Unemployment Persistence Risks of Skill Obsolescence in Arab Countries

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Abstract

This paper shows how unemployment has been persisting during the last years with the implied risks of knowledge obsolescence and other economic and social implications. Under the absence of actions that are likely to reduce the effects of knowledge obsolescence, Arab economies with high unemployment rates loose in terms of competitiveness and efficiency but also in the development of knowledge economy. Special training programs besides more business oriented educational sessions are likely to minimize the impacts of knowledge obsolescence. Descriptive statistics as well as regressions analyzes are used to show most of the dimensions of the unemployment problem in Arab economies.

Keywords: Unemployment-Persistence-Risks-Knowledge Obsolescence.

Introduction

This article shows how human resources could affect the quantity and the quality of economic and social prosperity. When labor markets are not able to absorb the human resources coming from the educational and training systems as flows of skilled segments needed to enhance labor productivity, the duration, the waiting time and the number of job seekers lead to further economic and social degradations and unnecessary social costs.

The structure of each of the Arab economies as described in the literature appears to be resilient and is likely to be implicitly constraining access to new knowledge based opportunities.

The scarcity of qualified human resources during the era of political independence of these countries has been pushing towards giving hiring priority to the public sector. But structural adjustments policies have questioned this priority and reduced the impacts of the hiring policies implemented at the level of the public sector. With a growing private sector, the preferences for the public sector have been clearly pursued with the perceptions that private businesses provide inferior working opportunities even when higher salaries are practiced (Driouchi & Reffeirs, 2012).

This chapter is devoted to the issue of unemployment in relation to the development of knowledge economy in Arab countries. It shows how unemployment and mainly that of skilled labor may persist even under further engagement of Arab countries in different components of knowledge economy. These high and persistent levels of unemployment in relation to skills, may lead to the obsolescence of the knowledge gained earlier by the human capital during the previous training periods. But, this question raises other issues related to the efficiency of the educational and training systems besides the job offers and the perceptions employers have about the length of unemployment. The reduced contributions of organizations and job seekers to lifelong learning opportunities may also affect the outcomes from the overall training and labor market systems. Most of these elements are addressed from a literature review perspective.

The paper is organized in three parts where the first one looks at the most important and significant publications on the unemployment issue in the Arab World. The second section is mainly based on the introduction of descriptive statistics and shows the major trends governing

unemployment in the Arab region. The last section discusses the risks of knowledge and skills obsolescence in relation to the persistence of high unemployment levels.

I. Literature Review

There is evidence that North African countries have been facing high rates of unemployment for their youth during the past few years. But this trend also appears for countries of the Middle East. In the Middle East and North Africa, the youth unemployment rate at 25 per cent, is the highest in the world according to series of publications (ILO, 2012). World Bank researchers are finding that the actual number of jobless people between the ages of 15 and 29 in the region could be much higher as many young people who are out of school and out of work are not reflected in the statistics.

Research has found that unemployment and under-employment are taking a toll on young people, often forcing them to wait years to obtain housing, get married and have children. As a consequence, young men between the ages of 25 and 29 in the region have the lowest marriage rates in the developing world at only 50 per cent. The 2013 ILO employment report (ILO, 2013a) and the one on Global Youth unemployment Trend (ILO, 2013b) says clearly that it is not easy "to be young in the labor market today" (p. 1). The total costs of unemployment include not finding a job and getting part time and inappropriate occupations. The reports indicate that the costs of long-term unemployment continue to rise and undermine the growth potential of economies. Skills mismatch has become a persistent and growing problem according to the report. Skill obsolescence is thus becoming increasingly serious. The latest ILO report (ILO, 2013b) clearly mentions the difficulties related to jobs and skills. The report refers to the skills mismatch on youth labor markets. It is recognized as persistent and occurring at an increasing trend.

It is also identified as increasing with the depreciation of skills as induced by long-term unemployment.

In Gatti, Morgandi, Grun, Brodmann, Angel-Urdinola, Moreno, Marotta, Bauer and Lorenzo (2013), several distortions are identified as preventing a more productive use of human capital and leading to unfairness and exclusion. The Arab region is known to have the world's highest unemployment rate among youth and the lowest female participation in the labor force. Besides that, desirable jobs are few with private employment of low value added, and the public sector providing the majority of formal jobs. High wage differentials, low mobility, and persistent are behind the inefficiencies observed in labor markets in this region. The authors of this book also address the limited role given to individual efforts and to other social and familial characteristics in employment.

According to the report focusing on Education for Employment, entitled "Realizing Arab Youth Potential" (2011), sponsored by the International Finance Corporation (IFC) and the Islamic Development Bank and conducted by McKinsey and Company, the Middle East suffers from the highest youth unemployment in the world. It is recorded at over 25%, with North Africa reporting approximately 24%. Female youth unemployment is even higher, exceeding 30% across the Arab world. The region's labor force youth participation rates are among the lowest globally, recorded at 35%, compared to the global average of 52%. In total, according to the report, the economic loss due to youth unemployment exceeds USD 40 to 50 billion annually, across the Arab World, equivalent to the GDP of countries like Tunisia or Lebanon.

Masood (2011) considers that the social and political turmoil in the Middle East and North Africa has given renewed urgency to the need to counter chronic joblessness, particularly among young people. Labor market data in the region are scarce, but available statistics covering six countries - Egypt, Jordan, Lebanon, Morocco, Syria, and Tunisia - indicate that average unemployment stood at 11% in 2008, barely below the average of the past two decades (12%) and the highest regional unemployment rate worldwide.

The problem is especially pronounced among the young and the educated. The share of young people among the unemployed in the six countries on average exceeds 40%, and even reaches around 60% in Egypt and Syria. At over 25%, the average youth unemployment rate is also the highest regional rate worldwide and, in Morocco and Tunisia, it stands at around 30%. Unexpectedly, unemployment in this region tends to increase with schooling. It exceeds 15% those with tertiary education in Egypt, Jordan, and Tunisia.

Unless more efforts are put into dealing with the unemployment problem in Arab countries, the situation is only going to worsen. The working-age population is increasing in the Arab economies at a rate that is significantly higher than the one of job openings (Drine, 2012). If the current spike in labor participation persists, then by 2020, Arab economies will need to create more than 100 million jobs to cover for the expected increase in potential workers. The situation is further disturbing since youth unemployment is the highest in Arab countries. Unemployment is accentuated for the new recruits of the job market rather than workers with more experience. Thus Arab economies should already start thinking of ways to create new positions. This task will be both costly and time consuming and should become one of these countries' priorities.

Al-Khalidi (2011), focused on the process leading to high unemployment in the Arab economies. To the authors, the total population of 20 Arab countries (with the exception of the Palestinian territories) had increased from 218.2 million in 1990 to about 332 million in 2008, and to about 340 in 2009. The average population growth declined from 2.43% in the years 1990-2000 to 2.29% in the years 2000-2009. The large rate of population increase poses a challenge to economic and social growth because it consumes much of the annual growth in the economy, leaving only a small balance for investment.

Apart from determining population growth rates, demographers deal with two other issues -the distribution of population by age group as well as by urban/rural configuration. In terms of age distribution, the rate of the age group below 15 has declined from 44.2% in 1975 to 41.3% in 1990 and then to 32.2% in 2008. By contrast, the ratio of the age group of 65 years and older has increased because of an improvement in the standard of living and health services.

At the same time, the rate of urban population has increased from 45.3% in 1970 to 68% in 2008. As a result, the active working population has increased from 35% in 1995 to 41.1% in 2008 or the equivalent of 136.4 million, an annual rate increase of 3.6% which is below the global rate because of the limited participation of women in the labor force.

