

Economic Growth and Investment in the Arab World

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Growth

The growth performance of the Arab world over the last twenty years has been disappointing. Figure 1 shows a measure of Arab world GDP per capita between 1960 and 2000.¹ After increasing at rapid rates between 1963 and 1980, GDP per capita stagnated over the following two decades. In fact, GDP per capita in the region as a whole was lower in the year 2000 than in 1980; the huge decline of the early 1980s was followed by a very moderate recovery, which has not yet helped the region reach the income levels of 1980. Of course, not all economies within the Arab world behave in exactly the same way. For example, whereas the pattern of GDP per

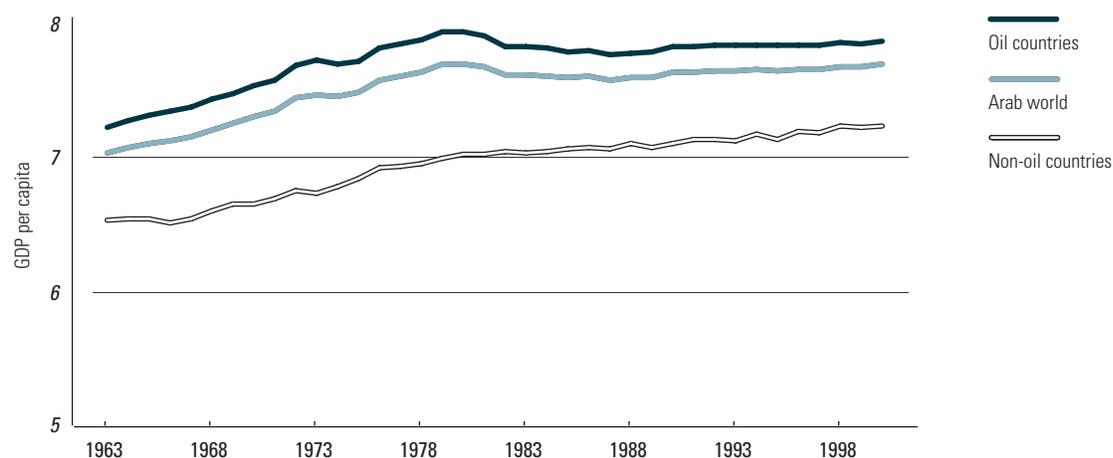
capita for oil-producing economies is similar to that of the group as a whole (the level is slightly higher for the oil countries than for the average country in the region, but the pattern over time is virtually identical), the non-oil producing countries grew almost continuously between 1960 and 2000 (see also Figure 1).² The rate at which GDP per capita increased, however, also seemed to slow after 1980.

The pattern of growth rates for the Arab world and differences between oil- and non-oil-producing countries are displayed in Figure 2. The first thing to notice is that the annual growth rate is highly volatile. The volatility is more pronounced for the oil countries, which shows that the growth rate depends, at least in the short run, on oil prices.

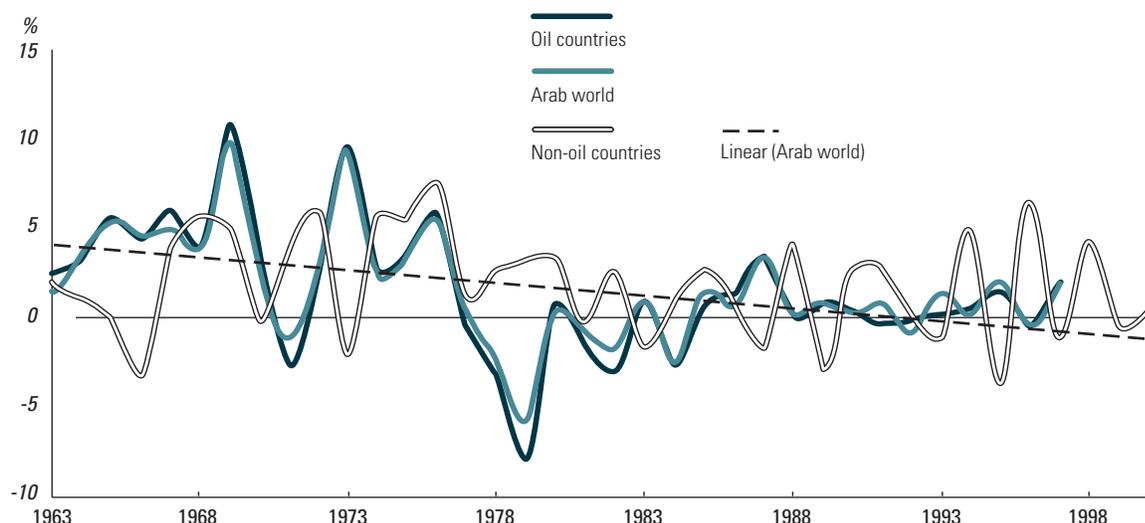
The short-term volatility, however, masks some well-defined medium- and long-term trends. For example, if we add a linear trend line to Figure 2, we see that it is negatively sloped, which suggests that the growth rate has had a tendency to decline over time. The negative trend of the growth rate over time applies equally to the oil and non-oil producing countries.

Figure 3 separates the annual growth rates into averages for five well-defined periods: the pre-oil-shock period (1963 to 1973), the oil-shock period (1974 to 1980), the period of steep decline in oil prices (1981 to 1985), the second half of the 1980s (1986 to 1990), and the 1990s (1991 to 2000). We notice that the annual growth rate of per capita GDP for the Arab region as a whole between 1963 and 1973 was much greater than 4 percent. The growth rate declined slightly to just above 3 percent between 1974 and 1980. Between 1980 and 1985 the growth

Figure 1. GDP per Capita (in US\$)



