

Understanding the Poor Human Capital Contribution to Economic Growth in Algeria

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Abstract

This paper reviews the labor outcomes in Algeria and analyses what is required to spur economic growth through increased efficiency of physical and human capital. It takes the view that the main problems behind the low contribution of labor market in economic growth in Algeria lies with inefficient labor market institutions and education system, absence of economic diversification, low participation of private sector in the economy, and inefficient labor policy. It adopts the view that undesirable labor market structures have interacted with adverse shocks related to the crises of oil's international prices in the middle of the 1980s. An important question concerns the reasons behind reluctance in Algeria to undertake reforms. The paper's thesis is that such reforms are not feasible when public sector is still offering higher wage than private sector without any consideration of labor productivity.

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1. Introduction. The search for the fundamental determinants of economic growth led many economists to turn to human capital as a growth potential engine. As the human capital is generated by education and professional learning, it is utilized in the economy in the form of labor market. Thus, the structure of the labor market is of primary importance for the determination of the quantity and the quality of the human capital (Pissarides, 2000b). The structure of the labor market determines the share of human capital, which is used in activities that generate economic growth. The remaining share of human capital is almost spent in activities without a real contribution to economic growth as some public activities in developing countries. Until recently, the experience of the East Asian countries confirmed the importance of substantial investment in education and human capital formation. This was most apparent in the fast-growing Asian economies (Korea, Singapore, Hong Kong, Taiwan and China). The development of skilled labor force makes an important contribution to development. An educated, trained and more productive workforce contributes to a greater economic growth (Kylah, 1997). It may therefore be argued that investment in education pays off. Investment in human capital (e.g., higher expenditures on education and training) may play a more persistent role in the growth process. Advances in technological progress often have strong links with education, especially at higher levels. Thus, education may not only make a contribution to «embodied» improvements via increases in the skills of the workforce but also through innovation. However, Caselli, et al. (1996) did not find robust evidence to support the view that human capital accumulation necessarily produces growth as suggested in earlier work done by Markiw et al. (1992). Casual comparative observations in a number of developing economies confirm these findings: increases in educational capital due to improvements in the educational attainment of the labor force do not always have a positive impact on the rate of growth of output per worker. According to Berthélemy and Dessus (2000), this seems to contradict the micro evidence, for which a huge literature indicates that more educated individuals receive higher wages. They argue that human capital can only have a limited impact on economic growth if it is employed in socially unproductive activities, even though it may be remunerated at the micro-level³. In other work, Berthélemy et al. (1999), while making the assumption that the fraction of human capital employed in the administrative public sector is not contributing to growth, estimated the average loss of GDP growth due to public employment. Labor market institutions influence the allocation of resources, whether human capital is employed in growth-enhancing activities or elsewhere.

Like many centrally planned economies, Algeria tried, since its independence in 1962, to secure a reasonable standard of living for its population through employment generation in the public sector and extensive social sector investments. This was possible during the period from 1973 to the early 1980s when oil prices were very high. During those years, progress in social indicators was impressive. But the decline in world oil prices in the 1980s in addition to an inefficient industrial structure dominated by the public sector led to economic stagnation and high unemployment. The cumulative impact of these effects has considerably aggravated

³ Murphy, Shleifer and Vishny (1991) state indeed that «when talented people become entrepreneurs, they improve the technology in the line of the business they pursue, and as a result productivity and income grow. In contrast, when they become rent seekers, most of their private returns come from redistribution of wealth from other owners and not from wealth creation». Such misallocation may occur when distortions in the institutional framework make rent seeking activities more profitable than productive ones, thus providing incentives for skilled workers to turn to the former. These activities do not per se promote growth, but contribute to reducing the negative impact of distortions on the profitability of private business. The intensity of rent seeking is then determined by the magnitude of distortions (Berthélemy and Dessus, 2000).

the country's social crisis. In the late 1980s, the government implemented initial reforms to liberalize the system on both political and economic fronts. However, due to structural rigidities, uncompetitive business practices ingrained during 25 years of centralized planning and lack of sufficient changes, institutional reforms failed to reverse the economic decline during the period 1989-94 and the level of unemployment continues to increase. The main causes of this increase were the lack of economic growth.

This paper is organized in four sections in addition to the introduction. In the second section, an overview of labor market in Algeria is presented. In the third section the contribution of labor market in economic growth in Algeria is analyzed. The fourth section presents the factors explaining the low outcomes of labor market. The last section concludes.

2. Overview of labor market in Algeria. Population growth rate, education expansion, and women participation to labor market represent the principal determinants of the growth rate of working population in Algeria. Recent changes in the Algerian economy (privatization, structural adjustment program, and orientation towards liberalization and deregulation), have entrained an important reallocation of labor force among the economic activities. Furthermore, these reforms have accelerated the growth of informal sector and unemployment rate, mostly for young working population.

The existing disequilibrium between supply and demand for the labor force in Algeria is further worsened by the lack of skilled workers adapted to the labor market needs and therefore for competitiveness requirements. Even, the often mentioned beneficial effect of trade liberalization, which is an increase in foreign direct investment, is not expected to be realized in Algeria in the near future. In fact, Algeria is not yet a member of WTO and has only recently signed the partnership agreement with the European Union (December 2001). In addition to the absence of major economic reforms, political and security instability in the country is an additional cause of the lack of foreign investment.