Haririan, Bilgin, and Karabulut (2009) investigate the long term relationship between GDP growth and unemployment for selected MENA countries. As expected from the literature, a negative relationship is found to show how increasing GDP growth can lower unemployment in the MENA countries. However, in 2006, with 12.2 percent unemployment, the Middle East and North Africa (MENA) stood out as the region with the world's highest unemployment rate. The

ILO observed that the Middle East and North Africa maintained the world's highest unemployment rates in 2007, at 11.8 and 10.9 percent, respectively. According to unofficial estimates, the unemployment rate may in fact be much higher.

According to a World Bank Report (World Bank, 2006) Morocco's low growth is the central challenge in the country's development agenda. This same report discusses both the historical economic realizations with the performance of 1960s where the per capita economic growth in the Middle East and North Africa (MENA) region was among the highest in the world with an average of 5 percent a year. This trend was lost in 1980s however and by 1990s, Morocco, for example performed lower in the MENA region with 2.5 percent. During the first years of 2000s, improvements took place and economic growth attained 4 percent between 2000 and 2004. These rates were considered as not enough to reduce poverty and unemployment. Labor force growth remains above 3 percent per year, and recorded unemployment stands at 11 percent. Reduction in unemployment requires sustained annual economic growth above 5 to 6 percent range.

Another report by the World Bank (2012) is also prepared just prior to the Arab Spring. This anticipates the demands for social and economic inclusion articulated by Moroccan young people especially following February 2011. Since then, these demands have been amplified and reached a new level of urgency. This study adopts a mixed method approach combining an innovative quantitative instrument with qualitative and institutional analysis. The goal is to provide policy makers with a nuanced analysis of barriers to employment and active civic participation encountered by young people aged 15 to 29 years so as to tailor youth interventions more effectively. It identifies a wide range of recommendations available to support youth inclusive

activities and policies, and a roadmap for integrated youth investments. Youth (aged 15 to 29) make up some 30 percent of Morocco‘s total population and 44 percent of the working age population (aged 15 to 64), but have been largely excluded from the sustained economic growth the country has experience in the last decade. Though the youth unemployment rate is high, averaging about 22 percent among males and 38 percent among females, it only provides a partial picture of young people‘s exclusion from economic life.

Achy (2012) relates unemployment and job vulnerability to the economics of the rents that are prevailing in the Arab economies. The author considers that the few jobs created are precarious and related to low productivity sectors. To adjust their unemployment rates with the world average, 20 million jobs are needed while keeping the current rate constant requires 13 million jobs. This necessitates a constant economic growth of at least 5 percent while the 20 million need an annual growth rate of 8 percent. This cannot be achieved under the on-going development model. This model is mainly based on the economics of rents, subsidies, fiscal favors and lack of transparency needs to be changed to a new model. This latter is merit based, transparent and without excessive rents.

Kadri (2012) considers that for more than a decade prior to the uprisings of 2011, the official unemployment rate in the Arab region was among the highest globally and around half of the Arab population subsisted on less than two dollars a day. When unemployment is measured by imputing a minimum historically-determined level of subsistence into it, the effective unemployment rate would rise to nearly fifty percent. Armed with neoliberal ideology, the Western-backed comprador class squandered resources either by expropriating the working population or by surrendering them to capital at prices that were set by a global power structure

from which working people in the Arab world were excluded. This essay argues that the retention of resources and their redeployment within the national economy are indispensable conditions for development and job creation. Employment policies are best set subject to social efficiency criteria distinct from the salient neoclassical productivity ones. It is highly unlikely, in view of the sheer smallness to which industry and the productive economy have shrunk under neo-liberalism, that it would be possible to reemploy the massive redundant labor force on the basis of expanding private-sector expansion and productivity gains. A criterion valuing and remunerating social work may be costly in the short term, but the social returns will reimburse initial expenses over the long term. Notwithstanding the reductionist nature of the neoclassical criterion of efficiency, equity, in an Arab context of war and oil, must precede any received criteria for efficiency. More egalitarian rent, land and resource distributions redressing the dispossession of the working population during the neoliberal age represent the necessary conditions for effective demand enhancement and a successful development strategy.

A more recent study based on the implications of open trade might explain the situation taking place in Arab countries. It establishes the link between trade openness and labor markets (Stone, Legendre & Sourdin, 2013). Among the results attained in this research, the need for more microeconomic approaches are needed because the impacts of free trade are found to be larger for labor occupations then at the industry level. The authors consider that these results are consistent with modern trade theory where expanding export sectors favor highly skilled workers against other skills that might find constraints to switch occupations.

More reports and publications have been devoted during the last years to the unemployment problem in the Arab economies. They all show the high rate of unemployment compared to other countries with unemployment affecting the youngest segments of the population where educated people are more concerned and where females are more affected that males. With the higher and the increasing figures of graduates from tertiary education, reporters and analysts observe the increasing rates of unemployment also among skilled workers. This has led to considering the discrepancies between the education and the employment systems while others focusing on the paradox related to the gap between employment and education. Besides these discrepancies, there is the duration of unemployment that warns from excessive unemployment periods for individuals and groups. This persistence in unemployment while generates high economic and social costs, it also induces likely losses of skills and abilities. But, these trends with the dimensions and implications discussed appear mainly in North African economies, Jordan, Libya, Egypt, Yemen, Syria and Sudan. They are not at all expressed at the level of Gulf countries.

Researchers, policymakers, and people are genuinely concerned about the progress of human capital in the Arab region in relation to the unemployment trends discussed in the first two sections of this chapter. The present part is devoted to discussing the relationships between unemployment and the risks related to the depreciation of skills. This is mainly based on a literature review through some publications that have directly or indirectly addressed similar issues in theory and different empirical contexts.

A recent study by the World Bank last year stressed the need for Arab countries to have 100 million jobs by 2025, only to maintain the current unemployment levels and prevent them from increasing. The study also stated that the unemployment rates in the Arab countries ranged between 25% and 30% in 2011, and these figures are the highest in the world.

Clearly, youth unemployment rates (15-24) constitute the highest figures in comparison with other age groups (Arab report, 2009). Unemployment is highest among secondary graduates and those with 'mid-level' educations. Dhillon and Yousef (2009) show that the duration of unemployment for new graduates is long in Arab countries: 3 years in Morocco and 2.5 years in Egypt. How to reduce the risk of persistent unemployment is an important macro policy question. But also unemployment disproportionally affects women.

De Grip (2004) defines the obsolescence of human capital as an important component of the economic challenge facing different economies as they move to knowledge based economy. The author shows that the causes of human capital obsolescence are both technical with the loss of prior skills and economic when the loss relates to the value of human capital. Based on this approach, the author identifies the kinds of obsolescence faced. These include wear of skills related to aging and illness, the reduction of skills due to lack of use, the job-specific obsolescence linked with technological and institutional changes and finally firm-specific obsolescence.

According to the above definitions, the non use of skills occurs also with unemployment. The longer is the unemployment, the more risks are expected on the obsolescence of skills mainly with the rapid changes in technologies and institutions.

