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**Discussing Demographic Transitions in  
Southern Mediterranean Countries**

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## **Discussing Demographic Transitions in Southern Mediterranean Countries**

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### **Abstract**

In a few decades Mediterranean societies deeply transformed themselves as regards many demographic aspects. As in the northern rim but with remarkable delay, in the southern rim a lot of countries entered a new regime. This became evident in the second part of the last century.

Demographic literature usually calls the passage from pre-modern to modern regime ‘demographic transition’.

According to some scholars, in Europe and in some other developed countries outside Europe the development of the demographic transition has led to enter a further new regime known as ‘second demographic transition’. But accordance does not exist on a different and new demographic transformation and also the presence of a breakdown is disputed.

Knowledge risen from our past and present research led us to argue about different demographic situations in southern Mediterranean countries. Our purpose here is to better address the theoretical issue of the demographic transitions for the countries of the southern rim of the Mediterranean discussing the adherence of theoretical models to empirical evidence. Moreover, problems concerning tempo effects and tempo distortions in period fertility indicators are considered to asses the real intensities of fertility and, consequently, the real state of demographic development.

**Keywords:** Demographic Transitions; southern Mediterranean countries; theoretical models; empirical evidence

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## **Introduction**

Studying social and demographic dynamics in the Mediterranean Basin, various issues emerge that require further insights. Peculiarities raised for five major countries of the southern rim - Algeria, Egypt, Morocco, Tunisia, and Turkey - induced us to discuss and verify the specific characteristics of their transitions.

In this paper, after presenting the main theories on the demographic transitions (par. 2) and a synthesis of the results which have come out from the analysis we have carried out until now (par. 3), we discuss the adherence of the theoretical models to empirical evidence (par. 4).

## **Transition and Transitions**

When we talk about demographic transition we refer to the passage from an equilibrium of high mortality and fertility to an equilibrium of low mortality and fertility, the passage from a pre-modern to a modern demographic regime.

The theory comes from the observation of the real path made by the crude fertility and mortality rates in contemporary history. Forerunners of such a theory were, at the beginning of the last century, Warren Thompson and Adolphe Landry, while the first definition – even if the term transition was not used yet - dates back to Frank Notestein in 1945. Among the scholars that are intensively studied Chesnais (1986) must be mentioned, who modelled the development of vital rates on the base of regularities found among country-cases. His book, based on the collection of a long series of historical data all over the world can be considered as a reference to understand the different types and the different aspects of transitions. Among other, Chesnais identifies the beginning and the end of the transition on the base of well defined parameters. In particular, according to him it is possible to state the conclusion of a transition when the average rate of natural increase lasting returns (for at least five years) equal or less than that of the period preceding the date of the beginning (a moderately positive or zero natural growth rate). Moreover, mortality should have reached a low level if it is ascertained that life expectancy at birth for females is at least 73 years. Chesnais sets the ending time of the demographic transition in nearly all European countries between 1960 and 1970, although their starting times are very different.

The theory supposes that a new balance between vital rates is maintained after the transition.

In the developed world, and in Western Europe in particular, this equilibrium was almost immediately disrupted first by the Baby-boom and then by the Baby-burst. The long-lasting imbalance and the persistent sub-replacement fertility have led some scholars to recognize a new demographic phase. It is the so-called ‘second demographic transition’, proposed by Lesthaeghe and Van de Kaa (Lesthaeghe & van de Kaa, 1986; van de Kaa, 1987). Not only this, but the particular low fertility (*lowest low*) reached by

some countries in the nineties have led some others even to talk of a ‘third demographic transition’ (Kohler, Billari, & Ortega, 2002).

The second demographic transition (SDT) theory ‘presently, constitutes “the” mainstream concept among population scholars dealing with demographic change in European societies’ (Billari & Liefbroer, 2004).

