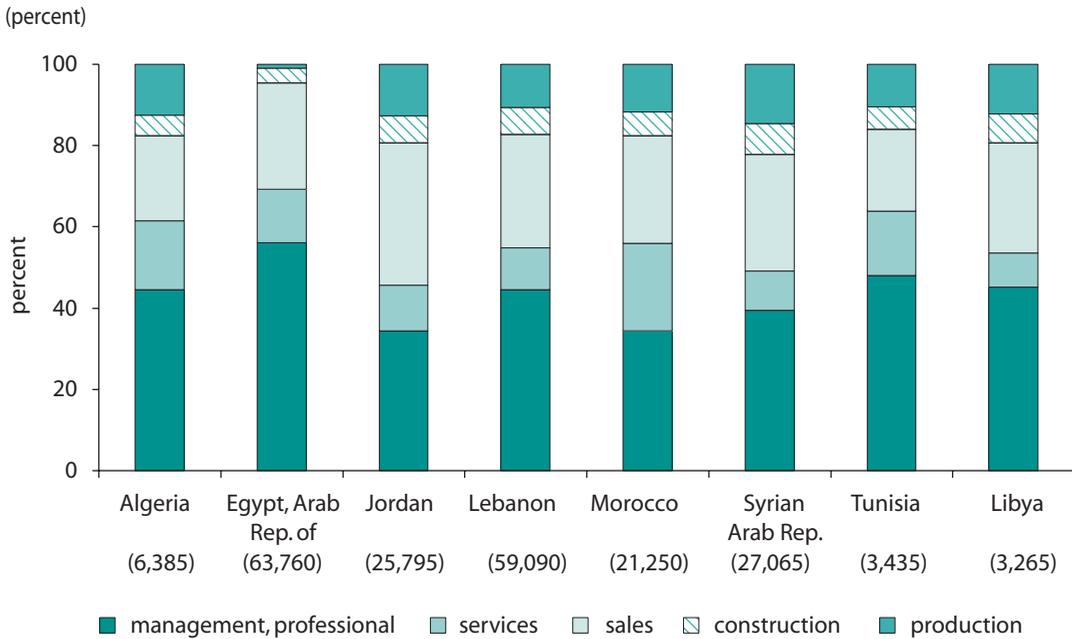
	Low	Medium	High	Total number
Egypt, Arab Rep. of	3.50	17.40	79.20	34,185.00
Lebanon	14.40	31.00	54.60	65,045.00
Syrian Arab Rep.	15.00	27.50	57.40	14,710.00
Jordan	4.00	29.90	66.10	4,260.00
Morocco	7.40	20.90	71.70	24,425.00
Algeria	4.80	16.10	79.10	17,405.00
Tunisia	3.90	14.10	82.00	5,215.00

Source: Statistics Canada, Population Census of 2001, in CARIM.

Note: Low education: primary education (0 to 8 years of schooling); medium education: secondary education (9 to 12 years of schooling); high education: tertiary education (13 years and above).

FIGURE 8.1

Occupation of Foreign Born by Country of Birth in the United States, 2000



Source: US Census Bureau, Census 2000, cited in CARIM.

Note: Figures in parentheses are the total number of foreign-born by country of birth in the United States in 2000.

markets in the region are not encouraging. The net outflows of MENA workers to other countries, not only in the region but also abroad, decelerated in the 1990s. For example, at the peak of the oil boom in the early 1980s, more than 20 percent of the Egyptian labor force and more than a third of the Yemeni and Jordanian labor forces worked abroad, primarily in the Gulf. This provided a significant buffer to many of the structural imbalances in the labor market and helped to contain unemployment. In the 1990s, however, the proportion of Egyptians and Yemenis working abroad dropped to about 12 percent, and in Jordan, to about 20 percent. Similarly, North African economies are increasingly facing greater restrictions on entering European labor markets.

The demand for Arab workers in the Gulf, according to Girgis (2002), is expected to fall. The GCC countries are increasingly seeking to fill new positions either with nationals or with Asian workers. Nationals are given skilled jobs (including jobs as teachers, journalists, clerks, and management where language requirements can be met) at higher (than average) wages. Asian workers are increasingly given unskilled jobs at lower (than average) wages and at wages below those of workers from Arab countries. Although the growth rate of the skilled labor force of nationals is not likely to meet demand in the foreseeable future, this trend will

slow the demand for migrants from countries like Egypt, Lebanon, and Jordan. Demand will also depend on what happens to oil prices in the future. High and limited volatility of oil prices will enhance the demand for workers, from the region or elsewhere, while low and volatile oil prices will dampen labor demand.

In Europe, the share of North African migrants has declined at a time when Europe is becoming one of the main destinations of international migrants. In 2002, between 36 and 39 million international migrants were living in Europe, representing 8 percent of its population.⁴ According to the European Commission, between 1960 and 2002, the population of the former EU-15 countries increased by 17.8 million persons. For the former EU-15, net migration was relatively low until the end of the 1980s. However, since 1999, as a consequence of migration, the EU-15 population has increased by close to, and sometimes more than, 1 million persons each year.⁵ Migrants to the EU fall into four main regional groups: those from Eastern Europe and the former Soviet States, from the Maghreb, from Turkey, and from various former colonies and refugee countries in Sub-Saharan Africa and Asia. To some extent each country has its “own” foreigners as a result of colonial heritage, privileged and often bilateral links, or geographic proximity to the countries concerned. Table 8.15 shows the stock of foreign labor in OECD countries over the last decade. Overall, the proportion and number of foreign labor have increased in OECD. However, as seen earlier, the proportion of North Africans has not increased.

In Europe, migration has become a contentious issue for a host of social, economic, and political factors. As a result, there is no strong political constituency for mass immigration. It is evident from many of the recent debates on migration within Europe that the perception of migration as socially and economically costly for the host countries is widespread. It is unclear how much the MENA region can rely on migration to Europe to mitigate its own labor demand dilemmas. Migrants from the Maghreb in particular are increasingly facing greater restrictions on legal entry, which is leading to an increase in illegal migration. The EU enlargement is another factor, as some of the new member countries enjoy abundant skilled workers who are also willing to accept relatively low wages.

The good news is that there are strong labor-market complementarities between the emerging labor force in MENA and the shrinking European workforce, a workforce that is facing growing shortages in the mid-level skills MENA workers possess. With the prevailing pay-as-you-go social security system in Europe, a rapidly aging population threatens to weigh heavily on future workers, who will need to provide for retirees with increasing life expectancies. According to the International Labour Organization (ILO), the number of potential workers between the ages of

TABLE 8.15

Stocks of Foreign and Foreign-Born Labor in the Labor Force of Selected OECD Countries, 1992–2001

(thousands and percent)

Stocks of foreign labor force	1992	1995	1998	2001
Austria	295.90	325.20	327.10	359.90
% of total labor force	9.10	9.90	137.50	11.00
Belgium	325.60	362.10	390.70	..
% of total labor force	7.80	8.50	8.80	..
Denmark	74.00	83.80	98.30	100.60
% of total labor force	2.60	3.00	3.40	3.50
France	1 517.8	1 573.3	1 586.7	1 617.6
% of total labor force	6.00	6.20	6.10	6.20
Germany	..	..	..	3 616.0
% of total labor force	..	..	..	9.10
Ireland	40.40	42.10	53.30	82.10
% of total labor force	3.00	2.90	3.30	4.60
Italy	296.80	332.20	614.60	800.70
% of total labor force	1.40	1.70	2.70	3.80
Luxembourg	98.20	111.80	134.60	170.70
% of total labor force	49.20	52.40	57.70	61.70
Netherlands	229.00	221.00	235.00	..
% of total labor force	3.50	3.20	3.20	..
Norway	46.60	52.60	66.90	..
% of total labor force	2.30	2.50	3.00	..
Portugal	59.20	84.30	88.60	104.70
% of total labor force	1.30	1.80	1.80	2.00
Spain	139.40	139.00	197.10	607.10
% of total labor force	0.90	0.90	1.20	3.40
Sweden	233.00	220.00	219.00	227.00
% of total labor force	5.30	5.10	5.10	5.10
Switzerland	716.70	728.70	691.10	738.80
% of total labor force	18.30	18.60	17.40	18.10
United Kingdom	902.00	862.00	1 039	1 229
% of total labor force	3.60	3.40	3.90	4.40
Stocks of foreign-born labor force				
Australia	..	2 138.8	2 293.9	2 367.3
% of total labor force	..	23.90	24.80	24.20
Canada	..	..	..	3 150.8
% of total labor force	..	..	..	19.90
United States	..	12 900	16 100	20 014
% of total labor force	..	9.70	11.70	13.90

Source: OECD, Trends in International Migration, 2003.

20 and 65 will increase on a net basis by 1 million in the EU-15 member states between 2000 and 2010. The group of people in retirement, ages 65 and above, will increase by 3.6 million over the same period (Johansson de Silva and Silva-Jauregui 2004). Short of a drastic change in fertility rates in the EU, migration provides the only means of reinforcing the shrinking workforce. Presently, the

EU receives around 0.6 million migrants on a net basis every year. Demographic projections by the UN suggest that to keep the working-age population constant, another million people would need to enter the EU each year, and to keep the ratio of old population to working population constant, to ensure that each retiree can rely on the same number of workers, the region would need as many as 10 million additional immigrants per year (Diwan et al. 2002).

All this is to suggest that the region should look for opportunities to increase intra-regional migration and migration to other destinations. Before exploring how that might be achieved, the next section assesses the economic impact of migration so far.

The Economic Impact of Migration: A Win-Win Game

In theory, free labor mobility leads to efficiency gains and increases in world income. According to Rodrik (2002), liberalizing cross-border labor movements can yield substantial benefits to the world economy that may be almost 25 times larger than those that would accrue from free goods and capital flows, given the huge differential in the wage rates for similar skills in developing and developed countries. Thus, the potential benefits from migration are huge.

However, the impact of migration on the individual migrant depends on whether or not the net benefits from migration are larger than those from staying at home. For the exporting country, the economic impact depends mainly on the remittances received minus the cost of forgone output, if any, and the cost of migrants' education. For the host country, the benefits depend mainly on the contribution of migrants to economic and social development net of the labor cost. This section assesses the impact of migration on all three entities—the migrant, the exporting country, and the host country—starting with the migrant.

The Migration Decision and Individual Net Benefits

Migration is an individual decision made at the household level, taking into account individual/family benefits and costs. In general, individuals face a choice between staying in their own country or migrating overseas. To maximize their utility, they decide to migrate if the benefits from migration exceed the costs. The benefits are both economic (e.g., higher incomes and better living standards) and noneconomic (e.g., stable jobs, job satisfaction, or career prospects). The costs are also monetary (involving, for example, the cost of transaction, transportation, and forgone income) as well as nonmonetary (e.g., the psychic costs of moving to a foreign

country or leaving family behind). In some cases, migration can be for political reasons as well.

As mentioned above, there is a positive relationship between education and migration. Educated individuals find it easier to access overseas labor markets because they have “saleable” skills; they have better access to information; and they are better in adapting to a new environment.

Going by revealed preferences, migrants in MENA must have decided to migrate because they believed that it was to their advantage to do so. This conclusion is supported by several factors. For both the educated and uneducated individuals in countries like Egypt, Yemen, and Jordan, higher wages overseas are an important pull factor. And indeed, the wage rate differentials between, say, the Gulf States and these countries are manifold. This factor alone would probably have been sufficient to convince some to migrate.

In addition to salary differences, the decision to migrate must have also been driven by push factors. These include relatively high unemployment rates at home, especially among university graduates, or the difficulty of finding a job that fits the training the graduate received. Going abroad often provides greater opportunities to find appropriately high-skilled, challenging work than is available at home. In addition, the evidence provided in chapter 9 points out that most MENA countries have had high rates of unemployment, especially among the youth and educated. Along the same lines, the evidence provided in the same chapter indicates that the rates of return to education in countries like Morocco, Egypt, and Jordan are low and declining. No wonder many individuals from these countries decide to migrate.

In addition to these economic factors, another push factor is political instability in the home country. On that account, it seems that the civil war in Lebanon and the first Gulf War did provide impetus for greater migration. In Lebanon, it was estimated during the time of the civil war that the number of Lebanese abroad exceeded the number of those who remained in Lebanon. Also, the Gulf War in 1990–91 resulted in the return of more than 2 million immigrants to their home country in MENA. Migration within the region has thus been a function of political circumstances, at least in some cases.

What all these factors suggest is that migrants in MENA must have benefited from migration, otherwise they would not have moved in such large numbers—voluntarily for the most part—to other counties in the region.

The Economic Impact on Home Countries

Labor-exporting MENA countries have benefited from emigration in a variety of ways. The most obvious is a reduction in domestic unemploy-

ment. According to the ILO, the MENA region recorded one of the highest unemployment rates among the developing regions in the 1990s.⁶ The rate has hovered around the 12 percent mark for at least the past decade, reflecting a steady increase in the number of total unemployed since mid-1990s. In addition, unemployment tended to be concentrated among the young and the educated. Without emigration providing a safety valve for the surplus labor, the rate of unemployment would have been even higher.

Equally important, migration does not seem to have created bottlenecks in domestic labor markets. Although some countries, Jordan, for example, experienced a shortage of agriculture workers, this was filled by Egyptian workers. Nor did the outflow of unskilled workers lead to a general rise in wages, given the vast pool of unskilled workers in labor-sending countries. Among skilled workers, the majority were either unemployed or worked in the public sector, where too many are employed in the first place and wages are determined according to a fixed scale. If anything, migration out of public employment probably reduced the wage bill.

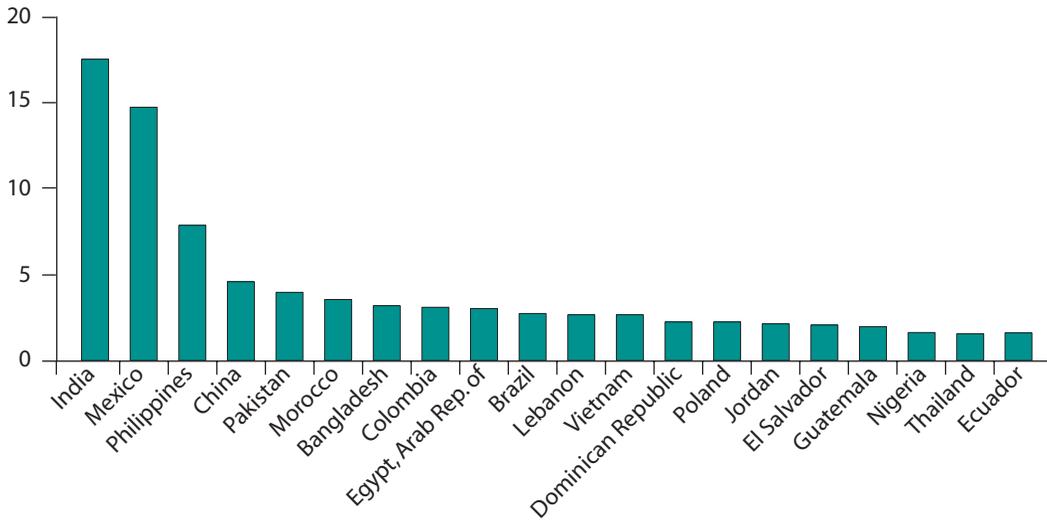
Another important benefit from migration has been the financial flows to the home country. For developing countries in general, remittances represent the second-largest source of external funding, after Foreign Direct Investment (FDI) (*Global Development Finance* 2003). According to Maimbo and Ratha (2005), workers' remittance receipts in developing countries stood, in 2003, at \$126 billion or 1.7 percent of their combined GDP, which is much higher than total official flows and private non-FDI flows, and more than half of total FDI flows to these countries. For MENA countries, workers' remittances, amounting to \$13 billion, were larger than net FDI flows and net official flows, which modestly stood at \$2 billion and \$1.6 billion, respectively (*Global Development Finance* 2004). Furthermore, these figures only refer to official transfers. Thus, they represent an underestimate of the size of remittances. In some countries it is believed that only around half of the remittances pass through official banking channels, because migrants are discouraged from using them by cumbersome procedures, high fees, and poor rates of exchange.

For a number of MENA countries, remittances have become the principal source of foreign exchange. Figure 8.2 shows the amount of labor remittances received by the top 20 countries. Four of the top receiving countries in the world are MENA countries. Figure 8.3 shows the top 20 countries from which remittances payments are sent. The United States and Saudi Arabia⁷ are the largest sources of workers' remittances, but Kuwait and Oman are also among the top 20 sources of remittances. All labor-sending countries in the region have benefited

FIGURE 8.2

Top 20 Developing-Country Recipients of Workers' Remittances, 2003

(billions of US\$)

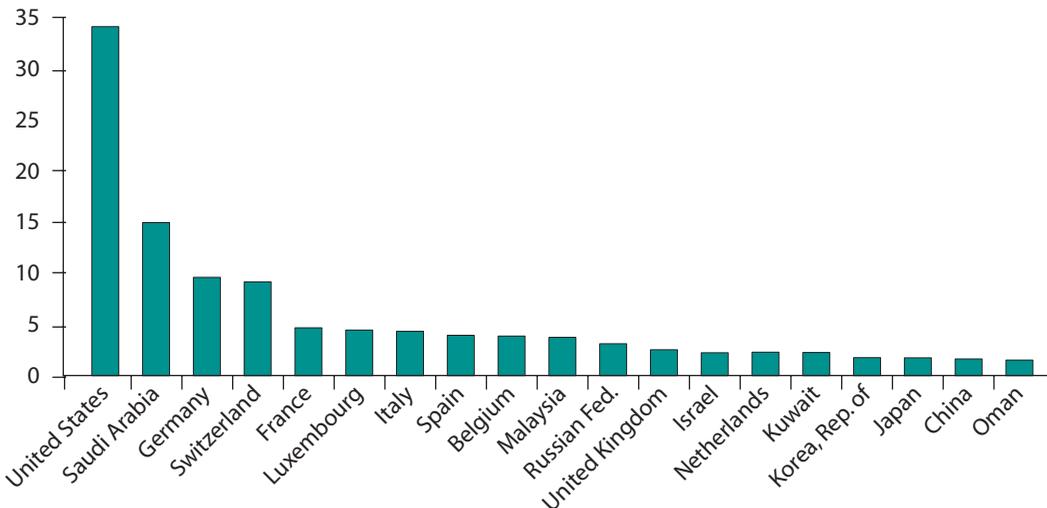


Source: Maimbo and Ratha (2005).

FIGURE 8.3

Top 20 Country Sources of Remittance Payments, 2003

(billions of US\$)



Source: Maimbo and Ratha (2005).

from receiving substantial flows of remittances, as table 8.16 shows. MENA labor-exporting countries are among the highest recipients of remittances in the world. In addition, MENA countries have the highest per capita migrants' remittances, as shown in figure 8.4.

Remittances comprise a substantial proportion of labor-exporting countries' merchandise exports. Table 8.17 shows the significance of remittances as a percent of GDP in MENA. However, the overall figures mask the importance of remittances for particular countries; for example, in 2003, remittances amounted to 22 percent of Jordan's GDP and 14 percent of Lebanon's GDP (Maimbo and Ratha 2005). Also, Egypt ranked fifth among the developing countries that received the highest amount of remittances in 2001. During the 1990s there was a decline in the remittances trend to Egypt after peaking in 1992 at \$6.1 billion. Recently, Egypt has been receiving around \$3 billion remittances annually, representing 4 percent of its GDP. According to the Central Bank of Egypt, the largest amounts of remittances arrived from the United States and Saudi Arabia (34.5 percent and 22.1 percent respectively), followed by Western European countries (about 15 percent). Morocco has been catching up with Egypt. Morocco received \$3.6 billion in 2001, an amount that represented over 11 percent of Morocco's GDP. In 2003, more than 90 percent of Morocco's remittances came from Western Europe (45 percent from France alone), but only 1.6 from Saudi Arabia (Hamdouch 2005).

TABLE 8.16

Workers' Remittances, 1990–2003

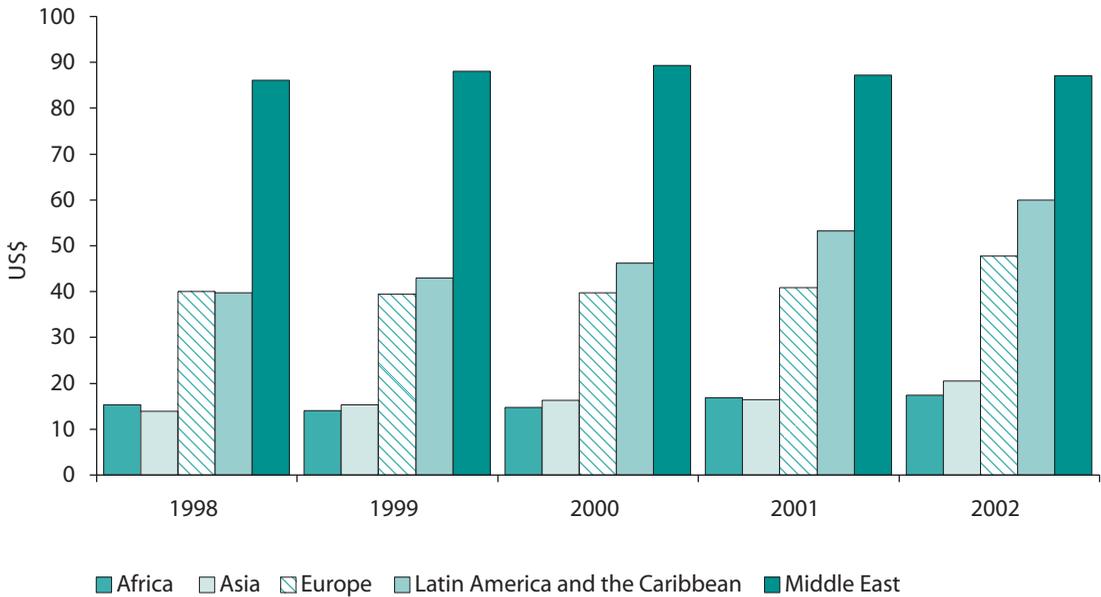
(billions of dollars)

Year	Egypt, Arab Rep. of	Jordan	Lebanon	Morocco	Tunisia	Yemen, Rep. of
1990	4.28	0.50	1.82	2.01	0.55	1.50
1991	4.05	0.45	1.90	1.99	0.52	1.00
1992	6.10	0.84	2.02	2.17	0.53	1.02
1993	5.66	1.04	2.05	1.96	0.45	1.04
1994	3.67	1.09	2.17	1.83	0.63	1.06
1995	3.23	1.24	0.84	1.97	0.68	1.08
1996	3.11	1.54	1.23	2.17	0.74	1.13
1997	3.70	1.66	0.96	1.89	0.68	1.17
1998	3.37	1.54	0.61	2.01	0.72	1.20
1999	3.24	1.50	0.43	1.94	0.76	1.22
2000	2.85	1.66	0.50	2.16	0.80	1.29
2001	2.91	1.81	0.56	3.26	0.93	1.29
2002	2.89	1.92	0.89	2.88	1.07	1.29
2003	2.96	1.98	1.00	3.61	1.25	1.27

Source: The World Bank, Global Development Finance and World Development Indicators Central (April 2005).

