2

Growth, Productivity, and Income

The aggregate growth and productivity performance of the Arab economies is of interest for at least two reasons. First, in light of the challenges the Middle East faces, it is helpful to get a sense of the region's history as a starting point for forming expectations about its future. However, as investment advisers endlessly caution, past performance is no guarantee of future results. For most countries, not only the Middle East, performance over decades varies significantly—good in one, bad in the next (Easterly et al. 1993). Only a handful of countries in Asia have been able to realize sustained growth decade after decade. The Middle East has not, but it is not unusual in this respect.

Second, economic performance may be related to a widespread sense of disaffection of significant parts of the population, which is often remarked upon in Arab as well as Western sources (UNDP 2002, 2003). Dissatisfaction with current performance, if channeled constructively, might yield political pressure for reform, or it can be externalized unproductively (Lust-Okar 2004). In this regard, one can view economic performance in two relevant ways. The first is in an absolute sense: Has the economy delivered increasing levels of material prosperity and if so at what rate? The second is in a relative sense internationally: Have incomes risen more or less quickly than those of other countries to which Middle Eastern citizens and policymakers might compare themselves?

This chapter focuses on economic development in some of the major countries of the Middle East. Given the current intense focus on the Arab economies and assertions that terrorism has its source in poverty and a lack of improvement in social well-being (Lugar 2004), we first consider

the economic performance of the Arab nations in terms of their income in purchasing power units relative to that of the advanced industrial countries of the Organization for Economic Cooperation and Development (OECD) and then analyze the change in absolute living standards over time within the Arab countries themselves. The main findings are that (1) as a group, the Arab countries grew fairly rapidly in the 1960s and 1970s but, like almost all developing nations, were not able to close the relative gap with the OECD economies; (2) their performance was much weaker in the 1980–2000 period than in the preceding two decades; and (3) despite the increased gap relative to rich countries, in a number of Arab countries for which data are available, the absolute standard of living improved, measured in local constant prices. Local residents could afford more calories and clothing, just not as many more as citizens of the OECD countries. However, in some of the highly oil-dependent economies, a decline in real income may have negated, in local perception, improved education and health. The recent spectacular increase in oil prices has changed some of these results not only for producers of oil but also for surrounding economies with which they have considerable interactions, particularly in employing expatriates. But the persistence of high prices is not assured, and we focus on the longer record from 1960 to the present.

The chapter begins by providing a number of descriptive measures in a comparative international framework. We consider the evolution of a few Arab economies relative to the advanced industrial economies of the OECD. These comparisons are carried out using internationally comparable measures that adjust for differences in purchasing power across nations. Even one of the best performing economies, Egypt, has not closed the gap between itself and the OECD nations over the last quarter century, while Saudi Arabia declined dramatically until the upsurge in oil prices in 2004, the sustainability of which is unknown. However, by another measure, namely the growth of per capita income within a country at local constant prices, the performance of Egypt and several (but not all) of the Arab countries is not very different from many other developing countries. In our view, this measure is likely to be more informative about how individuals perceive their own progress, though international comparisons are of interest in other dimensions.

We then analyze some of the proximate determinants of differences in growth over time and consider them in an international context. Contrary to what is usually claimed by those who focus solely on the Middle East, the achievements of the non–oil dominated Arab economies are not systematically worse than countries in other regions except for the East Asian countries. For nations such as Kuwait and Saudi Arabia, however, their near collapse since the peaking of oil prices in the 1980s has been notable (as is their more recent rise). While this failure has had ramifications for other countries, such as Jordan, ranging from reduced repatriation of earnings of expatriates to smaller export purchases, these effects have not pre-

cluded continued growth in the nations that are not resource rich. Now with oil prices rising, these indirect impacts have been partly reversed.

Identifying the Comparators

We focus on Egypt, Jordan, Saudi Arabia, Kuwait, Tunisia, Morocco, Algeria, and Syria, which account for more than half the population and GDP of the Middle East and reflect the many factors that determine economic performance in the region (table 2.1). Data availability even for this group is uneven but is better than that for other Arab countries. Even though, for reasons of data availability, we will often consider only a subset of all Arab countries in our analysis, occasionally for convenience they will be referred to as Arab, Middle Eastern, or Middle East and North Africa (MENA) countries with the understanding that sometimes we are analyzing the more limited set.

Obviously even this small group is disparate both economically and historically. Unlike the others, Egypt has a millennia-long national history, a strong sense of Egyptian national identity, a substantial cosmopolitan heritage predating colonialism, and was home to non-Arab minorities, including Copts, Greeks, and Jews who figured prominently among the entrepreneurial class.[1] French colonization of Algeria, Morocco, and Tunisia left a number of legacies including a greater identification with Europe than is true of some of the other countries. Algeria, Kuwait, and Saudi Arabia are resource rich, the others less so. The economic systems range from Soviet-style state intervention in Algeria to the freer economy of Jordan. In contrast, countries such as Kuwait, Jordan, Saudi Arabia, and Syria were the creation of the post–World War I victors who disposed of the territories of the Ottoman Empire. Thus, the countries considered are not a monolithic entity—they are all Arab but different in significant dimensions from each other. Nevertheless, their economic destinies are closely linked through population and financial flows. Compared with other regional groupings, they exhibit much greater similarities than differences, for example, in their being much less part of emerging trends in many aspects of international economic transactions.

We take account of many of the major economic differences as we search for comparable countries. It is difficult and arguably not helpful to search for correspondence in all dimensions such as colonial history. There is a great divergence across countries throughout the world yet many similarities in economic performance and the policies that nations with varying legacies have followed. To cite one example, almost all countries pursued a policy of import-substituting industrialization, neglect of

1. See, for example, the Alexandria quartet of novels of Lawrence Durrell or the memoir of Alhadeff (1998).

Table 2.1 GDP and population of the Middle East, 2004

Country	GDP (billions of current US dollars)	Population (millions)
Algeria	84.65	32.36
Bahrain	11.01	0.72
Djibouti	0.66	0.78
Egypt	78.80	72.64
Iran	163.44	67.01
Iraq	12.60	n.a.
Israel	116.88	6.80
Jordan	11.51	5.44
Kuwait	55.72	2.46
Libya	21.77	3.54
Lebanon	29.12	5.74
Morocco	50.03	29.82
Oman	24.28	2.53
Palestinian Authority territories	3.45	3.51
Qatar	20.43	0.78
Saudi Arabia	250.56	23.95
Syria	24.02	18.58
Tunisia	28.18	9.93
United Arab Emirates	104.20	4.32
Yemen	12.83	20.33
Total	1,104.16	311.23
Share of Middle East:		
Algeria	0.08	0.10
Egypt	0.07	0.23
Jordan	0.01	0.02
Kuwait	0.05	0.01
Morocco	0.05	0.10
Saudi Arabia	0.23	0.08
Syria	0.02	0.06
Tunisia	0.03	0.03
Total	0.53	0.63

n.a. = not available

Note: GDP data for Iraq, Qatar, and Palestinian Authority territories are from 2003.

Source: World Bank, *World Development Indicators,* May 2006.

agriculture, and intensive attempts by government to foster industrial development. Most efforts failed or resulted in slow growth, but a handful of Asian countries hit upon an improved version of these formulas that emphasized the role of exports while not abandoning the protection of the home market for a long period. Nevertheless, compared with other regions of the world, there are strong similarities among the Arab countries we consider, particularly their much lower integration into the world

economy in a number of critical dimensions including a paucity of non-primary product exports, low inflows of both portfolio and foreign direct investment, and tiny technology transactions. Moreover, they all will face, to varying degrees, a much more rapid growth in their labor force than any nation outside of sub-Saharan Africa.

For most of these countries, data from the 1950s and 1960s are sketchy, but Robin Barlow's (1982) attempt to construct consistent time series for the period 1950–72 suggests that, if anything, the countries of the Middle East exhibited slightly more rapid growth than comparable developing countries over this period. This would be consistent with the fairly rapid expansion of education evidenced by rising rates of school attendance and literacy. Data availability problems are less severe for the 1960s. Though consistent data are typically in local prices, it is now well understood that measures in Egyptian pounds or Saudi dinars converted to dollars at the official exchange rate may be misleading because of both exchange rate misalignment and the systematically lower costs in poor countries of internationally nontraded goods like haircuts and housing. Purchasing power parity (PPP)–adjusted national income data constructed using international price comparisons permit more informative comparisons of living standards across countries.

The question of what is the relevant set of countries to compare with the Arab countries can be answered in multiple ways. In one sense one wants to compare them with the best contemporaneous performers because it indicates the maximum that one might have expected from them or alternatively the upper bound of the opportunities forgone. In this regard South Korea and Taiwan are the exemplars. Admittedly from an Arab perspective, the comparison with South Korea and Taiwan may not seem an entirely fair one. Fifty years ago the Asians may have been "deceptively poor": Contemporary income was low because of small physical capital stocks (due to war devastation in the case of South Korea and a lack of investment on the island of Taiwan prior to the decampment of the Kuomintang from mainland China), but in the mid-1950s the ratio of human capital to income was among the highest in the world (Noland and Pack 2003, table 2.1). These were countries with considerable social capacity but lacking physical capital, which was rapidly accumulated, some of it financed by US aid in the context of the Cold War.[2] Nevertheless, in establishing the upper limits of opportunities forgone, these countries set the standard.

Another set of comparators would be large developing countries insofar as the familiarity with these countries engendered by political or eco-

2. It is worth debunking one frequently made assertion that the major source of South Korean and Taiwanese growth was foreign aid, particularly from the United States. Such aid can be viewed as akin to remittances by expatriate workers, foreign aid, and rents from natural resource revenue. As shown in chapter 4, some Arab countries received very large amounts in these dimensions, dwarfing the Asian aid inflows of the earlier period. Even aid alone, including debt forgiveness, was larger in some Arab countries than in South Korea or Taiwan.

nomic prominence would invite self-comparisons both by residents and policymakers in the Middle East. In this respect the obvious reference nations would be India and China, both of which exhibited slow growth for decades but have grown rapidly in the last two and three decades, respectively.

Lastly, we compare the Arab countries with other intrinsically similar economies. Here the heterogeneity within the Middle East itself suggests two separate groups of comparators: one set for the major oil producers and the other for countries less abundant in natural resources. Scatterplots of data on labor, physical capital, human capital, and arable land endowments for 83 countries in 1961 are shown in figures 2.1a and 2.1b. The country sample was determined on the basis of data availability; the countries of the Eastern Bloc and most major oil producers are missing. The absence of the former is not really a problem for identifying relevant historical comparators—they were operating in a fundamentally different system for most of the period under consideration so the comparisons would have been questionable in any case. (The experience of Eastern Europe may be more relevant with respect to policy reform and associated supply responses, however, and we examine that experience in chapter 7.) The oil producers are discussed separately below.

Each panel shows a two-dimensional barycentric projection of three endowments in 1961, roughly the starting year of our analysis. Every endowment point on a ray emanating from one corner of the triangle has the same ratio as the other two factors; points lying closer to the corner of the triangle have a larger relative endowment of that factor. The point where the three rays emanating from each vertex intersect in the middle of the triangle indicates the average endowment bundle of the sample. The endowments are physical capital, labor force, human capital, and arable land. It is arguable that a more inclusive measure should include mineral endowments including oil. On the other hand, the price per barrel of oil was still less than $3 as late as 1973 and the real price, after the 1970s spike, declined through most of the 1980s and 1990s. Similarly, the price of a number of primary metals declined for periods of varying length. Allowing for natural resource–based production other than agriculture would thus entail another kind of analysis, perhaps such barycentric projections every five years, but even that would be arbitrary. We believe the main points can be derived from the starting point that we use, and results that are sensitive to the 1961 grouping will be noted.

