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20 October 2015

Online at <https://mpra.ub.uni-muenchen.de/67361/>
MPRA Paper No. 67361, posted 20 Oct 2015 20:30 UTC

Threats to Skills of Unemployed Qualified Labor in Arab Economies

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Abstract

This paper focuses on skill loss from the unemployment of qualified labor in Arab economies. It aims at analyzing the prospects of unemployment of skilled labor in relation to the increasing gap between the supply of labor and the low levels of job creation. The obsolescence of the skills gained prior to job search, is discussed in relation to the length of unemployment. Descriptive statistical analysis of unemployment in addition to a discussion of skill obsolescence is pursued. Among the results, skill losses appear to be crucial under limited prospective policies. Some directions of economic and social policies that need strengthening are introduced.

Keywords: Risks; Loss; Skills; Obsolescence; Unemployment; Skilled Labor.

JEL: J24-J64

Introduction

A gap between the supply of labor and its corresponding demand has been observed during the last years, in both developed and developing economies. Such a gap has been also expressed for qualified labor and has been increasing over time in relation to the limited job creation in most developing economies with high figures for Arab countries.

These high and persistent levels of unemployment may lead to the obsolescence of the skills gained during the training periods. This question raises other issues related to the efficiency of the educational and training systems besides the job offers and the perceptions

about the length of unemployment. Under the rapid technical change and with the length of unemployment, different types of skill losses have been discussed in the literature. .

This paper follows previous publications by Achehboune and Driouchi, (2014) and by Driouchi (2014). It aims at discussing unemployment of qualified human resources with effects on the quantity and the quality of skills. When labor markets are not able to absorb the human resources from the educational and training systems, global labor productivity becomes at risk.

This paper is organized in three sections where the first one is a review of literature. It looks at the most important publications on the unemployment issue in the Arab World. The second section is based on descriptive statistics to show the major trends governing unemployment in the Arab region besides focusing on the duration of unemployment. The last section discusses the prospects of 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 unemployment for their youth during the past few years. In this region, the unemployment rate of the youth 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 this region could be much higher as many young people who are out of school and out of work are not included in the statistics.

Research has found that unemployment and under-employment places high pressure on young people, often forcing them to wait longer before accessing the real life. This is observed for young men between the ages of 25 and 29 having the lowest marriage rates. 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 above reports indicate that the costs of long-term unemployment continue to rise and undermine the growth potential of these economies. Skills mismatch has become a persistent and growing problem according to these reports. Skill obsolescence is thus becoming increasingly serious. The latest ILO report (ILO, 2013b) clearly mentions the difficulties related to jobs and skills.

Gatti, Morgandi, Grun, Brodmann, Angel-Urdinola, Moreno, Marotta, Bauer and Lorenzo (2013), find the Arab region has the highest unemployment rate among youth with the lowest female participation in the labor force. They also find that desirable jobs are limited with private employment providing low value added jobs while the public sector is still expected to offer the majority of formal jobs.

Morgandi, Grun, Brodmann, Angel-Urdinola, Moreno, Marotta, Bauer and Lorenzo (2013), identify that According to the report focusing on Education for Employment (2011), the Arab region suffers from the highest youth unemployment in the world. This 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. Available data on labor markets covering Egypt, Jordan,

Lebanon, Morocco, Syria, and Tunisia indicate that average unemployment was at 11% in 2008 close to the average of the past two decades (12%) with the highest regional unemployment rate worldwide. The problem is especially pronounced among the young and the educated with unemployment increasing with schooling in this region. The share of young people among the unemployed in the six countries on average exceeds 40%, and reaches 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%. It exceeds 15% for those with tertiary education in Egypt, Jordan, and Tunisia.

The working age the population is increasing in the Arab economies at a rate that is significantly higher than the one of job openings (Drine, 2012). According to this author the persistence of the current trend would lead Arab economies by 2020, to create more than 100 million jobs.

Al-Khalidi (2011), focuses on the process leading to high unemployment in the Arab economies. To the author, the total population of 20 Arab countries (with the exception of the Palestinian territories) 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. This 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 share for investment.

Haririan, Bilgin, and Karabulut (2009) investigate the long term relationship between GDP growth and unemployment for selected countries. As expected from the literature, a negative relationship is found to show how increasing GDP growth can lower unemployment.. The ILO observes that the Middle East and North Africa has 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 World Bank Report (World Bank, 2006), Morocco's low growth is the central challenge in the country development agenda. But the growth rates that are observed during the years 2000 are considered limited to reduce poverty and unemployment. To the report, reduction of unemployment requires sustained annual economic growth above 5 to 6 percent range. These same trends are discussed and observed in Bouderbate and Ajbilou (2007).