Ljungqvist & Sargent (2008) have already tackled the links between skills and unemployment with focus on the European economies compared to USA.The model used "explains why among older workers, hazard rates of gaining employment in Europe fall sharply with increases in the duration of unemployment, and why displaced workers in Europe experience smaller earnings losses and lower re-employment rates than those in the United States. The effects of layoff costs

on unemployment rates depend on the equilibrium proportions of frictional and structural unemployment that in turn depend on the generosity of unemployment benefits and the skill loss parameter that confronts displaced workers " (p. 1). OECD (2011) recognizes the impacts of the current recession on labor markets even after two years of recovery in OECD economies. The study reports that by the end 2010, the average OECD unemployment rate is still close to the peak during the crisis. The main concern raised is the persistence of high levels of unemployment that will eventually result in widespread deterioration of human capital, discouragement and labor market withdrawal. The risk is strongest for youth and less skilled workers.

a. The existence of skill obsolescence

There are some social and human costs of unemployment. They include the loss of lifetime earnings, loss of human capital, adverse health outcomes, and discouragement. Those become unemployed suffer a substantial decline in wages in the short and long run. Some scholars empirically document that these earning losses persist over time (Von watcher, 2010). Furthermore, parents' unemployment can even affect health and education outcomes of their children. The costs of unemployment seem to be particularly large for certain groups, such as the youth and the long term unemployed (von Watcher, 2010). Some scholars argue that the estimated increase in mortality due to unemployment can persist up to 20 years after the job loss and it can be associated with decreases in life expectancy. The duration of unemployment might be associated with higher risks of heart attacks and other stress related illnesses. High youth unemployment constitutes lost productivity to the economies of the region, with the opportunity costs associated with youth unemployment reaching almost 3% of GDP annually (Chaaban, 2010).

In addition, long-term unemployment involves important economic costs on everyone, not just the unemployed themselves. Elevated unemployment strains public finances because of both lost tax revenue and the payment of increased unemployment benefits and other income support to affected families. Some scholars argue that the longer the spell of unemployment, the more difficult it becomes for the worker to return to the employment (Heckman and Borjas, 1980). In overall, loss of skills reduces the economy's overall productive capacity in the long run. Such losses in skills are also shown in Pissarides (1992). Similar observations and evidence are developed in Acemoglu with a promising theoretical model (1995). Others such as Pavoni (2009) have underlined the links between unemployment and loss of skills.

College graduates from less prestigious universities or majors who have received less training or might be of lower abilities are at particular risk from early career interruptions. Nevertheless, the magnitude of these losses is unknown because of a lack of longitudinal data in MENA countries

The data were obtained from the World Development indicators from the World Bank. The database consists of annual observations. The problem with the dataset is that there is only a small number of observations. Data is also available by gender and age in the World Development Indicators from the World Bank. In what follows, a simple description of the unemployment rates is presented.

Given the nature of data, there is no way to identify spells of employment or unemployment that may have occurred. It is clear, however, that all workers are vulnerable to future spells of non-employment. Table displays the evolution of unemployment rates over time for a sample of Arab

countries. The average rate of unemployment over this period is high. If unemployment is being reduced in these countries, it is essential to decrease the percentage of long term unemployed.

But promising results based on an interesting economic model with appropriate data from series of sources are recently obtained by Khalifa (2013). The author attempts to assess the impact of skill loss by both the unemployed and the mismatched workers on the persistence of unemployment. The observations show that the total unemployment rate is highly persistent, and that the persistence of the unemployment rate of the unskilled workers is higher than that of the skilled workers. A framework that features search frictions is developed, where workers are either highly educated or low educated. The author shows that the highly educated lose their skills if unemployed, and if employed in very simple occupations. A study on skill monitoring through surveys has shown that feelings about the state of skills among workers can help in management and policies. According to Cedefop (2012), workers in some OECD countries, with stagnating or deteriorating skills are more likely to lose their jobs, have a temporary contract and have less chance of career progression. The conducted survey shows also that workers with up to date skills may become unemployed (20% of workers in Germany). This figure increases to 30% for workers feeling skill obsolescence.

Allen and de Grip (2012) analyze the impact of technological change on skill obsolescence and early labor market exit, and how training and on the job learning reduce these risks through using panel data on older workers. They find that workers report skill obsolescence more often when learning is part of the job and that the perceived skill obsolescence is not related to a higher probability of losing employment. Those that experience skill obsolescence appear to learn more with a lower risk of job loss.

b. Tentative measurements of skill obsolescence

Demmou (2012) considers that the volatility of labor markets in Estonia increases the risks of market entrance to groups with some characteristics including weak skills. To the author, these individuals may become long term unemployed. However, better school preparation, vocational training with improving access to tertiary education are among the instruments that help address the risks from long term unemployment.

Other publications such as that of Arrazola, De Hevia, Risueno and Sanz (2005) have already shown the role of vocational education in compensating for depletion of skills. The authors propose a model to estimate human capital depreciation using 1994 data for Spain. They estimate that the human capital depreciation rate around 1 percent per year. Furthermore the authors find that this depreciation rate is the same for all education levels considered. But, this important study shows that the depreciation rate is higher for individuals with long-term unemployment. The authors claim however, that training courses reduce the rate of depreciation of human capital. This means that training and vocational courses reduce the decay in knowledge and skills for unemployed. To these authors, retraining may help compensate for human capital depletion. But, more recently and under series of assumptions applied to a promising theoretical economic model, and under different unemployment durations of 3, 4, 5 and 6 months, the human capital depreciation rate is estimated to be respectively 14, 15, 16 and 17 percent by Laureys (2012). This means that there a monthly increase of 1 percent depreciation of the human capital. According to the estimates by Beblo and Wolf (2000) he estimated the human capital depreciation rates vary from 33 to 50 percent for a one year unemployment. But, as noted by De Grip (2006), losses in skills exist but there are major variations in the estimates developed by

different authors under different models. These statements are again confirmed in De Grip, Bosma, Willems and Boxtel (2007) with the study of job-worker mismatch and cognitive decline. Even before 2005, Loo, De Grip and Margot (2001) after indicating the few publications on the causes of and the remedies for skills obsolescence, analyze the relation between risk factors and skills obsolescence and the role of remedies to that. To the authors, the risk factors indentified in previous contributions can be empirically validated. The only problem is with remedies that are not having universal effects but could be tested in each context with the availability of data. On these matters, more research is needed.

All these contributions show that monitoring of the job markets needs to be further based on research and empirical evidence. It is likely to help find the appropriate instruments necessary in some of the Arab countries to overcome the loss of skills at the level of individuals and groups besides the reduction of the global losses from brain-drain. This brings again to the importance of the knowledge economy in providing the tools needed for the monitoring and generation of new business and economic policy initiatives that help tackle unemployment, long term unemployment but also the risks implied. All the research provided here show the existence of remedies through vocational education, regular training but also the creation of enterprises.

The following analyzes are devoted to showing the trends taking place in Arab countries in terms of unemployment. The focus is placed then on discussing the issue of unemployment persistence.

II. Descriptive Analysis Of Unemployment In Arab Countries

This part is composed of two major sections. The first one focuses on descriptive analysis of unemployment and the second section centred on regression analysis.

1. Descriptive Statistics

The data about unemployment rates have been collected from the World Bank Database. This data represents the unemployment rate for people with a certain level of education as a percentage of the overall unemployment rates in almost all the Arab countries: Algeria, Bahrain, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, the United Arab Emirates, and West Bank and Gaza, from 1991 to 2011. It contains the unemployment rate for people who are primary educated, which represents the first stage of compulsory education, or what we can call low skilled people. It also displays the unemployment rates for people who are secondary educated or with an intermediary education, which is in fact the stage that follow the primary education , and it represents the unemployment rate for people for tertiary educated or highly educated people, who have been to university or college. From the first look on the data, we can see that the trend of unemployment rates differ from a country to another (table 1).