In figure 2.1a, the five Arab countries in the sample—Algeria, Egypt, Jordan, Morocco, and Tunisia—all fall into the triangle defined by the land (*A*) and labor (*B*) vertices together with the center point (*C*) representing the sample average—i.e., they were all human capital–scarce. In figure 2.1b, arable land is replaced by physical capital. The five Arab countries fall into quadrilateral *ABCD*, indicating their relative labor abundance. Twenty-six countries constitute the Arab group's "neighbors" in these two

Figure 2.1a Endowment triangle of human capital, land, and labor, 1961

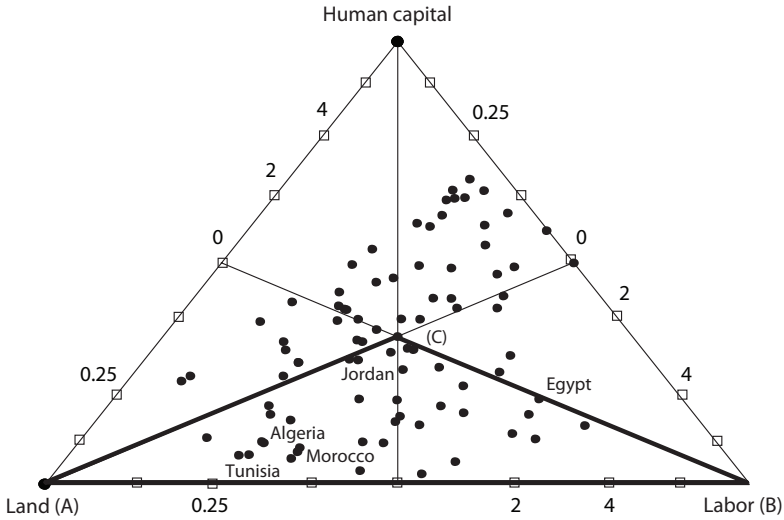
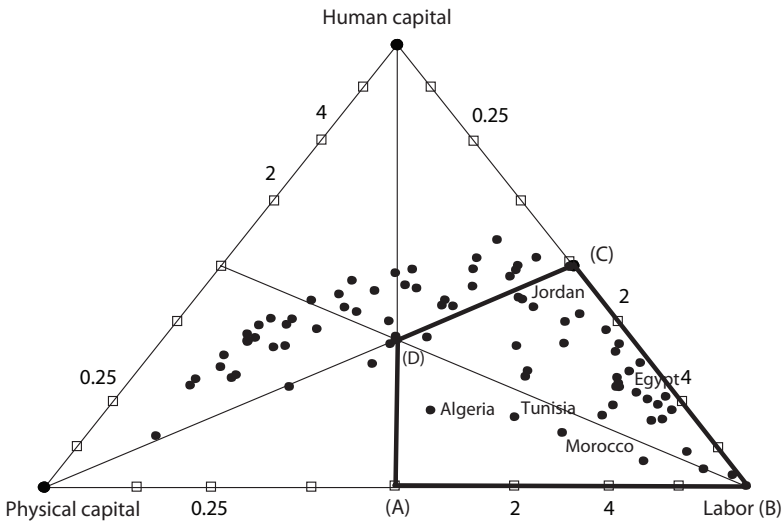


Figure 2.1b Endowment triangle of physical and human capital and labor, 1961



□ axis point

● countries

Note: Sample: n = 83

Source: Data from Bosworth and Collins (2003).

projections; most of these countries are relatively small African or Caribbean Basin economies. Seven are relatively large countries, however: Bangladesh, Brazil, India, Indonesia, Nigeria, Pakistan, and Turkey. It is an interesting and geographically diverse set of comparators. Four of the seven (Bangladesh, Indonesia, Pakistan, and Turkey) are predominantly Muslim, with Indonesia and Pakistan accounting for the largest Muslim populations in the world. Muslims make up a considerable share of Nigeria's population, while India's Muslims, though much smaller in percentage terms, constitute the third largest Muslim population in the world behind Indonesia and Pakistan. The four Muslim-majority countries plus Nigeria are members of the Organization of the Islamic Conference. Indonesia and Nigeria are members of the Organization of Petroleum Exporting Countries (OPEC), and their oil endowment could be viewed as justifying their inclusion in the natural resource–rich grouping. On the other hand, their per capita endowment of oil is much smaller than those of Kuwait or Saudi Arabia.

Thus we have identified a small group of comparators for the Arab economies: Some have been high performers, some are large and prominent, and some were similarly endowed. India is included on both of the latter two criteria, and Indonesia does double duty as a comparator to both Middle East oil producers (or at least to Algeria, which has a large population) as well as its less resource-abundant economies.

Natural Resources and Physical Capital

The relevant issues for the oil-centered economies are distinct. The economies of the Arabian Gulf, built around the export of a single commodity, are characterized by the generation of large oil rents and boom and bust cycles driven by the world price of their sole export. Table 2.2 reports the share of rents—defined as property income, grants from abroad, and state entrepreneurial income—in government revenue and GDP for seven Arab economies and four resource-abundant comparators. (It might be desirable to exclude state-owned enterprise income from this definition, but the reporting convention used by the International Monetary Fund [IMF] does not permit this.) As is immediately obvious, the Middle East oil producers represent extreme varieties of the species: It is difficult to identify other economies that are as rent-dependent. In terms of rentier status, diamond producer Botswana comes the closest; Nigeria and Venezuela, two other oil producers, rely significantly on rents for government revenue, though they have more broadly diversified economies than Kuwait, Saudi Arabia, and the smaller Gulf states, subject to the proviso that the Nigerian data are not the most current and almost certainly understate the contemporary centrality of oil to the Nigerian economy. Indonesia, another oil producer and predominantly Muslim country, is far less dependent on oil

Table 2.2 Rents (percent)

Country	Year	Share of government revenue	Share of GDP
Middle East			
Algeria	2000	70.0	24.9
Bahrain	2000	72.9	25.5
Kuwait	1999	85.2	29.4
Oman	2000	83.0	36.6
Qatar	2000	79.2	30.5
Saudi Arabia	2000	83.0	30.3
United Arab Emirates	2000	74.2	33.0
Resource-rich comparators			
Botswana	1996	66.2	30.4
Indonesia	1999	21.2	7.0
Nigeria	1978	30.0	4.9
Venezuela	2000	33.6	6.9

Note: Rents consist of entrepreneurial and property income (which includes income from state-owned enterprises) and grants (from abroad, including from supranationals, and from other general government units). Data for Bahrain and Saudi Arabia correspond to oil revenue only.

Sources: International Monetary Fund (IMF), *Government Finance Statistics,* various years; World Bank, *World Development Indicators,* various years; IMF Article IV Consultations.

than the major Arab producers, more closely resembling Algeria. Obviously the comparisons are imperfect: Botswana is subject to a different set of commodity price shocks, and Nigeria and Venezuela are less dependent on oil. Nevertheless they at least approximate the economic structures of the Middle Eastern oil producers.[3]

In these economies there is a macroeconomic tendency to save insufficiently during the booms and to overinvest in the export sector and local real estate, and as a consequence both individual financial institutions and the financial sector as a whole tend to be insufficiently diversified and subject to considerable systemic risk. For example, only one Gulf bank established following the second oil shock has survived.[4] The outstanding issue is for the government and local financial institutions to efficiently allocate the windfalls during the booms and maintain solvency during the busts, a task that is easier said than done.

A crude descriptive indicator of the efficiency of the capital allocation mechanism is the incremental capital-output ratio (ICOR), which measures

3. Colleagues have suggested that Angola, Equatorial Guinea, and Gabon might be appropriate comparators. Appropriate or not, lack of data prevents their consideration.

4. Roula Khalaf, "Sea of Cash Flooding into the Gulf Brings an Explosion of Investment Companies," *Financial Times*, October 19, 2006.

the investment necessary to produce an additional unit of output, a lower ratio being one indicator of better performance.[5] ICORs for some resource-rich economies are reported in table 2.3. For many countries, the available investment data include residential housing. In order to maximize the country sample we have computed the ICORs from these data; where available, ICORs derived from fixed business investment data alone are quantitatively quite similar. In a conventional neoclassical growth model one would expect the ICORs to rise gradually over time as capital deepening occurred and the marginal product of capital declined unless capital deepening were offset by growth in total factor productivity (TFP), the amount of output obtainable from a combined unit of labor and capital.

As seen in table 2.3, the ICORs in the resource-rich Middle Eastern countries are quite low in the 1960s, lower than in the comparator countries, arguably signaling an efficient allocation and use of investment. They rise in the 1970s but remain comparable to the comparators from outside the region. However in the 1980s, the ICORs in several of the oil producers explode. The ICORs of Kuwait and the United Arab Emirates—and over a more limited sample period, Bahrain and Libya—turn negative because income actually fell. By the turn of the millennium, the ICORs had clearly declined (i.e., capital was used more efficiently),[6] though Saudi Arabia's was relatively high, similar to Nigeria's, which in turn is often cited as exceptionally inefficient (Bevan, Collier, and Gunning 1999). Other countries such as Algeria and Oman had ICORs similar to those of Botswana and Indonesia, while Venezuela stands out as a relatively unsuccessful outlier. All in all, the data do not suggest that the identified economies are an unreasonable set of comparators for the Middle East's resource-abundant countries. ICORs for a larger group of countries are more systematically discussed later in this chapter in the section on investment and growth.

For economies that are more diversified than those of say the Gulf states, the presence of oil complicates exchange rate management. The tendency for the real exchange rate to appreciate during commodity booms and thereby render other industries uncompetitive in international markets is known as "Dutch disease," or more loosely the natural resource curse, named for the experience of the Netherlands after the discovery of natural gas in the 1970s. This phenomenon could also afflict neighboring economies that experience large capital inflows associated with remittances

5. The ICOR is proportional to the inverse of the marginal product of capital. In the Cobb-Douglas production function $Q=AK^{\alpha}L^{1-\alpha}$, the marginal product of capital is $\alpha Q/K$ while the ICOR is $\Delta K/\Delta Q$, where Q is gross domestic product, K is the quantity of capital, and L the amount of labor. ΔK is roughly equal to the value of investment in a year. The value of $\Delta K/\Delta Q$ is affected by the level of total factor productivity (TFP), A, in the individual sectors of the economy, and by the efficiency of the allocation of capital across sectors insofar as the marginal product of capital varies among sectors. These are discussed in the next section.

6. The ICORs declined due to better allocation across sectors and/or more efficient use within sectors.

Table 2.3 Incremental capital-output ratios (ICORs)

	1960s		1970s		1980s		1990s		2000s	
Country	**Period**	**ICOR**	**Period**	**ICOR**	**Period**	**ICOR**	**Period**	**ICOR**	**Period**	**ICOR**
MENA										
Algeria	1960–69	4.0	1970–79	2.9	1980–89	8.0	1990–99	8.9	2000–2004	4.4
Bahrain		n.a.		n.a.	1980–85	–27.9		n.a.		n.a.
Kuwait	1962–69	0.5	1970–79	2.0	1980–88	–5.2	1995–99	12.6	2000–2003	3.5
Libya	1960–69	0.6	1970–79	5.7	1980–83	–3.5		n.a.		n.a.
Oman		n.a.		n.a.	1980–85	2.4	1990–99	3.3	2000–2004	4.7
Saudi Arabia		n.a.		n.a.		n.a.	1997–99	24.9	2000–2003	8.6
United Arab Emirates		n.a.	1975–79	2.9	1980–89	–9.2	1993–99	6.8	2000–2004	3.3
Comparators										
Botswana		n.a.	1975–79	2.9	1980–89	1.5	1990–99	4.3	2000–2004	4.8
Indonesia	1960–69	1.3	1970–79	1.2	1980–89	2.6	1990–99	5.0	2000–2004	4.7
Nigeria	1960–69	3.9	1970–79	6.0	1980–89	51.7	1990–98	6.7	2001–2004	9.9
Venezuela	1960–69	2.6	1970–79	4.7	1980–89	62.5	1990–99	5.6	2000–2004	38.6

MENA = Middle East and North Africa
n.a. = not available

Source: World Bank, *World Development Indicators*, 2004, 2006.

from workers in the oil patch. Indonesia, with its diversified economy, including oil, timber, and manufactures, is the obvious comparator in this dimension.

