

Ageing and Age-Structural Transition in the Arab Countries: Estimated Period of Demographic Dividends and Economic Opportunity

by

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Abstract

The rapid demographic transition particularly, the worldwide reduction in mortality rates during the latter half of the last century has resulted in numerical growth of older (65+) population, which would have far reaching socio-economic consequences. This paper examines the trends of ageing and age-structural transition in 22 members of the League of Arab States by the middle of the 21st century. The analysis is based upon medium variant population projections published by the United Nations in 2008. Based on the indices of ageing, Arab states have been classified as ‘Fast’, ‘Medium’ and ‘Slow’ ageing countries. The analysis of ‘Potential Support Ratio’ showed rapid increase during the period around 1995-2020 and thereafter recorded a decline. It, however, revealed increasing of burden of old-age persons placed on the working population. Based on the analyses of growth rates for working age population and of total population, the period of demographic dividend/economic opportunity for all the Arab States has been estimated.

1. Introduction

Population ageing is the outcome of demographic transition. Reductions in infant, child and maternal mortality and decreases in fertility rates during the post-half of the last century have resulted in numerical growth of older populations around the world. Rapidly swelling numbers of elderly population – defined here as persons aged 65 years and above has far reaching socio-economic consequences. Most of the developed countries of the world have experienced higher growth of elderly population much earlier. In these countries mortality had stabilized at lowest level in early 70’s and fertility had reached replacement level or even below during last decade. In Arab region, however, onset of fertility decline is relatively a new phenomenon and therefore, the process of ageing is in its early stages. Nevertheless, in the wake of fast changing demographic scenario in developing countries, the need to meet the challenges ahead on account of increase in the absolute population aged 65 years and above, cannot be underestimated. Particularly, in Arab countries where old age dependency burden is likely to increase not only due to decline in levels of fertility and mortality but also on account of age-selective out migration from the countries. The prevailing economic conditions, especially high unemployment rates in most of the Arab countries and political uncertainty in the region are some of the push factors operating on the young population. This is altogether a different scenario in the Arab region which most of the developed countries had never experienced. The interplay of emigration of young adult population with the ongoing fertility and mortality transition may accelerate demographic ageing.

During the process of age-structural transition, a transitory period of ‘demographic dividend’ or ‘window of economic opportunity’ as called by economic demographers, comes which may prove to be conducive for higher economic growth if grabbed properly. Below we elaborate the condition under which the period of demographic dividend is realized which temporarily opens the ‘window of economic opportunity’ for the country:

What is Demographic Dividend?

At an early stage of demographic transition, fertility rates fall, leading to fewer children to feed. Concurrently, the working age population provisionally grows more rapidly as compared to the dependent population on it. This situation may allow governments to invest a larger share of available resources on economic development and other developmental programmes. During this period, per capita income may grow more rapidly. This is what is called the *first demographic dividend* (Lee and Mason, 2006). This period may last for five decades or even more. Its duration, however, depends mainly upon the pace of fertility decline in future. A rapid fall in fertility would reduce the growth of working age population, resulting in slow growth of per capita income and shortening of the period of economic opportunity. On the other hand, continuing improvement in old-age mortality accelerate the growth of elderly population. This is the stage when the first demographic dividend turns negative. Thus, the first demographic dividend gives transitory bonus.

Fortunately, there is possibility of having a *second demographic dividend*. Due to increased longevity, a large old population may continue working in the extended period of retirement, with little or no family liability. This provides very favorable conditions to accumulate assets. If these additional assets are properly invested, national income would rise. This is the period of *second demographic dividend*.

The period of first dividend is short lived and yields transitory bonus, whereas the second that continues indefinitely, transforms that bonus into greater assets and sustainable development. These outcomes are, however, not automatic but depend on the implementation of effective policies (Lee and Mason, 2006).

2. The Objectives

The present study is aimed at examining the prospects of ageing and age-structural transition in 22 members of the league of Arab states. On the basis of indices of ageing, the countries of the region are grouped in three categories of ageing, namely, 'fast ageing', and 'medium ageing' and 'slow ageing' countries. Age-structural transition has been studied and the period of demographic dividend/economic opportunity has been estimated separately for countries falling in the above three categories of ageing. For 'slow ageing' countries, however, only the year of onset of the period of demographic dividend has been obtained since for almost all of the countries belonging to this category of ageing, period of first demographic dividend may not be over by 2050. Finally, the Arab states, which may get the second demographic dividend before 2050, have been identified.

3. Data and Methods

To accomplish the above objectives, necessary data have been taken from the United Nations publications (U.N. 2007 and U.N. 2008). For the purpose of analysis, medium variant population projections have been used. In the present paper, we first briefly give past and future course of demographic (fertility and mortality) transition.

To ascertain future prospects of population ageing in 22 Arab countries, three indices, namely (i) Old-age dependency [# of persons 65 years and over per 100 persons of age 15 to 64 years], (ii) Oldest-old dependency [# of persons 80 years and over per 100 persons of age 15 to 64], and (iii) ageing index [# of persons 65 years old and above per 100 persons under 15 years] have been computed from the data given in the U.N. 2007. Based on these three measures of ageing, the relative position of 22 Arab countries as 'fast', 'medium' and 'slow' ageing countries have been ascertained and discussed.

To study age-structural transition, we consider the changes in five age groups, namely, 0-4, 5-14, 15-24, 25-64, and 65+. These age segments are compatible with different vital stages of life cycle. For example, the first two age groups give the changes in child population whereas age group 0-4 necessarily indicates the recent fertility change, if any. The age segment 15-24 represents the youth population in which some part of the population may be in labour force and rest may still be pursuing their studies. The age group 25-64 is the prime working age group in which people are engaged in economic activity and the ages 65+

constitute the old age group in which the bulk of the population is dependent upon the working population in 15-64 age segments. The age structure (i.e., the share of population in different age groups) has phenomenal effect on per capita GDP growth rate and thus on the economy of the country (Lindh and Malmberg, 1999); Anderson, 2001; Navaneetham, 2004; Mason and Lee, 2006).

To study the burden of old-age persons placed on the working population, Potential Support Ratio (PSR) has been computed for all the Arab countries for all the years starting from 1980 to 2050. The PSR is defined as the number of people aged 15-64 per one older person aged 65 or older. However, for the present study, the potential support ratio has been taken as the number of people aged 20-64 per one elderly person aged 65 years or more. This is because, the majority of the population in the 15-19 age segments would be going to schools/colleges for education and therefore they have not been included in computing the ratio. To study the trend, PSRs for all the years from 1980 to 2050 have been plotted on the graph for selected Arab countries. Large variations have been observed in the time-trend of potential support ratio. The points of time are noted from which the ratio shows a monotonic increase, reaches maximum (i.e., before recording a downward trend).

Estimation of the Period of Demographic Dividends and Economic Opportunity

It has been shown mathematically that output per capita would grow if the growth rate of working population exceeds the growth rate of total population even if the output per worker does not change (Bloom and Williamson 1997). This is the time of the beginning of the period of economic opportunity for a country. To know the timing of the opening of the 'window of opportunity', the growth rates of the population in working (effective) age groups (20-64) and of the total population have been computed for all the 22 Arab countries at five year intervals from 1980 to 2050. The period of economic opportunity starts where the difference in the growth rates of working population and of total population becomes positive. Later, when it becomes negative, it shows the end of the period of *first demographic dividend* for that country. The first and the last cut-off points of the two trajectories mark the beginning and end of the period of first economic opportunity, respectively. The second cut-off point may also mark the beginning of the second demographic transition provided the elderly population could take advantage of the favourable conditions of the first demographic transition and accumulate assets. The years of the two cut-off points are marked when the sign of the difference in the growth rates of the population aged (20- 64) and of total population changes from negative to positive and later it again becomes negative. From these two cut-off points the period of economic opportunity is computed.

3. Demographic Trends

3.1. Population Scenario:

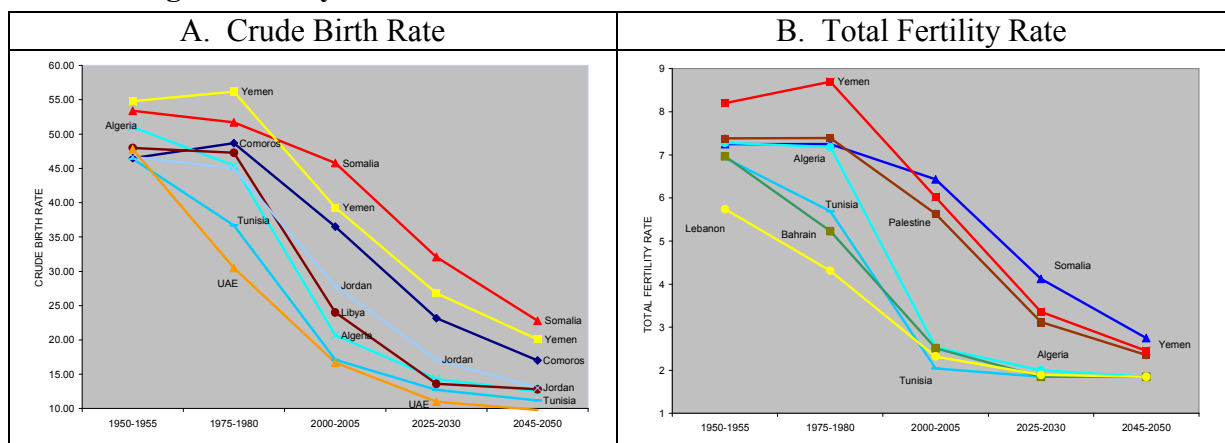
According to the revised population estimates of the United Nations (2007), the population of the 22 Arab countries rose from 76.6 million in 1950 to 286.6 million in 2000. The population grew at an average growth rate (Exponential) of 2.6 percent per annum during the post half of the last century. As per the medium variant population projections, the population of the Arab countries is expected to touch 451.9 million and 586.3 million in 2025 and 2050, respectively. The rate of growth of the population during first twenty-five years of the new Millennium is likely to be 1.8 percent per annum; whereas it would further decline to 1.0 percent during 2025-2050. The Arab states differ largely in population size and growth rates. In population size, Egypt would take the lead followed by Sudan, Iraq, and Yemen. These states are likely to gain in their populations relatively at faster pace. Bahrain is likely to have the lowest population in the region in 2050. For details see Saxena (2008). As regards fertility and mortality transition, all the countries showed decline in their fertility and mortality with varying pace. However, the region has recorded a phenomenal decline in mortality during post half of the last century.

