
**Document de travail de la série**
***Etudes et Documents***

E 2005.35

# Labor markets and economic growth in the MENA region[1]

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[1] A first version of this paper was written by Christopher Pissarides in 1999 for the Growth Development Project of the World Bank as a "thematic" paper for the MENA region. The current version is fully revised and updated, following comments from anonymous referees.

Abstract

*The labor market plays an important role in economic development through its impact on the acquisition and deployment of skills. This paper argues that countries in the MENA region failed to deploy human capital efficiently despite high levels of education because of a large public sector which has distorted incentives and because of excessive regulation in the private sector. The education system is geared to the needs of the public sector so the acquired skills are inappropriate for growth-enhancing activities. Excessive regulation of the private sector further removes the incentives for employers to recruit and train good workers. As a result, MENA countries found it difficult to adapt to new conditions in the 1990s and their rate of productivity growth fell to very low levels. The group as a whole failed to keep up with countries that used to be at a comparable level of development, such as East and South-East Asia.*

# Labor markets and economic growth in the MENA region

Executive summary

Human capital – the skills that workers posses and their ability to perform complicated tasks – plays a key role in economic growth and development. The decisions to invest in skills, the types of skills that are chosen and their deployment into productive use are taken in labor markets. How successful a country is in accumulating useful skills and increasing its productive potential depends on the institutions that govern relations in the labor market: the structure of the labor market is critical in the acquisition of skills and by extension in the growth performance of nations. Our main message in this paper is that labor market institutions in the Middle East and North Africa have given distorted incentives for the acquisition of productive skills, and as a consequence the economies of the region are characterized by misallocation and a low social rate of return to skills. This poor record is reflected in the poor overall economic performance of the region.

After she sharp fall in oil prices in the 1980s, both national output and total factor productivity declined and remained low in the majority of MENA countries. Even though the region experienced a small recovery in the 1990s, it was not enough to allow MENA to close the gap with the more advanced developing countries, with which the region was catching up in the 1960s (East and South Asia in particular). The MENA countries have been falling behind, despite a rapid growth in the acquisition of skills through general education. Human capital in the region has been less successful in contributing to growth than elsewhere. The failure to reap the benefits of education can be largely attributed to the structure of labor markets in the region.

An important source of misallocation of skills can be traced to the large public sectors in the region and the incentives they give to highly trained labor to apply for jobs. Public sector productivity is low, despite highly trained employees, because of overstaffing. The high wages and other job advantages (such as job security, worker protection and social allowances) offered by the pubic sector have diverted skilled labor from growth-enhancing activities into unproductive public sector jobs. Public sector wages relative to private in the region are higher than elsewhere. Although this difference partly reflects the higher educational qualifications of the public-sector labor force, it is not a sufficient explanation: it also indicates the presence of distortions, which are at the root of the misallocation of skilled labor.

Another source of misallocation of skilled labor is due to the unemployment of highly-qualified people, which is generally high in the MENA region. Many individuals in the middle to the upper end of the educational distribution are unemployed, yet at the same time entrepreneurs regularly cite the lack of labor with suitable skills as an important constraint to hiring. The combination of high skilled unemployment and skill shortages is evidence of an educational system that trains individuals in unsuitable skills. In the MENA region this is almost certainly due to the fact that the educational system has been geared to the needs of the public sector.

Other distortions that lead to lower rates of return to human capital can be traced to the institutional framework that regulates the employment relationship. Included in this framework are work standards, the hiring and firing employees, minimum wages and trade union recognition and powers. In MENA, labor market regulations have historically been stringent and not friendly towards employers. They are tight compared with other regions of the developing world, although not as high as in the formerly planned economies, or in some Latin American countries. The majority of the countries in the MENA region have suffered from this situation, which has led to rigidities in the labor market. Rigidities of this kind slow down the economy's response to new economic conditions, such as changes in international trade relations, changes in oil prices and, going back a few years, to the Gulf war. There is evidence that in the MENA region adjustment to these events has been, and still is, slower than elsewhere.

The free market usually signals the need for skills through the relative wage system, namely, through the private rate of return to education and training. In MENA, the rates of return to schooling by sector of activity confirm the attractiveness of the public sector. The bias toward the public sector explains the low skill composition of the private sector and the skill mismatches in the region. There is evidence that the distortions in relative wages have increased the private rate of return to skill, without a corresponding increase in its social rate of return. So although highly-skilled workers who get public sector jobs are rewarded for their educational investment, labor productivity in the private sector does not rise to match the private rewards.

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January 2005

## Introduction: The growth context

The labor market is given a key role in the literature on economic growth. This may not appear at first to be the case, as many models do not refer explicitly to the structure of labor markets. But on deeper examination of the most popular recent models it is invariably found to be the case. A variety of "engines of growth" are usually discussed in the growth literature, which are directly or indirectly related to human capital and the implementation of new ideas. The engine of growth in the baseline Solow model is unspecified labor-augmenting technology; what can labor-augmenting technology be if it is unrelated to human capital? In other models it is the ability to introduce new products, namely the knowledge how to do new things. And in others it is explicitly "human capital" without going into the specifics of what human capital does to output growth and how. The conclusion reached from a reading of the recent growth literature is that if we are to understand growth and development, we need to understand the creation and deployment of human capital.

Human capital is created and put into use in labor markets. The structure of the labor market is therefore critical for the quantity and quality of human capital that is created and for the uses to which it is put. The structure of the market will determine, for example, how much human capital is put into growth-enhancing activities and how much into other activities, such as redistribution. It will also determine what types of human capital will be required in different environments. Yet, despite the wide appeal of the recent growth literature and the large number of economists that have been attracted to it, not many labor economists have switched from their traditional preoccupations to the study of growth. Research in growth has become the domain of macroeconomists whose data on labor markets amounts to two or three aggregate series – usually for employment, schooling, and participation rates. As a result, progress in the integration of labor market institutions with aggregate growth has been slow. In fact, it has not progressed much beyond the insights that generated the initial interest in growth theory. Looking at what data macroeconomists have on labor markets, and what propositions have been put forward by growth theorists for the link between labor-market outcomes and growth, it becomes obvious that not much progress can be made within the current cross-country research agenda.[3] Deeper country research is needed that pays attention

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[3] Similar conclusions are reached by Topel (1999) in his survey of research on labor markets and growth.

to the institutional structure of the country in question and to the links between human capital, the institutional structure and the growth outcomes.