It is frequently argued that beyond narrow issues of economic management, the presence of large rents associated with extractive industries has a negative impact through a variety of channels. The allocation of those rents is an intrinsically political action whether it occurs in Riyadh, Moscow, or Austin. In the case of the Arabian Gulf oil producers, those rents are so vast that the state does not need economic policy, only expenditure policy (Luciani 1990). In fact, a constant theme of the IMF's interactions with Saudi Arabia has been the clarification of the definition of the public sector and the introduction of more orderly and transparent budgetary procedures (IMF 2001, 2002, 2003).

At the level of the individual, the generation of massive oil rents means that few are directly involved in the production of wealth—the majority are involved in its distribution and consumption. Indeed one commentator goes so far as to argue that in what he describes as the allocation states of the Middle East, the rentier mentality embodies a disconnect in the work-reward causation (Beblawi 1990). It is almost always more remunerative to maneuver for a larger rent allocation than to engage either in directly productive economic activity or in political activism to construct a more rational system of allocation.

And while money cannot buy happiness, as discussed in chapter 3, it helps. From the standpoint of the political cultures and stability of the rentier states, the positive effect of high incomes on personal well-being has to be set against potentially destabilizing concerns about distribution: The absence of any transcendently rational or objective ground for determining who receives a share of the rents could manifest itself in dissatisfaction.[7]

Authoritarianism is an understandable, though regrettable, response of a political leadership confronting this conundrum and a potentially aggrieved populace. The existence of oil rents acts as an emollient through multiple channels. First, the existence of rents may absolve governments from taxation and as a consequence relieve pressure for accountability through what might be called the "accountability effect" (Ross 2001). Second, rents may furnish governments with revenues for patronage and again relieve discontent or undercut the formation of social groups independent of the state. As Lisa Anderson (2001, 56) observes, in MENA "the

7. Clement M. Henry and Robert Springborg (2001, 107–108) describe the opaque carving up of rents in Algeria, underpinned by oil, with "little or no economic rationale" by internal factions likened to the "Mafiosi." In Syria, under the alliance of convenience between the Alawite-dominated security services and the Sunni merchant class, "the differences between 'Arab Socialism' and 'Mafya-Kapitalism,' Russian-style, have blurred considerably" (Richards 2001, 48).

Table 2.4 Polity scores

Country	1960–69	1970–79	1980–89	1990–99	2000–2003
Middle East					
Algeria	–8.6	–9.0	–8.3	–4.0	–3.0
Bahrain	n.a.	–9.3	–10.0	–9.3	–7.8
Kuwait	–8.7	–8.9	–9.0	–7.2	–7.0
Oman	–10.0	–10.0	–10.0	–9.1	–8.5
Qatar	n.a.	–10.0	–10.0	–10.0	–10.0
Saudi Arabia	–10.0	–10.0	–10.0	–10.0	–10.0
United Arab Emirates	n.a.	–8.0	–8.0	–8.0	–8.0
Resource-rich comparators					
Botswana	6.3	7.0	7.3	8.3	9.0
Indonesia	–5.7	–7.0	–7.0	–5.4	7.0
Nigeria	1.8	–5.4	–1.2	–4.4	4.0
Venezuela	6.4	9.0	9.0	8.1	6.3

n.a. = not available

Source: Polity IV Project, 2003, www.cidcm.umd.edu/polity (accessed January 24, 2007).

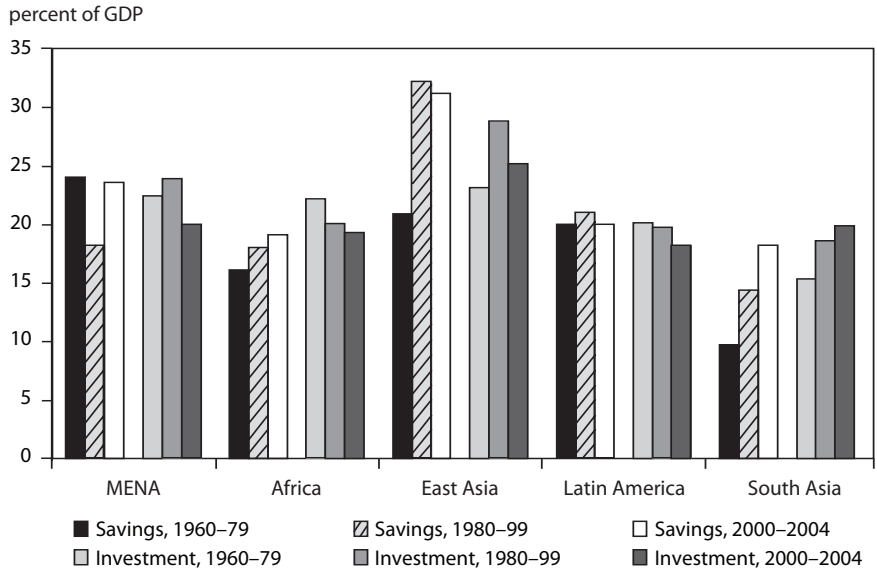
public sector accounts for over half the labor force: Government employment is a form of social security." (On the other hand, as seen in later chapters, a large public sector may reduce the flexibility of the government in addressing serious economic problems.) A third channel through which rents may impede democracy would be by financing the development and maintenance of institutions of internal repression.

In fact, the Polity IV scores of the quality and nature of government in the resource-abundant Middle Eastern countries are appalling (table 2.4).[8] On a scale from –10 to 10, all are negative, with Qatar and Saudi Arabia flat-lining at the minimum –10.[9] Not all the news is bad—the Algerian scores show an upward trend as do the scores for Kuwait. These data do not capture post–sample period liberalizing openings in a number of countries including Lebanon, Palestinian Authority territories, Saudi Arabia, Kuwait, and Egypt, with post-Saddam Iraq representing an obviously special case. Even so, the resource-rich Middle Eastern countries appear

8. For definitions and numerical results, see Polity IV Project, www.cidcm.umd.edu/polity (accessed January 24, 2007).

9. In addition to Qatar and Saudi Arabia, eight other countries scored –10 at some point between 1970 and 2000: Bahrain, Haiti, Iran, Jordan, Kuwait, Oman, Qatar, and Swaziland. Saudi Arabia alone scored –10 for the entire sample period, though. On average, the Arab countries experienced 1.1 regime changes during this period. Algeria was the least stable with three regime changes, while Kuwait and Saudi Arabia experienced no regime changes during this period.

Figure 2.2 Savings and investment ratios, 1960–2004



Note: Annual averages of gross domestic savings and gross fixed capital formation as a share of GDP. Average of available data.

Sources: World Bank, *World Development Indicators*, 2004, 2006; *Taiwan Statistical Databook*, 2006.

remarkably undemocratic, even in comparison with other resource-abundant economies in other parts of the world.

At least at the regional level, capital accumulation patterns in the Middle East have exhibited episodic shifts associated significantly with movements in the price of oil. During the 1960s and 1970s capital accumulation in the Middle East, financed in large part by oil revenues, was as rapid as in Asia and more rapid than in other developing areas (figure 2.2).

However, the Middle East's rate of capital accumulation slowed after 1980, largely due to declining saving in Kuwait and Saudi Arabia, while Asia surged ahead as rates of saving and investment rose across the region, particularly in China. However, weakness in the institutional environment, specifically fear of expropriation, may have encouraged local entrepreneurs to focus on trading and services and eschew illiquid investments in fixed capital. The upshot was to encourage the Arab states to assume a leading role in capital-intensive sectors, ultimately saddling the economy with inefficient public enterprises and a public employment share twice the world average. This may be one explanation for the falloff in the efficiency of capital investment, as discussed in greater detail below, though there is considerable intraregional variation in this regard.

Regional capital accumulation surged in the most recent period, driven by the increase in the price of oil. Although many in the region are determined that the free-spending, low-efficiency pattern of investment will not be reproduced again, concerns remain, as discussed in greater detail below (box 2.1). Slow capital accumulation does not appear to be the only explanation of the region's deteriorating relative performance, though there are reasons for concern with respect to both quality and in some nonoil producers, quantity. As seen below, despite the respectable investment rates, rapid growth in the labor force led to relatively slow growth or decline of the capital-labor ratio in a number of countries in the 1990s.

Human Capital

Economists increasingly regard investment in education and skills—human capital—as an important determinant of economic performance. As shown in figure 2.3a, South Korea and Taiwan started out with more human capital than the other comparators, at least as measured by years of schooling embodied in the labor force, and widened that lead over most of these countries over the succeeding four decades.[10] A noticeable exception was Jordan, which surpassed Brazil and China and had nearly caught up with Taiwan by the turn of the millennium. Egypt, which started the period with an educational attainment similar to that of India, Pakistan, and Bangladesh, accumulated human capital more quickly than the South Asian trio and on this measure by the end of the period had passed Turkey and had caught up with Brazil and China. Tunisia also started out behind the South Asian countries, passed Bangladesh and Pakistan, and had nearly caught up to India by 2000.

Figure 2.3b presents the same series for some resource-rich countries. Algeria started out the period a bit behind Indonesia but virtually closed the gap by the end of the period. In 1960 Iraq was comparable to Algeria, though as discussed in the next chapter it deteriorated significantly during the past 30 years. These three countries are bracketed by Venezuela, which began the period at a higher level of educational attainment and accumulated it more quickly, and Nigeria, which lagged from the start.

For late developers trying to adapt to local circumstances technology developed abroad, science and engineering education could have a particularly large impact (table 2.5). Again, the Middle East does not look distinct—its 13 percent share of tertiary graduates receiving science or engineering degrees during the late 1950s and 19 percent share in the late 1990s are both well within the norms of the comparator group. China and Taiwan had particularly high shares in the 1950s. South Korea did not,

10. Mean years of education are only a first approximation as quality measures discussed in the next chapter indicate that the Arab countries may have weak education outcomes.

Box 2.1 An oil-driven revival?

The Arab economies directly and indirectly benefit from increases in the price of oil. Obviously exporters of oil benefit immediately while contiguous resource-poor nations realize greater repatriated earnings, increased tourism from other oil-based countries, and perhaps financial inflows that allow the expansion of real investment in the recipient. In the past, such short-term gains have not been transformed into sustained growth as much of the new investment went into nontraded sectors or into inefficient investment in traded goods. It is obviously too early to tell whether, as the financial community often says in the face of a bubble, "this time it's different." The following table shows two measures of interest, namely, the total growth of per capita GDP at constant US prices and the growth of manufacturing value added at the same prices. The United States is included to allow a benchmark.

The oil-rich countries, as expected, do best, but Jordan and Tunisia exhibit very rapid growth—with Jordan partly reflecting the impact of trade agreements with the United States and Tunisia the effects of continuing economic reform. Both of these nations also experienced rapid growth in manufacturing, which augured well for the future. Thus, these examples provide some basis for optimism about the effect of an oil boom superimposed on trade agreements and policy reform (discussed in chapter 8).

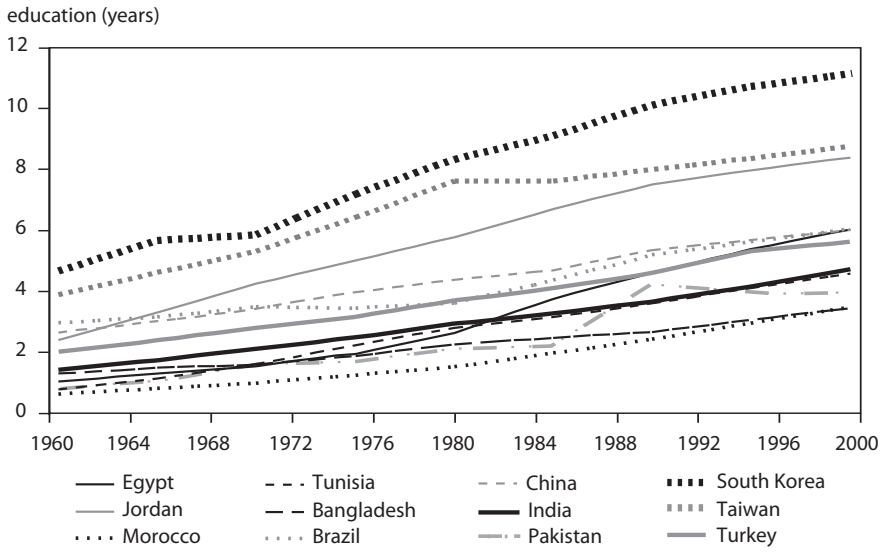
Cumulative percent change in GDP per capita and manufacturing value added, 2003–05

Country	GDP per capita	Manufacturing value added
Algeria	7.4	6.2
Egypt	5.2	6.3
Jordan	9.5	30.1
Kuwait	8.9	n.a.
Morocco	1.1	6.1
Saudi Arabia	6.5	n.a.
Syria	3.1	n.a.
Tunisia	8.5	9.0
United States	5.8	n.a.

n.a. = not available

Source: World Bank, *World Development Indicators,* 2006.