3.2 Fertility Transition

The growth rates of populations of some Arab countries are expected to experience sharp decline during 2000-2050 and are likely to range between 0.7 percent and 3.4 percent per annum. The reason for decline in rates of population growth is due to lowering of Crude Birth Rate (CBR). Although, both fertility and mortality would record a decline during the next 50 years, the decline in fertility in absolute term is expected to be greater than mortality decline. The CBR for all Arab countries combined recorded a fall by about 18 points from 1950-55 to 2000-2005. It is expected to come down to 16.2 per 1000 population in 2045-2050. The Total Fertility Rate (TFR) is likely to drop from 4.2 in 2000-2005 to near replacement level (2.2) in 2050. Figure 1A gives trends in CBR of selected Arab countries from 1950-1955 to 2045-2050. Only those countries have been chosen to depict the trend which had either extreme values of CBR in 1950-55 or which had or likely to have atypical trend of CBR during 2000-2005 and 2045-2050. The trends in CBR of rest of the countries are likely to be contained within the trends of the extremes. Although, the Arab countries have witnessed some decline in their fertility during the period 1950-1955 and 2000-2005 with differential pace, the majority of them are expected to record steep fall in their fertility during next 50 years. In terms of CBR the countries can be divided into three broad categories in 2000-2005. First, those countries in which CBR was higher than 40; the list of countries in this category, include, Somalia, Yemen and Mauritania. The second group of countries which had CBR between 30 and 40 (medium fertility) were Palestinian, Djibouti, Comoros, Oman, Iraq, Saudi Arabia, Sudan, and Jordan. The third group of countries (relatively low fertility) consists of those in which the CBR ranged between 15 (for Bahrain and United Arab Emirates) and 29.9 for Syria. All the 22 countries are expected to follow a monotonically declining trend during 2000-2005 and 2045-2050.

The Total Fertility Rate (TFR), defined as the average number of children a woman would have at the end of her reproductive life, declined monotonically for the Arab region from nearly 7 to 4.2 during the post half of the last century and is expected to reach near replacement level in next 50 years. The individual countries, however, showed a decline in TFR at varying pace. After 1975, all the 22 Arab States had recorded a monotonic decline in TFR. Leaving Yemen and Somalia; all other countries are expected to attain replacement level of fertility (TFR = 2.2) by 2050. However, fertility of Lebanon and Tunisia is likely to decline below replacement level in next 50 years. Figure 1B gives trends of TFR of seven selected Arab countries during 1950-2050. These countries are expected to attain extreme values of TFR in 2045-2050. Trends of TFR of rest of the Arab countries are likely to lie between the extremes.

Fig.1: Fertility Transition in Selected Arab Countries 1950-2050

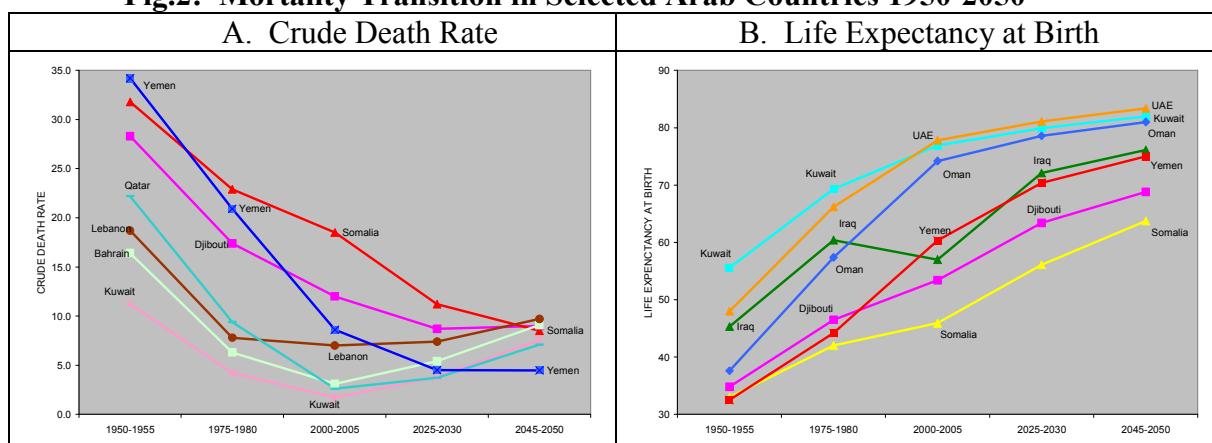


Source: Appendix Table 1

3.3 Mortality Transition

Mortality in the Arab region has recorded a phenomenal decline during post half of the last century. The Crude Death Rate (CDR) of 24.3 per 1000 population observed in 1950-1955 dropped to 7.1 by the close of the last century and is expected to maintain about the same level in next 50 years. The expectation of life at birth (e_0^0) rose from 42.7 years in 1945-50 to 66.5 years in 2000-2005. It is likely to reach nearly 77 years by 2045-2050.

Fig.2: Mortality Transition in Selected Arab Countries 1950-2050



Source: Appendix Table 1.

Like fertility, there has been a wide variation in the pattern of mortality decline in 22 Arab States. The decline of CDR in some countries was dramatic during 1950-2000. However, a few countries are expected to see reversal of trend in their CDR during next 50 years (Fig. 2A). A phenomenal increase in CDR is expected in four Arab States, namely, Lebanon, Bahrain, and Kuwait during the period 2000-2005 and 2045-2050. Curiously enough, the death rate in these countries is likely to rise up by 2050 to about three fold of their respective levels in the beginning of the new Millennium. It may, however, be noted that the populations of these countries are relatively small as compared to other countries of the region. Also, the rise in the crude death rates in 2050 as compared to their respective values in 11 countries in 2000 does not necessarily mean increase in the level of mortality. In fact, it would be due to ageing of the population of these countries resulting from fall in the levels of fertility and mortality.

In terms of life expectancy at birth (e_0^0), except Djibouti and Somalia, rest of the Arab States have shown monotonic decline in the level of mortality with varying pace during 1950 and 2000. At the beginning of this century, UAE and Somalia had lowest and highest levels of mortality, respectively. Again, UAE is likely to have the lowest mortality ($e_0^0 = 81.1$) in 2050. Kuwait and Oman may attain the expectation of life at birth around 80 years. Somalia is expected to record the lowest expectation of life at birth around 63 years, in the region. Life expectancy at birth of rest of the countries is likely to range between 72.1 for Mauritania and 79.4 for Saudi Arabia (Fig. 2B).

4. Population Ageing: Future Prospects

To ascertain future prospects of population aging in 22 Arab countries, three indices, namely, (i) Old-age dependency; (ii) Oldest-old dependency; and (iii) Ageing Index have been computed from the data given in the U.N. 2008. These indices are given in Table 1. Based on the above three measures of aging, the relative position of 22 Arab countries have been presented and discussed in the sections to follow.

Table 1. Measures of Aging: Arab Countries, 2000 and 2050

Countries	2000			2050		
	Dependency			Dependency		
	Old Age (65+)	Oldest Old Age (80+)	Aging Index	Old Age (65+)	Oldest Old Age (80+)	Ageing Index
Algeria	6.8	0.9	12.3	27.5	5.3	97.1
Bahrain	4.2	0.7	10.4	28.6	7.5	114.1
Comoros	4.5	0.3	5.6	12.6	1.7	33.9
Djibouti	4.6	0.2	6.3	12.4	1.6	36.1
Egypt	7.5	0.8	12.5	20.7	3.9	66.5
Iraq	5.2	0.6	6.6	12.7	1.9	35.2
Jordan	4.9	0.6	7.0	20.7	4.1	71.6
Kuwait	1.5	0.3	2.8	30.7	12.6	68.7
Lebanon	10.8	1.4	22.2	27.4	6.2	99.2
Libya	5.2	0.6	10.3	28.0	5.5	93.7
Mauritania	6.5	1.0	8.5	14.1	2.4	39.3
Morocco	7.6	0.9	13.9	25.5	5.1	88.9
Palestine	7.0	1.1	7.4	11.1	2.1	27.6
Oman	3.5	0.5	5.8	15.2	2.0	50.2
Qatar	2.0	0.2	5.7	24.8	4.8	108.7
Saudi Arabia	4.6	0.5	7.1	19.2	3.9	67.1
Somalia	4.9	0.5	5.9	8.4	1.1	18.1
Sudan	6.1	0.7	7.9	12.7	1.9	35.1
Syria	5.4	0.6	7.4	21.1	3.8	72.2
Tunisia	9.2	1.2	19.3	33.1	7.4	124.8
U.A.E	1.4	0.2	4.5	27.2	4.3	128.2
Yemen	4.8	0.6	4.9	9.0	1.1	21.0

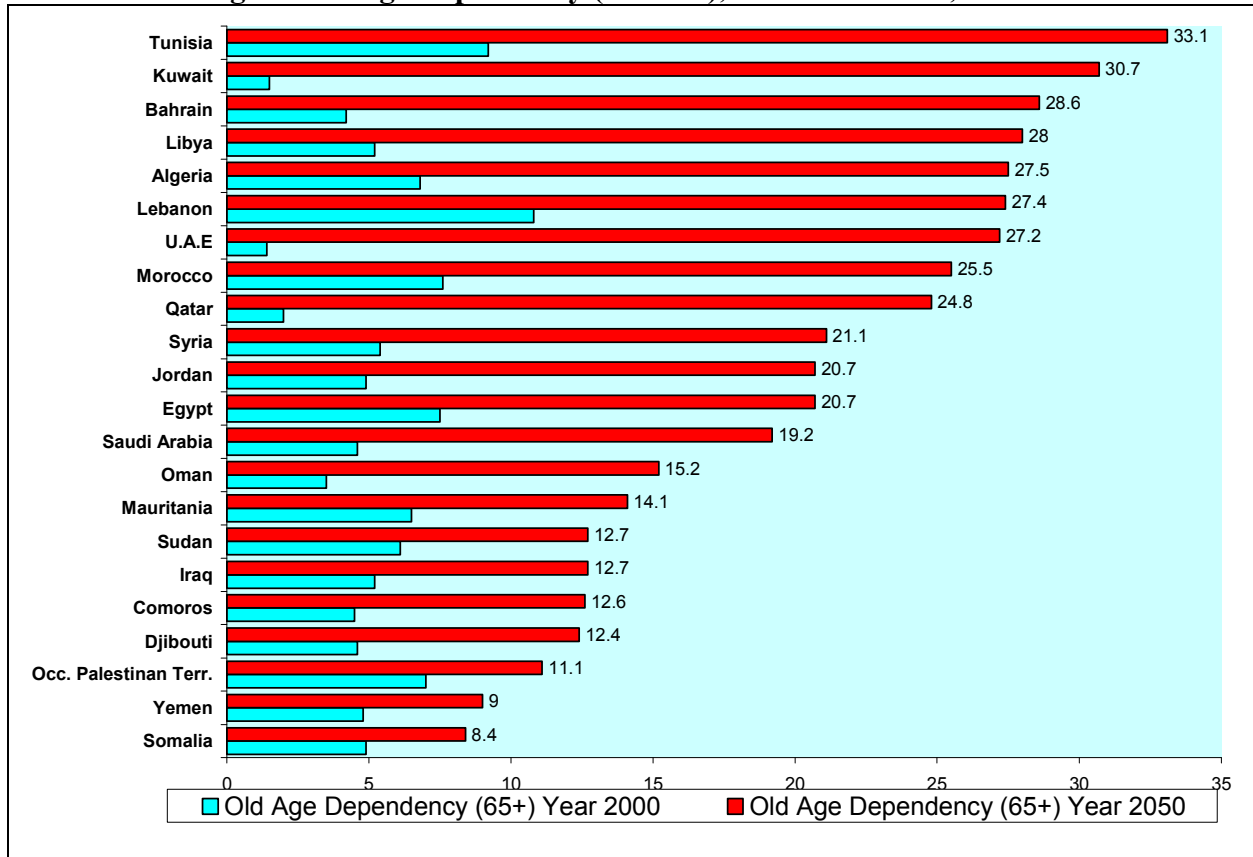
Source: Computed from United Nations (2007)