FIGURE 8.4

Per Capita Migrants’ Remittances by Region, 1998–2002



Source: Straubhaar, Vádean (2005).

Note: “Remittances” refer to the sum of the “compensation of employees,” “workers’ remittances,” and “other current transfers in other sectors”; “Official flows” include general government transfers both current and capital.

Although there has been a lot of debate on the uses of remittances and their impact, there is evidence to suggest that remittances have been used in investment and microenterprises in the home countries. In addition, return migrants are potent carriers of capital, technology, and entrepreneurship, i.e., of factors that can contribute to the economic development of the home country. As McCormick and Wahba (2001) and Wahba

TABLE 8.17

Workers’ Remittances Received by Developing Countries by Region, 1999–2004

(percent of GDP)

	1999	2000	2001	2002	2003	2004 est
Total	1.20	1.10	1.20	1.60	1.70	1.80
East Asia and Pacific	0.70	0.70	0.60	0.90	1.00	1.00
Europe and Central Asia	0.90	0.90	0.90	1.00	0.90	0.90
Latin America and the Caribbean	1.00	1.00	1.20	1.60	2.20	2.20
Middle East and North Africa	2.20	1.90	2.30	2.30	2.40	2.40
South Asia	2.60	2.30	2.30	3.00	3.40	4.10
Sub-Saharan Africa	1.30	0.80	1.00	1.70	1.50	1.50

Source: Maimbo and Ratha (2005).

Note: est = estimate.

(2004) show, evidence from Egypt suggests that overseas employment opportunities have had significant effects on the probability of those returning migrants becoming entrepreneurs in the origin country. Overseas savings and the time spent abroad have had positive and highly significant effects on the migrants' likelihood of becoming entrepreneurs upon return. Almost 53 percent of the educated returnees have found the skills they acquired abroad to be beneficial to the job they held upon return, compared to 33 percent of the less educated and 22 percent of the illiterates. Hence, overseas work experience provides an opportunity for human capital enhancement, especially for the educated (McCormick and Wahba 2001). Further evidence from Egypt suggesting that return migrants benefit from their overseas work experience is the fact that the proportion of migrants moving into high-skilled occupations upon return is greater than the proportion doing so before migration (Wahba 2004).

Thus, the overall benefits from migration seem to outweigh the output loss and the cost of migrants' education. While the output loss is arguably modest because of unemployment, the size of remittances and the positive network effects on trade and investment are substantial. Labor-exporting MENA countries benefit from migration as it reduces tensions in the labor market, decreases unemployment, provides return migrants with skills and capital for investment, and increases monetary flows from labor remittances, which contribute to the balance of foreign finance. As it turns out, migration has been instrumental in redistributing oil revenues within the MENA region over the last few decades.

The Economic Impact on Host Countries

As for labor-receiving countries, they also benefited from immigration in a variety of ways. The most important is that immigration removes labor scarcity and leads to fuller utilization of abundant capital. Thus, it gives a boost to economic growth that would not have been possible in the absence of foreign labor. In the case of the Gulf States, migration enabled them to have a construction boom and build much-needed infrastructure. It also provided the skilled human capital necessary to provide social services and other public goods. Currently, foreign workers also contribute to the labor market by filling jobs that cannot be filled by locals.

In the case of EU countries, immigration provides similar benefits, but with a twist. Previously, Western Europe—France, for example—relied on imported workers from the Maghreb for almost three decades (until the mid-1970s) to help in postwar reconstruction work. More recently, foreign workers have filled jobs that locals do not want to do—in the service sector, for example—or jobs that suffer from seasonal shortages of labor, for example, in farming. In many other instances, the

immigrants offer skills that are scarce in Western countries (those of doctors, for example) and that are essential for the growth and welfare of those economies.

Notwithstanding these benefits, there is a growing perception that immigration has a negative impact on the labor markets of the host countries. Some argue that immigration leads to lower wages among unskilled workers and higher unemployment rates. However, there is no strong empirical evidence to support either claim (see, for example, International Organization for Migration 2005). Also, immigrants are perceived to rely on public welfare and social services, but to pay relatively little in the form of welfare contributions and taxes. However, available evidence indicates that educated workers contribute more in taxes than they receive in benefits. The evidence concerning the uneducated is mixed, with migrants' reliance on welfare being higher than that of the local population in a number of countries (Austria, Belgium, France, and the Netherlands), but not in others (Germany, Spain, and the United Kingdom). Notwithstanding this result, the overall impact of immigration seems to be positive on a net basis for the receiving country.

What about the Brain Drain?

The "brain drain," which occurs when a labor-exporting developing country loses its educated workers to a more developed or richer country, has been hotly debated in the development literature for some time. Because migration is generally easier for university graduates than for the less educated, the argument, as Adisesiah (1972) puts it, is that for many countries, "education is not the road to development but the road to migration." However, others, like Mountford (1997) and Stark et al. (1998), argue that the emigration of the highly educated may lead to "brain gain" if the return to education is higher overseas than at home, thus leading to higher returns to human capital, and thereby enhancing further investment in human capital. At any rate, from the point of view of the sending country, the extent of migration selectivity, the opportunity cost of losing an educated worker, and the temporary or permanent nature of the migration all make a difference to the impact of the migration on the home country.

For the MENA region, intraregional migration is different from migration to Europe and elsewhere. Thus, it is useful to discuss them separately. Starting with intraregional migration, disaggregated data on the educational composition of Arab emigrants in the GCC and other Arab countries are not available for ascertaining the extent of migration selectivity. However, Docquier and Marfouk (2004) estimate that 1.9 million or around 17.5 percent of adult immigrants in the GCC are tertiary ed-

ucated (17 percent in Bahrain, 17.2 percent in Saudi Arabia, and 14 percent in Kuwait). These rates are not very high and, on the basis of scattered evidence for some MENA countries, intraregional migration is not considered highly selective. Furthermore, migration to the GCC and other Arab countries is temporary, and as such does not lead to the permanent loss of educated people. Finally, in light of the high unemployment in the exporting countries, the opportunity cost of keeping university graduates at home is low if not zero or even negative. Thus, the brain drain problem is not so in intraregional migration in MENA.

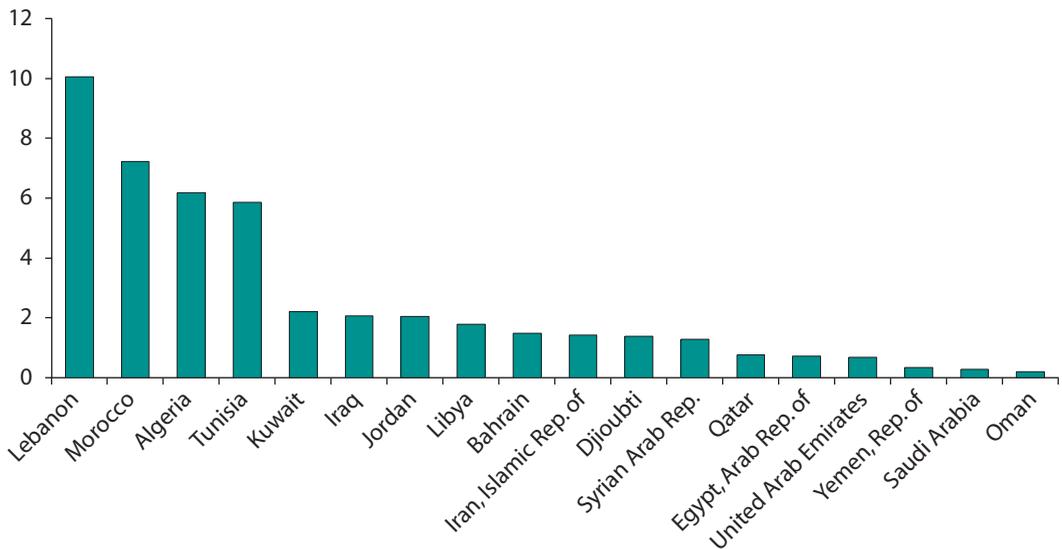
With respect to emigration from MENA to OECD countries, the picture is somewhat different. Migration to OECD tends to be permanent. Recent OECD data on the emigration rate to OECD countries⁸ from MENA suggests that Lebanon and the Maghreb countries have higher emigration rates than the rest of the MENA countries. Thus, figure 8.5 shows that the expatriate rate is around 10 percent in Lebanon and between 6 and 8 percent for the Maghreb countries. The emigration rate from other MENA countries to OECD is under 2 percent.

Docquier and Marfouk (2004) have recently compiled an international data set of estimates of emigration stocks and rates to OECD

FIGURE 8.5

Expatriate Rate, 2005

(population 15+)



Source: OECD 2005, Database on immigrants and expatriates.

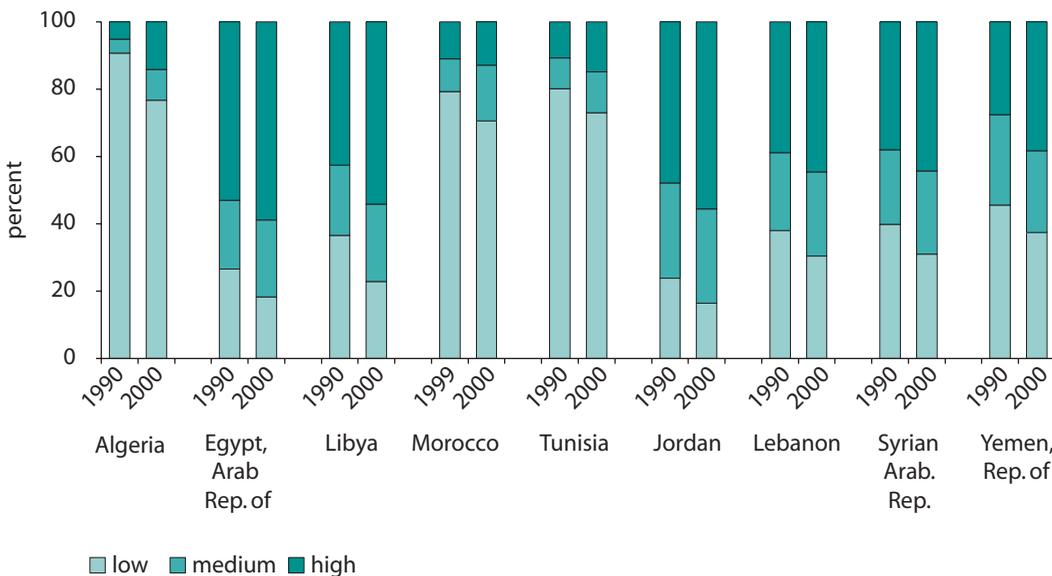
Note: The emigration rate from country *i* is calculated by dividing the population (15+) from country of origin *i* by the total native-born (15+) population of the same country (native-born(*i*)= expatriates(*i*) + resident native born(*i*)).

countries by educational attainment in 2000 and 1990. Figure 8.6 shows the educational distribution of the stock of emigrants in OECD countries from MENA. Egypt has the highest selection-rate, i.e., the highest proportion of skilled workers in total emigration in this figure. Among the 195 countries studied by Docquier and Marfouk (2004), Egypt and Jordan are among the top 30 countries with the highest selection, i.e., the proportion of skilled emigrants in the total emigration stock. Egypt is ranked 19 and Jordan 27, with a 59 percent selection rate in Egypt and 56 percent in Jordan. On the other hand, Tunisia and Morocco are among the 30 lowest selection rate countries, i.e., only 13 percent of Moroccan and 15 percent of Tunisian emigrants are high skilled. Based on the 1998 Egypt Labour Market Survey (ELMS) and the 1997 Morocco Living Standards Measurement Study (LSMS), it is clear that, given the high unemployment rates for the educated in Egypt (figure 8.7A), they are the most likely to emigrate; for Morocco, however, given that there is no relationship between educational level and unemployment (figure 8.7B), there is no evidence of a high selection rate. It is important to note, though, that the average educational level is higher in Egypt than it is in Morocco.

FIGURE 8.6

Stock of Emigrants from MENA to OECD by Educational Level, 1990 and 2000

(percent)



Source: Docquier and Marfouk (2004).

Note: Low education: primary education (or 0 to 8 years of schooling); medium education: secondary education (9 to 12 years of schooling); high education: tertiary education (13 years and above).

FIGURE 8.7A

Probability of Unemployment by Educational Level in Egypt, 1998

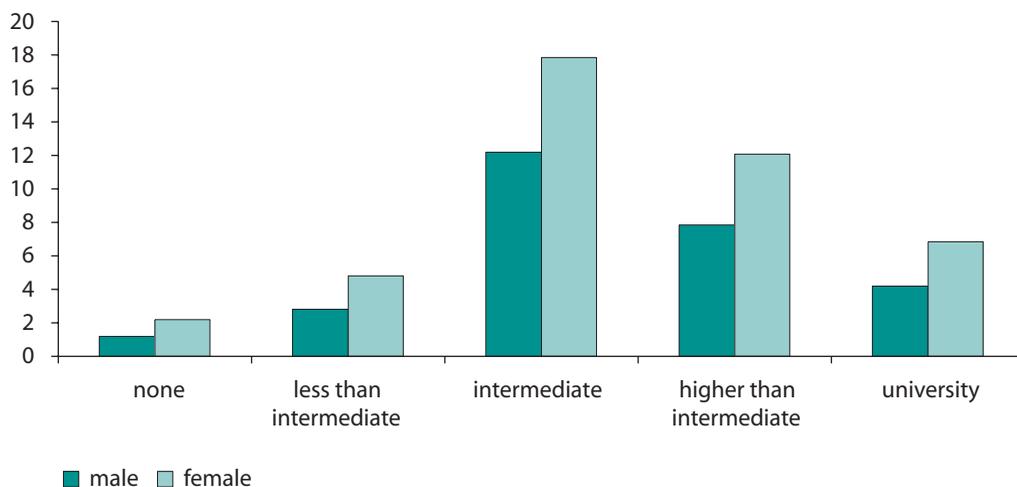
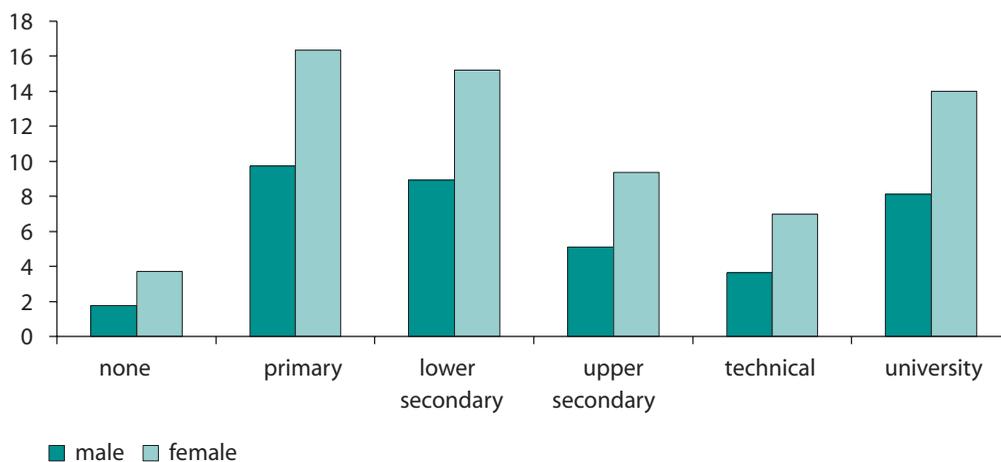


FIGURE 8.7B

Probability of Unemployment by Educational Level in Morocco, 1999



Source: Wahba 2005, p. 26.

Table 8.18 shows the emigration rates by three educational levels in 1990 and 2000 from selected MENA countries to OECD countries. Emigration rates by educational levels are obtained by comparing the emigration stocks to the total number of people born in the source country and belonging to the same educational category. Lebanon has the highest emigration rate of skilled workers in MENA and ranks 27 out of the

195 countries studied in 2000. Morocco and Tunisia both have high emigration rates of skilled workers, i.e., comparing the emigration stocks of the highly educated to the total number of highly educated people born in the source country. Although both countries have a low proportion of skilled emigrants in their total emigration stock, the proportion of highly educated emigrants to the total number of educated people back home is high. In other words, they are more vulnerable to brain drain.

Thus, based on Docquier and Marfouk (2004), overall, MENA countries are not experiencing worrying levels of brain drain as a region, as illustrated in table 8.19. However, Lebanon in particular, followed by Morocco and Tunisia, are losing a substantial proportion of their educated population. This is also consistent with Adams (2003), who finds that out of a sample of 24 countries, international migration takes more than 10 percent of those with a tertiary education from five countries: Jamaica, Morocco, Tunisia, Turkey, and Sri Lanka. Thus, the evidence suggests that there is a brain drain in Morocco and Tunisia, which would suggest

TABLE 8.18

Emigration Rates from MENA to OECD by Educational Level, 1999 and 2000

(percent)

Educational level	Year	Low	Medium	High	Total
Algeria	1990	5.30	2.00	7.10	5.10
	2000	4.60	2.10	9.40	4.50
Egypt, Arab Rep. of	1990	0.30	1.00	5.90	0.80
	2000	0.20	0.80	4.60	0.90
Libya	1990	0.60	1.00	2.30	0.90
	2000	0.50	0.60	2.40	0.90
Morocco	1990	6.40	6.20	21.60	7.00
	2000	6.80	8.10	17.00	7.60
Tunisia	1990	6.20	4.60	17.80	6.50
	2000	5.10	3.80	12.50	5.40
Jordan	1990	1.60	4.80	8.60	3.50
	2000	1.00	2.40	7.20	2.80
Lebanon	1990	10.90	16.10	43.90	17.20
	2000	9.40	11.10	38.60	15.00
Syrian Arab Rep.	1990	1.00	3.00	7.00	1.90
	2000	0.90	2.30	6.10	1.90
Yemen, Rep. of	1990	0.10	0.70	5.50	0.20
	2000	0.10	1.20	6.00	1.40
Average	1990	3.60	4.40	13.30	4.80
	2000	3.20	3.60	11.50	4.50

Source: Docquier and Marfouk (2004).

Note: Emigration rate is the emigration stock as a share of the total number of people born in the source country and belonging to the same educational category. Low education: primary education (or 0 to 8 years of schooling); medium education: secondary education (9 to 12 years of schooling); high education: tertiary education (13 years and above).

TABLE 8.19

Emigration Rates to OECD and Selectivity by Region, 2000

(percent)

	Share in OECD stock		Rate of emigration		Share of skilled workers	
	Total	Skilled	Total	Skilled	among residents	among migrants
By region/group						
MENA	6.50	6.00	2.80	8.90	9.40	32.00
Sub-Saharan Africa	3.80	4.70	0.90	12.9	2.80	42.60
Least developed countries	4.20	4.20	1.00	13.20	2.30	34.00
Economies in transition	12.30	10.80	2.70	4.80	17.10	30.30
EU 15	23.00	21.60	4.80	8.10	18.60	32.50
By income						
High-income countries	30.40	33.70	2.80	3.50	30.70	38.30
Upper middle-income countries	24.30	17.70	4.20	7.90	13.00	25.20
Lower middle-income countries	26.60	27.20	3.20	7.60	14.20	35.40
Low-income countries	15.10	19.80	0.50	6.10	3.50	45.10

Source: Docquier and Marfouk (2004), p.19.

that there is a need for these countries to adopt policies to deal with this loss of human capital.

Why Isn't More of a Good Thing Happening?

Although migration is potentially a win-win game for both sending and receiving countries, MENA countries have not been able to gain as much as they possibly could have from their investment in education through migration. The high unemployment of graduates in many of the labor-exporting countries and the persistent gap in human capital in capital-abundant countries suggest that more migration could have been to the benefit of both parties. The question is why this did not happen by virtue of the forces of supply and demand. It is argued below that suboptimal migration is fundamentally the result of large failures of labor markets across countries, which have not been adequately addressed by governments.

To be sure, labor markets can fail to allocate labor efficiently within a country, either because of problems of information asymmetry between the employer and the employee, weak intermediation, poor contract enforcement, or other labor market-distorting policies. However, these problems tend to be accentuated in the case of migration because of concern for national sovereignty, geographical distances, and language and cultural barriers. Thus, short of deliberate actions by governments to address these problems, the level of migration will be suboptimal. The mi-

grant will not have reasonable information about job opportunities elsewhere, alternative intermediation possibilities to seek these jobs, fair enforcement of the contract once signed, and the means to transfer resources back home through the official channels without penalty. Similarly, the employer will not have access to credible information about the qualifications of alternative candidates, the means to screen them, and a reasonable recourse in case they do not perform well.

Against this background, the remainder of this section discusses a number of key migration policies in MENA, both in the host and home countries.

Migration Policies of Host Countries

Clearly, the prevailing migration policies and practices in the Gulf States have worked reasonably well, as evidenced by the number of immigrants they have received. However, not all features of these policies and practices are consistent with the best interests of the host and sending countries.

Currently, in most of the Gulf States, foreigners must be “sponsored” for admission; after arrival, the migrant deals with the government through the sponsor, not directly with any government agency. The only way for a foreigner to obtain residence and work visas is to respond to an advertisement placed by a Kuwaiti or Saudi citizen seeking workers. However, the reality is that recruitment agencies sometimes send workers for nonexistent jobs, some provide false information about jobs, and many charge migrants excessive fees for services. Some Gulf citizens require job-seeking foreign migrants to pay them “sponsor fees.” Migrants often go into debt to pay these fees and some, after their arrival in the Gulf, learn that the sponsor has no job for them. Thus, migrants may arrive in debt and find themselves jobless, left with the choice of working illegally or returning home in debt. The sponsorship or *kafeel* system common in the Gulf States has also resulted in labor inflows not matched by actual employer demand, resulting in irregular status for migrants (ILO 2004).

In addition, imported workers in many cases are not protected in the host country. For example, MENA labor-importing countries use temporary contract employment but such employees, particularly unskilled laborers, are not covered under local labor laws. In other cases, foreign workers are exploited or discriminated against, with no legal protection in the host country (ILO 2004).

In Europe and North Africa, migrants face the standard problems they encounter in search for employment abroad, including information about jobs, reliable intermediaries, etc. In addition, they are increasingly facing restrictive migration controls that have led to increased irregular

and illegal migration from the region. According to the ILO, 10 to 15 percent of migrants are irregular. In the United States, there were an estimated 7 to 8 million irregular migrants in 2000. In Europe, irregular foreigners who had been regularized accounted for 4 percent of total migrants. That same year, there were 22 million foreign nationals resident in Western Europe. If the number of irregular migrants were equivalent to, say, 15 percent of the foreign population, the total number in irregular status would be 3.3 million—which is in the range commonly quoted.⁹

The extent of the flows of irregular workers is a strong indication that the demand for regular migrant workers is not being matched by the supply, with migrants serving as the buffers between political demands and economic realities. As Boeri and Brücker (2005) point out, although the EU has tightened border controls, this has not prevented migration but rather increased illegal migration. In fact, stricter migration policies have led to other distortions as well, such as modifying the skill composition of the migrants in favor of unskilled workers and inflating the ranks of the informal sector. Thus, minimizing the illegal flows of migrants to the EU from MENA would require less strict controls and a more managed approach to migration.