In the following sub-section, we describe shortly the structure of the labor market in Algeria. This description will include a presentation of the determinants of labor supply and demand, the sectoral utilization of labor, and the labor costs by activity and sector ownership.

2.1. High growth of labor force in Algeria. As mentioned above, three main factors determine the labor force growth in Algeria: population growth rate; educational expansion; and women participation to labor market. The population growth remains high in Algeria (cf. Table 1). Education has expanded the number of graduates with poor skills. Enrollment explosion, absence of education reforms, and the insufficiency of budget allocated to education have seriously weakened the educational system in the country. Increased women participation in the formal labor market is probably the most important factor behind the high annual growth rate of labor force in Algeria observed during the last two decades. Before, women participation to labor market is concentrated in the agriculture sector. Nevertheless expanding education for women has increased their role in the formal urban labor market.

Table 1: Population and Labor Force Trends in Algeria compared to other MENA countries

	Population		Labor Force		Labor Force participation Rates			
	Average Growth rate	Annual	Average Growth rate	Annual				
	%		%		Men		Women	
					%		%	
	1980-90	1990-97	1980-97	1997-2010	1980	1997	1980	1997
Algeria	2.9	2.3	3.9	3.8	41.1	46.9	11.1	16.7
Egypt	2.5	2.0	2.6	2.7	50.7	51.4	18.9	22.1
Jordan	3.7	4.8	5.3	3.6	39.2	43.8	7.2	13.4
Morocco	2.2	1.9	2.5	2.5	47.7	51.0	24.1	27.1
Tunisia	2.5	1.8	2.8	2.5	48.0	52.1	20.1	23.9

Source: MENA Trends 2000

2.1.1. High population growth rate. According to the latest population census, Algeria's population in mid-1998 was 29.3 millions, with around 51% of the population living in the urban areas. Population growth has steadily decreased in the recent decades, to an annual average of 2.3% in the period 1990-98 coming from 2.7% per annum in late 1980s and 3.1% prior to that period. Yet, owing to higher rates recorded in the 1970s and 1980s, the age structure of the population remains young (48% of the population is under the age of 20), even though it has changed over the past 10 years (about 55% in 1987).

2.1.2. Education expansion. Investing in human capital is necessary for economic growth and it ensures that workers have the skills necessary to benefit from the jobs created. Since 1976, education becomes accessible to the entire population. The main outcome of education development in Algeria was the noticeable decline in the rate of illiteracy, which became less than 33% in 1999. It is for the female population that the rate of illiteracy has observed the important dropping, passing from 76% in 1980 to 44% in 1999.

Actually, the gross enrollment rate for primary education was about 99%. Important improvements were made in female primary and secondary enrollment rates over the late two decades. Tertiary enrollment also improved significantly between the 1960s and the 1990s, passing from 1% in 1965 to about 13% in 1980. However, beyond the primary level, there were considerable differences in enrollment among regions and income groups: total urban secondary enrollment is estimated to 82%, compared to 77% for the urban poor. In addition, total rural secondary enrollment was around 64% compared to 59% for the rural poor.

2.1.3. Increase of the rate of female participation in the labor market. Like the MENA region countries, female participation in the Algerian formal labor market remains weak. Their participation in the labor market was mostly concentrated in non-market oriented-activities, which are not accounted for as occupational workers in the Algerian official

statistics. Given the low level of education of female in Algeria, their access to the labor market is mainly limited to the only unskilled categories. Although, the need to improve the standards of living of Algerian households has pushed recently young women to follow long and highly qualified formations.

In fact Algeria takes advantage from oil revenue, which during the previous decades allowed the major share of households to depend exclusively on the overestimated salaries of males who were the main breadwinners in the families. A condition that is no longer valid due to the decline in oil prices and the high population growth rate. All those conjugated factors induced a reduction of the labor demand, and therefore, tough competition among the job seekers. Thus, if one compares the labor participation rate of women in Algeria to that of other countries in the MENA region, it can be noted that only Jordan realizes a weaker rate of women participation in the labor market (*Table 2*). Tunisia, Morocco and Egypt realize higher rates than Algeria. Nevertheless, the data in this table must not be interpreted as a reinforcement of women's access to education and consequently to less precarious work. Data in table 2 also shows the sectoral distribution of women in the labor force. Although their place is mostly found in non-market works, nevertheless the existence of increasing potential of unemployed women for which access to labor market will be reinforced over the coming years.

Table 2: Employment by Gender and Sector

	Agriculture				Industry				Services			
	% of male in		% of female in		% of male in		% of female in		% of male in		% of female in	
	Labor force		Labor force		labor force		labor force		labor force		labor force	
Country	1980	1990-97	1980	1990-97	1980	1990-97	1980	1990-97	1980	1990-97	1980	1990-97
Algeria	27	18	69	57	33	38	6	7	40	45	25	36
Egypt	43	29	8	32	20	22	10	7	32	39	56	37
Jordan	11	10	58	41	27	28	3	4	62	63	39	55
Morocco	48	35	72	63	23	28	14	19	29	37	14	18
Tunisia	33	23	53	42	30	33	32	32	37	44	16	27
L.I.C	65	61	81	75	13	15	8	10	22	25	11	14
M.I.C	55	50	59	56	23	23	17	17	22	26	24	27
H.I.C	8	5	8	4	n.a.	34	22	17	n.a.	53	n.a.	73