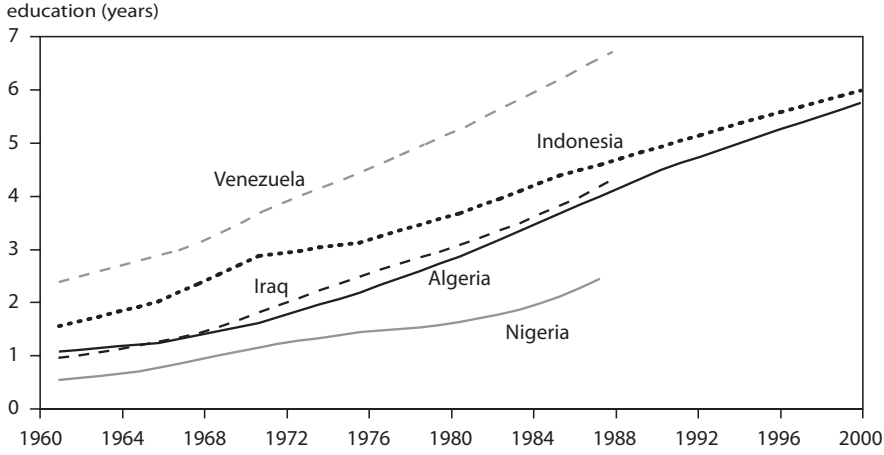
Figure 2.3a Human capital accumulation, normally endowed countries, 1960–2000



Note: Mean years of total education of the population age 15 and over.

Source: Bosworth and Collins (2003).

Figure 2.3b Human capital accumulation, resource-rich countries, 1960–2000



Note: Mean years of total education of the population age 15 and over.

Sources: Iraq, Nigeria, and Venezuela: Nehru and Dhareshwar (1995); Others: Bosworth and Collins (2003).

Table 2.5 Share of science and engineering tertiary graduates
(percent)

	1950s and 1960s		1990s	
Country	**Year**	**Share**	**Year**	**Share**
Middle East (aggregated)		13.1		18.6
Algeria		n.a.	1995	43.2
Bahrain		n.a.	1994	28.1
Egypt	1957	11.4	1995	10.2
Jordan	1962	0.0	1996	19.4
Lebanon	1961	18.6	1995	14.3
Libya	1960	16.4		n.a.
Morocco	1964	37.3	1995	27.8
Tunisia	1961	5.5	1996	16.7
Oman		n.a.	1995	10.4
Palestinian Authority territories		n.a.	1995	18.7
Qatar		n.a.	1997	3.0
Saudi Arabia		n.a.	1996	14.3
Syria	1957	6.6	1995	27.5
United Arab Emirates		n.a.	1997	19.4
Yemen		n.a.	1992	4.0
High-performing comparators				
Taiwan	1957	30.6	1997	32.2
South Korea	1957	15.9	1997	39.4
Large comparators				
China	1960	40.0	1994	29.9
India	1957	3.7	1991	16.3
Normally endowed comparators				
Brazil	1957	10.5	1993	12.3
Pakistan[a]	1957	22.4	1992	11.2
Turkey	1957	16.2	1994	23.6
Resource-rich comparators				
Botswana		n.a.	1997	22.0
Indonesia		n.a.	1996	17.2
Nigeria	1961	23.3	1990	16.7
Venezuela	1958	15.7		n.a.

n.a. = not available

a. 1957 figure for Pakistan includes Bangladesh.

Sources: UN Educational, Scientific and Cultural Organization, *Statistical Yearbook*, 1970, 1998; *Taiwan Statistical Data Book,* 1997.

though its proportion of science and engineering graduates rose dramatically in the 1960s.

However, there is some evidence that the quality of Middle Eastern education, at least in the contemporary period, has been substandard.[11] For example, in international tests in mathematics and science for fourth graders, Morocco and Tunisia had the lowest scores in both disciplines. In reading literacy scores, Kuwait (not included in the science and mathematics tests) and Morocco exceeded only Belize and were far below Moldova, Turkey, Macedonia, and Argentina (National Center for Education Statistics 2004). And the experience in the United States and other countries is that such differentials usually widen as children progress through the school system.

Indeed, in separate surveys conducted by the *Times of London* and Shanghai Jiao Tong University, no Arab university ranked among the top 200 in the *Times* survey and the top 500 in the Shanghai survey, the only region to achieve this dubious distinction.[12] The *Times* survey was based on a combination of peer reviews by 1,300 academics worldwide and objective indicators such as faculty publication and citation counts; the Shanghai survey relies exclusively on objective indicators such as citation counts and Nobel Prize winners among faculty and alumni to form these rankings—that is, neither survey is purely a beauty contest. The rankings do not prove that there are no good universities in the Middle East—the results could be interpreted as reflecting lack of integration into peer networks rather than the quality of output per se—and there may well be pockets of excellence within individual institutions that do not get picked up in these kinds of aggregate data. But even the more generous "lack of peer recognition" interpretation suggests that Middle East academics are relatively isolated from world intellectual developments, a theme to which we return in chapter 7. The bottom line is that as with the accumulation of physical capital, with respect to investment in human capital, the Middle East does not look very different from other developing areas, save Asia, but there are reasons for concern, especially with regard to quality.

Relative International Performance

The citizens of a nation are obviously concerned with their standards of living. They may be interested in how they fare relative to citizens of other

11. On the quality of Arab education systems, see the *Arab Human Development Reports* (UNDP 2002, 2003) and Iqbal (2006).

12. See *Times Higher Education Supplement*, www.thes.co.uk (accessed April 22, 2005) and Institute of Higher Education, Shanghai Jiao Tong University (http://ed.sjtu.edu.cn) for rankings and links to the study methodologies.

Box 2.2 The Mediterranean shores

In 1950, with the end of colonization imminent in Algeria, Egypt, Morocco, and Tunisia, local leaders might have envisioned a decline in the income gap and a move toward a European standard, but by 2000 it had become clear that whatever dreams that existed were now unattainable. Combined with the failure of the societies to modernize in so many dimensions delineated in the *Arab Human Development Reports,* the dismay voiced in those reports and elsewhere becomes more understandable.

Yet the absolute performance of these and other Arab economies has not been very different from those of many other developing economies, and in some aspects such as income distribution it has been quite good. But if the relevant comparison group is indeed the Southern European countries of the northern shore of the Mediterranean, as may well have been the case for the postwar Egyptian middle class depicted in the novels of the expatriate Lawrence Durrell, the disenchantment of the current descendants of that group may become more comprehensible.

Gap in GDP per capita (purchasing power parity) (dollars)

Country	1950	2000
Average GDP per capita of Greece, Portugal, and Spain	2,063	13,778
Difference between this average and local income in		
Algeria	698	10,986
Egypt	1,153	10,858
Morocco	608	11,120
Tunisia	948	9,240
Saudi Arabia	–168	5,776

Source: Calculated from Maddison (2003).

countries—an increasingly likely comparison given the growth of satellite television and the Internet. But perhaps of more importance is the growth in the local standard of living regardless of how the country performs relative to others. The former comparative perspective has led to widespread dismay among Arab analysts about the perceived poor performance of their countries and to a search for its proximate causes, for example in the various *Arab Human Development Reports* (UNDP 2002, 2003, 2004a). Even if this perception is incorrect, it is clearly widely held and has motivated a search for explanations (see box 2.2).

Considerable literature predicts per capita income convergence across countries in terms of purchasing power parity. Egypt, the major nonoil country in the region, is one among many poorer countries that did not converge. On this purchasing power–adjusted measure, over the period 1960–2000, Egyptian incomes fell slightly relative to the industrial countries of the OECD while the absolute difference in per capita incomes widened from roughly $7,000 in 1960 to nearly $20,000 in 2000 (table 2.6).

In marked contrast, incomes in South Korea and Taiwan, which in 1960 were similar to those in Egypt, rapidly converged to the OECD average. (Indeed, South Korea joined the OECD in 1996, and given the "normal" requirements for membership Taiwan would have joined the organization had it not been for its peculiar diplomatic status.) Their performance is not cited as a cudgel but to underline the opportunities that have existed in the world over the period considered, opportunities forgone by the key Arab countries (and most other less developed countries as well). To wit, China, one of the populous developing countries, experienced rapid convergence in the latter part of the sample period, while India's relative status during the period as a whole remained unchanged as in Egypt. Among the similarly situated economies, income converged on the OECD average in Indonesia after economic reforms were initiated in the 1970s, showed no trend in Brazil and Pakistan, and worsened in Bangladesh and Turkey. Despite the predictions of theoretical models, most countries outside of East Asia did not converge on the OECD, and in a much larger group of nations divergence has been standard (Pritchett 1997). While the Middle East was not alone in its relative misery, this outcome was not preordained. As indicated in table 2.6, of the six similarly endowed countries that began the period at income levels similar to or lower than Egypt, Morocco, and Syria, three of them experienced substantial convergence (Botswana, China, and Indonesia), and the two high-performing Asian economies outstripped the Middle Eastern countries in absolute terms by a huge margin. Tunisia stands alone among the larger Arab countries in having significantly narrowed the gap in relative terms.

The convergence of South Korea with respect to the OECD offers an important benchmark for the forgone achievement of Egypt and others. In 1960 South Korea had roughly the same population and per capita income as Egypt. Both are poor in natural resources, though South Korea possessed considerably more human capital. In the natural resources dimension, if anything, Egypt is better endowed—it benefits from tourist attractions such as the Pyramids, revenue from the Suez Canal, natural irrigation from the Nile River, and is a few hundred miles by ship from the European market. Moreover, given the rapid growth in income in the oil states, similar language and religion led to considerable growth in Egyptians being employed abroad and substantial repatriation of earnings after the oil price boom of the 1970s. Contrast this with South Korea's largely poor agricultural land, dearth of tourist attractions, lack of overland

Table 2.6 GDP per capita (PPP)

