



Thinking Ahead  
for the Mediterranean



## WP 7 - Human capital, social protection, inequality and migration

# Education and Social Protection Systems in Southern and Eastern Mediterranean Countries

Alia el Mahdi, Ola el Khawaga and Ashraf el Araby

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### Abstract

This report assesses the current status of the education and social protection systems in 11 southern and eastern Mediterranean countries. It compares these countries using various education indicators and attempts to highlight the main differences in the social protection systems among the countries using qualitative analysis. The report finds that despite the differences among the countries, they share a common feature: when measured by the UN Development Programme's Human Development Index (HDI), their inequality-adjusted values are significantly lower than their HDI values and ranks when not taking inequality into account. Nevertheless, significant improvements have been achieved in all the quantitative indicators for education, while the qualitative performance is still modest in the majority of the countries studied. As to the social protection aspect, the research reveals that various social protection programmes are being adopted in the 11 countries. As most of their financing is covered by government budgets, however, this places a high fiscal burden on them. Yet few of the countries (Turkey being the most notable) are trying to improve the sustainability of their social insurance schemes.

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# Education and Social Protection Systems in Southern and Eastern Mediterranean Countries

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## 1. Introduction

This report attempts to assess the current status of the education and social protection systems in 11 southern and eastern Mediterranean countries (SEMCs).<sup>1</sup> It also seeks to analyse and compare the different aspects of development taking place in the 11 countries, identifying areas of weakness or strength within them.

Despite the differences among the countries, they share a common feature, namely that when measured by the UN Development Programme's Human Development Index (HDI) of 2010,<sup>2</sup> which has been calculated for such countries as Israel, Tunisia, Jordan, Turkey, Egypt, Syria and Morocco, their inequality-adjusted values and ranks drop significantly in comparison with their HDI values and ranks. The main reasons for this significant drop invariably relate to educational achievement. Therefore, education remains a problem in all 11 countries, as regardless of their average performance, there is a high degree of inequality among youth in terms of their share of enrolment in and benefits from the education systems. The children coming from relatively better off families seem to benefit more from the current, mostly free education systems in the countries, whereas a relatively higher percentage of the children coming from poor families tend to become drop-outs, repeaters or do not join the education system from the start. Thus the fruits of the education policies seem to be reaped more by the children from middle-/high-income households than those from poorer households. This bias negatively affects the opportunities of the poor when they enter the labour market seeking jobs. Their lack of skills and knowledge reduces their chances and their wages.

Whereas the comparisons of educational inputs, outputs and quality are made possible thanks to the numerous domestic and international indicators that are available, the same cannot be said about the social protection indicators. Therefore, this report compares the 11 countries using the various education indicators, and attempts to highlight the main differences in the social protection systems among the countries using qualitative analysis.

This report is split into three main sections: section 2 covers education, including an overview of the education systems in the region, the main inputs, access and equity, efficiency, and outcomes and quality as well as scenarios for the future. Section 3 offers a comparative analysis of the social protection systems in the 11 SEMCs, including a general overview of the countries, comparisons of the social protection systems and future prospects.

Yet, it might be useful at the beginning to highlight some of main results derived from the comparisons.

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<sup>1</sup> The 11 countries are Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine, Syria, Tunisia and Turkey.

<sup>2</sup> The *Human Development Report 2010* (UNDP, 2010) was the first report to include the inequality estimates and indicators.

**First, where educational developments are concerned, there are several points to consider:**

- During the past decade, the numbers of students enrolled at the secondary and tertiary levels in the countries have been growing at a steady rate, with differences among the 11 SEMCs.
- Gross enrolments rates in primary education are consistently higher than rates in secondary schools in all 11 countries.
- The gap between male and female enrolments in schools is lower at the primary level compared with secondary and tertiary education; however, it is growing narrower over time.
- The growth rates achieved in female enrolments are higher for all countries with respect to total enrolments, except in Israel in secondary education and Libya at the primary and secondary levels. This indicates that even if female enrolments are lower than male enrolments in some countries in the region, this gender gap is diminishing over time, with female enrolments growing faster than male enrolments.
- The majority of the 11 countries provide compulsory education free of charge or with subsidised tuition fees, and some countries extend free education until tertiary education. This requires the governments to direct a considerable and regular portion of their public spending towards financing the education system.
- The higher share of public spending on education is directed at the primary and secondary levels, while university education receives a smaller share.
- Gini coefficients in the 11 SEMCs are high relative to other regions, such as East Asia.
- In most of the countries, female retention rates exceed the male rates. The highest retention rate in education among the 11 SEMCs is achieved by Israel, reaching 99.21% on average for the period 2000–08, while the lowest rate is found in Morocco, at 81.26%.
- The education systems in the region still suffer from two main obstacles: first, efforts have been exerted on expanding the education system while public accountability has been given limited focus; second, there is a mismatch between the education system outcomes and labour market demand, given that the graduates of the system are not sufficiently qualified with the skills and knowledge needed in the labour market.
- Some of the 11 countries are close to fully eradicating illiteracy, while other countries still suffer from high illiteracy rates.
- Labour force participation rates for both genders and for females in 11 countries are lower than the world averages of 65% and 52%, respectively.
- The 11 SEMCs have high unemployment rates compared with the world average of 5.7% in 2008.
- In an attempt to evaluate the prospects for education in the countries, an econometric exercise was conducted to extrapolate the gross enrolment rates (for primary, secondary and tertiary levels) of the 11 countries for the period 2011–30.
- The results of the econometric model for each education level for the different countries indicate that the variations of gross enrolment rates (GERs) are related to a number of explanatory factors that differ from one country to another. The most relevant variables in this case are the GDP growth rates, the official development assistance (ODA) (especially the EU-15 ODA in some of the 11 SEMCs), the population growth rates in certain age brackets, the proportion of public expenditures on education as a percentage of GDP and poverty levels.
- Three scenarios are forecasted: business-as-usual, an optimistic one and a pessimistic one.

- The forecasted data imply different directions and magnitudes of growth among the countries and across various education levels. Still, the educational attainment levels are expected to improve, if at different rates and depending on the type of scenario considered.
- The optimistic and pessimistic figures of some countries, such as Lebanon and Syria, deviate a lot from the figures in the business-as-usual scenario, as they have high standard deviations. Also, it is worth mentioning that possible deviations from the expected values are higher for secondary education compared with other education levels.

**Second, comparisons of the social protection systems reveal the following findings:**

- Most of the selected countries are considered upper-middle income countries, with the sole exception of Israel, which is the highest-income OECD country in the region. Meanwhile, Egypt, Syria, Palestine and Morocco are lower-middle income countries.
- The percentage of the population below the national poverty line exceeds 50% in Palestine, while it is around 20% of the total population in Egypt, Turkey, Israel and Algeria. The share is in the range of 13.3% in Jordan, 9% in Morocco and 3.8% in Tunis. There is no data on Libya or Lebanon.
- The 11 countries have recorded an improvement in life expectancy and several other health indicators, and to a large extent the Israeli health indicators exceed the EU averages.
- The social protection systems (SPS) vary from one country to another. Yet, a majority of the countries share certain common characteristics, namely modest coverage and a fragmented nature. Poverty and high recipient rates of social benefits (and thus low contribution rates) could be explanatory factors for the modest coverage. The high rates of informal work in the labour markets, for example in Egypt, Turkey, Tunisia, Lebanon and Morocco, add to the limited coverage of the system.
- Owing to the low contribution rates to the SPS in most of the countries, the protection systems are only partially funded and most of the countries rely on PAYG systems that are financially unsustainable.
- Several countries are currently working on implementing new social protection systems. The main objectives of the new systems are broader coverage and greater financial sustainability in the future, although the latter is still questionable.

## **2. Educational developments in the 11 SEMCs**

### **2.1 Overview of the education systems**

#### *2.1.1 Introduction*

Countries in the region have achieved a lot of progress in the last few decades in terms of accumulated human capital. Nonetheless, the education systems in the region still suffer from two main obstacles. First, efforts have been exerted on expanding the education systems while public accountability has been given limited focus, that is, governments have worked on increasing the numbers of schools, teachers and students enrolled in the education system without giving enough attention to the quality and efficiency of the system. Second, there is a mismatch between the education system outcomes and labour market demand. Labour markets in the region have failed to absorb all the graduates, causing higher unemployment rates in most of the countries in the region.

This part of the report reviews the progress achieved in the education systems in the 11 SEMCs during the past decade. Following this introduction, section 2.2 tackles the inputs into the education systems. Section 2.3 gives an overview of access and equity. Then, efficiency indicators are presented in section 2.4, followed by a discussion on education outcomes and quality (section 2.5). Section 2.6 forecasts the future scenarios for education, and finally section 2.7 concludes.

## 2.1.2 Structure of the school system

Countries that were subject to French colonisation, such as Algeria and Morocco, have witnessed several transformations in their education systems. Education has changed from being restricted to the elite to being available to all citizens. In Algeria, the Arabic language has replaced French as the language of instruction at the primary and secondary levels, but French has remained the instruction language in most post-secondary institutions. The case is different in Morocco, where the government has introduced two tracks: a modern track with French language used in instruction and an original track based on Koranic education. Public schools in Egypt provide education in Arabic or English, while the private sector offers education in Arabic, English, French and German. In Lebanon, although the Arabic language is taught in all schools, the school system uses French or English (or both) as a basic language. Conversely, in Syria, Arabic is the basic language, while English and French are taught.

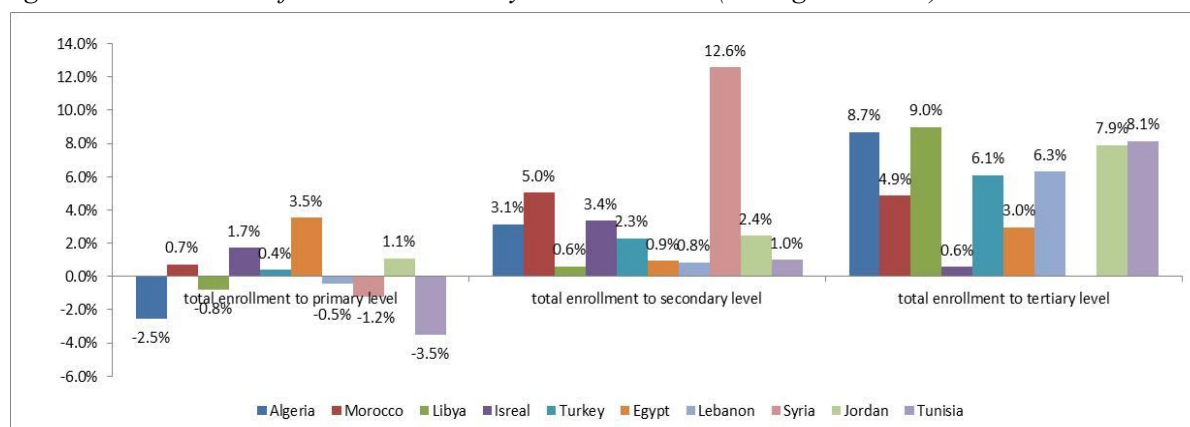
The 11 countries have adopted the 6-3-3 model with a few exceptions (such as Jordan and Palestine, where basic compulsory education lasts for ten years followed by two optional ones of secondary education). Students are enrolled at the primary level for six years, then move to the intermediary or lower secondary level for three years. These nine years are considered basic education, and are compulsory and provided for free in most countries. The upper secondary level lasts for three years. Successful students progress to university education for four to five years.

## 2.2 Inputs into the education systems

### 2.2.1 Growth rates of enrolments by education level and gender

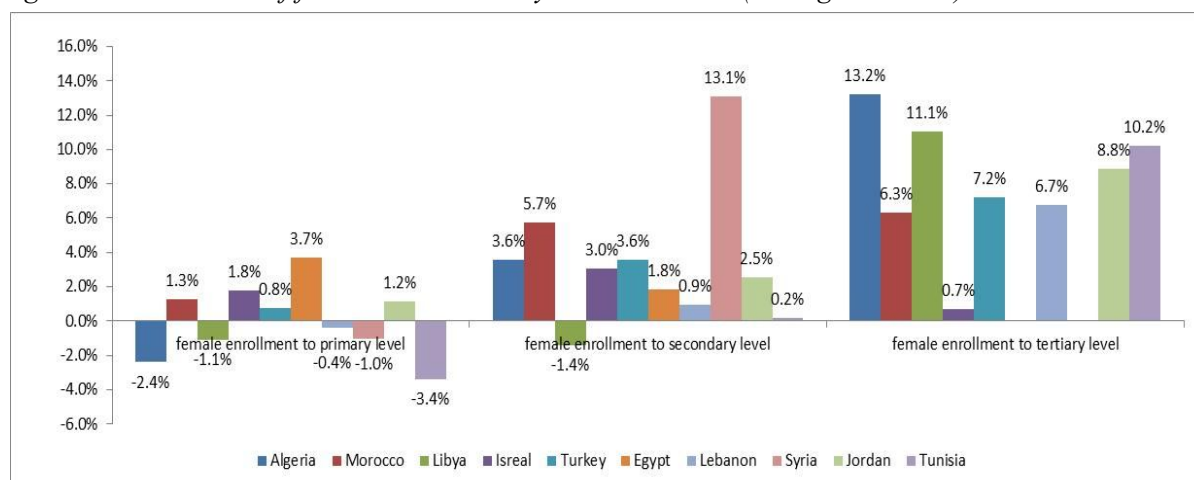
During the past decade, the number of students enrolled in secondary and tertiary education in the 11 SEMCs has been growing. Figure 1 illustrates that enrolments in all of the countries shown have increased. The highest growth rate was achieved at the secondary level in Syria (12.6%) and the tertiary level in Jordan (9.0%). As for the primary level, the enrolment growth rates vary between negative and positive rates. The enrolment of Egyptian students grew by 3.5%, while enrolments in Tunisia decreased by 3.5%. Similar trends are shown in Figure 2 for female enrolments among the different education levels.

Figure 1. Growth rate of total enrolments by education level (average 2000–08)



Source: UNESCO, Institute for Statistics, Data Centre, Custom Tables, accessed on 30 December 2012 ([http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF\\_Language=eng&BR\\_Topic=0](http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF_Language=eng&BR_Topic=0)).

Figure 2. Growth rate of female enrolments by education level (average 2000–08)



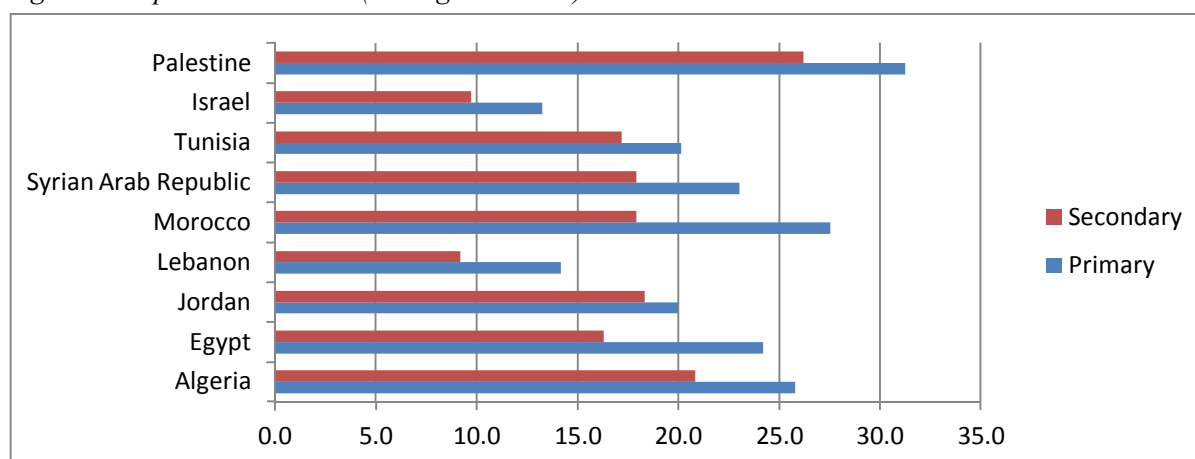
Source: UNESCO, Institute for Statistics, Data Centre, Custom Tables, accessed on 30 December 2012 ([http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF\\_Language=eng&BR\\_Topic=0](http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF_Language=eng&BR_Topic=0)).

The growth rates achieved in female enrolments are higher for all the countries compared with total enrolments, except in Israel in secondary education and Libya at the primary and secondary levels. This indicates that even if female enrolments are lower than male enrolments in some countries, this gender gap is diminishing over time with female enrolments growing faster than male enrolments.

### 2.2.2 Pupil–teacher ratio

Israel achieved the lowest ratio in primary education, reaching 13.2 on average for the period 2000–08, while Lebanon has the lowest pupil–teacher ratio at the secondary level, which is 9.2, for the same period. These ratios are lower than the world averages in 2008 at the primary and secondary levels (24.6 and 18.0, respectively) (UNESCO, Institute for Statistics). On the other hand, Palestine suffers from high pupil–teacher ratios compared with several other countries in the region (Figure 3).

Figure 3. Pupil–teacher ratio (average 2000–08)



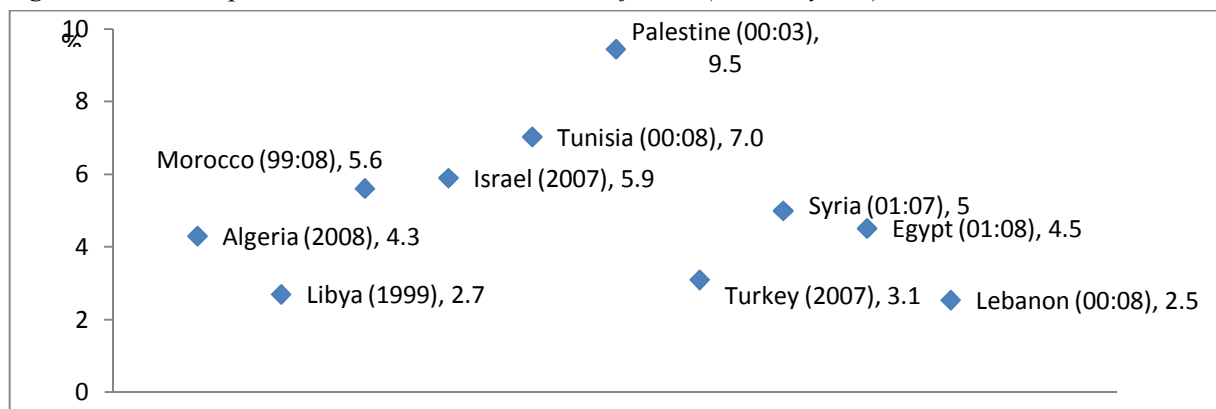
Source: UNESCO, Institute for Statistics, Data Centre, Custom Tables, accessed on 30 December 2012 ([http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF\\_Language=eng&BR\\_Topic=0](http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF_Language=eng&BR_Topic=0)).

### 2.2.3 Expenditures on education

As mentioned earlier, the majority of the countries under study provide compulsory education free of charge or with subsidised tuition fees, and some countries extend free education until tertiary education. This requires the governments to direct a considerable and regular portion of their public

spending towards financing the education system. As shown in Figure 4, Palestine has the highest percentage of GDP spent on the education system, reaching 9.5% on average for the period 2000–03. Lebanon is at the tail end, having spent only 2.5% of its GDP on education on average for the period 2000–08.

Figure 4. Public expenditures on education as a % of GDP (various years)



Sources: For Syria, Central Bureau for Statistics; for Egypt, CAPMAS (2009); for Lebanon, World Bank, World Development Indicators; for Palestine, the Palestinian Ministry of Education and Higher Education (MoEHE), 2007; for Algeria, Libya, Israel, Morocco, Turkey and Tunisia, UNESCO, Institute for Statistics.

An almost common feature among the countries is that a considerably higher share of public spending on education is directed at the primary and secondary levels, while university education receives a smaller share. For instance, lately the Egyptian government has been shifting resources from university education towards financing basic and secondary education, to compensate for the drop in expenditures on education that occurred in 2003–04 and 2004–05 (CAPMAS, 2009). In Syria, since 2001 more funds have been directed at the development of basic and secondary education, which received 80% of public spending on education in 2001 and has not fallen below 75% in the subsequent years. Similar trends have been found in Lebanon and Morocco (Kabbani and Salloum, 2009).

Concerning private spending on education, in most cases this is used to fund private tutoring and university tuitions. This is to be expected given the limited resources assigned to university education in addition to the lower quality of education, which is usually addressed through private tutoring.

## 2.3 Access and equity

### 2.3.1 Gross enrolment rates by education level and gender

Gross enrolment rates in primary education are consistently higher than the rates in secondary schools in all 11 SEMCs. The primary enrolment rates in some countries and secondary rates in Libya exceed 100%, indicating that students older than the typical age group are attending primary and secondary education (Table 1). The highest gross enrolment rates have been achieved in Syria and Libya, at the primary and secondary levels, respectively. The gender gap in gross enrolment rates varies between favouring males in some countries and favouring females in others, but the largest gender gap is found in Turkey in secondary education, where the male enrolment rate reached 90.61% while the female enrolment rate was 71.68% on average for the period 2000–08. The gender gap is further explained below by the gender parity index within the gross enrolment rate.