4.1 Dependency Burden

A. Old age dependency

The old-age dependency ratio is the number of persons 65 years and over per 100 persons of age 15 to 64 years. In economics term it gives the dependency burden the economically active population has to bear for the old population. As can be seen from Figure 3, except for Tunisia, Lebanon, Morocco and Egypt, there was not much variation in the old age dependency ratio between rests of the Arab States in 2000 (see Table 1). However, the problem due to ageing is expected to assume an alarming proportion in some Arab countries in 2050. A wide difference is expected to emerge in the old age dependency ratio among the countries. The ratio is expected to vary between a minimum of 8.4 for Somalia and a maximum of 33.1 for Tunisia. The list of countries which may have 65+ dependency burden more than 25 on 100 persons in the ages 15-64 include, in order of magnitude, Tunisia (33.1), Kuwait (33.0), Bahrain (28.6), Libya (28.0), Algeria (27.5), Lebanon (27.4), UAE (27.2), and Morocco (25.5).

Fig.3 : Old Age Dependency (Percent), Arab Countries, 2000 & 2050

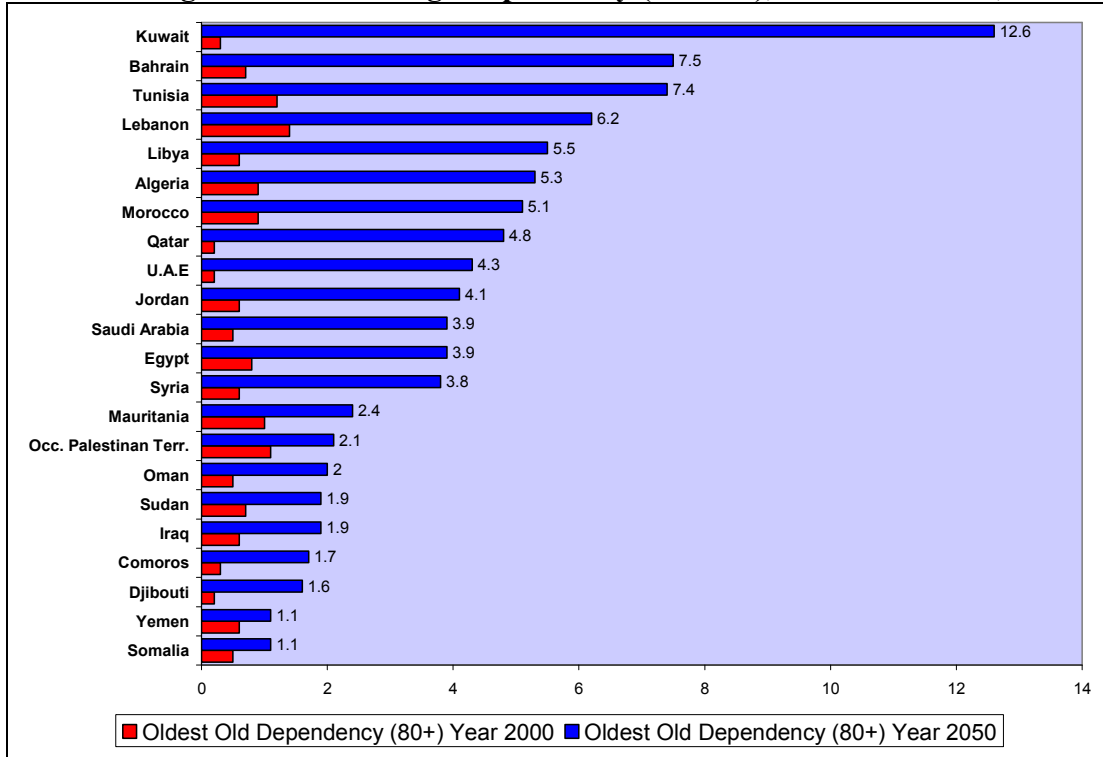


Source: Table 1.

B. Oldest old dependency

The oldest old dependency is defined as the percentage of 80+ people to the population in the economic active age group 15-64. Like the old age (65+) dependency ratio, the oldest old (80+) dependency didn't show variation of higher magnitude among Arab countries in 2000 (see Figure 4). However, the States are expected to differ much in oldest old dependency by the middle of the present century. Kuwait is expected to have the largest 80+ dependency burden (12.6%) followed by Bahrain (7.5%). Among other countries, which may have oldest old age dependency burden, more than 5.0 percent are Tunisia (7.4%), Lebanon (6.2%), Libya (5.5%), Algeria (5.3%) and Morocco (5.1%). The rest of the Arab States may not attain an alarming magnitude of the oldest old dependency ratio in 2050 (Table 1).

Fig. 4: Oldest Old Age Dependency (Percent), Arab Countries, 2000 & 2050

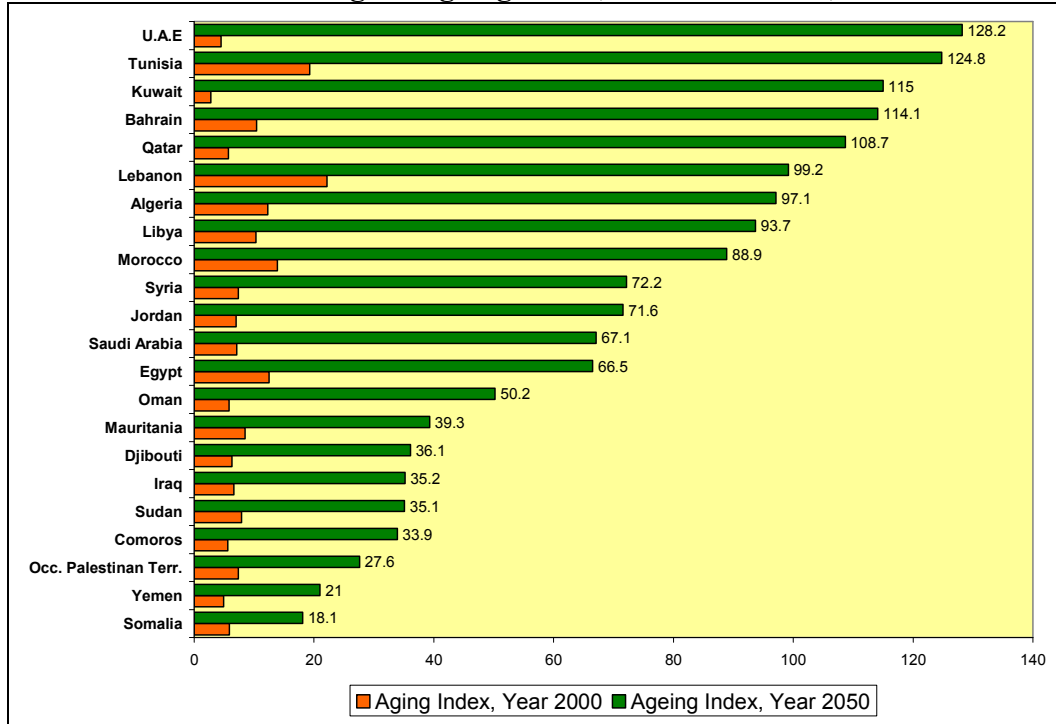


Source: Table 1

4.2 Ageing Index

The ageing index is defined as the number of persons 65 years old and above per 100 persons under 15 years. As per the index, the ageing process was much slower in the Arab countries till 2000 (Figure 5). It can be seen from the figure that leaving Lebanon, Tunisia and Morocco not much variations has been observed in the index of ageing in rest of the Arab countries in 2000. The index is expected to increase phenomenally in some countries by the middle of the present century. Some of the Arab States such as United Arab Emirates, Tunisia, Kuwait, Bahrain, Qatar and Lebanon which were ahead in demographic transition are expected to show faster ageing by 2050 with the index value being 128.2%, 124.8%, 115%, 114.1%, 108.7% and 99.2%, respectively (Table1). Ageing process is expected to accelerate due to higher survival of elderly persons beyond age 80 and steep decline in fertility in these countries.

Fig. 5: Ageing Index, Arab Countries, 2000 & 2050



Source: Table 1

4.3 Absolute Populations Aged 65+ and 80+ and their Average Growth Rates, 2000-2050:

With the expected increase in the expectation of life at birth and decline in fertility over the next 50 years, both the absolute size of the old (65+) and oldest old (80+) populations are likely to swell in all the Arab States by 2050. Egypt had the largest populations aged 65+ (about 3 million) and 80+ (16.5 million) in 2000. The country is expected to maintain the highest rank in absolute numbers in both old and oldest populations in the region, in 2050. It may have the largest (3.1 million) oldest old (80+) population in 2050 followed by Algeria (1.7 million), Morocco (1.4 million) and Saudi Arabia (1.2 million). The absolute population of the oldest old may pose challenging problems to the governments of these countries to provide social security and health facilities. Most of the remaining countries of the region would have their 80+ populations much below one million (Table 2).