In light of this, research on growth and the labor market in the MENA region has to begin with an examination of the labor market institutions in the MENA countries that are likely to influence growth outcomes. Unfortunately past literature provides little guidance in this respect. There is virtually no literature explaining which labor market institutions are likely to be good for growth and which bad. Of course, economists have views on the matter, but there is no consensus founded on solid empirical research. For example, the thorough and comprehensive in coverage books on growth by Barro and Sala-i-Martin (1995) and Aghion and Howitt (1998) do not mention a single labor market institution that might influence growth. But in many variants of their models they do devote space to what they consider the key to growth, human capital. The same can be said for the recent survey on labor markets and economic growth by Robert Topel (1999). The survey is devoted to human capital and growth but not to labor market institutions. Of course, this reflects the current state of the literature, not an omission of the authors of those works.[4] In the case of the MENA region, although some recent studies analyze quite extensively the functioning of the labor market, there is very little discussion on the connections between the labor market and growth.[5]

Country research on growth can make a real contribution to our understanding of growth if it can produce new data that can identify labor-market institutions that are conducive to the creation and deployment of good quality human capital and institutions that are wasteful of human resources. The purpose of this "thematic" paper is to point out the links between human capital and growth that need empirical verification and discuss some summary data for the MENA region that might help point directions for research on individual countries. The role that human capital occupies in growth theory and its likely empirical contribution in the MENA region is first discussed. It is shown that despite rapid growth in human capital resources it is unlikely that human capital has contributed significantly to growth in this region. The challenge facing research in this region is to find the reasons for the apparent wasteful use of human capital. We examine the sectoral composition of employment and the institutional structure that governs wage determination and employment and make some suggestions about the role of each and the directions for future research.

## Human capital and economic growth

### *Human capital definitions*

Human capital is created by formal education and formal training as well as by informal learning mechanisms. Each time someone develops the ability to do something new, he or she increases his or her human capital. Of course, measuring human capital in its full dimension is an impossible task. For this reason, the literature usually confines itself to measuring the years of schooling in the working population and using the outcome as a proxy for all human capital in the country.

As a first step in the study of labor markets and growth we therefore need a series for the stock of human capital (years of schooling) in the labor force or the population of working age. This can be done by employing an inventory method to enrolment data, provided one or more points of reference are available for the stock from labor force surveys.

[4] More recently there has been increased emphasis on the role of institutions in growth and their empirical measurement. See, for example, Acemoglu et al (2005).

[5] See, in particular, World Bank (2004) for a study of the functioning of labor markets in the MENA region and Agenor et al. (2003) for a more quantitative approach to the study of labor market institutions and reforms and outcomes.

The stock is augmented by the years of schooling of school leavers and depreciates by the education of those leaving the labor force. Data for the stock of human capital for the population of working age is also useful in making inferences about the likely changes in the supply of labor. A country with large amounts of human capital outside the labor force (e.g. with many educated women who are not participating) is more likely to experience changes in its participation rates than another.

Data for five-year periods in 1960-99 are available (Barro and Lee, 2000) and these data could provide a starting point for the research on the connection between human capital and growth in MENA. Table 1 reproduces some summary statistics for a selection of MENA countries, as well as by region. The main feature of these statistics is the steady growth of education in all the MENA countries of our sample throughout the period**.** In the 1960s, MENA educational attainment was one of the lowest in the world with an average of 1.6 years of schooling for each adult over the age of 15 years. This low attainment was comparable to the low attainment in the countries of Sub-Saharan Africa and South Asia. By 1999, however, the MENA region had closed the educational gap with the more advanced developing economies. With an average of 5.8 years of schooling, MENA is far ahead South Asia and Sub-Saharan Africa, and less than one year behind Latin America and East Asia.

**Table 1. Average number of schooling years, total population over 15 years old**

| *Country* | 1960 | 1980 | 1999 |
|---|---|---|---|
| **Algeria** | 1.0 | 2.7 | 5.4 |
| **Bahrain** | 1.0 | 3.6 | 6.1 |
| **Egypt** | | 2.3 | 5.5 |
| **Iran** | 0.8 | 2.8 | 5.3 |
| **Iraq** | 0.3 | 2.7 | 4.0 |
| **Jordan** | 2.3 | 4.3 | 6.9 |
| **Kuwait** | 2.6 | 4.3 | 7.1 |
| **Syria** | 1.4 | 3.6 | 5.8 |
| **Tunisia** | 0.6 | 2.9 | 5.0 |

*Source:* Barro and Lee (2000)

| *Region* | 1960 | 1980 | 1999 |
|---|---|---|---|
| **Sub Saharan Africa** | 1.7 | 2.5 | 3.5 |
| **East Asia** | 3.4 | 5.3 | 6.7 |
| **Eastern Europe** | 4.5 | 6.3 | 7.2 |
| **Developed Economies** | 6.7 | 8.3 | 9.5 |
| **Latin America** | 3.5 | 5.1 | 6.2 |
| **MENA** | 1.6 | 3.7 | 5.8 |
| **South Asia** | 1.5 | 2.9 | 4.2 |

*Source:* Authors' calculation from Barro and Lee (2000)

## *Growth theory*

What specific role does growth theory give to human capital? Modern growth theory appears to give, at one and the same time, a large role to human capital but not say enough about it. In some models, such as the Lucas (1998) model, human capital drives growth. Everything else – capital, output – adjusts endogenously to the accumulation of human capital. In other models, such as the imitation model of Rivera-Batiz and Romer (1990), it drives the imitation technology which ultimately determines the speed of convergence to the technological frontier. This model is of particular relevance to developing countries, especially those in proximity to more advanced trading partners. The MENA countries fall into this category in relation to the European Union. In R&D models, such as the variant estimated by Benhabib and Spiegel (1994), human capital is the factor that is engaged in R&D and so its productivity determines the rate of growth. This model, however, is less relevant to MENA, as R&D activity is concentrated in a small number of advanced countries.