Table 1 : Selected Demographic and Socioeconomic Indicators for Youth Ages 15-24 in MENA

	Youth as % of Total Population			Youth % of Working Age Population	Unemployment Rate Among Youth (%)	
	1985	2005	2025	2005	Male	Female
MENA	20	21	17	34	23	33
Algeria	20	23	15	34	43	46
Bahrain	16	15	14	22	17	27
Egypt	19	21	18	34	21	40
Iran	19	25	14	38	20	32
Iraq	20	20	19	36	-	-
Jordan	21	20	18	33	28	50
Kuwait	17	15	14	21	16	8
Lebanon	20	18	15	29	24	14
Libya	18	23	17	34	-	-
Morocco	20	18	17	32	17	16
Oman	17	21	17	33	-	-
Palestine	20	19	21	38	39	45
Qatar	15	14	13	18	8	30
Saudi Arabia	19	19	17	31	25	39
Syria	20	23	18	38	16	36
Tunisia	21	21	13	31	31	29
Turkey	20	18	16	28	19	19
UAE	15	17	14	23	6	6

Yemen	20	21	20	42	21	14

The above table represents some socioeconomic and demographic indicators for unemployment among youth aged between 15 and 24 in the MENA region. The unemployment rate among youth is higher for females in almost all the countries of the MENA region except Kuwait, Lebanon, Tunisia and Yemen. It remains almost stable for other countries like Algeria (46%), Morocco (16%), Turkey (19%) and UAE (6%). The MENA region suffers from the unemployment of youth and especially the females (33%). The numbers show that the unemployment rate is higher especially concerning females in some countries like Jordan (50%), Algeria (46%), Palestine (45%), Egypt (40%), Saudi Arabia (39%), Syria (36% and Iran (32%).

Table 2: Youth Unemployment and Annual Population Growth in the MENA Region (Source: Paper IEMed,(9), joint Series with EuroMesco. February 2012

	Youth Unemployment (Average 2006-2010)	Annual Pop. Growth (1980-2009)
Qatar	1.4	-
UAE	12.1	-
Algeria	23.7	2.13
Bahrain	-	2.84
Egypt	27.3	2.15
Jordan	28.1	3.60
Lebanon	22.1	-
Libya	-	
Morocco	17.5	1.70
Saudi Arabia	30.8	3.40
Syria	19.1	3.08
Tunisia	28.8	1.60
Yemen	-	3.57

In addition, table 2 presents the youth unemployment as an average between 2006 and 2010 and the annual population growth between 1980 and 2009 for the MENA Region. The table shows that the youth unemployment average is high for Saudi Arabia (30.8), Tunisia (28.8), Jordan (28.1) and Egypt (27.3) this average is low for Qatar (1.4) compared to the other countries in the MENA regions. The following table and graph presents the average of unemployment

between 2006 and 2010, the Maximum, Minimum and the latest value for unemployment for the MENA Region. This table shows that West Bank and Gaza have the highest numbers in the unemployment as it goes from 21.6 as a minimum value to 21.6 as a maximum value. It is followed by Sudan where unemployment ranges between 17.7 and 20.7 then Iraq and Yemen, Jordan and Tunisia and Algeria. Then, the unemployment decreases for Morocco (8.8 to 9.4), Egypt, Lebanon, Syria, Kuwait and Saudi Arabia.

Tableau 3 Labor Force Participation, Employment to Population, Paid to total Employment, Unemployment and Youth Unemployment

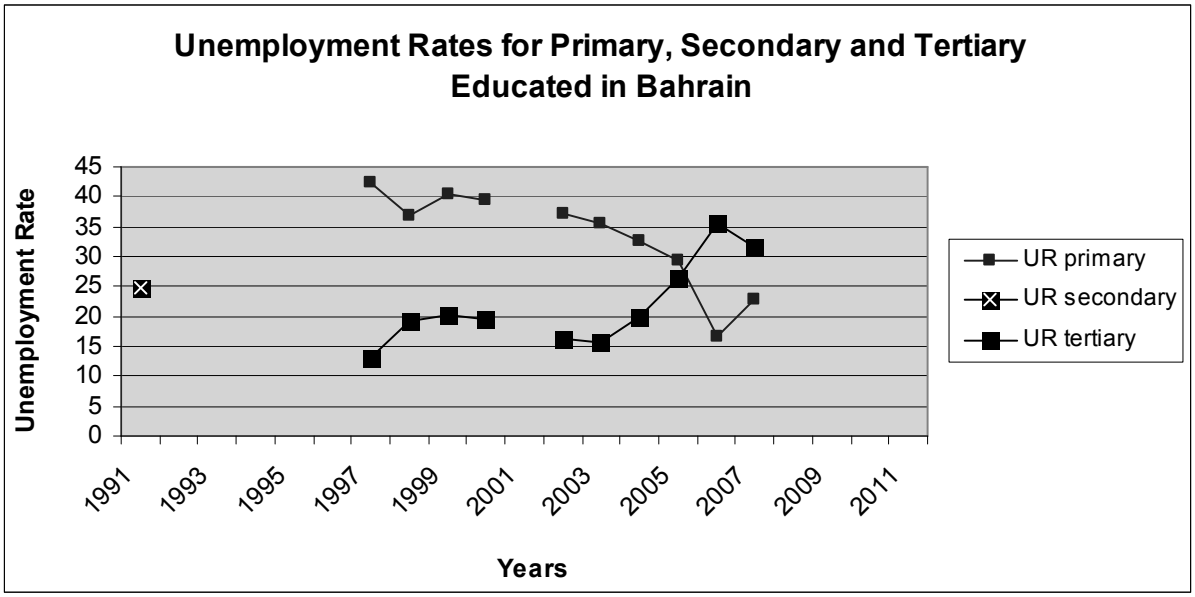
	Latest Year	Labor Force Participation	Employment to Population	Paid to Total Employment	Unemployment	Youth Unemployment
Algeria	2010	41.7	37.6	33.4	10.0	21.5
Bahrain	2010	-	-	-	3.7	-
Egypt	2010[a]	50.3	42.5	59.1	8.9	24.8
Iraq	2008[b]	-	-	-	15.3	43.5
Jordan	2010	39.5	34.6	83.5	12.5	28.1
Kuwait	2008[c]	-	-	-	7.7	-
Lebanon	2007	43.4	39.5	-	9.0	22.1
Morocco	2010[d]	49.6	44.6	44.4	9.1	17.6
Qatar	2009	87.7	87.4	99.6	0.3	1.2
Saudi Arabia	2009	49.9	47.2	-	5.4	29.9
Sudan [e]	2008	-	-	-	20.7	-
Syria	2010	43.7	42.0	62.7	8.4	18.3
Tunisia	2010	46.9	40.8	-	13.0	29.4
UAE	2008	72.6	69.7	95.8	4.0	12.1
WB &Gaza	2010[f]	39.5	29.8	67.6	23.7	40.2
Yemen	2009	42.2	36.1	-	14.6	-

Table 3 presents rates of the labor force participation, employment to population, paid to total employment, unemployment, and youth unemployment. For Egypt the “a” of 2010 denotes only data for unemployment the rest of rates correspond to 2007, Iraq: “b” Data for Youth Unemployment rate corresponds to 2006. In Kuwait, “c” shows that data refers only to Kuwaiti unemployment, “d” Morocco: Data for Unemployment to Population correspond to 2009, Sudan “e” the numbers in the table show official estimates. West Bank and Gaza on the other hand,

denotes by “f” data for Youth Unemployment rate that correspond to 2008. The labor force participation rates are higher for Qatar (87.7%), UAE (72.6%) and Egypt (50.3). Morocco and Saudi Arabia follow with 49.6% and 49.9% respectively. The unemployment is higher for Sudan (20.7%) and WB & Gaza (23.7%). Then, comes Iraq (15.3%), Tunisia (13%) and Jordan (12.5%). The unemployment is lower for Qatar (0.3%), Bahrain (3.7%) and UAE (4%). On the other hand, youth unemployment is also lower for Qatar with 1.2% and reaches its highest value in Iraq and West Bank and Gaza with 43.5% and 40.2%.