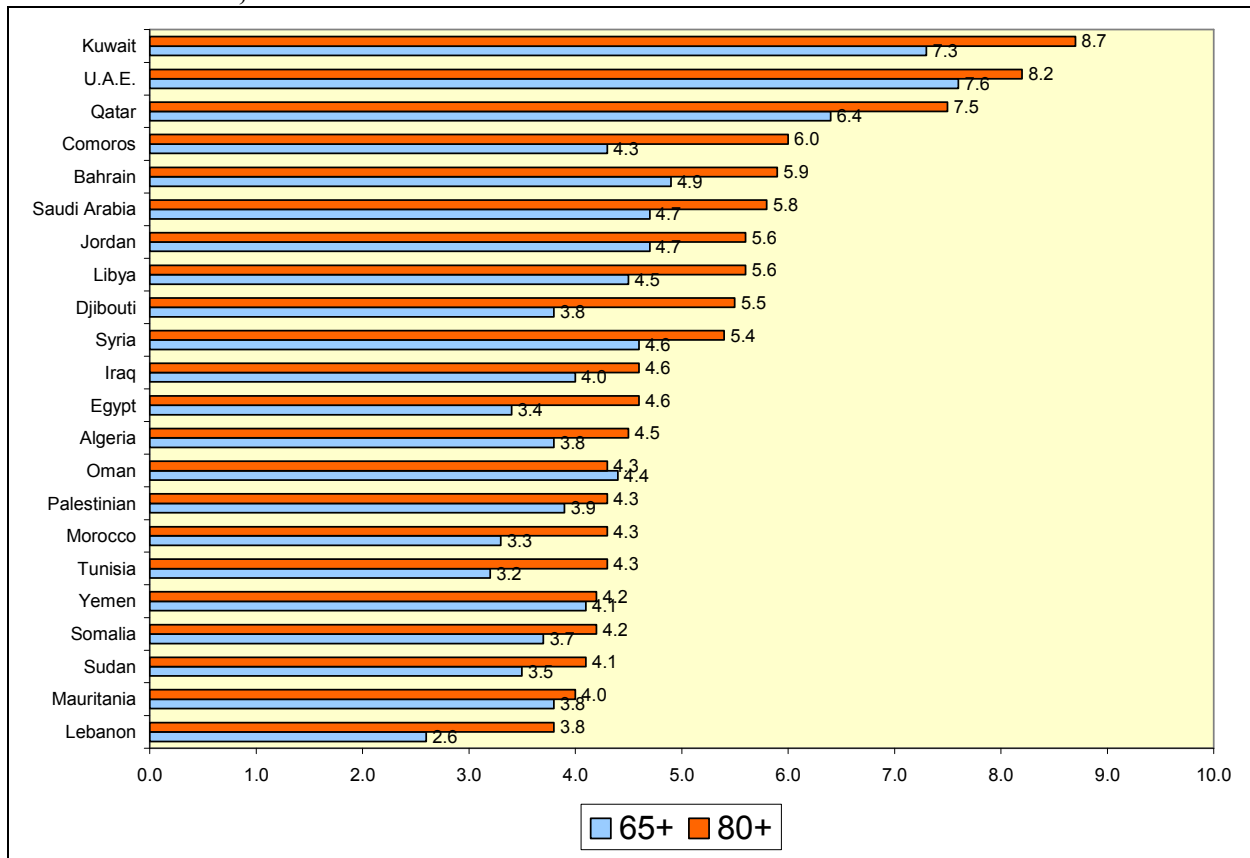
To study with what pace the old and oldest old populations are likely to grow in the Arab countries during 2000-2050, the average growth rates of old and oldest old populations have been computed and are shown in Fig.6. As is evident from the figure, 80+ populations of Kuwait, U.A.E., and Qatar are expected to grow at much faster rates ranging between 7.5 % and 8.7 % per annum as compared to other Arab states. These three countries may also experience the fastest growth rates of their 65+ populations in the region. The growth rates of 80+ populations in next seven Arab countries (from Comoros to Syria shown in Fig. 9) are likely to vary between a narrow range of 0.6%. Again, the growth rates of populations aged 80+ of the rest of the 12 Arab countries may vary within a thin range of 0.8% -- maximum growth rate being 4.6% for Iraq and minimum 3.8% for Lebanon (see Fig. 9).

Table 2: Absolute Populations 65+ & 80+ and their Growth Rates During 2000-2050 in Arab Countries 2000 and 2050

Country	2000		2050		Average Growth Rate, 2000-2050 (Percent per Annum)	
	Absolute Population	Absolute Population	Absolute Population	Absolute Population	65+	80+
	65+ (‘000)	80+ (‘000)	65+ (‘000)	80+ (‘000)		
Algeria	1277	175	8749	1673	3.8	4.5
Bahrain	19	3	218	57	4.9	5.9
Comoros	17	1	144	20	4.3	6.0
Djibouti	19	1	125	16	3.8	5.5
Egypt	2991	313	16524	3081	3.4	4.6
Iraq	709	82	5292	805	4.0	4.6
Jordan	135	17	1401	279	4.7	5.6
Kuwait	16	3	611	233	7.3	8.7
Lebanon	256	32	922	209	2.6	3.8
Libya	178	21	1717	338	4.5	5.6
Mauritania	91	14	598	102	3.8	4.0
Morocco	1351	165	7052	1413	3.3	4.3
Palestinian	109	17	752	143	3.9	4.3
Oman	51	7	453	60	4.4	4.3
Qatar	9	1	224	43	6.4	7.5
Saudi Arabia	565	64	5857	1180	4.7	5.8
Somalia	183	18	1146	145	3.7	4.2
Sudan	1106	121	6242	955	3.5	4.1
Syria	499	59	4903	870	4.6	5.4
Tunisia	559	71	2735	610	3.2	4.3
U.A.E.	35	4	1560	246	7.6	8.2
Yemen	432	53	3427	433	4.1	4.2

Source: Computed from United Nations (2007)

Fig. 6: Average Growth Rates of Old (65+) and Oldest Old (80+) Populations of Arab Countries, 2000-2050



Source Table 2

5. Classification of Arab Countries Based on Population Ageing in 2050

As mentioned earlier, the process of population ageing had been slower in Arab countries till 2000. However, ageing of population of some states is likely to accelerate at a faster rate during next 50 years of the present century. In fact, the process of ageing has begun in the region and may take alarming proportion in a few states in the years to come. For that reason it would be desirable to categorize countries of the region according to the relative pace of population ageing so that policy measures could be geared up to cope up the challenges ahead for some of the Arab countries. Three indices of ageing, namely, old-age dependency; oldest-old age dependency; and index of ageing have been used to assess the population ageing. All the 22 Arab states were arranged in descending order of magnitude of their index values in 2050 for each of the three indices employed (see Figs. 4, 5 & 6). Interestingly, nine states, namely, U.A.E., Tunisia, Kuwait, Bahrain, Qatar, Lebanon, Algeria, Libya and Morocco fell consistently within first nine according to the magnitude of all the three indices of ageing. The last eight states, namely, Mauritania, Djibouti, Iraq, Sudan, Comoros, Palestine, Yemen and Somalia are expected to rank lowest in almost all the groupings based on the values of ageing indices in 2050. The first nine and the last eight states have been characterized as “Fast” and “Slow” ageing countries, respectively; while the middle five states are termed as “Medium” ageing countries. The list of medium ageing countries includes Syria, Jordan, Saudi Arabia, Egypt, and Oman. The Governments of the ‘Fast’ ageing states need to devise strategies and plans on priority basis to meet the needs of their elderly populations. The rest of the Arab states

particularly the eight 'Slow' ageing countries, are not likely to have problems of ageing of their populations in next 50 years.

The age pyramids of the selected Arab states of the 'Fast', 'Medium' and 'Slow' ageing countries in 2000 and their likely age-sex structures in 2025, and 2050 are given in Figures 7 (a), 7 (b), and 7 (c), respectively. Differentials in Ageing in Arab Countries for 2000 and 2050 have also been shown in Fig. 9.

The population pyramids of 'Fast' ageing countries show phenomenal changes in their age-sex structures from 2000 to 2050. The percentage of people aged 0-14 is expected to decrease sharply in 2005 due to fall in the levels of fertility. Interestingly, in this group of countries, two common features are likely to be witnessed: First, a high percentages of old (65+) and oldest old (80+) populations and second, a cylindrical age-sex structure of populations unlike the 'Inverted Pyramid' observed in some European countries' populations due to steep fall in fertility during late 80's.

The 'Medium' ageing countries differ from the fast ageing countries mainly with respect to their base and old age populations. Though the fertility showed some decline but continues to be high. The age-sex pyramids show bulge in the middle age groups.

The eight Arab states, classified as 'Slow' ageing countries, are expected to have a broad-based age pyramids with their populations tapering off gradually with the increase in age. However, bulging of the pyramids in the young and middle age groups is likely to take place in this set of countries in 2050.