But whereas human capital is postulated to be the factor that plays these roles, it has not yet been possible to empirically test any model with sufficiently detailed data to arrive at a smaller set of possible links between human capital and growth. The macroeconomic models that have been estimated, mostly with cross-country data, or with panel regressions

making use usually of the Barro-Lee data set for human capital, cannot discriminate between these models.[6]

It can be argued that -- as a first step in our attempts to understand the connection between labor market structure and growth -- research should concentrate on the relation between labor market structure and the contribution of human capital to GDP growth, without trying to discriminate between the different roles that have been attributed to human capital in the literature. Of course, if the research could discriminate between some roles it would be an added bonus. But the more urgent need (and the one that will be of more policy relevance) is to identify institutional structures that are good for the productive use of human capital and for encouraging more investments in it and structures that are poor in this respect.

In order to focus ideas, consider the neoclassical production function without human capital:

$$Y=AK^{\alpha}L^{\beta}.$$

Human capital in some models influences the technological parameter $A$, through for example R&D or imitation of more advanced countries' technologies. And sometimes it augments the labor input $L$ as a productive factor. In the first class of models it influences, at least temporarily, the rate of growth of $A$, and hence of output. But in the second class of models it influences the level of output with the same coefficient as the labor input.

Cross-country regressions have come under criticism for a variety of reasons but whatever their merits, they cannot distinguish between these two variants of the model – does the level of human capital influence the rate of growth of output or its level? In fact, hardly any robust results have been derived from these regressions about the contribution of human capital to growth, though when human capital does not show up as a significant influence in cross-country regressions most authors blame the data. Such is the conviction that human capital must be an important influence on growth. We will argue below that it is possible for human capital to have a high private rate of return but not contribute to growth, when the institutional structure of the labor market is such that "rent seeking" or other less productive activities yield a higher private return to the individual than do growth-enhancing activities. In some cases, the contribution of human capital to growth can be hampered by its low quality, or by its unsuitable nature, as when skill mismatches and market rigidities lead to the unemployment of qualified people.

The fact that the stock of human capital has been trending up in most countries of the world but the rate of growth of output has not, gives an indication that if the level of human capital influences the rate of growth of output over certain periods of time, it is likely to be a temporary phenomenon. But if this were to lead to adoption of the other extreme view, that the human capital stock influences output with the same coefficient as labor, the role of human capital in production and the implied rate of return to human capital would be too small to be credible. The results of the cross-country empirical research are diverse but they are not consistent with the hypothesis that human capital enters the production function with the same coefficient as labor[7].

The capital stock is usually treated as endogenous in growth models and driven by the savings rate in the economy. In the models which make human capital the engine of growth, the rate of growth of the capital stock eventually converges to the rate of growth of human capital. In addition, the capital-labor ratio is also influenced by the features of the human

[6] The human capital by Nehru et al (1993) have similar implications to those of the Barro-Lee data set where the two overlap.

[7] See Topel (1999) for an evaluation and Barro and Sala-i-Martin (1995), Benhabib an Spiegel (1994) and Pritchett (1996) for empirical results and more discussion.

capital production function. The prediction of growth models is that a country with more human capital will eventually have more physical capital as well. As a first step, however, it might be worthwhile to explain the contribution of human capital to output growth net of the contribution of the capital stock, namely to the series $\log Y - \alpha \log K$, though ultimately a complete explanation of the contribution of human capital to growth will need to explain the dependence of investment on human capital.

### *Growth accounting*

Growth accounting exercises decompose the growth of output into growth due to capital, employment and total factor productivity (TFP). Their information content is limited and the decompositions they arrive at should not be treated as research findings that should guide policy but as suggestive of further research. Yet occasionally growth accounting exercises come up with surprising (when viewed through the OECD lens, perhaps) facts and cause controversy, as Young's (1995) work on growth accounting for South-East Asia did. For the MENA research on growth and labor, growth accounting exercises can shed light on the level and rate of growth of TFP in each country and their relation to human capital. More specifically, how can we account for the fact that the human capital stock has grown rapidly since 1960, yet output growth seems to have stagnated?

Tables 2 and 3a show GDP growth rates for a selection of MENA countries and by region, gross and decomposed into growth in the capital stock, labor force and TFP. The share of capital in the TFP calculations is taken to be 0.4, although there are variations across countries and in deeper country research country-specific estimates could be given. The share of labor is correspondingly taken to be 0.6. In the absence of a time series for employment, we used a series for total labor force growth. TFP1 shows the results of the TFP calculations when the contribution of human capital is not netted out. The idea behind TFP1 is that human capital contributes to TFP growth; namely, that human capital is one of the factors that explains the path of TFP growth and not the level of output. TFP1 is calculated as the residual of the production function previously specified: $\log(TFP1) = \log(Y) - 0.4 \log(K) - 0.6 \log(L)$. In TFP2, however, we have treated human capital as a factor that improves the quality of the labor force and so we used data on human capital to augment the contribution of labor before deducting it from output growth. With a Cobb-Douglas production function this amounts to treating human capital as a factor of production. In this case, TFP2 is calculated as follows: $\log(TFP2) = \log(Y) - 0.4 \log(K) - 0.6 \log(L')$ where L' (the skilled labor) is the labor force (L) augmented by the number of years of schooling of the population over 15 years old (H), the rate of return to education being fixed at 0.1.[8] The results should be regarded as indicative of trends rather than accurate descriptions of reality, as data tend to be unreliable. There are more than one time series for GDP growth for these countries and they are not all consistent with each other, and the capital stock data sometimes exhibit implausible behavior.