	Constant 1996 international dollars					Share of OECD				
Country	**1960**	**1970**	**1980**	**1990**	**2000**	**1960**	**1970**	**1980**	**1990**	**2000**
Middle East										
Algeria	2,693	3,428	4,745	4,965	4,894	0.32	0.28	0.30	0.25	0.20
Egypt	1,476	1,977	2,419	3,241	4,184	0.17	0.16	0.15	0.16	0.17
Jordan	2,305	2,248	4,051	3,472	3,892	0.27	0.18	0.26	0.18	0.16
Kuwait	n.a.	n.a.	18,319	11,352	14,545	n.a.	n.a.	1.13	0.58	0.58
Lebanon	n.a.	n.a.	n.a.	3,244	5,780	n.a.	n.a.	n.a.	0.16	0.24
Morocco	1,322	2,245	2,976	3,547	3,720	0.16	0.18	0.19	0.18	0.15
Saudi Arabia	n.a.	n.a.	21,120	11,028	11,716	n.a.	n.a.	1.30	0.55	0.47
Syria	1,388	1,648	2,965	3,113	4,094	0.16	0.13	0.19	0.16	0.17
Tunisia	n.a.	2,550	4,354	4,937	6,777	n.a.	0.21	0.27	0.25	0.28
Yemen	n.a.	n.a.	n.a.	1,098	818	n.a.	n.a.	n.a.	0.06	0.03
High-performing comparators										
South Korea	1,571	2,777	4,830	9,959	15,881	0.18	0.22	0.30	0.51	0.65
Taiwan	1,468	2,809	5,850	10,995	17,056	0.17	0.23	0.37	0.56	0.74
Large comparators										
China	685	820	1,072	1,790	3,747	0.08	0.07	0.07	0.09	0.15
India	838	1,077	1,162	1,675	2,480	0.10	0.09	0.07	0.08	0.10
Normally endowed comparators										
Bangladesh	1,057	1,100	967	1,278	1,685	0.12	0.09	0.06	0.06	0.07
Brazil	2,395	3,600	6,327	6,212	7,185	0.28	0.29	0.40	0.32	0.29
Pakistan	639	945	1,159	1,748	2,007	0.08	0.08	0.07	0.09	0.08
Turkey	2,700	3,625	4,325	5,741	6,838	0.32	0.29	0.27	0.29	0.28

Resource-rich comparators										
Botswana	984	1,208	3,462	5,417	7,541	0.12	0.10	0.22	0.27	0.32
Indonesia	960	1,097	1,891	2,851	3,637	0.11	0.09	0.12	0.14	0.15
Nigeria	1,035	1,113	1,209	1,096	713	0.12	0.09	0.08	0.06	0.03
Venezuela	7,751	10,342	7,905	6,974	6,420	0.91	0.84	0.50	0.35	0.26
Memoranda:[a]										
Middle East (6)	1,837	2,349	3,585	3,879	4,594	0.22	0.19	0.23	0.20	0.19
OECD	8,508	12,384	15,885	19,718	24,418	1.00	1.00	1.00	1.00	1.00
East Asia	1,644	2,950	5,456	9,030	11,044	0.19	0.24	0.34	0.46	0.45
Latin America	3,814	5,031	6,357	5,773	7,527	0.45	0.41	0.40	0.29	0.31
South Asia	845	1,041	1,096	1,567	2,057	0.10	0.08	0.07	0.08	0.08
Sub-Saharan Africa	1,839	2,429	2,984	3,482	4,210	0.22	0.20	0.19	0.18	0.17

n.a. = not available
OECD = Organization for Economic Cooperation and Development
PPP = purchasing power parity

a. Regional averages composed of Middle East: Algeria, Egypt, Jordan, Morocco, Syria, and Tunisia (except 1960); OECD: Current members excluding Czech Republic, Hungary, Mexico, Slovakia, South Korea, and Turkey; East Asia: China, Hong Kong, Indonesia, Philippines, Singapore, South Korea, Taiwan, and Thailand; Latin America: Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, and Peru; South Asia: Bangladesh, India, and Pakistan; sub-Saharan Africa: Ghana, Kenya, Mauritius, Nigeria, South Africa, and Tanzania.

Notes: Data for Botswana reported for 2000 are from 1999; Kuwait for 1990 are from 1989; Taiwan for 2000 are from 1998.

Sources: Penn World Tables, v6.1 (Laspeyres series, reference year 1996); for Kuwait and Saudi Arabia: World Bank, *World Development Indicators,* 2004 (constant 1995 PPP dollars). Original source does not report data after 2000.

transportation routes to Europe and Asia due to the division of the Korean peninsula, and a 7,000-mile distance from its major market, the United States. (The closer, but smaller, Japanese market was only semiaccessible because of trade barriers for most of the period.) But as evidenced by the quote from South Korean leader Park Chung-hee in the previous chapter, the South Korean government from 1961 onward decided that its legitimacy was dependent on delivering growing living standards and oriented its policies to achieve this (see also Mason et al. 1980, Haggard 1990). In contrast, during the 1950s and 1960s Gamal Abdel Nasser attempted to obtain legitimacy by playing a leadership role first in the nonaligned movement and then by his advocacy of pan-Arabism, including a short-lived union with Syria that did not benefit either country. Moreover, he fought a proxy war in Yemen with Saudi Arabia in the 1960s and two wars with Israel in 1956 and 1967. In the more than two decades in which he has been the leader since the assassination of Anwar Sadat, Hosni Mubarak has not evinced any overriding concern with accelerating growth.

Even if one dismisses the results for South Korea and Taiwan as reflecting transitorily low incomes at the beginning of the sample period for reasons previously elaborated, and that of China as embodying an unsustainable recovery from the aberrant effects of self-imposed Maoism, from the perspective of the Middle East it would seem difficult to dismiss the experience of Indonesia: postcolonial, multiethnic, predominantly Muslim, similar level of human capital, oil producing, historically authoritarian, and occasionally in conflict with its neighbors. Perhaps in a big enough sample it represents the anomalous case that just got lucky—alternately it reflects the effect of good policymaking for much of the period (Hill 1996).[13]

With respect to the resource-rich countries, the results are more ambiguous: While Saudi Arabia experienced a tremendous decline in income relative to the OECD, the other two large oil producers, Nigeria and Venezuela, did as well. Incomes in Botswana and Indonesia converged on the OECD, but Botswana is subject to different commodity price shocks, and Indonesia is far less reliant on oil. Both have also benefited from good macroeconomic policies that have helped to contain potential "Dutch disease" problems.

Saudi Arabia, whose pattern roughly parallels that of other oil-producing economies in the Middle East, exhibited growing divergence from the OECD nations. Between 1980 and 2000, its relative per capita income

13. Nor can one dismiss the Indonesian (and Malaysian) experiences as simply reflecting the influence of the ethnic Chinese business community. In Indonesia, the Chinese make up less than 4 percent of the population. Between 1960 and 2000, the value-added share of industry tripled. Employment data are only available beginning in 1980, but between 1980 and 2000 nonagricultural employment more than doubled, increasing by 29 million jobs. Even if the ethnic Chinese are vastly overrepresented in the business community, it is difficult to imagine that structural transformation of this magnitude could have occurred without substantial input from, and impact on, the indigenous population.

(PPP) declined dramatically from 1.30 to 0.47. From an average living standard of Lyon or Geneva, income declined to that of Sao Paolo, Brazil. Similar declines occurred in other oil economies like Kuwait and Oman. Not only was there a decline vis-à-vis the OECD and some fast-growing poorer countries but also the absolute level of GDP per capita (in purchasing power–adjusted terms) in Saudi Arabia declined by roughly 40 percent. Unlike Egypt, where weak growth relative to the OECD was nevertheless accompanied by an increase in the absolute standard of living, Saudi Arabia suffered both absolutely and relatively—not a prescription for domestic tranquility. The recent boom in oil prices has reversed much of this decline, the sustainability of which is far from assured in the absence of a major change in economic policies.

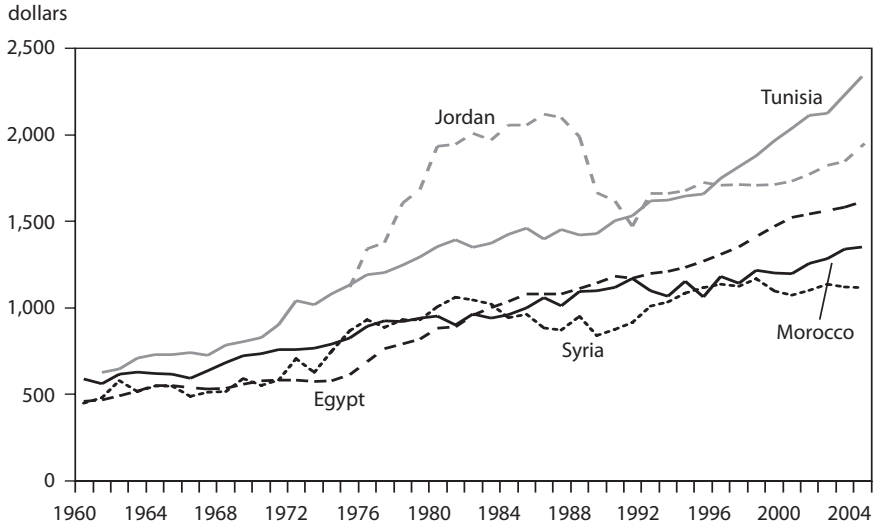
Despite the continued growth in countries such as Egypt, it is nevertheless true that the absolute income gaps with respect to the OECD have continued to grow. The absolute gap in PPP income per capita between Egypt and the OECD average was $2,030 in 1960, $13,466 in 1980, and $20,234 in 2000. The absolute gap has increased dramatically even for an economy that has been growing steadily. At a time when knowledge of international consumption patterns is widely disseminated through film, satellite television, and the Internet, such growing absolute disparities are likely to have generated envy and perhaps some resentment toward both the richer countries and the local governments that have not been able to close these gaps. Whether growing absolute levels of income over time in individual countries will assuage discontent is unknowable, but many observers believe it is one component of the dissatisfaction in many Arab countries.

Domestic Growth over Time

Having set out an international prism through which to view the comparative development of the major Arab economies, we now turn to the absolute performance measured in constant local prices. While international comparisons of levels of real income are important, showing the best performance possible given the extant international conditions and the forgone income in not achieving this frontier, levels of real domestic living standards are probably more important in characterizing any economy. People's perception of their welfare may depend more on how they are doing this year relative to five years ago than how they compare with residents of London, Silicon Valley, Seoul, Shanghai, or Côte d'Azur. The evolution of GDP per capita in constant local prices (figures 2.4a and 2.4b) is shown for two separate groups, the resource-rich and resource-poor countries, as different factors affect their growth.

Of the poorer countries (figure 2.4a), Tunisia has done much better than the others, though Egypt, often described as a weak economy, has in fact experienced more rapid growth since 1980. But growth in Jordan declined

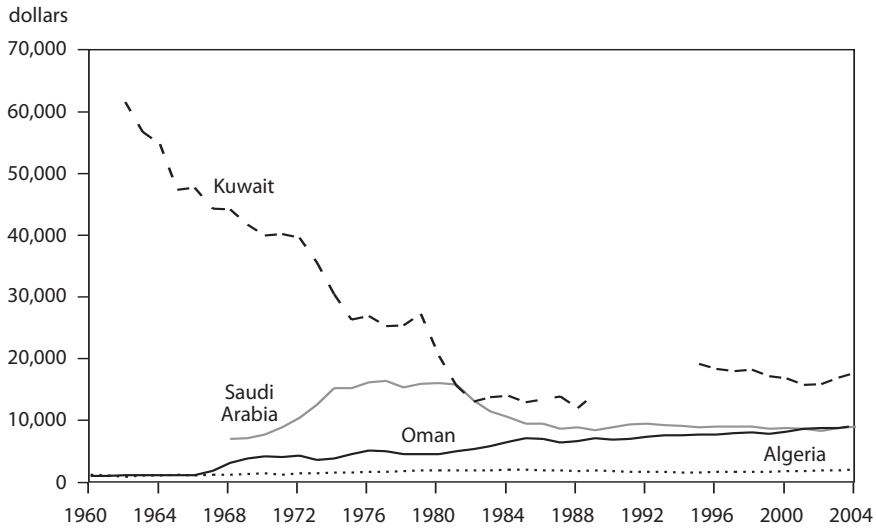
Figure 2.4a GDP per capita, normally endowed countries, 1960–2004



Note: Constant 2000 US dollars.

Source: World Bank, *World Development Indicators,* 2004, May 2006.

Figure 2.4b GDP per capita, resource-rich countries, 1960–2004



Note: Constant 2000 US dollars.

Source: World Bank, *World Development Indicators,* 2004, May 2006.

(perhaps surprisingly given its significant economic reforms and relatively high human capital), while Morocco has had relatively slow growth. Despite its oft-cited rigidities, Syria exhibited a small positive growth rate, though its data are more uncertain than those of the other countries we consider. Its performance is largely due to oil exports (small relative to the oil-rich countries), a rapidly diminishing resource.