Another report by the World Bank (2012) anticipates the demands for social and economic inclusion. It identifies a wide range of recommendations 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 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. The youth unemployment rate is high, averaging about 22 percent among males and 38 percent among females.

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 because of the impacts of free trade found to be larger for labor occupations than 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 and where educated people are more concerned with females more affected than 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 employment while others focus 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 losses of skills and abilities. But, these trends appear mainly in North African economies, Jordan, Libya, Egypt, Yemen, Syria and Sudan.

Researchers, policymakers, and people are genuinely concerned with the progress of human capital in the Arab region in relation to the unemployment trends discussed. A recent study by the World Bank 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 states 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 (for ages 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' education. 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.

De Grip (2004) defines the obsolescence of human capital as an important component of the economic challenge facing different economies. 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. These same dimensions are emphasized in De Grip and Van loo (2002).

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 is the persistence of high levels of unemployment that eventually result in widespread deterioration of human capital, discouragement and labor market withdrawal. With high unemployment rates with long duration, Arab countries are concerned as well.

II. Descriptive Statistical Analysis of Unemployment in Arab Countries

This part is composed of three major sections. The first one focuses on unemployment data. The second section is centered on their descriptive preliminary analysis while the third one introduces data on the unemployment duration. This is to keep in mind the link between unemployment rate, its duration and the likelihood of skill losses.

1. Introduction of Data

This is achieved in two stages starting with a global introduction of data and ending with the relationship between education levels and unemployment rate for Arab countries.

a. Global Data

The data about unemployment rates have been collected from the World Bank Database. These data represent the unemployment rate for people with a given 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, besides 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 can be called “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 follows the primary education. The data include the unemployment rate for people with tertiary education or “highly educated people”. Data show that the trend of unemployment varies by country (table 1).

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

Source: World Bank Database

	Youth as % of total Population			Youth % of working age population 2005	Unemployment Rate Among Youth (%)	
	1985	2005	2025		Male	Female
All	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

Some socioeconomic and demographic indicators related to unemployment of youth aged between 15 and 24 in the region are introduced in the above table. The unemployment rate among youth is higher for females in almost all the countries of the 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 region suffers from the unemployment of

youth and especially the females (33%). The numbers show that the unemployment rate is higher especially for 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 Arab countries
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	3.6
Lebanon	22.1	-
Libya	-	-
Morocco	17.5	1.7
Saudi Arabia	30.8	3.4
Syria	19.1	3.08
Tunisia	28.8	1.6
Yemen	-	3.57

In addition, table 2 introduces youth unemployment as an average between 2006 and 2010 and the annual population growth between 1980 and 2009 for the Region. This table shows that 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.

Table 3: Labor Force Participation, Employment to Population, Paid to total Employment, Unemployment and Youth, source: ILO, 2012

	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	2009	49.9	47.2	-	5.4	29.9

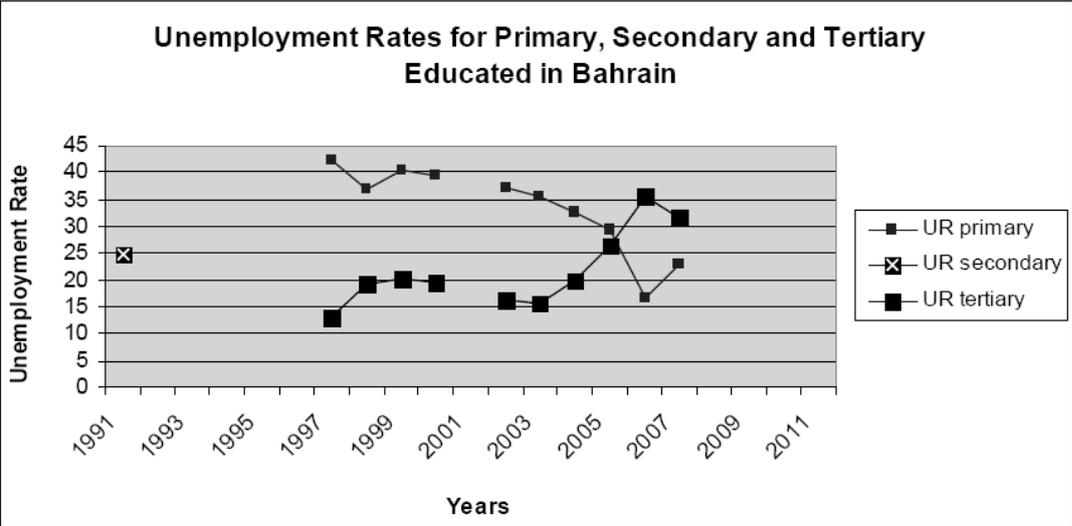
Arabia						
Sudan ^e	2008	-	-	-	20.7	-
Syria	2010	43.7	42.0	62.7	8.4	18.3
Tunisia	2010	46.9	40.8	-	13.0	29.4
UAE	2008	72.6	69.7	95.8	4.0	12.1
WB & Gaza	2010 ^f	39.5	29.8	67.6	23.7	40.2
Yemen	2009	42.2	36.1	-	14.6	-