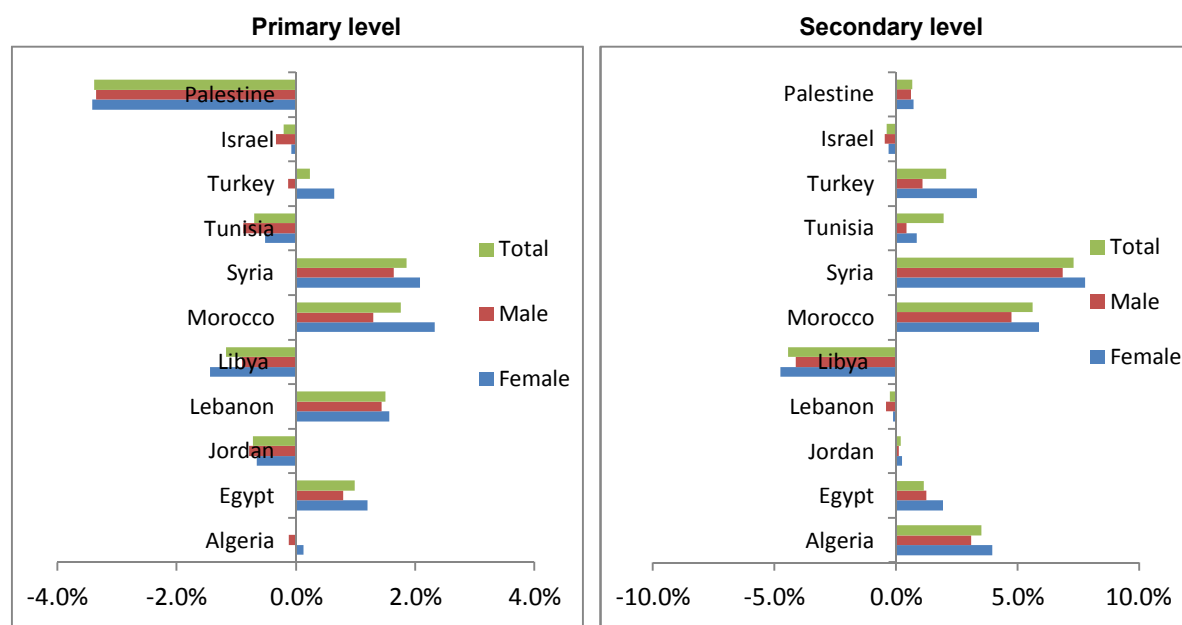
Table 1. Gross enrolment rate by education level, average for 2000–08 (%)

|           | Primary |        |        | Secondary |       |        |
|-----------|---------|--------|--------|-----------|-------|--------|
|           | Female  | Male   | Total  | Female    | Male  | Total  |
| Algeria   | 105.17  | 113.23 | 109.29 | 84.89     | 80.48 | 82.64  |
| Egypt     | 93.68   | 99.05  | 96.43  | 73.28     | 77.94 | 75.99  |
| Jordan    | 99.24   | 98.52  | 98.87  | 87.61     | 84.87 | 86.20  |
| Lebanon   | 99.45   | 102.07 | 100.79 | 86.64     | 77.94 | 82.22  |
| Libya     | 111.99  | 114.40 | 113.22 | 109.12    | 97.79 | 103.34 |
| Morocco   | 97.86   | 109.98 | 104.02 | 40.52     | 49.24 | 45.87  |
| Syria     | 116.04  | 122.62 | 119.40 | 58.95     | 62.44 | 60.73  |
| Tunisia   | 109.56  | 113.10 | 111.38 | 86.24     | 80.32 | 83.84  |
| Turkey    | 94.84   | 100.26 | 97.60  | 71.68     | 90.61 | 81.30  |
| Israel    | 111.78  | 111.16 | 111.46 | 91.94     | 92.12 | 92.03  |
| Palestine | 91.61   | 91.59  | 91.60  | 91.85     | 86.44 | 89.08  |

Source: UNESCO, Institute for Statistics (<http://stats.uis.unesco.org/unesco/tableviewer/document.aspx?ReportId=143>).

Syria and Morocco have achieved the greatest progress in gross enrolment rates, in both primary and secondary education. For instance, in Syria, the gross enrolment rate grew by 1.9% and 7.3% on average over the period 2000–08 at the primary and secondary levels, respectively (Figure 5). On the other hand, Palestinian and Jordanian enrolment rates in primary schools and Libyan enrolment rates at the primary and secondary levels deteriorated over the same period on average.

Figure 5. Average growth rate of enrolment by education level



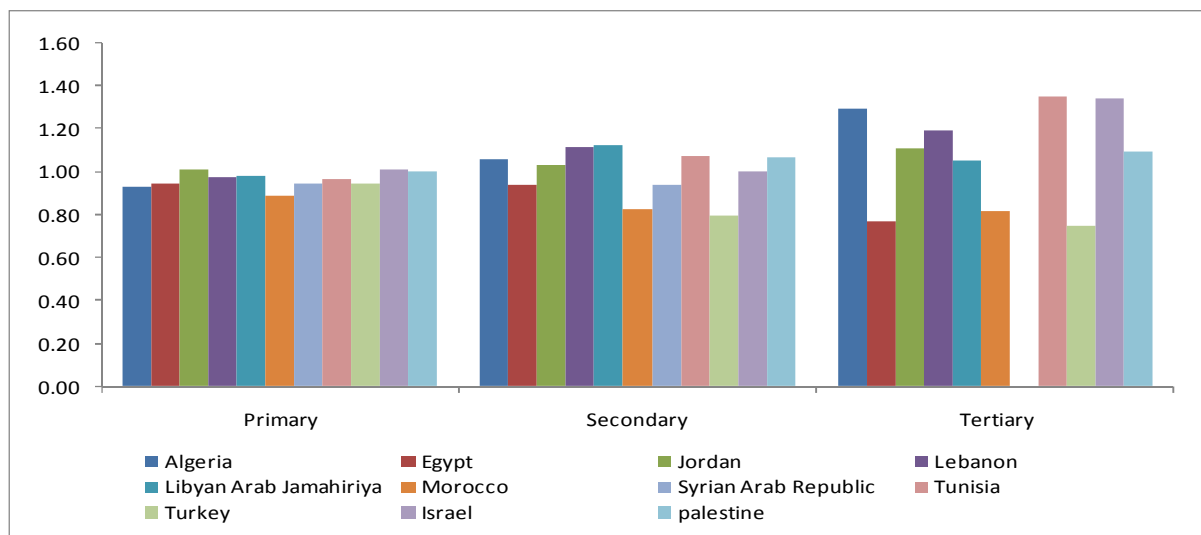
Source: Authors' calculations, using data from UNESCO, Institute for Statistics, Data Centre, Custom Tables, accessed on 30 December 2012 ([http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF\\_Language=eng&BR\\_Topic=0](http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF_Language=eng&BR_Topic=0)).

### 2.3.2 Gender parity index within the gross enrolment rate

The gap between male and female enrolments in schools is lower at the primary level compared with secondary and tertiary education in the 11 SEMCs. Also, the gender parity index at the primary level

does not vary much across the countries, ranging between 0.89 and 1.01, but at the tertiary level the index ranges between 0.74 in Turkey and 1.35 in Tunisia (Figure 6). Jordan has one of the most equitable education systems in the region, where the figures for the gender parity index are respectively 1.01, 1.03 and 1.11 for the primary, secondary and tertiary levels, despite a tiny bias in favour of females.

Figure 6. Average gender parity index within the gross enrolment rate (2000–08)

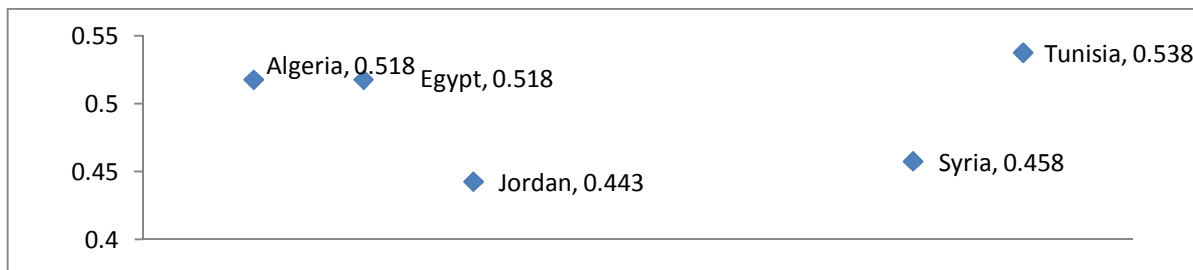


Source: UNESCO, Institute for Statistics, Data Centre, Custom Tables, accessed on 30 December 2012 ([http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF\\_Language=eng&BR\\_Topic=0](http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF_Language=eng&BR_Topic=0)).

### 2.3.3 Gini coefficients for the number of years of schooling

The Gini coefficients for countries in the Middle East and North Africa are high relative to other regions, such as East Asia or Latin America. Tunisia in particular suffers from a more inequitable education system compared with other countries (Figure 7).

Figure 7. Gini coefficients for the number of years of schooling in 2000



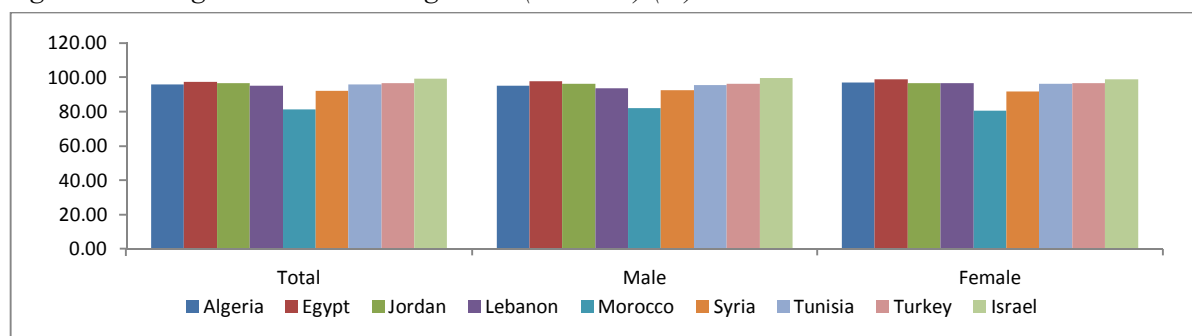
Source: Thomas et al. (2001).

## 2.4 Efficiency

### 2.4.1 Retention rates at grade 5

The highest rates of retention in education in the 11 countries are achieved in Israel, reaching 99.21% on average for the period 2000–08, while the lowest rates are found in Morocco 81.26% (Figure 8). In most of the countries, the retention rates for female students exceed those for males, with three exceptions: Morocco, Syria and Israel. Thus, although the enrolments of male students in primary education are higher than those of female students, the retention rates for females are higher at grade 5. The widest gender gap in retention rates at grade 5 is in Lebanon, where the male and female retention rates are 93.4% and 96.4%, respectively.

Figure 8. Average retention rate at grade 5 (2000–08) (%)

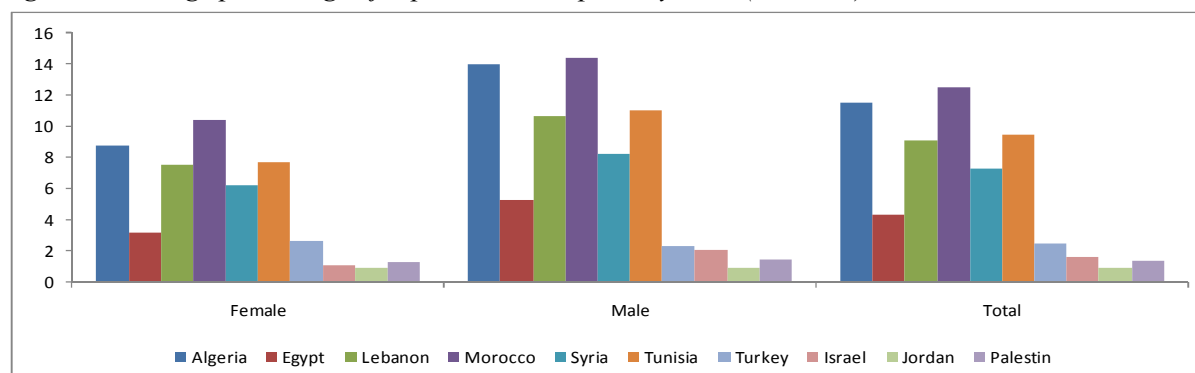


Source: UNESCO, Institute for Statistics, Data Centre, Custom Tables, accessed on 30 December 2012 ([http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF\\_Language=eng&BR\\_Topic=0](http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF_Language=eng&BR_Topic=0)).

### 2.4.2 Percentage of repeaters by education level

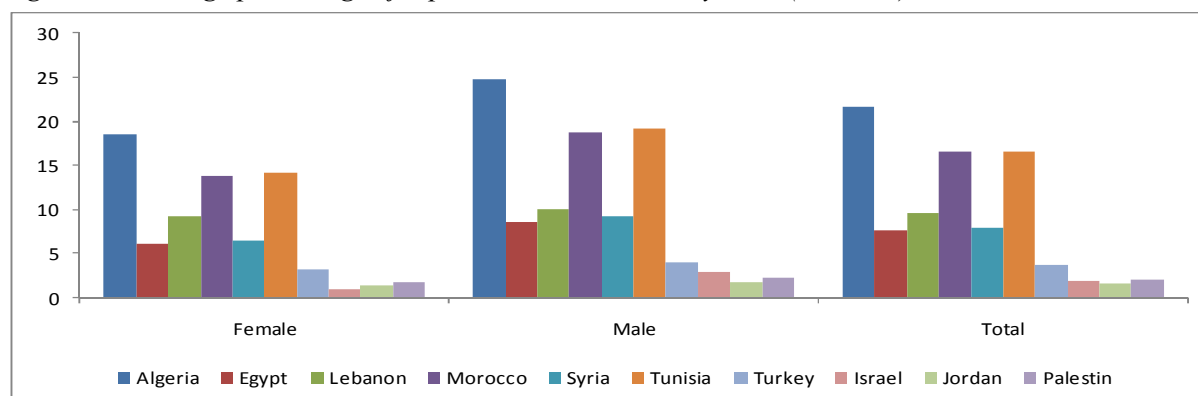
The percentage of repeaters at the secondary level is generally higher than the percentage of repeaters at the primary level. Morocco and Algeria have the highest shares of repeaters at the primary level and secondary levels, for the total as well as male and female students respectively, indicating the low quality of education in these countries. It can also be noted that the percentage of male repeaters is consistently higher than that of females in all countries, whether in primary or secondary education (Figures 9 and 10).

Figure 9. Average percentage of repeaters at the primary level (2000–08)



Source: UNESCO, Institute for Statistics, Data Centre, Custom Tables, accessed on 30 December 2012 ([http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF\\_Language=eng&BR\\_Topic=0](http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF_Language=eng&BR_Topic=0)).

Figure 10. Average percentage of repeaters at the secondary level (2000–08)



Source: UNESCO, Institute for Statistics, Data Centre, Custom Tables, accessed on 30 December 2012 ([http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF\\_Language=eng&BR\\_Topic=0](http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF_Language=eng&BR_Topic=0)).

### 2.4.3 Dropout rate

Dropout figures are not available for all 11 countries. For the countries where data are available, dropout rates increased with the education level. That is, the secondary level suffered from higher dropout rates compared with basic education. Some of the countries have witnessed declining dropout rates over the past decade, indicating that higher internal quality has been achieved, for instance, at all education levels in Palestine, at the secondary level in Lebanon and Egypt, at the preparatory level in Syria and the primary level in Tunisia. On the other hand, other countries had higher dropout rates at some education levels, for example at the primary level in Lebanon and Egypt, and at the secondary level in Tunisia.

Syria had the highest dropout rates in 2003, reaching 7% and 25% at the primary and secondary levels, respectively (Table 2). The highest gap in the dropout rates between the primary and secondary levels rates was in Egypt in 2004, where the dropout rates at the secondary level were six times those at the primary level.

Table 2. Dropout rate by education level (different years)

| Country          | Primary level (%) | Secondary level (%) |
|------------------|-------------------|---------------------|
| Palestine (2004) | 1*                | 4.1                 |
| Egypt (2004)     | 0.84              | 5.1                 |
| Syria (2003)     | 7                 | 25                  |
| Lebanon (2003)   | 2.2               | 11.1**              |
| Tunisia (2004)   | 1.7               | 10                  |

\* Dropout rate for the basic level

\*\* Dropout rate for the lower secondary level

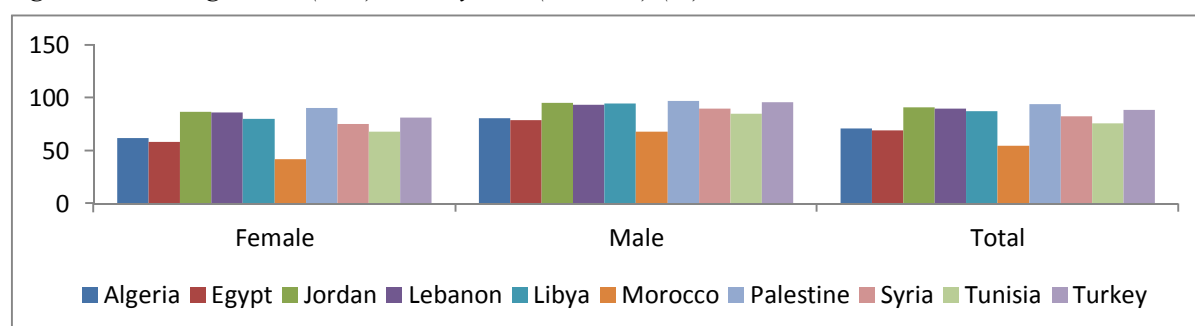
Sources: For Palestine, Ministry of Education and Higher Education; for Egypt, Ministry of Education; for Lebanon, Ministry of Education; for Tunisia, Ministry of National Education.

## 2.5 Outcomes and quality

### 2.5.1 Literacy rate by gender

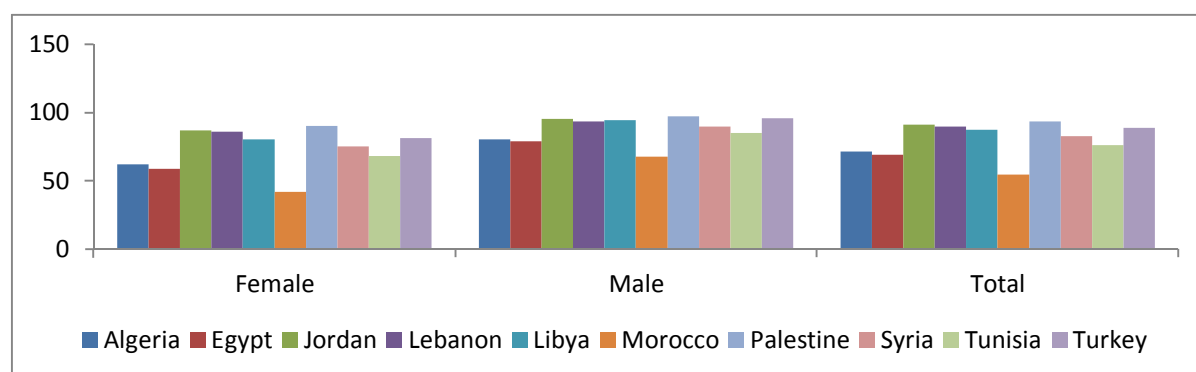
Some of the 11 SEMCs are close to fully eradicating illiteracy, for instance the adult literacy rate in Palestine reached 93% on average for the period 2000–08. Higher literacy rates are found among youth in Palestine, Jordan, Libya and Lebanon, reaching 99%. On the other hand, Morocco has low literacy rates of 55% for adults and 76% for youth (Figures 11 and 12).

Figure 11. Average adult (15+) literacy rate (2000-08) (%)



Source: UNESCO, Institute for Statistics, Data Centre, Custom Tables, accessed on 30 December 2012 ([http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF\\_Language=eng&BR\\_Topic=0](http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF_Language=eng&BR_Topic=0)).

Figure 12. Average youth (15-24) literacy rate (2000–08) (%)



Source: UNESCO, Institute for Statistics, Data Centre, Custom Tables, accessed on 30 December 2012 ([http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF\\_Language=eng&BR\\_Topic=0](http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF_Language=eng&BR_Topic=0)).

### 2.5.2 Labour force participation rates

The labour force participation rates for both genders and for females in the 11 SEMCs are lower than the world averages of 65% and 52%, respectively. As for males, it is only in Morocco, Algeria and Syria that the participation rate exceeds the world average of 78% (Table 3). In general, the female participation rates in the 11 SEMCs are lower than the male rates. The highest gender gap is in Syria and the lowest in Israel.

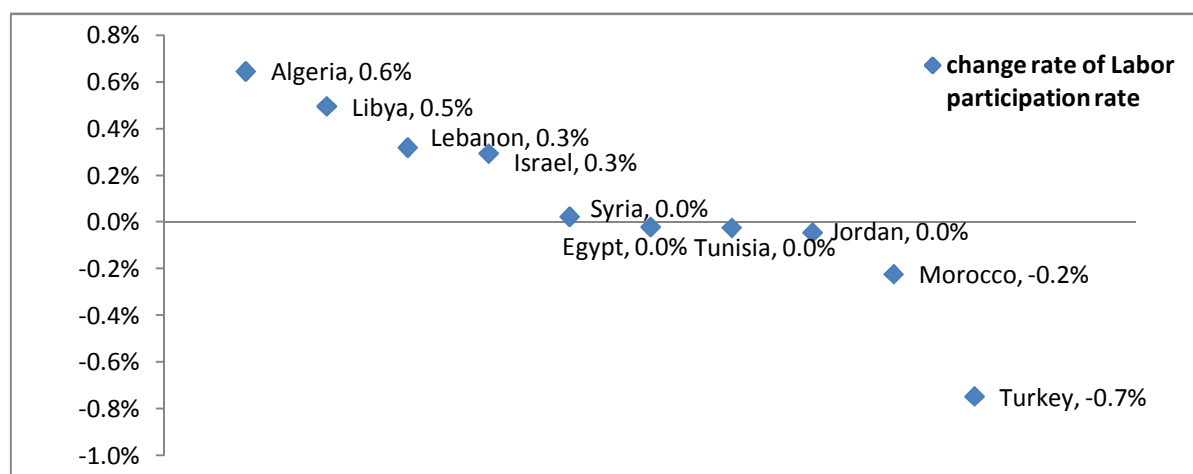
Table 3. Average labour force participation rate (2000–08) (%)

|         | Female | Male  | Total |
|---------|--------|-------|-------|
| Algeria | 34.44  | 79.38 | 56.99 |
| Egypt   | 23.06  | 73.66 | 48.31 |
| Israel  | 50.88  | 62.71 | 56.66 |
| Jordan  | 22.26  | 74.43 | 49.2  |
| Lebanon | 21.09  | 71.19 | 45.25 |
| Libya   | 23.91  | 77.38 | 51.85 |
| Morocco | 26.01  | 80.1  | 52.27 |
| Syria   | 20.11  | 79.32 | 49.82 |
| Tunisia | 24.73  | 71.16 | 47.92 |
| Turkey  | 25.64  | 71.34 | 48.51 |

Source: WDI.