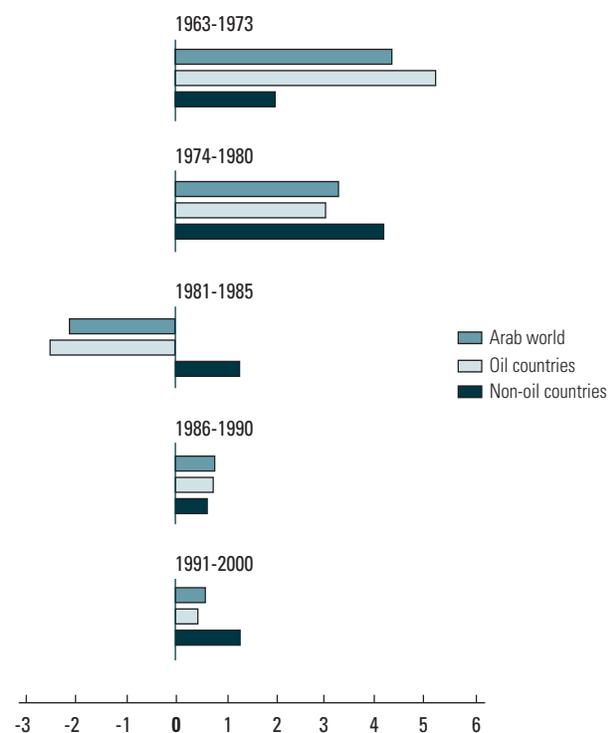
Source: Authors' calculations

Figure 2. Annual Growth Rates (in Percent)

Source: Authors' calculations

rate was negative 2 percent, and it never recovered the levels of the 1960s—in fact, the rate was below 1 percent for the rest of the 1980s and the 1990s.

As was the case for the level of GDP per capita, the growth rate was not uniform across all the Arab countries. For example, between 1981 and 1985, the growth rate for oil producers was negative, whereas that of the non-oil producers was slightly positive (given the superior weight of the oil producers in

Figure 3. Annual Growth Rates in the Arab World (in Percent)

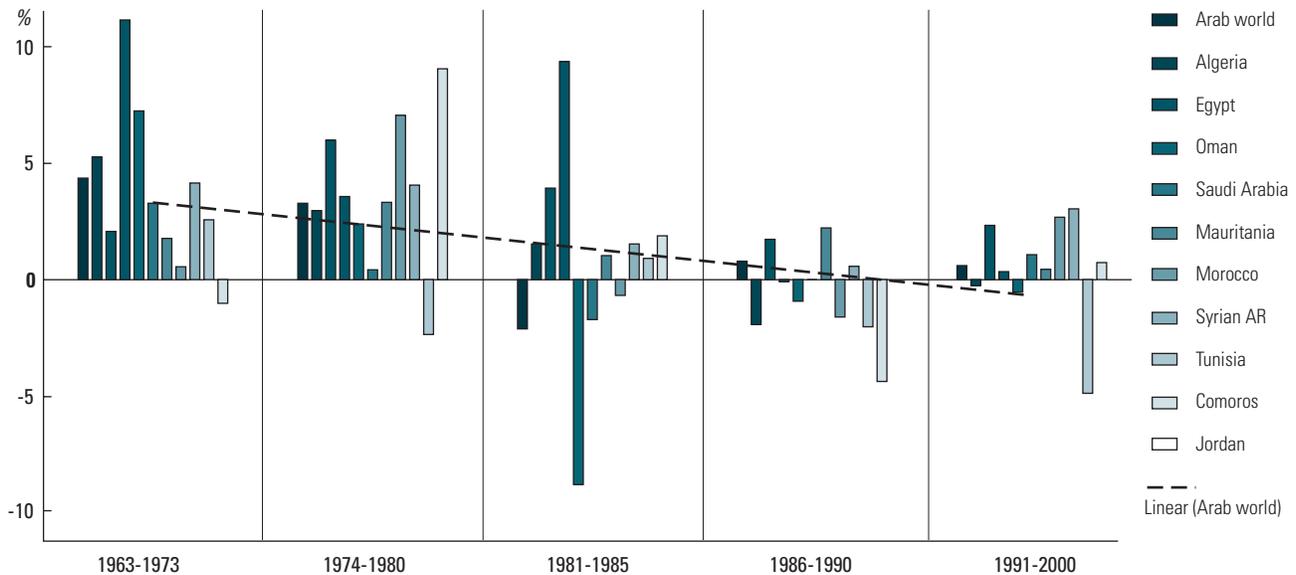
Source: Authors' calculations

overall Arab GDP, the aggregate growth rate for the region ended up being negative). Not surprisingly, the growth performance of the oil economies was vastly superior during the second half of the 1970s (when oil prices were high) and vastly inferior during the first half of the 1980s (when oil prices declined). In fact, the growth rate for the oil economies during this period was consistently lower than that of the non-oil countries, although neither of them was very high. Despite these differences, the medium-term behavior of growth rates is similar for oil and non-oil economies; that is, the extraordinary growth rates of the 1960s disappeared after the first oil shock.

The yearly correlations between each country's growth rate and the aggregate growth rate for the region are very low for some of the countries. This indicates that the short-term business cycle for different Arab countries is not highly synchronized. However, when we divide the period into five medium-term subperiods, we see that similar patterns arise.

Figure 4 shows the growth rates for the same five subperiods defined above for a sample of ten Arab countries (plus the aggregate Arab world numbers displayed in Figure 3). The growth rates are certainly not the same for every country, but the overall pattern is very similar: large growth rates for the two initial periods, a substantial reduction in the early 1980s (Oman was an exception; its growth rate was more than offset by the large negative growth rate of Saudi Arabia), and very small growth rates across the board for the second half of the 1980s and 1990s. The overall trend for the growth rates is clearly negative.

Figure 4. Annual Growth Rates for Selected Countries (in Percent)



Source: Authors' calculations

In sum, despite the fact that the Arab world displays substantial heterogeneity in its economic growth performance, one common behavior requires analysis: the large growth rates of the 1960s and 1970s, which disappeared after 1980. For some countries, the growth rate became negative on average, and for others it declined but remained positive. Overall, however, we can say that the growth performance of the Arab world after 1980 was disappointing across the board.