Fig. 7 (a): Age Pyramids of Selected Arab Countries – Fast Ageing

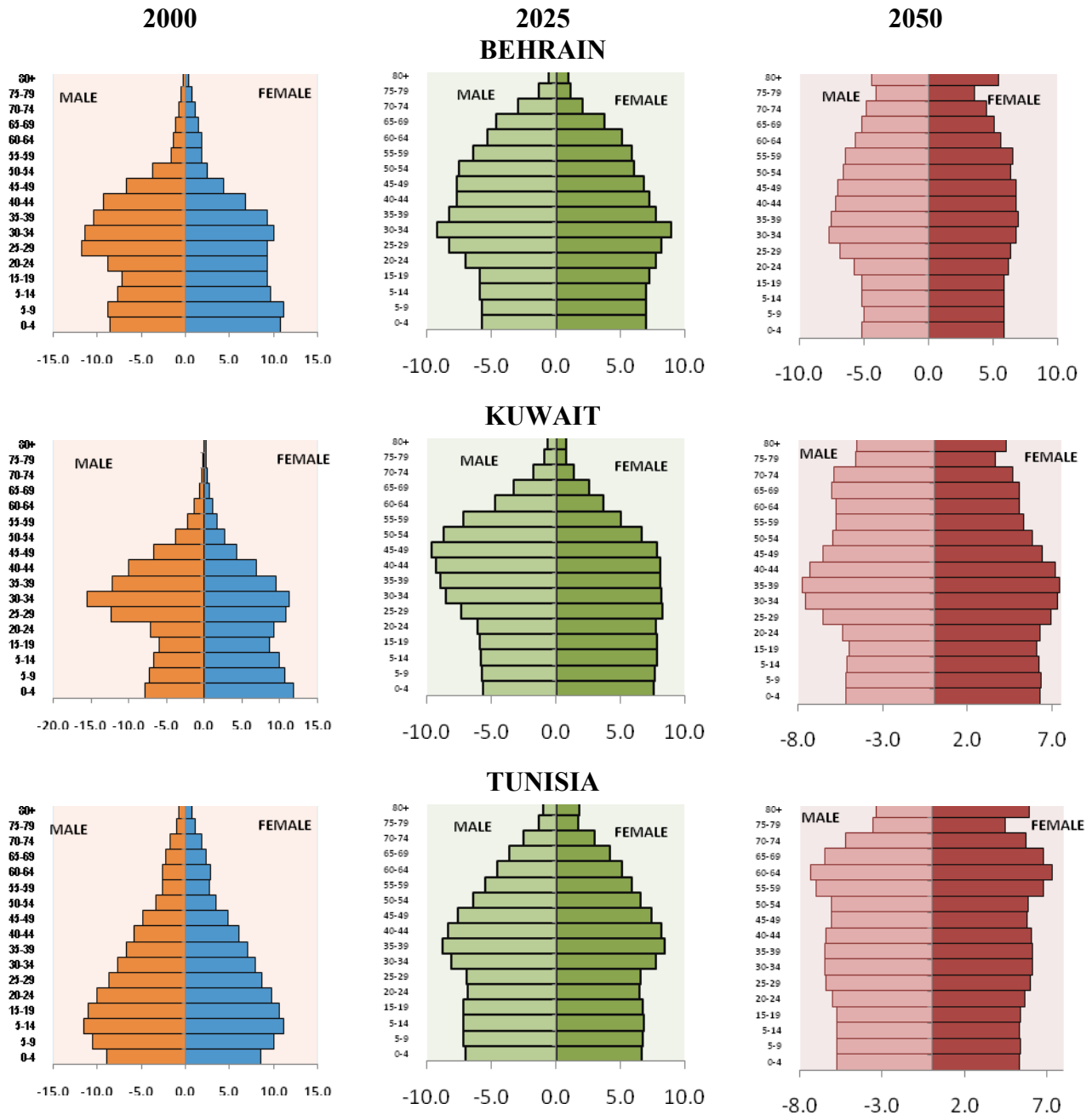


Fig. 7 (b): Age Pyramids of Selected Arab Countries – Medium Ageing

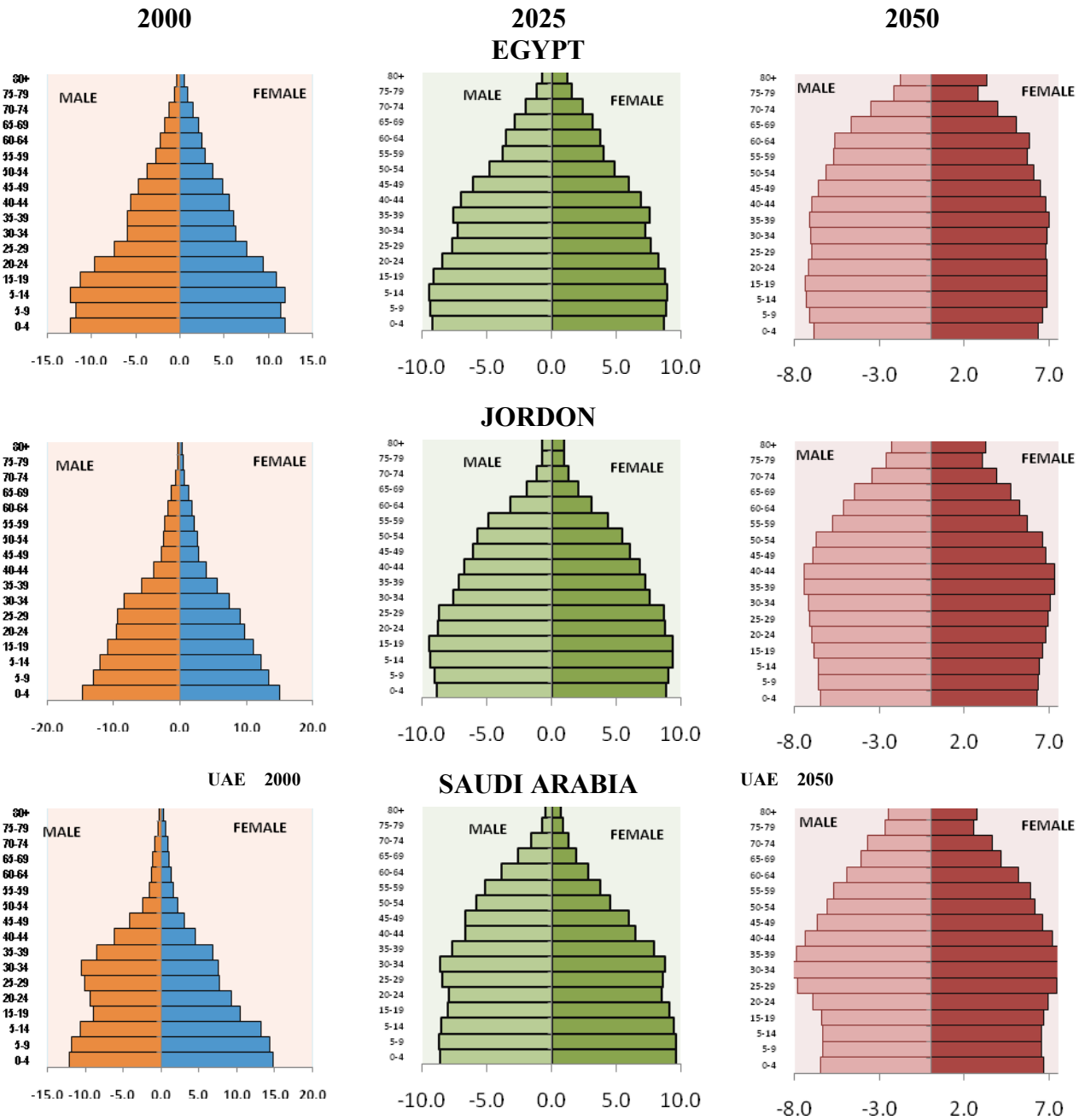
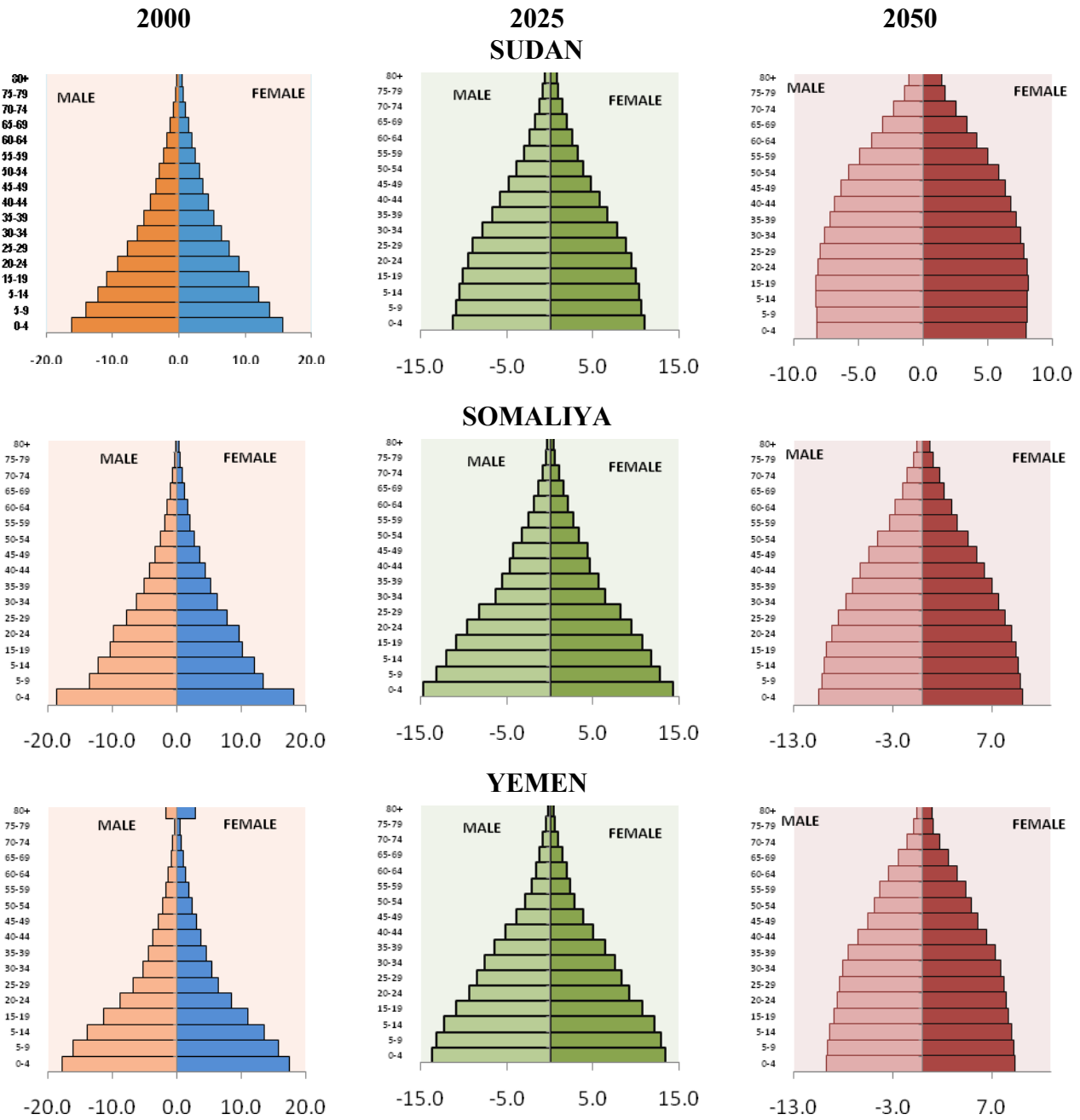


Fig. 7 (c): Age Pyramids of Selected Arab Countries – Slow Ageing



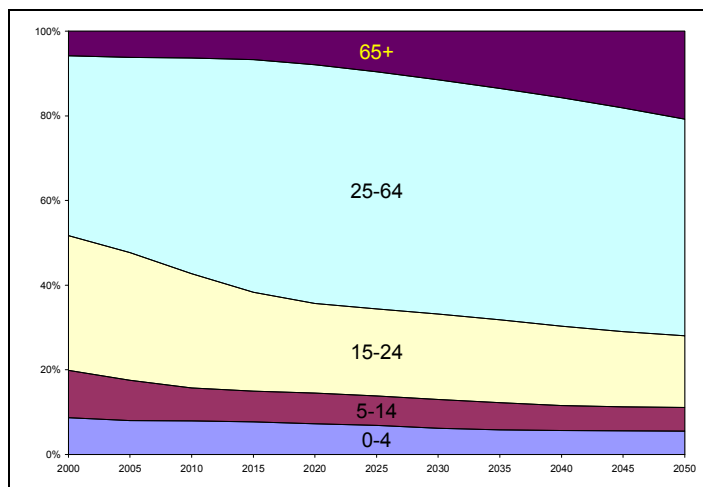
6. Age-Structural Transition in Arab Countries

As observed in previous sections, demographic transition is taking place in all the 22 Arab states with varying speeds. The transition in both fertility and mortality is causing changes in the age-structure of these populations (Tabbarah, 2002). We consider the changes in the age-structure of the population in five age groups, namely, 0-4, 5-14, 15-24, 25-64, and 65+. These age segments are compatible with different vital stages of life cycle. For example, the first two age groups give the changes in child population whereas 0-4 age group necessarily indicates the recent fertility change, if any. The age segment (15-24) represents the youth population in which some part of the population may be in labour force and rest may still be pursuing their studies. The age group 25-64 is the prime working age group in which people are engaged in economic activity and the ages 65+ constitute the old age group in which the bulk of the population is dependent upon the working population in 15-64 age segments, to meet their consumption and health needs. Recent studies have shown that the age-structure (in other terms the share of population in different age groups) has phenomenal effect on per capita GDP growth rate and thus on the economy of the country (Lindh and Malmberg, 1999; Andersson, 2001; Navaneetham, 2004a, Mason and Lee, 2006).