Most of the 11 SEMCs have growing or stable labour participation rates, with the exception of Morocco and Turkey, where the labour participation rates declined by 0.2% and 0.7%, respectively, on average over the period 2000–08 (Figure 13). By contrast, Algeria had the highest growth rate, reaching 0.6%.

Figure 13. Average growth of the labour participation rate (2000–08)



Source: Authors' calculations, using data from UNESCO, Institute for Statistics, Data Centre, Custom Tables, accessed on 30 December 2012 ([http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF\\_Language=eng&BR\\_Topic=0](http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF_Language=eng&BR_Topic=0)).

### 2.5.3 Unemployment rates

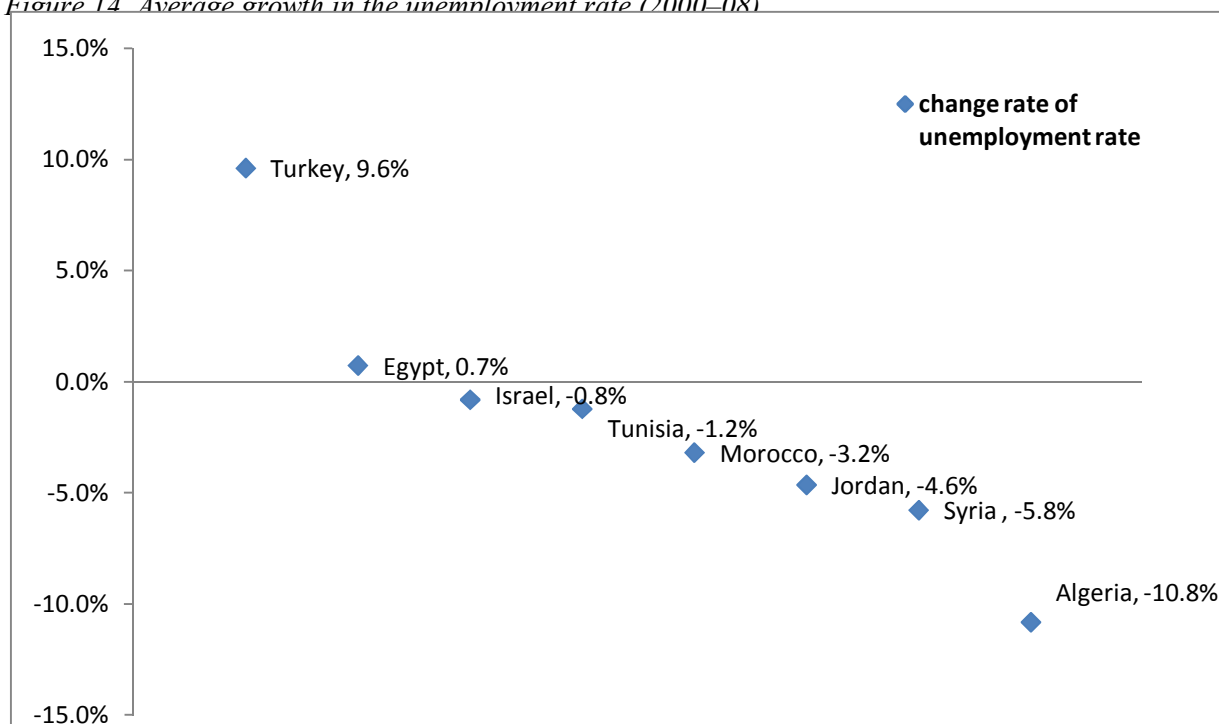
The countries under study have high unemployment rates compared with the world average of 5.7% in 2008. The gender gap varies a lot among the countries. Egypt has the largest gender gap, where the female unemployment rate is more than triple the male rate (Table 4). Meanwhile, the gap is almost negligible in Turkey.

Table 4. Average unemployment rate for 2000–08 (%)

|         | Female | Male  | Total |
|---------|--------|-------|-------|
| Algeria | 19.55  | 17.66 | 19.93 |
| Egypt   | 22.74  | 6.15  | 9.87  |
| Israel  | 9.30   | 8.36  | 8.80  |
| Jordan  | 21.39  | 12.55 | 14.06 |
| Lebanon | 8.92   | 7.75  | 8.42  |
| Syria   | 20.25  | 6.22  | 8.86  |
| Morocco | 11.23  | 10.97 | 11.03 |
| Tunisia | 16.67  | 14.15 | 14.59 |
| Turkey  | 10.35  | 10.26 | 10.28 |

Source: WDI.

Although Turkey has a low unemployment rate compared with the other 11 countries, the percentage of unemployed workers in Turkey has been increasing over time at a very high growth rate, reaching 9.6% on average for the period 2000–08 (Figure 14). On the other hand, other countries (such as Algeria and Syria) have progressed in this area, with substantial declines in their unemployment rates during the same period.

*Figure 14 Average growth in the unemployment rate (2000–08)*

Source: Authors' calculations, using data from UNESCO, Institute for Statistics, Data Centre, Custom Tables, accessed on 30 December 2012 ([http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF\\_Language=eng&BR\\_Topic=0](http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF_Language=eng&BR_Topic=0)).

#### 2.5.4 Educational attainment of the population aged 25 and older

The distribution of the population aged 25 and older that has attained various levels of education differs across countries. In Tunisia and Syria, the majority of the educational attainment by the population was found to be concentrated at the primary education level, while in Egypt 37.1% were enrolled in secondary education (Table 5).

Table 5. Educational attainment of the population aged 25 and older (%)

| Country        | Primary level | Secondary level | Tertiary level | Total |
|----------------|---------------|-----------------|----------------|-------|
| Tunisia (2004) | 32.1          | 24.1            | 9.2            | 65.4  |
| Egypt (2005)   | 12.3          | 37.1            | 6.6            | 56    |
| Syria (2005)   | 62.1          | 20.8            | 3.6            | 86.5  |

Sources: Tunisia, Institut National de la Statistique (INS); compilation from Institut Tunisien de la Compétitivité et des Etudes Quantitatives (ITCEQ).

#### 2.5.5 TIMSS scores

In TIMSS (Trends in International Mathematics and Science Study) scores, the 11 SEMCs are consistently below the world average, whether in math or science, with the exception of the science score in Jordan, which was slightly higher than the world average in 2003. Morocco was at the tail end of math scores and Lebanon had the lowest score in science compared with several other countries (Table 6).

Table 6. TIMSS scores (2003)

| Country       | Math | Science |
|---------------|------|---------|
| Egypt         | 406  | 421     |
| Jordan        | 424  | 475     |
| Lebanon       | 433  | 393     |
| Morocco       | 387  | 396     |
| Tunisia       | 410  | 404     |
| World average | 467  | 474     |

Source: Mullis et al. (2004).

## 2.6 Future scenarios for education

In an attempt to forecast the future prospects for education in the 11 countries, an exercise was undertaken to extrapolate the gross enrolment rates (at the primary, secondary and tertiary levels) of the 11 countries for the period 2011–30. To do so, the exercise used the following data for the period 1970–2010: gross enrolment rate, GDP per capita, public expenditures on education, public expenditures on education as a percentage of GDP, ODA, percentage of the population under the poverty line, population growth at the age of primary education and population growth at the age of secondary education.

First, the above data was used to fit an econometric model for each education level in each country that explains the variations of GERs over time. Then, these models along with the forecasted values of the explanatory variables (using the AR(1) model) for the period 2011–30 were used to extrapolate GER series for the same period. Because we used the AR(1) model in forecasting the explanatory variables, the process resulted in a business-as-usual scenario.

A limited number of cases failed to follow a regression model; as a result, no predictions were made. Nevertheless, in such cases the linear trend estimation was performed for prediction, and by constructing the same intervals using the standard error of the estimate, the optimistic and pessimistic scenarios were formed.

The forecasted data implied different directions and magnitudes of growth among the countries and across various education levels.

In primary education, some countries experienced insignificant changes over time (less than 1% throughout the forecasted period). Most of the remaining countries expected to achieve some progress in GERs for primary education, for instance in Egypt, Lebanon and Syria. An exception is Jordan, which will likely witness a drop during the forecasted period.

In secondary education, the gap that already exists among the 11 countries will widen further. Algeria and Tunisia are expected to achieve growth rates of 35% and 27% between 2011 and 2030, while secondary-level GERs in Libya and Turkey may fall gradually over the same period (Table 7).

As for tertiary education, one of the main findings is that GER growth at this level in Turkey reached 175% over the forecasted period.

Another important finding of the AR(1) model applied to the 11 SEMCs is that in a number of countries, such as Algeria, Egypt, Palestine, Syria and Lebanon, the results revealed that one of the main determining factors of the GERs at the three education levels (which varied by country) was either the level of the EU-15's share in total ODA or the value of the EU-15's ODA.<sup>3</sup>

<sup>3</sup> See the statistical appendix 1, as well as the technical note in appendix 2.



Table 7. Percentage change in GERs (2011–30)

| Level     | Algeria | Egypt | Jordan | Lebanon | Libya | Morocco | Palestine | Syria | Tunisia | Turkey | Israel |
|-----------|---------|-------|--------|---------|-------|---------|-----------|-------|---------|--------|--------|
| Primary   | 0.03    | 34.4  | -1.19  | 2.43    | –     | 0.17    | 1.63      | 2.71  | 0.38    | 0.85   | -0.30  |
| Secondary | 35.2    | 0.33  | 0.67   | -0.75   | -5.12 | -2.9    | 9.18      | -1.22 | 27.5    | -3.21  | –      |
| Tertiary  | –       | 3.6   | -17.8  | -5.42   | –     | -2.34   | 19.85     | –     | 174.9   | –      | –      |

Source: Authors' calculations, using data from UNESCO, Institute for Statistics, Data Centre, Custom Tables, accessed on 30 December 2012 ([http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF\\_Language=eng&BR\\_Topic=0](http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=136&IF_Language=eng&BR_Topic=0)).

As for the optimistic and pessimistic scenarios, these are estimated using the standard errors of the GER models and the predicted future values of the GERs, where

optimistic figures = predicted figures + 2 S.E.

pessimistic figures = predicted figures - 2 S.E.

Consequently, the optimistic and pessimistic<sup>4</sup> figures for some countries, such as Lebanon and Syria, deviate significantly from the figures in the business-as-usual scenario, as they have a high standard deviation. Also worth mentioning is that possible deviations from the expected values are higher for secondary education compared with other education levels.

## 2.7 Conclusions

The following conclusions are drawn:

- Education is considered one of the main building blocks for human development and poverty reduction. Thus, making use of cooperation opportunities between the EU and Mediterranean countries is a way of realising the millennium development goals in those countries.
- Relations between the EU and the southern and eastern Mediterranean countries have been active for a long time, starting with the Cooperation Agreements, then the Euro-Mediterranean Partnership (EMP) followed by the European Neighbourhood Policy (ENP) and finally the Union for the Mediterranean (UfM). All these initiatives have aimed at strengthening relations in political, economic and social fields.
- Education is one of the main areas of cooperation between the EU and the 11 SEMCs. Education projects are dedicated to basic and vocational education, and also areas of higher education, for instance by the European Training Foundation (ETF), EuroMed Youth, Euro-Mediterranean Partnership, Education and Training for Employment (MEDA ETE) and Erasmus Mundus programmes.
- The results indicate that several of the countries have benefited from the education assistance provided by the EU in raising their GERs and thus extending the outreach of education to children.
- The development achieved in the countries differs in the quantity and quality of education. Some countries have managed to develop in one of these two respects and some have progressed in both (such as Lebanon and Israel). Also, the magnitude of the development has differed, but none of the 11 countries has been stagnant in all indicators. On the other hand, some countries are currently suffering from political and economic instability and will continue to do so, and these conditions will affect their future cooperation with the EU and the potential development of their education systems.
- As in the case of economic growth and development, it is expected that the more progress a country has already made, the more difficult it is to achieve further large leaps in development. Countries that perform well based on their current education indicators, such as Turkey, Israel and Jordan, will achieve slower progress compared with other countries in the region, which are still at the middle of the road.

<sup>4</sup> See the statistical appendix 1 and the technical note in appendix 2.

### 3. Comparative assessment of social protection systems in the 11 SEMCs<sup>5</sup>

#### 3.1 Introduction

Social protection is one of the fundamental instruments in the struggle against poverty. Therefore, its contribution is considered essential to developing stability and alleviating poverty in a region such as the southern and eastern Mediterranean, which is characterised by poverty and conflicts of both a political and an economic nature.

Social protection has various institutional mechanisms, insurance and assistance that can protect families and individuals against certain types of risk. Yet the social protection systems in the region are highly fragmented in terms of the type of support, the target groups and sources of funding.

This part of the report provides an analysis of the social protection systems in the 11 SEMCs. It analyses the design and operation of the social protection systems in these selected countries as well as the impact, challenges and future prospects of these systems. The final objective is to map the current status and performance of these countries' social protection systems.

In short, this part of the report depends on a descriptive analysis that gives a basic understanding of the countries' protection systems. This in turn helps the development of a forecast for these systems in the framework of the current economies of the 11 countries. To achieve this objective, this part of the report is divided into four sections. Section 3.2 gives a general overview of the 11 SEMCs with respect to macroeconomic indicators, population, poverty, health status and total expenditure of their social protection systems. Section 3.3 compares the social protection systems of the countries, under the themes of old-age, disability and survivors' benefits; healthcare and maternity benefits; unemployment benefits; and finally cash transfer and subsidy programmes. Section 3.4 concludes, highlighting the main challenges these systems face in terms of development, and the future prospects in the context of the actions, policies and reforms underway in the countries.

#### 3.2 General overview of social protection systems in the 11 SEMCs

##### 3.2.1 Macroeconomic indicators

Most of the selected countries are considered upper-middle income countries, with the sole exception of Israel, which is the highest-income OECD country in the region. Meanwhile, Egypt, Syria, Palestine and Morocco are lower-middle income countries.

*GDP indicators.* Turkey has the largest GDP, which amounted to \$735.3 billion in 2010. Egypt is second on the list, with \$218.9 billion in GDP and a growth rate that reached 5.1% in FY 2009–10, followed by Israel, Algeria and Morocco with \$217.8 billion, \$159.4 billion and \$91.2 billion, respectively. Libya and Syria are characterised as medium-sized economies with \$62.4 billion and \$59.1 billion in GDP, respectively, as of 2010. The GDP of Tunisia is \$44.3 billion, Lebanon's is \$39.2 billion, while Jordan's GDP is around \$31.4 billion.

The lowest GDP is Palestine's, at \$4 billion as of 2010. In light of the deterioration in living conditions, the international community has promoted support for different social and emergency relief programmes. As a result, GDP growth in Palestine has been relatively steady, despite the economic deterioration following the first and second intifadas, from 2000 and onwards.

*GDP per capita.* Israel has the highest GDP per capita of \$27,340 as of 2010. It is followed by Turkey, Libya and Lebanon, with \$9,712, \$9,714 and \$9,203 in GDP per capita, respectively. Jordan, Algeria

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<sup>5</sup> This part of the report is based on detailed, background case studies of the countries, which were prepared (but some of which are as yet unpublished) within the framework of MEDPRO project and are listed in the References section.

and Tunisia have almost the same GDP per capita, of around \$4,525, \$4,501 and \$4,204 respectively. Morocco, Syria and Egypt also have similar levels of GDP per capita, at \$2,771, \$2,734 and \$2,591, respectively as of 2010. As in the case of GDP, Palestine has the lowest GDP per capita, at \$1,123. The discrepancy in the nominal daily wage between the Gaza Strip and the West Bank is significant, with the average, nominal daily wage in the West Bank being consistently higher.

*Employment.*<sup>6</sup> Palestine suffers from the highest unemployment rate of the 11 SEMCs, at 24.5%. The unemployment rate in the Gaza Strip was highest in the third quarter of 2009, reaching 42.3%. Tunisia and Turkey have almost the same unemployment rate, of 14.2% and 14% respectively. Turkey and Egypt's informal labour market is estimated to represent nearly 45% and 42% respectively of total employment. Informal labour comprises the self-employed and wage workers, along with unpaid family workers who are not contributing to social security and are mostly underperforming owing to incomplete protection and poor job conditions. Many reasons explain the persistence of informal work in Turkey and Egypt. Among the main ones is the prospect of relatively higher labour costs as a result of the high costs of social protection provisions. In the case of Turkey, although social security contributions were reduced in 2008, minimum wages remain high when compared with other countries in the region.

Jordan's unemployment rate is 12.9%, followed by Algeria, Morocco and Lebanon at 11.3%, 10% and 9%, respectively. Egypt's unemployment rate started to fall below 9% in 2010, but it rose again and exceeded 10% at the beginning of 2011. Syria's unemployment rate is 8.4% and Israel's is 7.6%. Data on Libya's unemployment rate were not available.

### 3.2.2 Population and poverty

*Population.* Egypt had the highest population (84.5 million) of the 11 SEMCs in 2010, and in 2009, 21.9% were living at the national poverty line. Turkey's population was 75.7 million in 2010, with 18.1% living at the national poverty line in 2009. Algeria and Morocco had nearly the same population in 2010 (35.4 million and 32.4 million, respectively) and also similar poverty rates. Algeria suffered from a poverty rate of 7% during 2000–09, while Morocco had about 9% of the population living at the national poverty line in 2007. Tunisia's population was 10.5 million in 2010, with the lowest poverty rate in the region of 3.8% in 2005. Israel's population was at 7.6 million as of 2010. When compared with EU countries, Israel's population is relatively young. Meanwhile, 20% or 1.5 million of the Israeli population lives below the poverty line. Nearly half of the Arab-Israelis and the ultra-orthodox households remain below the national poverty line. The Israeli elderly population is also prone to a high incidence of poverty, which remains above the national averages. Jordan's population was 6.1 million in 2010, with a median age of around 22. Therefore, Jordan is also a fairly young country, in which 13.3% of the population lived at the national poverty line in 2009. Among Syria's population of 20 million, more than 50% lived in urban areas in 2010 (no information was available on the poverty rate).

The smallest populations are in Libya, Lebanon and Palestine, with 6.5 million, 4.3 million and a little over 4 million, respectively, as of 2010; no data were available on the poverty rates of the first two countries. The population in these three countries is considered relatively young given the high fertility and lower mortality trends. This leaves the percentage of the older (age 65 or more) population low, which also keeps the old-age dependency ratio at a relatively low level. Still, the dependency ratio in Palestine is considered among the highest in the Arab world. With the continued economic decline in 2007 and the strict closures on Gaza, the current deep poverty rate is certainly higher. Living standards in Palestine deteriorated sharply amid the second intifada in 2002: 62% of households lost more than 50% of their income and almost 60% of them were below the national poverty line. Almost 20% of households suffer from severe poverty according to actual spending

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<sup>6</sup> Data on unemployment for the different countries refer to the year 2010. In some countries, however, we had to go as far back as 2008 due to the unavailability of new data.

patterns and nearly 45% suffer severe poverty in terms of income. In Gaza, the deep poverty level is very high. The percentage of Gazans who lived in deep poverty rose from 21.6% in 1998 to nearly 35% in 2006. About 80% of the population relies on some form of UN humanitarian assistance.

### **3.2.3 Health status indicators**

The 11 SEMCs have generally recorded an improvement in life expectancy, other than Turkey, which had greater life expectancy figures until the 1980s but has converged on regional averages ever since. In particular, life expectancy at birth in Turkey has been rising steadily, almost entirely coinciding with the 11-country average since the 1990s. In 2008, Turkey surpassed only Morocco, Palestine and Egypt. At the same time, health status in Turkey has improved over the past few decades, although it remains below the regional norms. A similar trend also exists for infant mortality figures, which have declined in all countries, as have the regional averages for the 11 SEMCs and the EU. Following a substantial drop during the 1960s, the infant mortality rates have fallen more quickly in Turkey than in other countries in the region since the early 2000s. For these reasons, the infant mortality rates are below the average for the 11 SEMCs according to the latest data available for 2009. To large extent, the Israeli health indicators exceed the EU averages. Accordingly, life expectancy at birth has been above age 70 since the 1960s and reached over 80 in the mid-2000s, along with most EU countries. Infant mortality rates have also declined over the past decades, dropping from 30 deaths per 1,000 births to under 4 deaths in 2008. Turkey's life expectancy at birth is 72 years, followed by 70 years in Egypt, 72 years in Morocco and Lebanon, 73 years in Algeria and Jordan, 74 years in Tunisia, Syria and Palestine, and 75 years in Libya.

### **3.2.4 Total expenditures of the social insurance system**

In Palestine, the resources allocated to the social sector were estimated at 45% of the total budget for each year from 2008 to 2010. Moreover, social protection spending nearly doubled in 2005, to 6.5% of GDP. The major source of the increase was the programme for temporary employment. Expenditure on the currently generous public pension represented 4% of GDP in 2009, which was higher than the average burden in the region, despite the fact that the Palestinian population tends to be younger than most of the populations in the region.

In Turkey, the total expenditures of the social insurance system – including on social security, general health insurance and unemployment insurance – represented nearly 10% of GDP or roughly 30% of the general government expenditures in 2009. Among the various items under social insurance spending, healthcare expenses had increased the most since 1999.

By contrast, with defence-related expenditures in Israel representing nearly 8% of GDP, government spending on social programmes has remained relatively low and has further declined in recent years. Against the background of a relatively young Israeli population, healthcare and pension expenditures are comparably low. Social spending remains lower than average spending in many EU countries, with increasingly restricted access to income-support benefits and child allowances.