[8] Following Dasgupta et al (2002), the exact way in which we augmented the labor input is $L'=L*\exp(0.1*H)$ where H is the number of years of schooling.

**Table 2: TFP calculations for a selection of MENA countries**
(average annual growth rates in %)

| | | GDP | Capital Stock | Labor Force | TFP1 | Skilled Labor Force | TFP2 |
|---|---|---|---|---|---|---|---|
| **Algeria** | **1970s** | 5.7 | 8.7 | 3.2 | **0.3** | 4.4 | **-0.4** |
| **Algeria** | **1980s** | 2.5 | 4.9 | 3.8 | **-1.8** | 5.5 | **-2.8** |
| **Algeria** | **1990s** | 1.5 | 1.0 | 3.8 | **-1.1** | 5.0 | **-1.8** |
| **Egypt** | **1970s** | 8.0 | 9.8 | 2.1 | **2.8** | 4.5 | **1.4** |
| **Egypt** | **1980s** | 4.9 | 8.8 | 2.5 | **-0.1** | 4.5 | **-1.3** |
| **Egypt** | **1990s** | 4.3 | 3.4 | 2.9 | **1.2** | 4.2 | **0.5** |
| **Iran** | **1970s** | 0.7 | 12.8 | 3.0 | **-6.2** | 4.3 | **-7.0** |
| **Iran** | **1980s** | 3.8 | 2.6 | 3.0 | **1.0** | 4.2 | **0.3** |
| **Iran** | **1990s** | 4.0 | 1.3 | 2.3 | **2.1** | 3.7 | **1.2** |
| **Jordan** | **1970s** | 8.7 | 10.8 | 2.3 | **3.0** | 3.4 | **2.4** |
| **Jordan** | **1980s** | 3.2 | 7.0 | 4.9 | **-2.6** | 6.7 | **-3.6** |
| **Jordan** | **1990s** | 5.2 | 1.3 | 5.8 | **1.2** | 6.9 | **0.6** |
| **Morocco** | **1970s** | 5.6 | 8.8 | 3.2 | **3.0** | 4.1 | **-0.4** |
| **Morocco** | **1980s** | 3.6 | 4.9 | 2.6 | **-2.6** | 3.4 | **-0.4** |
| **Morocco** | **1990s** | 2.2 | 3.5 | 2.5 | **1.2** | 3.4 | **-1.2** |
| **Tunisia** | **1970s** | 7.4 | 7.0 | 3.6 | **2.4** | 5.1 | **1.5** |
| **Tunisia** | **1980s** | 3.7 | 4.6 | 2.7 | **0.3** | 3.7 | **-0.4** |
| **Tunisia** | **1990s** | 4.8 | 3.3 | 2.9 | **1.7** | 4.0 | **1.0** |

*Source:* Authors' calculations from World Bank data

Tables 2 and 3a show that GDP growth experienced a sharp decrease in the 1980s, after the fall in oil prices. This has been the case in all the MENA countries in the sample (except Iran, Table 2) and in all regions (except South Asia, Table 3a). Both investment and employment decreased during the period, especially the former. But these declines do not fully account for the decrease in GDP growth, so our calculations show a sharp fall in TFP growth which becomes negative in the majority of our MENA sample. In this regard, the MENA region did not perform better than Africa, although in terms of GDP and human capital growth the region as a whole outperformed Africa.

In the 1990s, the MENA region experienced a small recovery of GDP and TFP growth, despite a further cut of investment projects (in the public sector in particular). The recovery, however, was not sufficient to allow MENA to close the gap with the more advanced developing countries, with which the MENA region was catching up in the 1960s (East and South Asia in particular, Table 3a).

**Table 3a. TFP Calculations by Region**
(average annual growth rates in %)

| *Region* | | GDP | Capital Stock | Labor Force | TFP1 | Skilled Labor Force | TFP2 |
|---|---|---|---|---|---|---|---|
| **Africa** | **1970s** | 3.7 | 5.5 | 2.5 | **0.0** | 3.1 | **-0.3** |
| **Africa** | **1980s** | 2.2 | 3.1 | 2.7 | **-0.7** | 3.4 | **-1.1** |
| **Africa** | **1990s** | 2.7 | 2.0 | 2.6 | **0.3** | 3.2 | **0.0** |
| **East Asia** | **1970s** | 7.7 | 10.6 | 3.1 | **1.6** | 4.1 | **1.1** |
| **East Asia** | **1980s** | 6.1 | 8.5 | 2.7 | **1.1** | 3.4 | **0.7** |
| **East Asia** | **1990s** | 6.2 | 8.5 | 2.2 | **1.4** | 3.0 | **0.9** |
| **Eastern Europe** | **1970s** | 5.7 | 8.2 | 1.6 | **1.5** | 1.4 | **1.6** |
| **Eastern Europe** | **1980s** | 4.4 | 4.7 | 2.5 | **1.0** | 1.3 | **1.7** |
| **Eastern Europe** | **1990s** | 3.8 | 4.1 | 2.6 | **0.7** | 2.0 | **1.0** |
| **OECD** | **1970s** | 4.2 | 5.2 | 1.5 | **1.2** | 2.4 | **0.7** |
| **OECD** | **1980s** | 2.8 | 3.3 | 1.1 | **0.8** | 1.9 | **0.3** |
| **OECD** | **1990s** | 2.8 | 3.1 | 1.0 | **0.9** | 1.7 | **0.6** |
| **Latin America** | **1970s** | 4.7 | 6.4 | 2.9 | **0.4** | 3.6 | **0.0** |
| **Latin America** | **1980s** | 1.0 | 3.1 | 2.8 | **-1.9** | 3.5 | **-2.3** |
| **Latin America** | **1990s** | 3.2 | 3.3 | 2.7 | **0.3** | 3.2 | **0.0** |
| **MENA** | **1970s** | 6.1 | 9.6 | 2.8 | **0.6** | 5.0 | **-0.7** |
| **MENA** | **1980s** | 3.8 | 6.1 | 3.3 | **-0.6** | 5.4 | **-1.9** |
| **MENA** | **1990s** | 3.7 | 2.3 | 3.3 | **0.8** | 4.3 | **0.2** |
| **South Asia** | **1970s** | 3.6 | 4.5 | 2.5 | **0.3** | 2.4 | **0.3** |
| **South Asia** | **1980s** | 5.3 | 5.5 | 2.3 | **1.7** | 3.2 | **1.2** |
| **South Asia** | **1990s** | 5.0 | 4.5 | 2.5 | **1.6** | 3.1 | **1.3** |

*Source:* Authors' calculations from World Bank data.