Notes: Column Entries refer to percentage of sectoral employment to total employment

Source: MENA Trends 2000

Table 2 shows that in spite of the continued dominance of the agricultural sector as principal employer for women in Algeria, its contribution has been dropped from 69% in 1980 to 49% in 2001. This decrease in the contribution of agricultural sector in the occupation of women labor force can be explained principally by the development of service sectors as an important employer in Algeria. Its contribution in the female employment increased from 25% in 1980 to 39% in 2001. Nevertheless, this shift of feminine labor from the primary sector to

the service sector cannot be directly analyzed as an improvement of the qualification of women. On the contrary, it can be explained by the decline observed in the agricultural sector in the economy and the growth of precarious jobs in the service sector, mainly in trade.

2.1.4. High growth of labor force. As a result of the three factors described in the last sections, the labor force has been growing faster than the population at a rate of 3% per annum at the end of the 1990s. The latest employment survey dates back to September 1997 reported the total number of labor force at 7.7 millions, which represents only 27% of the Algerian population. This low rate is mainly due to high enrollment rate and relative low participation of women in the labor market, despite its steady increase. Indeed, the total participation rate grew from 36% for population aged between 15 and 64 years in 1977 to 48% in 1997. It's expected that trend of labor force will continue to grow rapidly in the coming years. Assuming a fixed participation rates, the World Bank (1994a) expects an average annual increase of labor force by 0.3 million workers in the early 2000s compared to an annual average of 0.2 million through the mid 1980s. If the actual tendency of growth in the rate of female labor force participation is considered, the total labor force growth will be even greater.

2.2. Trends in labor demand and structure of employment by sector. Non-agricultural employment growth during the 1980s was concentrated in the construction and industry sectors. The public sector contribution of job creation during the early 1980s was estimated to 78%. Employment growth in public administration during the period 1980-85 averaged 6.4% per year compared to 5.9% for industry and construction sectors. During this period, the annual average growth rate of GDP accounted 4.5. By the late 1980s, when GDP growth fell to an average of 0.6% per year, the growth in public administration employment surged to 9.8% per year. During the same period, the average employment growth rate in industry and construction sectors fell to 2.4% with negative growth in some years.

The analysis of employment trends in public and private sectors reveals major tendency changes through the late 1980s. Starting from a small base, private sector employment grew at nearly twice the rate of growth of public sector employment over the period 1985-89.

2.3. Trends in unemployment. Unemployment implies a substantial loss of human capital to the economy. As mentioned earlier, Algeria made considerable progress over the last decades in increasing access to basic education. But at the time when human capital achievements should be having their greatest pay-off, in terms of economic growth, an important share of these resources were left idle, by being unemployed.

As economic growth and labor demand since the mid-1980s have been insufficient to absorb the large number of new entrants in the labor force, unemployment grew-up from 10% in 1985 to 26.4% in 1997 despite a relatively low labor force participation rate in Algeria. Recent data confirms that unemployment has increased since 1997 to reach the rate of 30%.

Unemployment reflects to a large extent the high population growth at a time when the increasing macroeconomic imbalances of the 1980s rendered unsustainable the strategy of public sector employment generation. As a result, open unemployment jumped from 0.4 to 2 millions between 1985 and 1997. Although unemployment among older workers emerge with the progress of enterprise restructuring and privatization (until 1997, public enterprise

restructuring led to about 0.45 million layoffs). As noted, this problem will be intensified with the continued rise in female participation rate to labor market.

3. The contribution of labor in economic growth and labor productivity in Algeria. The growth accounting exercise realized for the period 1962-99 (Chemingui, 2003) showed that for an annual increase of real GDP by 5% requires an increase in labor and capital at respective average annual rates of 2.4% and 4.9%. For a value of 0.3 of the elasticity of capital, the growth rate of labor productivity is about 1.7% annually whereas that of the capital reached 1.5% during the same period. Respective contributions of the primary factors labor and capital, in growth, were established to 34.5% for the first and 29.8% for the second. This evolution hides significant variations among the periods by which Algerian's economy passed. Thus, the strong economic growth carried out during the period 1962-85, the volume of labor increased annually at a rate of 2.3% for a contribution to the growth of almost 17.6% whereas the stock of physical capital increased by 5.9% annually during the same period for a contribution to the growth of around 26.3%. Thus the annual productivity of the capital increased at the rate of 1.2% annually for labor and 1.9% for the capital. These results showed that during the period 1962-85, Algerian's economy was much more powerful compared to the period 1962-99 owing to the fact that for the same volume of labor and an additional stock of capital of 1%, Algerian's economy gained more than 2 points of economic growth. This is explained especially by a strong improvement of the growth of the TFP. It is important to say that during this period, Algeria began a two-decade period of massive public investment in infrastructure, health and education, which in this early period of development was translated into high growth both by increasing the contribution of capital and labor and also by the improvement of the TFP. However, compared to the volume of investment during this period, the contribution of capital to growth seems lower than expectations for the country. This poor contribution of capital in economic growth confirms that not all the investments undertaken in Algeria in this period were productive. In fact, Algeria invested in large infrastructure projects and protected public industries with low efficiency and poor resources allocation. This was encouraged by the subsidizing policy of energy, water, and other inputs undertaken by the government during this period.