## **3.3 Social protection systems in the 11 SEMCs**

### **3.3.1 Introduction**

Social protection involves all the programmes and institutions that cover some or all of the risks the population faces during the life cycle. They are financed either through the contributions of current workers (social insurance) or the state budget (social assistance), relying on solidarity within and between the generations. This section of the report provides a comparative analysis of the social protection systems (SPS) in the 11 countries.

In general, the social protection systems in these countries are well established and provide a number of benefits to the poor and others who are covered by these systems. Nonetheless, the characteristics of these systems differ from country to country.

While the **Egyptian** SPS covers survivors, old-age retirement, unemployment benefits, disability, work injuries, sickness and maternity, the **Israeli** system provides unemployment insurance, health insurance, income support, social assistance and solidarity funds, maternity benefits and family allowances. In **Turkey**, the system also provides income, healthcare, education, accommodation and rehabilitation benefits to social groups in need, such as the elderly with no family support, disabled citizens, orphans, abused women and children, and the poor. The **Lebanese** system covers four categories: retirement, maternity insurance and sickness, family allowances, and emergencies and risks in the work environment. In **Syria**, the main form of social protection is the social insurance system, which provides coverage for old age, disability and survivors, along with work injuries and maternity benefits. Almost 90% of the beneficiaries of the Syrian system are public sector workers. The **Jordanian** social security system is composed of a pension, health insurance, maternity benefits, cash transfers and subsidy programmes. The case is somewhat different in **Palestine**, since there are public pensions, cash transfers (including the special fund for hardship cases, temporary employment schemes, the martyrs and injured fund, and the detainee's fund), food aid and other services.

The national **Algerian** programmes for social security cover all persons employed under a labour contract, with earnings at least equal to half the legal minimum wage of 12,000 dinars. The insured person and the employer's contributions solely finance old-age benefits and the government subsidises the minimum pension. Disability benefits, survivors' benefits and a death grant are financed under the sickness and maternity programmes.

In **Libya**, the national social security programmes cover all persons residing in Libya, with a special system for armed forces personnel. The insured person, the employer and the self-employed person's contributions help finance sickness benefits, pregnancy benefits, birth grants and work injury benefits, while the government contributes 0.75% of covered earnings, providing annual subsidies and income-tested benefits. The national social security programmes in **Morocco** cover salaried workers and apprentices, persons employed by landlords, craftsmen and certain categories of self-employed persons along with specific categories of fishermen. The system has voluntary coverage for previously insured persons and self-employed persons, as well as special systems for civil servants and for other specific categories of employees. The source of funding is the employee and the employer with no government contribution. Direct assistance programmes, whether in kind or in cash, are available, as are food distribution programmes to the elderly, disabled persons, mothers and children. Furthermore, there are literacy and training programmes for the most deprived persons, orphans, etc. In addition, social security allowances are distributed on a category-specific basis and according to poverty lines.

In general, the countries of the Maghreb are characterised by a strong and cohesive social system through which families help in periods of shortage and where income is redistributed among the poorest by associations along with religious and charitable foundations. The private sector is involved in the solidarity process as well as the national level, through associations of all kinds and foundations that were created recently with the support of the King of Morocco to counter social exclusion, accompanying the social policy.<sup>7</sup>

Social protection in **Tunisia** is comprised of social insurance schemes and social assistance programmes financed directly from the state budget, targeting the poor and those on a low income. The latter programmes include cash transfers, free or reduced-fee healthcare, some basic food and energy price subsidies. The social insurance schemes in the public and private sectors are

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<sup>7</sup> One example is the Mohammed V Foundation for Solidarity, which was established in 1999 as a public utility entity. Guided by its motto 'Ready to help the needy', it has been involved, jointly with other social players, in the fight against poverty. Its activities involve relief to victims of natural disasters, providing food support, reaching out to vulnerable people, launching or fitting out social work centres and centres for the advancement of women, hostels, building facilities for the disabled, building healthcare centres and providing equipment for public hospitals. In addition is the provision of financial and logistical support for NGOs and other sustainable development activities, such as improving basic infrastructure, literacy, informal education, vocational training, developing activities and setting up sustainable income-generating units, particularly for women in rural areas.

fundamentally different. There is a relatively large number of schemes in the private sector, which differ according to the socio-professional classifications of employees in terms of contributions, risk coverage, benefits and qualifying conditions. The general feature of social insurance schemes in Tunisia is that they are in most cases mandatory and generally cover some or all of the following risk categories: pensions for old age, disability and survivors; sickness and maternity benefits, which cover medical care and cash benefits for lost days of work; family allowances; and benefits for accidental injuries and occupational illness. Most recently, a kind of unemployment insurance has been introduced, in the form of aid for a limited period and under very strict conditions. In the private sector, besides the general scheme (the RSNA for non-agricultural wage earners, established in 1960), there are different schemes for wage earners in agriculture (the RSA, 1981), wage earners in agricultural firms and cooperatives (the RSAA, 1989), self-employed agricultural and non-agricultural workers (the RTNS, 1995), and work injuries and occupational illness (1994). There is also medical care for students (and eventually family allowances if they are married with children). In addition, there is a scheme for Tunisians working abroad who not covered by any other scheme in Tunisia or abroad, which is optional and covers only medical care and old age (the RTTE, 1989). Several other schemes were added in 2002 with the aim of eventually extending coverage to all workers, including a scheme for persons on a low income (the RTRF), which covers household workers, small-scale fishermen, agricultural workers working less than 45 days per quarter with the same employer; a scheme for workers at construction sites (the RTC); and a scheme for artists, creators and intellectuals (the RACI). With these new schemes the rate of statutory coverage reached 97% of the population in 2006; it is higher if we exclude the unemployed.

### *3.3.2 Social protection systems in the 11 SEMCs: A comparative analysis*

#### *Old-age, disability and survivors' benefits*

Most social protection systems in the 11 countries provide old-age, disability and survivors' benefits.<sup>8</sup>

The **Egyptian** social security system (SSS) covers employed persons aged 18 or older, and aged 16 or older if a government employee. The SSS is based on a pay-as-you-go (PAYG) system, which covers 25 million members and is administered by the National Organisation for Social Insurance through two separate pension funds: i) for government workers (civil servants, the army, police, etc.) (the GSIF); and ii) for workers in public and private enterprises, the self-employed, casual workers and Egyptians working abroad (the PSIF). Different assistance schemes are provided by the Ministry of Social Solidarity to those who are not otherwise covered by the system. The SSS is so expensive that a large proportion of employers and employees are unable to participate in it. The contribution rate is 41% of salaries, of which employers contribute 26%, workers contribute 14% and the treasury contributes 1%. The SSS suffers from major deficiencies, namely higher contribution avoidance, a low ceiling for the pensionable salary, high administration costs, and inconsistent and unsustainable financing.

In 2010, a **new, unified social protection system** was proposed and introduced to overcome these deficiencies. It covers all categories of the population and provides a basic pension for all Egyptian citizens who reach the age of 65 even if they are non-contributors. The new system shifts from a defined benefit system to a defined contribution system with an annual increase for pensions indexed to inflation. The system provides benefits in the event of death, disability, work injury or unemployment. The old-age pension benefits under this system depend on the value of the insured person's account balance at retirement, which is contingent upon the duration and amount of contributions collected, the rate of return on invested assets and the rate of wage increases. The pension received ranges between 65 and 75% of the value of the last gross real wage prior to

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<sup>8</sup> As noted earlier, country data on the social insurance and protection systems are based on the detailed, background country reports prepared for the MEDPRO project.

retirement; for disability or death, it represents 75-88% of the value of the last net wage before retirement.

In **Lebanon**, the social security system is a classical, state-run compulsory scheme. The system is financed by contributions representing a percentage of lifetime earnings; it is operated as a PAYG system and is very partially funded. The major revenues of the system come from the contributions of both employers and employees, with the state being committed to cover deficits. Old age, disability and a survivors' programme are part of a social insurance system that solely provides a lump-sum benefit. The old-age benefit is a lump sum payable from age 60 but it is compulsory at age 64. It is payable i) at any age if an individual has at least 20 years of employment, ii) if a woman marries and leaves employment during the first year of marriage, iii) if a person is disabled (with at least 20 years of employment), or iv) upon death (with at least 6 years of employment). A reduced benefit is paid at any age with 5 to 19 years of employment if the insured person leaves employment permanently. The Lebanese social security system is fragmented, with multiple health insurance schemes and limited social safety-net programmes. The system is characterised by low coverage and high fiscal costs, and the schemes for the civil service and military cover just 6% of the labour force, while costing 2.7% of GDP per year. Additionally, the formal social safety nets/social assistance programmes are weak and fragmented, and too inadequate to play an effective role in times of economic need. Consequently, Lebanon is planning to increase the minimum value of pensions by moving towards a multi-pillar scheme for pension funds.

The **Syrian** old-age pension system has been designed somewhat differently with respect to age than the systems in Lebanon and Egypt. The pension system applies to men aged 55 and women aged 50 with 240 months of contributions, or at any age for both men and women with 360 months of contributions. It also applies to men aged 60 and women aged 55, and to persons whose occupations are physically demanding or dangerous, with a minimum of 180 months of contributions. The system covers employees, domestic workers, freelance workers, the self-employed and employers. Family labour is not covered, however, but those who work abroad have the right to join the system. Civil servants have their own special system. Early pensions apply at any age with a minimum of 300 months of contributions. In the Syrian system, there is an 'old-age settlement' that is applied to those who do not satisfy the qualifying conditions for the old-age pension for men aged 60 and women aged 55. The insured person is paid 2.5% of his or her base earnings multiplied by the number of years of contributions, up to a ceiling of 75% of the basic earnings (which equal the prior year's average monthly earnings). The disability pension applies to those persons who have suffered a loss of at least 80% of their working capacity. The beneficiary must have contributed for the most recent 12 months or for 24 months, including the previous 3 months. The insured person is offered 40% of his or her base earnings in addition to 2% for each year of covered employment (where the base earnings are equal to last year's average monthly earnings). The maximum pension is 80% of base earnings.

In **Turkey**, the public pension system is one of the most generous old-age benefit plans in OECD countries, with an estimated gross replacement rate of around 86%. It is based on a defined-benefit model, providing old-age income to the insured person and his or her dependents. Turkey's publicly funded defined-benefit system is financed on a PAYG basis. All salaried employees above the minimum retirement age who have contributed to the pension fund are entitled to old-age benefits. Employee contributions to the public system amount to 9% of monthly earnings; employers contribute 11% of the payroll. The government also makes transfers of up to 25% of the total contributions. Minimum and maximum monthly limits also apply for contribution purposes.

A **reform was implemented in 2006** that consolidated the separate pension institutions and systems providing benefits to self-employed workers and farmers, private and public sector workers, and civil servants. Non-public occupational and personal pension schemes also exist in Turkey. Among these, mandatory occupation schemes for the armed forces and coal mining enterprises are the most established while others are growing. A private pension system providing complementary pension income was introduced in 2001. Joining any private pension plan is optional. The law provides a number of tax incentives to motivate salaried employees to shift to private pensions.

The **Israeli** social security system is highly stratified. The pension system in particular includes several layers. First, the basic pension arrangement provides a low level of support to all Israelis. A means-tested system also exists alongside, providing income support to low-income elderly families. In 2008, a mandatory pension saving system was introduced for all workers, currently covering nearly two-thirds of the population. Lastly, the high-tech and public sectors have supplementary pension systems, including occupational pensions that are no longer accepting entrants. The link between the pension payments and contributions is weak. Men are eligible for a pension at age 67, while women can obtain pension income after age 62. The old-age support ratio, or the ratio of potential pension contributors (aged 20 to 64) to beneficiaries (aged 65 and older), is nearly 8-to-1. As a consequence, expenditures on pensions are relatively low. Nearly a quarter of the elderly receiving pension benefits live under the national poverty line. The Israeli pension system also relies on private pensions to reduce poverty risks. The private (second-pillar) pension schemes, which are especially prevalent, have recently been transformed from occupational defined-benefit schemes (which have not accepted new members since 1995) to defined-contribution schemes, with tax advantages provided for long-term savings and annuity programmes.

In 2008, **a new agreement was struck between the unions and employers** that required a gradual increase of the mandatory employee and employer contributions to defined-contribution schemes. Currently, only half of retirees receive income from a second-pillar pension scheme; however, this share should increase over time as more people retire under the mandatory scheme. Disability benefits, on the other hand, provide a low level of income for those with an ‘assessed level of disability’. Although no qualifying contribution period exists, potential beneficiaries must have a total assessed disability that is over a certain threshold and would lead to a loss of 50% or more of their earning capacity from employment. The share of disability benefit recipients among the population has increased rapidly, reaching 5% of the working-age population in the mid-2000s. One of the key reasons is the relative generosity of the scheme when compared with income support payments.

The **Jordanian** pension system is typical of the region in many respects, while both superior and inferior in others. At the most basic level, it shares many characteristics with the region: it is a partially funded PAYG scheme, which covers around 37% of the workforce. At present, there are three separate tiers within Jordan’s public pension system; however, the formerly independent schemes for public sector and military employees have been closed to new entrants. Since their creation in the mid-20<sup>th</sup> century, the schemes have fallen into financial difficulty, prompting the Jordanian government to suspend new membership. These schemes are the i) now-closed Civil Pension System, covering those government employees hired prior to 1995; ii) the more recently closed Military Pension System, covering only those armed service members recruited prior to 2002; and iii) the Social Security Corporation (SSC), which remains open to new entrants and covers state employees hired after 1995, members of the armed forces enlisted subsequent to 2002 and the nation’s private sector employees. The consolidation of the formerly independent public and military schemes into the SSC is part of the Jordanian government’s vision of creating a fully integrated, universal public pension system. Participation in the SSC is compulsory for business owners with more than five employees. The age conditions set by the SSC differ for men and women, with male eligibility set at 60 years and female eligibility set at 55. The contribution rates for the SSC total 14.5% of gross wages and are split between work injury and occupational disease insurance (2%) and old-age, disability and survivors’ pensions (12.5%). Employers contribute the 2% needed for the work injury and occupational disease insurance, while the 12.5% allotted for old-age, disability and survivors’ pensions is split between the employer’s 7% contribution and the employee’s 5.5% contribution. The contributions made by employers are income tax-deductible, while the employee’s contributions are tax-exempt.

In **Palestine**, there are two different pension systems for civil servants in the West Bank and in the Gaza Strip, and a third for the security forces. These schemes cover civil servants and local authorities – approximately 160,000 public sector employees or 15% of the working population. All three public pension systems are defined-benefit schemes (unfunded or partially funded) that do not allow for capital accumulation nor enable investments in the local economy. It was estimated that the budgetary pension expenditures accounted for 4% of GDP in 2009, which is higher than the average burden in



the region, despite the fact that the Palestinian population tends to be younger than that of many countries in the region. The private pension schemes currently have the following characteristics: i) they are voluntary and accessible; ii) most of them involve defined benefits and employer contributions; iii) they vary in motivation and investment policies; iv) they provide lump-sum payments rather than regular retirement payments; v) the provident fund is paid by the end of the work contract rather than at retirement age; vi) provident funds are not transferable to other employers; vii) they are managed through shared representation by the employer and employees, with weak tracking systems; and viii) most of these funds are not significant to the extent that they can impact on the local economy.

In **Algeria, Morocco and Libya**, retirement pensions are generally based on salaries during a relatively short reference period: three or five years in Morocco, and three years in Libya and Algeria. Public works programmes have existed in Morocco for several years, especially since the beginning of the 1990s with the implementation of the structural adjustment programme. The pension systems (for old age, disability and death) in Algeria, Morocco and Libya were legally codified at the same time.

In Algeria, the old-age pension is for men aged 60, veterans aged 55 with at least 15 years of coverage and women aged 55 with at least 10 years of coverage. It applies regardless of age for men and women who have at least 32 years of contributions. The normal retirement age for insured women (age 55) who have raised at least one child for at least 9 years is reduced by a year for each child, up to 3 years. The normal retirement age for veterans with a disability (age 55) is reduced according to the assessed degree of disability. Disability insurance is paid at any age for workers with a total disability who do not meet the other qualifying conditions for a disability pension. Workers who do not have the required number of years of coverage at the normal retirement age can continue to work for up to 5 years to meet the qualifying conditions. Persons employed in unhealthy work can retire before the normal retirement age. The system provides a partial pension at age 50 for men with at least 20 years of contributions and at age 45 for women with at least 14 years of contributions who have *voluntarily retired* from employment.

The system also provides an early pension for men at age 50 and for women at age 45 with at least 20 years of contributions. The insured person must be *involuntarily unemployed* owing to economic factors (such as downsizing or business closure), must have worked at least three of the last ten years with the employer, and must not be receiving income from any professional activity. The employer must pay a lump-sum contribution, calculated according to the number of years at which the insured person retires before the normal retirement age.

In terms of age, the limits are different in Libya and Morocco. In Libya, eligibility for the old-age pension starts at age 65 for men, 60 for women, 62 for civil servants and 60 for workers in hazardous or unhealthy occupations, with 20 years of contributions needed for a full pension. In Morocco, eligibility for the old-age pension starts at age 60 for men (55 for miners with at least five years of underground work) with at least 3,240 days of coverage.

In **Tunisia**, old age, disability and survivors' pensions are financed by a contribution rate of 4.74% of gross earnings from the insured person and 7.76% of gross payroll from the employer. It also includes a death grant and a death allowance from an administrative and management point of view, even though their financing is covered by the premium paid for the sickness and maternity programme. To qualify for an old-age pension, the insured person must reach the legal retirement age of 60 (or 55 for certain hard occupations), with at least 120 months of contributions. There is, however, the possibility of early retirement without a penalty in the following cases: i) at age 55 with at least 360 months of contributions; and ii) at age 50 for a mother with three children and at least 15 years of contributions, for prematurely aged workers and for persons unemployed for at least six months because of economic reasons (redundancy). Early retirement for personal convenience with a penalty is also possible, starting from age 50 with at least 360 months of contributions, in which case a penalty of 0.5% is incurred for each missing quarter until the statutory retirement age. If the insured person has reached the legal retirement age, but has contributions of between 60 and 120 months, s/he qualifies for a partial pension. With less than 60 months of contributions, s/he does not qualify even for a partial

pension, but the value of all his or her contributions is refunded to the individual at age 60. The old-age pension is equal to 40% of the base (calculated as the average earnings during the last ten years, revalorised by some type of index), plus 0.5% for each additional quarter of service beyond the ten years. There is a maximum pension equal to 80% of the base after 30 years of contributions, and the base must not exceed six times the official, industrial minimum wage (referred to as SMIG); periods of declared wages of less than 66.7% of the SMIG are not taken into account in the calculation. There is also a minimum pension equal to 66.7% of the SMIG and a minimum partial pension equal to 50% of the SMIG. Pensions are indexed to changes in the SMIG.

The disability pension in Tunisia covers a disability not related to a work injury or occupational illness. To qualify for it, the insured person must have contributed at least 60 months and show a permanent disability of at least 66.7%; a medical commission must assess his or her disability annually until the age of 55. It is cashed immediately and is equal to 50% of the base of the old-age pension (as defined above), plus 0.5% for each additional quarter beyond 180 months of contributions; a supplement of 20% is paid if constant attendance is needed. All other qualifications pertaining to the old-age pension (maximum, minimum and base calculations) also apply. To qualify for the survivors' pension, the insured person must either be a pensioner at the time of death or active and have contributed at least 60 months prior to death. The survivors are the widow, a child younger than 16, a child younger than 21 if still at school or younger than 25 if a university student without a scholarship. There is no age limit if a young survivor is disabled or is an unmarried daughter. Concerning the amount, 75% of the accrued or actual pension of the deceased is paid to a widow without dependent children, but only 70% if the widow has one dependent child (30% goes to the child), and only 50% if the widow has two or more dependent children (the other 50% goes to the children).

### *Healthcare and maternity benefits*

Unlike old-age benefits, not all of the 11 SEMCs provide health insurance and maternity benefits.

In **Egypt**, the healthcare system provides a set of benefits that includes general and specialist care, surgery, hospitalisation, maternity care, dental care, laboratory services, medicines, rehabilitation services, and appliances. Service benefits are provided by the employer, and public or other medical facilities under contract with the Health Insurance Organisation, which pays benefits directly. The system is dominated by three state-owned companies, which constitute 90% of the system. In terms of work injury benefits, the compensation is paid for the injured during the period of injury and absence from work. If a permanent disability occurs, a pension of 80% of the real gross wage before the injury is paid. If it is a partial injury, a partial pension is paid. For the sickness benefits, the beneficiary receives 75% of the most recent, covered daily wage prior to the disability, which is paid for the first 90 days; subsequently, the figure is 85% (100% of earnings is paid for specified chronic diseases). The longest period of benefit payments is 180 days in a calendar year; for specified chronic diseases there is no limit to the duration. The lowest amount of benefits is equal to the lowest amount of contributory wages. Finally, in the case of maternity benefits, the beneficiary receives 75% of the most recent, covered daily wage prior to the maternity leave period, which is paid for up to 90 days. The benefits are payable for up to three pregnancies. The lowest amount of benefits is equal to the lowest amount of contributory wages.

In **Lebanon**, service benefits are provided by hospitals under contract with, and paid directly by, the National Social Security Fund. Benefits include general and specialist care, hospitalisation, maternity care, medicines and laboratory services. The insured person receives a partial cash refund for the cost of a doctor's treatment and a full refund for maternity care. The insured person is normally reimbursed by the fund for 80% of the cost of a doctor's treatment (90% of the cost of hospital care and 100% of the cost of maternity care as well as kidney and cholesterol dialysis), according to a schedule specified by law. The duration of benefits is 26 weeks, going up to 52 weeks in special cases. For chronic illnesses, including heart disease and cancer, there is no limit to the duration. The work injury programme is an employer liability system, involving compulsory insurance with a private carrier. This system applies to all wage earners covered by an employment contract. The sickness and

maternity leave programmes both cover agricultural workers and teachers. Public sector employees, university students, dockworkers and newspaper-sellers are solely covered by medical benefits; the coverage does not extend to temporary agricultural workers or citizens of countries without mutual agreements. Unpaid coverage exists for the self-employed and for workers previously covered by the obligatory system but without coverage in their present employment.