The independent TFP estimates of Nehru and Dhareshwar (1994) show a low TFP growth in all countries in the period 1960-90 and, more strikingly, a negative overall TFP growth rate for the MENA region as a whole (see Table 3b). TFP growth in the MENA region compares poorly even with the rest of Africa. Our calculations are consistent with the Nehru and Dhareshwar estimates but show that the negative results are even more striking when the contribution of human capital to TFP is deducted (TFP2 series, Table 3b). Because human capital accumulation was higher in the MENA region than in the rest of Africa, its performance net of human capital was even worse than in the earlier estimates that ignored it. This suggests a low contribution of human capital to growth in the region when compared with the rest of the world.

The task faced by a researcher of economic growth in the MENA region is to explain why TFP growth in the region was so low, in view of the fact that other things equal, the low initial income should have returned TFP growth rates above the average of the world economy. The relatively high investments in human capital that took place in these countries since the 1960s should also have contributed to faster convergence dynamics, namely, faster TFP growth during the sample period. For research on labor markets and growth in particular, the task is to identify features of the labor markets of the MENA countries that contributed to the low return on human capital and the low overall TFP growth.

**Table. 3b. TFP calculations by regions**

(annual percentage changes)

| Nehru and Dhareshwar (1994) | 1960-1990 | 1960-1990 |
|---|---|---|
| *Region* | *ECM* | *FD* |
| **Africa** | -0.8 | -0.4 |
| **East Asia** | 0.5 | 1.2 |
| **OECD** | 0.5 | 1.3 |
| **Latin America** | -0.6 | -0.1 |
| **MENA** | -1.2 | -0.3 |
| **South Asia** | 0.3 | 0.8 |

| Authors' Calculations | 1960-2000 TFP1 | 1960-2000 TFP2 |
|---|---|---|
| **Africa** | 0.0 | -0.3 |
| **East Asia** | 1.3 | 0.8 |
| **Eastern Europe** | 1.5 | 1.6 |
| **OECD** | 1.3 | 0.8 |
| **Latin America** | 0.1 | -0.3 |
| **MENA** | 0.5 | -0.4 |
| **South Asia** | 1.1 | 0.7 |

*Notes*: Unweighted averages of annual country rates. ECM stands for "error-correction method" and FD for "first-difference method". Both sets of calculations ignore human capital.

## Labor market structure

Human capital in the MENA region grew steadily throughout the period of low TFP growth (see Table 1). Therefore -- even in the absence of a careful statistical analysis and despite the other factors that played a role in slowing down TFP growth, such as economic reforms, macroeconomic and political instability, or governance -- it is obvious that human capital will not be able to contribute much to growth in country regressions. This may be due to the fact that human capital in MENA has suffered either from low quality or from a misallocation that diverted it from employment in growth-enhancing activities. A lot of it must have stood idle, engaged in "rent-seeking" or less productive activities (not properly recorded in national income statistics, such as the running of social services). An analysis of this issue, with a view to finding ways to improve the situation if misallocations are found, requires an examination of the labor market's **static efficiency**.

### *Static efficiency*

Static efficiency investigates the allocation of labor across sectors of the economy. The concern in the present context is whether the allocation of skilled labor is the one most likely to maximize the country's growth potential. Table 4a shows the allocation of labor across some broadly defined sectors. Manufacturing occupies a smaller fraction of the labor force than in other industrializing countries, and this is compensated for in the MENA region by a bigger public sector (Table 4b). Tables 5a and 5b show that MENA's government and public sector (excluding health and education in the case of Table 5b) employ a bigger fraction of the non-agricultural labor force than in any region outside Africa.

**Table 4a. Sectoral distribution of employment**
(% of total employment)

| *Country* | Agr | Man & other Ind | Services |
|---|---|---|---|
| **Algeria** (1995) | 12 | 30 | 58 |
| **Bahrain** (1994) | 1 | 54 | 43 |
| **Egypt** (2000) | 30 | 21 | 49 |
| **Iran** (1996) | 23 | 31 | 45 |
| **Iraq** (1990) | 16 | 18 | 66 |
| **Jordan** (1993) | 6 | 25 | 69 |
| **Kuwait** (1988) | 1 | 24 | 74 |
| **Morocco** (1999) | 44 | 21 | 33 |
| **Syria** (1991) | 28 | 25 | 46 |
| **Tunisia** (2001) | 22 | 34 | 44 |
| **WB & G** (2000) | 14 | 34 | 52 |
| **UAE** (2000) | 8 | 33 | 59 |

*Source:* World Bank (2004)

**Table 4b. Public sector employment**
(% of total employment)

| *Country* | (1) | (2) |
|---|---|---|
| **Algeria** (1990-1999) | 58 | 30 |
| **Bahrain** (1991-2001) | 68 | 80 |
| **Egypt** (1988-1998) | 27 | 38 |
| **Iran** (1986) | 31 | |
| **Jordan** (1987-1996) | 45 | 36 |
| **Kuwait** (1989-2000) | 42 | 75 |
| **Morocco** (1991-1999) | 12 | 8 |
| **Oman** (1991-1999) | 76 | 79 |
| **Quatar** (1986) | 37 | |
| **Saudi Arabia** (1992-1999) | 70 | 82 |
| **UAE** (late 1980s) | 31 | |
| **Tunisia** (2001) | 24 | 21 |
| **Yemen** (late 1980s) | 16 | |