Turning to the oil-rich countries, Algeria stagnated for roughly two decades before the reversal of oil prices in 2003, and the other major oil-rich nations (figure 2.4b) were also not able to transform their oil riches into sustained growth. Kuwait underwent a precipitous decline over 30 years, while over the past generation Saudi Arabia has witnessed a decline of almost 50 percent in per capita income measured in constant dollars. As noted earlier, the reversal since 2003 in oil prices is too short-lived to allow strong inferences. Thus, these Middle Eastern countries resemble Nigeria and Venezuela rather than Indonesia, three other oil-rich countries with widely divergent paths. Nigeria and Venezuela suffered declines in per capita income since the mid-1970s despite vast oil revenues (and in the case of Venezuela, a demographically favorable declining dependency ratio), while Indonesia has been a success despite recent problems. These differences can be accounted for by appalling government policies in the former and rather good ones in the latter (Bevan, Collier, and Gunning 1999).

Major wars have had very limited effects in the poorer countries. For example, in Egypt the intensive war in Yemen against the Saudis and Yemeni factions from 1962 to 1967, immediately followed by the Six Day War of 1967, the War of Attrition in the late 1960s, and the October War of 1973 had no major effect. In 1974 growth resumed, albeit at a slow rate. In most wars the lost military equipment and infrastructure were replenished by foreign patrons, particularly the Soviet Union, thus precluding the need for major expenditures in this sphere.

As shown in figures 2.4a and 2.4b, the effect of the Gulf War of 1990–91 did not affect trends in the countries not directly involved, although Kuwait sustained significant damage during the Iraqi invasion in the summer of 1990. The low growth of Jordan in the 1990s may have been partly attributable to its proximity to Iraq and the effects of the Iraq-Iran war of the 1980s and the Gulf War of 1990–91. Although the Gulf War was of limited duration and Jordan did not suffer any material damage, the cost of absorbing the Palestinians expelled from Kuwait, Saudi Arabia, and other countries may have been significant though many repatriated their assets. In addition, Jordan lost some entrepôt rents as international trade with Iraq declined. Even the assassination of President Anwar Sadat in 1981, an event that might have shaken confidence in the Egyptian economy, did not have any lasting effect on growth.

While the downside effect of political turbulence has not been quantitatively significant, it is notable that international expansion also has scant

Table 2.7 Cumulative percent change of constant price GDP per capita and exports, 1995–2000

Country	Exports	GDP per capita
Algeria	34.0	8.5
Egypt	13.6	19.8
Jordan	–5.4	3.3
Kuwait	–4.3	–9.6
Morocco	27.2	12.5
Saudi Arabia	n.a.	–1.3
Syria	64.7	–3.8
Tunisia	28.6	23.0
OECD	45.7	10.8

n.a. = not available

Source: World Bank, *World Development Indicators*, 2006.

spillover effect. As can be seen from figures 2.4a and 2.4b and table 2.7, there was no particular benefit in the late 1990s from the unusual prosperity in the world economy. All of the countries except Syria lagged the OECD increase in export growth, and only Egypt, Morocco, and Tunisia exceeded the OECD growth in GDP.

This is not surprising given that much of the boom of the late 1990s was due to investment in information technology (both hardware and software) and the telecommunication sectors. In some of the OECD countries such as the United States, the purchase of domestically produced hardware and software led to a rapid growth in aggregate demand while their adoption may have led to an acceleration of the rate of growth of potential supply. In contrast, the Arab countries had little ability to produce these goods or their components and thus did not benefit significantly from growing international demand for them. And they also had only modest ability to take advantage of the growth in income of potential trading partners, which led to an enormous increase in demand for all consumer and producer goods, not just those in information and communication technology. Unlike India and the Philippines, nations that are considerably poorer than many of those considered here, there was meager success at even partly transforming the structure of production to take advantage of low-wage costs to export software and other services.

Comparative data for a number of relevant countries are given in table 2.8. From 1960 to 1980 growth in the Middle East was comparable to other developing areas, superior to many, consistently inferior only to the high-performing Asian countries. In the 1980s, performance in the Arab countries deteriorated, as it did in many other less developed countries. Growth lagged not only the high-performing Asian countries but also the large

Table 2.8 Growth rate of GDP per capita (percent)

Country	1960–70	1970–80	1980–90	1990–2000
Middle East				
Algeria	1.2	2.8	–0.2	–0.3
Egypt	2.9	4.4	2.9	2.3
Jordan	n.a.	n.a.	–1.8	0.6
Kuwait	–4.9	–6.5	–3.8	1.3
Lebanon	n.a.	n.a.	n.a.	5.3
Morocco	2.0	2.7	1.6	0.4
Saudi Arabia	n.a.	7.9	–5.7	0.0
Syria	2.0	6.4	–1.1	2.1
Tunisia	3.2	5.0	1.1	3.1
Yemen	n.a.	n.a.	n.a.	1.7
High-performing comparators				
South Korea	5.6	5.5	7.4	5.1
Taiwan	6.9	6.9	6.9	5.0
Large comparators				
China	1.5	4.3	7.7	8.9
India	1.7	0.7	3.6	3.6
Normally endowed comparators				
Bangladesh	1.4	–1.0	1.1	3.0
Brazil	3.2	5.9	–0.4	1.3
Pakistan	4.3	1.5	3.5	1.4
Turkey	n.a.	1.7	2.8	1.7
Resource-rich comparators				
Botswana	5.6	11.1	7.1	1.9
Indonesia	1.8	5.4	4.4	2.7
Nigeria	1.7	1.7	–1.9	–0.1
Venezuela	1.5	–0.8	–1.7	–0.1
Memoranda:[a]				
Middle East (6)	2.2	4.3	0.4	1.4
OECD	4.4	2.6	2.5	1.7
East Asia	2.4	4.6	5.6	6.4
Latin America	2.5	3.4	–0.9	1.6
South Asia	1.9	0.7	3.3	3.3
Sub-Saharan Africa	2.6	0.7	–1.1	–0.4

n.a. = not available

a. Composition of regional averages follows the World Bank's definition except for the Middle East and North Africa (MENA), which includes Algeria, Egypt, Jordan (1980–90 and 1990–2000), Morocco, Syria, and Tunisia.

Note: Compound annual growth rates for the period. Data for Kuwait are for 1962–70 and 1980–89, and Tunisia are for 1961–70.

Sources: World Bank, *World Development Indicators,* 2004 (constant 1995 US dollars); and *Taiwan Statistical Databook,* 2004 (per capita national income, constant 1996 local currency). Index is no longer reported in the *World Development Indicators.*

comparators of India and China, though it remained superior to that in Africa and the Latin American nations that were strongly affected by the debt crises that began in the early 1980s. But the divergence widened during the 1990s, when many Middle Eastern economies continued to have slow or negative growth while most other regions resumed or accelerated growth. There was some intragroup variation in all regions, but the poor performance in the Arab countries was largely, though not exclusively, due to the major oil producers. This underlies our point that even in the worst decades, much of the bad international performance was concentrated in the oil producers, and the more diversified economies often performed similar to Latin America and typically better than Africa. Of course, judged by the standards of East Asia, even the better-performing Middle Eastern countries did weakly. Moreover, they did poorly relative to the heretofore weak, and arguably more comparable, economies of South Asia such as India and Bangladesh, two nations that considerably lagged the Arab countries in the 1960–80 period but whose reforms facilitated improving performance in the 1990s.

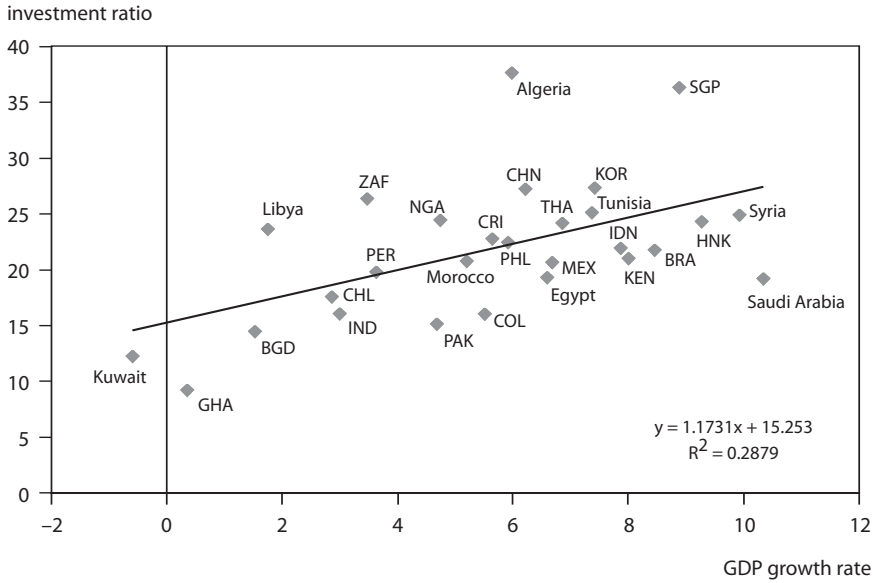
Investment and Growth

Having examined the growth of per capita income in domestic prices in the previous section and noting the fact that many of the countries had fairly good performance for varying periods, we consider a particularly simple relation between GDP growth and investment to GDP ratio.[14] While these two series are subject to some uncertainty, the simple relationship is helpful. In the next section we amplify the determinants of growth by including the impact of labor force and TFP. Figures 2.5a, 2.5b, and 2.5c show the investment to GDP ratio and GDP growth rates for three decades. These figures are a graphic representation of the ICORs discussed above.

In the 1970s most of the Arab countries exhibited either average or superior performance: They had better than average investment ratios and for a given investment ratio, GDP growth was equal or superior to that of other nations or regions, being close to or to the right of the regression

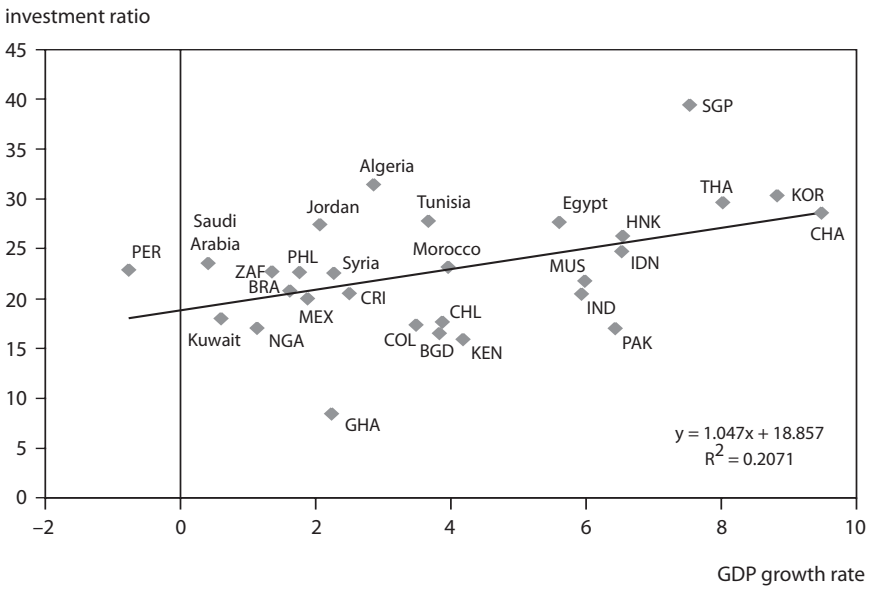
14. Barry Bosworth and Susan Collins (2003) find that there is a low correlation between investment to GDP ratios and capital stock growth rates that have been calculated for individual countries using perpetual inventory. The investment to GDP ratio is of interest as the underlying 1960–90 capital stock series built up by Vikram Nehru and Ashok Dhareshwar (1995) and the 1990 to 2000 additions by Bosworth and Collins assume an identical depreciation rate across countries. In contrast, significant literature argues the lower cost of skilled labor in poorer countries militates in favor of longer life for capital. Different depreciation rates across countries, which may also vary over time, imply that the absence of a significant relation between investment to GDP ratios and the Nehru-Dhareshwar—Bosworth-Collins capital stock series is not surprising.