Medical benefits for employees in **Syria** cover general and specialist care, surgery, hospitalisation, drugs, X-rays, appliances and rehabilitation. The health insurance law in Syria applies to all employees in all sectors. Yet, the system for medical care and health insurance under the social security law in Syria has a shortfall, in that employees are subject to the rules of each institution. The work-related injury system covers employees in industry, commerce and agriculture as well as public sector employees (excluding domestic servants). The system does not require a minimum qualifying period.

Until 2003, a majority of the population in **Turkey** was covered by a patchwork of health insurance schemes even though there were serious problems in the delivery of healthcare services. The health insurance and healthcare systems were broadly reformed in 2003, with the introduction of a universal health insurance system, increased medical staffing in rural and remote areas and new performance incentives for physicians. More recent reforms implemented in 2008 introduced family medicine in some of the selected areas. Furthermore, Turkey's health expenditures (as % of GDP) have increased dramatically over the last 15 years. In 1999, the total expenditures on health represented 4.8% of GDP. Nearly a third of these expenditures were private, mostly comprising out-of-pocket expenditures. Thanks to increasing public expenditures in the early 2000s, total health expenditures had jumped to 6.7% of GDP by 2009, surpassing the averages for the 11 SEMCs. Private spending on healthcare as a share of national income remained relatively constant, representing around 1.5% to 1.8% during this period. In turn, the share of public expenditures (in total healthcare expenditures) caught up with the EU averages. Sickness benefits are also available for covered individuals with at least 120 days of contributions. The cash benefits are equivalent to 50% of average daily earnings during the required period for inpatient treatment and 66% of daily earnings for outpatient treatment. For both sickness and maternity leave, the contributions are approximately 5% and 7.5% of the monthly payroll for employees and employers, with government contributions of up to 25% of the total contributions collected.

The **Israeli** healthcare system operates under a health management organisation (HMO), where individuals, who have universal basic insurance, choose among competing healthcare providers. Aside from wage contributions by employees and employers, payments to the service providers are supported by government transfers. A supplementary system of private health insurance also exists and is becoming increasingly prevalent. The healthcare system consists of a mixture of private, semi-private and public entities. The service providers are statutorily non-profit in nature, funded by the National Health Insurance funds according to the number of covered members and age groups. Although overall expenditures have remained unchanged (at around 7.5 to 8% of GDP) since the early 1990s, the underlying structure of healthcare expenditures has changed substantially. The share of public healthcare expenditures has diminished dramatically. Maternity leave benefits have been available in Israel since the 1950s to insured persons (men and women), the wives of insured persons and individuals aged 18 or older in vocational training. The programme provides income support, representing a cash transfer of 100% of the insured person's average, daily net income for 14 weeks. Eligibility for full benefits requires at least 10 months of coverage within the last 14 months, or 15 months within the last 22 months. A partial benefit (7 weeks of income replacement) is also available for those with less coverage.

In **Jordan**, the healthcare infrastructure is modern and highly developed; indeed, it currently ranks among the best in the region and is a burgeoning market for medical tourism. This is evinced by the country's high ratio of medical personnel. With 15,226 working physicians in 2009, Jordan's per capita rate stood at 24.5 doctors per 10,000 inhabitants. Currently, health services in the Kingdom are an amalgam of the public, private and donor sectors. To contend with this, Jordan has developed a

rather baroque set of insurance schemes in which individuals are often eligible for more than one programme at a time. The public sector, which covers an estimated 48% of the population, is by far the largest provider of medical coverage in the country. An additional 20% of the population is covered through private insurers or receives care from the United Nations Relief and Workers Agency (UNWRA) in the donor sector. The final 32% of Jordanians, while not eligible for free public-sector healthcare, is offered public plans at highly subsidised rates. In total, 81% of the Jordanian population is covered by some form of health insurance, while 20% is reportedly covered by more than one scheme. The number of uninsured and underinsured in Jordan is estimated to be about 30% of the population. In 2009, Jordan's total expenditure on healthcare stood at 9.3% of GDP. The state constituted 64.6% of this spending while private sector expenditure was 35.4%. Total per capita healthcare expenditure in Jordan amounted to \$336 in 2009. Spending on healthcare as a percentage of GDP remained relatively steady between 2003 and 2009; however, government spending on healthcare as a percentage of total government spending doubled during the same period. The underlying reasons are that Jordan's demographic transition includes both population growth and ageing. There is also a general expectation in the Kingdom that the social welfare system, including healthcare, should be expanded. Finally, there are deep structural and economic inefficiencies within the system itself. Conversely, private expenditure on healthcare underwent a steep decline during the same time period.

With respect to maternity benefits, the current Jordanian legislation mandates pay during maternity leave for both public and private sector employees. Under the present system, the cost of leave is to be borne by the employer – whether private or public. After the official period of maternity leave has expired, there is an additional one year period in which women are entitled to take paid time off for the purpose of nursing a newborn baby, provided that the total time off does not exceed one hour per day. Firms that employ at least 20 married women workers are mandated by Jordanian law to provide an 'adequate facility', overseen by a trained nurse, for employees' children aged four and under, given that there are at least ten children within that age group.

In **Palestine**, households spend an average of 40% of their own out-of-pocket resources on healthcare. Out-of-pocket payments are considered regressive (i.e. the proportional cost of payments decreases as the ability to pay increases). They remain the most inequitable way of financing healthcare and are unable to maintain adequate resources to sustain health services. The current structure of out-of-pocket payments in Palestine has almost no price discrimination policies to account for differences in the ability to pay. Healthcare spending on needed programmes faces continual challenges as a consequence of resource constraints. The double burden phenomenon and demographic transition in addition to an unstable economy exacerbate the situation. In 2005, the total operating expenditure of the Ministry of Health (MoH) was \$139.6 million (compared with \$100.3 million in 2000). Since the establishment of the National Authority, the MoH and Palestinian healthcare NGOs have attached strategic importance to the development of a primary healthcare (PHC) system through the provision and expansion of healthcare services. PHC is delivered by a variety of healthcare staff working for the MoH, NGOs, UNRWA, the military health service, the Palestinian Red Crescent and others. The expansion of PHC has covered larger areas in the different national governorates, and grew from 454 centres in 1994 to 693 in 2009 – an increase of 52.9% compared with 1994. Government-run PHC centres represent 63.5% of all centres. Healthcare services are financed through a mixture of taxes, health insurance premiums and co-payments, out-of-pocket payments, local community financial and in-kind donations, and loans and grants from the international community (including UNRWA).

Chronic diseases and injuries are another resource burden in the West Bank and Gaza. As a result, expenditure on healthcare is on the rise and eating up a significant portion of the GDP. The majority of Palestinians have some form of health insurance, with 64% of households stating that all their members enjoy some type of health insurance coverage. Although villagers were somewhat less likely than city dwellers to be insured, there were no significant differences across income groups; indeed, families suffering hardship were least likely to be without any coverage. Moreover, refugees were at least 1.3 times more likely to enjoy full coverage than the rest of the population. The MoH provides for nearly half of all families; private institutions accounted for 28%, and UNRWA for 21%.

Households above the poverty line were nearly twice as reliant on private care (40%) as poor households (24%). Nevertheless, even persons with disabilities who use their health insurance do not receive adequate, quality healthcare services because the healthcare system and infrastructure in Palestine are not well developed, owing to a relative lack of human and technical resources as well as medical supplies.

In **Morocco**, health and maternity insurance addresses employees in the public sector, members of the army and formal workers in the private sector through welfare boxes (cash desks). Yet it provides limited coverage beyond the free offer of certain services and forms of care. Furthermore, the coverage is weak in terms of effective spending. As a result, the public system is regressive, meaning that the poorer the household, the greater is its share of expenditures on healthcare.

Finally, in **Tunisia**, a new health insurance law was launched in 2004 that reorganised the entire health insurance system, taking effect over several stages, starting in July 2007. The aim was to provide more access to private sector facilities for all affiliates, while reducing inefficiencies and inequities and containing overall costs. Following the reform, all schemes for both public and private sector workers have been unified and merged into a single mandatory scheme, managed in all its aspects by a newly created and independent public body, the Caisse Nationale d'Assurance Maladie (CNAM), overseen by the Ministry of Social Affairs. This body is solely responsible for management, supervision, quality control (through a medical commission) and negotiations with all parties involved in the system (including their representatives) pertaining to official tariffs for the various services and premium adjustments if needed.

In addition to health insurance, the CNAM also manages cash benefits under the sickness and maternity programme, as well as work-related injuries and occupational illness. The new mandatory scheme offers the insured person three options to choose from, against a progressively unified premium of 6.25% (2.5% charged to the employee/insured person and 4% charged to the employer). Pensioners who were previously exempt are now required to pay a premium of 4%. Also, the implementation of the new scheme is supposed to proceed over three to five years in several stages, starting with only ambulatory care and progressively extending to hospitalisation, first for employees in the public sector and then through a general scheme for employees in the private sector (RSNA), and so on. The three options include the so-called 'public option', the 'private option' and the reimbursement option. The public option allows unlimited access to public facilities, against a low 'moderating ticket' (co-payment) and is capped annually at the equivalent of two month's salary. The private option allows access to both public and private facilities, against a higher and uncapped moderating ticket. In order to contain costs, patients must obtain a referral from their family doctor (who must be affiliated with CNAM) prior to accessing any type of specialised care. The reimbursement option also offers access to both private and public facilities, but the reimbursement is not full and there is a ceiling. The reform is at its beginning, and there is already concern that in its current form (particularly in terms of contributions), it will not guarantee the long-term viability and financial sustainability of the system. That is why the reform has provided for the establishment of a permanent committee of experts in the field to regularly evaluate the functioning of the system and eventually propose corrective actions.

### *Unemployment benefits*

Providing unemployment benefits is not a common practice in the 11 countries. **Egypt** had an unemployment benefit by which the unemployed person was paid 60% of the last monthly wage, after a 7-day waiting period, for up to 16 weeks, which could be extended to 28 weeks if contributions had been paid for the last 24 months. This system was practically ineffective, however, and was never applied. Thus, it has been revised and fixed under the new pension law, which stipulates disbursement of unemployment benefits starting 8 days from the end of service until employment for a period of no more than 6 months.

Unemployment insurance was introduced in **Turkey** in 1999, with the aim of compensating for the income loss of workers who become unemployed. The unemployment benefits correspond to 50% of

the daily average gross earnings in the last four months and cannot exceed the gross monthly minimum wage, with a maximum duration of about one and a half years following the termination of a contract. Workers cannot receive unemployment benefits at the same time as sickness or maternity benefits. The payments are not subject to any taxes or deductions. The duration of benefits is linked to the contribution periods of workers. Accordingly, the insurance benefits are paid for 180 days to an insured worker with less than 600 days of contributions, for 240 days to those with at least 900 days of contributions, and for 300 days to those with 1,080 or more days of contributions. The rate of salary contributions for unemployment insurance is 4% of a worker's monthly earnings, of which employers contribute half, the insured persons contribute a quarter and the public contributions account for the remaining quarter.

**Israel's** unemployment insurance benefits provide short-term income support for the involuntarily unemployed from 45 days to 6 months maximum, depending on age and family situation. Income support, which is more prevalent in Israel, is means-tested, although it also provides benefits for working families with lower incomes. Monthly benefits are linked to prior earnings and the age of the insured. The share of salary provided as income support under the insurance scheme decreases with the insured person's prior salary, implying a progressive system that replaces a greater proportion of earnings for those on lower incomes. The official replacement rates for 2010 ranged from a high of 80% for those older than 28 with a monthly salary less than approximately €600 to a low of 33% for those with a monthly salary of approximately €5,000. With high poverty, general cash assistance programmes take precedence in the country. In 2008 and 2009, the Israeli government undertook an experimental welfare-to-work arrangement to actively encourage the poor to lift themselves out of poverty.

In **Palestine**, anyone registered with a union that certifies them to be unemployed is eligible for benefits without paying a contribution. In **Algeria, Libya** and **Morocco**, an income replacement benefit is paid in case of incapacity to work. The device of unemployment insurance has been useless for a long time and seems like a luxury today. The upper limit of the allowance can be paid for three years in Algeria. The trend is to develop programmes of replacement, within the framework of the fight against poverty, in particular in the form of micro-finance. Finally, in contrast with the previously mentioned countries, there are no national programmes for unemployment insurance in **Lebanon, Syria** or **Jordan**.

### *Cash transfer and subsidy programmes*

There are several cash transfer and subsidy programmes among the 11 SEMCs. In **Egypt**, these programmes include cash transfers and in-kind subsidies. The key subsidy programmes are for food, energy, farmers and student transportation. The cost of cash and in-kind subsidy programmes as a percentage of GDP increased from 6.5% in 2002 to about 14% in 2009. Yet, the system suffers significant abuse, as rich segments of society are benefiting the most from such programmes.

Also, the **Lebanese** government applies a set of cash transfer and subsidy programmes to support low-income groups and the elderly in Lebanon. Spending on cash transfer and subsidy programmes increased from 3% of GDP in 2002 to 8.7% in 2008.

In **Turkey**, social services and social assistance provide income, healthcare, education, accommodation and rehabilitation benefits to the social groups in need, such as the elderly with no family support, disabled citizens, orphans, abused women and children, and the poor. A means-tested safety net exists for those with no social security rights, who are either disabled or aged 65 and older, with an average monthly payment of nearly 12.5% of the minimum wage.

Meanwhile, in **Israel**, income support is more prevalent. It provides benefits for working families with lower incomes. In addition to other support programmes, it offers child support, disability benefits, maternity leave and study grants.

Owing to the relatively high levels of poverty experienced in **Jordan**, measures to combat and alleviate poverty are a main focus of the Jordanian government. One general tool used to alleviate

poverty is cash transfers. Although the household income survey asks about the value of government transfers, it does not specify what these transfers include. Most likely, the major components of household transfers are the following: assistance from the Jordanian National Aid Fund and cash subsidies or coupons for food items. Nevertheless, the value of this assistance does not constitute a large part of the average household's total income, making up only 1.1% to 4.4% in the sampled years.

The **Palestinian** National Cash Transfer Programme provided cash transfers to more than 63,000 of the poorest households in 2010. The deteriorating political and economic situation the Palestinian people face under occupation has generated very harsh conditions, with dependent and poor groups requiring assistance and ongoing support from the Palestinian Authority, along with aid from international organisations. Studies conducted in the West Bank and Gaza Strip illustrate that kinship-based networks are a strong element of informal support, where the better-off households give to those in need. Relatives are sources of refuge during or after environmental or political catastrophes. The closer the kinship and community ties are, the greater the prevalence of sources of informal support. Informal support is lowest in those camps where dispersal and dispossession has weakened kinship relations. For example, in the case of the West Bank and Gaza, informal support – although limited in scope – provides a cushioning effect for the economic shocks experienced by poorer families and is a tangible source of relief.

### 3.4 Conclusions

The comparative analysis of the social protection systems in the 11 SEMCs gives rise to the following conclusions:

- The typical pension system in the region is a partially funded PAYG scheme that covers survivors, old-age retirement, unemployment, disability, work injuries, sickness and maternity.
- The major revenues of the systems come from contributions by both employers and employees, with the state being committed to cover deficits.
- Analysis has shown that the social protection systems in the 11 countries are highly fragmented in terms of the type of support, the target groups and sources of funding.
- In many cases, important social protection mechanisms, such as unemployment benefits and health insurance, do not exist.
- The efficiency and effectiveness of these systems in alleviating poverty and ensuring social justice is another major concern.
- There is the prospect of increasing demand for social security services in the future. As the coverage of social insurance schemes is expanded, the budgetary pressures are likely to grow.
- Therefore, more social protection contributions and more effective efforts are considered essential to developing stability and alleviating poverty in the southern and eastern Mediterranean region. Many of these countries are currently implementing different reforms to address deficiencies.
- Several reform initiatives have recently been introduced to improve the effectiveness of these systems. Yet, the challenges that social protection systems currently face and the future prospects of the 11 countries in general underscore the importance of greater involvement in a real partnership with their EU neighbour countries. Through such a partnership, the countries stand to benefit from the accumulated experience and more advanced systems to ensure that social protection schemes are equitable, universal and efficient, especially for the poor and the most vulnerable groups.

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## Appendix 1. Statistics

### Business-as-usual scenario

#### 1) Primary level

Table A1.1 BAU scenario – Primary level

| Year | Algeria | Egypt   | Jordan  | Lebanon        | Morocco | Palestine | Syria   | Tunisia        | Turkey  | Israel  |
|------|---------|---------|---------|----------------|---------|-----------|---------|----------------|---------|---------|
| 2011 | 111.748 | 102.897 | 102.915 | <b>99.654</b>  | 92.527  | 91.035    | 104.552 | <b>114.257</b> | 100.698 | 112.454 |
| 2012 | 111.883 | 104.108 | 102.736 | <b>99.886</b>  | 92.906  | 91.309    | 104.835 | <b>114.296</b> | 100.848 | 112.292 |
| 2013 | 111.923 | 105.196 | 102.582 | <b>100.101</b> | 93.171  | 91.534    | 105.119 | <b>114.331</b> | 100.947 | 112.213 |
| 2014 | 111.926 | 106.196 | 102.449 | <b>100.300</b> | 93.347  | 91.719    | 105.389 | <b>114.365</b> | 101.024 | 112.174 |
| 2015 | 111.916 | 107.133 | 102.334 | <b>100.485</b> | 93.454  | 91.870    | 105.638 | <b>114.396</b> | 101.089 | 112.153 |
| 2016 | 111.901 | 108.023 | 102.235 | <b>100.656</b> | 93.509  | 91.994    | 105.865 | <b>114.426</b> | 101.146 | 112.142 |
| 2017 | 111.886 | 108.881 | 102.150 | <b>100.815</b> | 93.524  | 92.096    | 106.070 | <b>114.453</b> | 101.198 | 112.135 |
| 2018 | 111.872 | 109.715 | 102.076 | <b>100.962</b> | 93.510  | 92.179    | 106.254 | <b>114.479</b> | 101.244 | 112.130 |
| 2019 | 111.859 | 110.534 | 102.013 | <b>101.098</b> | 93.474  | 92.247    | 106.418 | <b>114.503</b> | 101.286 | 112.128 |
| 2020 | 111.847 | 111.342 | 101.958 | <b>101.224</b> | 93.422  | 92.303    | 106.564 | <b>114.526</b> | 101.324 | 112.125 |
| 2021 | 111.836 | 112.143 | 101.911 | <b>101.341</b> | 93.358  | 92.349    | 106.695 | <b>114.547</b> | 101.358 | 112.124 |
| 2022 | 111.827 | 112.940 | 101.871 | <b>101.450</b> | 93.287  | 92.387    | 106.811 | <b>114.567</b> | 101.389 | 112.123 |
| 2023 | 111.818 | 113.735 | 101.836 | <b>101.550</b> | 93.212  | 92.418    | 106.914 | <b>114.585</b> | 101.417 | 112.122 |
| 2024 | 111.811 | 114.529 | 101.805 | <b>101.643</b> | 93.134  | 92.443    | 107.007 | <b>114.603</b> | 101.442 | 112.121 |
| 2025 | 111.804 | 115.324 | 101.779 | <b>101.730</b> | 93.055  | 92.464    | 107.089 | <b>114.619</b> | 101.465 | 112.121 |
| 2026 | 111.798 | 116.121 | 101.757 | <b>101.810</b> | 92.977  | 92.481    | 107.162 | <b>114.634</b> | 101.486 | 112.120 |
| 2027 | 111.793 | 116.919 | 101.738 | <b>101.884</b> | 92.899  | 92.495    | 107.227 | <b>114.649</b> | 101.504 | 112.120 |
| 2028 | 111.788 | 117.720 | 101.721 | <b>101.952</b> | 92.824  | 92.506    | 107.284 | <b>114.662</b> | 101.521 | 112.120 |
| 2029 | 111.784 | 118.524 | 101.707 | <b>102.016</b> | 92.751  | 92.516    | 107.336 | <b>114.675</b> | 101.537 | 112.120 |
| 2030 | 111.780 | 138.348 | 101.694 | <b>102.075</b> | 92.681  | 92.523    | 107.382 | <b>114.686</b> | 101.550 | 112.119 |