By 1986, as international oil prices slumped in the wake of global overproduction, Algeria marked a rupture in the growth of capital and labor productivity and in general began a long period characterized by a decline in the economic growth. With macro-economic imbalances and growing external debt pressures, investments declined dramatically. The productivity of the capital thus showed a fall of 1% compared to the period from 1962 till 1985. Indeed, the annual growth rate of the productivity of capital passed from 1.9 to 0.9%. This tendency was relatively rectified during the period from 1989 to 1994, where the productivity of the capital accused an annual growth rate of 1.4%. As for Labor factor, its productivity was not affected by the crisis observed since 1986. Indeed, for an annual rise of the volume of labor used at the rate of 3.2%, its productivity increases at an annual rate of 2%, which corresponds more or less to a quasi efficiency stability of the use of labor factor. Over the period 1989-1994, which corresponds to the application of the structural adjustment program of Algerian's economy, the crisis touched more the labor market. Indeed, the total occupied labor force increased at the rate of 1.9% annually for an annual growth of the productivity at about 1.1%.

It's clear from this analysis that labor market contribution in economic growth declines specially from the year 1989. This period corresponds also to a decline in public expenditure

on education but mainly with the reinforcement of privatization. But compared to other MENA countries, both the contribution of labor to economic growth and labor productivity was low.

According to Keller and Nabli (2002), labor productivity, which is used as basis for real wages improvements over the long term, has generally increased throughout MENA, but remains low by international standards. They argue that growth of GDP per worker was lower in the MENA region than in any other region of the world, averaging only 0.8% a year over the 1990s. Compared to other MENA countries, labor productivity in Algeria accounted for a strong decline over the 1990s (Table 3).

Table 3. Employment, Labor Productivity and Growth in Algeria and other Selected MENA countries during the 1990s (%)

Country	GDP Growth	Employment Growth	Productivity Growth	Employment Elasticity	Period
Algeria	0.9	3.2	-2.2	3.6	1989-1997
Egypt	4.4	2.7	1.6	0.6	1988-1998
Morocco	3.3	2.7	1.1	0.8	1993-1999
Tunisia	5.0	3.0	1.9	0.6	1989-1997

Source: Keller, J. and M.K. Nabli (2002).

Compared to other regions in the world like East Asia, Algeria's labor market's outcomes was very poor. The real difference between them can be shown by comparing the growth rate of labor force to GDP. In fact, in East Asia countries, labor force growth was accompanied by an important increase in real GDP, which is not the case for Algeria. According Keller and Nabli (2002), real GDP growth in East Asia averaged 7.6% by year during the period 1970-1980, which represents more than double its labor force growth rate for the same period. As for Algeria, economic growth during the 1990s has only averaged 1.9% by year, which represents only 50% of its labor force growth rate. These poor outcomes of labor force in Algeria can be explained by a strong deterioration in productivity per worker in the country (Table 4).

Table 4. Labor Force Growth and Real GDP Growth: MENA 1990s versus East Asia in the 1970s (%)

Country	Average Yearly Labor Force Growth	Average Yearly GDP Growth	Average Yearly Growth of Output Per Laborer
Algeria	3.8	1.9	-1.9
Egypt	2.9	4.4	1.5
Jordan	5.7	5.1	-0.6
Morocco	2.5	2.1	-0.4
Tunisia	2.9	4.8	1.8
MENA	3.0	3.6	0.6
East Asia	3.1	7.6	4.4

Source: Keller, J. and M.K. Nabli (2002).

4. Understanding the poor labor market contribution to economic growth in Algeria.

This analysis on labor productivity and its contribution to economic growth in Algeria shows that the high growth level of labor force have been accompanied only by very low economic growth unlike other countries in MENA region and East Asia. In the East Asia region for example, high labor force growth rate during the 1970s contributed to high GDP growth rate during the same period.

Many other reasons related to economic policy adopted in Algeria, as the dominance of public sector in the economy, can explain these low outcomes of labor market and human capital in the country. In addition, reduction of public expenditures on education sector and low qualifications of Algerian labor force are some of the other factors which explain the poor human capital outcomes in Algeria.

In the following sub-sections we briefly describe some problems underlying the low level of human capital contribution to economic growth in Algeria.

4.1. Inefficient labor policy in Algeria. Immediately after independence, employment regulations were introduced to preserve full employment through restrictions on firing and job flexibility. They were also designed to deliver many benefits to workers through their employers. Some of these benefits were offered directly by employers and others were financed either entirely by employers or jointly with employees in the form of payroll taxes and salary withholdings. The labor market policy pursued by Algeria, after independence, was also designed to protect employees and to offer them many qualifications through education and training systems. In addition, the government was involved in wage determination (particularly by setting a minimum wage by qualification) and social security of employees.