In addition, some migrants end up being underemployed relative to their human capital. A recent study by Mattoo et al. (2005) examines the differences in the occupational attainment of immigrants to the United States with similar educational backgrounds but from different countries. They estimate the probabilities for bachelor of arts and professional degree holders from a select group of countries, who arrived in the 1990s, of obtaining skilled jobs in the United States. They find that these probabilities vary significantly across countries. As shown in table 8.20, a 34-year-old Indian who arrived in 1994 and has a bachelor's degree has a 69 percent probability of obtaining a skilled job while the probability is only 31 percent for an Egyptian of identical age, experience, and education. For a holder of a master's degree, an Egyptian still has only a 49 percent probability of obtaining a skilled job, while the probability for an Indian is 80 percent. On the other hand, the probabilities of obtaining science, professional, and other skilled jobs for someone with a professional degree are much higher for Middle Easterners. However, French-speaking North African immigrants underperform compared to other MENA countries with the exception of Yemen.

Emigration Policies of Home Countries

Like the host countries, the home countries in MENA followed policies that at least did not prohibit migration. Otherwise, we would not have

TABLE 8.20

Probability of Obtaining Skilled Jobs: Different Cohorts and Education Levels for Selected Countries, 1970–1990

(percent)

Country	Cohort educational level			1980s Bachelor	1970s Bachelor
	1990s Professional	1990s Masters	1990s Bachelor		
Algeria	66.00	49.00	31.00	10.00	78.00
Egypt, Arab Rep. of	80.00	49.00	31.00	36.00	49.00
Iran, Islamic Rep. of	81.00	55.00	39.00	39.00	37.00
Iraq	83.00	47.00	31.00	32.00	44.00
Jordan	55.00	38.00	24.00	26.00	28.00
Kuwait	89.00	51.00	39.00	18.00	0.00
Lebanon	85.00	58.00	44.00	36.00	35.00
Morocco	35.00	48.00	30.00	31.00	40.00
Saudi Arabia	79.00	51.00	38.00	58.00	0.00
Syrian Arab Rep.	74.00	30.00	20.00	31.00	43.00
Yemen	26.00	39.00	24.00	0.00	42.00
MENA Mean	68.50	46.80	31.90	28.80	36.00
Other countries					
China					
India	77.00	68.00	55.00	42.00	38.00
Nigeria	87.00	80.00	69.00	40.00	45.00

Source: Mattoo, Neagu, and Özden (2005).

seen this large outflow of emigrants from the region. Yet home countries have not pursued active policies for overseas employment in the Gulf, other Arab countries, or elsewhere. On the contrary, they have sometimes adopted policies, such as overvalued exchange-rate regimes, that made migration less attractive for individuals. Nor have they pushed hard enough for regional labor-mobility agreements, notwithstanding the large benefits to their national economies. The focus, as noted already, has been on free-trade agreements.

Contrast the above with the successful experience of the Philippines. In this case, the Filipino government has played a supportive and regulatory role in promoting temporary migration. The process began with making temporary labor migration a foreign-policy priority in both bilateral and regional trade negotiations. This objective was pursued through a strategy that combines both the private and public sectors. On the private side, licenses were issued to Philippines-based agencies to recruit labor for employers in Saudi Arabia, Kuwait, and other destinations. On the public side, the government established an agency that would later become the Philippines Overseas Employment Administration (POEA) to provide contract labor directly to foreign employers and governments. Whether recruited privately or by the government

agency, workers and recruiters enter into a contract that is enforceable under Philippine law and that provides protection to the workers. In addition, the Filipino government encouraged official migration by providing migrants with a number of subsidized benefits: premigration training on social and work conditions abroad, life insurance and pension plans; medical insurance and tuition assistance for the migrant's family; and eligibility for predeparture and emergency loans. Registration for these benefits is compulsory and costs less than \$200 per year. This is paid by the recruitment agency, presumably out of the worker's wages, or directly by the migrant. In addition, the government encouraged migrants to send money home. For example, the migrant was issued an identification card that is also used as a Visa card linked to dollar- or peso-denominated savings accounts in a consortium of banks. The card can be used to send remittances home at \$3 or less per transaction (O'Neil 2004).

None of the labor-exporting MENA countries has followed a strategy similar to that of the Philippines to facilitate the flow of human capital abroad. A new migration policy along the above lines could encourage more migration and achieve greater returns to education. Whether through government agencies or regulated private sector actors, the new policy should aim at reducing the burden of the initial cost of migration, provide reliable information about job prospects, protect the workers against abuse or discrimination, and make the transfer of remittances back home an attractive and low-cost option. In parallel, MENA labor-exporting countries could attempt to extend existing (or new) free-trade agreements to include temporary labor mobility. Besides offering the benefits of migration to the home country, these agreements could well be to the advantage of the host countries as well, as they assure these countries of the temporary nature of the migration and reduce illegal migration.

Summing Up

The key point made in this chapter is that labor mobility in the MENA region has served both the hosting and exporting countries reasonably well in the past. Without labor mobility, unemployment in the region would have been higher and the returns to education would have been lower than those observed. Yet this positive outcome was possible despite an array of migration policies and practices that do not encourage migration. The hiring policies in the Gulf States and strict migration policies in the EU and North America have led to a suboptimal level of migration and a high level of illegal migration. The lack of explicit pro-migration policies in the exporting MENA countries left some mi-

grants with no efficient mechanism for seeking a job abroad or assurances of agreeable working conditions in the host country. For both reasons, migration in MENA has not been as much of a win-win game for all as might have been. Supporting this view are the high unemployment rates in labor-abundant countries and the persistent human capital gaps in capital-rich countries.

Addressing these problems requires new migration policies in both the hosting as well as the home countries, separately or collectively. Cross-border labor markets fail because of severe problems of information asymmetry, weak intermediation, and poor contract enforcement, all of which are exacerbated by concern for national sovereignty, high transportation and transaction costs, and other social factors. These problems cannot be resolved by market forces alone, nor can they be fully addressed by the private sector without a regulatory framework to protect workers and employers.

To maximize the returns on their investment in education, labor-sending countries need to rethink their emigration policies. They could adopt transparent and predictable systems for licensing and supervising private recruitment agencies to combat recruitment malpractices. They could impose sanctions on fraud and safeguard against excessive placement fees. In addition, they could facilitate access to information about job opportunities and the rights and duties of migrants by establishing “one-stop” contract registration/processing centers. All of these actions may require the creation of a migration agency in charge of all migration issues: managing, coordinating, and supporting migrants.

As for labor-hosting countries, clearly, temporary migration is important to their ability to use their capital fully and efficiently. To ensure that they are getting the most qualified workers at the lowest price, they need to revise some aspects of their migration policies. In the GCC, these include the *kafeel* system, the legal treatment of foreigners, and the way recruiting agencies function. In Europe and North America, temporary migration could be a solution to the problems of illegal migration, the aging of the population, and the scarcity of certain skills. Thus, it may be worth revisiting restrictive migration policies, which do not seem to have worked in the past.

Collectively, both hosting and home countries could benefit from concluding bilateral or multilateral agreements on an orderly migration and return migration of workers. They could further coordinate their education systems to ensure that the graduates of the exporting countries have the skills most in demand in the host-country markets. Such agreements would by no means be easy, but they have the potential of being beneficial to both parties.

Endnotes

1. Members of the GCC are: Saudi Arabia, Kuwait, Bahrain, Qatar, United Arab Emirates, and Oman.
2. As pointed out, for example, by Rodrik (2002).
3. In these two instances, the figures by origin, which would enable one to distinguish between the educational distribution of Arab and Asian workers, are not available.
4. Europe here is defined as the EU-25; Iceland, Liechtenstein, and Norway (European Economic Area) and Switzerland; see Holzmann and Münz (2004).
5. Population Statistics 2004.
6. ILO, Global Employment Trends 2005.
7. Saudi Arabia is the largest source of remittances on a per capita basis (*Global Development Finance* 2003).
8. This is based on the new database on immigrants and expatriates in OECD countries, the first internationally comparable data set with detailed information on the foreign-born population for almost all member countries of the OECD. The figures refer to emigration rates to OECD countries by country of origin of population aged 15 and over.
9. Europol estimates the annual inflow of undocumented workers to the European Union at around half a million. It is also estimated that the number of undocumented migrants crossing the Gibraltar Strait to Spain is around 14,000 to 21,000 persons yearly. In the late 1990s, the authorities in Spain caught about 7,000 emigrants yearly (the Arab League 2004).

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The Road Ahead

It is time to discuss the title of this report: “The Road Not Traveled.” This is obviously a provocative description that may elicit some protest. Is it meant to assert that little educational development has occurred in the region? That the region has not done any education reform? That graduates have not been put to productive uses to any degree? Or that the expansion of education has not had any social impact? These would be inaccurate statements. The report demonstrates that tremendous gains in education have been realized: most children benefit from compulsory schooling; quite a few have opportunities to continue their formal education; and learning outcomes are relatively adequate. The report also documents numerous past and ongoing education reform attempts, from pedagogical reform to decentralization and community participation. Furthermore, the report points out that accumulated human capital has served economic development to some extent: the region experienced periods of rapid economic growth and improved Total Factor Productivity (TFP), and was able, through migration, to generate substantial benefits from investment in education to the individuals and countries involved. Finally, fertility rates and a host of other social indicators have improved as education expanded, especially among women.

In short, past achievements are impressive, particularly if one considers the starting point of most mass national education systems in the region during the 1950s and 1960s. However, the report has also established that:

- An important gap exists between what education systems currently produce and what the region needs to achieve its development objectives. The region has produced fewer educational outcomes than many competitors, as measured by years of educational attainment in the adult population. The educational achievements to date are in part compromised by high dropout rates, and relatively low scores on international tests. Literacy rates are still low and the education systems produce more graduates in humanities than in science.

- Past and ongoing education reforms tend to focus too much on engineering education and too little on motivating the actors involved and enhancing public accountability. This deficiency threatens the future competitiveness of the region, which requires a different and continuously changing set of educational outcomes for a wider group of individuals.
- Finally, part of the human capital accumulated in the region is either wasted, in the form of high unemployment among graduates, or underutilized, mostly in government jobs. The region can no longer afford such a disconnect between education outcomes and labor-market demands.

Thus, the road not traveled in this report refers to the rest of the journey the region needs to make. This journey is a continuation in part of past reform efforts, but it is also in part a significant departure from past practices. It has two features: one is a new approach to education reform, and the other emphasizes closing the gap between the supply of educated individuals and labor demand.

The proposed approach to education reform has three components: (i) *engineering*, which ensures that the right technical inputs are in place and are used efficiently; (ii) *incentives* to promote better performance and responsiveness from those providing educational services; and (iii) *public accountability* to make certain that education, as a public good, serves the interests of the widest range of citizens. These three components, if well formulated and implemented, could take on the roughest terrain and permit the education systems in the region to meet the *new challenges and diverse demands* that they face. This approach is supported by the findings of chapter 6, which suggests that the countries within the MENA region that have made the most progress on all three components of the approach are also the countries that have been able to achieve better education outcomes.

Historically, most MENA countries, as explained in chapter 5, have placed greater emphasis on *engineering*, which served them well during earlier periods of educational development. Furthermore, the configuration of *incentives* and *public accountability* measures were specifically geared to the task of creating and maintaining a national mass education system. Most MENA countries adopted a command-and-control education management structure to establish, expand, and maintain schools, training centers, and universities. Such structures rarely established results-based incentives to service providers or created links of accountability to beneficiaries. As time went by, some countries realized the limits of this approach and began experimenting with new pedagogical innovations, private provision of education, decentralization, etc. How-

ever, the bulk of reform measures in the region have continued to be focused on engineering education, with little real change in the incentive structures or public accountability.

Today, these education systems must adjust from an environment where they can select their clientele to one where the clientele selects them—and this clientele has grown in size and diversity, has continually changing educational needs, and has become increasingly discerning. Moreover, the region faces a new set of challenges, as detailed in chapter 3. Knowledge is becoming the key to competitiveness, and the region has a “youth bulge” of a magnitude never seen before. Both factors are likely to place pressure on government resources to provide quality education to a large number of youth at the post-compulsory level of education. Meeting these new demands and successfully addressing these challenges require a new configuration of education engineering, performance-based incentive schemes, and avenues for public accountability that the region does not currently possess.

Fixing the education system is not enough, however, if investment in education is to contribute significantly to economic growth, better income distribution, and poverty reduction. This is why the second pillar is important. As explained in chapters 7 and 8, this pillar has two complementary components: (i) *domestic labor markets*, where most educational rewards are determined, and (ii) *external labor markets*, which can balance excess supply of human capital in labor-abundant countries with excess demand in labor-scarce countries. The outcomes in both markets ultimately depend on the overall economic and policy environment in which the economic actors operate.

Historically, the region relied on public sector employment as a way of absorbing the increasing level of educated citizens. Public sector employment was seen in some countries as a way of equalizing income, and in others as a mechanism for redistributing natural wealth. Meanwhile, the state played a significant role in the productive sector, leaving the private sector with very limited opportunities to innovate and flourish. Cumbersome and costly regulations were put in place, and most MENA economies were insulated from international competition. As a result, the region did not generate sufficient growth to create enough productive jobs for its growing and increasingly educated population. We argue that reforms in these areas are critical if MENA countries are to reap the full benefits of investing in education.

A similar observation holds with respect to external labor markets. Although the size of migration in the region has been relatively high, accounting for 6 percent of migration worldwide, this level of migration occurred despite significant market imperfections. Leaving political factors aside, migration has been hindered by widespread market failures

(e.g., information asymmetry, poor intermediation mechanisms, and imperfect contract enforcement) and national migration policies at both ends of the exchange. We argue that the governments of the region can play an important role in resolving these problems, with potentially large benefits to the collaborating parties.

In sum, although the MENA region has made impressive progress in the past few decades, the world has changed, and so have our expectations from the education systems. Today, it is no longer sufficient to simply enroll eligible children in schools; issues of quality and efficiency constitute pressing challenges for the education systems, including those in MENA. To meet these challenges, a new road must be traveled.

From Engineering Inputs to Engineering for Results

Engineering in earlier phases of reform was a relatively straightforward activity. Establishing equitable access required an accurate mapping of educational demand and the installation of buildings, teachers, and pedagogical materials. Demand was simple, predictable, and stable. Education systems were geared to ensure that everyone received the same educational service, and thus education management was essentially an exercise in ensuring that all component inputs remained in place and met uniform standards. Now education is supposed to meet the challenges of producing appropriate skills for global competition and a growing demand for post-compulsory education, which requires a shift from “command and control” to “coordinate and evaluate” management style. This in turn leads education authorities to develop new functions to manage and regulate partnerships, to diversify resources, and to ensure quality control of service providers (both public and nonpublic).

From Monopoly to Partnership

If educational authorities are not the only providers of educational services, then the management of education services becomes, in part, one of managing relationships with partners. This may constitute one of the most difficult considerations for educational authorities, who are used to having control over all inputs of education development. Whether it is through contracting with other parties (e.g., using private publishers to print and distribute textbooks) or through complementary provision of inputs (e.g., communities building schools and educational authorities providing personnel), education authorities must learn to *negotiate* the terms of partnership rather than *impose* them. This requires a different set of planning and implementation tools. Planning must be done in a

flexible manner that takes into consideration the priorities of potential partners. Partners can come in three forms: potential contractors, alternative providers, and complementary sponsors of educational activities.

Educational authorities in MENA are adopting new partnership strategies in a wide array of domains, but with a relatively limited scope. Contracting to other parties has been the most developed in the areas of textbook publishing and distribution and the provision of nonformal education. However, even in these areas, there are possibilities for considerably more experimentation. Furthermore, although private education has begun to develop throughout the region, the authorities responsible for accreditation and promotion do not always play the role of promoters and effective regulators. Many countries have been experimenting with the use of NGOs in the education sector, but, again, on a relatively experimental basis.

Diversifying the Revenue Base of Public Education

One of the more delicate aspects of mature education systems is that traditional sources of funding become insufficient. All education systems must eventually consider new ways of diversifying their revenue base. Fees for specific services (e.g., in-service training), co-financing arrangements (local government), and tuition may become necessary evils. If and when governments do decide to go that route, it is important that they have a clear strategy for dealing with equity concerns. It is also important to develop a different strategy for involving the private sector at each level of education.

Some MENA countries have allowed private sector provision of education without differentiating between levels of education. Moreover, many of those that introduced school tuition have not devised a system that ensures equitable access for qualified students who cannot afford private schools. On both counts, while resource diversification is important, it is equally important that these concerns be addressed.

In contrast to the private-tuition option, co-financing arrangements are relatively rare. For example, few countries mobilize resources from private sector actors, philanthropists, or local governments, although all could be convinced that their contribution would serve a variety of interests. There is room also for cost savings, for example, by competitively contracting certain activities, including the publication of textbooks and school maintenance, to the private sector.

Overall, the region faces a trade-off. To meet the expansion in demand for higher education and maintain quality, the easy way out for policy makers would be to continue to make no change in the current funding strategy of reliance on government. However, this option would

impose a burden on public finance and might be a detriment to the quality of education and its contribution to economic development. Alternatively, meeting the increase in demand, especially at the tertiary level, could be accomplished by mobilizing private funding while ensuring that those who are qualified but cannot afford tertiary education have access to government funding. Such a strategy would be consistent with international trends.

From Service Provision to Quality Control

Moving to incentive-based management of the education system, as will be discussed below, does not mean that the central educational authorities no longer have jobs. In fact, they would have the very complex task of ensuring that contracts are honored, results are attained, and quality is ensured. This requires establishing monitoring systems, evaluation capacity, and licensing and regulatory authorities.

With respect to *quality assurance*, many MENA countries have recently put in place mechanisms for universities, both public and private. This is a very promising development, as it provides the quality control framework necessary for countries to allow public and private universities to broaden the types of training and academic fields they can provide. Most countries are in the process of establishing this capacity, and thus it would be overly optimistic to indicate that such monitoring and accreditation capacity is truly in place.

As mentioned above, quality assurance of primary and secondary schools has essentially been provided through inspectorates. However, inspectorates were initially established to ensure that standards were met rather than to ascertain that outcomes were achieved. If performance-based grants, flexible teacher support services, and school accreditation are to become the additional responsibilities of existing monitoring services, inspectorates (or like organizations) will need to undergo a fundamental change in capacity, expertise, tools, and institutional culture.

From Hierarchical Control to Incentive-Compatible Contracts

In the face of the challenges of globalization, the increasing emphasis on the knowledge economy, and a significant increase in demand for post-compulsory education, education systems worldwide have depended more and more on *incentives* to educators, educational institutions, and other education-related service providers to improve the flexibility and performance of the services rendered. This evolution reflects the con-

clusion of the principal-agent literature, which suggests that managing results is usually more effective than managing inputs, and that this can best be achieved by aligning the interest of the agent with that of the principal. It also reflects the observation that the quality of instruction and the pertinence of what is taught depend more on the behavior and management of educators and managers than on any particular mix of inputs. In a world where the kind of knowledge and skills desired by citizens (and needed by the economy) is constantly changing, and where students come to school with an increasingly varied array of initial abilities and expectations, managing inputs to produce results increasingly becomes a logistical challenge.

Using *incentives* to change the behavior of educators, schools, or providers of other education services is not new in the region. The principal instruments used in most MENA countries to hold educational institutions responsible for results have been the inspectorate and hierarchical control. Also, many countries have put in place special incentives to attract and deploy qualified teachers to schools, particularly in geographic areas that are hard to service. Although these mechanisms continue to be important, they have also reached their limits. To promote the flexibility and performance of education actors, we argue that there are three areas where MENA countries can further improve incentive structures: (i) additional promotion of nonpublic provision of instruction and education-related services; (ii) greater autonomy and accountability of public education institutions; and (iii) the professionalization of teachers.

Promoting More and “Smarter” Nonpublic Provision of Education in the MENA Region

The principal criticism of any suggestion to promote nonpublic provision of education services is that it will be inequitable: only the rich will be able to afford good education and the rest will be deprived of a basic human right. But private education has one clear advantage: private schools can be more easily held accountable for results because the “client” (student, parent, education authority) usually has a choice. As long as the “client” has some way of measuring the relative worth of the education service (a big “if” in many education circles), then providers will be motivated to respond. Thus, private provision of education has its merits and demerits. Policy makers need to weigh the relative cost of making private schooling available to those who can’t afford it and the benefits that competition may provide, in terms of the quality, diversity, and responsiveness of instruction. Below, we discuss the potential for private providers in the MENA to improve educational outcomes.

Private schools. Private schooling in the MENA region is undergoing a clear boom. Until recently, MENA had some of the lowest rates of private schooling in the world. Except for some outliers (Lebanon, Jordan, and Kuwait), few countries had a large private formal schooling sector across all levels of instruction.

This is quickly changing. Throughout the region, private universities, professional schools, and specialized post-compulsory schools and training centers (e.g., language instruction, computers and information sciences, business, and accounting) are opening in virtually all MENA countries at a quickening pace. Also, many countries have passed new laws to make it relatively easier to open and operate private schools. The problem is that the expansion of education in the MENA region seems to be across all levels of education in the countries that opted for that strategy. This trend stands in contrast to the experience of East Asia, where governments committed themselves to basic education and encouraged private sector provision in tertiary education.

Also, in some countries in the MENA region, suspicion concerning private institutions of instruction, particularly those with international links, remains. This reluctance to allow these schools to flourish comes with a clear cost, particularly with regard to the development of post-compulsory levels of instruction where competition and accountability are easier to establish (through, for example, employment rates of graduates, earning capacity of graduates, acquisition of specific skills, etc.).¹

Furthermore, these institutions are often more flexible than publicly run schools, as they are able to change structures, programs, staffing, and pedagogical approaches more easily as demand evolves. This is particularly important for post-compulsory levels of instruction, which are required to adapt quickly to labor-market signals.

Other nonpublic providers of education services. MENA has had considerable experience with nonpublic providers of educational services aside from private formal schools: textbook production by private publishers; nonformal education provided through NGOs and associations; and nonpublic providers of both pre-service and in-service vocational training.² It has long been recognized throughout the region that these types of providers are more nimble, particularly as the beneficiaries are often more difficult to reach or mobilize, or the product (such as schoolbooks) needs to be quickly modified and distributed. Our survey of programs to reach out-of-school youth, for example, has indicated that nonpublic providers are more effective at reaching this population.