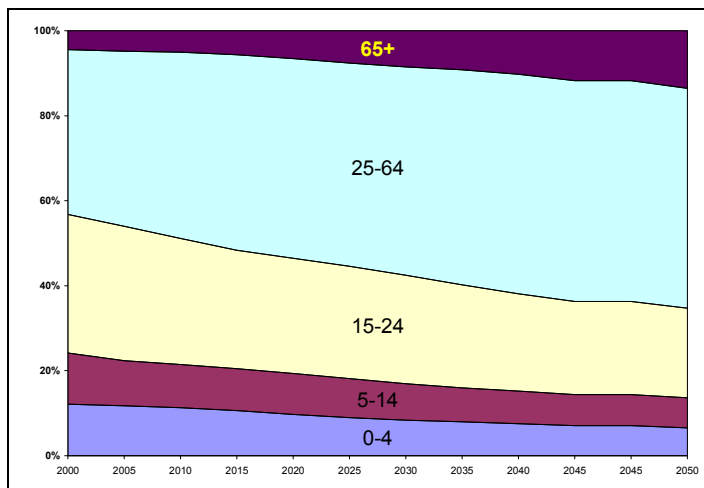
Figure (8) shows age-structural transition in the total populations during 2000 - 2050 of three Arab countries, namely, Tunisia, Egypt and Yemen taken as a representative of the 'fast', 'medium' and 'slow' ageing countries, respectively. It is evident that all the fast, medium and slow ageing countries (as revealed by their representative countries) are expected to record significant changes in the age-structure of their populations between 2000 and 2050. However as expected, the pace of change in the three types of countries is different. The most striking feature in selected fast ageing countries is the phenomenal growth of population in the working age group 15-64, particularly, in the prime economically active age segments 25-64. For example, in Tunisia, the percentage share of population in the working age group 15-64 is expected to increase from 74.4% in 2000 to 76.6% in 2025 and is likely to decline to 68.2% in 2050. The population in the prime economically active age group, namely, 25-64, grew from 34.5% in 1980 to 48.1% in 2005 and is likely to reach 57.8 percentage points in 2015. Among other countries which may have high concentration of urban population in working age groups in 2015 are Tunisia, Morocco, Jordan, and Yemen. The share of youth (in 15-24 age group) population is likely to decrease in Tunisia (and so may be the case of some other fast ageing Arab countries, Morocco, and Yemen from 1980 to 2015. Interestingly, there does not seem much concentration of urban population in old age segments (65+) in the Arab countries. The urban population in the age group 65+ in case of Egypt – having the largest population among all the Arab states, is likely to increase from 4.6% in 1980 to 8.4% in 2015. Morocco and Tunisia are likely to have old age urban populations between 6% and 7% in 2015. In rest of the Arab states this percentage may vary between 3% and 4% at the end of the observational period. The percentage figures given above should be taken with a caution with little value attached to their numerical values since they are based on the strong assumption of the stationary age structure of the rural population. Nevertheless, they do suggest the phenomenal growth of urban population in the working age segments and also the relative position of the selected countries in this respect.

Fig 8: Age Structural Transition of the Populations of Selected Fast, Medium and Slow Ageing Arab Countries, 2000-2050

Fast Ageing: TUNISIA



Medium Ageing : EGYPT



Slow Ageing : YEMEN

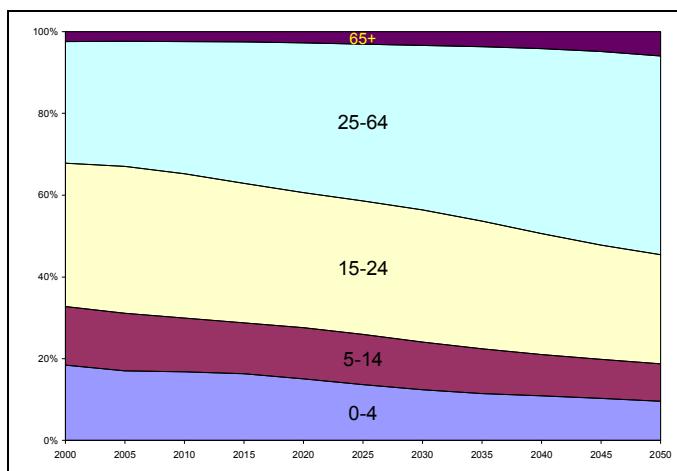
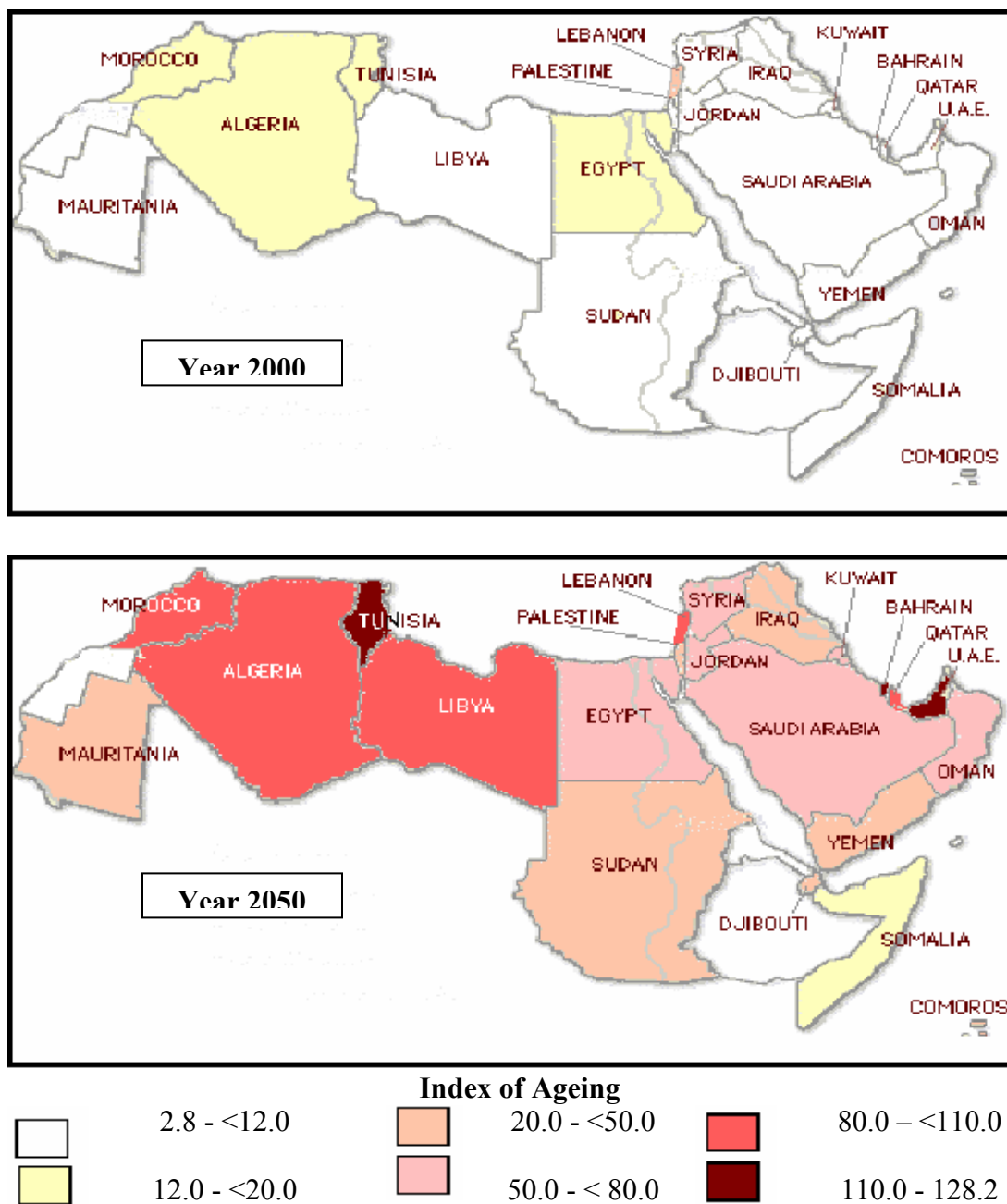


Fig. 9: Maps showing differentials in ageing in Arab Countries, 2000 and 2050.



6.1 Potential Support Ratio (PSR)

The potential support ratio (PSR) is defined as the number of people of ages 15-64 per one old person aged 65 years or older. Figures 10A, 10B & 10C show the trajectories of potential support ratio of selected Arab countries from 1950 to 2050 for fast, medium and slow ageing countries. The pattern of trajectories of the potential support ratio varies across the Arab countries. However, the common feature among all the trajectories is that they rise initially, reach to a maximum value and then start decreasing. The increase in the ratio was rapid during the period 1975-2020 in the countries of Kuwait, Algeria, Bahrain, Qatar, U.A.E and Tunisia and thereafter it recorded a decreasing trend. All the countries irrespective of the speed of ageing showed very high support ratio till 2005. Thereafter, the decline was steep in case of fast ageing countries

followed by countries with medium pace of ageing. In case of slow ageing countries, the decline in PSR is expected to be sluggish till mid of the present century. The ratio suggests that there will be 3-4 working age population to support a dependent in the nine fast ageing countries. In case of medium and slow ageing countries the potential support ratios are expected to reach 4-5 and 7-8 persons in the age-group 20-64 per old person aged 65 or above in 2050, respectively. The rapid increase in the support ratio during 1975-2020 was mostly due to decline in the child population. The plateau of the support ratio after 2020 is due to increase in the old age population. The changes in the support ratio would be gradual in the medium ageing countries and very slow in slow ageing countries, namely, Mauritania, Djibouti, Iraq, Sudan, Comoros, Occupied Palestine Territory, Yemen and Somalia. The period of demographic dividend is expected to continue over a longer period in these countries (see Figs. 10A, 10B & 10 C)

Fig.10 A: Potential Support Ratio for Selected Arab Countries (Fast Ageing)

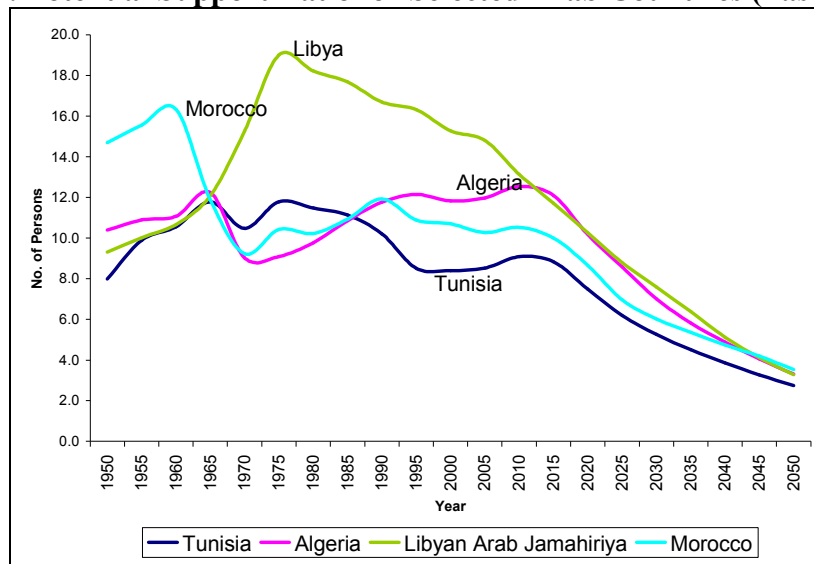


Fig.10 B: Potential Support Ratio for Selected Arab Countries (Medium Ageing)