Table 3 introduces 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%.

b. Unemployment and levels of education per country

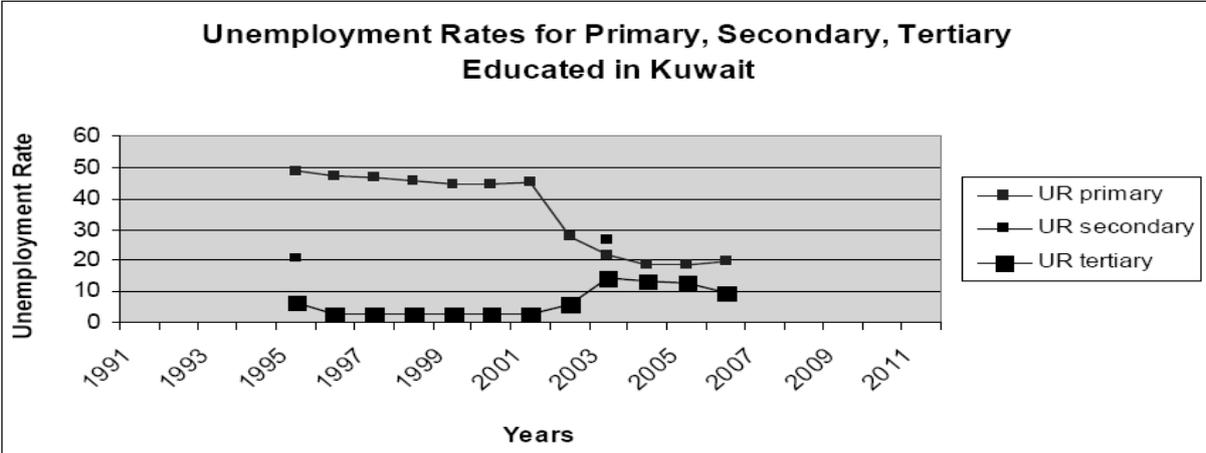
In relation to the levels of education, figure 1 related to unemployment in Bahrain shows that those with tertiary education have increasing unemployment compared to those with primary education.

Figure 1: Unemployment by educational level in Bahrain, adopted from Achehboune and Driouchi, 2014; Source: ILO, 2012



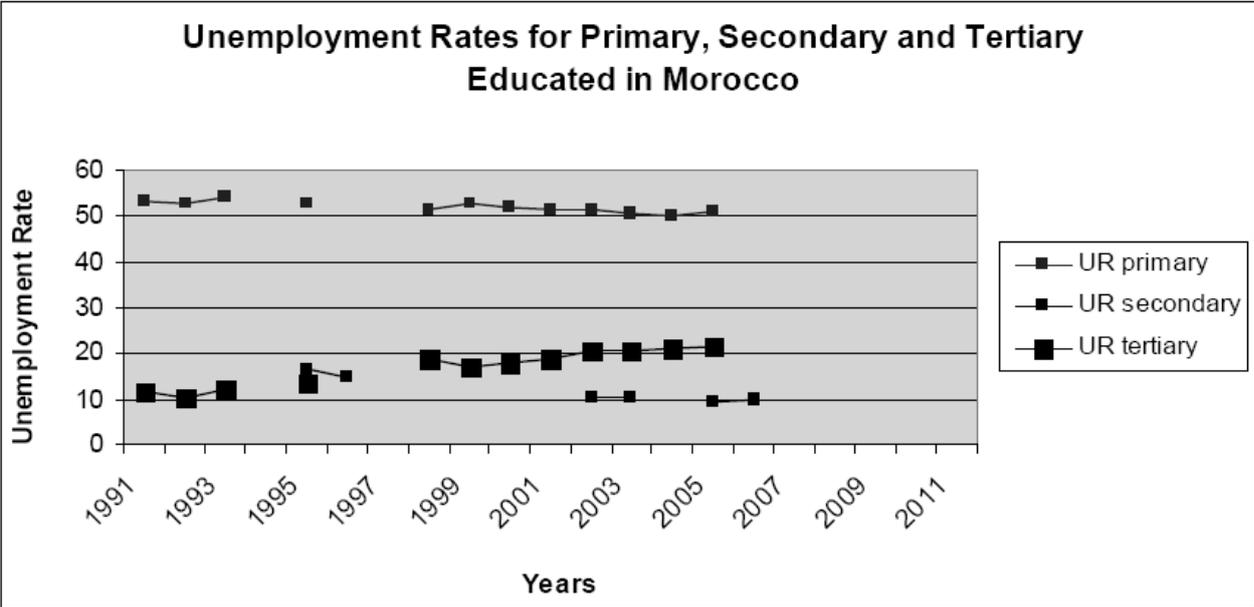
For instance, for Bahrain, the unemployment rates for both primary and tertiary educated change their trends around the years 1998 and 2006. In 1998, the unemployment rate for primary educated increases whereas it decreases for tertiary educated. The same thing happened in 2006. The decrease in unemployment for the primary educated and the increase for the tertiary educated mean that more low skilled are being hired in Bahrain relative to skilled people. In 2005, the unemployment rate for tertiary educated people continued to increase until it exceeded that for primary educated. It starts decreasing in 2006, but exceeds the level for primary educated. A similar pattern is observed in Kuwait for the same period but with smaller increase in unemployment for tertiary educated (figure 2).