## 2) Secondary level

*Table A1.2 BAU scenario – Secondary level*

| <b>Year</b> | <b>Algeria</b> | <b>Egypt</b> | <b>Jordan</b> | <b>Lebanon</b> | <b>Libya</b>  | <b>Morocco</b> | <b>Palestine</b> | <b>Syria</b> | <b>Tunisia</b> | <b>Turkey</b> |
|-------------|----------------|--------------|---------------|----------------|---------------|----------------|------------------|--------------|----------------|---------------|
| 2011        | 85.717         | 88.285       | 77.294        | <b>65.169</b>  | <b>75.277</b> | 50.984         | 89.721           | 52.823       | <b>89.228</b>  | 76.138        |
| 2012        | 86.439         | 88.343       | 77.387        | <b>65.065</b>  | <b>74.941</b> | 50.824         | 90.087           | 52.524       | <b>90.369</b>  | 75.868        |
| 2013        | 87.610         | 88.391       | 77.464        | <b>64.973</b>  | <b>74.626</b> | 50.680         | 90.481           | 52.364       | <b>91.522</b>  | 75.629        |
| 2014        | 88.958         | 88.429       | 77.527        | <b>64.899</b>  | <b>74.330</b> | 50.549         | 90.895           | 52.277       | <b>92.687</b>  | 75.417        |
| 2015        | 90.388         | 88.459       | 77.579        | <b>64.842</b>  | <b>74.051</b> | 50.431         | 91.324           | 52.231       | <b>93.865</b>  | 75.226        |
| 2016        | 91.865         | 88.484       | 77.622        | <b>64.799</b>  | <b>73.790</b> | 50.324         | 91.762           | 52.206       | <b>95.058</b>  | 75.054        |
| 2017        | 93.377         | 88.504       | 77.658        | <b>64.767</b>  | <b>73.544</b> | 50.227         | 92.208           | 52.193       | <b>96.266</b>  | 74.898        |
| 2018        | 94.921         | 88.520       | 77.687        | <b>64.744</b>  | <b>73.313</b> | 50.138         | 92.657           | 52.185       | <b>97.490</b>  | 74.755        |
| 2019        | 96.495         | 88.532       | 77.711        | <b>64.726</b>  | <b>73.096</b> | 50.057         | 93.109           | 52.181       | <b>98.731</b>  | 74.625        |
| 2020        | 98.100         | 88.542       | 77.731        | <b>64.714</b>  | <b>72.892</b> | 49.983         | 93.562           | 52.179       | <b>99.991</b>  | 74.505        |
| 2021        | 99.735         | 88.550       | 77.747        | <b>64.704</b>  | <b>72.700</b> | 49.916         | 94.014           | 52.178       | <b>101.269</b> | 74.394        |
| 2022        | 101.402        | 88.556       | 77.761        | <b>64.698</b>  | <b>72.520</b> | 49.854         | 94.464           | 52.178       | <b>102.567</b> | 74.292        |
| 2023        | 103.101        | 88.561       | 77.772        | <b>64.693</b>  | <b>72.351</b> | 49.797         | 94.913           | 52.177       | <b>103.885</b> | 74.197        |
| 2024        | 104.832        | 88.564       | 77.781        | <b>64.689</b>  | <b>72.192</b> | 49.744         | 95.358           | 52.177       | <b>105.225</b> | 74.109        |
| 2025        | 106.597        | 88.567       | 77.789        | <b>64.686</b>  | <b>72.042</b> | 49.696         | 95.801           | 52.177       | <b>106.588</b> | 74.027        |
| 2026        | 108.395        | 88.569       | 77.795        | <b>64.684</b>  | <b>71.902</b> | 49.651         | 96.240           | 52.177       | <b>107.973</b> | 73.951        |
| 2027        | 110.228        | 88.570       | 77.800        | <b>64.683</b>  | <b>71.770</b> | 49.610         | 96.675           | 52.177       | <b>109.382</b> | 73.879        |
| 2028        | 112.096        | 88.571       | 77.804        | <b>64.682</b>  | <b>71.646</b> | 49.571         | 97.107           | 52.177       | <b>110.816</b> | 73.813        |
| 2029        | 113.999        | 88.572       | 77.808        | <b>64.681</b>  | <b>71.530</b> | 49.536         | 97.535           | 52.177       | <b>112.276</b> | 73.750        |
| 2030        | 115.939        | 88.572       | 77.810        | <b>64.680</b>  | <b>71.420</b> | 49.503         | 97.959           | 52.177       | <b>113.762</b> | 73.692        |



## 3) Tertiary level

*Table A1.3 BAU scenario – Tertiary level*

| <b>Year</b> | <b>Egypt</b> | <b>Jordan</b> | <b>Lebanon</b> | <b>Morocco</b> | <b>Palestine</b> | <b>Tunisia</b> |
|-------------|--------------|---------------|----------------|----------------|------------------|----------------|
| 2011        | 32.914       | 33.115        | <b>43.734</b>  | 11.570         | 53.072           | <b>39.038</b>  |
| 2012        | 33.445       | 32.251        | <b>43.097</b>  | 11.517         | 53.802           | <b>41.369</b>  |
| 2013        | 33.738       | 31.505        | <b>42.630</b>  | 11.475         | 54.523           | <b>43.807</b>  |
| 2014        | 33.899       | 30.863        | <b>42.289</b>  | 11.440         | 55.230           | <b>46.356</b>  |
| 2015        | 33.988       | 30.309        | <b>42.039</b>  | 11.412         | 55.920           | <b>49.022</b>  |
| 2016        | 34.037       | 29.832        | <b>41.857</b>  | 11.390         | 56.589           | <b>51.810</b>  |
| 2017        | 34.064       | 29.420        | <b>41.723</b>  | 11.371         | 57.236           | <b>54.726</b>  |
| 2018        | 34.079       | 29.065        | <b>41.625</b>  | 11.357         | 57.860           | <b>57.775</b>  |
| 2019        | 34.087       | 28.759        | <b>41.554</b>  | 11.345         | 58.460           | <b>60.964</b>  |
| 2020        | 34.092       | 28.495        | <b>41.501</b>  | 11.335         | 59.036           | <b>64.299</b>  |
| 2021        | 34.095       | 28.268        | <b>41.463</b>  | 11.327         | 59.589           | <b>67.787</b>  |
| 2022        | 34.096       | 28.072        | <b>41.435</b>  | 11.321         | 60.118           | <b>71.434</b>  |
| 2023        | 34.097       | 27.903        | <b>41.414</b>  | 11.316         | 60.625           | <b>75.249</b>  |
| 2024        | 34.097       | 27.758        | <b>41.399</b>  | 11.312         | 61.109           | <b>79.238</b>  |
| 2025        | 34.097       | 27.632        | <b>41.388</b>  | 11.308         | 61.572           | <b>83.410</b>  |
| 2026        | 34.097       | 27.524        | <b>41.380</b>  | 11.305         | 62.014           | <b>87.773</b>  |
| 2027        | 34.098       | 27.430        | <b>41.374</b>  | 11.303         | 62.437           | <b>92.336</b>  |
| 2028        | 34.098       | 27.350        | <b>41.370</b>  | 11.302         | 62.839           | <b>97.108</b>  |
| 2029        | 34.098       | 27.281        | <b>41.367</b>  | 11.300         | 63.224           | <b>102.098</b> |
| 2030        | 34.098       | 27.221        | <b>41.365</b>  | 11.299         | 63.591           | <b>107.317</b> |

**Optimistic scenario**

## 1) Primary level

*Table A1.4 Optimistic scenario – Primary level*

| Year | Algeria | Egypt   | Jordan  | Lebanon        | Morocco | Palestine | Syria   | Tunisia        | Turkey  | Israel  |
|------|---------|---------|---------|----------------|---------|-----------|---------|----------------|---------|---------|
| 2011 | 113.016 | 109.728 | 108.856 | <b>115.322</b> | 113.385 | 95.719    | 117.272 | <b>123.514</b> | 104.647 | 113.919 |
| 2012 | 113.151 | 110.939 | 108.677 | <b>115.554</b> | 113.764 | 95.993    | 117.555 | <b>123.552</b> | 104.796 | 113.757 |
| 2013 | 113.191 | 112.027 | 108.522 | <b>115.770</b> | 114.029 | 96.218    | 117.839 | <b>123.588</b> | 104.896 | 113.679 |
| 2014 | 113.194 | 113.027 | 108.389 | <b>115.969</b> | 114.205 | 96.402    | 118.109 | <b>123.622</b> | 104.973 | 113.639 |
| 2015 | 113.184 | 113.963 | 108.274 | <b>116.154</b> | 114.312 | 96.554    | 118.358 | <b>123.653</b> | 105.038 | 113.619 |
| 2016 | 113.169 | 114.854 | 108.175 | <b>116.325</b> | 114.367 | 96.677    | 118.585 | <b>123.682</b> | 105.095 | 113.607 |
| 2017 | 113.154 | 115.711 | 108.090 | <b>116.483</b> | 114.382 | 96.779    | 118.790 | <b>123.710</b> | 105.147 | 113.600 |
| 2018 | 113.140 | 116.546 | 108.017 | <b>116.630</b> | 114.368 | 96.862    | 118.973 | <b>123.736</b> | 105.193 | 113.596 |
| 2019 | 113.127 | 117.365 | 107.953 | <b>116.766</b> | 114.332 | 96.931    | 119.138 | <b>123.760</b> | 105.235 | 113.593 |
| 2020 | 113.115 | 118.173 | 107.899 | <b>116.893</b> | 114.280 | 96.987    | 119.284 | <b>123.782</b> | 105.272 | 113.591 |
| 2021 | 113.104 | 118.974 | 107.852 | <b>117.010</b> | 114.216 | 97.033    | 119.414 | <b>123.804</b> | 105.307 | 113.589 |
| 2022 | 113.095 | 119.771 | 107.811 | <b>117.118</b> | 114.145 | 97.070    | 119.531 | <b>123.823</b> | 105.337 | 113.588 |
| 2023 | 113.086 | 120.565 | 107.776 | <b>117.219</b> | 114.070 | 97.101    | 119.634 | <b>123.842</b> | 105.365 | 113.587 |
| 2024 | 113.079 | 121.360 | 107.746 | <b>117.312</b> | 113.992 | 97.127    | 119.726 | <b>123.859</b> | 105.391 | 113.587 |
| 2025 | 113.072 | 122.155 | 107.720 | <b>117.398</b> | 113.913 | 97.147    | 119.808 | <b>123.876</b> | 105.414 | 113.586 |
| 2026 | 113.066 | 122.951 | 107.697 | <b>117.478</b> | 113.835 | 97.164    | 119.881 | <b>123.891</b> | 105.434 | 113.586 |
| 2027 | 113.061 | 123.750 | 107.678 | <b>117.552</b> | 113.757 | 97.178    | 119.946 | <b>123.905</b> | 105.453 | 113.586 |
| 2028 | 113.056 | 124.551 | 107.661 | <b>117.621</b> | 113.682 | 97.190    | 120.004 | <b>123.919</b> | 105.470 | 113.585 |
| 2029 | 113.052 | 125.355 | 107.647 | <b>117.684</b> | 113.609 | 97.199    | 120.056 | <b>123.931</b> | 105.485 | 113.585 |
| 2030 | 113.048 | 145.179 | 107.635 | <b>117.743</b> | 113.539 | 97.207    | 120.101 | <b>123.943</b> | 105.499 | 113.585 |

## 2) Secondary level

*Table A1.5 Optimistic scenario – Secondary level*

| <b>Year</b> | <b>Algeria</b> | <b>Egypt</b> | <b>Jordan</b> | <b>Lebanon</b> | <b>Libya</b>   | <b>Morocco</b> | <b>Palestine</b> | <b>Syria</b> | <b>Tunisia</b> | <b>Turkey</b> |
|-------------|----------------|--------------|---------------|----------------|----------------|----------------|------------------|--------------|----------------|---------------|
| 2011        | 118.335        | 95.241       | 87.820        | <b>86.957</b>  | <b>125.155</b> | 55.291         | 96.479           | 67.611       | <b>98.702</b>  | 82.960        |
| 2012        | 119.057        | 95.300       | 87.913        | <b>86.853</b>  | <b>124.819</b> | 55.131         | 96.846           | 67.312       | <b>99.843</b>  | 82.690        |
| 2013        | 120.228        | 95.347       | 87.990        | <b>86.761</b>  | <b>124.504</b> | 54.987         | 97.239           | 67.152       | <b>100.996</b> | 82.452        |
| 2014        | 121.576        | 95.385       | 88.053        | <b>86.687</b>  | <b>124.208</b> | 54.856         | 97.653           | 67.065       | <b>102.161</b> | 82.239        |
| 2015        | 123.006        | 95.416       | 88.105        | <b>86.630</b>  | <b>123.929</b> | 54.738         | 98.082           | 67.019       | <b>103.339</b> | 82.049        |
| 2016        | 124.483        | 95.440       | 88.148        | <b>86.587</b>  | <b>123.668</b> | 54.631         | 98.521           | 66.994       | <b>104.532</b> | 81.877        |
| 2017        | 125.995        | 95.460       | 88.184        | <b>86.555</b>  | <b>123.422</b> | 54.534         | 98.966           | 66.981       | <b>105.739</b> | 81.721        |
| 2018        | 127.539        | 95.476       | 88.213        | <b>86.532</b>  | <b>123.191</b> | 54.445         | 99.416           | 66.973       | <b>106.964</b> | 81.578        |
| 2019        | 129.113        | 95.489       | 88.237        | <b>86.514</b>  | <b>122.974</b> | 54.364         | 99.868           | 66.969       | <b>108.205</b> | 81.448        |
| 2020        | 130.718        | 95.498       | 88.257        | <b>86.502</b>  | <b>122.770</b> | 54.290         | 100.320          | 66.967       | <b>109.464</b> | 81.328        |
| 2021        | 132.353        | 95.506       | 88.273        | <b>86.492</b>  | <b>122.578</b> | 54.223         | 100.772          | 66.966       | <b>110.742</b> | 81.217        |
| 2022        | 134.020        | 95.512       | 88.287        | <b>86.486</b>  | <b>122.398</b> | 54.161         | 101.223          | 66.966       | <b>112.040</b> | 81.115        |
| 2023        | 135.719        | 95.517       | 88.298        | <b>86.481</b>  | <b>122.229</b> | 54.104         | 101.671          | 66.965       | <b>113.359</b> | 81.020        |
| 2024        | 137.450        | 95.521       | 88.307        | <b>86.477</b>  | <b>122.070</b> | 54.051         | 102.117          | 66.965       | <b>114.699</b> | 80.932        |
| 2025        | 139.215        | 95.523       | 88.315        | <b>86.474</b>  | <b>121.920</b> | 54.003         | 102.559          | 66.965       | <b>116.061</b> | 80.850        |
| 2026        | 141.013        | 95.525       | 88.321        | <b>86.472</b>  | <b>121.780</b> | 53.958         | 102.998          | 66.965       | <b>117.447</b> | 80.773        |
| 2027        | 142.846        | 95.527       | 88.326        | <b>86.471</b>  | <b>121.648</b> | 53.917         | 103.434          | 66.965       | <b>118.856</b> | 80.702        |
| 2028        | 144.714        | 95.528       | 88.330        | <b>86.470</b>  | <b>121.524</b> | 53.878         | 103.865          | 66.965       | <b>120.290</b> | 80.636        |
| 2029        | 146.617        | 95.528       | 88.334        | <b>86.469</b>  | <b>121.408</b> | 53.843         | 104.293          | 66.965       | <b>121.750</b> | 80.573        |
| 2030        | 148.557        | 95.528       | 88.336        | <b>86.468</b>  | <b>121.298</b> | 53.810         | 104.717          | 66.965       | <b>123.235</b> | 80.515        |

## 3) Tertiary level

*Table A1.6 Optimistic scenario – Tertiary level*

| <b>Year</b> | <b>Egypt</b> | <b>Jordan</b> | <b>Lebanon</b> | <b>Morocco</b> | <b>Palestine</b> | <b>Tunisia</b> |
|-------------|--------------|---------------|----------------|----------------|------------------|----------------|
| 2011        | 36.261       | 37.228        | <b>54.799</b>  | 12.098         | 63.669           | <b>39.159</b>  |
| 2012        | 36.791       | 36.364        | <b>54.162</b>  | 12.045         | 64.399           | <b>41.490</b>  |
| 2013        | 37.084       | 35.618        | <b>53.695</b>  | 12.003         | 65.121           | <b>43.927</b>  |
| 2014        | 37.246       | 34.976        | <b>53.354</b>  | 11.968         | 65.828           | <b>46.477</b>  |
| 2015        | 37.335       | 34.422        | <b>53.104</b>  | 11.940         | 66.517           | <b>49.143</b>  |
| 2016        | 37.384       | 33.945        | <b>52.922</b>  | 11.918         | 67.186           | <b>51.931</b>  |
| 2017        | 37.411       | 33.533        | <b>52.788</b>  | 11.899         | 67.833           | <b>54.847</b>  |
| 2018        | 37.426       | 33.178        | <b>52.690</b>  | 11.885         | 68.457           | <b>57.896</b>  |
| 2019        | 37.434       | 32.872        | <b>52.619</b>  | 11.873         | 69.057           | <b>61.085</b>  |
| 2020        | 37.439       | 32.608        | <b>52.566</b>  | 11.863         | 69.634           | <b>64.420</b>  |
| 2021        | 37.441       | 32.381        | <b>52.528</b>  | 11.855         | 70.186           | <b>67.908</b>  |
| 2022        | 37.443       | 32.185        | <b>52.500</b>  | 11.849         | 70.716           | <b>71.555</b>  |
| 2023        | 37.443       | 32.016        | <b>52.479</b>  | 11.844         | 71.222           | <b>75.370</b>  |
| 2024        | 37.444       | 31.871        | <b>52.464</b>  | 11.840         | 71.707           | <b>79.359</b>  |
| 2025        | 37.444       | 31.745        | <b>52.453</b>  | 11.836         | 72.170           | <b>83.531</b>  |
| 2026        | 37.444       | 31.637        | <b>52.445</b>  | 11.834         | 72.612           | <b>87.894</b>  |
| 2027        | 37.444       | 31.543        | <b>52.439</b>  | 11.831         | 73.034           | <b>92.457</b>  |
| 2028        | 37.444       | 31.463        | <b>52.435</b>  | 11.830         | 73.437           | <b>97.228</b>  |
| 2029        | 37.444       | 31.394        | <b>52.432</b>  | 11.828         | 73.821           | <b>102.219</b> |
| 2030        | 37.444       | 31.334        | <b>52.430</b>  | 11.827         | 74.188           | <b>107.438</b> |

**Pessimistic scenario**

## 1) Primary level

*Table A1.7 Pessimistic scenario – Primary level*

| Year | Algeria | Egypt   | Jordan | Lebanon       | Morocco | Palestine | Syria  | Tunisia        | Turkey | Israel  |
|------|---------|---------|--------|---------------|---------|-----------|--------|----------------|--------|---------|
| 2011 | 110.480 | 96.067  | 96.975 | <b>83.986</b> | 71.669  | 86.352    | 91.832 | <b>105.001</b> | 96.749 | 110.988 |
| 2012 | 110.615 | 97.277  | 96.796 | <b>84.218</b> | 72.048  | 86.626    | 92.115 | <b>105.039</b> | 96.899 | 110.826 |
| 2013 | 110.655 | 98.365  | 96.641 | <b>84.433</b> | 72.313  | 86.851    | 92.399 | <b>105.075</b> | 96.998 | 110.748 |
| 2014 | 110.658 | 99.366  | 96.508 | <b>84.632</b> | 72.489  | 87.035    | 92.669 | <b>105.108</b> | 97.075 | 110.708 |
| 2015 | 110.648 | 100.302 | 96.394 | <b>84.817</b> | 72.596  | 87.186    | 92.919 | <b>105.140</b> | 97.140 | 110.688 |
| 2016 | 110.633 | 101.192 | 96.295 | <b>84.988</b> | 72.651  | 87.310    | 93.146 | <b>105.169</b> | 97.198 | 110.676 |
| 2017 | 110.618 | 102.050 | 96.209 | <b>85.146</b> | 72.666  | 87.412    | 93.350 | <b>105.197</b> | 97.249 | 110.669 |
| 2018 | 110.604 | 102.884 | 96.136 | <b>85.293</b> | 72.652  | 87.495    | 93.534 | <b>105.223</b> | 97.295 | 110.665 |
| 2019 | 110.591 | 103.703 | 96.072 | <b>85.430</b> | 72.616  | 87.564    | 93.698 | <b>105.247</b> | 97.337 | 110.662 |
| 2020 | 110.579 | 104.511 | 96.018 | <b>85.556</b> | 72.564  | 87.620    | 93.844 | <b>105.269</b> | 97.375 | 110.660 |
| 2021 | 110.568 | 105.312 | 95.971 | <b>85.673</b> | 72.500  | 87.666    | 93.975 | <b>105.290</b> | 97.409 | 110.658 |
| 2022 | 110.559 | 106.109 | 95.930 | <b>85.781</b> | 72.429  | 87.703    | 94.091 | <b>105.310</b> | 97.440 | 110.657 |
| 2023 | 110.550 | 106.904 | 95.895 | <b>85.882</b> | 72.354  | 87.734    | 94.195 | <b>105.329</b> | 97.468 | 110.656 |
| 2024 | 110.543 | 107.698 | 95.865 | <b>85.975</b> | 72.276  | 87.759    | 94.287 | <b>105.346</b> | 97.493 | 110.656 |
| 2025 | 110.536 | 108.493 | 95.839 | <b>86.061</b> | 72.197  | 87.780    | 94.369 | <b>105.363</b> | 97.516 | 110.655 |
| 2026 | 110.530 | 109.290 | 95.816 | <b>86.141</b> | 72.119  | 87.797    | 94.442 | <b>105.378</b> | 97.537 | 110.655 |
| 2027 | 110.525 | 110.088 | 95.797 | <b>86.215</b> | 72.041  | 87.811    | 94.507 | <b>105.392</b> | 97.555 | 110.655 |
| 2028 | 110.520 | 110.889 | 95.780 | <b>86.284</b> | 71.966  | 87.823    | 94.565 | <b>105.405</b> | 97.572 | 110.654 |
| 2029 | 110.516 | 111.693 | 95.766 | <b>86.348</b> | 71.893  | 87.832    | 94.616 | <b>105.418</b> | 97.588 | 110.654 |
| 2030 | 110.512 | 131.517 | 95.754 | <b>86.407</b> | 71.823  | 87.840    | 94.662 | <b>105.430</b> | 97.602 | 110.654 |