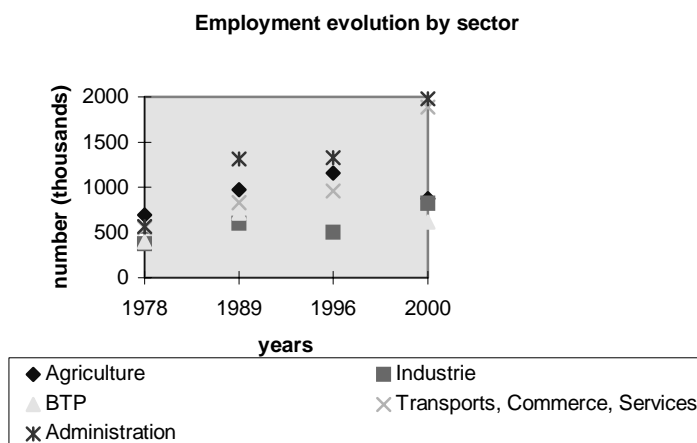
Regarding the labor cost, historically, wages for formal sector employees were paid according to a salary grid. At present, only the public administration remains governed by the official salary grid. All other parts of the public sector are free to negotiate their own agreement. There is evidence, however, that the old salary grids and bonuses still the reference in most public enterprises. Data on wages structures and levels were generally available only on terms of the salary structure themselves. However, bonuses can increase the base wage by as much as 75 per cent (World Bank, 1994). Consequently, the basic salary structure as published by a particular enterprise or industry is only an indicative measure of the actual wages paid. The minimum wage is negotiated between the government, employers and labor unions; and set by government decree. In principle, the level of the minimum wage is based on the evolution of consumer prices, average national productivity, and overall economic conditions (World Bank, 1994).

In response to high unemployment, numerous employment programs have been designed and implemented in Algeria. A large number of them have been directed to the young unemployed. A new micro-enterprise scheme targeting this category of unemployed was introduced in 1997. In this schema, more attention is paid to projects' profitability than in previous similar programs.

Algeria also has a large vocational and technical training system, which provides about 0.29 million places to train skilled workers and technicians using institution-based training and apprenticeships. In 1994, two schemes were created to help laid off workers for economic reasons: unemployment insurance and early retirements. They are theoretically available to both public and private sectors; in practice, they were essentially used in the context of public enterprise restructuring. The unemployment insurance's revenues are derived from payroll taxes paid by both employers and employees. Currently, the training costs do not represent more than 1% of the total firm expenditures and sometime training is not even practiced at the enterprise level. The high public intervention in labor market and the absence of real incentives for the private sector are among the most important factors behind the low productivity of labor in Algeria.

4.2. Inefficient sectoral allocation of labor. One of the reasons that human capital may be diverted from growth-enhancing activities is that it may have opportunities to engage in rent-seeking activities. By looking at the sectoral allocation of labor in Algeria during the period 1978-2000, an important conclusion can be derived. The contribution of agriculture sector showed an important decline in the employment of Algerian workers although the contribution of public administration and services realized a high grew-up of their contribution.

In Algeria, the government has subsidized heavily the education sector but without any obvious objective about the type of education needed. Jobs in the public sectors were protected, so there was a large component of rent seeking in the public sector. In addition, qualified public-workers usually get another job in the private sector to increase their income. Contrary to the actual tendency in labor market in the world, central administration in Algeria have realized in important growth of its contribution in the labor occupation in Algeria during the last two decades. This tendency was a good indication that the private sector still not yet developed and/or the compensations in private sector are not competitive.



Structure of the employment by sector
(1978-2000) U = %

Sectors	1978	2000
Agriculture	27	14
Industry	14	13
BTP	15	10
T.,C., Services	21	31
Administration	22	32
Total	100	100

Source: Figure and table established from the data of ONS

4.3. High wages differentials among activities and ownerships. The recent orientation towards further liberalization of the Algerian economy raises a complex debate over the future of employment in the country. In fact, job creation is insignificant to absorb the 139% increase in labor force during the last twenty years. Nevertheless, it appears from the analysis of employment's trends in Algeria during the period 1978-2000 that primary and secondary sectors have marked a strong decline in benefit of service sector. The public administration in itself employs more than 32% of the working population in 2000 and its share in the total wage bill is estimated at 47%. This decline of employment in the primary and secondary sectors comes along with an improvement of the ratio «value added/worker», particularly in the energy sector (166% in 1998 against 14% in 1989), building materials (123% in 1998 against 15% in 1989), chemical (113% in 1998 against 12% in 1989) and in the farm-products sector (167% in 1998 against 19% in 1989). Thus, it's interesting to look if the sectoral wage differentials confirm the evolution of the employment's structure in Algeria. Available data (Table 5 and 6) indicate that until 1992, the public administration sector offered the highest wages while the construction sector had the lowest wage levels over the same period.

Table 5: Evolution of the Average Gross Salaries " permanent staff " - Public sector