In relation to the levels of education, graph 1 related to unemployment in Bahrain shows that those with tertiary education have increasing unemployment compared to those with primary education.

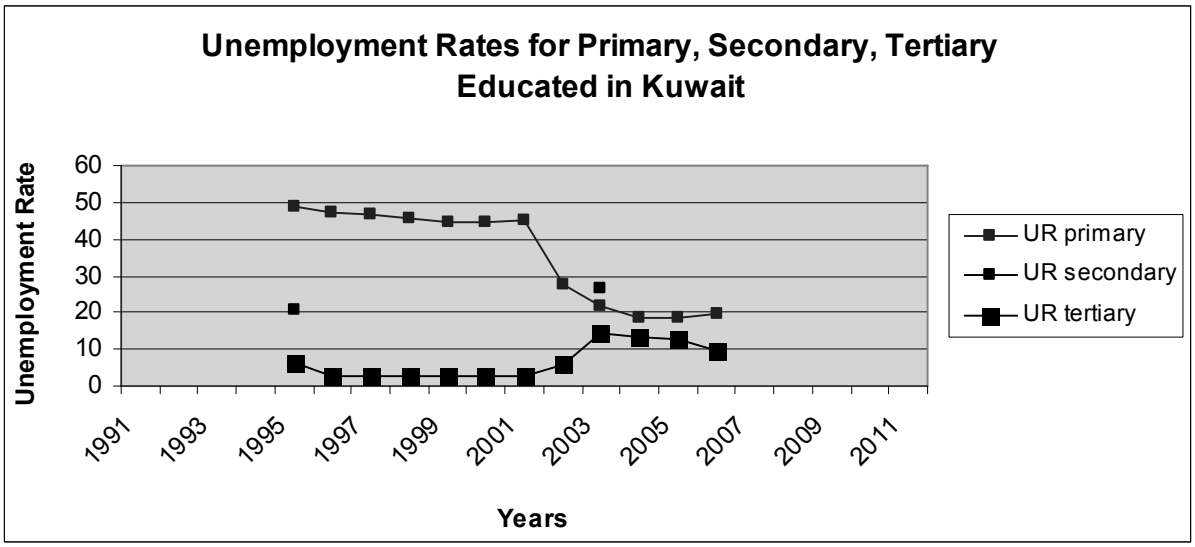
Graph 1: Unemployment by educational level in Bahrain



For instance, for Bahrain, the unemployment rates for both primary and tertiary educated change their trends around the years 1998 and 2006. In 1998, the unemployment rate for primary educated increases whereas it decreases for tertiary educated. The same thing happens in 2006.

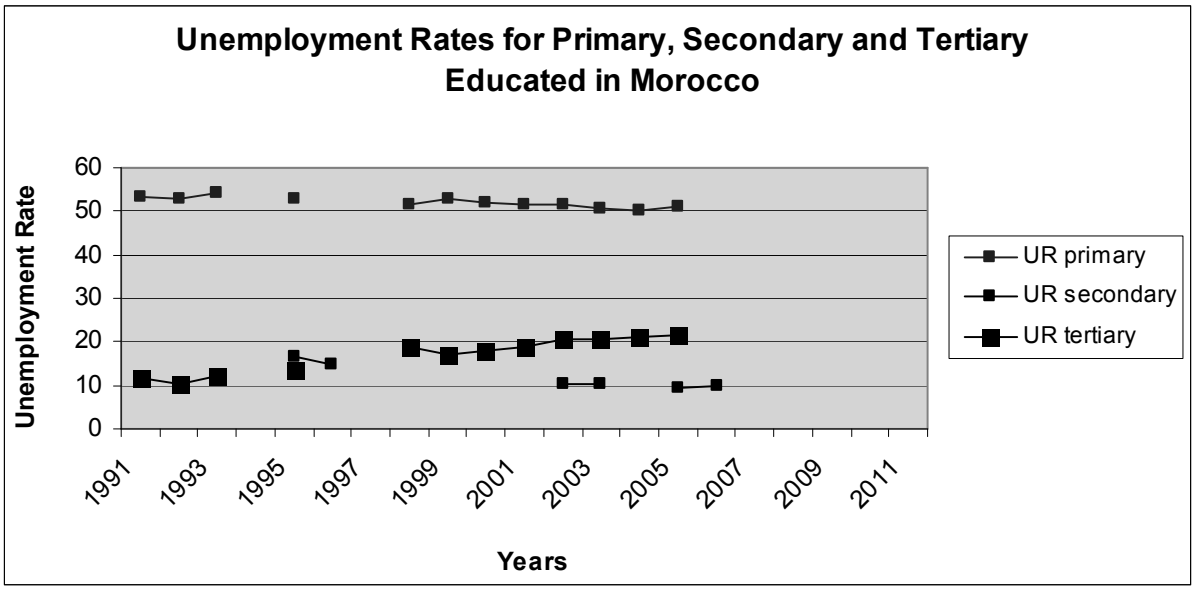
The decrease in the unemployment rate for the primary educated and the increase in the unemployment rate for the tertiary educated means that more low skilled are being hired in Bahrain, and less skilled people are being hired if we suppose that the tertiary educated people are the skilled ones. In 2005, the unemployment rate for tertiary educated people continues to increase until it exceeds the unemployment rate for primary educated. It starts decreasing in 2006, but it still continues to exceed the rate for primary educated. A similar pattern is observed in Kuwait for the same period but with small increase in unemployment of tertiary educated compared to Bahrain (graph 2).

Graph 2: Unemployment by educational level in Kuwait



As for Kuwait, we can notice that there is a very wide gap between the unemployment rates for primary and tertiary educated people, where it reaches 50% for primary educated and does not exceed 10% for tertiary educated. We can also see from the line graph that in 2001, the unemployment rates for primary educated sharply decreases and continues to decrease with a slower rate in the upcoming years, while the rate starts decreasing for the unemployment rates for the tertiary educated, until the two lines get very close and reach values between 10% and 20%.