*Source:* Shaban *et* al. (2001) and World Bank (2004)
Note: (1) and (2) relate respectively to the first and the second year in the country list above

**Table 5a. The size of government in the 1990s**

| *Region* | **employment** (% total) | **wages** (% GDP) |
|---|---|---|
| **Sub-Saharan Africa** | 6.2 | 6.3 |
| **Asia** | 6 | 4.5 |
| **Eastern Europe** | 16 | 3.9 |
| **OECD** | 17.5 | 4 |
| **Latin America** | 9 | 5 |
| **MENA** | 17.6 | 9.8 |

*Source :* Schiavo *et* al. (2003)

**Table 5b. Share of public sector in non-agricultural employment and human capital**

| Region | Share of public sector | Estimated loss GDP growth, 1985-95 |
|---|---|---|
| **Sub-Saharan Africa** | 32.9 | 8.8 |
| **Asia** | 19.8 | 4.9 |
| **OECD** | 20.6 | 5.1 |
| **Latin America** | 17.7 | 4.3 |
| **MENA** | 31.7 | 8.4 |

Another set of more detailed statistics shows that in Egypt (Table 6), government employs more than half of all degree holders in the country, with public enterprises also employing a large fraction. Public sector employment of this magnitude clearly interferes with the static efficiency of the labor market and deeper country studies need to investigate carefully the uses to which the public sector puts this human capital.

**Table 6. Educational attainment by employment sector, Egypt, 1988**

| *Sector* | *Below intermediate* | *Intermediate and above* | *University and above* | *Total* |
|---|---|---|---|---|
| **All sectors** | 76.9 | 14.6 | 8.5 | 100 |
| | | | | |
| **Government** | 7.0 | 47.2 | 55.6 | 16.9 |
| **Public enterprise** | 5.3 | 15.8 | 14.7 | 7.6 |
| **Private agric.** | 57.6 | 9.6 | 2.6 | 45.9 |
| **Private non-agric.** | 29.7 | 24.5 | 23.0 | 28.4 |
| **Total** | 100 | 100 | 100 | 100 |

*Source*: Shaban, et al. (1993), Table 11.

Recent studies show that low productivity is exacerbated in the public sector of countries in the MENA region by an increasing overstaffing (World Bank, 2004). In the early 1990s, the share of underutilized workers in the public sector ranged from 17 % (Algeria) to 21 % (Egypt) and to even more in the oil exporting countries. This share, despite its substantial size, has increased recently to 35 % in Egypt and 40 % in Jordan. Berthelemy et al. (1999) estimated the average loss of GDP growth due to public sector employment by making the admittedly strong assumption that the fraction of human capital employed in the administrative public sector does not contribute at all to growth. Their estimate is shown in the last column of Table 5b. The loss in the MENA and sub-Saharan Africa regions is bigger than elsewhere by a large margin.

Another source of misallocation of skilled labor comes from unemployment of highly qualified people. Unemployment rates are generally high in the MENA region (Table 7a) but more importantly, the unemployment rates of people in the middle to the upper end of the educational distribution are even higher (Table 7b). The waste of human capital through the high unemployment rates must be a contributory factor to the low overall contribution of human capital to growth. Interestingly, despite the high unemployment rates, entrepreneurs in these countries regularly cite the lack of labor with suitable skills as an important constraint to hiring. The combination of high skilled unemployment and skill shortages at the industrial level provides support to those who have claimed that the education systems in the MENA region have mostly been geared to the needs of the public sector. The high wages and other job advantages (such as job security, worker protection and social allowances) offered by the pubic sector led to educated workers queuing for public sectors jobs, and so to the absence of pressure to reform the educational system according to the needs of industry.

**Table 7a. Unemployment rates**
(% labor force)

| *Country* | |
|---|---|
| **Algeria** (2000) | 29.8 |
| **Bahrain** (2001) | 13 |
| **Egypt** (2000) | 9 |
| **Jordan** (2000) | 14 |
| **Iran** (2001) | 13.8 |
| **Kuwait** (2003) | 2.6 |
| **Lebanon** (1997) | 8 |
| **Morocco** (2002) | 22 |
| **Oman** (1996) | 12 |
| **Quatar** (2002) | 12 |
| **Saudi Arabia** (1999) | 7.5 |
| **Syria** (2001) | 11 |
| **Tunisia** (2001) | 15.4 |
| **UAE** (1999) | 2.5 |
| **W-B & Gaza** (2001) | 25 |
| **Yemen** (1999) | 11.5 |

*Source:* World Bank (2004)

How did MENA countries find themselves into a situation of large public sectors and misallocation of their human capital resources? Country experiences differ and a full analysis requires an examination of the institutional structure of the countries in question and the historical context. For the region as a whole, however, there has been one big missed opportunity. Historically, the biggest influence in these countries has been the oil boom of the 1970s, which lasted up to about 1982, and which enriched the public sector and led to the large education expansion. But the resources gained during the oil boom were used to expand and protect the public sector from market competition and not spent in a way that was favorable to growth. They contributed to the large expansion of public sector employment, to the misallocation of resources in the public educational systems and to the introduction of other institutional rigidities that the economies could afford (perhaps) when the oil revenues were abundant, but not when they dried up.[9]

**Table 7b. Unemployment rates (by educational level)**

| Country | None | Primary | Secondary | Tertiary | All |
|---|---|---|---|---|---|
| **Algeria** (1995) | 9.6 | 30.9 | 30.9 | 68.4 | 27.9 |
| **Egypt** (1998) | 4.1 | 5.7 | 22.4 | 9.7 | 11.4 |
| **Jordan** (1991) | 8.2 | 8.7 | 25.8 | 21.5 | 14.4 |
| **Morocco** (1999) | 9.4 | 26.3 | 32.4 | 37.6 | 15.6 |
| **Oman** (1996) | 5.6 | 13.4 | 24.8 | 2.8 | 10.8 |
| **Tunisia** (1997) | 10.2 | 20.8 | 15.4 | 6.4 | 15.7 |

*Source:* Shaban *et* al. (2001) and World Bank (2004)

[9] See Pissarides (1993) for more discussion of the historical context and the relation between oil revenues and public sector expansion. More recent discussion about the role of reforms can be found in Dasgupta et al (2002) and more discussion about the role of social contracts, political regimes, and wars and their influence on the economy of the countries in the MENA region can be found in World Bank (2004).