According to Lesthaeghe (2010) and van de Kaa (2004) the second demographic transition is not merely the continuation of the first (first demographic transition -FDT- is now termed the demographic transition to distinguish between the two), not a new stage of it, because the fundamentals of the new demographic situation are completely different: contrasting nuptiality regimes, contrasts in fertility behaviour, contrasting societal background. The main characteristics are the changes in fertility - intensity reduction and postponement - made possible by efficient contraception not available before, and associated with transformations in familial behaviours. The essence of the theory is that such changes in fertility behaviour can be traced back and eventually explained by changes in value orientation across Western societies. Indeed, individual choice and self-determination, particularly of women, replaced the social control on that issue.

In spite of its popularity, the SDT theory has been subject to criticism. According to Coleman (2004) the new trends cannot be considered a new transition but a new partial regime change of the FDT. The new regime is mainly concerned with a limited and not strictly demographic aspect: marriage and its alternative. Moreover, it is based on the same kinds of cultural and ideational change forces accounted for the fertility transition in the FDT. Individualisation has been a continuous process not different in substance from what moved parents to control their offspring during the FDT.

The new relational forms appear to live together with the traditional form of family and not seem to overcome it. The new forms of family constitution and re-constitution are not prevalent so that a ‘true’ transition does not exist. Instead, it can be stated that in some societies progressive institutions and well-being permitted a wide spectrum of behaviours. In some other societies, some characteristics have spread but they have nothing to do with a well defined pattern.

Cliquet (1991) rejects the thesis of a new transition. Recent trends must be considered as an accelerated continuation of the demographic transition. There does not exist discontinuity or clear caesura in most of demographic variables. Discontinuity, when exists, consists of shifts certainly important but not as revolutionary in nature as those produced by the onset of modernization.

The acceleration of already existing features was caused by an accelerating development of already existing and mutually interacting cultural and economic processes.

In line with Cliquet’s view of the modern demographic history is Caldwell’s view (2004), which has lengthened the horizon to a grand theory. According to Caldwell, the demographic transition theory is an adequate theoretical framework to include the more recent demographic developments. Modern society and modern demographic behaviours are the product of the

industrial mode of production. Industrial societies do not need the traditional family; they do not need, at the level of individuals or couples, to reproduce. The very low fertility regime of the SDT is only the response to the changes and the development of industrialization and to the difficulties of societies to adequate to them. This mode of production is not overcome yet and there is enough room for further development. This means that further, perhaps unknown, advancements in demographic behaviour can occur. The demographic transition ends with low mortality and fertility, but not necessarily with an equilibrium.

### **Demographic Developments in the Major Southern Mediterranean Countries**

The principal demographic changes the major southern Mediterranean countries underwent in recent decades are summarized in Table 1. First considering mortality, from an annual average rate of between 19 and 26 per thousand in the five-year interval 1950-1955 in Turkey and Morocco respectively, the crude death rate (CDR) declined until the current common level of 5-6 deaths per every thousand inhabitants. In the same period life expectancy at birth increased from between around 42.90 years in Morocco and Egypt and 47.59 years in Turkey to between 71.16 years in Morocco and 72.96 years in Turkey. In particular, today life expectancy at birth for females is higher than 73 years in all countries. Thus, the mortality transition had already started in the 1950s in Turkey and was moving onto the other countries. Now, following Chesnais, it comes to an end in the whole set of countries.

Compared to mortality, the dynamics of fertility were much more multifaceted. Instead, looking jointly at two main fertility indicators, the crude birth rate (CBR) and the total fertility rate (TFR), an important decrease in fertility occurred with a passage from a situation of homogeneity to one of heterogeneity in behaviours among the major southern Mediterranean countries. In particular, TFR more than halved, declining from a common standard of 6-7 children per woman in the first half of 1950s to the less than 3 children per woman today, with a range between 2.04 and 2.85. It is particularly low in Tunisia and Turkey (2.04 and 2.15 respectively) and quite high in Egypt (2.85). These results are quite striking given the resistance of fertility to decline in these contexts, a condition shared with the rest of Muslim countries.

As a result of the decline of both the CBR and the CDR, the natural growth rate declined too. At present the natural growth rates are positive and still relatively high, especially in Egypt. Due to the different time in which fertility started to decline, the maximum high growth rate was reached first by Turkey, followed by Egypt, Tunisia, Morocco, and Algeria. These peaks can be



considered high (Tunisia, Turkey, and Egypt) and very high (Algeria and Morocco)<sup>1</sup>.