## 2) Secondary level

*Table A1.8 Pessimistic scenario – Secondary level*

| <b>Year</b> | <b>Algeria</b> | <b>Egypt</b> | <b>Jordan</b> | <b>Lebanon</b> | <b>Libya</b>  | <b>Morocco</b> | <b>Palestine</b> | <b>Syria</b> | <b>Tunisia</b> | <b>Turkey</b> |
|-------------|----------------|--------------|---------------|----------------|---------------|----------------|------------------|--------------|----------------|---------------|
| 2011        | 53.099         | 81.328       | 66.768        | <b>43.381</b>  | <b>25.399</b> | 46.677         | 82.962           | 38.035       | <b>79.755</b>  | 69.315        |
| 2012        | 53.821         | 81.387       | 66.861        | <b>43.277</b>  | <b>25.063</b> | 46.517         | 83.329           | 37.736       | <b>80.896</b>  | 69.045        |
| 2013        | 54.992         | 81.434       | 66.938        | <b>43.185</b>  | <b>24.748</b> | 46.373         | 83.723           | 37.576       | <b>82.048</b>  | 68.806        |
| 2014        | 56.340         | 81.472       | 67.001        | <b>43.111</b>  | <b>24.452</b> | 46.242         | 84.137           | 37.489       | <b>83.213</b>  | 68.594        |
| 2015        | 57.770         | 81.503       | 67.053        | <b>43.054</b>  | <b>24.173</b> | 46.124         | 84.565           | 37.443       | <b>84.392</b>  | 68.403        |
| 2016        | 59.247         | 81.528       | 67.096        | <b>43.011</b>  | <b>23.912</b> | 46.017         | 85.004           | 37.418       | <b>85.584</b>  | 68.231        |
| 2017        | 60.759         | 81.547       | 67.132        | <b>42.979</b>  | <b>23.666</b> | 45.920         | 85.449           | 37.405       | <b>86.792</b>  | 68.075        |
| 2018        | 62.303         | 81.563       | 67.161        | <b>42.956</b>  | <b>23.435</b> | 45.831         | 85.899           | 37.397       | <b>88.016</b>  | 67.933        |
| 2019        | 63.877         | 81.576       | 67.185        | <b>42.938</b>  | <b>23.218</b> | 45.750         | 86.351           | 37.393       | <b>89.258</b>  | 67.802        |
| 2020        | 65.482         | 81.586       | 67.205        | <b>42.926</b>  | <b>23.014</b> | 45.676         | 86.803           | 37.391       | <b>90.517</b>  | 67.682        |
| 2021        | 67.117         | 81.593       | 67.221        | <b>42.916</b>  | <b>22.822</b> | 45.609         | 87.255           | 37.390       | <b>91.795</b>  | 67.572        |
| 2022        | 68.784         | 81.600       | 67.235        | <b>42.910</b>  | <b>22.642</b> | 45.547         | 87.706           | 37.390       | <b>93.093</b>  | 67.469        |
| 2023        | 70.483         | 81.604       | 67.246        | <b>42.905</b>  | <b>22.473</b> | 45.490         | 88.154           | 37.389       | <b>94.412</b>  | 67.374        |
| 2024        | 72.214         | 81.608       | 67.255        | <b>42.901</b>  | <b>22.314</b> | 45.437         | 88.600           | 37.389       | <b>95.752</b>  | 67.286        |
| 2025        | 73.979         | 81.611       | 67.263        | <b>42.898</b>  | <b>22.164</b> | 45.389         | 89.042           | 37.389       | <b>97.114</b>  | 67.204        |
| 2026        | 75.777         | 81.613       | 67.269        | <b>42.896</b>  | <b>22.024</b> | 45.344         | 89.481           | 37.389       | <b>98.500</b>  | 67.128        |
| 2027        | 77.610         | 81.614       | 67.274        | <b>42.895</b>  | <b>21.892</b> | 45.303         | 89.917           | 37.389       | <b>99.909</b>  | 67.057        |
| 2028        | 79.478         | 81.615       | 67.278        | <b>42.894</b>  | <b>21.768</b> | 45.264         | 90.349           | 37.389       | <b>101.343</b> | 66.990        |
| 2029        | 81.381         | 81.615       | 67.282        | <b>42.893</b>  | <b>21.652</b> | 45.229         | 90.777           | 37.389       | <b>102.802</b> | 66.928        |
| 2030        | 83.321         | 81.616       | 67.284        | <b>42.892</b>  | <b>21.542</b> | 45.196         | 91.200           | 37.389       | <b>104.288</b> | 66.869        |

## 3) Tertiary level

*Table A1.9 Pessimistic scenario – Tertiary level*

| <b>Year</b> | <b>Egypt</b> | <b>Jordan</b> | <b>Lebanon</b> | <b>Morocco</b> | <b>Palestine</b> | <b>Tunisia</b> |
|-------------|--------------|---------------|----------------|----------------|------------------|----------------|
| 2011        | 29.568       | 29.002        | <b>32.669</b>  | 11.042         | 42.474           | <b>38.917</b>  |
| 2012        | 30.098       | 28.138        | <b>32.032</b>  | 10.989         | 43.204           | <b>41.248</b>  |
| 2013        | 30.391       | 27.392        | <b>31.565</b>  | 10.947         | 43.926           | <b>43.686</b>  |
| 2014        | 30.552       | 26.750        | <b>31.224</b>  | 10.912         | 44.633           | <b>46.235</b>  |
| 2015        | 30.641       | 26.196        | <b>30.974</b>  | 10.884         | 45.323           | <b>48.901</b>  |
| 2016        | 30.691       | 25.719        | <b>30.792</b>  | 10.862         | 45.992           | <b>51.689</b>  |
| 2017        | 30.718       | 25.307        | <b>30.658</b>  | 10.843         | 46.639           | <b>54.605</b>  |
| 2018        | 30.733       | 24.952        | <b>30.560</b>  | 10.829         | 47.262           | <b>57.654</b>  |
| 2019        | 30.741       | 24.646        | <b>30.489</b>  | 10.817         | 47.863           | <b>60.843</b>  |
| 2020        | 30.745       | 24.382        | <b>30.436</b>  | 10.807         | 48.439           | <b>64.178</b>  |
| 2021        | 30.748       | 24.155        | <b>30.398</b>  | 10.799         | 48.992           | <b>67.666</b>  |
| 2022        | 30.749       | 23.959        | <b>30.370</b>  | 10.793         | 49.521           | <b>71.313</b>  |
| 2023        | 30.750       | 23.790        | <b>30.349</b>  | 10.788         | 50.028           | <b>75.128</b>  |
| 2024        | 30.750       | 23.645        | <b>30.334</b>  | 10.784         | 50.512           | <b>79.117</b>  |
| 2025        | 30.751       | 23.519        | <b>30.323</b>  | 10.780         | 50.975           | <b>83.289</b>  |
| 2026        | 30.751       | 23.411        | <b>30.315</b>  | 10.777         | 51.417           | <b>87.652</b>  |
| 2027        | 30.751       | 23.317        | <b>30.309</b>  | 10.775         | 51.839           | <b>92.215</b>  |
| 2028        | 30.751       | 23.237        | <b>30.305</b>  | 10.773         | 52.242           | <b>96.987</b>  |
| 2029        | 30.751       | 23.168        | <b>30.302</b>  | 10.772         | 52.627           | <b>101.977</b> |
| 2030        | 30.751       | 23.108        | <b>30.300</b>  | 10.771         | 52.993           | <b>107.196</b> |

## Linear trend forecasting

Some of the countries at each educational level (primary, secondary and tertiary) failed to follow a regression econometric model; as a result no regression model fitted and predictions were made in those cases based on a linear trend estimation for each educational level up to the year 2030. The optimistic and pessimistic scenarios were formed by constructing the interval (estimated  $Y + 2$  S.E., estimated  $Y - 2$  S.E.) respectively, where S.E. denotes the standard error of the estimate.

### 1) Primary level – Libya

*Table A1.10 Primary level*

| <b>Year</b> | <b>Business-as-usual scenario</b> | <b>Optimistic scenario</b> | <b>Pessimistic scenario</b> |
|-------------|-----------------------------------|----------------------------|-----------------------------|
| 2007        | 104.8095                          | 119.794                    | 89.825                      |
| 2008        | 104.153                           | 119.137                    | 89.169                      |
| 2009        | 103.4965                          | 118.481                    | 88.512                      |
| 2010        | 102.84                            | 117.824                    | 87.856                      |
| 2011        | 102.1835                          | 117.168                    | 87.199                      |
| 2012        | 101.527                           | 116.511                    | 86.543                      |
| 2013        | 100.8705                          | 115.855                    | 85.886                      |
| 2014        | 100.214                           | 115.198                    | 85.230                      |
| 2015        | 99.5575                           | 114.542                    | 84.573                      |
| 2016        | 98.901                            | 113.885                    | 83.917                      |
| 2017        | 98.2445                           | 113.229                    | 83.260                      |
| 2018        | 97.588                            | 112.572                    | 82.604                      |
| 2019        | 96.9315                           | 111.916                    | 81.947                      |
| 2020        | 96.275                            | 111.259                    | 81.291                      |
| 2021        | 95.6185                           | 110.603                    | 80.634                      |
| 2022        | 94.962                            | 109.946                    | 79.978                      |
| 2023        | 94.3055                           | 109.290                    | 79.321                      |
| 2024        | 93.649                            | 108.633                    | 78.665                      |
| 2025        | 92.9925                           | 107.977                    | 78.008                      |
| 2026        | 92.336                            | 107.320                    | 77.352                      |
| 2027        | 91.6795                           | 106.664                    | 76.695                      |
| 2028        | 91.023                            | 106.007                    | 76.039                      |
| 2029        | 90.3665                           | 105.351                    | 75.382                      |
| 2030        | 89.71                             | 104.694                    | 74.726                      |



## 2) Secondary level – Israel

*Table A1.11 Secondary level*

| <b>Year</b> | <b>Business-as-usual scenario</b> | <b>Optimistic scenario</b> | <b>Pessimistic scenario</b> |
|-------------|-----------------------------------|----------------------------|-----------------------------|
| 2010        | 97.3796                           | 103.136                    | 91.623                      |
| 2011        | 97.8718                           | 103.628                    | 92.115                      |
| 2012        | 98.364                            | 104.121                    | 92.607                      |
| 2013        | 98.8562                           | 104.613                    | 93.100                      |
| 2014        | 99.3484                           | 105.105                    | 93.592                      |
| 2015        | 99.8406                           | 105.597                    | 94.084                      |
| 2016        | 100.3328                          | 106.089                    | 94.576                      |
| 2017        | 100.825                           | 106.582                    | 95.068                      |
| 2018        | 101.3172                          | 107.074                    | 95.561                      |
| 2019        | 101.8094                          | 107.566                    | 96.053                      |
| 2020        | 102.3016                          | 108.058                    | 96.545                      |
| 2021        | 102.7938                          | 108.550                    | 97.037                      |
| 2022        | 103.286                           | 109.043                    | 97.529                      |
| 2023        | 103.7782                          | 109.535                    | 98.022                      |
| 2024        | 104.2704                          | 110.027                    | 98.514                      |
| 2025        | 104.7626                          | 110.519                    | 99.006                      |
| 2026        | 105.2548                          | 111.011                    | 99.498                      |
| 2027        | 105.747                           | 111.504                    | 99.990                      |
| 2028        | 106.2392                          | 111.996                    | 100.483                     |
| 2029        | 106.7314                          | 112.488                    | 100.975                     |
| 2030        | 107.2236                          | 112.980                    | 101.467                     |

## 3) Tertiary level – Algeria, Turkey, Israel and Libya

Table A1.12 Tertiary level

| Year | Algeria |        |        | Turkey |        |        | Israel |        |        | Libya  |        |        |
|------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|      | BAUS    | OS     | PS     | BAUS   | OS     | PS     | BAUS   | OS     | PS     | BAUS   | OS     | PS     |
| 2004 |         |        |        |        |        |        |        |        |        | 54.798 | 60.136 | 49.460 |
| 2005 |         |        |        |        |        |        |        |        |        | 55.953 | 61.291 | 50.615 |
| 2006 |         |        |        |        |        |        |        |        |        | 57.108 | 62.446 | 51.770 |
| 2007 |         |        |        |        |        |        |        |        |        | 58.262 | 63.600 | 52.924 |
| 2008 |         |        |        |        |        |        |        |        |        | 59.417 | 64.755 | 54.079 |
| 2009 |         |        |        |        |        |        |        |        |        | 60.572 | 65.910 | 55.234 |
| 2010 |         |        |        | 43.955 | 48.164 | 39.745 | 64.161 | 67.291 | 61.030 | 61.726 | 67.064 | 56.388 |
| 2011 | 31.541  | 34.181 | 28.900 | 45.977 | 50.187 | 41.768 | 65.505 | 68.635 | 62.374 | 62.881 | 68.219 | 57.543 |
| 2012 | 33.097  | 35.738 | 30.457 | 48.000 | 52.210 | 43.790 | 66.849 | 69.979 | 63.718 | 64.036 | 69.374 | 58.698 |
| 2013 | 34.654  | 37.294 | 32.013 | 50.023 | 54.232 | 45.813 | 68.192 | 71.323 | 65.062 | 65.191 | 70.528 | 59.853 |
| 2014 | 36.210  | 38.850 | 33.569 | 52.045 | 56.255 | 47.836 | 69.536 | 72.667 | 66.406 | 66.345 | 71.683 | 61.007 |
| 2015 | 37.766  | 40.407 | 35.126 | 54.068 | 58.277 | 49.858 | 70.880 | 74.011 | 67.750 | 67.500 | 72.838 | 62.162 |
| 2016 | 39.322  | 41.963 | 36.682 | 56.090 | 60.300 | 51.881 | 72.224 | 75.354 | 69.094 | 68.655 | 73.993 | 63.317 |
| 2017 | 40.879  | 43.519 | 38.238 | 58.113 | 62.323 | 53.903 | 73.568 | 76.698 | 70.438 | 69.809 | 75.147 | 64.471 |
| 2018 | 42.435  | 45.076 | 39.794 | 60.136 | 64.345 | 55.926 | 74.912 | 78.042 | 71.782 | 70.964 | 76.302 | 65.626 |
| 2019 | 43.991  | 46.632 | 41.351 | 62.158 | 66.368 | 57.949 | 76.256 | 79.386 | 73.125 | 72.119 | 77.457 | 66.781 |
| 2020 | 45.548  | 48.188 | 42.907 | 64.181 | 68.390 | 59.971 | 77.600 | 80.730 | 74.469 | 73.273 | 78.611 | 67.935 |
| 2021 | 47.104  | 49.744 | 44.463 | 66.203 | 70.413 | 61.994 | 78.944 | 82.074 | 75.813 | 74.428 | 79.766 | 69.090 |
| 2022 | 48.660  | 51.301 | 46.020 | 68.226 | 72.436 | 64.016 | 80.288 | 83.418 | 77.157 | 75.583 | 80.921 | 70.245 |
| 2023 | 50.217  | 52.857 | 47.576 | 70.249 | 74.458 | 66.039 | 81.631 | 84.762 | 78.501 | 76.738 | 82.075 | 71.400 |
| 2024 | 51.773  | 54.413 | 49.132 | 72.271 | 76.481 | 68.062 | 82.975 | 86.106 | 79.845 | 77.892 | 83.230 | 72.554 |
| 2025 | 53.329  | 55.970 | 50.689 | 74.294 | 78.503 | 70.084 | 84.319 | 87.450 | 81.189 | 79.047 | 84.385 | 73.709 |
| 2026 | 54.885  | 57.526 | 52.245 | 76.316 | 80.526 | 72.107 | 85.663 | 88.793 | 82.533 | 80.202 | 85.540 | 74.864 |
| 2027 | 56.442  | 59.082 | 53.801 | 78.339 | 82.549 | 74.129 | 87.007 | 90.137 | 83.877 | 81.356 | 86.694 | 76.018 |
| 2028 | 57.998  | 60.639 | 55.357 | 80.362 | 84.571 | 76.152 | 88.351 | 91.481 | 85.221 | 82.511 | 87.849 | 77.173 |
| 2029 | 59.554  | 62.195 | 56.914 | 82.384 | 86.594 | 78.175 | 89.695 | 92.825 | 86.564 | 83.666 | 89.004 | 78.328 |
| 2030 | 61.111  | 63.751 | 58.470 | 84.407 | 88.616 | 80.197 | 91.039 | 94.169 | 87.908 | 84.820 | 90.158 | 79.482 |

## Appendix 2. Technical note on scenario building: Forecasting the education variables

### Summary

In an attempt to forecast the future prospects of education in the 11 SEMCs, an exercise was undertaken to extrapolate the gross enrolment rates (GERs) (for the primary, secondary and tertiary levels) of the 11 countries for the period 2011–30. To do so the following data were used: gross enrolment rate, GDP per capita, public expenditures on education, public expenditure on education as a percentage of GDP, ODA, the percentage of the population under the poverty line, population growth at the age of primary education and population growth at the age of secondary education, covering the period 1970–2010.

First, the above data were used to fit an econometric model for each educational level in each country, which explains the variations of GERs over time. Then, these models along with the forecasted values of the explanatory variables (using the AR(1) model for the period 2011–30) were used to extrapolate the GER series for the same period. Since we used the AR(1) model in forecasting the explanatory variables, it created the business-as-usual scenario. As for the optimistic and pessimistic scenarios, they are estimates using the standard errors of the GER models and the predicted future values of the GER.

A limited number of cases failed to follow a regression model; as a result no predictions were made. Nevertheless, in such cases a linear trend estimation was performed to derive a prediction.

### Variable notations as used in the Stata file

Table A2.1 Variable information

| Variable notation   | Variable label   |
|---------------------|--|
| Country             | Country  |
| Year                | Year: 1971:2010  |
| GER_PRIMARY         | Gross enrollment rate in primary education                             |
| GER_Secondary       | Gross enrollment rate in secondary education                           |
| GDP_percapita       | GDP per capita   |
| Log_GDP_Percapita   | Log GDP per capita   |
| Public_exp_educ     | Public expenditure on education  |
| Pov_under_1         | Percentage of the population below \$1.25 ppp                          |
| Pov_under_2         | Percentage of the population below \$2.00 ppp                          |
| ODA                 | Total ODA in constant prices   |
| POP_N_GW_Prm        | Population growth at the age of primary education                      |
| POP_N_GW_SEC        | Population growth at the age of secondary education                    |
| ODA_EU-15           | ODA from the EU-15   |
| GER_tertiary        | Gross enrollment rate in tertiary education                            |
| EUODA_share         | EU-15 share of total ODA   |
| Delta_Log_GDP       | –  |
| Pov_1_completed     | Percentage of the population below \$1.25 ppp completed (interpolated) |
| Pov_2_completed     | Percentage of the population below \$2.50 ppp completed (interpolated) |
| Public_exp_educ_GDP | Public expenditure on education as a percentage of GDP                 |

### Linearly interpolated variables

- Percentage of the population living on less than \$1.25 per day (source: PovcalNet)
- Percentage of the population living on less than \$2.50 per day (source: PovcalNet)
- Public expenditure on education as a percentage of GDP (source: World Bank)
- Population growth at the primary education age group (source: UNpop)
- Population growth at the secondary education age group (source: UNpop)

### AR(1) model

An autoregressive model of order (1) was used to create the business-as-usual scenario in order to predict the future values of the explanatory variables to 2030 and use them in forecasting the dependent variable. In an autoregressive model, the dependent variable is regressed against its own lagged values. The number of lags used as regressors is called the order of the autoregression.

### Standard error of the estimated dependent variables

The standard deviation of the error term or the square root of the mean square for the residuals is in the ANOVA.

Concerning the standard error,

- the DF model is the regression degrees of freedom corresponding to the number of estimated coefficients, including the intercept, minus 1; and
- the standard error of the estimate (SSE) is calculated in any regression analysis output, sometimes called the 'square root of MSE'.

The standard errors of the estimated GER primary, estimated GER secondary and estimated GER tertiary across the countries are reported in Table A2.2.

*Table A2.2 Standard error*

|           | <b>Estimated GER primary</b> | <b>Estimated GER secondary</b> | <b>Estimated GER tertiary</b> |
|-----------|------------------------------|--------------------------------|-------------------------------|
| Algeria   | 0.634                        | 16.309                         | –                             |
| Egypt     | 3.4154                       | 3.4782                         | 1.6733                        |
| Jordan    | 2.9702                       | 5.263                          | 2.0565                        |
| Lebanon   | 7.8342                       | 10.894                         | 5.5325                        |
| Libya     | –                            | 24.939                         | –                             |
| Morocco   | 10.429                       | 2.1535                         | 0.26401                       |
| Palestine | 2.3418                       | 3.3792                         | 5.2987                        |
| Syria     | 6.3599                       | 7.394                          | –                             |
| Tunisia   | 4.6283                       | 4.7368                         | 0.06044                       |
| Turkey    | 1.9744                       | 3.4114                         | –                             |
| Israel    | 0.73274                      | –                              | –                             |

## Linear trend forecasting

Some of the countries at each educational level (primary, secondary and tertiary) failed to follow a regression model, and as a result no regression model fitted and no predictions were made. In this section, for each educational level where these countries are found, a linear trend estimation is performed for predicting up to the year 2030.

### Primary level

1) Libya

Table A2.3 Primary education

| Year           | Predicted GER in primary education |
|----------------|------------------------------------|
| 2007           | 104.8095                           |
| 2008           | 104.153                            |
| 2009           | 103.4965                           |
| 2010           | 102.84                             |
| 2011           | 102.1835                           |
| 2012           | 101.527                            |
| 2013           | 100.8705                           |
| 2014           | 100.214                            |
| 2015           | 99.5575                            |
| 2016           | 98.901                             |
| 2017           | 98.2445                            |
| 2018           | 97.588                             |
| 2019           | 96.9315                            |
| 2020           | 96.275                             |
| 2021           | 95.6185                            |
| 2022           | 94.962                             |
| 2023           | 94.3055                            |
| 2024           | 93.649                             |
| 2025           | 92.9925                            |
| 2026           | 92.336                             |
| 2027           | 91.6795                            |
| 2028           | 91.023                             |
| 2029           | 90.3665                            |
| 2030           | 89.71                              |
| R <sup>2</sup> | 39%                                |

### Secondary level

2) Israel. The R-squared of the estimated regression model was 11%, so no prediction was made. Table A2.4 shows the linear trend estimation with R-squared = 77.8%.