One area where the promotion of nonpublic provision has particular promise, and where many MENA countries have still done little, is vocational education and training. Currently, pre-service VET has a relatively negative reputation in the region, because vocational schools tend

to receive lower-performing students and rarely do much to increase employability. However, VET has a very important place within a lifelong learning framework, particularly when the objective is to further integrate into the global knowledge economy. In many countries worldwide, VET status, attraction, and impact have improved when there has been a clear demarcation of responsibilities, with training provision essentially the domain of the private sector. This is a model that more MENA countries should consider as they address the changing demands for human capital in their labor force.

As demand for services becomes more diverse and dynamic, the comparative advantage of nonpublic providers can be expected to increase. Providing instruction to out-of-school youth, unemployed graduates, adult workers requiring new skills and competencies, and specific populations that, for whatever reason, have had little opportunity to pursue formal compulsory schooling constitutes a massive clientele with a daunting array of needs. It would be useful for MENA education authorities to look first to the nonpublic sector to address these various needs.

BOX 9.1

Learning from Successful Private Schools: The Case of Fe y Alegria in Venezuela

This example highlights the effectiveness of private provision of education through school decentralization, school autonomy, and flexibility of teacher contracts. It also suggests that school climate is important for achieving good results.

Originally started as a Christian educational institution to reach out to disadvantaged youth, Fe y Alegria has grown rapidly and now covers 1.2 million students in 15 Latin American countries. While this private school does not have higher per-pupil spending than public schools in Venezuela, students in Fe y Alegria perform significantly better than students in other schools. Students at Fe y Alegria score higher on both math and verbal exams in the Prueba de Aptitud Académica (PAA), the secondary education exit exam, which is essentially the same as the SAT in the United States.

Research attributes this success to: (1) the school management structure (characterized by decentralized fund management and higher autonomy practiced at schools); (2) labor contract flexibility in teacher employment; and (3) a positive school climate described as “family feeling,” a strong sense of belonging, which was reported by students, teachers, and administrative personnel (Allcott and Ortega 2007). Although wages are relatively low in Fe y Alegria schools, teachers seem to have higher incentives and a commitment to teaching.

Source: Allcott, H., and Ortega, D. 2007. “The Performance of Decentralized School Systems: Evidence from Fe y Alegria in Venezuela.” Washington, D.C.: World Bank.

Incentives to Improve the Performance of Public Education Institutions in MENA: Greater School Autonomy and Accountability Are the Answer

Throughout the world, education authorities are increasingly delegating more responsibilities to schools, universities, and training centers to mobilize and manage the inputs necessary to address local circumstances and changing demand for education services. There is obviously a wide range of experiences and configurations in this regard. However, the consensus is clear: the best place to decide how to meet the needs of students is within the school itself. This is increasingly the case when it comes to complex demand. More autonomous public schools have three features of note: (i) greater use of performance-based agreements tied to resource allocations; (ii) the possibility of diversifying sources of revenue; and (iii) the margin of freedom of schools to acquire and manage resources as they see fit to meet expected results.

Some MENA countries have begun experimenting with public school autonomy through performance-based grants and providing school directors more decision-making power in the areas of pedagogy, student promotion, and school finance. However, most initiatives are quite recent and timid, with few schools yet given much real freedom of action. Often, these programs only concern a relatively circumscribed number of schools. Egypt, for example, is often praised because of its community school experiment; however, only a small number of Egyptian schools have participated as of today. The area where schools and school directors continue to have the least prerogative is teacher management. Teacher careers continue to be determined for the most part through standard civil servant regulations, with little regard to actual classroom performance. This often undermines the management authority of school directors and even district or regional authorities. It also limits the potential autonomy provided in other domains, as teachers may not be required to follow school directors' initiatives to change pedagogical approaches, implement new programs, or react to indications that performance is weak in specific areas.

The reluctance to establish fees for public basic education is a common and understandable position held by most MENA countries. However, there are other ways to diversify revenues for primary and secondary schools: partnerships with the private sector, local associations, and local interests (including local government, chambers of commerce, etc.) are increasingly common ways of providing schools with a greater margin of maneuver. As discussed in previous sections, local partnerships have contributed greatly to increasing enrollment in rural areas and reducing the gender gap. However, here too, MENA education authorities

have been quite tentative, with partnership experiences usually limited to school construction in rural areas or pilot projects.

University autonomy is on everyone's agenda in MENA. However, few MENA countries have in fact gone far in turning public universities into more autonomous institutions. The examples of Morocco and Tunisia are telling: the new laws give a wide range of responsibilities to universities to charge fees, sell services, organize new fields of study, and manage resources autonomously. There has yet to be much movement in operationalizing these new opportunities for autonomy, however.

Some countries are starting to establish grant mechanisms to support efforts of universities to improve the relevance and quality of instruction. These grants pay for the establishment of new programs, staff upgrading, new equipment, etc. However, these initiatives have also just started to be implemented.

At this level of instruction, several MENA countries have introduced fees and tuition, thus broadening the revenue base of their universities. In these cases, the universities have had more opportunities to develop new programs and reinforce the quality of existing ones. However, other forms of resource diversification, such as partnerships with industry, local government, and contribution of philanthropists, are relatively rare in the MENA region.

Incentives to Improve the Performance of MENA Teachers: Turning Civil Servants into Professionals

Teachers are at the center of education systems. Rather than simply present a standard set of materials to a group of students, teachers are now expected to continuously evaluate the learning needs of all their students and adapt appropriate methods accordingly. To meet demand in the past, they functioned much like factory workers along a production chain, delivering a range of skills and knowledge to a homogeneous group of students. To meet the new demands on education, teachers are now expected to function more like physicians or lawyers, applying diagnostics and crafting responses according to the specific needs of the students and the environment.

If the onus of responsibility now lies with the teacher, how can we ensure that teachers have the right tools and incentives to produce the best outcomes? The use of incentives for individual teachers based on student outcomes is controversial worldwide. The difficulties of linking the average performance of students within a classroom to a particular teacher are legendary. However, many countries throughout the world are experimenting with incentives to teachers to work more effectively as professionals in two ways, both of which could be of interest to MENA authorities.

First, incentives have been given for teaching teams (sometimes school-wide, sometimes to a specific department) to work together to improve quality outcomes in their schools. Usually via school-based grants, the teams are expected to work together to meet certain agreed-to objectives. Second, incentives have been provided for teachers to continuously upgrade their skills and competencies, as part of requirements for continued accreditation and promotion. Rather than depend on seniority alone to determine promotion, teachers are expected to participate in programs that address skill needs identified on an individual basis.

Neither approach is applied in the MENA region, except through individual pilot experiments found in some countries. This is perhaps the one area where there is the greatest potential for growth and change. Turning teachers into professionals, rather than workers, will be the biggest challenge facing MENA countries as they attempt to meet more complex demands for education.

Accountability to the State versus Accountability to the Public: Education Has a New Boss

As argued in chapters 4 and 6, the potential for *public accountability* in the education sector is determined to a great extent by the overall governance environment within a country. If there is a general culture of and mechanisms for accountability of public officials and public services, these are often adapted to the education context. For example, overall opportunities for public debate will allow reform advocates to place education reform on the public agenda; and more judicial oversight will provide avenues for individuals and communities to obtain their deserved educational opportunities. Also, with a more general environment of public accountability, it will be less likely that disagreements over education policy or the functioning of education systems will need to be addressed through extra-institutional means (such as favoritism, student and teacher strikes, or avoidance of public schools by certain populations).

More specific to the education sector, *public accountability* can be approached along three dimensions. First, institutional mechanisms can be put in place to ensure a more “level playing field” for stakeholders to influence educational policy, resource allocation, and service delivery. These mechanisms can be developed by government or by civil society. Second, public accountability mechanisms can be developed at either national levels or at points of service delivery (schools and universities). A third and critical element is information, without which public accountability cannot effectively be practiced.

Institutionalizing “Voice” in the Education Sector: From the Government’s Perspective

Vehicles of public accountability put in place by government are usually of three types. First, agencies or fora can be created by government to debate and monitor education policies and priorities (these usually have a wide participation of civil society, government, and sector representatives). As discussed in chapter 6, these can take different forms, such as consultative events, parliamentary oversight committees, advisory committees, etc. These fora may have the mandate to elaborate, propose, and/or endorse policy options. Second, there are agencies or organizations whose job is to ensure quality control, through the setting of standards, monitoring, evaluation, and/or the treatment of grievances, which also include the participation of non-governmental stakeholders. Finally, there are public affairs offices of education ministries that disseminate information to the public or respond to public requests. These vehicles can exist at national levels (national advisory boards) or the level of the establishment (university councils, parents’ associations).

MENA has had considerable experience with these types of institutions, which have tended to include wider stakeholder representation over time. Also, many MENA governments have become increasingly sensitive to the need to communicate with education stakeholders (teachers, students, parents, employers) to explain reform efforts and collect feedback, thus creating public affairs bureaus and investing in public information campaigns.

However, one of the main shortcomings of these types of institutions is that they are essentially *government*-sponsored spaces for the public to contribute to the education reform process. Parents’ associations are regulated by the ministry of education; conventions are attended by invitees of the minister; public affairs offices are housed in government offices. This does not mean that they are necessarily unrepresentative or unable to confront education authorities or service providers; however, it does indicate one of the potential weaknesses of this type of approach.

Institutionalizing “Voice” in the Education Sector: From Civil Society’s Perspective

Independent from government sponsorship or support, civil society can also put in place vehicles of public accountability. These usually serve the functions of advocate of certain education policies or priorities and/or “watchdogs” over implementation and compliance. In both cases, they are usually fiercely independent from government and some of their legitimacy can in fact stem from this status. As discussed above, recent re-

form efforts in many countries outside the MENA region have been spearheaded by civil society organizations, networks, and “champions.” At national levels, they can take the form of professional associations (of educators, for instances), nongovernment research institutes, and organizations spearheading the interests of certain stakeholders who have a common education interest or agenda (a particular minority group, business interests, “concerned citizens,” etc.).

MENA does not have a strong tradition of this type of public accountability in the education sector. Independent education-research institutions, stakeholder associations (e.g., professional educators, parents, employers, etc.), and networks promoting certain educational agendas (e.g., lifelong learning, opportunities for dropouts, changes in curricula) are quite rare in the region. Such entities have proven essential for the success of educational reforms in many other developing and developed countries, particularly as they address complex demands for education.

Information, Information, Information

An accurate, credible, regularly updated, and detailed information system is required to effectively use incentives to improve educational outcomes, as well as to ensure that all vehicles of public accountability function on the basis of a firm foundation. Equally important is the capacity to transform, analyze, disseminate, and use education information effectively.

Education information systems tend to be weak in the MENA region, as demonstrated by the many gaps in basic educational data available to the public. Even simple information on student outcomes, attendance, dropout rates, teacher absenteeism, teacher training, and qualification needs is not readily available to school, district, and national education managers on a timely basis. Also, even when available, the information is not always used to correct the distribution of inputs or to change the content of programs.

In addition to more standard information on education inputs, information on educational outcomes is particularly absent. Counting students is not the same thing as assessing results, both within schools and after graduation. In the education sector worldwide, impact evaluation generally remains an infant industry and this is no exception in MENA. We note one area where there is important progress in this regard: MENA country participation in TIMSS and PIRLS. Greater use of the information generated by these exercises by planners and managers in the sector would be a natural next step for those countries that have been involved in these endeavors.

However, even the best information is useless if it is not made available. First, availability creates avenues of verification and correction.

Second, it is the basis of public accountability. When the public is not informed of educational outcomes, they do not have the basis for judging the effect of reforms or the performance of their schools. Not only does this curb the effectiveness of vehicles of public accountability, it also undermines a government's own credibility with regard to its education agenda. Information is the fuel of all education systems; improving its accuracy and availability will make for a sector that performs much better.

BOX 9.2

Information is a Key to Promoting Accountability in Education: The Case of Uganda

As part of Uganda's Public Expenditure Tracking Survey (PETS), the media played a critical role in raising public awareness about accountability in education. In the mid-1990s, PETS data proved that only 20 percent of central government spending actually reached the schools. It also revealed that local government officials and some politicians in charge of disbursing school grants captured a large amount of these grants.

To combat this resource leakage and corruption at the local level, the central government launched an information campaign using newspapers. Information on school grants (details of the grant program, the timing and the amount of monthly transfers to local governments, etc.) were published and became widely available to teachers, parents, and community members. As a consequence, the public became highly aware of local government activities and more involved in monitoring education resource distribution (Reinikka and Svensson 2004a).

After the initial PETS, the Ministry of Education expanded the information campaign to promote accountability in public fund management. Through this movement, accurate and detailed information became available to the public, both at the local and school levels. This resulted in a significant reduction of corruption as shown in data from a successive PETS conducted in 2002, which revealed that schools received an average of 80 percent of their annual entitlements (Reinikka and Svensson 2004b).

This case from Uganda is a good example of how improved access to information plays a key role in improving transparency and accountability in education. Providing information to teachers, parents, and community members strengthened their voice and involvement in monitoring public expenditures. A follow-up study found a strong correlation between proximity to a newspaper outlet and a reduction in the diversion of school funds (Reinikka and Svensson 2004b). It provides firm evidence that improved access to information significantly reduces local capture.

Source: Reinikka and Svensson (2006a, b).

Synchronizing Human Capital Accumulation with Labor Demand

The accumulation of human capital is expected to contribute to faster economic growth and, under certain conditions, to better income distribution and lower poverty. A positive relationship between these variables is not assured, however. The breakdown occurs when labor market outcomes are characterized by high unemployment and/or under employment, leading to low productivity and low rates of return to education.

The analysis of chapter 2 shows that the MENA region has not been able to fully capitalize on the progress made in increasing the level of human capital in the labor force over time. Acquiring more education has not always been translated into higher standards of living for the individuals who invested in education, nor to the economy at large. Indeed, the region is characterized by two separate but mutually reinforcing labor-market features that have lowered the economic returns to investment in education: rising unemployment has meant that fewer (than potentially employable) workers are contributing to productive activities, and the lower (than average) productivity of those employed has meant further reduction in the productive capacity of the labor force. We argue that domestic labor markets and migration policies are responsible for this outcome. A policy shift on both fronts is therefore necessary.³

From Government Employment to Employment in Dynamic Private Sector Led Activities

Several policies have contributed to poor labor-market outcomes and low returns to investment in education. Employment policy in government is one, which has led to a suboptimal use of labor and created expectations that could not be fulfilled. This policy was coupled with relatively low levels of job creation by the private sector in new and dynamic activities. In turn, limited private sector activities were essentially the product of excessive and costly regulations, limited openness, and low confidence in macroeconomic policies. These policies collectively meant that those who could not afford to be unemployed or to wait for a government job, even if well-educated, had to seek jobs in the informal sector. These jobs tend to be low productivity–low income jobs.

Recognizing the above constraints, many countries in the MENA region have abolished the policy of job guarantees in government. They have initiated far-reaching economic reforms to improve the investment climate for the private sector. They have made significant progress on opening up their economies. And they have embarked on reforms to make the labor market more flexible. Nevertheless, the reform agenda is

far from completed, especially in comparison with the dynamic economies of East Asia and Latin America (see for example the *Doing Business* report 2006). One important implication of all of this for the education sector is that, until sufficient progress is made to create productive jobs in the dynamic sectors of the economy, further expanding the education systems in the region may be counterproductive.

From Migration by Default to Coordinated Migration

Labor mobility in the MENA region has served both the hosting and exporting countries reasonably well in the past. Without labor mobility, unemployment in the region would have been higher and the returns to education would have been lower than observed. Yet, this positive outcome was possible despite an array of migration policies and practices that do not encourage migration. Beyond restrictive migration policies in both the hosting and sending countries, cross-border labor markets fail because of severe problems with information asymmetry, weak intermediation, and poor contract enforcement, all of which are exacerbated by concern for national sovereignty and high transportation and transaction costs.

The above problems cannot be resolved by market forces alone, nor can they be addressed fully by the private sector. Collectively, governments of both the hosting and home countries could benefit from concluding bilateral or multilateral agreements on an orderly migration and return migration of workers. They could further coordinate their education systems in such a way as to ensure that the graduates of the exporting countries have the skills most in demand in the host country markets. Third, they could reform their migration policies internally, to make it easier, less costly, and safer to migrate.

Getting Started Down the Road of Reform

The modern history of education reform in MENA is a tale of brazen ambition, struggle against internal and external odds, unintended consequence, tactical error and success, accomplishment, and unfinished business. It is also the story of the interaction of competing visions of the purpose and ends of education, pitching global trends in education strategy and content against age-old education traditions. Along this tumultuous path, the region should indeed be proud of its accomplishments.

However, all over the world, the organization of education systems is changing on pedagogical (student-centered and competency-based learning), structural (lifelong learning), financing (diversification of funding), and managerial (decentralization and coordination) fronts to

keep pace with the changing place of human capital in the development equation. Hence, the success of future education reform programs will require a change in tack. It will require a sharing of responsibility among sector authorities, potential service providers, and civil society. In other terms, it will require a new balance of *engineering*, *incentives*, and *public accountability*.

Experience also shows that the returns to education can be compromised if the system continues to produce graduates that are not in demand. No matter how qualified these graduates may be, the real returns they make on their investment in education and the contribution they make to the economy depend on the employment opportunities they have, either locally or abroad. In turn, job opportunities are a function of what policy makers do or do not do to promote growth, trade openness, and labor mobility across nations.

On both fronts, education and economic reforms, most MENA countries have initiated significant reforms. However, innovative education reforms remain partial and timid. Compared to other regions in the world, MENA has generally not been as willing to “let go” of education-development strategies based on command and control, which have proven both their worth and their limits. Also in comparison with the same set of countries, economic reforms in MENA continue to lag behind. In a world where what matters is not only what a country does, but also what its competitors do, a more rapid pace of reform is a must.

The above generalizations obviously do not apply equally to all countries in the MENA region. Indeed, the analysis of chapter 6 illustrates that some countries have carried out more education reforms and achieved better results than others. A similar statement can be made about the magnitude and nature of economic reforms. Thus, the reform agenda for each country is likely to differ, depending on these initial conditions. However, the broad point and principal message of this report is that MENA has yet to fully embark on the road of reforming its education systems to satisfy its development needs. It also has yet to catch up with the more dynamic economies of the newly industrialized world. The purpose of this report is to provide input to policy makers to consider in traveling that journey.

Endnotes

1. One of the legendary ironies in many countries of the region (Egypt, Morocco, Tunisia, and Algeria, for example) is that parents are willing to spend generously for private tutoring of their children but not for private post-compulsory education.

2. This does not count private tutoring, which is quite prevalent in the region.

3. Clearly, the focus here is on the factors that most immediately impact the returns to education, namely labor markets. However, the outcomes in the labor markets also depend on the broader policy and institutional environment in which economic agents operate. Thus, macroeconomic policies, industrial policy, and policy stability and credibility are all important determinants of labor-market outcomes.

References

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Reinikka, Ritva, and Jakob Svensson. 2006a. "Fighting Corruption to Improve Schooling: Evidence from a Newspaper Campaign in Uganda." World Bank, Washington, DC.

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Statistical Appendix

The statistical appendix of this report is intended to be as comprehensive a database of education and education-related indicators for the Middle East and North Africa region as possible. It provides time-series data from 1950 to the present for most countries in the region. The data were collected from as many sources as possible, primarily World Bank reports, World Bank staff, World Bank databases, governments, UN-ESCO databases and reports, and other UN organizations. Most of the tables in the text of the report are based on this statistical appendix.

The statistical appendix has two parts. One is at the end of the report and presents the tables of the education indicators used in the report text. The other part is in the attached CD-ROM and is a more comprehensive database.

Definitions of Indicators

Adult literacy rate (percentage of people ages 15 and older) is the percentage of people ages 15 and older who can, with understanding, both read and write a short, simple statement about their everyday life out of the whole population ages 15 and older. The data are based on self-declaration or household declaration as to whether people can read and write in population census, household, and/or labor-force surveys in the international standards. However, some cases are simply based on the length of schooling achieved. Therefore this indicator needs to be used with caution.

Average years of schooling of adults (aged 15 and older) is the years of formal schooling received, on average, by adults over age 15.

Dropout rate is the percentage of a cohort of pupils enrolled in the first grade of primary education who are not expected to reach the last grade

of primary education. It is calculated as 100 percent minus the survival rate to the last grade of primary education.

Gender parity index (GPI) is the ratio of the female-to-male values of the gross enrollment ratio. A GPI of 1 indicates parity between sexes.

Gross enrollment rate is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Primary education provides children with basic reading, writing, and mathematics skills along with an elementary understanding of such subjects as history, geography, natural science, social science, art, and music.

Gross (apparent) intake rate to grade 1 is the number of new entrants in the first grade of primary education, regardless of age, expressed as a percentage of the population of theoretical entrance age to primary education.

Net enrollment rate is the ratio of children of official school age based on the International Standard Classification of Education 1997 who are enrolled in school to the population of the corresponding official school age. For example, net enrollment rate in primary education is the number of pupils in the theoretical age group for primary education enrolled in primary education expressed as a percentage of population in that age group.

Percentage of trained teachers is the number of teachers who have received the minimum organized teacher training (pre-service or in-service) required for teaching at the primary level of education in the given country, expressed as a percentage of the total number of teachers at the primary level of education.

PISA (the Programme for International Student Assessment) is an internationally standardized assessment that was jointly developed by participating countries and administered to 15-year-olds in schools. The survey was implemented in 43 countries in the first assessment in 2000, in 41 countries in the second assessment in 2003, and at least 58 countries will participate in the third assessment in 2006. Tests are typically administered to between 4,500 and 10,000 students in each country.

Primary completion rate is the percentage of students completing the last year of primary school. It is usually calculated by taking the total

number of students regardless of age in the last grade of primary school, minus the number of repeaters in that grade, divided by the total number of children of official graduation age.

Private enrollment share is the number of pupils in primary education enrolled in institutions that are not operated by a public authority but controlled and managed, whether for profit or not, by a private body such as a nongovernmental organization, religious body, special-interest group, or foundation or business enterprise, expressed as a percentage of the total number of pupils enrolled in primary education.

Total public expenditure in education is the current and capital expenditures on education by local, regional, and national governments, including municipalities (household contributions are excluded).

Total public expenditure in education as percentage of GDP (Gross Domestic Product) is the current and capital expenditures on education by local, regional, and national governments, including municipalities (household contributions are excluded), expressed as a percentage of the gross domestic product.

Public expenditure in education as percentage of government spending is the current and capital expenditures on education by local, regional, and national governments, including municipalities (household contributions are excluded), expressed as a percentage of government spending.

Pupil (Student)-teacher ratio is the average number of pupils (students) per teacher at a specific level of education in a given school year. The number is calculated by dividing the total number of pupils enrolled at the specified level of education by the number of teachers at the same level.

Repetition rate is the proportion of pupils enrolled in a given grade in a given school year who study in the same grade in the following school year. This is calculated by dividing the number of repeaters in a given grade in school year $t+1$ by the number of pupils from the same cohort enrolled in the same grade in the previous school year t .