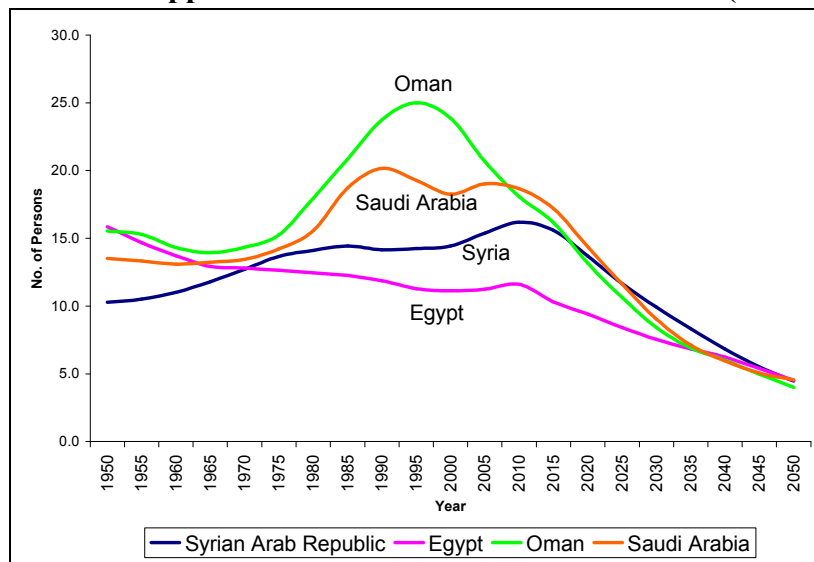
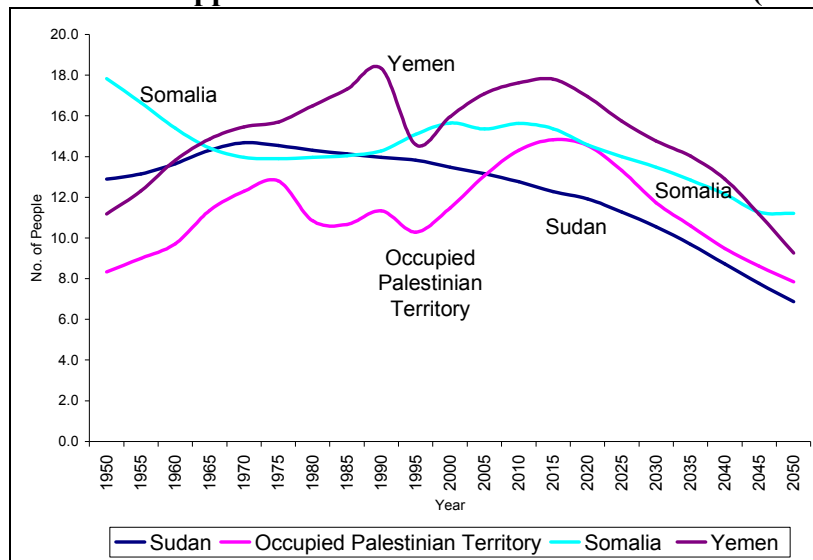


Fig.10 C: Potential Support Ratio for Selected Arab Countries (Slow Ageing)



7. Estimated Period of Demographic Dividend/Economic Opportunity

The timings of opening and closure of the window of economic opportunity and its transitory period for each of the Arab countries have been derived from the difference in the growth rates of working age population and the total population. The results are presented in Table 3. Interestingly enough, we found that in a few Arab countries the window of demographic dividend opened and closed twice during the age-structural transition unlike developed countries and as well as South-east countries where this was a one-time opportunity. In case of seven Arab countries - two each from fast and medium ageing countries and three from slow ageing countries, namely, Morocco, Qatar, Jordan, Saudi Arabia, Mauritania, Iraq, and Somalia, have witnessed two periods of economic opportunities – the first called the period of “first demographic dividend and the second is named as period of “additional demographic dividend” (note that we cannot call it as the period of “second demographic dividend” as it has a different meaning in demographic literature). In all the above seven countries it is observed that there is an interval between the periods of “first demographic dividend” and “additional demographic dividend” We call this interval as the duration of “Eclipse on the period of economic opportunity” which is defined as,

The duration of “**Eclipse on the period of economic opportunity**” is the interval between the timings of closing of the first demographic window and opening of the “**additional demographic window**”. During this interval, the difference in growth rates of working population and of total population remains either zero or negative.

Under what condition the period of “Additional Demographic Dividend (ADD)” is observed?

There is a possibility of achieving ADD in highly migrating populations. During the period of “first demographic dividend” the economy of the country may grow due to increase in GDP which in turn may increase better employment prospects for the nationals. In this period, there may be return migration of some of those who emigrated when they were young adults in search of overseas jobs, prior to the onset of the period of first demographic dividend. Such return migrants may join the labour force relatively at older ages. After sometime the cohort of these return migrants may leave the labour force on attaining 65 years of age. When they enter the old age segment, the growth rate of total population may exceed the growth rate of the working population. This situation may last till the growth rate of working population (born in high fertility regime) takes over the growth rate of total population. This period we termed as the eclipse on the period of economic opportunity. The duration of which may depend on the age and size of the return migrants.

As stated earlier, due to turbulent times in some of the Arab countries arising from civil war, conflicts, political unrest and unfavourable socioeconomic conditions, the pattern of age-structural transition in these countries has been somewhat different from that experienced in the Western countries. In fact, out migration of young adults has played a significant role in accelerating demographic ageing in some of the Arab countries. The phenomenon of observing an additional demographic dividend may be due to heavy return migration.

Table 3 gives the timings (years) of opening and closing of demographic window for the first time for each of the Arab country. The fifth column presents the duration of eclipse on the period of economic opportunity in case the country finds an additional demographic dividend. The sixth and seventh columns of the table give respectively the timings of opening and closing of the “additional demographic window”.

In the fast ageing countries, the window of opportunity opened as early as 1950 for Qatar followed by Bahrain in 1963. In case of rest of the countries of this category, the period of demographic dividend started circa 1973 with an exception of Libya where the window opened in 1985. The period of first demographic dividend ranged from a minimum of 40 years for Kuwait to a maximum of 62 years for Bahrain and Morocco. The total period of demographic dividend is the sum of the two periods of demographic dividend minus the duration of eclipse on the period of economic opportunity.

In case of medium ageing countries, the total period of demographic dividend ranged from a minimum of 52 years for Saudi Arabia to a maximum of 65 years for Jordan. The window of first demographic dividend for this category of ageing opened relatively in later years as compared to fast ageing countries.

Leaving Comoros, all other slow ageing countries had open window i.e., the window of opportunity remained open after 2050. The window of first demographic dividend opened at later years as compared to the fast and medium ageing countries.

The duration of eclipse on the period of economic opportunity ranged from a minimum of five years for Morocco, Saudi Arabia and Mauritania to a maximum of 15 years for Somalia followed by 10 years for Jordan and seven years for Iraq.

The in all the countries except Palestinian. These dividends would be available to most of the countries of the region till 2030 and thereafter the bonus would decline and turn negative eventually. The window of opportunity will be closed earlier – circa 215, for fast ageing countries, particularly Kuwait, Qatar, Tunisia and U.A.E. The contribution of demographic bonus during the decade 2005-2015 would vary between 0.124-1.025 percent GDP growth rate in the total per capita GDP growth rate. The demographic bonus would be negative in most of the countries after 2040. However, the slow ageing countries would be getting benefit from the age-structural transition after 2030.

Presently, the female labour force participation in economic activity is low in most of the Arab countries. The expected increase in the female labour force participation in Arab states in future would give more economic returns during the period of demographic dividend. Also, more economic gains may be realized during this period due to shortening of the duration of child bearing span on account of sharp decline in their fertility. Thus, if women are also absorbed in economic activity, the demographic dividend would yield increased GDP.

Table 3: Estimated Period of Economic Opportunity for Arab Countries 1950 - 2050

Arab Countries	Year of opening window 1st time	Year of closing window 1st time	Total Period of 1 st Demographic Dividend (Years)	Duration of Eclipse (Years)	Year of opening window 2 nd time	Year of closing window 2 nd time	Period of Additional Demographic Dividend (Years)	Total period of Demographic Dividend
Fast Ageing Countries								
Tunisia	1973	2018	45		-	-	-	45
Bahrain	1963	2025	62		-	-	-	62
Algeria	1970	2018	48		-	-	-	48
Libya	1985	2035	50		-	-	-	50
Lebanon	1970	2020	50		-	-	-	50
Morocco	1973	2035	62	5	2025	2035	10	67
Qatar	1950	1995	45	8	2003	2018	15	52
Kuwait	1975	2015	40					40
Medium Ageing Countries								
Syria	1985	2043	58					58
Jordon	1958	1973	15	10	1983	2043	60	65
Saudi Arabia	1978	1990	12	5	1995	2040	45	52
Egypt	1968	2040	72					
Oman	1973	2043	70					
Slow Ageing Countries								
Mauritania	1980	1985	5	5	1990	2050+	60+	55+
Djibouti	1973	2050+	77+					77+
Iraq	1973	1978	5	7	1985	2050+	65+	58+
Sudan	1985	2050+	65+					65+
Yemen	1990	2050+	60+					60+
Somalia	1980	2000	20	15	2015	2050+	35+	40+
Comoros	1985	2038	53					53

8. Conclusion and Recommendations

Although ageing in the Arab region is relatively a recent phenomenon, the rapid ongoing demographic transition in some of the states is expected to bring radical changes in the age-sex structure of their populations. Based on a number of indices of ageing employed, 22 Arab countries have been classified in three groups of ageing, namely, "Fast", "Medium", and "Slow" ageing countries. The fast ageing countries are Algeria, Bahrain, Egypt, Kuwait, Lebanon, Libya, Morocco, Qatar, Tunisia, and United Arab Emirates. Six countries, namely, Comoros, Iraq,

Jordan, Saudi Arabia, Syria and Sudan constituted the group of medium ageing countries; whereas rest of the six states, namely, Djibouti, Mauritania, Palestine, Somalia and Yemen are classified as slow ageing countries. Seemingly, the group of medium ageing countries does not immediately pose any threat towards needed resources to meet the requirements of their elderly populations. Nevertheless, continuous declining fertility and mortality in these countries are building up the needed momentum for rapid ageing. The six countries which fall in slow category of ageing are not likely to show any alarming sign of ageing by the middle of the present century.