### *Institutional Foundations*

Labor market institutions influence the allocation of resources. In the present context the question is whether human capital is employed in growth-enhancing activities or elsewhere. There is a risk, when writing about labor market institutions to drift too far from the growth context. The focus of our discussion here is on the institutions that are likely to influence the allocations of labor in growth versus non-growth enhancing activities, even if other institutions appear more important at first sight. Two broad institutional structures appear most relevant for the allocation of resources and growth in the MENA region.

First, **wage setting** institutions and their implications for relative wages across sectors. Do high public sector wages explain why the public sector is so large in the MENA region? Table 8 shows that public sector wages relative to private in the MENA region are higher than anywhere else (in addition, the public sector offers more non-wage benefits). Although this difference may partly reflect the higher educational background of the labor force working in the public sector, it also indicates the presence of distortions. If it reflected only the higher educational attainment of workers in the public sector there would have been no queues to enter the public sector and no higher unemployment of more educated workers. As it is, the public sector is obviously not competing with industry for qualified labor – it rather sets the agenda for wages and rations employment. The high wages and high non-wage benefits that we already mentioned constitute an important incentive for qualified workers to enter the public sector, with the poor results for the contribution of human capital to overall growth that we have already noted.

In addition to the waste of human capital in less productive public sector employment, the large size of public employment in these countries inflates the public sector wage bill. The wage bill has to be met from the public budget and the debt and tax implications for private sector activity impose another large burden on the economy that works against growth.

**Table 8. Central Government wages, early 1990s**

| *Region* | *Central government wage bill, ( % of GDP)* | *Ratio of public sector to private sector wages* |
|---|---|---|
| **Sub-Saharan Africa** | 6.7 | 1.0 |
| **Asia** | 4.7 | 0.8 |
| **ECA** | 3.7 | 0.7 |
| **Latin America** | 4.9 | 0.9 |
| **OECD** | 4.5 | 0.9 |
| **MENA** | 9.8 | 1.3 |
| **Overall** | 5.4 | 0.8 |

*Notes*: Table 3 of MNSED (1999).

Second, the institutional framework for hiring and firing employees and more generally the framework that regulates the **employment relationship**, including the legal framework for standards at work, minimum wages and trade union recognition and powers. This institutional framework is likely to be the result of government policy but workers' organizations may have their own rules on hiring and firing. In the MENA region, labor market regulations have historically been stringent and are still too tight compared with other regions of the developing world, although not as high as the formerly planned economies or Latin America (Table 9a). The majority of the countries in the region are affected by this situation, which has introduced rigidities in the labor market (Table 9b). At the micro level rigidities of this kind lead to low productivity and removal of the incentive to innovate and start new businesses. At the macro level these negative consequences translate to slow growth, and to inertia in response to macroeconomic shocks, unemployment and

misallocation of labor. More in-depth analysis is required of the implications of the regulation of employment and business for growth than can be pursued here, and the recent availability of the World Bank database provides a basis on which country papers can build.

**Table 9a: Labor market regulation in developing regions**

| *Region* | Composite index |
|---|---|
| **Sub-Saharan Africa** | 1.45 |
| **East Asia** | 1.6 |
| **Europe and Central Asia** | 1.95 |
| **Latin America** | 2.05 |
| **MENA** | 1.65 |
| **South Asia** | 1.25 |

*Source:* Doing Business Database (2003)

**Table 9b: labor market regulation in MENA countries**

| *Country* | Composite index |
|---|---|
| **Algeria** | 1.5 |
| **Egypt** | 1.85 |
| **Jordan** | 1.55 |
| **Iran** | 1.9 |
| **Lebanon** | 1.2 |
| **Morocco** | 1.35 |
| **Syria** | 1.3 |
| **Tunisia** | 1.7 |

*Source:* Doing Business Database (2003)

### *Market flexibility*

It is clear from results obtained so far on TFP growth in the MENA countries (and elsewhere) that the way that we define and measure TFP gives a cyclical TFP series with downswings that can last for many years. This is a reflection of the well-known fact that labor productivity is pro-cyclical. But unlike OECD economies, which are diversified and suffer from regular cyclical shocks of small intensity, developing countries have suffered mostly from more pronounced shocks associated with well-defined one-off events, such as the debt crisis in Latin America, the fall of oil prices in MENA and the financial crisis in South-East Asia. The intensity and persistence of the resulting downswings in TFP growth are directly related to the ability of the economy to adjust to new long-term conditions with the minimum of waste. This is where the issue of market flexibility becomes key to growth. Consistent with this view it has been shown that, where labor markets are more rigid, countries tend to experience deeper recessions before adjustment, as well as slower recoveries (Forteza and Rama, 2001).

The main economic shocks in the MENA region over the last twenty years that seem to have affected TFP growth are the fall in the price of oil after 1982 and the Gulf War a decade later. Both these events reduced GDP growth for many years. The speed of response of the economy to the after-shock situation was generally slow, a fact that is at least partly due to the rigid institutional structure of the labor market. As with static efficiency, the institutional features that are likely to influence the dynamic adjustment are likely to be the wage setting institutions and how flexible they are in allowing wages to respond to changes in market conditions; the hiring and firing restrictions that govern the speed of labor turnover; and the ease with which workers can migrate and change sector of employment. Of course, the economy sooner or later adjusts to a new steady state. The question in the present context is how fast it adjusts and whether policy can help it adjust faster and with less waste.