Survival rate to grade 5 (pupils reaching grade 5) is calculated on the basis of the reconstructed cohort method, which uses data on enrollment and repeaters for two consecutive years. It is defined as the percentage of a cohort of pupils enrolled in the first grade of a primary cycle in a given school year who are expected to reach grade 5, regardless of repetition.

TIMSS (Trends in International Mathematics and Science Study) is international mathematics and science assessments by the International Association for the Evaluation of Educational Achievement (IEA) conducted every four years. TIMSS assesses achievement in countries around the world and collects information about the educational contexts for learning mathematics and science. TIMSS was conducted the first time in 1995 and stood for “the Third International Mathematics and Science Study.” The second cycle was conducted in 1999 and named “TIMSS-Repeat,” which stood for “the Third International Mathematics and Science Study-Repeat.” When the third cycle was conducted in 2003, the study was renamed as “the Trends in International Mathematics and Science Study.”

Sources: World Bank EdStats, UNESCO Institute for Statistics (UIS), World Bank Global Development Finance and World Development Indicators Central Database, and TIMSS & Progress in International Reading Literacy Study International Study Center.

Definition of Level of Education

Primary education [ISCED level 1] is normally designed on a unit or project basis to give pupils a sound basic education in reading, writing, and mathematics, and an elementary understanding of subjects such as history, geography, natural sciences, social sciences, art, and music. Religious instruction may also be featured. These subjects serve to develop pupils’ ability to obtain and use information they need about their home, community, or country. Primary education is also known as elementary education.

Secondary education [ISCED levels 2 and 3] means lower and upper secondary education.

Lower secondary education [ISCED 2] is generally designed to continue the basic programs of the primary level, but the teaching is typically more subject-focused, requiring more specialized teachers for each subject area. The end of this level often coincides with the end of compulsory education.

Upper secondary education [ISCED 3], the final stage of secondary education in most countries; in upper secondary education, instruction is

often organized even more along subject lines and teachers typically need a higher or more subject-specific qualification than at ISCED level 2.

Tertiary or higher education [ISCED 5 and 6] is a program with an educational content more advanced than that offered at ISCED levels 3 and 4. The first stage of tertiary education, ISCED level 5, includes level 5A, composed of largely theoretically based programs intended to provide sufficient qualifications for gaining entry to advanced research programs and professions having high skill requirements; and level 5B, where programs are generally more practical, technical, and/or occupationally specific. The second stage of tertiary education, ISCED level 6, comprises programs devoted to advanced study and original research, and leading to the award of an advanced research qualification.

Source: UNESCO 2006. For further information, see UNESCO 1997.

Data Sources

The primary sources of the data used in this study were:

- World Bank analytical and advisory work, project documents, and publications.
- UNESCO Institute for Statistics.

Where data were not available from the above sources, we relied on World Development Indicators, OECD, UNICEF, or UNDP.

For most recent years, we relied on World Bank reports and staff.

Weighted Averages and Symbols

Weighted averages for a region cover low- and middle-income countries, following the classification of the World Bank and based on GNI per capita.

The symbols used in the statistical appendix are as follows:

- Not available
- n.a. Not applicable
- .. Negligible
- 0 or 0.0 Zero or less than half the unit shown
- \$ Current U.S dollars unless otherwise noted

Reference Year of the Data

If data are reported for fiscal years, they are shown in the first calendar year. For example, gross enrollment rate in primary education in 2003/2004 is shown in 2003 in the tables in this appendix.

As of 2006, the UNESCO Institute for Statistics (UIS) has changed its convention for citing the reference year of education data for countries with a school year spreading across two calendar years, from the calendar year that begins the school year to the calendar year that ends the school year. Because of technical reasons, this change applies only to data from 1998 onward. The reference year to the data prior to 1998 remains the same.

However, this report does not follow the new UIS guideline to make time-series data more consistent. When the UIS data from 1998 onward are used in this report, they are adjusted to our guideline. Therefore, if we have data for 2004 from UIS we put the data in 2003.

In addition, when data are not available in a given year, we used the year closest to that year but not more than two years before or after the given year.

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A. Physical, Human, and Financial Capital Inputs

TABLE A.1

Pupil-Teacher Ratio in Primary Education, 1970–2004

	1970	1975	1980	1985	1990	1995	2000	2001	2002	2003	2004
Algeria	42.4	40.6	35.2	27.8	27.7	27.3	27.8	27.6	27.5	26.5	25.4
Bahrain	–	21.9	9.4	10.0	19.3	10.3	17.8	16.4	–	–	–
Djibouti	35.7	36.4	40.2	43.1	42.7	41.0	37.9	35.0	35.0	34.5	34.9
Egypt, Arab Rep. of	38.0	35.4	33.0	31.9	23.9	23.4	22.3	22.5	22.2	22.1	25.6
Iran, Islamic Rep. of	32.4	29.4	24.9	21.9	31.4	31.1	25.3	24.4	23.6	20.0	–
Iraq	22.1	25.4	27.8	23.8	24.8	20.0	21.2	21.0	19.4	20.5	–
Jordan	38.8	34.7	31.8	31.3	25.1	20.8	–	20.1	19.9	–	–
Kuwait	21.2	17.6	18.5	18.0	17.8	14.6	13.5	13.6	13.3	12.8	–
Lebanon	12.5	–	17.9	7.5	6.7	–	17.0	16.8	17.0	14.1	–
Libya	28.5	22.9	18.1	16.0	13.7	–	8.1	–	–	–	–
Morocco	34.3	41.6	38.2	27.8	27.1	28.2	28.1	28.3	28.2	27.6	–
Oman	17.7	26.6	23.2	26.6	27.5	25.7	23.7	23.4	21.1	19.4	–
Qatar	19.5	18.9	14.8	12.9	11.4	9.1	12.6	12.4	11.7	8.9	–
Saudi Arabia	24.2	19.7	18.3	16.1	15.7	13.3	11.8	12.3	11.8	11.7	–
Syrian Arab Rep.	36.8	33.9	28.1	25.9	25.1	23.5	23.3	22.7	23.2	17.6	–
Tunisia	47.5	40.0	38.5	31.6	27.8	24.5	22.7	21.9	21.5	..	–
United Arab Emirates	27.3	16.4	16.3	24.8	18.3	16.5	15.9	15.3	15.2	15.0	–
West Bank and Gaza	–	–	–	–	37.8	–	–	–	36.0	26.9	–
Yemen, Rep. of	–	–	–	–	–	20.5	–	–	–	22.0	–
Average	29.9	28.8	25.6	23.4	23.5	21.9	20.6	20.8	21.7	20.0	–
Standard deviation	9.8	8.8	9.4	9.1	9.0	8.2	7.5	6.3	7.3	7.0	–
Weighted average											
MENA	–	–	–	–	–	–	–	–	–	–	–
EAP	29.7	29.9	28.7	26.2	28.1	23.7	31.1	29.9	30.6	–	–
ECA	–	–	28.1	27.0	20.9	–	18.0	17.4	17.5	–	–
LAC	33.3	30.4	31.2	28.2	26.0	25.2	25.7	24.5	25.1	–	–
SAS	41.6	41.7	31.1	32.0	41.2	33.0	42.7	40.7	40.9	–	–
SSA	43.1	41.9	43.0	42.1	41.0	40.1	44.9	45.7	44.7	–	–

Sources: Calculated from the numbers of students and teachers collected for the report (see the attached CD-ROM for the raw data) except for the following data. EAP, ECA, LAC, SAS, and SSA: UNESCO Institute for Statistics through World Bank, EdStats - Data Query System (accessed in 2005).

TABLE A.2

Pupil-Teacher Ratio in Secondary Education, 1970–2003

	1970	1975	1980	1985	1990	1995	2000	2001	2002	2003
Algeria	20.6	10.2	25.4	22.2	17.1	16.9	18.4	19.0	19.7	–
Bahrain	–	–	11.2	–	14.2	18.3	11.0	9.9	–	–
Djibouti	–	13.5	18.5	23.0	20.3	18.9	22.2	29.7	26.7	–
Egypt, Arab Rep. of	25.0	27.6	24.0	20.4	18.1	15.3	12.0	12.3	12.1	–
Iran, Islamic Rep. of	34.2	26.7	–	–	23.5	31.3	28.1	26.7	26.1	–
Iraq	23.6	24.5	30.8	27.7	18.4	18.6	14.8	–	16.8	18.8
Jordan	23.0	21.1	20.7	17.5	14.5	16.6	–	17.4	16.9	–
Kuwait	12.9	11.5	11.9	12.7	11.9	10.8	10.3	10.3	10.2	–
Lebanon	–	–	–	–	–	–	6.4	6.3	6.6	–
Libya	12.4	14.1	12.2	13.3	14.6	–	–	–	..	–
Morocco	20.4	–	21.8	18.4	14.7	16.4	16.5	17.2	17.0	–
Oman	–	6.6	–	12.1	14.6	17.0	17.6	17.6	16.5	–
Qatar	12.6	12.2	9.8	8.9	8.5	10.0	10.1	9.9	10.0	–
Saudi Arabia	17.6	14.5	13.1	13.2	12.5	13.0	12.0	12.3	11.3	–
Syrian Arab Rep.	21.8	19.6	17.1	16.3	16.9	14.9	15.8	15.2	15.5	–
Tunisia	27.8	23.0	20.5	18.1	17.1	19.5	25.7	19.0	–	–
United Arab Emirates	12.7	–	–	14.7	12.6	12.3	12.9	12.6	13.5	–
Yemen, Rep. of	–	–	–	–	–	19.2	15.7	17.4	19.0	20.5
Average	20.4	17.3	18.2	17.0	15.6	16.8	15.6	15.8	15.9	–
Standard deviation	6.7	6.8	6.4	5.1	3.6	4.9	5.8	6.1	5.6	–
Weighted average										
MENA	–	–	–	–	–	–	–	–	–	–
EAP	–	23.0	19.6	18.8	16.0	16.5	–	–	–	–
ECA	–	–	–	15.5	14.7	–	–	–	–	–
LAC	–	–	–	–	–	–	–	–	–	–
SAS	21.9	20.8	19.1	21.1	23.7	24.2	–	–	–	–
SSA	22.7	–	37.5	–	–	–	–	–	–	–

Sources: Calculated from the numbers of students and teachers collected for the report (see the attached CD-ROM for the raw data) except for the following data. EAP, ECA, LAC, SAS, and SSA: UIS data through World Bank, EdStats - Data Query System (accessed in 2005).

Note: Yemen: Student-to-teacher ratio is for upper secondary education.

TABLE A.3

Pupil-Teacher Ratio in Tertiary Education, 1970–2002

	1970	1975	1980	1985	1990	1995	2000	2001	2002
Algeria	11.4	7.8	–	11.5	14.1	17.4	9.9	10.9	11.8
Bahrain	9.0	8.9	12.0	9.6	12.3	–	–	–	22.3
Djibouti	–	–	–	–	–	–	12.4	12.3	–
Egypt, Arab Rep. of	16.4	–	–	26.8	21.3	–	31.3	–	29.7
Iran, Islamic Rep. of	11.5	11.3	–	12.4	22.5	19.8	22.8	19.8	20.4
Iraq	23.3	22.7	15.9	19.2	–	–	23.9	21.6	–
Jordan	14.4	14.9	16.0	11.6	23.1	20.6	25.7	28.6	29.3
Kuwait	11.0	13.6	11.8	17.7	12.0	16.4	–	28.4	27.5
Lebanon	18.5	–	–	10.7	15.8	7.8	14.2	13.0	12.9
Libya	13.3	14.1	–	–	–	–	23.6	23.9	23.9
Morocco	26.0	27.6	–	23.2	13.7	23.7	22.2	22.5	18.7
Oman	–	–	2.3	6.4	6.8	9.1	31.5	31.5	–
Qatar	–	11.3	8.0	11.8	13.0	12.8	13.1	13.2	12.0
Saudi Arabia	12.2	12.4	8.3	10.4	11.6	16.8	20.9	20.3	22.5
Syrian Arab Rep.	35.8	52.4	–	–	–	–	–	–	–
Tunisia	16.5	14.4	7.9	8.0	15.1	17.4	20.1	19.8	20.4
United Arab Emirates	–	–	11.1	17.5	12.1	–	24.3	21.5	–
West Bank and Gaza	–	–	–	–	–	16.7	12.1	–	–
Yemen, Rep. of	–	–	–	–	29.5	–	55.2	–	–
Average	16.9	17.6	10.4	14.1	15.9	16.2	22.7	20.5	20.9
Standard deviation	7.5	12.3	4.3	5.9	6.0	4.7	10.9	6.4	6.3

Sources: Calculated from the numbers of students and teachers collected for the report. (See the attached CD-ROM for the raw data.)

TABLE A.4

Percentage of Trained Teachers in Primary Education, 1998–2003

	1998	1999	2000	2001	2002	2003
Algeria	93.7	94.6	95.7	97.1	97.9	–
Egypt	–	–	99.9	–	–	–
Egypt, Arab Rep. of	–	–	98.4	–	100	–
	–	100	–	–	–	52
Kuwait	100	100	100		100	–
Lebanon	–	–	–	14.9	14.0	–
Oman	99.6	99.6	99.8	99.8	–	–
Saudi Arabia	–	93.3	93.3	–	–	–
	–	–	88.0	–	–	–
Tunisia	–	–	94.1	–	–	–
Average	–	–	96.1	–	–	–
Standard deviation	–	–	4.3	–	–	–
Weighted average						
MENA	–	–	–	–	–	–
EAP	91.9	–	93.5	–	–	–
ECA	–	–	–	–	–	–
LAC	–	79.0	74.5	76.7	–	–
SAS	62.9	63.8	65.7	66.9	–	–
SSA	72.8	72.8	80.4	–	–	–

Sources: UNESCO Institute for Statistics through World Bank, EdStats - Data Query System (accessed in July 2005) except for the following data. Iraq 2003: Republic of Iraq Ministry of Education 2005 (proportion of primary school teachers holding at least the minimum qualification).

TABLE A.5

Percentage of Trained Teachers in Secondary Education, 1998–2003

	1998	1999	2000	2001	2002	2003
Egypt, Arab Rep. of	–	–	83.02	–	–	–
Iran, Islamic Rep. of	–	–	–	–	100	–
Iraq	–	100	–	–	–	91
Kuwait	100	100	100	–	–	–
Oman	100.0	100	100	100	–	–
Saudi Arabia	–	86.2	–	–	–	–
Tunisia	–	–	63.6	–	–	–
United Arab Emirates	51.7	50.2	52.3	51.7	–	–

Sources: UNESCO Institute for Statistics through World Bank, EdStats - Data Query System (accessed in July 2005) except for the following data. Iraq 2003: Republic of Iraq Ministry of Education 2005 (proportion of secondary school teachers holding at least the minimum qualification).

TABLE A.6

Public Expenditure in Education as Percent of GDP, 1970–2003

	1970	1975	1980	1985	1990	1995	2000	2001	2002	2003
Algeria	7.7	6.6	7.6	8.3	5.1	6.4	5.5	6.5	6.8	6.4
Bahrain	–	–	2.8	3.8	4.1	3.6	3.5	–	–	–
Djibouti	–	–	–	2.8	3.5	–	7.1	5.5	6.3	6.1
Egypt, Arab Rep. of	4.7	5.0	5.3	5.7	5.0	5.6	5.5	5.8	5.9	–
Iran, Islamic Rep. of	–	–	7.5	3.7	4.1	4.1	4.6	4.9	4.9	4.8
Iraq	–	–	3.0	4.0	5.1	–	–	–	–	–
Jordan	3.8	3.8	6.8	6.8	8.0	8.2	5.9	6.0	6.0	6.4
Kuwait	3.5	3.2	2.8	5.5	4.8	6.1	–	6.7	7.1	6.3
Lebanon	–	–	–	–	3.2	2.7	3.9	4.4	2.6	2.6
Libya	3.9	6.0	3.4	7.1	–	–	2.7	–	–	–
Morocco	3.5	5.2	5.9	5.9	5.3	5.6	6.2	6.5	6.4	6.3
Oman	–	1.3	1.9	3.6	3.2	3.9	4.2	4.6	4.6	–
Qatar	3.1	1.8	2.8	4.5	3.5	–	–	–	–	–
Saudi Arabia	2.9	7.9	4.1	7.5	5.8	5.5	–	–	–	–
Syrian Arab Rep.	3.9	4.0	4.6	6.1	4.0	3.2	–	–	–	–
Tunisia	6.8	5.0	5.2	5.5	6.0	6.5	6.2	6.3	6.5	7.2
United Arab Emirates	–	0.9	1.3	1.8	1.8	1.9	–	1.6	1.6	–
West Bank and Gaza	–	–	–	–	–	–	7.5	9.8	9	11.5
Yemen, Rep. of	–	–	–	–	–	4.5	5.8	6.3	6.8	6.5
Average	4.4	4.2	4.3	5.2	4.5	4.8	5.3	5.8	5.7	6.4
Standard deviation	1.6	2.2	2.0	1.8	1.4	1.7	1.4	1.8	1.9	2.2
Weighted average										
MENA	3.9	5.1	4.9	5.9	5.3	4.7	4.9	–	–	–
EAP	3.2	2.3	2.5	2.5	2.9	3.0	2.3	3.2	3.0	–
ECA	–	–	–	–	5.2	5.1	3.9	3.8	4.4	–
LAC	3.1	3.6	3.4	2.8	2.8	3.4	4.3	4.4	4.3	–
SAS	1.7	2.2	2.0	2.7	2.6	3.1	3.1	–	–	–
SSA	3.7	3.3	3.7	3.0	3.4	4.3	3.4	–	–	–

Sources: UNESCO Institute for Statistics through EdStats except for the following data. Algeria 1995: Ministry of National Education, Ministry of Finance and National Office for Statistics through Zaafrane 2004. Algeria 2000: World Bank 2006c. Djibouti 2000–04: Résultats des travaux de la mission de préparation de la Phase II Programme d'Accès et préparation de la Phase II Programme d'Accès et d'Amélioration de l'Éducation 2004. Egypt 1990: Ministry of Finance through World Bank 2002. Egypt 1995: Ministry of Finance. Jordan 2000–03: Education and Training Task Force 2004. Kuwait 2001–03: The State of Kuwait Ministry of Education 2004. Lebanon 2000, 2001: Lebanese Republic Ministry of Education and Higher Education Educational Center for Research and Development 2004. Tunisia 2000–02: Ministry of Education through World Bank 2004c. Tunisia 2003: World Bank 2003. West Bank and Gaza: World Bank 2006b. Yemen 2000–03: calculated by a consultant based on Ministry of Finance 2004.

Note: The data for Algeria 1990 are actually for 1991. The data for Egypt 1980 are actually for 1981. The data for Iraq 1990 are actually for 1988. The data for Jordan 1990 are actually for 1991. The data for Lebanon 1990 are actually for 1989. The data for Libya 2000 are actually for 1999. The data for MENA 2000 are actually for 1999.

TABLE A.7

Public Expenditure in Education as Percent of Government Spending, 1980–2003

	1980	1980	1985	1990	1995	2000	2001	2002	2003
Algeria	–	–	–	21.1	18.3	19.0	20.8	19.5	20.0
Bahrain	–	–	–	14.6	–	12.1	–	–	–
Djibouti	–	–	–	10.5	–	21.7	18.4	19.0	20.5
Egypt, Arab Rep. of	–	–	–	9.5	20.3	–	–	19.0	–
Iran, Islamic Rep. of	–	–	–	22.4	–	20.4	21.7	17.7	–
Iraq	–	–	–	–	–	–	–	–	–
Jordan	–	–	–	17.1	–	13.6	14.0	13.6	13.5
Kuwait	–	–	–	3.4	–	–	–	17.4	–
Lebanon	–	–	–	–	–	11.1	11.1	12.3	12.7
Libya	–	–	–	–	–	–	–	–	–
Morocco	12	18.5	22.9	24.1	24.6	28.5	26.4	26.4	27.8
Oman	–	–	–	11.1	–	–	–	–	26.1
Qatar	–	–	–	–	–	–	–	–	–
Saudi Arabia	–	–	–	17.8	–	–	–	–	–
Syrian Arab Rep.	–	–	–	17.3	–	–	–	–	–
Tunisia	–	–	–	13.5	19.8	22.8	23.0	23.6	–
United Arab Emirates	–	–	–	14.6	–	22.5	–	22.5	–
West Bank and Gaza	–	–	–	–	–	15.0	12.4	11.6	17.9
Yemen, Rep. of	–	–	–	–	–	17.7	19.5	20.7	17.2
Average	–	–	–	15.1	20.8	18.6	18.6	18.6	19.5
Standard deviation	–	–	–	5.7	2.7	5.3	5.1	4.5	5.4
Weighted average									
MENA	–	–	–	17.3	–	–	–	–	–
EAP	–	–	–	15.2	–	17.5	–	–	–
ECA	–	–	–	–	–	–	–	–	–
LAC	–	–	–	12.8	–	13.7	13.4	15.3	–
SAS	–	–	–	8.5	–	12.9	–	–	–
SSA	–	–	–	–	–	–	–	–	–

Sources: UNESCO Institute for Statistics through EdStats except for the following data. Algeria 1995–2003: Ministry of National Education, Ministry of Finance and National Office for Statistics through Zaafrane 2004. Djibouti 2000–04: Résultats des travaux de la mission de préparation de la Phase II Programme d'Accès et d'Amélioration de l'Éducation 2004. Egypt 1990–2000: Ministry of Finance through World Bank 2002. Jordan 2000–03: Education and Training Task Force 2004. Lebanon 2000 and 2001: Lebanese Republic Ministry of Education and Higher Education Educational Center for Research & Development 2004. Morocco 1975–2000: Banque mondiale 2003. Tunisia 1995–02: Ministry of Education through World Bank 2004c. West Bank and Gaza: World Bank 2006b. Yemen 2000–03: Calculated by a consultant based on Ministry of Finance 2004.

Note: The data for Tunisia 1995 are actually for 1996.