Figure 2.5a Investment ratio and GDP growth, 1970–80



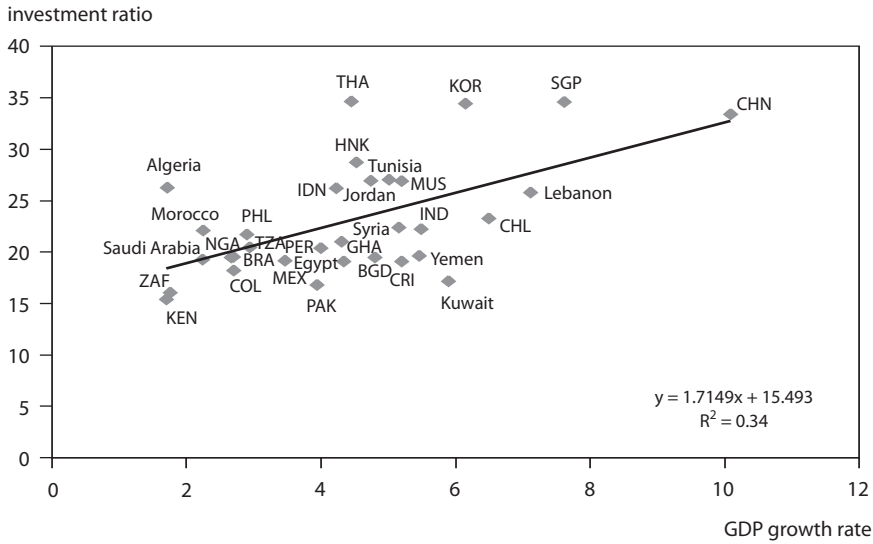
Source: World Bank, *World Development Indicators*, various years.

Figure 2.5b Investment ratio and GDP growth, 1980–90



Source: World Bank, *World Development Indicators*, various years.

Figure 2.5c Investment ratio and GDP growth, 1990–2000



Source: World Bank, *World Development Indicators*, various years.

line. Morocco, Egypt, Tunisia, Syria, and Saudi Arabia fall into this group. Saudi Arabia in particular exhibited extraordinary performance, achieving 10 percent growth with a relatively low investment to GDP ratio. At the other extreme, even in a boom, Algeria had Soviet-style outcomes, very high investment not accompanied by spectacular growth. The only country in the graph with a similar (though somewhat lower) investment ratio, Singapore, achieved a growth rate of 10 percent compared with Algeria's 6 percent. Singapore's rate also led to a much higher growth in per capita income given its slower population growth rate. Though obviously per capita income growth differs from GDP growth, the simple relation suggests that the oil price boom decade was accompanied by reasonably successful deployment of considerable investment.

However, the picture changed substantially in the 1980–2000 period. In the 1980s many countries outside of East Asia experienced slower growth. Clearly, low investment was not the source of poor economic performance in this period. Most of the Arab countries lie above the regression line in the 1980s, indicating lower gross average returns than those realized in other countries. The weakening performance was partly due to a drop in TFP growth discussed in the next section but certainly cannot be attributed to declining investment rates though these played a minor role. In the 1990s there was another twist, namely, a decline in investment ratios and GDP growth rates in some of the oil-rich nations, especially Saudi Arabia

(figure 2.5c). At the same time some Arab countries such as Egypt and Tunisia achieved a growth rate greater than would be predicted from their investment ratio. The problems of the 1990–2000 period occur most clearly in several of the oil-rich countries. Algeria and Saudi Arabia invested 40 and 19 percent of GDP, respectively, yet realized very little growth. In Algeria there were sufficiently small returns so that per capita income was declining. Such low gross returns from investment are unusual though some Communist countries such as Cuba and North Korea have had similar experience. The ICORs shown in these figures belie the assertions often made of Arab exceptionalism. Performance of Arab countries, excluding oil-rich ones, was not notably worse (or better) than other countries or regions. Other countries had either lower investment rates or lower gross returns. Indeed in the 1990s, Egypt had an investment-growth performance similar to Mexico despite the latter's benefiting from the newly signed North American Free Trade Agreement, partly offset by the peso crisis of 1994–95.

Although figures 2.5a, 2.5b, and 2.5c provide a gross picture, it is necessary to consider more focused measures that take account simultaneously of the growth in the labor force and TFP rather than the simple ICOR relation shown for expository purposes.

Sources of Differences in Growth Rates

In the previous section, we looked at the simple relation between the investment to GDP ratio and GDP growth rate to determine whether low investment has been the key issue for a large sample of countries. In this section we examine TFP, which measures the growth in production after the growth of capital and labor inputs are taken into account. It is essentially a measure of growing efficiency of resource use. TFP estimates by Collins and Bosworth (1996) and Bosworth and Collins (2003) for a handful of Middle Eastern countries imply that over the 1960–73 period (i.e., before the run-up in oil prices), they achieved similar TFP growth rates to other developing countries, registering modest positive TFP growth prior to 1973, and like other developing countries turning slightly negative (–0.1 percent) afterward (i.e., after the first oil shock and the possible onset of "Dutch disease" and, more plausibly, the economic and political challenges associated with the need to allocate the massive oil-derived windfall). The impression one gets is of countries that had done a reasonable job of mobilizing labor and capital, developed human capital from a low base, achieved a modicum of technological efficiency up until a turning point roughly a generation ago, and stagnated afterward.

One reason the preceding section focused on the investment-growth relationship is because it is difficult to measure both labor force and TFP. All recent measures of TFP growth have used labor force rather than em-

ployment or total hours. However, the labor force is subject to error, e.g., calculating the total employment in rural activities and the urban informal sector. This difficulty is compounded when neither unemployment rates nor hours are available with any precision. And as is well known the measures of constant price capital contain a considerable degree of arbitrariness. Moreover, TFP is calculated as a residual from a posited aggregate production function relationship and hence specific estimates are dependent on the form of the assumed production function. Thus, the TFP growth calculations for all nations need to be taken with caution.

Bosworth and Collins (2003) present systematic estimates of TFP growth for a large number of countries, based on growth accounting.[15] They have attempted to use consistent data and utilize an identical assumed international production function. Of the countries of interest in this book, they undertake calculations for five—namely, Algeria, Egypt, Jordan, Morocco, and Tunisia. Data for Kuwait, Saudi Arabia, and Syria and others are not available. Their calculations for these and other countries and regions are graphically represented in figures 2.6a, 2.6b, and 2.6c.[16]

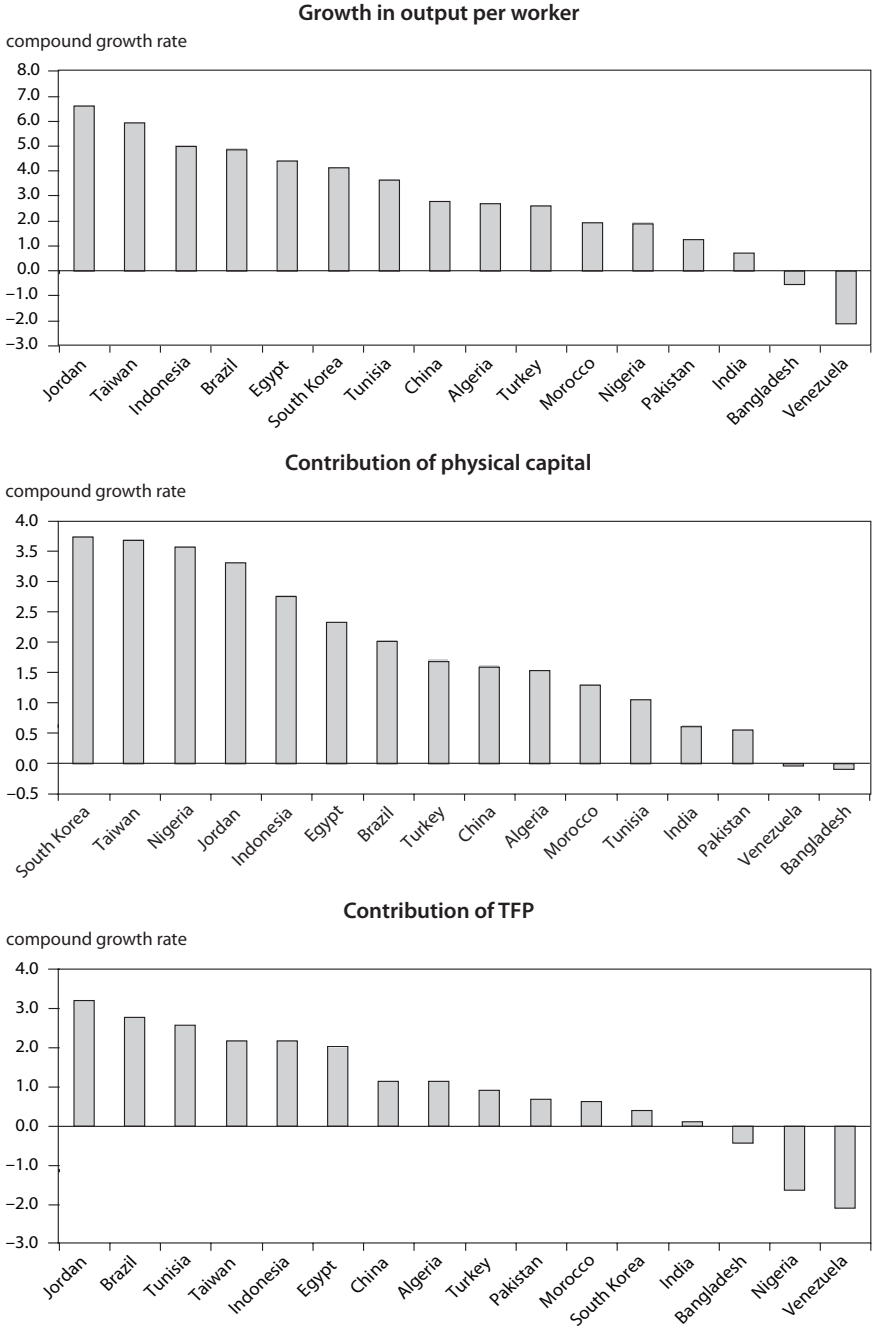
The data are broadly consistent with the implications of the simple investment-to-GDP ratio/GDP growth rate graphs. Egypt and Tunisia (and Morocco to a lesser extent) have realized sustained growth output per worker and only a rare decade of declining TFP. In contrast, Algeria and Jordan experienced two decades of negative growth in output per worker. In Algeria both negative TFP growth and a declining capital intensity contributed to the downturn whereas in Jordan a decrease in capital intensity played some role, but the decline was due mainly to negative TFP growth rates. Despite Algeria's high investment rates, its labor force growth of 3.7 percent in these decades offset it. As seen in chapter 4, the rapid labor force growth of nations like Algeria will be a principal source of the problems facing many of the Arab nations.

As shown in earlier studies (for example, Easterly et al. 1993), there is very little stability across decades, in the case of the Arab countries as well. Jordan was the leader in the 1970s in both growth in per worker

15. TFP estimates using growth accounting have a number of limitations compared with econometric estimates of production functions (Nelson and Pack 1999, Pack 2001). However, growth accounting estimates provide notional orders of magnitude and are unlikely to have systematic biases that would reverse the findings of econometric estimates.

16. In addition to the TFP growth rates assuming that growth in physical capital is the only other source of growth, Bosworth and Collins (2003) also calculate one that allows for human capital, but it is more problematic in our context as identical international elasticities of output with respect to human capital are employed to calculate its contribution to growth in output per worker. In the Arab countries the measure they employ, whether years of education or one using wage information, is widely viewed as a weak proxy for labor force quality due to the declining quality of education (UNDP 2003 and Richards and Waterbury 1996 for detailed discussions). Thus, their narrower measure, which allows only for the growth of physical capital, is arguably more informative.