Qualification	Sector	1988	1990	1991	1992	1993	1994	1995	1996
Highly	Activity	1988	1990	1991	1992	1993	1994	1995	1996
	Oil sector	100				161%	240%	297%	287%
	Industry	100	118%	138%	185%	189%	229%	294%	279%
	Construction	100	118%	126%	205%	166%	195%	255%	265%
	Transport	100	125%	160%	194%	251%	328%	365%	414%
	Business	100	110%	120%	168%	185%	217%	296%	294%
	Services	100	113%	144%	208%	277%	235%	330%	385%
	Average wage	100	117%	137%	191%	211%	273%	323%	326%
Moderately	Oil sector								
	Industry	100	120%	148%	197%	209%	265%	321%	311%
	Construction	100	112%	127%	208%	185%	196%	262%	251%
	Transport	100	124%	158%	192%	205%	288%	408%	368%
	Business	100	123%	164%	158%	212%	245%	306%	325%
	Services	100	111%	144%	193%	215%	218%	307%	359%
	Average wage	100	118%	146%	195%	213%	272%	321%	324%
Least	Oil sector								
	Industry	100	134%	174%	234%	264%	328%	400%	394%
	Construction	100	130%	153%	209%	321%	261%	347%	344%
	Transport	100	125%	179%	180%	212%	306%	426%	392%
	Business	100	142%	198%	205%	265%	309%	379%	417%
	Services	100	123%	165%	231%	265%	292%	382%	427%
	Average wage	100	132%	172%	223%	275%	314%	390%	391%

Source: ONS

The gross average wage distributed in the trade sector was also below the average national wage. According to a recent survey conducted by the ministry of employment and social welfare⁴, the gross average wage in trade sector paid by the private sector in 1998 represents almost 80% of the average gross salary in the whole private sector. The results of this survey, also shows that for transport and telecommunication sectors, the trend is rather reversed. The private sector offers a very low wages compared to the public sector, which pays more around 141% as in private sector. However, by taking into account all branches of industry, the study of the MTPS (Table 6) indicates important wage differentials among the public and the private sectors. These wage differentials were more important in the category of middle skill labors (an average difference of 65%). However, the situation is different in the case of foreign firms. They generally practice salaries higher than those found in the national sectors, both private and public, especially in the category of skilled workers.

⁴ The sample includes 195 firms of which 126 are public, 52 private, 12 are foreign firms and 5 have a mixed status. The number of employees is approximately 157488. The study has been conducted over two years (1997-1998).

Table 6: Average Gross salaries of the permanent employees by social groups and legal sector (1997-1998)

Ownership Qualification	Public Salary	Private Salary	Foreign Salary	Mixed Salary	Global Salary
1997 Highly	13 939,51	8 624,27	13 410,59	35 650,10	13 781,85
1998	12 756,94	9 524,45	13 369,78	28 203,48	12 671,26
1997 Moderately	22 501,08	13 418,80	21 985,56	30 187,31	22 299,60
1998	22 821,61	13 991,39	22 780,08	30 976,98	22 746,12
1997 Least	42 348,83	21 889,04	27 441,94	30 136,57	41 927,54
1998	32 499,17	26 708,31	33 688,64	33 497,13	32 444,53
1997 Global	21 131,58	10 235,49	14 939,04	31 804,43	20 790,91
1998	19 090,72	11 231,45	15 391,41	30 982,73	18 877,16

Source: MTPS

In public firms, the wage policy remains relatively independent from the productivity. The salaries continue to draw a big part of the value-added generated even though wage differentials with the private sector are reduced (Table 7).

Table 7: Evolution of the ratio wage/value added by type of ownership during the period 1989-1999 (in %)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Public	68,6	53,8	45,0	43,1	46,7	44,8	42,5	43,7	42,3	42,6	39,0
Private	27,4	22,2	20,6	20,6	24,2	25,9	24,3	21,7	28,0	29,1	31,5

Source: ONS

The high wage differentials found among the various sectors in the Algerian economy reflect the dynamics of human resources, where the sectors offering non-attractive salaries are experiencing decline in the number of their employees, mostly for qualified categories. It's also clear that wages are not automatically proportional to productivity and participation in economic growth.

4.4. Fluctuations in economic growth and non-economic diversification in Algeria. The macroeconomic stabilization and structural reforms undertaken since 1987 failed to stop the economic decline that began in the mid-1980s. Most of macroeconomic indicators continued to deteriorate during the period 1987-1995.

Despite high investment rate, average annual GDP growth rate during the period 1986-1994 declined by 0.3% per year, while non-oil and non-agricultural real GDP fell on average

by about 2% per year during the same period. This decline in GDP is mainly due to inefficient performance in the industrial and manufacturing sectors, which still dominated by large public enterprises in the absence of private investment. Return to investment for non-oil sectors was very low (five-year ICOR ranging from 10 to 40). Disposable household income was also severely affected by the recession and followed a pattern similar to consumption that is falling by about 36% in real terms over the period 1986-1994. This sharp decrease was mainly caused by the decline in wage income. Table 8 shows per capita income evolution.

Table 8: Real GDP and per capita income growth rate in Algeria during the four last decades

	1960-80	1981-85	1986-94	1995-98
Real GDP Annual Growth Rate	5.47	5.21	-0.24	3.4
Population Annual Growth Rate	2.74	3.17	2.52	2
GDP per Capita Annual Growth Rate	2.6	1.97	-2.7	1.2

Source: Author’s calculation on the basis of the World Bank data

With the implementation of reform program supported by the World Bank and the IMF in 1994, Algeria marked a solid departure from the past in terms of both macroeconomics policy and economic growth. The government introduced swift stabilization and adjustment measures, including strong fiscal adjustment; tight monetary policy; an active exchange rate policy; and price liberalization. The program was accompanied by a debt rescheduling agreement and the initiation of structural reforms such privatization. The program has been highly successful in bringing about macroeconomics stability. Inflation dropped from 39% in 1994 to around 5% by the end of the 1990s and is currently around 3%. The fiscal deficit, at 8.7% of GDP in 1993, was initially halved and then subsequently kept at low levels and turned into surpluses of around 2.5% by 1997. The oil price drop of 1998 weakened the fiscal performance as a decline in oil revenues prompted a deficit of 4% of GDP, but the fiscal stance was reversed following the oil price recovery and expenditure curtailments in 1999, yielding a close-to balanced budget.