Figure 2: Unemployment by educational level in Kuwait, adopted from Achehboune and Driouchi, 2014; Source: ILO, 2012



But for Kuwait, there is a 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. The figure shows also that in 2001, the unemployment rate for primary educated sharply decreases and continues to decrease with a slower rate in the following years, while the rate starts decreasing for the tertiary educated, until the two lines get very close and reach values between 10% and 20%.

Figure 3: Unemployment by educational level in Morocco, adopted from Achehboune and Driouchi, 2014; Source: ILO, 2012



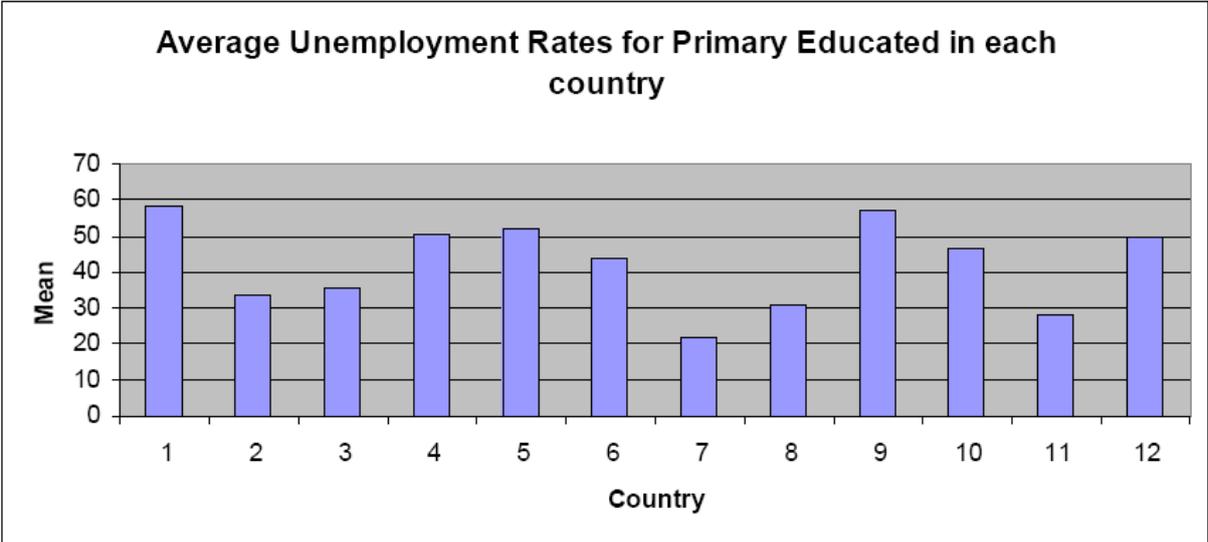
For Morocco (figure 3), the unemployment rates remain almost constant for the three levels of education, with a very small increase in the unemployment rates for the tertiary educated, and a very small decrease for secondary educated people. There is a wide gap between the unemployment rates, while that for the primary educated people exceeds 50% along the years, and where that for secondary educated people does not exceed 25%. From 2003, the unemployment rate for tertiary educated starts exceeding the unemployment rate for secondary educated.