B. Access

TABLE B.1

Gross Enrollment Rate in Primary Education, 1950–2004

	1950	1955	1960	1965	1970	1975	1980
Algeria	25	30	46	68	76.1	92.7	94.5
Bahrain	24	32	72	103	98.4	95.9	104.2
Djibouti	–	–	–	–	27.9	29.8	37.0
Egypt, Arab Rep. of	–	–	66	75	67.6	70.0	73.1
Iran, Islamic Rep. of	28	28	41	63	72.8	93.2	87.3
Iraq	24	36	65	74	68.8	93.6	113.4
Jordan	48	78	77	95	84.2	86.6	81.7
Kuwait	78	99	117	116	88.1	92.6	102.1
Lebanon	–	77	102	106	121.4	–	111.4
Libya	20	37	59	78	110.5	137.3	124.6
Morocco	21	30	47	57	51.5	62.0	83.0
Oman	–	–	–	–	3.0	37.0	50.9
Qatar	–	–	67	97	96.2	111.6	104.6
Saudi Arabia	4	7	12	24	45.3	57.5	61.3
Syrian Arab Rep.	52	52	65	78	77.5	95.6	99.6
Tunisia	35	47	66	91	100.4	96.5	102.1
United Arab Emirates	–	–	–	–	94.6	101.5	88.9
West Bank and Gaza	–	–	–	–	–	–	–
Yemen, Rep. of	–	–	8	9	–	–	–
Average	32.6	46.1	60.7	75.6	75.5	84.6	89.4
Standard deviation	20.0	26.2	28.5	29.3	30.2	27.3	23.2
Weighted average							
MENA	–	–	–	–	70.1	81.9	86.6
EAP	–	–	–	–	89.4	114.2	110.6
ECA	–	–	–	–	..	..	99.3
LAC	–	–	–	–	107.2	98.7	104.8
SA	–	–	–	–	70.6	75.0	76.7
SSA	–	–	–	–	51.0	59.5	80.4

Sources: UNESCO 1971, UNESCO 1980, and UNESCO Institute for Statistics through World Bank, EdStats - Data Query System (accessed on May 11, 2006) except for the following data. Algeria 2003: Zaafrane 2004. Egypt 2000–03: Ministry of Education through World Bank 2005a. Iran 1995: Ministry of Education. Iran 2000–2002: Ministry of Education/Ministry of Planning and Organization 2004 through World Bank 2005a. Iraq 2003: Republic of Iraq Ministry of Education 2005. Jordan 1995 and 2000: Ministry of Education through World Bank 2003. Morocco 1990–2003: Government of Morocco. West Bank and Gaza 1995: Palestinian Central Bureau of Statistics website (the data are for basic education (from grades 1 through 10)). Yemen 2000–03: Ministry of Education and Central Statistics Organization.

	1985	1990	1995	2000	2001	2002	2003	2004
	93.6	100.5	106.6	106.8	108.9	110.4	113.4	-
	112.6	110.0	108.1	103.4	103.8	103.6	104.0	-
	39.9	37.7	38.5	36.3	36.9	38.0	39.1	-
	85.4	91.5	99.8	104.6	105.7	104.7	103.9	-
	98.2	109.3	106.0	117.3	115	119.9	103.0	-
	107.7	115.6	85.0	98.3	98.4	99.5	98	-
	71.8	100.6	101.3	95.9	91.6	101.9	101.1	98.7
	103.0	60.2	72.9	92.6	95.3	95.4	96.0	-
	111.8	113.2	109.4	109.1	107.9	106.4	106.8	-
	108.6	104.7	118.0	113.0	112.5	112.5	-	-
	77.2	64.2	79.6	102.2	108.8	112.4	113.1	-
	76.3	84.9	79.2	91.0	90.8	89.9	87.3	-
	108.5	100.5	86.2	104.0	104.9	106.0	101.7	-
	64.7	72.8	77.9	68.7	67.7	67.2	67.3	-
	109.6	102.2	100.8	107.4	110.1	122.2	122.9	-
	115.1	113.7	116.8	112.6	111.4	110.6	-	-
	97.7	110.9	90.8	87.1	85.2	85.4	83.8	-
	-	-	-	108.9	105.5	100.5	92.9	-
	-	65.4	73.1	83.1	83.6	86.0	87.9	88.4
	93.0	92.1	91.7	97.0	97.0	98.6	95.4	-
	20.9	22.8	19.8	18.9	19.0	19.6	19.4	-
	91.9	97.0	95.4	98.9	99.7	100.5	-	-
	119.1	119.3	115.5	113.4	112.6	112.0	-	-
	102.5	97.9	99.9	100.9	101.3	102.0	-	-
	105.3	104.3	111.6	123.2	122.9	122.2	-	-
	86.4	95.2	94.3	93.7	97.2	101.3	-	-
	76.1	72.6	75.7	86.6	89.0	94.7	-	-

TABLE B.2

Gross Enrollment Rate in Secondary Education, 1950–2003

	1950	1955	1960	1965	1970	1975	
Algeria	5	6	8	7	11.2	20.0	
Bahrain	–	–	–	33	51.3	52.4	
Djibouti	–	–	–	–	6.6	6.6	
Egypt, Arab Rep. of	–	–	16	26	28.4	40.3	
Iran, Islamic Rep. of	4	7	12	18	27.1	45.0	
Iraq	5	8	19	28	24.4	34.6	
Jordan	4	18	25	38	32.8	47.5	
Kuwait	2	4	37	52	63.5	66.5	
Lebanon	–	9	19	26	41.5	46.9	
Libya	0.5	4	9	14	20.8	54.7	
Morocco	1	2	5	11	12.6	16.5	
Oman	–	–	–	–	0.0	1.3	
Qatar	–	–	–	15	36.3	53.8	
Saudi Arabia	0.2	0.4	2	4	12.1	21.6	
Syrian Arab Rep.	8	13	16	28	38.1	43.0	
Tunisia	8	9	12	16	22.7	21.1	
United Arab Emirates	–	–	–	–	21.8	32.6	
West Bank and Gaza	–	–	–	–	–	–	
Yemen, Rep. of	–	–	–	–	–	–	
Average	3.8	7.3	15.0	22.6	26.5	35.5	
Standard deviation	2.9	5.0	9.5	13.0	16.4	18.4	
Weighted average							
MENA	–	–	–	–	23.45	34.38	
EAP	–	–	–	–	23.76	41.9	
ECA	–	–	–	–	..	..
LAC	–	–	–	–	27.59	34.73	
SA	–	–	–	–	22.96	23.81	
SSA	..	..	..	..	6.32	9.85	

Sources: UNESCO 1971, UNESCO 1980, and UNESCO Institute for Statistics through EdStats - Data Query System (accessed on July 11, 2005) except for the following data. Iraq 2003: Republic of Iraq Ministry of Education 2005. Yemen 2000–03: Ministry of Education and Central Statistics Organization.

	1980	1985	1990	1995	2000	2001	2002	2003
	33.0	51.4	60.9	62.5	–	75.0	77.6	80.7
	64.0	97.2	99.7	97.0	96.4	97.2	98.3	98.8
	12.0	11.7	11.6	12.9	16.5	17.5	19.5	21.5
	50.5	61.4	70.8	76.5	85.9	86.2	86.9	87.1
	42.0	45.0	57.5	75	77.4	77.2	78.5	81.9
	57.0	53.8	49.0	41.9	38.3	–	42.7	42
	59.1	52.2	63.3	55.3	87.3	88.5	88.3	87.4
	80.1	90.9	42.9	64.1	89.2	85.7	89.3	89.9
	59.1	60.6	73.9	80.7	80.3	83.6	86.8	88.7
	75.9	58.8	85.9	101.5	–	104.0	103.9	–
	26.0	35.4	35.5	38.5	40.4	42.3	44.3	47.6
	11.6	26.5	44.9	66.8	80.8	83.3	85.6	86.4
	66.4	82.3	83.6	79.7	86.1	88.2	92.9	96.8
	29.5	40.1	43.7	57.9	71.7	72.9	69.2	67.8
	46.4	58.2	48.8	43.3	42.1	43.9	59.2	63.2
	27.0	38.9	44.4	60.4	77.2	78.6	77.0	81.3
	52.1	54.7	65.4	77.6	78.4	74.4	70.0	66.5
	–	–	–	–	83.3	85.9	89.2	93.6
	–	–	45.4	30.6	44.1	44.4	44.9	45.9
	46.6	54.1	57.1	62.3	69.1	73.8	73.9	73.7
	20.7	21.8	20.9	22.8	23.2	22.3	22.3	–
	42.22	49.87	57.42	61.89	64	73.28	68.75	–
	43.28	40.21	46.85	61.92	63.52	65.07	68.24	–
	86.2	88.07	84.37	82.99	–	–	90.47	–
	41.98	46.93	48.52	55.34	82.83	84.63	87.02	–
	27.17	33.8	39.11	43.37	44.86	48.52	48.48	–
	15.01	20.09	21.29	25.93	–	–	31.78	–

TABLE B.3

Gross Enrollment Rate in Tertiary Education, 1970–2003

	1970	1975	1980	1985	1990	1995	2000	2001	2002	2003
Algeria	1.8	3.0	5.9	7.9	11.8	12.0	16.1	17.9	19.1	19.6
Bahrain	1.4	2.1	5.1	12.8	16.7	21.1	21.0	–	34.7	34.4
Djibouti	–	–	–	–	0.1	0.2	0.7	1.1	1.3	1.6
Egypt, Arab Rep. of	6.9	11.7	16.1	18.1	16.7	20.2	30.2	27.3	28.5	32.6
Iran, Islamic Rep. of	2.9	4.5	–	4.6	10.4	17.2	20.2	19.3	20.3	22.5
Iraq	4.8	8.3	8.7	11.5	12.2	11.2	12.0	12.6	–	15.4
Jordan	2.1	5.2	13.4	13.1	24.0	16.0	27.9	31.2	35.0	39.3
Kuwait	4.0	9.3	11.3	16.6	12.1	19.2	23.3	–	–	22.3
Lebanon	21.0	–	30.1	27.8	29.0	27.0	42.3	44.8	44.7	47.6
Libya	2.9	6.0	7.8	9.2	15.4	20.2	51.6	55.4	56.2	–
Morocco	1.4	3.0	5.9	8.7	10.9	9.0	8.8	8.8	10.5	10.6
Oman	–	–	0.0	0.8	4.2	5.3	7.8	7.7	–	12.9
Qatar	–	4.5	10.4	20.7	21.6	27.5	21.1	19.7	17.8	19.1
Saudi Arabia	1.6	3.9	7.1	10.6	10.3	15.8	22.7	22.5	25.9	27.7
Syrian Arab Rep.	8.3	10.7	16.9	17.1	18.5	15.4	–	–	–	–
Tunisia	2.6	3.9	4.9	5.5	8.7	13.0	21.3	22.8	26.2	28.6
United Arab Emirates	–	–	3.1	6.8	6.7	11.0	23.7	23.3	22.5	–
West Bank and Gaza	–	–	–	–	–	10.2	28.1	30.0	33.9	37.9
Yemen, Rep. of	–	–	–	–	4.3	4.2	13.5	14.3	13.2	9.4
Average	4.8	5.9	9.8	12.0	13.0	14.5	21.8	22.4	26.0	23.8
Standard deviation	5.3	3.1	7.3	6.8	7.3	7.2	12.1	13.7	13.8	12.5
Weighted average										
MENA	4.4	6.7	11.0	10.9	13.2	15.2	–	–	24.3	–
EAP	1.1	1.5	3.3	4.5	5.3	7.4	12.9	14.9	17.2	–
ECA	–	–	30.9	34.4	34.3	32.8	–	42.4	44.1	–
LAC	6.3	11.8	13.7	–	15.7	17.7	23.2	25.3	27.0	–
SA	4.2	4.4	4.9	5.5	5.6	6.0	10.2	10.7	10.0	–
SSA	0.8	1.0	1.4	1.8	2.5	3.5	–	–	–	–

Sources: UNESCO Institute for Statistics through EdStats - Data Query System (accessed on July 11, 2005) except for the following data. Egypt 2000: UNDP 2003. Egypt 2001: UNDP 2004. Morocco 1995 and 2000–01: Banque mondiale 2003. West Bank and Gaza 1995: Ministry of Higher Education and Scientific Research Palestinian National Authority 2002. Yemen 2000–01: Ministry of Education.

TABLE B.4

Net Enrollment Rate in Primary Education, 1970–2004

	1970	1975	1980	1985	1990	1995	2000	2001	2002	2003	2004
Algeria	–	76.6	80.9	86.0	93.2	95.1	93.7	95.4	96.3	97.1	–
Bahrain	70.6	70.1	79.9	96.2	99	98.8	96.1	96.4	95.9	96.8	–
Djibouti	–	–	–	31.3	31.3	32.3	29.4	31.1	32.0	32.9	–
Egypt, Arab Rep. of	62.8	–	–	–	83.7	97.9	97.1	98.4	98	98.3	–
Iran, Islamic Rep. of	60.0	–	–	80.9	92.3	95.4	96.2	96.3	98.5	–	–
Iraq	55.4	77.8	95.7	93.1	100.8	76.1	92.9	–	–	87.7	–
Jordan	–	78.6	73.0	–	94.1	67.5	90.0	84.8	96.4	101.1	–
Kuwait	60.6	68.7	84.6	86.7	49.0	61.8	81.9	84.9	85.4	86.0	–
Lebanon	–	–	–	–	77.8	76.1	95.4	94.2	93.3	93.2	–
Libya	85.7	–	–	–	96.1	–	–	–	–	..	–
Morocco	39.1	46.5	61.6	60.7	52.4	65.3	84.5	89.9	91.9	92.0	–
Oman	–	27.1	42.6	66.4	69.3	70.2	81.4	81.6	80.0	77.9	–
Qatar	71.9	81.0	84.6	91.1	89.5	86.8	93.2	93.5	94.8	89.8	–
Saudi Arabia	32.4	41.7	48.6	50.9	58.7	63.3	59.0	59.2	54.9	53.1	–
Syrian Arab Rep.	69.5	86.1	89.5	94.7	92.3	91.4	94.8	97.0	98.0	98.1	–
Tunisia	75.6	–	82.2	93.1	93.9	97.8	95.2	96.7	97.2	–	–
United Arab Emirates	–	–	73.6	76.5	100.2	79.6	76.2	74.7	73.2	71.2	–
West Bank and Gaza	–	–	–	–	55.7	–	97.7	96.4	92.5	86.3	98
Yemen, Rep. of	–	–	–	–	51.7	–	62.6	66.8	65.7	66.8	–
Average	62.1	65.4	74.7	77.5	77.9	78.4	84.3	84.5	84.9	83.0	–
Standard deviation	15.6	19.8	16.1	19.8	21.6	18.2	17.9	18.0	18.7	18.8	–
Weighted average											
MENA	57.7	–	–	78.6	84.7	86.7	86.0	90.3	88.9	–	–
EAP	–	–	–	–	95.5	97.6	–	–	–	–	–
ECA	–	–	–	–	90.0	–	–	–	88.7	–	–
LAC	77.2	–	–	85.2	85.8	91.1	94.5	95.0	95.3	–	–
SA	59.2	–	–	–	–	–	80.3	83.2	87.1	–	–
SSA	–	–	–	–	53.5	–	–	–	63.7	–	–

Sources: UNESCO Institute for Statistics through EdStats - Data Query System (accessed on July 11, 2005) except for the following data. Egypt 2000–03: Ministry of Education through the World Bank 2005. Iran 2000 and 2001: Ministry of Education. Iran 2002: Ministry of Education/Ministry of Planning and Organization 2004 through World Bank 2006a. Iraq 2000 and 2003: Republic of Iraq Ministry of Education 2005. Jordan 1995 and 2000: Ministry of Education through World Bank 2003. Lebanon 1995: MSA survey, computed by T. El-Hachem 1998 through World Bank 1999. Morocco 1990–2003: Government of Morocco. West Bank and Gaza 2004: Ministry of Education. Yemen 2000–03: Ministry of Education.

Note: Egypt 2000–03: For Ministry of Education and Al-Azhar Schools. Net enrollments for Al Azhar students were estimated assuming the same proportion of net:gross enrollment of MOE students.

TABLE B.5

Gross Intake Rate to Grade 1, 1970–2003

	1970	1975	1980	1985	1990	1995	2000	2001	2002	2003
Algeria	–	88.2	86.6	95.0	101.4	103.3	86.0	102.2	99.3	101.7
Bahrain	–	–	96.5	112.3	107.9	103.9	96.6	94.4	96.2	99.6
Djibouti	24.0	31.4	–	36.5	35.4	37.6	37.4	36.8	37.7	38.6
Egypt, Arab Rep. of	78.2	72.7	79.8	88.2	–	89.5	97.6	99.3	98.7	–
Iran, Islamic Rep. of	83.7	–	–	103.5	107.4	92.3	110.4	114.5	119.2	109.6
Iraq	76.8	110.4	–	104.1	–	–	111.0	–	–	106.7
Jordan	–	86.6	75.4	70.2	101.9	68.4	104.7	104.1	99.2	–
Kuwait	53.5	87.9	99.0	96.3	46.0	71.8	95.7	95.0	92.5	95.7
Lebanon	–	–	–	–	–	99.9	96.0	96.4	98.7	99.7
Libya	120.3	122.8	116.1	–	–	–	–	–	–	–
Morocco	–	–	–	–	71.4	86.9	118.5	123.2	123.2	108.6
Oman	–	40.2	–	80.6	88.3	67.5	83.9	83.0	81.4	74.4
Qatar	76.5	88.8	79.4	75.2	55.9	53.6	110.8	108.3	108.2	99.6
Saudi Arabia	–	60.9	64.4	64.4	70.8	75.0	67.7	67.6	67.2	65.8
Syrian Arab Rep.	85.4	98.5	103.6	107.9	98.1	97.0	116.4	120.3	121.5	119.9
Tunisia	79.5	84.4	93.1	101.0	102.0	95.7	101.3	98.9	–	–
United Arab Emirates	–	86.7	68.4	111.6	103.2	89.7	95.0	90.8	94.1	88.6
West Bank and Gaza	–	–	–	–	–	–	105.5	100.7	91.9	84.3
Yemen, Rep. of	–	–	–	–	–	–	79.4	83.8	86.2	87.3
Average	75.3	81.5	87.5	89.1	83.8	82.1	95.2	95.2	94.7	92.0
Standard deviation	25.8	25.4	15.8	21.6	25.1	19.3	19.6	20.3	21.1	20.4
Weighted average										
MENA	81.4	83.4	84.0	94.9	101.7	90.6	92.7	95.7	–	–
EAP	–	–	–	–	107.0	107.7	99.9	–	–	–
ECA	–	–	–	–	–	99.2	–	104.6	–	–
LAC	135.2	142.6	145.6	133.2	–	118.5	116.6	121.7	–	–
SA	97.5	–	–	115.7	–	126.1	120.3	–	–	–
SSA	–	–	83.7	–	–	–	86.9	–	–	–

Sources: UNESCO Institute for Statistics through EdStats - Data Query System (accessed on July 11, 2005) except for the following data. Iran 2002: Ministry of Education/Ministry of Planning and Organization 2004 through World Bank 2006a. Kuwait 2001–03: Ministry of Education through the State of Kuwait Ministry of Education 2004. Morocco 1995 and 2000–03: Royaume du Maroc Ministère de L'Éducation Nationale de l'Enseignement Supérieur de la Formation des Cadres et de la Recherche Scientifique Department de l'Éducation Nationale Direction la de Strategie, de la Statistique et de la Planification. 2004. Yemen 2000–03: Ministry of Education.

C. Equity

TABLE C.1

Gender Parity Index of Primary Gross Enrollment Rate, 1960-2003

	1960	1965	1970	1975	1980	1985	1990	1995	2000	2001	2002	2003	2004
Algeria	0.67	0.65	0.62	0.69	0.75	0.81	0.85	0.89	0.92	0.92	0.92	0.93	–
Bahrain	–	–	0.74	0.80	0.88	1.06	1.00	1.02	1.01	1.00	1.00	1.00	–
Djibouti	–	–	0.42	0.54	–	0.70	0.71	0.74	0.76	0.76	0.78	0.79	–
Egypt, Arab Rep. of	0.65	0.67	0.65	0.67	0.72	0.81	0.83	0.88	0.93	0.93	0.94	0.95	–
Iran, Islamic Rep. of	0.48	0.47	0.56	0.63	–	0.80	0.90	0.93	0.96	0.96	0.97	1.10	–
Iraq	0.38	0.44	0.43	0.52	0.90	0.85	0.84	0.85	0.82	0.81	0.83	0.82	–
Jordan	0.63	0.79	0.82	0.90	0.99	1.01	1.01	1.01	–	1.00	1.01	–	–
Kuwait	0.78	0.80	0.76	0.86	0.95	0.97	0.95	0.98	1.02	0.99	1.01	1.01	–
Lebanon	0.94	0.79	0.86	–	–	–	0.96	0.97	0.96	0.96	0.96	0.96	–
Libya	0.26	0.40	0.62	0.90	0.94	0.92	0.94	1.01	1.01	1.00	1.00	–	–
Morocco	0.40	0.45	0.55	0.58	0.61	0.64	0.69	0.75	0.87	0.89	0.90	0.90	–
Oman	–	–	0.16	0.39	0.52	0.80	0.92	0.95	0.98	0.98	0.99	1.00	–
Qatar	–	–	0.85	0.96	0.96	0.97	0.93	0.99	1.00	0.96	0.98	0.98	–
Saudi Arabia	0.09	0.31	0.47	0.59	0.66	0.78	0.86	0.96	0.96	0.97	0.96	0.96	–
Syrian Arab Rep.	0.44	0.50	0.62	0.70	0.79	0.88	0.90	0.90	0.93	0.93	0.95	0.95	–
Tunisia	0.49	0.56	0.66	0.67	0.74	0.85	0.89	0.93	0.96	0.96	0.96	1.00	–
United Arab Emirates	–	–	0.63	0.91	0.99	1.00	0.97	0.97	0.96	0.96	0.97	0.97	–
West Bank and Gaza	–	–	–	–	–	–	–	–	1.01	1.01	1.00	1.00	–
Yemen, Rep. of	0.03	0.06	–	–	–	–	0.35	0.40	0.65	0.68	0.71	0.73	0.76
Average	0.48	0.53	0.61	0.71	0.81	0.86	0.86	0.90	0.93	0.93	0.94	0.94	–
Standard deviation	0.26	0.21	0.18	0.17	0.15	0.12	0.15	0.15	0.10	0.09	0.08	0.09	–

Sources: Calculated from the gross enrollment rates by gender collected for the report. (See the attached CD-ROM for the raw data.)

Note: West Bank and Gaza 1995: The data are for basic education (from grades 1 through 10).