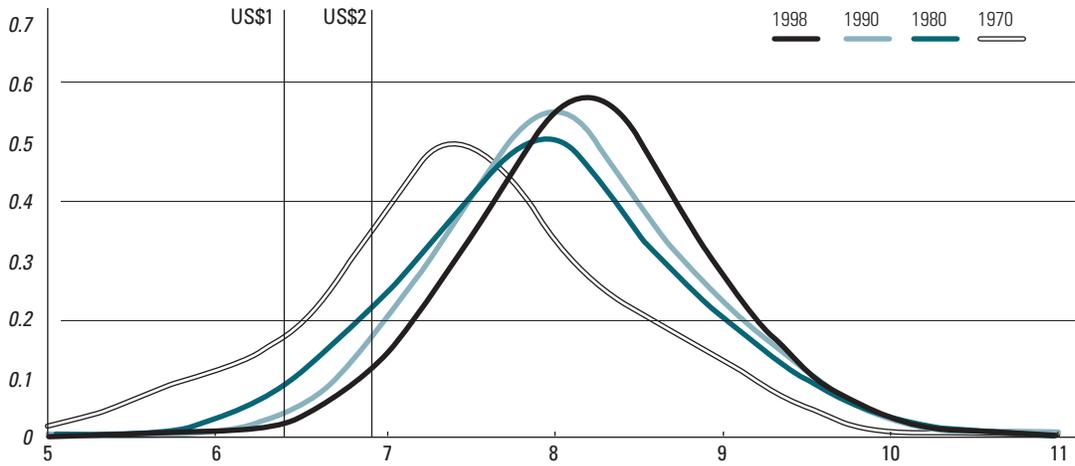
Growth and the Distribution of Income and Poverty

The slowing of the growth process has very important implications for human welfare. For example, positive growth tends to increase the income of most social groups and “shift” the distribution of income to the right. Figure 5 estimates the distribution of income for the Arab region for select years between 1970 and 1998, using the methodology developed by Sala-i-Martin (2002). We note that income distribution improved substantially during the 1970s—growth led to improvements in the level of income for the majority of the population, rich and poor. We see that the “area under the distribution” and to the left of the US\$1 a day line (that is, the “poverty rate”) decreased substantially during this period. As the region’s growth rate slowed, so too did the improvements in income distribution (in Figure 5, the distribution does not move much to the right between 1980 and 1998). Of course, this means that poverty rates did not decline much over the period of slow growth.

Over the last two decades, the world has witnessed spectacular reductions of poverty rates, thanks to the extraordinary growth performances of some of the largest economies of the planet: China, India, and Indonesia (Sala-i-Martin 2002). Figure 6 displays the poverty rates for the Arab world. We see that during the “high growth rate years” of the 1970s, there was a substantial reduction in poverty rates in the Arab region. The fraction of the population living on less than US\$1 a day³ went from 11 percent in 1970 to 2.4 percent in 1980. The fraction living with less than US\$2 a day decreased from 30 percent in 1970 to 14 percent in 1980. The rapid reduction in poverty rates slowed down dramatically after 1980, when the aggregate growth rates also slowed down. By 1998, the US\$1 a day poverty rate was still 1 percent (little change since 1980) and the US\$2 a day rate was still above 5 percent.

Poverty levels in the Arab world are substantially lower than those in countries with similar levels of income. There are various reasons for that. One is that the public system in the Arab world has relatively effective safety nets because governments try to maintain social cohesion and an egalitarian society. Another reason is that Arab countries are marked by an important and cohesive system of private social responsibility under which families provide help to their members during hard times and income is redistributed through a religious charitable system. The dual Islamic practices of *zakat* and *sadaqa* encourage the rich members of society to donate a percentage of their income and

Figure 5. Arab World Distribution of Income (in Percent)



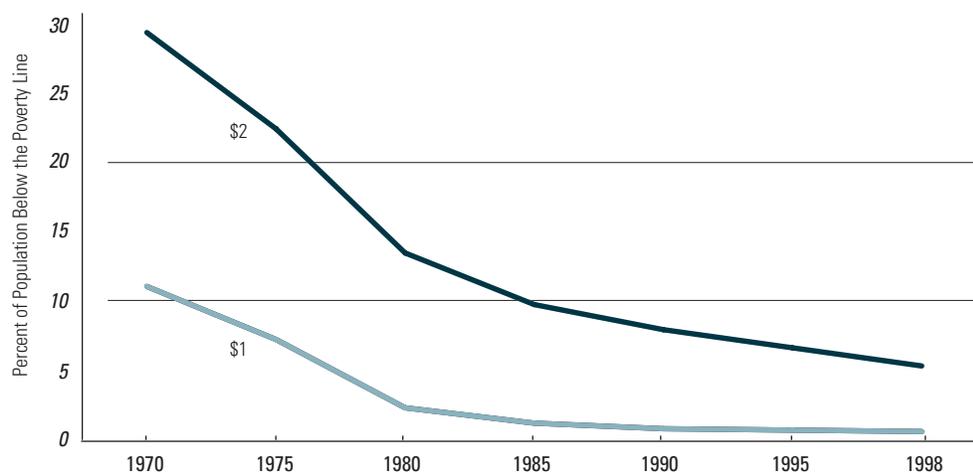
Source: Authors' calculations

wealth to the poor. *Zakat* fixes the donations to 2.5 percent of annual earnings; *sadaqa* allows some larger flexibility to the donor, but it can amount to substantial sums. Overall, the sums of money collected by charitable organizations to redistribute income and to deal with poverty are estimated to amount to large sums of money. All of this explains why poverty rates in the Arab world are low relative to its income levels. However, Figures 5 and 6 make it clear that the best way to reduce poverty over time is to increase the growth rate of the economy; poverty declined substantially over the period of high growth and progress slowed significantly during the period of low growth. From a welfare point of view, therefore, one of the key economic questions is: Why has the Arab world not grown much after 1980?