From the whole trends of the crude death and birth rates, not presented here but analytically discussed in a recent study of ours and to which we refer to for details (Zagaglia & Moretti, 2012), it seems that in Algeria, Morocco and Tunisia an equilibrium between the two crude rates has been reached since the beginning of the new millennium. In the case of Turkey we observed the attainment of an equilibrium too. In Egypt, instead, the distance between the two rates reduced slightly and there are no evidence of an equilibrium.

If we look at the levels of TFR, the intensity fertility indicator that, other than changes in reproductive behaviour and the stage of fertility transition, highlights the stage of the demographic transition as a whole, the demographic transition surely reached an end in Tunisia and is at least close to an end in Turkey<sup>2</sup>.

**Table 1. Principal Demographic Indicators for the Major Southern Mediterranean Countries 1950-1955 and 2005-2010**

	Mortality indicators				Fertility indicators				Natural growth rate (per 1,000 population)		
	Crude death rate (per 1,000 population)		Life expectancy at birth *		Crude birth rate (per 1,000 population)		Total Fertility Rate				
	1950-1955	2005-2010	1950-1955	2005-2010	1950-1955	2005-2010	1950-1955	2005-2010	1950-1955	2005-2010	Maximum of the period **
Algeria	24	5	43.08 (44.20)	72.30 (73.71)	51	21	7.28	2.38	27.1	15.9	32.6 (1970-75)
Morocco	26	6	42.90 (43.85)	71.16 (73.44)	50	20	7.18	2.38	24.7	14.3	30.8 (1965-70)
Tunisia	23	6	44.60 (45.10)	73.90 (76.04)	46	17	6.93	2.04	23.8	11.5	28.6 (1960-1965)
Turkey	19	5	47.59 (49.27)	72.96 (75.28)	48	19	6.30	2.15	29.6	13.2	29.6 (1950-1955)
Egypt	22	5	42.89 (43.70)	72.35 (74.26)	48	24	6.37	2.85	25.8	18.7	26.9 (1955-1960)

Note: \*In bracket, female life expectancy at birth; \*\*In bracket, five-year interval of maximum.  
Source: Our elaboration on UN data (United Nations, World Population Prospects: The 2010 Revision. CD-ROM Edition, 2011).

Changes in reproductive behaviours, the key variable in the demographic transition, were made possible by the spread in the use of contraception consisting almost exclusively of reversible female modern methods, except in

<sup>1</sup>Classification of the levels of growth by Chesnais (1986).

<sup>2</sup>A TFR of 2.1, corresponding to a zero population growth rate in case of no migration and low mortality, is generally considered the threshold to enter the post-transitional phase (Bongaarts, 2008).

Turkey where the use of traditional and male methods of contraception is particularly high (for details see Zagaglia & Moretti, 2012).

Even if there is not accordance in literature on the effectiveness of family planning programme, implemented by the governments of these countries in different times and to different degree (UN, 2010), it is indubitable that a broad use of contraception played a role in driving down family size. Moreover, contraception has spread at a relatively high speed. To be considered, indeed, with respect to this aspect, that Koranic law does not forbid contraception (Jones, 2006).

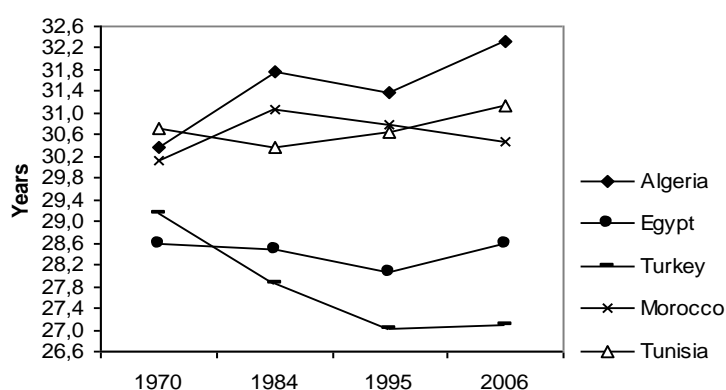
Islam, instead, encourages the legalization of union formation (Jones, 2006) and marriage rests the sole allowed form of a stable couple formation. However, also important changes happened as regards this aspect: later entry and an increasing number of women never entering a union (Zagaglia & Moretti, 2012; Tabutin & Schoumaker, 2005; Rashad 2000).