*Table A2.4 Secondary education*

| <b>Year</b> | <b>Predicted GER in secondary education</b> |
|-------------|---|
| 2010        | 97.3796                                     |
| 2011        | 97.8718                                     |
| 2012        | 98.364                                      |
| 2013        | 98.8562                                     |
| 2014        | 99.3484                                     |
| 2015        | 99.8406                                     |
| 2016        | 100.3328                                    |
| 2017        | 100.825                                     |
| 2018        | 101.3172                                    |
| 2019        | 101.8094                                    |
| 2020        | 102.3016                                    |
| 2021        | 102.7938                                    |
| 2022        | 103.286                                     |
| 2023        | 103.7782                                    |
| 2024        | 104.2704                                    |
| 2025        | 104.7626                                    |
| 2026        | 105.2548                                    |
| 2027        | 105.747                                     |
| 2028        | 106.2392                                    |
| 2029        | 106.7314                                    |
| 2030        | 107.2236                                    |

***Tertiary level***

## 3) Algeria

*Table A2.5 Tertiary education*

| <b>Year</b> | <b>Predicted GER in tertiary education</b> |
|-------------|--|
| 2011        | 31.5409                                    |
| 2012        | 33.0972                                    |
| 2013        | 34.6535                                    |
| 2014        | 36.2098                                    |
| 2015        | 37.7661                                    |
| 2016        | 39.3224                                    |
| 2017        | 40.8787                                    |
| 2018        | 42.435                                     |
| 2019        | 43.9913                                    |

*Table A2.5 cont'd*

|                |         |
|----------------|---------|
| 2020           | 45.5476 |
| 2021           | 47.1039 |
| 2022           | 48.6602 |
| 2023           | 50.2165 |
| 2024           | 51.7728 |
| 2025           | 53.3291 |
| 2026           | 54.8854 |
| 2027           | 56.4417 |
| 2028           | 57.998  |
| 2029           | 59.5543 |
| 2030           | 61.1106 |
| R <sup>2</sup> | 95%     |

## 4) Turkey

*Table A2.6 Tertiary education*

| <b>Year</b>    | <b>Predicted GER in tertiary education</b> |
|----------------|--|
| 2010           | 43.9548                                    |
| 2011           | 45.9774                                    |
| 2012           | 48   |
| 2013           | 50.0226                                    |
| 2014           | 52.0452                                    |
| 2015           | 54.0678                                    |
| 2016           | 56.0904                                    |
| 2017           | 58.113                                     |
| 2018           | 60.1356                                    |
| 2019           | 62.1582                                    |
| 2020           | 64.1808                                    |
| 2021           | 66.2034                                    |
| 2022           | 68.226                                     |
| 2023           | 70.2486                                    |
| 2024           | 72.2712                                    |
| 2025           | 74.2938                                    |
| 2026           | 76.3164                                    |
| 2027           | 78.339                                     |
| 2028           | 80.3616                                    |
| 2029           | 82.3842                                    |
| 2030           | 84.4068                                    |
| R <sup>2</sup> | 93%  |

## 5) Israel

*Table A2.7 Tertiary education*

| <b>Year</b>    | <b>Predicted GER in tertiary education</b> |
|----------------|--|
| 2010           | 64.1607                                    |
| 2011           | 65.5046                                    |
| 2012           | 66.8485                                    |
| 2013           | 68.1924                                    |
| 2014           | 69.5363                                    |
| 2015           | 70.8802                                    |
| 2016           | 72.2241                                    |
| 2017           | 73.568                                     |
| 2018           | 74.9119                                    |
| 2019           | 76.2558                                    |
| 2020           | 77.5997                                    |
| 2021           | 78.9436                                    |
| 2022           | 80.2875                                    |
| 2023           | 81.6314                                    |
| 2024           | 82.9753                                    |
| 2025           | 84.3192                                    |
| 2026           | 85.6631                                    |
| 2027           | 87.007                                     |
| 2028           | 88.3509                                    |
| 2029           | 89.6948                                    |
| 2030           | 91.0387                                    |
| R <sup>2</sup> | 91%  |

## 6) Libya

There were only five observations provided for Libya; in this case the regression could not be performed due to insufficient observations. Table A2.8 shows the linear trend prediction.

*Table A2.8 Tertiary education*

| <b>Year</b> | <b>Predicted GER in tertiary education</b> |
|-------------|--|
| 2004        | 54.7982                                    |
| 2005        | 55.9529                                    |
| 2006        | 57.1076                                    |
| 2007        | 58.2623                                    |
| 2008        | 59.417                                     |
| 2009        | 60.5717                                    |
| 2010        | 61.7264                                    |



Table A2.8 cont'd

|                |         |
|----------------|---------|
| 2011           | 62.8811 |
| 2012           | 64.0358 |
| 2013           | 65.1905 |
| 2014           | 66.3452 |
| 2015           | 67.4999 |
| 2016           | 68.6546 |
| 2017           | 69.8093 |
| 2018           | 70.964  |
| 2019           | 72.1187 |
| 2020           | 73.2734 |
| 2021           | 74.4281 |
| 2022           | 75.5828 |
| 2023           | 76.7375 |
| 2024           | 77.8922 |
| 2025           | 79.0469 |
| 2026           | 80.2016 |
| 2027           | 81.3563 |
| 2028           | 82.511  |
| 2029           | 83.6657 |
| 2030           | 84.8204 |
| R <sup>2</sup> | 38%     |

## Regression models

### Algeria

*Primary.* The gross enrollment rate in primary education in Algeria is influenced by the following indicators:

- 1) total ODA,
- 2) population growth at the age of primary education, and
- 3) delta log GDP.

The regression model equation is as follows:

$$\text{GER\_Primary} = 105.7778 + 0.010607 \text{ ODA} + 0.027524 \text{ POPN\_GW\_Prm} + 115.5854 \text{ Delta\_Log\_GDP.}$$

*Secondary.* The gross enrollment rate in secondary education in Algeria is influenced by the following indicators:

- 1) total ODA, and
- 2) population growth at the age of secondary education.

The regression model equation is as follows:

$$\text{GER\_Secondary} = 99.31009 - 0.0855302 \text{ ODA} - 0.2241041 \text{ POPN\_GW\_SEC}.$$

### Egypt

*Primary.* The gross enrollment rate in primary education in Egypt is influenced by the following indicators:

- 1) EU-15 share of total ODA, and
- 2) percentage of the population below \$2.50 ppp completed (interpolated).

The regression model equation is as follows:

$$\text{GER\_Primary} = 134.3912 + 1.807173 \text{ EUODA\_share} - 1.112222 \text{ Pov\_2\_completed}.$$

*Secondary.* The gross enrollment rate in secondary education in Egypt is influenced by the following indicators:

- 1) population growth at the age of secondary education, and
- 2) percentage of the population below \$1.25 ppp completed (interpolated).

The regression model equation is as follows:

$$\text{GER\_Secondary} = 94.31718 - 0.0677163 \text{ POPN\_GW\_SEC} - 4.308937 \text{ Pov\_1\_completed}.$$

*Tertiary.* The gross enrollment rate in tertiary education in Egypt is influenced by the following indicator:

- 1) ODA from the EU-15.

The regression model equation is as follows:

$$\text{GER\_tertiary} = 24.87528 + 0.0140936 \text{ ODA\_EU-15}.$$

### Morocco

*Primary.* The gross enrollment rate in primary education in Morocco is influenced by the following indicators:

- 1) population growth at the age of primary education, and
- 2) public expenditure on education as a percentage of GDP.

The regression model equation is as follows:

$$\text{GER\_Primary} = -168.969 - 168.969 \text{ POPN\_GW\_Prm} + 45.17508 \text{ Public\_exp\_educ\_GDP}.$$

*Secondary.* The gross enrollment rate in secondary education in Morocco is influenced by the following indicators:

- 1) population growth at the age of secondary education, and
- 2) percentage of the population below \$2.50 ppp completed (interpolated).

The regression model equation is as follows:

$$\text{GER\_Secondary} = 62.62928 - 0.60207 \text{ Pov\_2\_completed} - 0.12033 \text{ POPN\_GW\_SEC}.$$

*Tertiary.* The gross enrollment rate in tertiary education in Morocco is influenced by the following indicator:

- 1) percentage of the population below \$1.25 ppp completed (interpolated).

The regression model equation is as follows:

$$\text{GER\_tertiary} = 13.46311 - 0.60969 \text{ Pov\_1\_completed}.$$

### *Palestine*

*Primary.* The gross enrollment rate in primary education in Palestine is influenced by the following indicator:

- 1) population growth at the age of primary education.

The regression model equation is as follows:

$$\text{GER\_Primary} = 89.05212 + 0.387715 \text{ POPN\_GW\_Prm.}$$

*Secondary.* The gross enrollment rate in secondary education in Palestine is influenced by the following indicators:

- 1) population growth at the age of secondary education, and
- 2) EU-15 share of total ODA.

The regression model equation is as follows:

$$\text{GER\_Secondary} = 28.84744 + 3.42624 \text{ POPN\_GW\_SEC} + 5.276046 \text{ EUODA\_share.}$$

*Tertiary.* The gross enrollment rate in tertiary education in Palestine is influenced by the following indicators:

- 1) EU-15 share of total ODA, and
- 2) ODA from the EU-15.

The regression model equation is as follows:

$$\text{GER\_tertiary} = 7.453119 + 5.194357 \text{ EUODA\_share} + 0.052934 \text{ ODA\_EU-15.}$$

### *Syrian Arab Republic*

*Primary.* The gross enrollment rate in primary education in Syria is influenced by the following indicators:

- 1) population growth at the age of primary education, and
- 2) EU-15 share of total ODA.

The regression model equation is as follows:

$$\text{GER\_Primary} = 66.57771 + 7.260731 \text{ EUODA\_share} + 6.843791 \text{ Public\_exp\_educ\_GDP.}$$

*Secondary.* The gross enrollment rate in secondary education in Syria is influenced by the following indicator:

- 1) EU-15 share of total ODA.

The regression model equation is as follows:

$$\text{GER\_Secondary} = 43.89326 + 23.75957 \text{ EUODA\_share.}$$

### *Tunisia*

*Primary.* The gross enrollment rate in primary education in Tunisia is influenced by the following indicator:

- 1) public expenditure on education as a percentage of GDP.

The regression model equation is as follows:

$$\text{GER\_Primary} = 73.56562 + 5.88836 \text{ Public\_exp\_educ\_GDP.}$$

*Secondary.* The gross enrollment rate in secondary education in Tunisia is influenced by the following indicators:

- 1) population growth at the age of secondary education, and
- 2) public expenditure on education as a percentage of GDP.

The regression model equation is as follows:

$$\text{GER\_Secondary} = -82.6961 - 0.56153 \text{ POPN\_GW\_SEC} + 22.59258 \text{ Public\_exp\_educ\_GDP}.$$

*Tertiary.* The gross enrollment rate in tertiary education in Tunisia is influenced by the following indicator:

- 1) percentage of the population below \$1.25 ppp completed (interpolated).

The regression model equation is as follows:

$$\text{GER\_tertiary} = 25.57826 - 2.48474 \text{ Pov\_1\_completed}.$$

### *Turkey*

*Primary.* The gross enrollment rate in primary education in Turkey is influenced by the following indicators:

- 1) total ODA, and
- 2) population growth at the age of primary education.

The regression model equation is as follows:

$$\text{GER\_Primary} = 100.278 + 0.0168401 \text{ POPN\_GW\_Prm} + 0.0037414 \text{ ODA}.$$

*Secondary.* The gross enrollment rate in secondary education in Turkey is influenced by the following indicators:

- 1) population growth at the age of secondary education, and
- 2) percentage of the population below \$1.25 ppp completed (interpolated).

The regression model equation is as follows:

$$\text{GER\_Secondary} = 66.2494 + 5.126761 \text{ Pov\_1\_completed} - 0.216844 \text{ POPN\_GW\_SEC}.$$

### *Israel*

*Primary.* The gross enrollment rate in primary education in Israel is influenced by the following indicators:

- 1) population growth at the age of primary education, and
- 2) delta log GDP.

The regression model equation is as follows:

$$\text{GER\_Primary} = 109.1007 - 91.9278 \text{ Delta\_Log\_GDP} + 0.406015 \text{ POPN\_GW\_Prm}.$$

### *Jordan*

*Primary.* The gross enrollment rate in primary education in Jordan is influenced by the following indicator:

- 1) percentage of the population below \$1.25 ppp completed (interpolated).

The regression model equation is as follows:

$$\text{GER\_Primary} = 105.2176 - 2.297578 \text{ Pov\_1\_completed}.$$

*Secondary.* The gross enrollment rate in secondary education in Jordan is influenced by the following indicator:

- 1) public expenditure on education as a percentage of GDP.

The regression model equation is as follows:

$$\text{GER\_Secondary} = 50.83675 + 4.364301 \text{ Public\_exp\_educ\_GDP.}$$

*Tertiary.* The gross enrollment rate in tertiary education in Jordan is influenced by the following indicator:

- 1) percentage of the population below \$1.25 ppp completed (interpolated).

The regression model equation is as follows:

$$\text{GER\_tertiary} = 44.22614 - 11.0888 \text{ Pov\_1\_completed.}$$

### **Lebanon**

*Primary.* The gross enrollment rate in primary education in Lebanon is influenced by the following indicator:

- 1) population growth at the age of primary education.

The regression model equation is as follows:

$$\text{GER\_Primary} = 106.2139 + 0.6000421 \text{ POPN\_GW\_Prm.}$$

*Secondary.* The gross enrollment rate in secondary education in Lebanon is influenced by the following indicators:

- 1) population growth at the age of secondary education, and
- 2) EU-15 share of total ODA.

The regression model equation is as follows:

$$\text{GER\_Secondary} = 66.02451 + 4.93248 \text{ EUODA\_share} - 1.893796 \text{ POPN\_GW\_SEC.}$$

*Tertiary.* The gross enrollment rate in tertiary education in Lebanon influenced by the following indicator:

- 1) ODA from the EU-15.

The regression model equation is as follows:

$$\text{GER\_tertiary} = 36.97133 + 0.040599 \text{ ODA\_EU-15.}$$

### **Libya**

*Secondary.* The gross enrollment rate in secondary education in Libya is influenced by the following indicator:

- 1) population growth at the age of secondary education.

The regression model equation is as follows:

$$\text{GER\_Secondary} = 73.72482 - 1.04036 \text{ POPN\_GW\_SEC.}$$

## Regression model summary







Table A2.9 Primary education

| Countries            | Explanatory variables      |  |                    |                       |               |                               |                               | R-squared | No. of obs. used in the regression model |
|----------------------|----------------------------|--|--------------------|-----------------------|---------------|-------------------------------|-------------------------------|-----------|--|
|                      | Total ODA                  | Population growth at the primary education level | ODA from the EU-15 | EU share of total ODA | Delta_Log_GDP | % pop. under \$1.25 completed | % pop. under \$2.50 completed |           |  |
| Algeria              |                            |  |                    |                       |               |                               |                               | 0.8946    | 10                                       |
| Egypt                |                            |  |                    |                       |               |                               |                               | 0.7265    | 14                                       |
| Jordan               |                            |  |                    |                       |               |                               |                               | 0.2937    | 17                                       |
| Lebanon              |                            |  |                    |                       |               |                               |                               | 0.1657    | 24                                       |
| Libya                | No regression model fitted |  |                    |                       |               |                               |                               |           |  |
| Morocco              |                            |  |                    |                       |               |                               |                               | 0.5576    | 34                                       |
| Palestine            |                            |  |                    |                       |               |                               |                               | 0.7728    | 15                                       |
| Syrian Arab Republic |                            |  |                    |                       |               |                               |                               | 0.4081    | 33                                       |
| Tunisia              |                            |  |                    |                       |               |                               |                               | 0.4950    | 34                                       |
| Turkey               |                            |  |                    |                       |               |                               |                               | 0.3548    | 36                                       |
| Israel               |                            |  |                    |                       |               |                               |                               | 0.8620    | 9  |

Table A2.10 Secondary education

| Countries               | Explanatory variables |  |                          |                             |                   |  |  | R-squared | No. of obs.<br>used in the<br>regression<br>model |
|-------------------------|-----------------------|--|--------------------------|-----------------------------|-------------------|--|--|-----------|---|
|                         | Total<br>ODA          | Population<br>growth at the<br>secondary<br>education<br>level | ODA<br>from the<br>EU-15 | EU share<br>of total<br>ODA | Delta_Log_<br>GDP | % pop.<br>under<br>\$1.25<br>completed | % pop.<br>under<br>\$2.50<br>completed |           |   |
| Algeria                 | ■                     | ■  |                          |                             |                   |  |  | 0.5255    | 32  |
| Egypt                   |                       | ■  |                          |                             |                   | ■                                      |  | 0.8351    | 14  |
| Jordan                  |                       |  |                          |                             |                   |  | ■                                      | 0.3379    | 22  |
| Lebanon                 |                       | ■  |                          | ■                           |                   |  |  | 0.3309    | 23  |
| Libya                   |                       | ■  |                          |                             |                   |  |  | 0.2354    | 17  |
| Morocco                 |                       | ■  |                          |                             |                   |  | ■                                      | 0.8867    | 24  |
| Palestine               |                       | ■  |                          | ■                           |                   |  |  | 0.8495    | 15  |
| Syrian Arab<br>Republic |                       |  |                          | ■                           |                   |  |  | 0.4846    | 40  |
| Tunisia                 |                       | ■  |                          |                             |                   |  | ■                                      | 0.9616    | 34  |
| Turkey                  |                       |  |                          |                             |                   | ■                                      |  | 0.9594    | 16  |
| Israel                  |                       | ■  |                          |                             |                   |  |  | 0.1190    | 36  |

Table A2.11 Tertiary education

| Countries            | Explanatory variables      |   |  |                       |               |  |                               | R-squared | No. of obs. used in the regression model |
|----------------------|----------------------------|---|--|-----------------------|---------------|--|-------------------------------|-----------|--|
|                      | Total ODA                  | Population growth at the tertiary education level | ODA from the EU-15   | EU share of total ODA | Delta_Log_GDP | % pop. under \$1.25 completed  | % pop. under \$2.50 completed |           |  |
| Algeria              | No regression model fitted |   |  |                       |               |  |                               |           |  |
| Egypt                |                            |   |   |                       |               |  |                               | 0.6288    | 7  |
| Jordan               |                            |   |  |                       |               |   |                               | 0.8166    | 6  |
| Lebanon              |                            |   |   |                       |               |  |                               | 0.4685    | 12                                       |
| Libya                | Insufficient observations  |   |  |                       |               |  |                               |           |  |
| Morocco              |                            |   |  |                       |               |   |                               | 0.9310    | 10                                       |
| Palestine            |                            |   |  |                       |               |  |                               | 0.8213    | 13                                       |
| Syrian Arab Republic | No data available          |   |  |                       |               |  |                               |           |  |
| Tunisia              |                            |   |  |                       |               |  |                               | 0.9995    | 3  |
| Turkey               | No regression model fitted |   |  |                       |               |  |                               |           |  |
| Israel               | No regression model fitted |   |  |                       |               |  |                               |           |  |





## About MEDPRO

MEDPRO – Mediterranean Prospects – is a consortium of 17 highly reputed institutions from throughout the Mediterranean funded under the EU’s 7<sup>th</sup> Framework Programme and coordinated by the Centre for European Policy Studies based in Brussels. At its core, MEDPRO explores the key challenges facing the countries in the Southern Mediterranean region in the coming decades. Towards this end, MEDPRO will undertake a prospective analysis, building on scenarios for regional integration and cooperation with the EU up to 2030 and on various impact assessments. A multi-disciplinary approach is taken to the research, which is organised into seven fields of study: geopolitics and governance; demography, health and ageing; management of environment and natural resources; energy and climate change mitigation; economic integration, trade, investment and sectoral analyses; financial services and capital markets; human capital, social protection, inequality and migration. By carrying out this work, MEDPRO aims to deliver a sound scientific underpinning for future policy decisions at both domestic and EU levels.

|  |   |
|--|---|
| <b>Title</b>                           | MEDPRO – Prospective Analysis for the Mediterranean Region  |
| <b>Description</b>                     | MEDPRO explores the challenges facing the countries in the South Mediterranean region in the coming decades. The project will undertake a comprehensive foresight analysis to provide a sound scientific underpinning for future policy decisions at both domestic and EU levels.   |
| <b>Mediterranean countries covered</b> | Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine, Syria, Tunisia and Turkey   |
| <b>Coordinator</b>                     | Dr. Rym Ayadi, Centre for European Policy Studies (CEPS), <a href="mailto:rym.ayadi@ceps.eu">rym.ayadi@ceps.eu</a>  |
| <b>Consortium</b>                      | Centre for European Policy Studies, <b>CEPS</b> , Belgium; Center for Social and Economic Research, <b>CASE</b> , Poland; Cyprus Center for European and International Affairs, <b>CCEIA</b> , Cyprus; Fondazione Eni Enrico Mattei, <b>FEEM</b> , Italy; Forum Euro-Méditerranéen des Instituts de Sciences Economiques, <b>FEMISE</b> , France; Faculty of Economics and Political Sciences, <b>FEPS</b> , Egypt; Istituto Affari Internazionali, <b>IAI</b> , Italy; Institute of Communication and Computer Systems, <b>ICCS/NTUA</b> , Greece; Institut Europeu de la Mediterrania, <b>IEMed</b> , Spain; Institut Marocain des Relations Internationales, <b>IMRI</b> , Morocco; Istituto di Studi per l’Integrazione dei Sistemi, <b>ISIS</b> , Italy; Institut Tunisien de la Compétitivité et des Etudes Quantitatives, <b>ITCEQ</b> , Tunisia; Mediterranean Agronomic Institute of Bari, <b>MAIB</b> , Italy; Palestine Economic Policy Research Institute, <b>MAS</b> , Palestine; Netherlands Interdisciplinary Demographic Institute, <b>NIDI</b> , Netherlands; Universidad Politecnica de Madrid, <b>UPM</b> , Spain; Centre for European Economic Research, <b>ZEW</b> , Germany |
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| <b>Duration</b>                        | 1 April 2010 – 31 March 2013 (36 months)  |
| <b>EC Scientific Officer</b>           | Dr. Domenico Rossetti Di Valdalbero, DG RESEARCH  |
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