TABLE C.2

Gender Parity Index of Secondary Gross Enrollment Rate, 1960–2003

	1960	1965	1970	1975	1980	1985	1990	1995	2000	2001	2002	2003
Algeria	0.67	0.50	0.41	0.53	0.65	0.74	0.81	0.90	–	1.05	1.07	1.07
Bahrain	–	–	0.72	1.05	0.83	0.99	1.03	1.05	1.10	1.09	1.07	1.06
Djibouti	–	–	0.37	0.36	0.57	0.62	0.66	0.68	0.62	0.62	0.66	0.69
Egypt, Arab Rep. of	0.39	0.41	0.49	0.56	0.63	0.70	0.79	0.86	0.93	0.93	0.93	–
Iran, Islamic Rep. of	0.44	0.46	0.51	0.57	0.62	0.66	0.75	0.83	0.94	0.95	0.94	0.94
Iraq	0.31	0.33	0.43	0.43	0.50	0.57	0.64	0.63	0.60	–	–	0.66
Jordan	0.36	0.44	0.57	0.73	0.91	1.08	1.04	1.09	1.00	1.02	1.02	–
Kuwait	0.54	0.73	0.81	0.87	0.90	0.91	0.98	0.99	1.06	1.06	1.06	1.06
Lebanon	0.52	0.61	0.68	0.98	0.93	0.98	1.07	1.11	1.10	1.09	1.08	1.09
Libya	0.13	0.17	0.23	0.54	0.71	0.94	1.01	0.93	–	1.06	1.06	–
Morocco	0.29	0.31	0.42	0.56	0.61	0.67	0.73	0.76	0.81	0.81	0.83	0.84
Oman	–	–	–	0.20	0.33	0.49	0.81	0.91	0.99	0.98	0.96	0.96
Qatar	–	–	0.72	1.26	1.05	1.10	1.06	0.99	1.07	1.04	1.02	0.97
Saudi Arabia	0.01	0.14	0.26	0.53	0.64	0.65	0.80	0.87	0.90	0.88	0.90	0.88
Syrian Arab Rep.	0.28	0.30	0.39	0.50	0.62	0.70	0.73	0.82	0.90	0.90	0.93	0.93
Tunisia	0.26	0.39	0.38	0.53	0.60	0.70	0.79	0.91	1.05	1.04	1.08	1.05
United Arab Emirates	–	–	0.32	0.81	0.88	1.00	1.21	1.09	1.07	1.09	1.07	1.06
West Bank and Gaza	–	–	–	–	–	–	–	–	1.08	1.06	1.06	1.05
Yemen, Rep. of	–	–	–	–	–	–	–	0.31	0.43	0.44	0.47	0.49
Average	0.35	0.40	0.48	0.65	0.70	0.79	0.88	0.87	0.92	0.95	0.96	0.93
Standard deviation	0.18	0.17	0.17	0.27	0.19	0.19	0.17	0.20	0.20	0.18	0.16	0.18

Sources: Calculated from the gross enrollment rates by gender collected for the report. (See the attached CD-ROM for the raw data.)

TABLE C.3

Gender Parity Index of Tertiary Gross Enrollment Rate, 1970–2003

	1970	1975	1980	1985	1990	1995	2000	2001	2002	2003
Algeria	0.25	–	0.37	0.47	0.52	0.70	–	–	–	1.08
Bahrain	1.29	1.58	0.90	1.70	1.44	1.57	1.76	–	1.79	1.84
Djibouti	–	–	–	–	0.40	0.84	–	0.82	0.82	0.82
Egypt, Arab Rep. of	0.37	0.45	0.49	0.46	0.53	0.66	–	–	–	–
Iran, Islamic Rep. of	0.35	0.40	..	0.40	0.48	0.60	0.94	1.01	1.08	1.11
Iraq	0.30	0.51	0.49	0.60	0.63	0.64	0.54	0.54	–	0.45
Jordan	0.49	0.55	0.93	0.93	1.12	0.96	1.13	1.01	1.10	–
Kuwait	1.16	–	1.74	1.16	1.83	1.61	2.39	–	–	2.72
Lebanon	0.32	–	0.51	–	0.95	0.98	1.11	1.15	1.20	1.12
Libya	0.13	0.23	0.36	–	0.87	0.97	1.04	1.09	1.09	–
Morocco	0.19	0.24	0.30	0.47	0.59	0.73	0.80	0.80	0.84	0.87
Oman	–	–	–	0.60	0.99	0.90	1.60	1.57	–	1.37
Qatar	–	3.64	2.69	2.63	3.73	2.91	2.92	3.00	3.45	2.86
Saudi Arabia	0.10	0.30	0.51	0.78	0.90	0.94	1.27	1.49	1.47	1.50
Syrian Arab Rep.	0.26	0.37	0.43	0.57	0.64	0.72	–	–	–	–
Tunisia	0.25	0.34	0.44	0.58	0.67	0.80	–	1.23	1.28	–
United Arab Emirates	–	–	1.93	1.96	4.43	3.81	3.08	3.15	3.24	–
West Bank and Gaza	–	–	–	–	–	–	0.96	0.97	1.04	1.04
Yemen, Rep. of	–	–	–	–	0.22	0.17	0.32	0.32	0.34	0.38
Average	0.42	0.78	0.86	0.95	1.16	1.14	1.42	1.30	1.44	1.32
Standard deviation	0.37	1.02	0.73	0.68	1.13	0.89	0.84	0.82	0.91	0.76

Sources: Calculated from the gross enrollment rates by gender collected for the report. (See the attached CD-ROM for the raw data.)

TABLE C.4

Gender Parity Index of Gross Intake Rate, 1970–2003

	1970	1975	1980	1985	1990	1995	2000	2001	2002	2003	2004
Algeria	–	0.77	0.80	0.87	0.91	0.95	0.97	0.98	0.97	0.98	–
Bahrain	–	–	0.92	1.04	1.02	1.02	1.01	0.97	1.01	0.99	–
Djibouti	0.43	0.46	–	–	0.90	–	0.79	0.76	0.79	0.83	–
Egypt, Arab Rep. of	0.70	0.72	0.78	0.86	–	0.91	0.97	0.98	0.98	–	–
Iran, Islamic Rep. of	0.60	–	–	0.88	0.97	0.98	0.99	1.00	1.14	1.15	–
Iraq	0.46	0.65	–	0.94	–	–	0.88	–	–	0.94	–
Jordan	–	0.92	1.00	1.01	1.01	1.03	1.00	1.01	1.01	–	–
Kuwait	0.82	0.85	1.00	0.98	1.01	0.96	1.04	0.99	1.02	0.99	–
Lebanon	–	–	–	–	–	–	0.97	0.98	0.99	0.99	–
Libya	0.85	0.97	0.98	–	–	–	–	–	–	–	–
Morocco	–	–	–	–	0.74	0.82	0.94	0.95	0.98	0.95	0.97
Oman	–	0.59	–	0.99	0.98	0.97	1.01	1.01	0.99	1.02	–
Qatar	0.92	1.02	0.92	1.06	1.02	1.13	0.98	1.01	1.00	1.00	–
Saudi Arabia	–	0.64	0.80	0.85	0.95	1.01	0.98	0.99	0.98	1.00	–
Syrian Arab Rep.	0.73	0.75	0.87	0.93	0.95	0.93	0.97	0.97	0.97	0.97	–
Tunisia	–	0.75	0.85	0.94	0.96	0.98	1.02	1.01	–	–	–
United Arab Emirates	–	1.00	0.99	0.97	0.97	0.99	0.99	0.98	1.00	0.99	–
West Bank and Gaza	–	–	–	–	–	–	1.01	1.02	1.00	0.99	–
Yemen, Rep. of	–	–	–	–	–	–	0.73	0.74	0.76	0.77	–
Average	0.69	0.78	0.90	0.95	0.95	0.98	0.96	0.96	0.97	0.97	–
Standard deviation	0.18	0.17	0.09	0.07	0.07	0.07	0.08	0.08	0.09	0.09	–

Sources: Calculated from the gross intake rates by gender collected for the report. (See the attached CD-ROM for the raw data.)

TABLE C.5

Gender Parity Index of Repetition Rate in Primary Education, 1970–2003

	1970	1975	1980	1985	1990	1995	2000	2001	2002	2003
Algeria	–	0.94	0.86	0.69	0.62	0.59	0.63	0.64	0.63	–
Bahrain	–	–	–	1.04	0.94	0.72	0.85	0.72	0.77	0.75
Djibouti	0.85	0.77	–	–	–	–	1.00	1.01	1.01	1.00
Egypt, Arab Rep. of	1.54	1.04	1.22	0.82	–	0.71	0.61	0.60	0.59	0.58
Iran, Islamic Rep. of	0.62	–	–	–	0.73	0.58	0.62	0.63	0.69	0.55
Iraq	1.07	0.95	–	0.85	0.78	0.69	0.71	–	–	0.72
Jordan	–	1.09	1.02	–	0.87	1.06	1.00	1.00	0.94	–
Kuwait	0.96	1.03	1.04	0.98	1.22	1.03	0.92	0.93	0.82	0.82
Lebanon	–	–	–	–	–	0.79	0.70	0.71	0.69	0.71
Libya	0.95	0.94	0.78	–	–	–	–	–	–	–
Morocco	–	–	0.91	0.87	0.81	0.75	0.76	0.77	0.74	–
Oman	–	0.96	–	0.70	0.85	0.72	0.69	0.64	0.64	0.64
Qatar	0.99	0.93	1.04	0.61	0.53	0.49	–	–	–	–
Saudi Arabia	–	0.68	0.51	0.58	0.62	0.48	0.57	0.61	0.46	0.66
Syrian Arab Rep.	0.85	0.96	0.81	0.82	0.81	0.75	0.74	0.74	0.76	0.79
Tunisia	–	0.90	0.88	0.88	0.87	0.82	0.78	0.70	0.67	–
United Arab Emirates	–	0.99	0.94	0.85	0.89	0.72	0.69	0.76	0.65	0.68
West Bank and Gaza	–	–	–	–	–	–	0.77	0.83	0.99	0.84
Yemen, Rep. of	–	–	–	–	–	–	0.76	0.83	0.81	0.83
Average	0.98	0.94	0.91	0.81	0.81	0.73	0.75	0.76	0.74	0.74
Standard deviation	0.26	0.11	0.18	0.14	0.17	0.16	0.13	0.13	0.15	0.12

Sources: Calculated from the repetition rates by gender collected for the report. (See the attached CD-ROM for the raw data.)

Note: Djibouti 2001–03: Only for public schools. Egypt 1995–2003: Ministry of Education schools, excluding Al-Azhar schools. 2003. Iraq 1990 and 1995: the data for females in 1995 and the data for males in 1990 and 1995 are presumed to be for Centre/South only. Yemen 2000–03: for basic education (grades 1 through 10).

D. Efficiency

TABLE D.1

Survival Rate to Grade 5, 1970–2003

	1970	1975	1980	1985	1990	1995	2000	2001	2002	2003	2004
Algeria	–	85.5	87.8	93.6	94.5	94.1	96.0	97.0	96.2	94.4	–
Bahrain	–	–	96.7	86.5	89.2	94.8	99.1	99.1	99.9	–	–
Djibouti	81.5	–	–	91.6	87.3	79.0	87.7	–	–	–	–
Egypt, Arab Rep. of	80.6	85.5	90.6	97.4	–	–	98.9	98.0	98.6	–	–
Iran, Islamic Rep. of	–	–	–	83.2	89.9	90.4	93.7	87.8	–	–	–
Iraq	73.7	89.0	–	84.0	–	–	65.6	–	–	–	–
Jordan	78.9	90.8	99.7	91.2	100.0	–	97.7	97.1	98.8	–	–
Kuwait	–	–	–	–	–	–	–	–	–	–	–
Lebanon	–	–	–	–	–	–	94.0	91.9	97.6	–	–
Libya	90.7	89.5	–	–	–	–	–	–	–	–	–
Morocco	65.8	78.5	78.7	68.9	75.1	75.0	83.7	81.2	75.6	–	–
Oman	–	74.0	–	93.5	96.9	95.9	96.2	98.0	97.6	–	–
Qatar	96.7	95.6	100.0	98.8	64.1	98.9	–	–	–	–	–
Saudi Arabia	82.6	82.6	83.6	93.3	82.9	89.4	94.1	91.5	93.6	–	–
Syrian Arab Rep.	88.9	85.5	90.6	95.5	96.0	93.5	92.4	–	–	–	–
Tunisia	67.8	86.5	86.6	86.6	86.5	91.0	95.5	96.2	96.5	–	–
United Arab Emirates	–	99.7	100.0	87.9	80.0	83.4	97.5	92.6	94.7	–	–
West Bank and Gaza	–	–	–	–	–	–	–	–	–	–	–
Yemen, Rep. of	–	–	–	–	–	–	64.5	67.2	66.6	67.3	68.0
Average	80.7	86.9	91.4	89.4	86.9	89.6	90.4	91.5	92.3	–	–
Standard deviation	9.8	6.9	7.5	7.6	10.2	7.4	11.1	9.2	10.8	–	–
Weighted average											
MENA	–	85.4	–	88.5	–	–	–	–	–	95.0	92.5
EAP	–	–	–	–	85.7	92.6	–	–	–	–	94.7
ECA	–	–	–	–	–	–	–	–	–	–	–
LAC	46.8	55.8	54.8	–	75.2	–	–	–	–	–	–
SA	–	–	–	53.7	–	–	–	–	61.0	59.9	62.4
SSA	–	–	–	–	65.0	–	–	–	–	–	–

Sources: UNESCO Institute for Statistics through EdStats - Data Query System (accessed on July 11, 2005) except for the following data. Algeria 2003: Zaafrane 2004.

TABLE D.2

Primary Completion Rate, 1990–2003

	1990	1995	2000	2001	2002	2003
Algeria	80.4	89.0	95.5	95.8	95.5	82.9
Bahrain	94.8	92.7	90.1	97.5	99.7	101.57
Djibouti	32.3	29.4	31.0	35.2	35.2	35.5
Egypt, Arab Rep. of	73.0	85.0	99.6	98.0	89.3	92.0
Iran, Islamic Rep. of	100.5	104.1	104.6	107.3	–	–
Iraq	–	–	55.8	–	–	–
Jordan	103.6	99.1	91.3	91.8	–	–
Kuwait	52.7	56.0	85.7	91.5	96.1	–
Lebanon	–	86.6	71.1	68.8	69.2	88.2
Libya	–	–	–	–	–	–
Morocco	47.2	52.3	61.1	63.3	67.5	75.0
Oman	–	75.3	69.1	71.6	73.4	–
Qatar	67.0	55.3	–	–	87.0	–
Saudi Arabia	56.5	64.1	74.8	66.1	61.4	–
Syrian Arab Rep.	98.6	89.7	86.5	90.2	87.5	–
Tunisia	74.5	87.8	91.1	95.8	98.8	–
United Arab Emirates	107.1	79.5	67.3	71.5	–	–
West Bank and Gaza	–	–	105.9	102.6	106.2	–
Yemen, Rep. of	–	–	61.3	62.0	63.3	62.0
Average	76.0	76.4	78.9	81.8	80.7	76.7
Standard deviation	24.1	20.7	20.0	19.6	19.7	22.1
Weighted average						
MENA	–	–	–	–	–	–
EAP	97.4	–	–	–	–	96.7
ECA	88.4	–	–	–	–	89.9
LAC	88.2	–	–	–	–	96.5
SA	73.6	–	–	–	–	80.2
SSA	50.0	–	–	–	–	59.2

Sources: UNESCO Institute for Statistics and governments through EdStats - Data Query System except for the following data. Algeria 2003: Zafrane 2004; Egypt 1990, 1995, and 2003: calculated by a consultant based on the data from Ministry of Education. Jordan 2000 and 2001: Ministry of Education. Lebanon 1995 and 2003: Ministry of Education. Yemen: Ministry of Education.

TABLE D.3

Repetition Rate in Primary Education, 1970–2003

	1970	1975	1980	1985	1990	1995	2000	2001	2002	2003
Algeria	–	12.5	11.7	7.5	9.2	8.7	12.5	11.7	11.4	11.8
Bahrain	–	–	–	8.6	5.1	5.5	4.3	3.8	2.9	3.2
Djibouti	10.7	18.9	–	12.5	13.4	14.7	14.3	12.3	11.8	10.4
Egypt, Arab Rep. of	4.5	6.7	7.9	1.5	–	6.1	5.2	5.1	4.5	4.0
Iran, Islamic Rep. of	9.1	–	–	10.2	9.4	5.9	4.8	4.3	2.3	2.3
Iraq	20.6	15.7	–	20.8	14.6	14.0	12.3	–	–	8.0
Jordan	–	4.1	3.2	–	5.4	1.3	0.6	0.5	0.5	–
Kuwait	15.6	10.8	6.2	5.2	2.8	3.5	3.2	2.8	2.5	2.5
Lebanon	–	–	–	–	–	12.3	8.7	9.6	9.7	10.1
Libya	25.8	16.4	9.2	–	–	–	–	–	–	–
Morocco	29.8	28.1	29.5	19.8	11.1	13.0	14.1	14.6	13.8	–
Oman	–	9.3	–	11.7	9.2	8.3	6.0	4.3	0.5	0.8
Qatar	23.7	21.9	12.6	10.7	7.4	4.7	–	–	–	–
Saudi Arabia	–	15.2	15.7	12.4	9.2	8.3	5.5	5.2	4.8	4.2
Syrian Arab Rep.	10.9	10.1	8.1	7.5	7.0	7.2	7.2	6.8	6.8	7.5
Tunisia	29.2	19.3	20.6	20.4	19.8	17.3	15.9	9.9	9.2	–
United Arab Emirates	–	15.2	9.0	5.7	4.4	4.7	3.1	2.8	2.6	2.2
West Bank and Gaza	–	–	–	–	–	–	1.8	1.5	1.2	0.2
Yemen, Rep. of	–	–	–	–	–	–	7.3	4.4	4.6	5.5
Average	18.0	14.6	12.1	11.0	9.1	8.5	7.5	6.2	5.6	5.2
Standard deviation	9.0	6.3	7.4	5.9	4.5	4.6	4.7	4.2	4.3	3.7
Weighted average										
MENA	13.0	13.2	–	10.2	–	8.2	7.8	7.2	6.8	–
EAP	–	–	–	–	6.8	3.0	1.9	1.6	1.4	–
ECA	–	–	–	–	–	2.4	1.0	0.9	0.8	–
LAC	16.1	12.0	15.3	15.0	–	12.9	11.0	10.5	–	–
SA	20.87	–	–	–	–	3.69	4.6	4.5	4.5	–
SSA	–	–	–	–	–	–	–	–	9.4	11.1

Sources: UNESCO Institute for Statistics through EdStats - Data Query System (accessed on July 11, 2005) except for the following data. Algeria 2002: République Algérienne Démocratique et Populaire Ministère De L'Education Nationale Direction De La Planification 2003. Djibouti 2001–03: Ministère de l'Education Nationale et de l'Enseignement Supérieur Direction de la Planification et de l'Informatisation Bureau des Statistiques 2002, 2003, and 2004. Egypt 1995–2003: Ministry of Education through World Bank 2005. Iran 2002: Ministry of Education/Ministry of Planning and Organization 2004 through World Bank 2006a. Iraq 1990 and 1995: UNESCO 2003. Lebanon: calculations using consecutive years' data from the Education Center for Research and Development's annual statistical bulletins. Morocco 1995–02: Royaume du Maroc Ministère de L'Education Nationale de l'Enseignement Supérieur de la Formation des Cadres et de la Recherche Scientifique Département de l'Education Nationale Direction la de Strategie, de la Statistique et de la Planification 2004. Tunisia 2000: World Bank 2001. Tunisia 2001: Banque mondiale 2005. Yemen 2000–03: Ministry of Education.

Note: Djibouti 2001–03: only for public schools. Egypt 1995–2003: only for MOE schools, excluding Al-Azhar schools. Iraq 1995: presumed to be for Centre/South only.

TABLE D.4

Repetition Rate in Secondary Education, 1970–2003

	1970	1975	1980	1985	1990	1995	2000	2001	2002	2003
Algeria	5.3	5.2	–	–	14.4	16.1	27.2	–	–	–
Bahrain	13.5	18.9	6.5	4.3	4.3	–	8.2	6.8	5.2	5.8
Djibouti	–	4.6	–	9.7	6.1	7.7	5.8	7.2	8.7	9.9
Egypt, Arab Rep. of	–	11.4	–	–	–	–	7.2	8.6	7.4	–
Iran, Islamic Rep. of	–	–	–	–	–	–	–	–	–	–
Iraq	29.5	18.8	–	23.5	–	–	27.5	–	–	9
Jordan	–	7.9	4.4	–	4.7	–	1.1	1.0	0.9	–
Kuwait	–	15.8	10.3	–	11.6	14.8	10.3	11.0	7.8	7.8
Lebanon	–	–	–	–	–	11.1	6.0	11.5	11.2	11.7
Libya	17.2	7.2	12.7	–	–	–	–	–	–	–
Morocco	16.8	15	15.0	14.8	18.5	19.1	17.7	17.2	16.4	–
Oman	–	1.2	–	12.6	8.4	10.3	9.4	7.7	7.9	6.5
Qatar	6.8	7.6	13.8	11.2	8.5	8.3	–	–	–	–
Saudi Arabia	–	8.2	14.8	–	6.4	11.8	7.1	7.4	7.8	6.6
Syrian Arab Rep.	16.2	15.6	13.9	13.5	13.22	–	10.9	9.9	7	7.8
Tunisia	–	8.5	7.4	13.7	15.5	13.9	15.2	16.7	14.1	–
United Arab Emirates	–	6.9	–	9.9	7.1	7.8	5.1	4.9	5.5	4.5
West Bank and Gaza	–	–	–	–	–	–	2.42	2.13	1.76	1.96
Yemen, Rep. of	–	–	–	–	–	–	6.7	4.8	4.2	5.7
Average	15.1	10.2	11.0	12.6	9.9	12.1	10.5	8.3	7.6	7.0
Standard deviation	8.0	5.4	4.0	5.2	..	3.8	7.8	4.7	4.3	2.7
Weighted average										
MENA	–	11.79	–	–	–	–	–	–	–	–
EAP	–	–	–	–	1.4	0.3	–	–	0.52	–
ECA	–	–	–	–	–	–	0.89	0.84	–	–
LAC	–	–	4.8	–	–	–	11.36	10.5	–	–
SA	–	–	–	–	–	–	4.93	4.98	5.04	–
SSA	–	–	–	–	–	–	–	–	–	–

Sources: UNESCO Institute for Statistics through EdStats - Data Query System. Djibouti 2001–03: Ministère de l'Éducation Nationale et de l'Enseignement Supérieur Direction de la Planification et de l'Informatisation Bureau des Statistiques 2002, 2003, and 2004. Iraq 2003: Republic of Iraq Ministry of Education 2005. Yemen 2000–03: Ministry of Education.

Note: Djibouti 2001–03: only for public schools. Iraq 1995: presumed to be for Centre/South only.