The issue of union dissolution is difficult to address owing to lack of data. According to what is reported in Tabutin & Schoumaker (2005) the divorce rate per 100 marriages dropped from 40% (1970 survey) to 19% (1992 survey) in Algeria and from 32% in 1941-45 to 14% in 1996-2000 in Egypt, while it remained stable at around 15% from the 1960s and the 1980s in Tunisia.

Changes in union formation and dissolution together with the spread in the use of contraception influenced the beginning of reproductive career and the intensity and the calendar of fertility.

Turning to the latter and important aspect, during a fertility transition the mean age at childbearing normally declines as birth control first is made within the marriage by giving up to further children in function of the number already had (i.e. Bongaarts, 1999). The trend of this indicator has followed the classic scheme in the cases of Turkey and Egypt until the 1990s while different are the schemes for Algeria, Morocco, and Tunisia: increasing as a whole for the first, an inverted U-shape curve for the second, and an U-shape curve for the third, as shown in Figure 1.

**Figure 1.** Mean Age at Childbearing in the Major Southern Mediterranean Countries.



Source: Our elaboration on UN data (United Nations, World Fertility Data2008. (POP/DB/Fert/Rev2008))

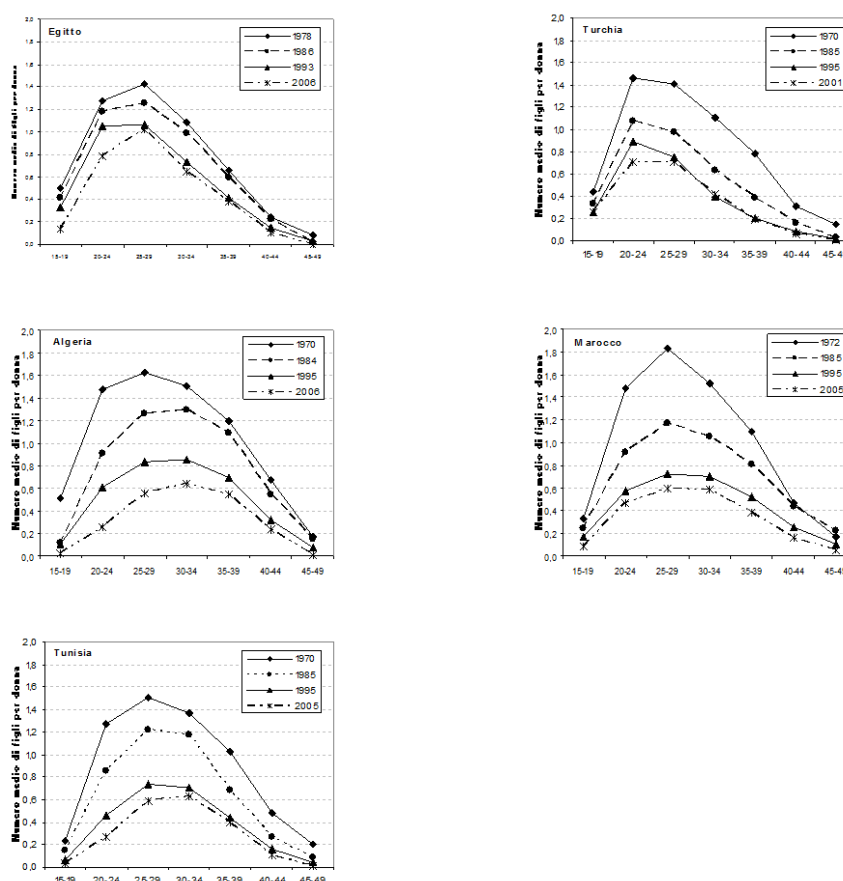
These shapes are determined by the different changes in fertility schedules by age. (Figure 2)

In Egypt, fertility declined first due to the decrease of fertility at all ages, later for the decline especially between the ages of 25 and 39, more recently for the decline at young ages. The changes in fertility schedule by age in Turkey are similar to the Egyptian ones. Altogether the calendar is set early still today. It must be stressed, in the case of Turkey, the particularly high fertility at younger ages and a traditional fertility model which persists over time. In both cases changes in the timing of fertility have happened only since the 1990s.