Graph 3: Unemployment by educational level in Morocco



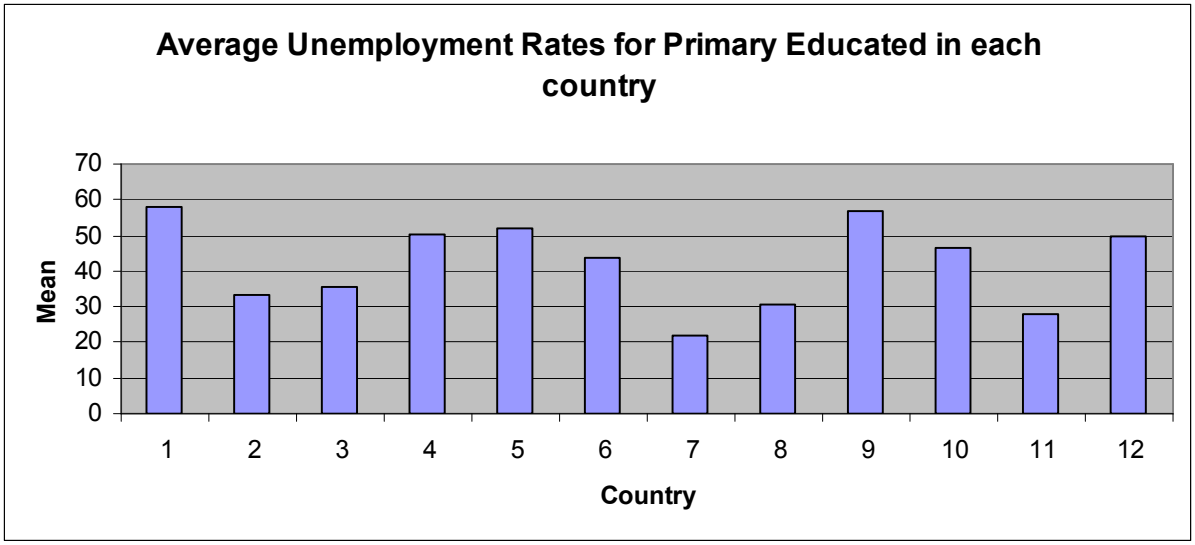
As for Morocco, we can notice that the same unemployment rates remained almost constant for the three levels of education, with a very small increase in the unemployment rates for the tertiary educated, and a very small decrease for secondary educated people. We can also notice the very wide gap between the unemployment rates, where the unemployment rate for the primary educated people exceeds 50% along the years, and where the unemployment rate for secondary educated people does not exceed 25%. And from 2003, we can also notice that the unemployment rate for tertiary educated starts exceeding the unemployment rate for secondary educated.

Examining all the countries data for the primary education reveals that Algeria has the highest mean in unemployment rates, and Qatar has the lowest one. We can also put the countries into two categories, the ones with means higher than average bar for the whole population (42.2%), which are Algeria, Lebanon, Morocco, Oman, Syria, Tunisia and the west Bank and

Gaza, and the ones with means lower than the average which are Bahrain, Kuwait, Qatar, Saudi Arabia, and United Arab Emirates.

When focusing on unemployment rates of those with primary education in different countries, the mean appears to be higher for Algeria, Tunisia and Morocco (graph 4).

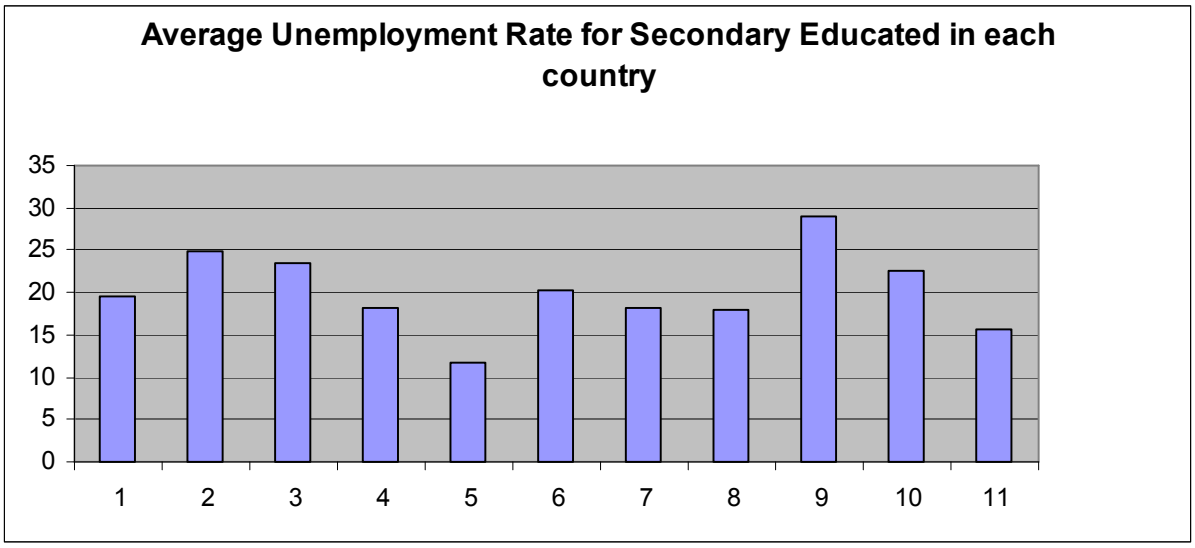
Graph 4: Average unemployment rates for primary educated by country



Notes: 1- Algeria ; 2- Bahrain; 3- Kuwait ; 4- Lebanon ; 5- Morocco ; 6- Oman; 7- Qatar; 8- Syria ; 9- Tunisia ; 10- United Arab Emirates; 11- West Bank and Gaza

As we draw the histograms of the average unemployment rates, the comparison between the countries gets clearer, we can for instance see that Algeria, Lebanon, Morocco, Syria, and west Bank and Gaza have the highest unemployment rates for primary educated, whereas Qatar, the United Arab Emirates and Saudi Arabia have the lowest unemployment rates.

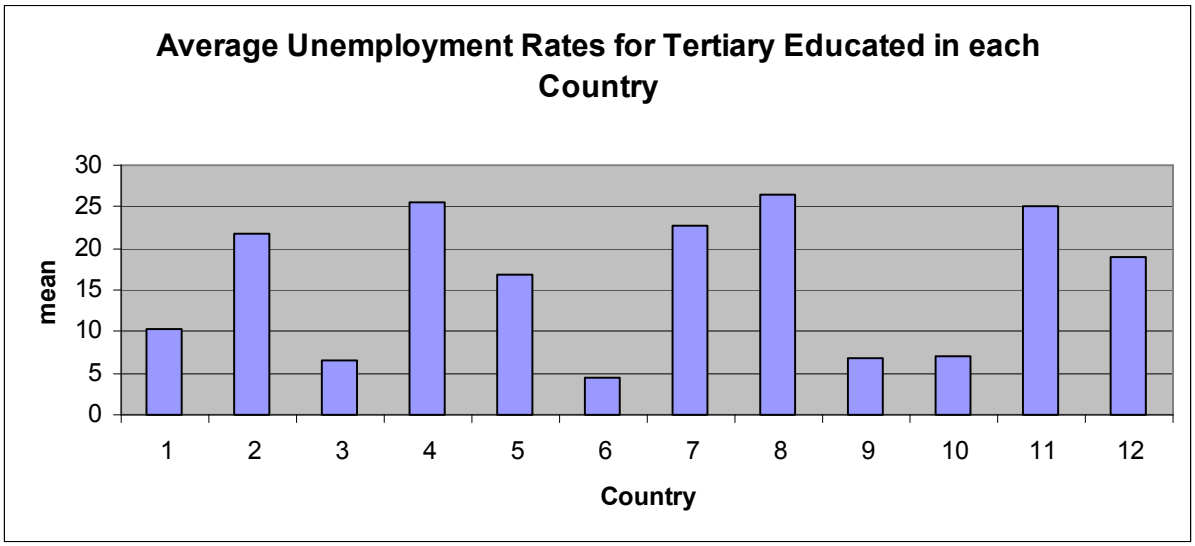
Graph 5: Average unemployment rates for secondary educated by country



1- Algeria ; 2- Bahrain; 3- Kuwait ; 4- Lebanon ; 5- Morocco ; 6- Oman; 7- Qatar; 8- Syria ; 9- Tunisia ; 10- United Arab Emirates; 11- West Bank and Gaza

As for the unemployment rates for the secondary educated, and from the histogram (graph 5), we can conclude that Tunisia has the highest unemployment rate, followed by Bahrain and Kuwait, and Morocco has the lowest unemployment rate followed by the West Bank and Gaza with an average unemployment rate of 15.65%. And this seems to be different from the results we have found from analysing the first histogram that represents the average unemployment rate for primary educated, and from which we concluded that mainly, the countries of the Gulf Cooperation Council have the lowest unemployment rates.