Investment

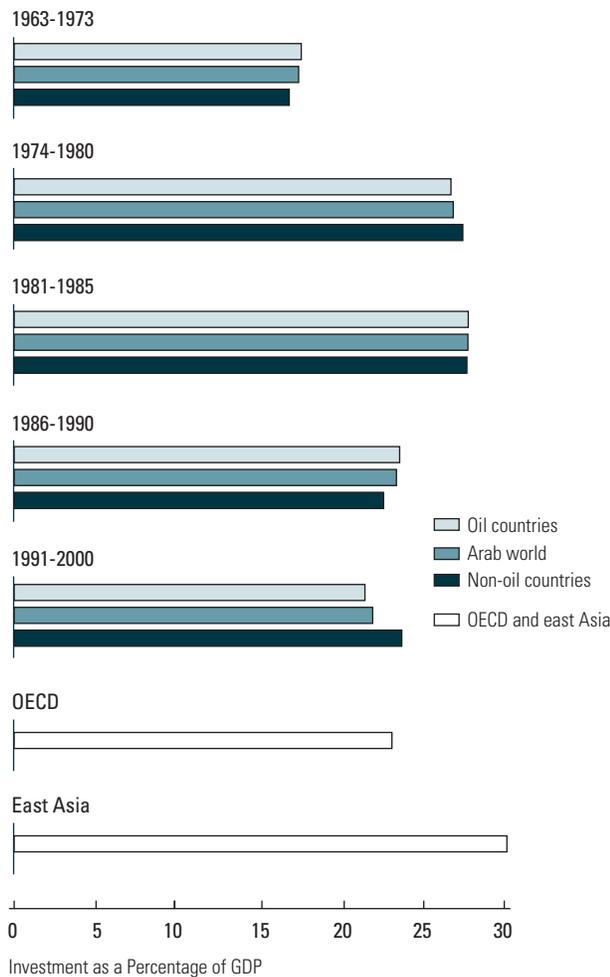
The first answer economists tend to give when exploring the economic success or failure of a country or an economic region is that the key determinant of economic growth is the investment rate: countries that grow quickly are countries that invest a substantial fraction of their GDP, and countries that fail to grow are countries that fail to invest. This explanation is partly based on economic theory. After all, the basic neoclassical growth model of Solow (1956) and Swan (1956) predicts that one of the key determinants of growth is the investment rate. Figure 7, however, shows that investment rates in the Arab world are not particularly low. The average investment rate over the period 1974 to 2000 is 24.6 percent, a rate higher than that of the OECD economies (22.9 percent) and only slightly lower than that of the successful economies of east Asia.

Figure 6. Poverty Rates in the Arab Region (in Percent)



Source: Authors' calculations

Over time, we see that the investment rate in the Arab world increased substantially from 17 percent in the pre-oil-shock period to 27 percent in the post-oil-shock period. The interesting thing is that this rather large shift in the investment rate applies to both oil producers and non-oil producers. The puzzling fact is that the investment rate increased again to 28

Figure 7. Investment Rates (in Percent)

Source: Authors' calculations

percent during the 1981 to 1985 period. We say this is puzzling because the growth rate became negative during this period. If the investment rate is a key determinant of the growth rate of an economy, why did the growth rate decline in the 1980s, a time in which the investment rates increased and remained high?

The investment rates declined slightly during the late 1980s and into the 1990s. Some analysts (UNDP 2002; Bisat et al. 1997) suggest that this reduction in the investment rate is responsible for the slow growth of the Arab region after 1980. We think that this is not the case, for two reasons.

First, we note that the reduction in the investment rate occurs five years after the overall growth rate falls dramatically (and even becomes negative). In particular, the investment rate achieves its highest level (27 percent of GDP) in the period 1981 to 1985, which is precisely the five-year period in which the growth rate was at its lowest level (-2.1 percent). One would

think that the high investment rates during the early 1980s were a response to—indeed a consequence of—the high growth rates of the 1970s (the Arab countries were trying to invest the proceeds of the good old seventies), rather than the cause of slow growth during 1981 to 1985 period. Similarly, the reduction in investment rates that followed the horrible first half of the 1980s was a consequence, not a cause, of the terrible growth performance of the first half of the decade.

Second, despite the small reduction in investment, rates remained high by international standards. Granted that the Arab world investment rate was not as high as rates in the “miraculous” countries of east Asia, but it was certainly comparable to those of the industrial countries of the OECD and far larger than those of the average developing country (see Figure 7). Moreover, investment rates in the Arab world during the late 1980s and through the 1990s remained higher than they had been in the 1960s, a period in which the region enjoyed much higher growth rates. If investment rates were higher in the 1990s than in the 1960s, why was the growth rate so much lower? Where was all this investment going during the 1980s and 1990s? Why didn't the large investment effort that was made after 1973 pay off in the form of higher growth rates?

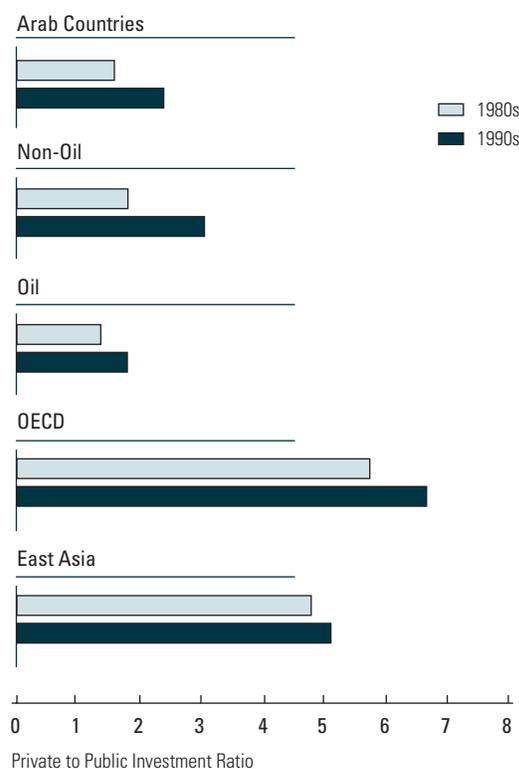
We should point out that the investment-growth behavior of Arab countries is not particularly puzzling, because empirical growth economists have found that the investment rate is not robustly correlated with growth in a large cross section of countries. For example, Doppelhoffer et al. (2002) used a new methodology based on Bayesian Model Averaging to test the variables that are robustly correlated with growth and found, perhaps surprisingly, that the investment rate is not one of the successfully robust variables. Similarly, Easterly et al. (1993) and Easterly and Levine (2001) show that, while the investment rate changes little over time for most countries in the world, the growth rate is highly volatile. If investment rates do not move much across decades whereas growth rates do, it is not possible for investment to be an important determinant of growth. In fact, this empirical result is partially confirmed by our data for the Arab world: the growth rate falls dramatically after 1973, but the investment rate remains relatively constant over the same period. Thus, an initial answer to the question “where has Arab investment gone?” is that we do not know, but this is not especially puzzling because the investment-growth phenomenon we have described happens all over the world.