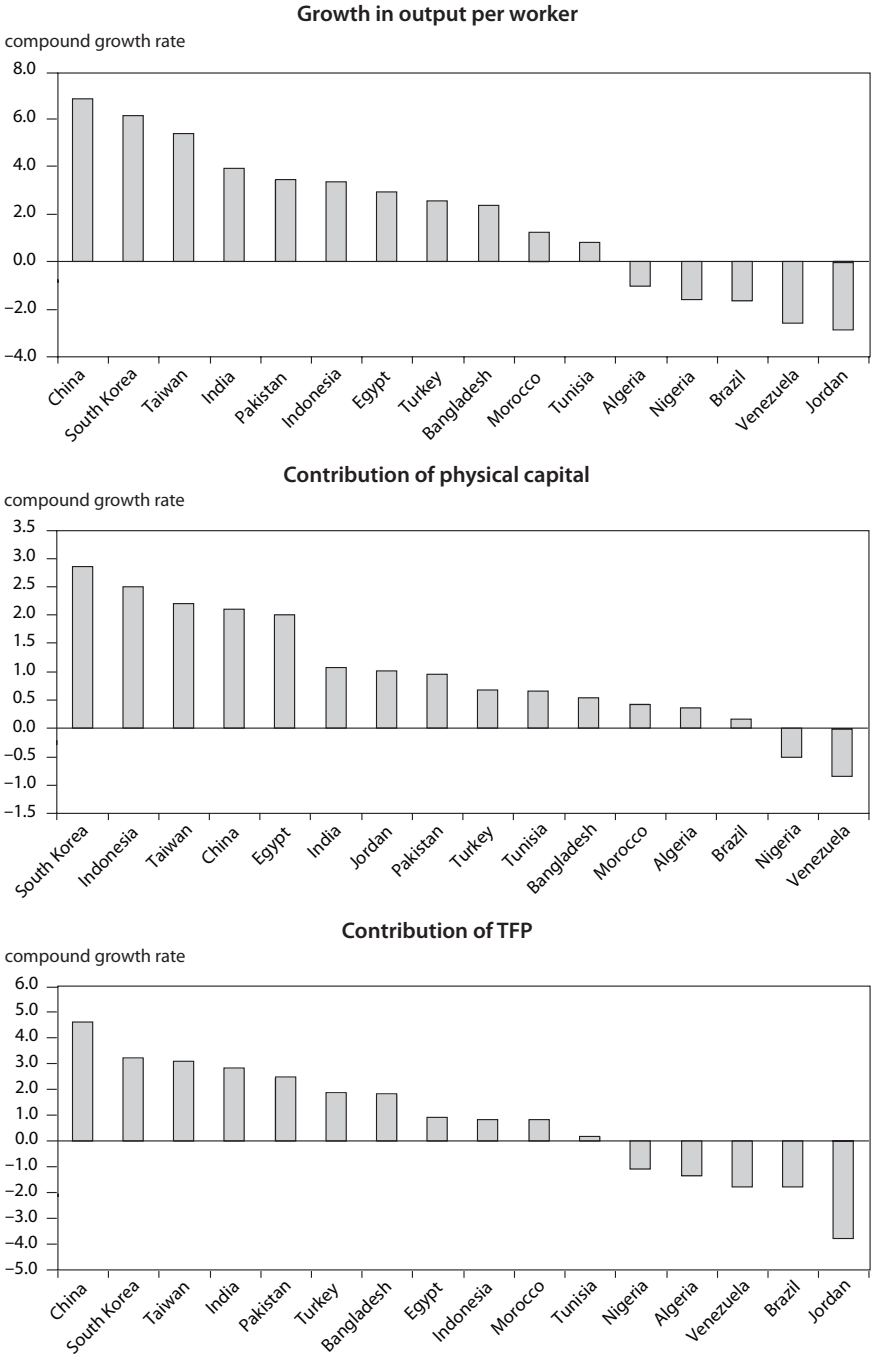
Figure 2.6a Accounting for economic growth, 1970–80



TFP = total factor productivity

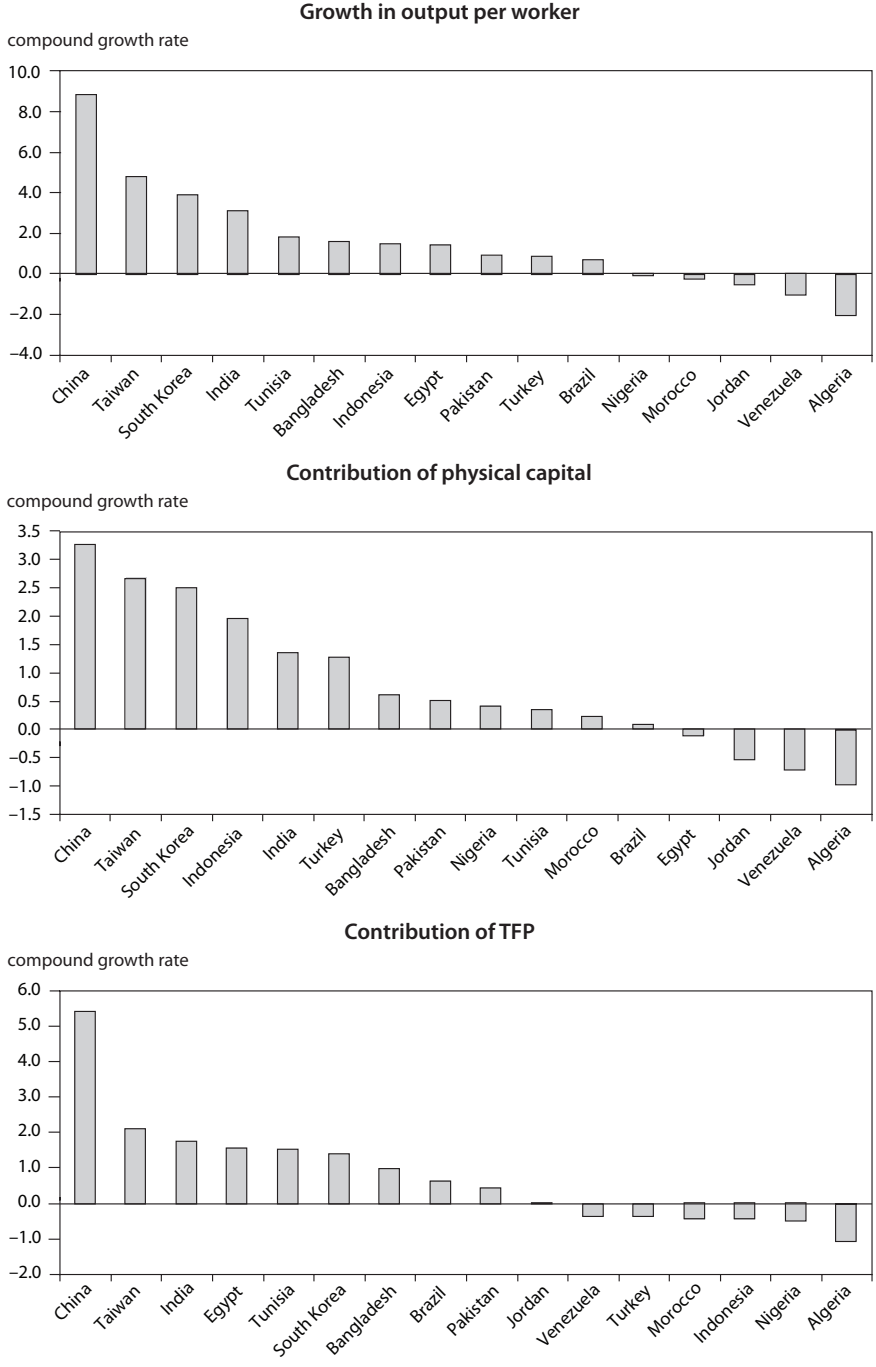
Source: Bosworth and Collins (2003).

Figure 2.6b Accounting for economic growth, 1980–90



Source: Bosworth and Collins (2003).

Figure 2.6c Accounting for economic growth, 1990–2000



Source: Bosworth and Collins (2003).

income and in TFP and was at the bottom in the 1980s. As can be seen in the figures, the 1980s witnessed much slower growth than the preceding decade. However, in much of the world there was a rebound in the 1990s as various policies were improved and the United States (and China) grew rapidly, propelling a boom in the international economy despite the Asian crisis that affected a few countries from 1997 to 1999. Despite widespread views that Egypt and Tunisia are authoritarian and ossified economies, their TFP performance in the 1990s was among the best in the entire group. Journalistic and popular views are not supported by systematic studies—they are too anecdotal and don't easily generalize.

In the countries with low TFP growth, one contributory factor may have been the very high youth dependency ratio across the region during this period. Some empirical support exists for the notion that a high youth age dependency ratio may depress the growth of both income and TFP (Kögel 2004). The argument is that large numbers of children depress aggregate household saving and, in the presence of international capital market imperfections, national saving. The result is less investment and thus lower capital-embodied technical change, which is not explicitly allowed for in the Bosworth-Collins calculations but instead is manifested as slower measured TFP growth. Yet this cannot be the whole story as Algeria with high investment had low TFP growth. Several observations stem from these graphs. The Arab economies were not very different from other countries or regions in the 1970s, but there was a significant decline, particularly in TFP growth rates in the 1980s and 1990s. In the 1990s, the decline in the rate of growth of capital per worker was an important source of the slowdown in the growth of income per worker despite the still relatively high investment rate shown in figures 2.6a, 2.6b, and 2.6c. This reflected the rapid growth of the labor force in most countries. This trend, which is likely to continue, is particularly problematic, as seen in chapter 4.

Persistent slow TFP growth presents a substantial problem. If productivity growth could be accelerated, greater output growth could be obtained with a given deployment of resources. An acceleration of productivity growth also implies that a given level of growth of real income per capita could be achieved with lower investment-GDP ratios, resulting in less immediate dissatisfaction compared with one in which short-term consumption is compressed. Given the perception of widespread dissatisfaction with economic growth, the additional consumption would be intrinsically important to households and might increase the latitude of governments to pursue politically risky reforms. Finally, as shown in chapter 4, given the need to absorb substantial growth in the labor force in most countries, TFP growth could partly offset the negative effect on real income growth as large amounts of new investment are devoted to equipping new labor force members with sufficient capital so they can be productively absorbed.

Conclusion

The disillusionment in parts of the Arab world partly stems from the perception of stagnating prospects, rooted in a modest decline in *relative* prosperity though absolute living standards have been rising. Falling behind was not preordained as demonstrated by the disparate experiences of other nations. The acceleration of India's economic growth since the early 1980s, for example, demonstrates that countries are not doomed by either nature or irreversible policies to low income growth rates in perpetuity. On the other hand, Argentina, which in 1940 had an income per capita that was 63 percent of the US level, has fallen behind steadily since, despite being very well endowed with natural resources and possessing a highly educated population (Maddison 2003). Argentina's politically derived dysfunctional economy illustrates that the constraints imposed by the latent threat of political upheaval often used to explain the absence of thoroughgoing reform in many Arab countries may not be all that different from political pressures faced elsewhere.

The success and failure of these and other countries can shed light on the problems of a country like Egypt and perhaps lead to insights about whether Egypt or another Arab country's problems reflect their Islamic legacy or standard interest group politics. Too often analysts conclude, without sufficient attention to detail and with a paucity of international perspective, that in Arab countries it is solely the former, and nothing can be done. If, on the contrary, Egypt's problems are not all that different from those posed by the popularity of dirigiste policies during India's three decades after independence, a more optimistic scenario for the future can be envisioned. The same holds for the state-dominated economy of Algeria. India's remarkable turnaround that began under Prime Minister Rajiv Gandhi in the 1980s and accelerated in the early 1990s suggests that concluding that all is hopeless is premature. Similarly, some of the experience of the transition economies of Eastern Europe is germane, though their experience offers some caution as discussed in chapter 7. But before that we examine how changes in incomes in the Arab countries have actually translated into changes in living standards in the region.