In the MENA region the adjustment to the oil shocks seems to have been slower than the adjustment to crises in other regions; for example, both Latin American and South East Asian countries came out of their respective debt and financial crises faster than did MENA countries out of their oil crisis. Although there has been some downward adjustment of real wages in the 1990s, the dominant role of government as employer has slowed down the adjustment. It requires a lot more research at the country level, however, to determine whether the labor market structure was responsible for the slow adjustment. In particular whether one or more of the three institutional features of the preceding paragraph – wage setting, employment flexibility and migration – played a role in slowing down the adjustment to the oil shocks. No general claims can be made for the region as a whole since the institutional structure is not well documented at the regional level.

## The acquisition of skills

The discussion so far focused on the allocation of human capital between alternative uses, some of which are growth-enhancing and some less so. But equally important is the question of the acquisition of skills, and how effective are labor markets in generating a large amount of skills that are useful for growth. This requires first a discussion of the educational and training system and how it is organized in each country. It includes the coverage and quality of the education system, who pays for education and what incentives there are for individuals to engage in training. Has human capital grown in some countries because the state financed it and encouraged particular skills or because private initiative did it? And what can be said about the quality of the human capital stock?

The free market usually signals the need for skills through the relative wage system, namely, through the private rate of return to education and training. Are labor markets in the MENA region effective in this signaling function? Do individuals respond to the signals? The answers to these questions touch on the **dynamic efficiency** of the labor market. Under dynamic efficiency the emphasis is shifted to the efficiency of the labor market in the provision of adequate resources for education and training and to the recruitment of enough people for these purposes.

In MENA, these questions need special attention because of the distortionary labor market institutions that we have highlighted. The outcome appears to be low quality education[10] and skill mismatches due to the bias toward public sector needs. The distortions in relative wages that we have highlighted increase the private rate of return to skill without a corresponding increase in its social rate of return, and its implications for dynamic efficiency are an issue that needs further investigation at the country level. Statistics on rates of return to schooling by sector of activity -- available for different countries -- confirm the attractiveness of the public sector. This is true at all levels of education, with the exception recently of Jordan and Yemen (Table 10).[11]

[10] See for example United Nations human development reports (2002, 2003).

[11] It has not been possible to find easily accessible data sources for the quality of the human capital stock for the region as a whole. Psacharopoulos (1985) contains virtually no MENA countries in his sample. Data on quality on a country basis are reported in the updated paper by Barro and Lee (2000), but the regional coverage for MENA is not satisfactory

**Table 10 Rate of return to schooling**

(% per year)

| | Egypt 1988 | Egypt 1998 | Morocco 1991 | Morocco 1999 | Jordan 1997 | Yemen 1997 |
|---|---|---|---|---|---|---|
| **Primary** | | | | | | |
| **Male public** | 8.2 | 6.4 | 12.4 | 6.1 | 3.5 | 2.7 |
| **Male private** | 2.3 | 3.6 | 3 | 3.4 | 2 | 2.7 |
| **Female public** | 1.9 | 5.3 | 28.2 | 10.5 | -3.9 | 5.1 |
| **Female private** | 0.9 | 7.2 | 8.5 | 9.4 | 14.7 | 8 |
| **Lower Secondary** | | | | | | |
| **Male public** | 7 | 4.9 | 10.7 | 8.2 | 2.9 | 2.7 |
| **Male private** | 2.5 | 4.4 | 6.4 | 6.3 | 5.5 | 2.7 |
| **Female public** | 7.7 | 8.2 | 22.3 | 13.4 | 5.2 | 3.7 |
| **Female private** | 3.2 | -11.2 | 13.9 | 10 | 9.8 | 7.4 |
| **Upper Secondary, General** | | | | | | |
| **Male public** | 8.6 | 8.8 | 10.6 | 8.8 | 2.8 | 2.2 |
| **Male private** | 6.3 | 7.3 | 10.4 | 7.7 | 6 | 2.2 |
| **Female public** | 8.6 | 9.7 | 18.1 | 12.1 | 4.6 | 3.9 |
| **Female private** | 3.8 | -1.5 | 16.4 | 11 | 10.4 | 12.1 |
| **Upper Secondary, Vocational** | | | | | | |
| **Male public** | 9.6 | 7.2 | 8.4 | 6.8 | 3.8 | 3.3 |
| **Male private** | 5.3 | 5 | 6.9 | 5.8 | 3.2 | 3.3 |
| **Female public** | 7.9 | 9.6 | 16.5 | 11.9 | 4.3 | 4.3 |
| **Female private** | 4.4 | 4.9 | 11.1 | 11.3 | 8.6 | 10.7 |
| **University** | | | | | | |
| **Male public** | 10.1 | 8.8 | 10.8 | 8.9 | 4.6 | 3.8 |
| **Male private** | 8.5 | 7.3 | 12.5 | 9.5 | 10.2 | 5.2 |
| **Female public** | 8.9 | 10.7 | 15 | 12.8 | 6.8 | 4.4 |
| **Female private** | 9.1 | 10.9 | 15.2 | 9.3 | 12.9 | 6.8 |

*Source:* Assaad (2002) and World Bank (2004)

## Conclusions

Human capital occupies a central role in modern thinking about growth. Despite a large literature on the matter, however, there is a lot to be learned: there is no consensus on its role in growth and development, probably because this role varies across different institutional settings and national environments. The labor market is the place where human capital is created and deployed. This paper has argued that the study of the links between labor markets and growth should concentrate on a study of labor market influences on the quantity, quality and productivity of human capital. This requires an investigation at the level of individual countries of the institutions that influence the acquisition and employment of human capital and their effectiveness in enhancing growth.

Our investigation of broad trends in the MENA region has revealed that there has been fast growth in the acquisition of skills through general education. But following the oil crises of the 1980s, the countries in the region have been unable to utilize their human resources to overcome the negative consequences of the crises for output and growth. In this respect, human capital in the MENA region has been less successful in contributing to growth than elsewhere, e.g., in East or South Asia. We argued that large and inflexible public sectors, wage inflexibility and excessive labor market regulation may be some reasons behind this failure. This opens up a number of issues about reform which require more and deeper research than can be given here on the role of labor market institutions at the country level.

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