A clearer answer to the investment-growth question can also be found in the empirical cross-country growth literature. It is this: what matters for growth is not the overall level of investment, but its quality and efficiency. For example, Doppelhoffer et al. (2002) found that one of the robust determinants of the rate of economic growth is public investment. Perhaps the most surprising fact is that the sign of the partial correlation is negative! In other words, with aggregate investment and various other determinants of growth held constant, the larger the fraction of investment from the public sector, the smaller the growth rate of the country. Although this result might seem puzzling, there are, in fact, some economic explanations for it. Public investment, like all public expenditures, needs to be financed with distortionary taxes, and these tend to hurt economic growth. If public investment is productive, its overall effect on aggregate growth will depend on whether the positive effects on national productivity are larger than the negative effects arising from the distortionary taxes needed to finance it. This, of course, is true if public investment is productive. In reality, however, it is not uncommon for public investments to be inefficient or appropriated to the wrong sectors. Efficiently chosen, a project financed by the public sector could be very productive, but a project could be quite useless, for example, if the government makes investment decisions with the objective of political or private gain. However, even unproductive public investment still needs to be financed with distortionary taxes. Thus, when public investment projects in a country are predominantly unproductive, the overall effect is to reduce the growth rate.

This discussion is particularly relevant for the Arab world, because if we analyze the ratio of private investment to public investment, we see that it is unusually low. Figure 8 shows that, for the Arab world as a whole, the ratio is close to 2; that is, private investment is twice as large as public investment. The private/public ratio is slightly larger for non-oil economies than for oil economies in the region, but the overall ratio remains well below the levels of OECD economies (with ratios close to 6) or that of the rapidly growing east Asian economies (with ratios close to 5).⁴

The reforms of the 1990s have moved the Arab economies in the right direction, in the sense that the ratio of private to public investment has increased. For the region as a whole, the ratio increased from 1.6 in the 1980s to 2.4 in the 1990s. The non-oil countries were the ones that went further in reforming: the ratio increased from 1.8 to 3.0 whereas the non-oil

Figure 8. Private to Public Investment Ratio Over Time



Source: Authors' calculations

economies increased from 1.4 to 1.7. It is interesting to see that the ratios of OECD economies also increased from 5.7 in the 1980s to 6.6 in the 1990s. Similarly, the ratios for east Asia increased from 4.8 to 5.1 over the same period. Hence, although reforms in the Arab world have gone in the right direction, they were not nearly large enough to put the private-to-public investment ratios at the levels of OECD or east Asian economies.

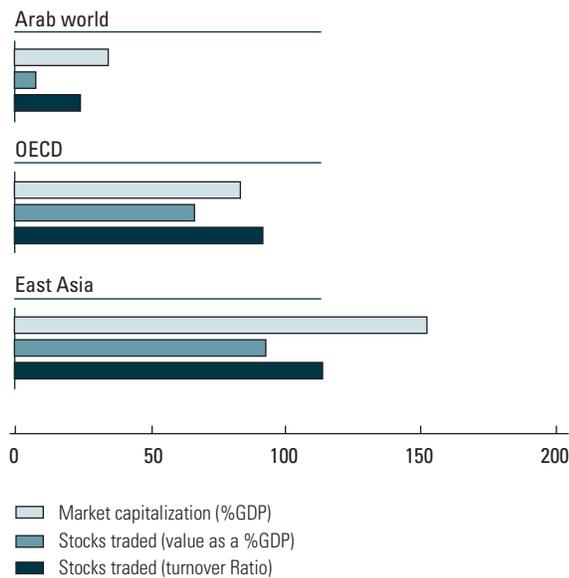
Despite large public-sector investments in the Arab world, infrastructures remain alarmingly inefficient. For example, according to the World Bank (1995), the percentage of unsuccessful telephone calls is 35 percent in Tunisia, 46 percent in Yemen, 50 percent in Lebanon, 57 percent in Morocco, and 60 percent in Jordan. Whereas the process of transmission and distribution of electricity suffers losses equivalent to 5 percent of output in OECD and east Asian countries, losses in the Arab world amount to 13 percent. These are hardly the numbers one would expect from economically competitive countries.

Inefficient Transmission of Savings to Investment

Private investment in the Arab world is both insufficient and inefficient. One of the reasons

for investment insufficiency is that savings are not properly channeled by the financial sector to productive projects. Some of the blame must go to the government and its exceptionally high involvement in the financial sector. As in most of the developing world, the financial sector in Arab countries plays a smaller role than in rich industrial economies and, perhaps more important, the sector is almost completely dominated by the banking system. Capital markets are either underdeveloped or nonexistent. Most have low levels of trading and very few listed companies. Figure 9 shows three measures

Figure 9. Stock Market



Capital Intelligence Unit (2001)

of the importance of capital markets: the market capitalization as a percentage of aggregate GDP, the value of stocks traded as percentage of GDP, and the turnover ratio. We notice that the three measures show the substantial underdevelopment of the Arab world relative to both industrialized economies of the OECD and high-growth economies of east Asia. For example, according to the Capital Intelligence Unit (2001), the stock market value of traded companies as a fraction of GDP is ten times higher in the OECD than in the Arab world and thirteen times higher in east Asia. The turnover ratio is four and five times larger, respectively. As an example, at year-end 1999, the Tunis Stock Exchange was comprised of only forty-four companies, of which thirteen were banks. Yemen has no stock market. There are two official stock exchanges in the United Arab Emirates, the Dubai Financial Market (DFM) and the Abu Dabi Securities Market (ADSM). The problem is that the DFM was set up in March 2000 and the ADSM

in November 2001. The lack of liquid investments in the Arab region has a direct negative effect on productive investment in the region, as it makes it difficult for entrepreneurs to raise capital to finance their potentially good ideas.⁵ The fact that many large companies tend to be either public or in the hands of politically influential individuals has led to low repayment rates, and this fact has helped to impede the development of efficient bond and capital markets. The low levels of development of capital markets as well as of primary and secondary bond markets forces potential real investors into the hands of the banking system, which, as a result, has become immensely powerful, both economically and politically.