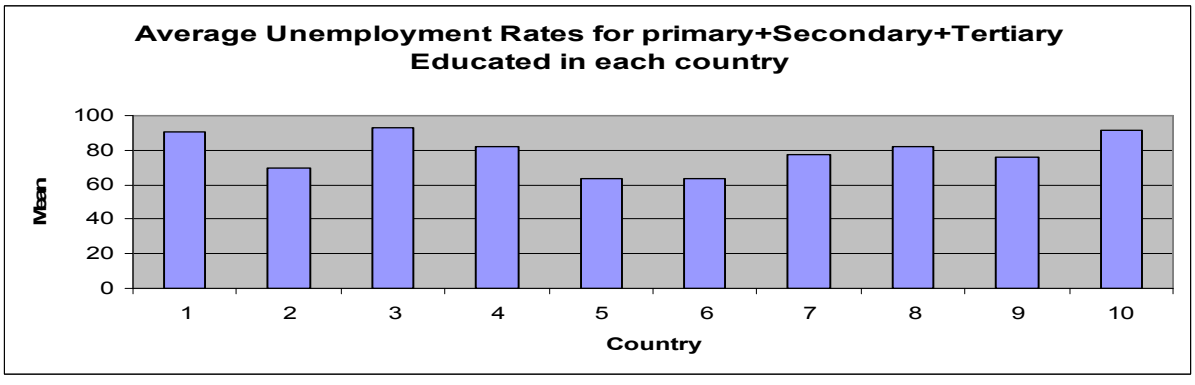
Graph 6: Average unemployment rates for tertiary educated by country



1- Algeria ; 2- Bahrain; 3- Kuwait ; 4- Lebanon ; 5- Morocco ; 6- Oman; 7- Qatar; 8- Syria ; 9- Tunisia ; 10- United Arab Emirates; 11- West Bank and Gaza

As for the unemployment rates for tertiary educated, we can see from the histogram (graph 6) that there is a very wide discrepancy between the countries' unemployment rates. Here, the country with the highest unemployment rate is Saudi Arabia, followed by Lebanon and the United Arab Emirates, and the country with the lowest unemployment rate is Oman, followed by Kuwait and Syria.

Graph 7: Average unemployment rates for all levels of education by country



1- Algeria ; 2- Bahrain; 3- Kuwait ; 4- Lebanon ; 5- Morocco ; 6- Oman; 7- Qatar; 8- Syria ; 9- Tunisia ; 10- United Arab Emirates; 11- West Bank and Gaza

And if we gather all the three unemployment rates, which will give us a measure of the unemployment rates of skilled people, and from the histogram above (graph 7) , we will find that Oman has the lowest rate, and Lebanon has the highest rate. And again we can split the countries into two categories, the ones that have a higher unemployment rate than 79.03% such as Algeria, Lebanon, Morocco, Syria, Tunisia, and the West Bank and Gaza, and the second category, of the countries which have a smaller unemployment rate than 79.03% such as Kuwait, Oman, Qatar, and the United Arab Emirates. And here again we can notice that the countries with relatively low unemployment rates of skilled people are the countries of the Gulf Cooperation Council.

For the unemployment rates for the primary educated, we can see that there is a low standard deviation, and hence a low variance for Algeria, Lebanon, Morocco, Qatar and Tunisia, which means that those countries have most of the data points centred around their respective means. The other countries have a relatively higher standard deviation (Bahrain, Kuwait, Saudi Arabia, Syria, the United Arab Emirates and the West Bank and Gaza), which means that their unemployment rates vary more than the other countries, and the data points are not really clustered around their respective means.

As for the unemployment rates for primary and secondary educated gathered, we can see that only one country has relatively high standard deviation, Kuwait. As for the rates for secondary and tertiary educated, two countries have relatively high standard deviations, Kuwait and the United Arab Emirates. At last, for the unemployment rates for primary secondary and tertiary educated, those latter countries again are the ones that have relatively high standard deviations. Again, these are not accurate measures, as the number of data per country that we have is really low, which make it hard for the standard deviation to be reliable.

2. Trend Analysis

The per country time trends are introduced in table 4.

Table 4: The Dynamics of the Yearly Unemployment Rates (1990-2012)

Country	constant	coefficient	R^2	Observations
Algeria	-0.06	0.99	0.90	23
	(-0.04)	(14.01)		
Bahrain	0.08	0.96	0.94	23
	(0.28)	(18.51)		
Egypt	2.70	0.72	0.63	23
	(2.46)	(5.98)		
Morocco	1.32	0.88	0.74	23
	(0.81)	(7.75)		
Jordan	2.46	0.82	0.72	23
	(1.44)	(7.36)		
Tunisia	2.64	0.82	0.75	23
	(1.75)	(7.89)		
Syria	8.00	0.10	0.01	23
	(4.20)	(0.49)		
Yemen	1.40	0.92	0.93	23
	(1.93)	(17.20)		
Saudi	0.91	0.84	0.66	23
	(1.27)	(6.36)		
UAE	4.44	0.04	0.00	24
	(2.35)	(0.20)	1	
Qatar	0.02	0.94	0.85	23
	(0.10)	(10.86)		
Lebanon	1.24	0.87	0.80	24
	(1.55)	(9.34)		
Algeria, Morocco & Tunisia	0.43	0.96	0.90	69
	(0.65)	(24.84)		
Saudi, Qatar & Bahrain	0.41	0.92	0.82	47
	(1.19)	(14.40)		

The R^2 shows that the trend line fits for almost all the countries except Syria and UAE. It ranges from 0.94 for Bahrain and 0.63 for Egypt. For all the countries, the unemployment rates increase through time. The difference resides in the speed with which each country increases. It increases rapidly for Algeria (0.99), Bahrain (0.96), Yemen (0.92) and Qatar (0.94). The speed is also high or Morocco (0.88), Tunisia and Jordan (0.82) Saudi Arabia (0.84), Lebanon (0.87) and Egypt (0.72). Yemen has the lowest speed with 0.1. The Aggregated countries show that the R^2 fits for

them. Algeria, Morocco and Tunisia have an R^2 of 0.9 and the unemployment increases by 0.96 as we increase by one year. For Saudi Arabia, Qatar and Bahrain it increases by 0.92.

Table 5: Trends of unemployment by level of education

The trends are respectively shown for each level of education as in table 5.

Results of Primary Education's Regressions

Country	constant	coeff	R. squared	Obs
Algeria	-0.04	0.10	0.91	20
	(-0.04)	(13.70)		
Morocco	1.03	0.87	0.77	21
	(1.20)	(7.91)		
Tunisia	2.86	0.65	0.92	14
	(6.64)	(11.56)		
Algeria, Morocco &Tunisia	0.48	0.96	0.97	55
	(2.04)	(42.29)		
UAE	0.04	0.98	0.95	17
	(0.87)	(18.02)		
Kuwait	0.01	1.07	0.93	15
	(1.41)	(13.68)		
UAE & Bahrain	0.02	1.01	0.99	32
	(2.27)	(76.03)		

Results of Secondary Regressions

Country	constant	coeff	R. squared	Obs
Algeria	-1.82	1.09	0.95	11
	(-1.56)	(13.44)		
Morocco	-0.69	0.98	0.95	12
	(-1.11)	(13.65)		
Tunisia	1.51	0.67	0.35	8
	(0.99)	(1.81)		
Algeria, Morocco &Tunisia	-0.18	0.97	0.98	31
	(-0.65)	(35.51)		