Examining all the countries data for primary education, reveals that Algeria has the highest mean in unemployment rates, and Qatar has the lowest one. Based on these observations,

countries can be divided in two categories. The ones with means higher than average for the whole population (42.2%) include Algeria, Lebanon, Morocco, Oman, Syria, Tunisia and the west Bank and Gaza. The other set with means lower than the average include 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 (figure 4).

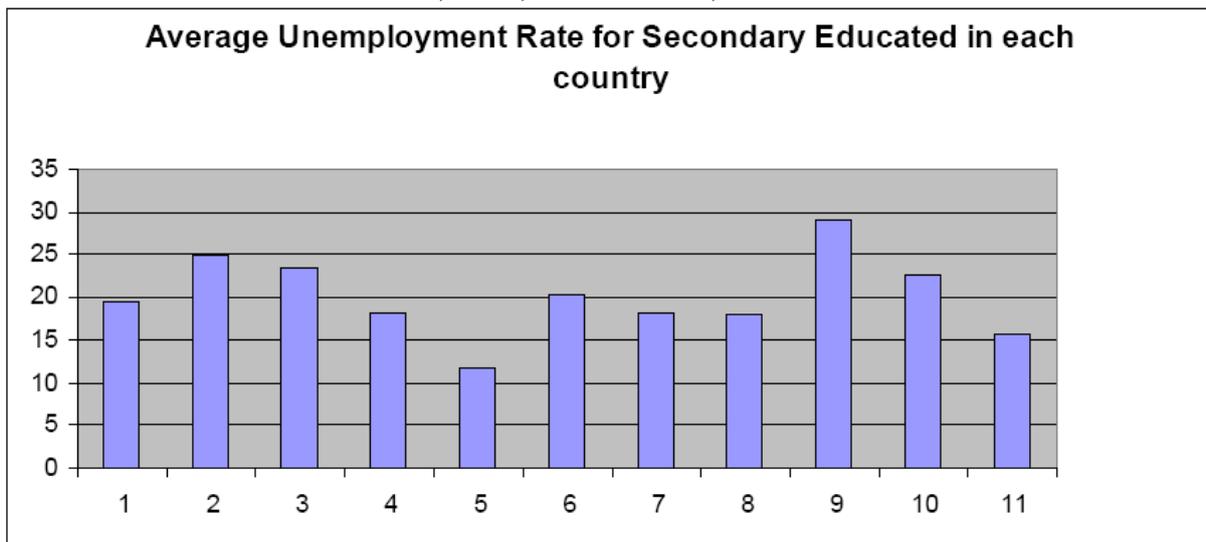
Figure 4: Average unemployment rates for primary educated by country, adopted from Achehboune and Driouchi, 2014; Source: ILO, 2012.



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

The comparison between the countries for instance shows 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.

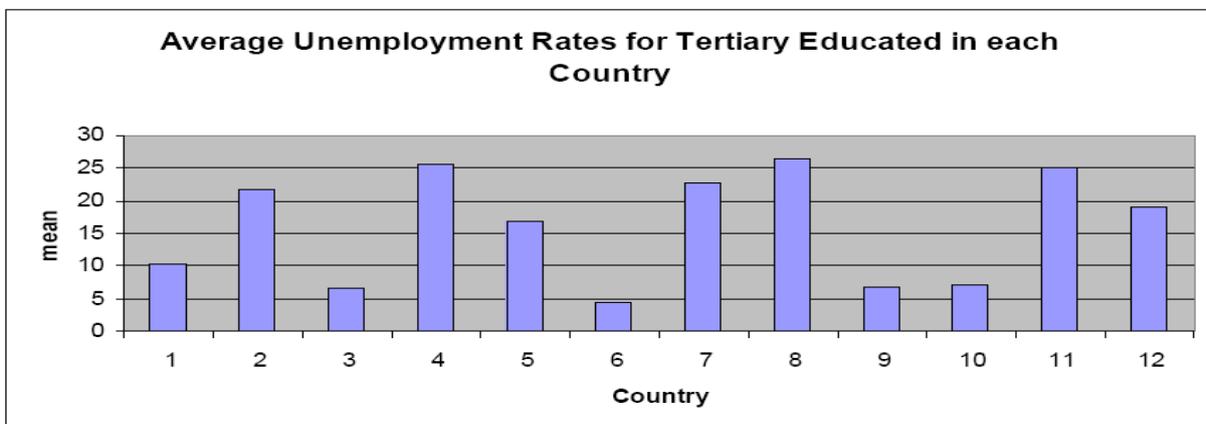
Figure 5: Average unemployment rates for secondary educated by country, adopted from Achehboune and Driouchi, 2014; Source: ILO, 2012