Notwithstanding the relatively slow ageing of populations as expected in next 50 years in a majority of Arab states, a few of them may face new challenges of the problems likely to crop in future due to sheer increase of their elderly populations. For example, Egypt is expected to have the largest number of old (23.7 million) and oldest old (3.1 million) populations in the region in 2050. Among other countries which would have more than 10 million old (60+) persons are Algeria and Morocco. The expected size of the elderly population in these countries is so large that requires both short and long term planning by their respective governments to meet the challenges that are not only concerning older persons alone but also overall effects of their growth on the total population (Rashad and Khadr, 1999). The absolute number of old persons would be gradually increasing during next 50 years. Planned efforts are needed to promote quality of life of elderly and enable them to work and live independently in their own communities; to provide healthcare systems and social security in old age; and to develop a social support system, both formal and informal, with a view to enhancing the abilities of families to take care of elderly people within the family (ICPD, 1994).

The ageing phenomenon in the Arab states studied in this paper is assumed to have resulted due to fertility and mortality transition only. The study completely ignored the possible effects of emigration of young adults and return of elderly to their home country on the age-sex structure of the population. In fact, some of the Arab states may lose their young adult population particularly males, due to prevailing strained economic situation, high unemployment rates, and political uncertainty. Thus, among the states that are classified as “Fast” and “Medium” ageing, a few may experience much accelerated ageing during the first half of the present century than expected.

Both out migration of the population in economically active ages and likelihood of return migration of elderly would push further the already high old age dependency ratio in some countries of the region. As discussed earlier, the increase in old age dependency burden may have adverse effects on country’s economy. This expected phenomenon calls for immediate attention of governments of those countries that are having more out migration to monitor the emigration situation of their economically active population and provide employment opportunities and better future prospects to retain their young adult populations.

The expected speed of ageing, measured as rate of growth (Exponential) of old and oldest old populations during the first half of the present century revealed that in 12 out of 22 Arab countries, the 60+ populations were growing at a rate more than 4 percent per annum; whereas 80+ populations were increasing at the rate greater than 5 percent per annum, in 11 countries. Leaving Djibouti, in rest of the states the speeds of old and oldest old populations are likely to be much greater than annual growth rate of their respective total populations. Among the older population aged 60+, oldest old (80+) persons are the fastest growing group in the world with women generally surviving to older ages than men (U.N. 2002 a).

In a majority of the Arab states, women are expected to outnumber men in both old and oldest ages in 2050. However, the imbalance in sex ratios at 80+ ages is likely to be striking. For example, Kuwait is expected to have nearly 63 males per 100 females in the ages 80+ in 2050. Due to higher pace of increase in expectation of life of females than males in older ages, the number of widows is likely to spurt in most of the Arab countries by the middle of the present century. These countries would have a heavy burden on their economies to meet the increasing demand of services for the swelling numbers of elderly widows. The governments of the countries have to plan in advance to construct old age homes/nursing homes for women; develop systems of health care as well as systems of economic and social security of them.

Nonexistence or limited coverage of the formal social security plans for elderly have several implications on the economic well being of the elderly in the Arab region. One of the implications is that a significant proportion of aged population continues to work even if their health doesn't permit to remain in labor force. For example, in Lebanon where retirement age is 64 years, one third of elderly men continued participating in the labor force after this age (Sibai, 1998). Labor force participation is still higher among elderly in Arab countries where more than 38 percent are found working as compared to 27 percent in developed countries (Rashad and Khadr, 1999). A majority of those engaged in economic activity in their old ages may be those who were not covered under social security scheme and were, therefore, forced to work to earn their daily livelihood. Unfortunately, there is no uniform policy for social security and its coverage, and retirement age in Arab countries. This situation is perhaps due to a wide disparity among the states with respect to their GDP and per capita income. Nevertheless, most of the governments in the region are conscientious about their commitments for the welfare of their elderly. However, as per the plan of action suggested in ICPD (1994) "... Governments should develop social security systems that ensure greater intergenerational and intragenerational equity and solidarity and that provide support to elderly people through the encouragement of multigenerational families, and the provision of long-term support and services for growing numbers of frail older people." There is a strong need of developing a uniform and effective social security system with a wider coverage in the Arab countries.

There seems to be no immediate threat to elderly in their living arrangements in Arab societies where old persons are respected, loved and cared in their families. However, ongoing social changes due to diffusion of Western culture may have some implications on traditional social support system. This in turn may significantly affect traditional living arrangements in the long run. An increase in nuclear living arrangements among the young generation and diminishing of extended family system are likely to weaken family care and support to elderly. In the absence of proper care of old persons in their family, some would require to shift to nursing/old age homes. Thus with the growing old age populations in the region, governments of member states in collaboration with non-governmental organizations and the private sector, should strengthen formal and informal support systems for elderly (ICPD, 1994).

Enhancement of self-reliance of old persons is crucial to facilitate their continued participation in society. Necessary conditions are to be developed to enable elderly people to lead self-determined, healthy and productive lives and to make full use of their skills and abilities for the benefit of the society. Support of governments, non-governmental organizations and families will go a long way to achieve this goal.

Rashad and Khadr (1999) stress that the implications of the ageing of the Arab population are not limited to elderly only but extend to the family. Since the family is the main provider of social support for the elderly, future policies for the well being of the old persons should also address

for the welfare of their family. This is very much true in the Arab context where old persons are still cared, loved and respected by their kith and kin.

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Appendix Table 1: CBR, CDR, TFR & Life Expectancy at Birth of Arab Countries, 1950-2050

CBR

Period	Comoros	Djibouti	Somalia	Algeria	Egypt	Libya	Morocco	Sudan	Tunisia	Mauritania	Bahrain	Iraq	Jordan	Kuwait	Lebanon	Palestine	Oman	Qatar	Saudi Arabia	Syria	UAE	Yemen
1950-1955	46.50	50.00	53.40	51.00	48.60	48.00	50.40	46.60	46.40	49.30	45.10	52.60	46.70	45.20	41.00	46.70	51.40	46.30	49.00	48.40	47.80	54.80
1975-1980	48.70	45.20	51.70	45.40	39.80	47.30	39.40	45.20	36.70	43.20	34.40	42.70	45.00	40.10	30.10	47.80	48.10	29.90	45.90	46.90	30.50	56.20
2000-2005	36.50	31.40	45.80	20.70	25.50	24.00	20.90	34.40	17.10	35.30	19.30	35.60	27.90	18.60	19.30	39.10	23.50	17.80	26.50	28.20	16.70	39.30
2025-2030	23.20	21.40	32.10	14.30	17.50	13.60	14.90	22.90	12.70	22.80	12.90	22.90	17.10	12.70	14.00	25.80	16.90	12.30	17.40	16.70	11.00	26.80
2045-2050	17.00	16.30	22.80	12.50	13.50	12.80	12.50	17.00	11.20	16.90	11.20	16.90	13.00	11.60	11.90	18.60	13.30	10.30	13.40	13.10	9.80	20.10

CDR

Period	Comoros	Djibouti	Somalia	Algeria	Egypt	Libya	Morocco	Sudan	Tunisia	Mauritania	Bahrain	Iraq	Jordan	Kuwait	Lebanon	Palestine	Oman	Qatar	Saudi Arabia	Syria	UAE	Yemen
1950-1955	23.5	28.3	31.8	23.9	24.0	22.5	25.7	25.2	22.6	23.2	16.4	20.7	26.0	11.2	18.7	26.0	27.1	22.2	25.9	20.5	22.8	34.2
1975-1980	15.1	17.4	22.9	13.4	14.5	12.7	13.0	17.3	10.0	15.1	6.3	9.4	9.6	4.2	7.8	13.5	11.0	9.4	10.7	9.0	7.4	20.9
2000-2005	7.4	12.0	18.5	5.0	5.9	4.1	6.0	11.2	5.5	8.7	3.1	10.6	4.1	1.7	7.0	4.2	2.8	2.6	3.8	3.6	1.4	8.6
2025-2030	4.8	8.7	11.2	5.5	5.8	5.1	6.4	7.8	6.6	6.2	5.4	4.8	4.4	3.8	7.4	3.1	3.8	3.7	4.3	3.9	2.2	4.5
2045-2050	5.5	9.0	8.5	8.5	7.3	7.8	8.8	7.8	10.0	6.8	9.1	5.7	6.9	7.6	9.7	4.0	6.4	7.1	6.7	6.2	5.3	4.5

TFR

Period	Comoros	Djibouti	Somalia	Algeria	Egypt	Libya	Morocco	Sudan	Tunisia	Mauritania	Bahrain	Iraq	Jordan	Kuwait	Lebanon	Palestine	Oman	Qatar	Saudi Arabia	Syria	UAE	Yemen
1950-1955	6.33	7.8	7.25	7.28	6.56	6.87	7.18	6.65	6.93	6.58	6.97	7.3	7.38	7.21	5.74	7.38	7.2	6.97	7.18	7.3	6.97	8.2
1975-1980	7.05	6.8	7.25	7.18	5.61	7.38	5.9	6.52	5.69	6.4	5.23	6.8	7.38	5.89	4.31	7.39	7.2	6.11	7.28	7.47	5.66	8.7
2000-2005	4.89	4.52	6.43	2.53	3.17	3.03	2.52	4.82	2.04	4.83	2.51	4.86	3.53	2.3	2.32	5.63	3.7	2.93	3.81	3.48	2.52	6.02
2025-2030	2.78	2.65	4.12	2	2.25	1.93	1.99	2.75	1.85	2.85	1.85	2.76	2.13	1.88	1.89	3.12	2.3	2.14	2.24	2.11	1.95	3.36
2045-2050	2.2	2.14	2.75	1.85	1.92	1.85	1.85	2.19	1.85	2.23	1.85	2.2	1.85	1.85	1.85	2.35	1.95	1.86	1.85	1.85	1.85	2.45

LEB

Period	Comoros	Djibouti	Somalia	Algeria	Egypt	Libya	Morocco	Sudan	Tunisia	Mauritania	Bahrain	Iraq	Jordan	Kuwait	Lebanon	Palestine	Oman	Qatar	Saudi Arabia	Syria	UAE	Yemen
1950-1955	40.7	34.8	33	43.1	41.9	42.7	42.9	38.6	44.6	40.5	50.9	45.3	43.2	55.6	55.9	43.2	37.6	48	39.9	45.9	48	32.5
1975-1980	50.9	46.5	42	58	53.3	57.4	55.7	47.8	59.8	50.9	65.6	60.4	61.1	69.3	66.1	60.8	57.4	65	58.7	61.2	66.2	44.2
2000-2005	63	53.4	45.9	71	69.8	72.7	69.6	56.4	73	62.2	74.8	57	71.3	76.9	71	72.4	74.2	74.3	71.6	73.1	77.8	60.3
2025-2030	71.9	63.4	56.1	76.2	75.6	77.4	75.5	65.4	77.2	69.8	78.4	72.1	76.4	79.9	75.8	76.9	78.6	78.4	76.3	77.5	81.1	70.4
2045-2050	75.9	68.8	63.7	79	78.6	80.1	78.6	70.3	79.8	73.6	80.8	76.1	79.1	82	78.7	79.5	81	80.8	79.1	80	83.4	75

Source :