Results of Secondary Female's Regressions

Country	constant	coeff	R. squared	Obs

Algeria	3.94 (0.61)	0.83 (2.61)	0.53	8
Morocco	1.19 (0.66)	0.88 (5.59)	0.74	13
Tunisia	0.47 (0.45)	1.02 (7.92)	0.91	8
UAE	4.50 (2.61)	0.85 (15.22)	0.95	15
Syria	0.32 (0.33)	1.04 (10.98)	0.93	11
Oman	-1.27 (-0.54)	1.05 (13.97)	0.95	12
Qatar	1.93 (0.87)	0.95 (12.01)	0.93	13
Kuwait	0.04 (0.03)	1.00 (10.36)	0.93	10
Algeria, Morocco &Tunisia	0.12 (0.28)	1.01 (32.69)	0.97	29

For primary education, the R^2 is significant for all the countries and the trend line fits for all the countries listed. It ranges from 0.77 (Morocco) and 0.95 (UAE). The coefficient increases for Morocco (0.87), Tunisia (0.65) and UAE (0.98). This value falls for other countries like Algeria (0.1) and Kuwait (1.07). The of countries Algeria, Morocco and Tunisia have an R^2 of 0.97 meaning that the trend line fits and the coefficient shows that unemployment increases by 0.96 as we increase by one year for individuals with Primary Schooling. Then UAE and Bahrain we get an R^2 of 0.99 and the unemployment increases by 1.01 for individuals with primary schooling.

For secondary education, the R^2 is high for Algeria (0.95), Morocco (0.95) and Tunisia (0.35) then the trend line fits and the coefficient shows that the speed by which unemployment increases for Algeria is high (1.09) compared to Morocco (0.98) and Tunisia (0.67). The aggregate countries Algeria, Morocco and Tunisia show that the R^2 is high (0.98) which means that the trend line fits for these countries. The coefficient of the regression shows that the speed by which unemployment increase for individuals with secondary schooling is increasing by 0.97.

For female secondary education, the R^2 of secondary female regressions are significant for all the countries with values above the threshold. Therefore, the trend line fits for all the countries

mentioned above. The lowest R^2 value is for Algeria with a 0.53 while the highest is a 0.97 when Algeria is combined with Morocco and Tunisia. Hence the trend line is even more accentuated when North African countries were grouped. The increase in unemployment is ranges between 0.83 in Algeria and 1.05 in Oman. As the years pass by, unemployment is expected to rise at a faster rate in Oman, and Syria rather than Morocco and Algeria for instance.

As a comparison, in Arab countries the general unemployment is fairly high, and as the population increases, youth unemployment also continues to rise.

The Arab region suffers the highest rates of unemployment in the world and a growing deficit of knowledge in both new and traditional forms. According to studies, the unemployment rate ranges from 56 per cent in Gaza to 15 percent in Oman, and the rate of unemployed youth as a percentage of the entire population sits between 39.5 per cent in Morocco (1999) and 75.4 per cent in Bahrain (1995). In Iran, youth account for 70 per cent of a population of more than 66 million, but youth unemployment has other national and global impacts, notably increased violence, crime, drug use, poverty and political instability. Additionally the rapid rate of urbanization in many Arab countries has increased the levels of youth-specific unemployment, due to the lack of skills required in urban employment compared to the job qualifications in rural areas.

Human Resources in Science and Technology (HRST) are an important feature in the new paradigm of knowledge economy: as the investments in high-tech technologies increases, there is an increase in demand for skilled labor force. In Eurostat methodology this fact is measured by the percentage of the total labor force in the age group 25-64, that is classified as HRST, i.e. having either successfully completed an education at the third level in an S field of study or is

employed in an occupation where such an education is normally required. HRST are measured mainly using the concepts and definitions laid down in the Canberra Manual, OECD, Paris, 1995.

But according to different sources and based on data availability, the World Bank database indicates that long term unemployment that covers unemployment durations close and above one year, appears to be widespread mainly in North Africa, Jordan, Lebanon, Syria, Yemen, Sudan and Egypt. This is lower for Gulf countries but larger for the remaining Arab countries. If the rates of knowledge obsolescence described above could be applied to Arab countries, this would imply a high level of re-training of those unemployed on the longer term. As defined by the World Bank longer term unemployment refers to the ration of those unemployed for close or above one year (more than 47 weeks) over the totally unemployed. This ratio is discussed below per country and by gender between 2000 and 2012. According to such figures, countries such as Bahrain, Algeria, Egypt and Jordan and Morocco do show higher long term unemployment rates for the total unemployed, implying higher levels of skills obsolescence. Others such as Qatar show moderate rates.

Table 6: Total Long Term Unemployment (Source: World Bank Database)

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Avg
UAE														
Bahrain					20									20
Algeria												7.1		7.1
Egypt				9.8	9.1	9.4	9	7.9	7.1	8	7.7			9.1
Iraq														
Jordan	3.2	2.5	3	2.1		3.1	3.2	4	2.5	4.5	4.3			4.5
Kuwait														

Lebanon														
Libya														
Morocco			7.6							6	5.7	5.8		6.7
Mauritania														
Oman														
Qatar							0.3	0.2	0.1	0.1		0.2	0.1	0.2
Saudi														
Sudan														
Syria														
Tunisia														
Palestine														
Yemen											4			4

Such trends are confirmed when looking at gender differences.

Table 7: Female Long Term Unemployment

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Avg
UAE														
Bahrain					16.1									16.1
Algeria												10.9		10.9
Egypt				21.5	21.9	21.7	21.3	16.9	15.1	19.3	19.9			21.1
Iraq														
Jordan														

Kuwait														
Lebanon														
Libya														
Morocco														
Mauritania														
Oman														
Qatar							1.1	1.1	0.5	0.7		1.1	0.9	1.1
Saudi														
Sudan														
Syria														
Tunisia														
Palestine											11.3			11.3
Yemen														

Table 8: Males Long Term Unemployment

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Avg
UAE														
Bahrain					25									25
Algeria												6.3		6.3
Egypt				6.5	5.1	5.7	5.5	5	4.7	4.5	4			5.2
Iraq														
Jordan														
Kuwait														
Lebanon														

Libya														
Morocco														
Mauritania														
Oman														
Qatar							0.2	0.1	0	0		0.1	0	0.1
Saudi														
Sudan														
Syria														
Tunisia														
Palestine											3			3
Yemen														

Conclusion

This chapter focuses on unemployment, youth, skilled and unskilled labor with an attempt to related unemployment persistence to skill obsolescence. After a literature review and descriptive parts, an introduction to the topic of skill obsolescence is developed. The studies by Khalifa (2013) and by Arrazola et al. (2005) appear to be promising as their results could be applied to understand the situation of Arab countries. But, the monitoring of labor markets besides unemployment requires large array of technical, economic and political solutions. This says that knowledge is again needed as further research provides means and tools to enrich both business and economic policies.

One of the potential solutions suggested in the formal literature is called reemployment bonuses. Workers, who have been unemployed for a long period of time, might have lost motivation or

hope. Bonuses that pay workers for finding a new job might can reconnect long term unemployed workers to the labor force (Von Watcher, 2010).

Job search assistance has been shown to be efficient and cost effective in the United States and some European countries. This assistance is linked to the perception of unemployment benefits. Job career centers can provide training courses and individual career counseling.

Combination of these policies can be implemented simultaneously for further effectiveness. Nevertheless, these policies cannot be substitute of a rise in job creation. Other authors argue that by retraining workers in the skills that are demanded by firms (Pretel, 2005), effectiveness could be enhanced.

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