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 for the unemployment rates for the secondary educated, and from the histogram (figure 5), It is clear from the above figure that Tunisia has the highest unemployment rate. It is followed by Bahrain and Kuwait, and Morocco. This latter country has the lowest unemployment and is followed by the West Bank and Gaza with an average unemployment rate of 15.65%. This seems to be different from the results from analyzing the first histogram that represents the average unemployment rate for primary educated, and from which the countries of the Gulf Cooperation Council express the lowest unemployment rates.

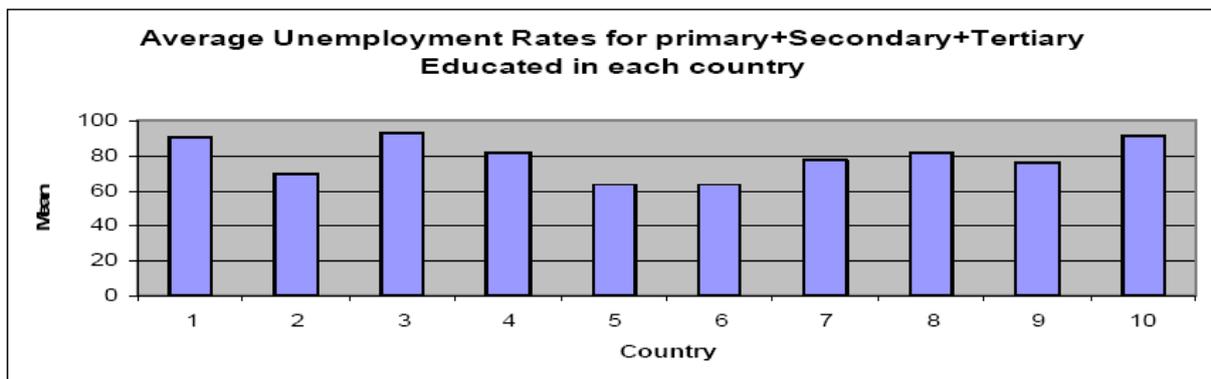
Figure 6: Average unemployment rates for tertiary educated by country, adopted from Achehboune and Driouchi, 2014; Source: ILO, 2012



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

For tertiary educated, figure 6 shows that there is a very wide discrepancy between the countries. 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.

Figure 7: Average unemployment rates for all levels of education by country, adopted from Achehboune and Driouchi, 2014; Source: ILO, 2012



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

Oman has the lowest rate, and Lebanon has the highest one (figure 7). Countries appear as ones with a higher unemployment rate: Algeria, Lebanon, Morocco, Syria, Tunisia, and the West Bank and Gaza, and those with lower rates such as Kuwait, Oman, Qatar, and the United Arab Emirates. Countries of the Gulf Cooperation Council show the lowest unemployment rates for skilled labor.

2. Trend Analysis

The per country time trends are introduced in table 4. The R^2 shows that the trend line fits almost all the countries except Syria and United Arab Emirates (UAE). It ranges from 0.94 for Bahrain and 0.63 for Egypt. For all these countries, the unemployment rates increase through time. The difference resides in the speed with which each country increases. It increases

rapidly in Algeria (0.99), Bahrain (0.96), Yemen (0.92) and Qatar (0.94). The speed is also high in 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 two last rows refer to aggregated countries and show that Algeria, Morocco and Tunisia have an R^2 of 0.9 with unemployment increases by 0.96. For Saudi Arabia, Qatar and Bahrain it increases by 0.92. This shows again that the Middle Eastern and North African economy exhibits unemployment differences in levels but with an important pattern of yearly increase. All these details are summarized in table 4.

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

Country	Constant	coefficient	R^2	Observations
Algeria	-0.06 (-0.04)	0.99 (14.01)	0.90	23
Bahrain	0.08 (0.28)	0.96 (18.51)	0.94	23
Egypt	2.70 (2.46)	0.72 (5.98)	0.63	23
Morocco	1.32 (0.81)	0.88 (7.75)	0.74	23
Jordan	2.46 (1.44)	0.82 (7.36)	0.72	23
Tunisia	2.64 (1.75)	0.82 (7.89)	0.75	23
Syria	8.00 (4.20)	0.10 (0.49)	0.01	23
Yemen	1.40 (1.93)	0.92 (17.20)	0.93	23
Saudi	0.91 (1.27)	0.84 (6.36)	0.66	23
UAE	4.44 (2.35)	0.04 (0.20)	0.001	24
Qatar	0.02 (0.10)	0.94 (10.86)	0.85	23
Lebanon	1.24 (1.55)	0.87 (9.34)	0.80	24
Algeria, Morocco & Tunisia	0.43 (0.65)	0.96 (24.84)	0.90	69
Saudi, Qatar & Bahrain	0.41 (1.19)	0.92 (14.40)	0.82	47

While the above trends in unemployment cover all types of skills, trends are assessed for different levels of education and by gender. The corresponding results are introduced in tables 5, 6 and 7.