Despite their domination of the financial sector, banks are not efficient enough to play the critical role that they must in the process of economic growth and development. Lending remains predominantly short-term and trade-related; very little lending is directed at long-term productive investments. The lack of competition among banks leads to lack of innovation in lending. Despite recent efforts to liberalize and privatize the banking system, governments have protected the banks from competition by restricting entry at the local and international levels, and this has made them inefficient. In several countries, the state remains the dominant player in the banking system, owning a major proportion of the bank capital. An important fraction of the state-owned banks' business is financing housing at subsidized interest rates, which usually mean significant financial costs to the banks and, therefore, to the state. In some of the countries where banks are privately owned, public policy tends to select "privileged sectors" that enjoy credit at subsidized interest rates as well as recurrent debt forgiveness. While many countries have freed interests on deposits and lending, the legal failure to enforce collateral rights discourages financial intermediaries from lending to small businesses or clients that do not have long borrowing records, or, for that matter, political connections.

In sum, although the banking system is the most important part of the financial sector, its extraordinary inefficiency does not lead it to allocate national savings to their most productive uses. Without proper channeling of savings into productive and efficient investment, economic growth is impossible. Thus, continuing reform of the banking sector is a necessary process for the Arab world. These reforms must include the: (a) further elimination of abusive and inefficient regulation; (b) opening of financial markets to domestic and foreign entrants in order

to promote competition, financial innovation, and modernization; (c) strengthening (public or private) of supervision to achieve sound corporate governance and accountability; (d) privatization of the remaining state banks, ensuring that the right incentives for sound commercial policies are in place (i.e., shifting commercial operations away from housing finance at subsidized interest rates to productive long-term investment); and (e) incorporation of the new technologies that are already changing the nature of the financial sector worldwide.

Inefficient Investment

Another source of low growth in the Arab world is the region’s reduced overall economic efficiency. One measure of the overall evolution of the efficiency of an economy is the Total Factor Productivity (TFP) growth index. TFP growth measures the growth in the economy that cannot be accounted for by the measured increases in capital and labor. In other words, the part of overall economic growth that cannot be accounted for by increases in physical capital and labor must be accounted by the change in the overall efficiency of capital and labor. Figure 10 shows the evolution of TFP growth for a sample of Arab countries between 1975 and 2000.⁶ The numbers are staggeringly low. With the exception of Egypt, Oman, Syria, and Tunisia, productivity growth in the Arab world has been negative; that is, the efficiency of the economy has markedly deteriorated.

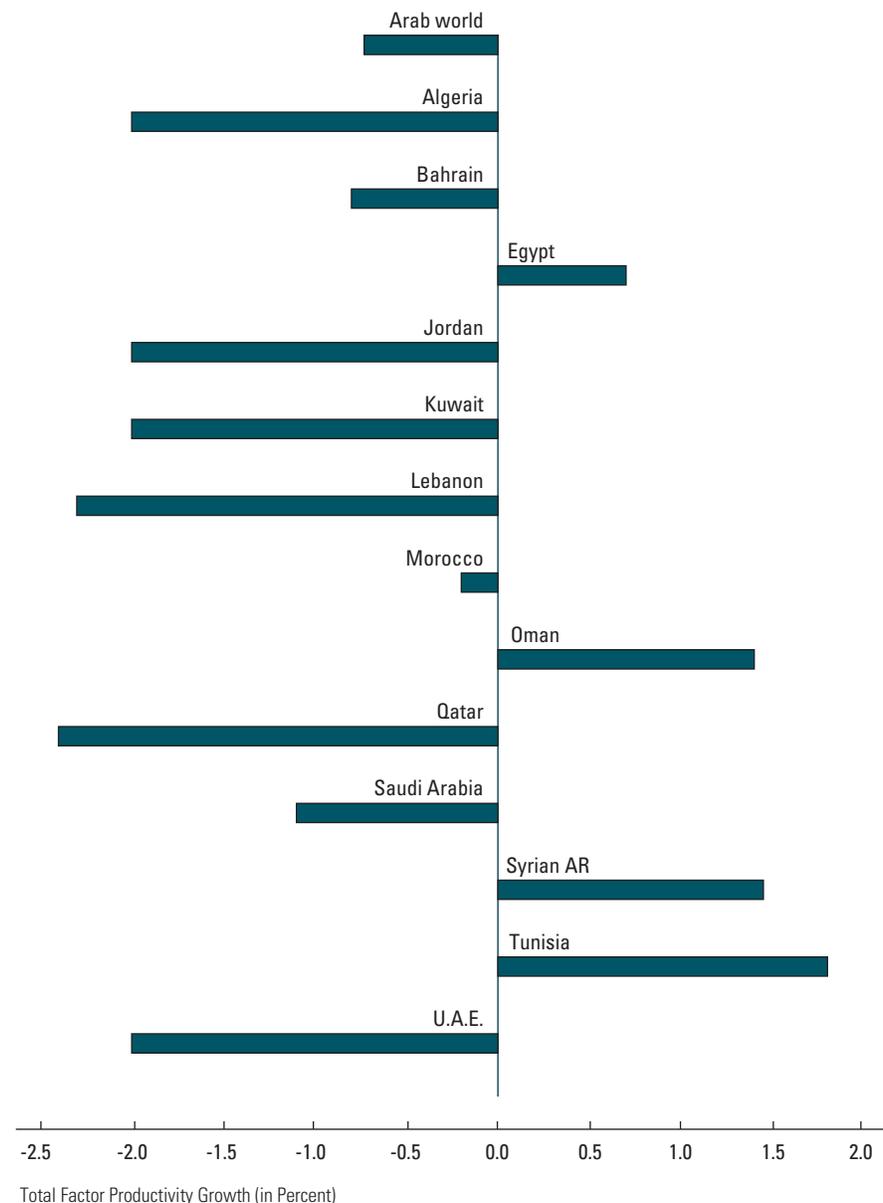
Why is the productivity of investment in the Arab world so low? And why has it declined over time? Again, there is no unique explanation. We will highlight three reasons: political and social instability, a deteriorated business environment due to excessive public intervention and overregulation, and the low quality of human capital.

Political instability

War, violence, and social conflicts are and have been widespread throughout the Arab world during the period we are considering here. For example, Libya has had constant conflicts with Chad over the Aozou strip and has suffered U.N. sanctions for supporting terrorism. This is not the optimal political and social environment needed for productive investment to flourish.