The reform program succeeded in reversing the long past decline in GDP growth. Real GDP growth rate averaged 4% in 1995-96 (mainly driven by the hydrocarbon sector), followed by a sharp slow down in 1997 to around 1%, reflecting drop in agricultural production and a continued decline in the public industrial sector. Manufacturing value added fell continuously by -2% in 1995, -13% in 1996, and -7% in 1997, implying a cumulative loss during the period 1990-97 of around 40% in real terms and prompting some industrial restructuring.

As result of this macroeconomic situation, unemployment rate increased from 17% in 1985 to 27% in 1994. In the past, the government had responded to the high growth rate in labor supply by expanding public sector employment. After the oil price collapse, total public sector employment slowed and employment in the public industrial sector declined. The non-agricultural private sector was unable to offset this decline, and average agricultural employment stagnated over the period.

Thus, in a centralized economy with import-substituting activities, the economic crisis that began in the middle of the 80s marked by a strong progression of the unemployment rate

in Algeria. These specificities of the Algerian economy show how economic growth can be improved by human resources development.

4.5. Decrease of Public Expenditures Allocated to the Education Sector. During the last years, public expenditures allocated to education sector has declined in Algeria passing from 10% of the GNP during 1985-87 to only 5% during 1995-97. Table 9 shows that among the five countries considered; only Tunisia and Jordan have made improvement in the share of GDP spent on education sector during the period 1985 and 1996.

Table 9: Public Education Expenditure in Algeria and Selected MENA Countries

	Government expenditure on education as % of GNP		Government expenditure on education as % of total government expenditures
	1985	1996	1993-96
Algeria	8.5	5.2	16.4
Morocco	6.3	5.3	24.9
Tunisia	5.8	6.7	17.4
Jordan	5.5	7.3	19.8
Egypt	6.3	n.a.	n.a.

Source: MENA Trends 2000 and World Bank data

Besides, it is interesting to note that considering the high population growth rate in Algeria, it's difficult to raise the public expenditures allocated to education either in countries with more resources. In order to get the same growth rates of educated population in two countries, the public effort must be higher for the country where demographic pressure is higher. Data in table 10 shows that Algeria appears at second place for enrollment rate in the three levels of education (primary, secondary and tertiary school) compared to the other four countries in the MENA region. Data also shows that Algeria has succeeded in reducing illiteracy rate and has reached comparable levels of education access as in other MENA countries.

Table 10: Human Capital Indicators in Algeria and selected MENA countries

Countries	Primary Scholl		Secondary Scholl		Tertiary Scholl	
	Enrollment Rate (%)		Enrollment Rate (%)		Enrollment Rate (%)	
	1980/90	1991/2000	1980/90	1991/2000	1980/90	1991/2000
Algeria	95.6	105.3	49.6	61.8	8.4	11.7
Morocco	77.6	78.3	33.5	37.5	8.4	11.1
Tunisia	111	115.8	37.1	54.9	6.2	11.6
Jordan	n.a.	n.a.	n.a.	n.a.	25.6	n.a.
Egypt	84.3	97	61.5	75.6	16.7	18.5

Source: MENA Trends and World Bank data

It is well established that the education and training system is still very weak to adapt to the new challenges. The magnitude and structure of the current unemployment situation suggests that neither the education nor the training system has been able to provide the economy with the desired manpower, both in quantity and in quality, and at the right time (Ali et al., 2000). The current situation of formal education and human capital formation in Algeria leaves much to be desired. Despite tremendous efforts in recent years, educational attainment remains low, investments in education are inadequate and the quality of acquired skills is poor, with the resultant decline and sometimes negative returns to education. The educational and training programs in Algeria are not producing workers with the skills needed by the private sector.

4.6. Rent seeking behavior as a factor of non-efficient utilization of human capital in Algeria. The availability of skilled workers does not always guarantee more economic growth. Many studies, mainly the work of Pritchett (1996), undermined the idea that human capital accumulation was directly a source of economic growth. In the MENA region, one of the main sources of this difficulty to transform education investment to economic growth lies in the fact that an important share of the stock of human capital is lost in rent seeking activities. Since its independence, Algeria set up mechanisms guaranteeing graduates of high schools employment in the public sector. In practice, rent seeking behavior constitutes a waste of productive resources. As a first approximation these behaviors are essentially intensive in skilled workers (Berthélmy et al., 2001). Rent seeking activities create, by executive the conditions required to bypass the laws and regulations or to use them to personnel's profit. The resulting corruption constitutes a special case of rent seeking behavior, that can be defined in a narrowly line as an illegal use of a position in the public administration to personnel's profit. The border between corruption and rent seeking behaviors is essentially juridical. In economies where the right rules are not well defined, this distinction between rent seeking behaviors and corruption is very limited. Corruption can harm economic growth in many ways that we can nevertheless classify in three categories. In the first place, corruption drives to a decrease in the accumulation of resources necessary for economic growth, notably by inciting foreign businesses to renounce their investment projects, and secondly, it implies a waste in the available productive resources by their use in non-competitive activities. Thirdly,

it reduces the competitiveness of enterprises by increasing the production costs which include rents.