Table 5: Results of Primary Education

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

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.

Table 6: Results of Secondary Education

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

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.

Table 7: Results of Secondary Education for Females

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 female secondary education, the R^2 are significant for all the countries. 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 are grouped. The increase in unemployment ranges between 0.83 in Algeria and 1.05 in Oman.

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). 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.

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. This is an important step towards discussing losses of skills in relation to the length of unemployment.

3. Unemployment Duration

The long term unemployment rate based on the few data introduced in table 8. This shows that the duration of one year and more of unemployment is frequent. The percentage to total unemployed attains 70, 40, 65 and 35 respectively for Algeria, Jordan, Morocco and Qatar. Even with limited data, it could be inferred that the long term unemployment during the most recent years is higher than the one that prevailed during the beginning of the years 2000.

This trend is also shown for Tunisia where the duration of unemployment (table 9 appears also to be high. The paper by Boughzala (2013) analyzes trends in youth employment and unemployment in private sector development, with special attention to education and female employment. It uses data from a 2007 enterprise survey.

Table 8: Long Term Unemployment as percent of total Unemployment Source: World Bank Data

Country Name	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
U.A.Emirates													
Bahrain					30.4								
Algeria												71.4	
Egypt													
Iraq													
Jordan	23.3	16.9	19.6	14.2		20.9	23	30.3	19.4	34.9	34.3	41.7	
Kuwait													
Lebanon													
Libya													
Morocco			66							66.1	62.8	64.8	
Mauritania													
Oman													
Qatar							36.1	38.5	28	35		34.6	30.1
Saudi													
Sudan													
Syria													
Tunisia													
Yemen											22.6		

Table 9 : Unemployment Duration in Tunisia Source: Boughzala (2013).

Matching Duration (months)	Frequency (%)	Cumulative Percentage
0-1	86.7	86.7
2-3	8.2	94.9
3-9	4.1	99.2
10-28	1.0	100

This table confirms that a total of 5 % of the unemployed workers could spend more than one year in unemployment. But, for Algeria, the unemployment duration could be higher as almost 64 % of the unemployed could wait for more than two years (table 10).

Table 10: Unemployment Duration in Algeria Unemployment Rate by Duration (as % of unemployment) from: Gijón, J, Davide Furceri, and Ernesto Crivelli (2011).

	Overall	Male	Female
Less than one year	35.6	33.8	35.6
12–23 Months	19.3	18.4	19.3
24 Month and more	45.1	47.8	45.1
Total	100	100	100

But the unemployment duration for Qatar (table 11) shows different patterns for Qatari and non Qatari workers.

Table 11: Employment search in months (2012) Source: The Gulf Labor Markets and Migration, 2012

duration of search	QATARI			NON-QATARI			Total		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
1-6 months	202	570	772	311	1,510	1,821	513	2,080	2,593
7-12 months	333	505	838	336	758	1,094	669	1,263	1,932
one year and more	212	764	976	231	746	977	1,625	4,853	1,953
Total	747	1,839	2,586	878	3,014	3,892	1,625	4,853	6,478

A relatively recent study by Hanushek, Schwerdt and Wiederhold (2013) could be used to show how skill loss might be of importance. The results of such a study could provide indications about the returns to skills in the absence of specific data on Arab economies. The authors use data from the Program for the International Assessment of Adult Competencies (PIAAC) to analyze the new survey of adult skills over the full lifecycle in 22 countries and show that the focus on early-career earnings leads to underestimating the lifetime returns to skills by about one quarter. They also indicate that a one-standard-deviation increase in numeracy skills is associated with an 18 percent wage increase among prime-age workers. But the authors recognize that this masks considerable heterogeneity across countries. Eight countries, have returns between 12 and 15 percent, while six are above 21 percent with the largest return being 28 percent. Estimates are remarkably robust to different earnings and skill measures, additional controls, and various subgroups. At the same time, the study shows that returns to skills are systematically lower in countries with higher union density, stricter employment protection, and larger public-sector shares. This might apply to Arab countries.