In Algeria, the first-round success of the Islamic Salvation Front (FIS) party in December 1991 caused the army to nullify the results and crack down on the FIS. The FIS reaction resulted in continuous civil conflict with the state apparatus, which involved mass

Figure 10. Investment Efficiency



Total Factor Productivity Growth (in Percent)
Source: Authors’ calculations

assassinations and widespread political violence. FIS's military arm, the Islamic Salvation Army, disbanded itself in January 2000 and many armed militants surrendered under an amnesty program designed to promote national reconciliation. Nevertheless, residual fighting continues.

Lebanon suffered a devastating sixteen-year civil war, which ended in 1991. Since then, the country has made progress toward rebuilding its political institutions and regaining its national sovereignty. The Lebanese have conducted several successful elections, most of the militias have been weakened or disbanded, and the Lebanese Armed Forces has extended central government authority over about two-thirds of the country. However, Hizballah (the radical Shi'a party) retains its weapons. Syria maintains about 25,000 troops in Lebanon, based mainly in Beirut, North Lebanon, and the Bekaa Valley. The Arab League legitimized Syria's troop deployment during Lebanon's civil war and in the Ta'if Accord that ended it. Israel's withdrawal from its security zone in southern Lebanon in May 2000, however, has emboldened some Lebanese Christians and Druze enough to demand that Syria withdraw its forces as well.

Territorial disputes between Iraq and Iran led to a very costly eight-year war between 1980 and 1988. In August 1990 Iraq seized Kuwait, but was expelled by U.S.-led, United Nations coalition forces during January and February 1991. Following Kuwait's liberation, the UN Security Council required Iraq to destroy all weapons of mass destruction and long-range missiles and to allow UN verification inspections. Sanctions remain in effect due to alleged incomplete Iraqi compliance with relevant Security Council's resolutions.

The Israel-PLO Declaration of Principles on Interim Self-Government Arrangements (the DOP), signed in Washington on 13 September 1993, provided for a transitional period, not to exceed five years, for Palestinian interim self-government in the Gaza Strip and the West Bank. Israel agreed to transfer certain powers and responsibilities to the Palestinian Authority, which includes the Palestinian Legislative Council elected in January 1996, as part of interim self-governing arrangements in the West Bank and Gaza Strip. A transfer of powers and responsibilities for the Gaza Strip and Jericho took place after the May 1994 Cairo Agreement on the Gaza Strip and the Jericho area. Additional areas of the West Bank followed suit. An *intifadah* broke out in September 2000; the resulting widespread violence in the West Bank and Gaza Strip, Israel's military response, and instability in

the Palestinian Authority are undermining progress toward a permanent settlement and contribute to the deterioration of the business environment that would be necessary for the two countries to regain the path towards steady economic growth.

The British withdrew from South Yemen (a protectorate they had created in the nineteenth century around the southern port of Aden) on 30 November 1967. Three years later, the southern government adopted a Marxist orientation. The massive exodus of hundreds of thousands of Yemenis from the south to the north (which had become independent from the Ottoman empire in 1918) contributed to two decades of hostility between the two states. The two countries were formally unified as the Republic of Yemen on 22 May 1990. A southern military bid to break away from the Union was defeated by the north in 1994.

These are just some examples of the political, military, and social conflicts that have plagued the Arab world during the last several decades. This kind of instability has direct implications on the level of income through destruction of productive capacity, but instability also has longer-term consequences, because it does not help create the business environment necessary for any economy to prosper. These conflicts have certainly deterred investment and slowed the process of economic growth and development in the Arab world.

Business environment

The weak business environment of the Arab region acts as another important constraint to the process of economic growth. Of course, the social and military conflicts that we described in the previous section contribute to the continued deterioration of the business environment. But violence is not the only problem. Potential investors in many Arab countries face a suffocating web of complex regulations, licensing, and other institutional obstacles that are often unclear and usually inconsistent with the rules that apply in the rest of the world. Most private investors are scared away by such cumbersome processes, and this leads to less entry and competition. This lack of competition, in turn, leads to a more inefficient and less innovative economic system.

Those investors not deterred by such opaque system participate in it at a very high cost. Egyptian entrepreneurs spend close to 35 percent of their time solving problems related to government regulation. Even Morocco (a country that has liberalized its economy more than its Arab neighbors) requires more than twenty documents and more than six months

to register a new business. The easy way around the complicated bureaucratic process is often bribery, local corruption, and unhealthy incest-like relations between family-owned businesses and political power. Needless to say, this causes further deterioration in competition and the business environment.

Privatization and the separation of business and politics need to be a priority in the Arab world. Countries with large and inefficient public sectors (such as Algeria and Egypt) will, first, have to sell state-owned money-losing enterprises and, second, attract private investment by deregulating and lowering political and institutional barriers of all kinds. The evidence shows that there is no shortage of funding for privatization in the region. But there is a bottleneck in the inefficient banking system and the small or inexistent debt markets and stock exchanges. Countries with less burdensome public enterprise systems (such as Jordan, Lebanon, Morocco, Tunisia, and some Gulf countries) will have to concentrate on the second strategy—the reduction of excessive regulation, licensing requirements, and bureaucratic barriers that impede the normal process of business investment. Finally, an equitable, well-functioning legal system (including an effective judiciary) that supervises the economic process and guarantees transparency and justice is also critical in promoting economic investment and growth.

Human capital

Another important explanation for the lack of incentives for private businesses to invest in the Arab world is the low quality of human capital. The literature has emphasized the importance of human capital in the process of economic growth and development. Moreover, authors emphasize the complementarity between human and physical capital investment: if potential investors cannot hire a highly qualified and trained labor force, their investments will not deliver profits. It follows that investment in physical capital will not take place in economies with low-quality human capital.