TABLE D.5

Dropout Rate in Primary Education, 1975–2004

	1975	1980	1985	1990	1995	2000	2001	2002	2003	2004
Algeria	–	–	–	–	–	6.5	1.6	1.9	2.3	–
Bahrain	–	–	–	–	–	0.2	–	–	–	–
Djibouti	–	–	–	–	–	–	–	–	–	–
Egypt, Arab Rep. of	–	–	–	3.9	1.3	0.9	0.9	0.8	0.9	0.5
Iran, Islamic Rep. of	–	–	–	–	–	–	–	1.7	–	–
Iraq	–	1.4	–	1.9	3.1	2.4	–	–	3.6	–
Jordan	3.2	2.4	1.1	2.3	0.4	0.2	0.2	0.2	0.2	0.2
Kuwait	–	–	–	–	–	1.5	1.3	0.8	–	–
Lebanon	–	–	–	–	0.7	2.2	2.6	1.2	2.2	–
Libya	–	–	–	–	–	–	–	–	–	–
Morocco	–	–	–	4.9	6.4	4.5	5.1	6.2	–	–
Oman	–	–	–	–	–	4.8	–	–	–	–
Syrian Arab Rep.	–	–	–	–	–	11.7	–	–	–	–
Tunisia	–	–	–	4.7	4.4	–	–	1.8	–	–
Saudi Arabia	–	–	–	–	–	7.8	–	–	–	–
United Arab Emirates	–	–	–	–	–	4.1	–	–	–	–
West Bank and Gaza	–	–	–	–	2.8	1.5	1.0	1.0	0.9	0.7
Yemen, Rep. of	–	–	–	–	–	15.5	8.5	6.9	7.8	–
Average	–	–	–	3.5	2.7	4.6	2.6	2.3	2.5	–
Standard deviation	–	–	–	1.4	2.2	4.5	2.8	2.3	2.6	–

Sources: Algeria 2000: UNESCO 2004. Algeria 2001: République Algérienne Démocratique et Populaire Ministère De L'Éducation Nationale Direction De La Planification 2003. Algeria 2002: Zaafrane 2004. Algeria 2003: World Bank 2006c. Bahrain: UNDP, "Gender Equality and Empowerment of Women" from <http://www.undp.org/bh/undp/files/Goal3.pdf>. Egypt: Ministry of Education. Iran: Ministry of Education/Ministry of Planning and Organization 2004 through World Bank 2006a. Iraq 1980, 1990, 1995, and 2000: UNESCO 2003. Iraq 2002: Republic of Iraq Ministry of Education. Jordan: Ministry of Education. Kuwait 2000: UNESCO 2004. Kuwait 2001 and 2002: State of Kuwait Ministry of Education 2004. Lebanon: Ministry of Education. Morocco: Royaume Du Maroc Ministère de L'Éducation Nationale de l'Enseignement Supérieur, de la Formation des Cadres et de la Recherche Scientifique Département de l'Éducation Nationale Direction la de Strategie de la Statistique et de la Planification 2004. Oman 2000: UNESCO 2004. Syria: UNESCO 2004. Tunisia 1990: Ministry of National Education through World Bank 1995. Tunisia 1995: Banque mondiale 2000. Tunisia 2002: World Bank 2004a. West Bank and Gaza 2000: UNESCO 2004. West Bank and Gaza 1995–2003: Palestinian Central Bureau of Statistics. West Bank and Gaza 2004: World Bank 2006b. Yemen 2001–03: Ministry of Education.

Note: Egypt: only for MOE schools, not including Al-Azhar schools. Egypt 1990: actually for 1991. Iraq 1980: actually for 1978. Iraq 1990 and 1995: presumed to be for Centre/South only. Iraq 2000: actually for 1998. Jordan 1985: actually for 1984. Morocco: only for public schools. Morocco 1990: actually for 1991. Tunisia 1990: actually for 1992. West Bank and Gaza: for basic education. Yemen 2000: actually for 1999.

TABLE D.6

Dropout Rate in Secondary, Lower Secondary, and Upper Secondary Education, 1975–2004

	Level	1975	1980	1985	1990	1995	2000	2001	2002	2003	2004
Algeria	Secondary	–	–	–	–	–	–	–	13.9	–	–
	Lower Secondary	–	–	–	–	–	–	12.7	13.4	13.6	–
	Upper Secondary	–	–	–	–	–	–	13.6	14.7	–	–
Bahrain	Lower Secondary	–	–	–	–	–	0.4	–	–	–	–
	Upper Secondary	–	–	–	–	–	1.8	–	–	–	–
Iraq	Secondary	–	–	–	–	–	–	–	–	4	–
	Lower Secondary	–	2.3	–	5.1	6.9	7.6	–	–	–	–
	Upper Secondary	–	–	–	1.5	1.9	..	–	–	..	–
Jordan	Secondary	9.7	9.0	9.4	11.8	2.1	1.1	0.9	0.7	0.7	0.7
	Lower Secondary	11.2	8.4	8.1	8.7	1.5	1.1	0.9	0.8	0.7	0.7
	Upper Secondary	5.6	10.2	11.9	16.3	2.8	1.1	0.9	0.7	0.7	0.7
Kuwait	Lower Secondary	–	–	–	–	–	–	2.8	1.6	–	–
	Upper Secondary	–	–	–	–	–	–	8.3	9.2	–	–
Lebanon	Lower Secondary	–	–	–	–	5.8	10.0	11.7	11.3	11.1	–
Morocco	Lower Secondary	–	–	–	12.7	14.8	12.7	14	14.6	–	–
	Upper Secondary	–	–	–	13	16.5	10.1	8.4	9.4	–	–
Oman	Lower Secondary	–	–	–	–	7.1	–	–	2.0	–	–
Tunisia	Secondary	–	–	–	–	8.7	–	–	9.2	–	–
	Upper Secondary	–	–	–	–	12	–	–	–	–	–
West Bank and Gaza	Upper Secondary	–	–	–	–	–	–	–	–	3	3
Yemen, Rep. of	Secondary	–	–	–	–	–	..	8.5	6.9	7.8	–
	Lower Secondary	–	–	–	–	–	12	9.6	7.4	6.0	–
	Upper Secondary	–	–	–	–	–	..	4.6	4.7	4.9	–

Sources (Secondary): Algeria 2002: Zaafrane 2004. Iraq 2003: Republic of Iraq Ministry of Education 2005. Jordan: Ministry of Education. Tunisia 1995: World Bank 1997. Tunisia 2000: World Bank 2004a. Yemen 2001–2003: Ministry of Education.

Note: Jordan 1995: actually for 1994.

Sources (Lower Secondary): Algeria 2001: République Algérienne Démocratique et Populaire Ministère de L'Éducation Nationale Direction de La Planification 2003. Algeria 2002: Zaafrane 2004. Algeria 2003: World Bank 2006c. Bahrain 2000: UNDP, "Gender Equality and Empowerment of Women" from <http://www.undp.org/bh/undp/files/Goal3.pdf>. Iraq 1980, 1990, 1995, and 2000: UNESCO 2003. Egypt: Ministry of Education. Iran: Ministry of Education/Ministry of Planning and Organization 2004 through World Bank 2005. Iraq 1990 and 1995: UNESCO 2003. Jordan: Ministry of Education. Kuwait: Ministry of Education through State of Kuwait Ministry of Education 2004. Lebanon: Ministry of Education. Morocco: Royaume Du Maroc Ministère de L'Éducation Nationale de l'Enseignement Supérieur de la Formation des Cadres et de la Recherche Scientifique Department de l'Éducation Nationale Direction la de Strategie de la Statistique et de la Planification 2004. Oman: Sultanate of Oman Ministry of Education. 2004. Yemen 2000–2003: Ministry of Education.

Note: Egypt: data are only for MOE schools, not including Al-Azhar schools. Iraq 1990 and 1995: presumed to be for Centre/South only. Iraq 1980: actually for 1978. Iraq 2000: actually for 1998. Jordan 1995: actually for 1994. Yemen 2000: actually for 1999.

Sources (Upper Secondary): Algeria 2001: République Algérienne Démocratique et Populaire Ministère de L'Éducation Nationale Direction de La Planification 2003. Algeria 2002: Zaafrane 2004. Bahrain 2000: UNDP, "Gender Equality and Empowerment of Women" from <http://www.undp.org/bh/undp/files/Goal3.pdf>. Iraq 1990 and 1995: UNESCO 2003. Jordan: Ministry of Education. Kuwait: Ministry of Education through State of Kuwait Ministry of Education 2004. Morocco: Royaume Du Maroc Ministère de L'Éducation Nationale de l'Enseignement Supérieur de la Formation des Cadres et de la Recherche Scientifique Department de l'Éducation Nationale Direction la de Strategie de la Statistique et de la Planification 2004. Tunisia 1995: World Bank 1997. West Bank and Gaza: Palestinian Central Bureau of Statistics Yemen 2001–2003: Ministry of Education.

Note: Iraq 1990 and 1995: presumed to be for Centre/South only. Jordan 1995: actually for 1994. Morocco 1990: actually for 1991. Tunisia 1995: actually for 1994.

TABLE D.7

Private Enrollment Share in Primary Education, 1985–2003

(percent)

	1985	1990	1995	2000	2001	2002	2003
Algeria	–	–	–	–	–	–	–
Bahrain	11.2	13.2	17.2	19.7	21.1	21.8	22.6
Djibouti	9.9	8.9	7.2	11.1	11.0	15.5	15.5
Egypt, Arab Rep. of	4.8	5.8	6.5	8.9	–	9.0	8.0
Iran, Islamic Rep. of	–	0.1	2.7	3.6	3.8	3.8	4.3
Iraq	–	–	–	–	–	–	–
Jordan	7.8	22.9	24.8	30.0	29.4	29.2	29.9
Kuwait	28.3	25.0	33.2	30.6	30.4	31.0	32.3
Lebanon	–	68.3	70.7	63.6	63.5	64.2	64.7
Libya	–	–	–	2.2	2.5	2.5	–
Morocco	3.4	3.6	3.8	4.6	4.9	5.3	5.5
Oman	1.2	1.8	3.1	4.5	4.1	4.0	4.3
Qatar	21.6	23.4	34.8	39.3	41.2	43.0	41.8
Saudi Arabia	3.2	4.1	6.0	6.6	6.7	6.8	6.9
Syrian Arab Rep.	4.5	3.6	3.9	4.3	4.4	4.2	4.2
Tunisia	0.4	0.5	0.6	0.8	0.8	0.9	1.0
United Arab Emirates	25.6	32.3	41.5	46.5	50.8	53.8	57.6
West Bank and Gaza	–	–	–	8.9	8.3	7.7	8.4
Yemen, Rep. of	–	–	–	1.3	1.3	1.7	1.8
Average	10.2	15.2	18.3	16.9	17.8	17.9	19.3
Standard deviation	19.5	17.4	22.8	20.3	21.3	18.4	20.4
Weighted average							
MENA	–	3.4	5.3	–	–	–	–
EAP	–	–	–	–	–	–	–
ECA	–	–	–	–	–	–	–
LAC	12.5	13.2	12.7	–	–	–	–
SAS	–	–	–	–	–	–	–
SSA	–	–	–	–	–	–	–

Source: UNESCO Institute for Statistics through EdStats - Data Query System, except for the following data. Morocco 1995–2001: calculated from Royaume du Maroc Ministère de l'Éducation Nationale 2002 and Ministry of Education.

TABLE D.8

Private Enrollment Share in Secondary Education, 1975–2003

(percent)

	1975	1980	1985	1990	1995	2000	2001	2002	2003
Algeria	–	–	–	–	–	–	–	–	–
Bahrain	–	–	12.2	8.8	14.8	15.2	14.9	15.2	15.5
Djibouti	–	–	3.0	15.7	10.9	14.7	15.3	–	21.0
Egypt, Arab Rep. of	–	–	–	3.8	4.8	–	6.0	6.0	5.5
Iran, Islamic Rep. of	–	–	–	0.3	2.6	–	–	5.7	–
Iraq	–	–	–	–	–	–	–	–	–
Jordan	–	–	–	6.1	9.4	16.5	16.2	16.3	16.6
Kuwait	–	–	13.8	22.6	26.5	27.3	27.6	27.1	27.6
Lebanon	–	–	–	57.8	60.5	51.1	51.0	51.1	51.9
Libya	–	–	–	–	–	–	2.8	2.8	–
Morocco	–	–	6.3	2.7	2.7	5.0	–	4.6	4.6
Oman	–	–	0.5	0.7	0.6	0.9	0.9	1.0	1.1
Qatar	–	–	10.8	12.3	19.5	28.8	30.4	31.7	32.3
Saudi Arabia	–	–	3.0	2.8	3.7	6.3	6.3	7.6	7.9
Syrian Arab Rep.	–	–	6.2	5.6	5.9	4.8	4.6	4.2	4.1
Tunisia	–	–	9.5	12.0	8.6	7.6	–	4.0	3.9
United Arab Emirates	–	–	15.4	20.7	28.5	33.7	35.9	38.1	40.6
West Bank and Gaza	–	–	–	–	–	4.8	4.3	4.1	4.3
Yemen, Rep. of	–	–	–	–	–	1.3	–	1.7	1.7
Average	–	–	8.1	12.3	14.2	15.6	16.6	13.8	15.9
Standard deviation	–	–	5.0	14.9	16.0	14.7	15.3	15.2	15.8
Weighted average									
MENA	14.5	–	–	3.1	–	–	–	–	–
EAP	–	–	–	–	–	–	–	–	–
ECA	–	–	–	–	–	–	–	–	–
LAC	–	–	22.6	–	–	–	–	–	–
SAS	–	–	–	–	–	–	–	–	–
SSA	–	–	–	–	–	–	–	–	–

Sources: UNESCO Institute for Statistics through World Bank EdStats - Data Query System.

TABLE D.9

Private Enrollment Share in Tertiary Education, 2000–2003

(percent)

	2000	2001	2002	2003
Egypt, Arab Rep. of	–	–	17.6	16.5
Iran, Islamic Rep. of	–	–	54.4	54.1
Iraq	12.3	–	–	6.5
Jordan	35.9	31.6	37.1	24.7
Kuwait	–	–	–	–
Lebanon	42.1	46.0	47.1	49.3
Libya	19.5	–	–	–
Morocco	3.7	4.3	4.6	5.1
Oman	–	–	–	28.7
Saudi Arabia	–	–	6.8	7.4
Tunisia	–	–	0.4	–
West Bank and Gaza	598.3	55.2	55.6	58.1
Yemen, Rep. of	–	–	–	8.7
Average	28.6	34.3	27.9	25.9
Standard deviation	20.4	22.2	23.2	20.9

Source: UNESCO Institute for Statistics through World Bank EdStats - Data Query System.

E. Quality and Outcomes

TABLE E.1

TIMSS Score in Math of 8th Grade, 1995, 1999, and 2003

	1995	1999	2003
Algeria	–	–	–
Bahrain	–	–	401
Djibouti	–	–	–
Egypt, Arab Rep. of	–	–	406
Iran, Islamic Rep. of	428	422	411
Iraq	–	–	–
Jordan	–	428	424
Kuwait	392	–	–
Lebanon	–	–	433
Libya	–	–	–
Morocco	–	337	387
Oman	–	–	–
Qatar	–	–	–
Saudi Arabia	–	–	332
Syrian Arab Rep.	–	–	–
Tunisia	–	448	410
United Arab Emirates	–	–	–
West Bank and Gaza	–	–	390
Yemen, Rep. of	–	–	–
Regional average	410	409	399
International average	513	487	467
Top country	643	604	605

Sources: Mullis, Martin, Gonzalez, and Chrostowski. 2004. Martin, Mullis, Gonzalez, and Chrostowski, S.J. 2004. Mullis, Martin, Gonzalez, Gregory, Garden, O'Connor, Chrostowski, and Smith (-> 2000). Martin, Mullis, Gonzalez, Gregory, Smith, Chrostowski, Garden, and O'Connor(-> 2000). Mullis, Martin, Beaton, Gonzalez, Kelly, and Smith 1998.

Note: Top country in 1995 was Singapore for both math and science. Top countries in 1999 were Singapore for math and Chinese Taipei for science. Top country in 2003 was Singapore for both math and science.

TABLE E.2

TIMSS Score in Science of 8th Grade, 1995, 1999, and 2003

	1995	1999	2003
Algeria	–	–	–
Bahrain	–	–	438
Djibouti	–	–	–
Egypt, Arab Rep. of	–	–	421
Iran, Islamic Rep. of	463	448	453
Iraq	–	–	–
Jordan	–	450	475
Kuwait	430	–	–
Lebanon	–	–	393
Libya	–	–	–
Morocco	–	323	396
Oman	–	–	–
Qatar	–	–	–
Saudi Arabia	–	–	398
Syrian Arab Rep.	–	–	–
Tunisia	–	430	404
United Arab Emirates	–	–	–
West Bank and Gaza	–	–	435
Yemen, Rep. of	–	–	–
Regional average	447	413	424
International average	516	488	474
Top country	607	569	578

Sources: Mullis, Martin, Gonzalez, and Chrostowski. 2004. Martin, Mullis, Gonzalez, and Chrostowski, S.J. 2004. Mullis, Martin, Gonzalez, Gregory, Garden, O'Connor, Chrostowski, and Smith (-> 2000). Martin, Mullis, Gonzalez, Gregory, Smith, Chrostowski, Garden, and O'Connor(-> 2000). Mullis, Martin, Beaton, Gonzalez, Kelly, and Smith 1998.

Note: Top country in 1995 was Singapore for both math and science. Top countries in 1999 were Singapore for math and Chinese Taipei for science. Top country in 2003 was Singapore for both math and science.

TABLE E.3

Adult Literacy Rate (Aged 15 and Older), 1955–2004

	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000	2001	2002	2003	2004
Algeria	19.0	–	18.8	21.5	28.4	36.6	44.9	52.9	60.3	66.7	67.8	68.9	69.9	–
Bahrain	–	25.3	28.5	50.9	62.9	71.2	76.7	82.1	85.2	87.5	87.9	88.5	86.6	–
Djibouti	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Egypt, Arab Rep. of	–	25.8	–	31.6	35.4	39.3	43.2	47.1	51.1	–	65.6	61.0	71.4	–
Iran, Islamic Rep. of	12.8	–	22.8	34.3	42.0	49.7	55.9	63.2	70.0	76.0	77.1	–	77.0	–
Iraq	–	–	–	–	–	–	–	–	–	–	–	–	74.1	65.0
Jordan	–	–	–	55.1	62.3	69.2	75.6	81.5	86.5	89.8	90.3	90.9	90.3	–
Kuwait	–	–	52.6	57.6	61.8	67.8	72.1	76.7	79.0	81.9	82.4	82.9	93.3	–
Lebanon	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Libya	12.9	–	21.7	35.4	44.7	52.7	60.8	68.1	74.5	79.9	80.8	81.7	–	–
Morocco	–	13.8	–	19.8	24.5	28.6	33.5	38.7	43.9	48.8	49.8	50.7	52.3	–
Oman	–	–	–	18.5	27.6	36.2	45.5	54.7	63.7	71.7	73.0	74.4	81.4	–
Qatar	–	–	–	58.3	63.4	69.8	74.4	77.0	79.3	–	–	–	89.0	–
Saudi Arabia	–	–	–	33.3	41.7	50.9	59.2	66.2	71.3	76.2	77.1	77.9	79.4	–
Syrian Arab Rep.	–	–	–	41.1	47.7	53.3	59.4	64.8	69.9	74.4	75.3	82.9	79.6	–
Tunisia	15.7	–	32.2	27.4	36.3	44.9	52.6	59.1	64.7	71.0	72.1	73.2	74.3	–
United Arab Emirates	–	–	–	52.2	59.6	65.4	68.8	71.0	73.4	76.2	76.7	77.3	–	–
West Bank and Gaza	–	–	–	–	–	–	–	–	84.3	89.2	90.2	91.0	91.9	92.3
Yemen, Rep. of	–	–	–	14.2	14.9	20.0	25.9	32.7	40.1	46.4	47.7	49.0	–	–
Average	–	–	–	29.7	35.8	42.0	47.0	54.3	60.4	69.0	69.0	68.7	68.7	–
Standard deviation	–	–	–	15.1	15.9	16.1	15.7	15.0	14.1	13.1	12.7	13.5	11.0	–
Weighted average														
MENA	–	–	–	24.7	32.5	40.3	48.3	56.1	63.3	68.4	69.4	–	–	–
EAP	–	–	–	54.1	61.0	68.0	74.1	78.9	82.5	90.2	–	–	–	–
ECA	–	–	–	96.4	97.0	97.5	98.0	98.4	98.7	97.1	–	–	–	–
LAC	–	–	–	72.6	75.9	79.1	81.7	84.1	86.3	88.5	–	–	–	–
SAS	–	–	–	33.2	36.9	40.7	44.6	48.5	52.3	55.8	59.3	–	–	–
SSA	–	–	–	–	–	–	–	–	–	62.3	64.1	64.9	–	–

Sources: UNESCO 1971, UNESCO 1980, and UNESCO Institute for Statistics through World Bank EdStats - Data Query System except for the following data. Egypt 1960, 2001, and 2002: UNDP 2003. Iraq 2004: Ministry of Planning and Development Cooperation and UNDP 2005. Jordan 1990 and 2003: World Bank 2004c. West Bank and Gaza 1995 and 2000–04: Palestinian Central Bureau of Statistics.

Note: Algeria: the data in 1955 and 1965 are actually for 1954 and 1966. Bahrain: the data in 1960 are for 1959.

TABLE E.4

Average Years of Schooling of Adults, 1960–2000

	1960	1965	1970	1975	1980	1985	1990	1995	2000
Algeria	0.98	1.04	1.56	2.01	2.68	3.46	4.25	4.83	5.37
Bahrain	1.04	1.58	2.78	3.23	3.62	4.06	4.97	5.50	6.11
Egypt, Arab Rep. of	–	–	–	1.55	2.34	3.56	4.26	4.99	5.51
Iran, Islamic Rep. of	0.80	1.34	1.61	2.21	2.82	3.37	3.96	4.73	5.31
Iraq	0.29	0.81	1.36	1.85	2.66	2.54	3.27	3.74	3.95
Jordan	2.33	2.74	3.25	3.77	4.28	5.23	5.95	6.47	6.91
Kuwait	2.89	2.88	3.13	3.37	4.53	5.28	5.99	6.54	7.05
Libya	–	0.97	–	2.03	–	3.87	–	–	–
Syrian Arab Rep.	1.35	1.77	2.15	2.84	3.65	4.47	5.11	5.48	5.77
Tunisia	0.61	0.94	1.48	2.27	2.94	3.34	3.94	4.53	5.02
United Arab Emirates	–	–	–	2.87	–	–	–	–	–
Yemen, Rep. of	–	–	–	0.09	0.34	0.84	1.48	2.35	2.91
Average	1.29	1.56	2.17	2.34	2.99	3.64	4.32	4.92	5.39
Standard deviation	0.9	0.8	0.8	1.0	1.2	1.3	1.3	1.2	1.3
Weighted average									
MENA	–	–	–	–	–	–	–	–	–
EAP	–	–	–	4.19	4.61	4.85	5.54	5.91	6.18
ECA	–	–	–	–	–	–	–	–	–
LAC	–	–	3.82	3.91	4.42	4.71	5.32	5.74	6.05
SAS	–	–	2.07	2.45	3.01	3.33	3.89	4.22	4.65
SSA	–	–	–	–	–	–	–	–	–

Sources: Barro-Lee 2000 except for the following data. Yemen 1995: calculated by a consultant using Central Statistical Organization 1996. Yemen 2000: calculated by a consultant using Yemen National Poverty Survey 1999.

Note: Yemen 1995: the data are for the population ages 10 and above in 1994. Yemen 2000: The data are actually for 1999.

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