This leads to considering that a very large skill loss even with lower returns to skills, may lead to high economic and social losses from skill degradation due to long term unemployment in Arab countries.

The following section is devoted to addressing the major debates related to skill losses instead of focusing on measurement of skill loss. It also addresses the major directions to be strengthened by economic and social policies at these stages of the prevailing transformation of Arab economies.

III. Prospects of Skill Loss and Direction of Economic and Social Policies in Arab World

This discussion is pursued through showing the existence of skill obsolescence and the subsequent attempts to measure the implied losses. The likelihood of economic and social policies accounting for skill obsolescence is also introduced.

1. 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 unemployed suffer a substantial decline in wages in the short and long run. Some scholars such as Wachter (2010) empirically document that these earning losses persist over time. Furthermore, the unemployment of parents can affect health besides the education outcomes of children. The costs of unemployment seem to be particularly large for certain groups, such as the youth and the long term unemployed. High youth unemployment constitutes lost productivity to the economy, 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). Overall, loss of skills reduces the overall productive capacity of an economy in the long run. Losses in skills are also emphasized by Pissarides (1992). Similar observations and evidence are developed in Acemoglu (1995) with a theoretical model. Other authors, such as Pavoni (2009) have also emphasized 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 the limitations of longitudinal and panel data for individual and all Arab countries. The data were obtained from the World Development indicators. The database consists of annual observations. The problem with the dataset is that there is only a small number of observations. 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 unemployment. Data display the evolution of unemployment rates over time for a sample of Arab countries and show that the average rate of unemployment over this period is high. 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. In a more recent paper, Khalifa (2014) assesses the impact of skill loss on the persistence of cyclical unemployment. This paper adopts the learning-by-doing framework to consider endogenous skill loss by the unemployed. The paper shows that as unemployment increases, workers lose their accumulated skills and thus, the skill obsolescence causes a decline in the future marginal productivity of workers. This decline in productivity causes persistence in the cyclical downturn, and a delay in the recovery of the economy.

According to Cedefop (2012), workers in some OECD countries, with stagnating or deteriorating skills are more likely to lose their jobs and have a temporary contract with 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.

Wachter and Handwerker (2009) show that high-skilled job losers recover more quickly than low-skilled workers while the largest and more persistent losses are borne by workers in the middle of the skill distribution. These authors consider that this is consistent with previous empirical findings.

2. 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.

3. Implied Directions for Economic and Social Policies

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. But, based on the above findings and contours of the links between skill loss and unemployment, the following economic and social directions of policies need continuous monitoring and updating through:

- Enrichment of labor market databases in collaboration with regional and international organizations,
- Pursuit of macroeconomic, sector and microeconomic analyzes devoted to supporting the economic policies,
- Strengthening of training practices and policies aiming at accompanying the loss of skills and the updating of abilities,
- Promotion of research that includes behavioral economics in order to enlarge the information database with behavioral parameters related to both labor supply and demand. This research needs also to account for the links between education, employment and unemployment.

These directions are to be strengthened in relation to the development of free and competitive labor market mechanisms with private enterprise creation and promotion of new businesses. Such directions are relatively new in Arab countries where major transformations are taking place with regard to privatization and openness of these economies. The practice of data generation and analysis of labor markets need to become more tied with free market mechanisms and less with the traditions of governments as sole past employers. The participation of all partners including public, private organizations and non-governmental agencies with labor unions at both stages of information production and diffusion is a process that ensures the relevance as well as the regional and international benchmarking. Such efforts and actions could be monitored through the number and quality of issues resolved and through comparisons with the rest of the world.

Conclusion

This paper addressed the most important contours of unemployment of youth and skilled labor with the attempts of linking unemployment length to skill obsolescence. Even if the literature mentions limited skill obsolescence of highly educated labor, relative to other levels, the likely loss of skills within this category needs to be addressed by economic and social policies.

In relation to the very critical topic of unemployment and mainly that of the young and educated segments in the Arab economies, international organizations and forums have been providing reports and suggesting reforms to these countries. The most recent report is the one by the IMF. The study by the International Monetary Fund (2014) on the economic repercussions shows that the economies of Egypt, Jordan, Morocco, Yemen, Tunisia, and Libya have an economic outlook that continues to be difficult and these economies should be ensuring economic stability. Economic growth is still too low and the jobs created are far too

few. The report emphasizes the ambitious reforms that increase growth and reduce the high rates of unemployment, especially among youth.

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