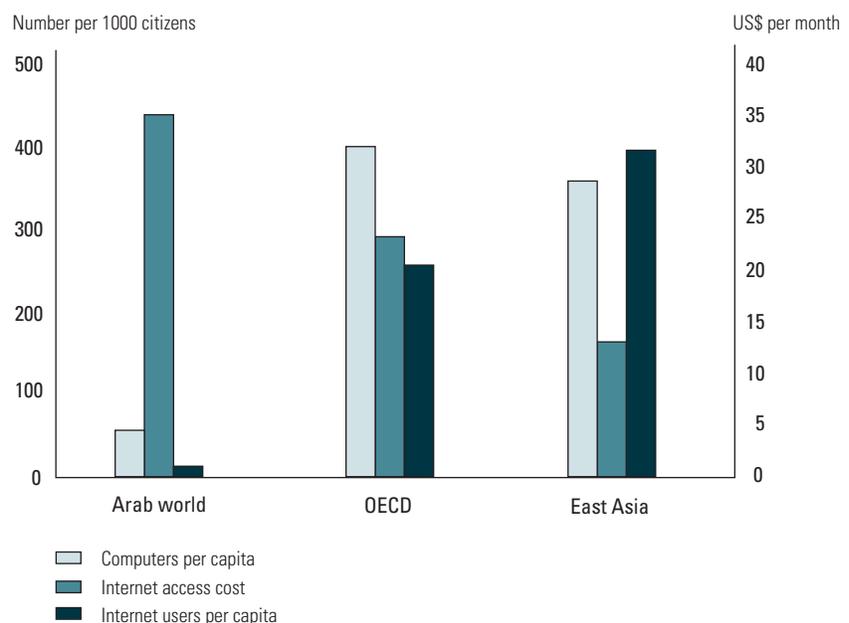
Despite some improvements over the last two decades, enrollment rates in the Arab world remain well below that of the industrial countries: primary school enrollment remains

below 85 percent (compared to 100 percent in the OECD),⁷ secondary school enrollment remains just above 50 percent (again close to 100 percent in the OECD), and tertiary school enrollment remains below 15 percent (over 60 percent in the OECD).

But apart from low enrollments, perhaps the most important problem with human capital in the Arab world is the low quality of the education system and the fact that education remains unconnected to the needs of productive firms. An empirical confirmation of this fact is that in the Arab world, the educated suffer from high unemployment rates and declining real wages; the education system fails to teach Arab citizens how to adapt to a dynamic world of rapid technical change. The Arab education system does not prepare students for today's global world of knowledge and information technologies.

According to the International Telecommunication Union (ITU) (2001), the penetration of both computers and Internet access in the Arab world is small relative to that of east Asia and the OECD (see Figure 11). One possible reason, of course, is that prices are higher in the Arab world. For example, the ITU reports that off-peak Internet access costs close to US\$35 per month in the Arab world, whereas the average cost is less than US\$23 in the OECD and about US\$13 in east Asia. The cost in the United States is less than US\$7, whereas in Yemen, Internet access costs US\$45, more than six times more. Another possible

Figure 11. Access to New Technologies



Source: Authors' calculations

reason for the low penetration of the Internet and computers is, of course, that people in the Arab world are not as trained to use new technologies as are people in the industrial nations.

The education system should be reformed so that students are not made to “learn things” but are taught “how” to learn. Only if future workers learn how to adapt in a changing technological and business environment will firms feel confident in the human capital of a nation. The reforms must bring together the education sector, the government, and the private business sector. Close coordination between firms and schools and universities is needed if education has to provide useful and productive services to the workers of the future.

The introduction of new technologies provides a unique chance for the Arab world to catch up, as it allows the countries to bypass old problems that have strangled the traditional sectors. In order to take advantage of the opportunities provided by the information technologies, these need to be introduced without the monopolistic and highly distorted structures that characterize other sectors. Interest groups may make it harder to reform old sectors than to introduce the right structures in new sectors. However, the chance to introduce the right structures is an opportunity not to be missed.

Conclusions

The Arab world has suffered a twenty-year growth slowdown. The decline in the investment rate in the region is probably a consequence, not a cause, of this slowdown. By international and historical standards investment has remained high, but this has not translated into higher growth rates. The reason is that what matters for growth is not the quantity of investment, but its quality. We have argued that there are two broad explanations for this “missing growth.” First, too large a fraction of overall investment has been unproductive public investment. Second, the environment for private investment has been hostile for at least three reasons: (1) excessive political, social, and military conflicts throughout the region; (2) excessive government intervention, protection, and regulation (which suffocates the business environment and makes private investment expensive and, therefore, uncompetitive); and (3) inadequate human capital.

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Endnotes

1. Arab world GDP per capita is constructed by aggregating World Bank or Heston et al. (2001) PPP-adjusted GDP data for each country and dividing it by aggregate population. Since the data are measured in PPP-adjusted units, it is strictly comparable across countries and, therefore, can in principle be aggregated. The countries used to construct this measure of Arab world GDP are: Algeria, Egypt, Kuwait, Oman, Saudi Arabia, Mauritania, Morocco, Syria, Tunisia, Comoros, and Jordan. Lebanon, Libya, the West Bank and Gaza Strip, Bahrain, Qatar, the U.A.E., Iraq, and Yemen have been excluded because of data limitations. For example, there is very little information available on the performance of the U.A.E. economy. In fact, the Central Bank published price-adjusted real GDP figures for the first time in 2000. Iraq's GDP data "disappeared" after the Gulf War.
2. Due to data availability, only the following countries were included in the "oil producers" category: Algeria, Egypt, Kuwait, Oman, and Saudi Arabia. .
3. The original definition of absolute is attributed to Ravallion et al. (1991). These researchers used "perceptions of poverty" in the poorest countries to place the poverty line at US\$31 per month. Later, the definition was changed to US\$30.42, and it then was modified to US\$1/day. The US\$1/day poverty line was later adopted by the World Bank as the "official" definition of "absolute poverty." Another poverty line appeared in the literature that doubled the original figure to US\$2/day. We use both definitions in this paper.
4. Again, there is substantial heterogeneity within the Arab world: the ratio for Morocco is seven whereas that for Tunisia is four. Both countries' ratios are close to those of the OECD and east Asia.
5. See Demircuc-Kunt et al. (2001) for an empirical and theoretical documentation and discussion of the negative impact that an underdeveloped financial system may have on growth.
6. The productivity estimates are our own, but they are similar to those estimated by other researchers and analysts, such as UNDP (2002) and Bisat et al. (1997).
7. In fact, primary school enrollment ratios in the Arab world are lower than those of the developing world as a whole.