5. Conclusion. Like many centrally planned economies, since its independence in 1962, Algeria has tried to enhance the living standards for its population through employment generation in the public sector and extensive social sector investments and social protection schemes. This was possible when oil prices were high, from 1973 to the early 1980s. During this time progress in social indicators was impressive. The inefficient publicly dominated industrial structure and the drop in oil revenues led to economic stagnation and high unemployment. The cumulative impact of these effects has aggravated the country's social crisis considerably. The government implemented initial reforms, in the late 1980s, to liberalize the system on both the political and economic fronts. However, mainly due to structural rigidities, non-competitive business practices ingrained during 25 years of centralized planning, and lack of sufficient changes, the institutional reforms failed to reverse the economic decline during 1989-94. Effort at structural adjustment were resumed and intensified in 1994.

The Algerian government began reforms by regrouping and restructuring state-owned enterprises, reallocating public investment away from heavy industry, providing incentives to attract foreign investors, and trying to promote the agricultural sector. But such reform efforts were fundamentally flawed. The government refused to devalue the real exchange rate, the centerpiece of all structural adjustment programs. Devaluation makes farm and factory products relatively more expensive, which encourages investment in these sectors. It also makes imports more expensive and exports cheaply. Therefore, imports failed, exports raised, and the trade balance improved. Yet, it is difficult to promote agriculture, create jobs, or foster the private sector without such a change in relative prices.

Algeria introduced macro-economic reforms in 1994 allowing it to improve its growth and reduce the effects of fluctuations in oil prices. However, the results of this reform prove that the realizations remain insufficient and the problems of the Algerian economy persist. In addition to structural factors (importance of the public sector, weakness of private participation in investment, absence of foreign direct investments, etc.), other factors negatively affect the take-off of the Algerian's economy and its growth and welfare prospects. Human capital formation and the efficiency of its utilization still remain a major handicap for economic growth.

This study showed the low outcomes of labor market in Algeria and its low contribution to economic growth. The low productivity of labor factor in Algeria is the most factor explaining these low outcomes of labor market in Algeria. In fact, economic growth induces better use of the available human capital stock by reducing the rate of unemployment and improving efficiency of the working population by increasing their productivity. On the other hand, during economic crisis, led by a fall in oil prices, a smaller use of the stock of human capital affects household's income, which reduces their consumption levels of goods and services particularly those produced by local industries, which affects negatively economic growth. In Algeria, industry and agriculture produce goods mostly for local market. This is mainly due to low competitiveness. Falling oil prices reinforce this effect. In addition to the low productivity of labor factor to economic growth, low quality and efficiency of human capital is a major issue. Since the reduction in public expenditure allocated to

education sector adopted in the 1980s, human capital dropped in terms of quality, which adversely affected the competitiveness of the Algerian's economy.

The waste of human capital is another source of inefficiency in Algeria. This waste is encouraged by the incentives offered by the public sector to the workers and the importance of rent seeking in this sector. Serious challenges are facing the Algerian economy in order to turn the human capital as a growth factor and not an impediment which reduces the efficiency of its productive resources. These challenges are more urgent for the Algeria. Promotion of market activities and the efficient use of human capital become of almost importance vis-à-vis the country's overall growth strategy.

Sustaining job-creating growth in Algeria requires continued changes in the domestic political economy. In this context, key elements for a strategy to reduce unemployment and increase the efficiency of human capital utilization, could include: restoring and maintaining macroeconomic balances; enhancing labor-intensive growth; speeding up privatization and public enterprise reform; continuing agricultural reforms; investigating reforms needed in the labor market to promote growth and emphasizing human capital development. Encouraging competition, promoting the private sector, and disengaging the state from involvement in production and trade are the three main measures needed to increase economic growth. Promoting private sector growth should help the reduction of unemployment. Development of the private sector, and of small and medium industrial and agricultural enterprises, in particular, will require state disengagement and improvement of the investment climate. This will lead to an increase in budgetary savings, which, in turn, should finance the required growth in private sector investment. Furthermore, progressive withdrawal of the State from productive and commercial sectors will free up public funds to finance activities beneficial to improve the quality of human capital. Consequently disengagement of the State should be accelerated. Reforms designed to make the economy more responsive to market signals can be expected, in the medium term, to improve employment and income opportunities for the entire population.

Expansion of employment may require changes in labor market policies and regulations. Greater labor market flexibility (regulations and wages) can promote privatization and facilitate public enterprises reform by enabling the industrial, agricultural and service sectors to absorb more labor, and by allowing greater labor mobility. Experience shows that increases in the minimum wage should be kept below the rate of labor productivity growth. However, further research is needed to understand: (i) the link between labor market policies and expansion of employment; (ii) the costs of labor (wage and non-wage); (iii) the cost of retrenchments during enterprise restructuring; and (iv) the obstacles to obtaining productive employment for women, and alternatives to increasing women's access to the labor market.

Investing in human capital is imperative for sustainable growth and ensures that the population has the skills necessary to benefit from the jobs created as a result of structural reforms.

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