On the contrary, in Algeria changes in the timing of fertility are evident in mid-1980s by the postponement of births from young to later ages. From the mid-1980s to the mid-1990s, instead, fertility reduced at all ages and from the mid-1990s to the mid-2000s especially at young and central ages.

In Morocco fertility progressively dropped at all ages. Finally, in Tunisia fertility changes followed first Morocco then Algeria.

**Figure 2.** Age Specific Fertility Rates for the Major Southern Mediterranean Countries. 1970-2005



Source: Our elaboration on UN data (United Nations, World Fertility Data2008. (POP/DB/Fert/Rev2008))

The decline of fertility at younger ages as the result of the postponement of the beginning of reproductive career causes tempo distortions<sup>1</sup> in period intensity fertility indicators - like TFR - while the decline at older ages does not if decline regards family size and not calendar (Bongaarts, 1999). Thus, in the three countries of Maghreb tempo distortions could have operated at least since the 1970s. For Egypt and Turkey, tempo distortions look operating in the most recent period even if they might have been at work for a longer time period. Confirmation of that could be obtained by an investigation of fertility by birth order. Unfortunately, births by order or age-order-specific fertility indicators are not available. However, for shorter periods and except for Algeria, we are able to investigate the changes in the median age at first birth for women<sup>2</sup>.

The results confirm childbearing postponement for the years for which data are available. The annual average change in the median age at first birth by age of the mother was always positive with very few exceptions and increases were often higher than 0.10. Postponement was stronger for Turkey (period 1993-2003) and above all for Morocco (since the late 1970s) and Tunisia (period 1978-1988) than for Egypt (whole period 1978-2005). In particular, it is strong in Morocco since the 1980s. (Table 2)

In conclusion, in these countries fertility decline as measured by period TFR is likely overestimated. The main period measure of fertility does not adequately represent current and recent fertility conditions in the populations.

**Table 2.** *Annual average change in female median age at first birth*

		Median age at birth of first child				
		25-29	30-34	35-39	40-44	45-49
Egypt	1978-1988	0,12+	0,16+	0,05		
	1988-1995	0,04	-0,03	0,11+	0,21	0,04
	1995-2005	0,08	0,10+	0,07	0,05	0,20
Turkey	1983-1993	0,14+	0,00	-0,02		
	1993-2003	0,11+	0,13+	0,13+	0,02	0,05
Morocco	1977-1987	0,14+	0,12+	0,10		
	1987-1995		0,25+	0,19+	0,16+	0,04
	1995-2003/4		0,25+	0,20+	0,13+	0,14+
Tunisia	1978-1988	0,20+	0,17+	0,01		

Note: + indicates changes greater than 0,10

Source: Zagaglia et al., 2012.

## Discussion

Finally, we want to give answer to the following research question: in the five countries analyzed are we in front of two different transitions - first and

<sup>1</sup>A “tempo distortion” is a tempo effect in period demographic measures not reflecting current conditions. It is the case when age-specific rates shift to higher or lower ages. See Bongaarts & Feeney for details (2010).

<sup>2</sup>We use data from DHS surveys but in Algeria only one survey was carried on.

second - or two subsequent stages of the same transition? Or have we directly to consider one and only path developing in a single phase by anticipating some characteristics typical of the SDT on the fertility side?

The answer is not the same for the five countries and also those countries showing the most similar paths exhibit significant differences and peculiarities.

Egypt and Turkey are the countries that seem better to be included in the interpretative scheme of a first transition possibly followed by a second transition, or better a second phase. We talk about a possibility because according to the Chesnais' methodology the first transition is concluded as regards mortality but not concluded as regards fertility. Fertility transition is in its final phase in Turkey but it is late phase in Egypt. However, in Egypt it seems that some conditions typical of the European SDT are present: a considerable spread of modern contraception and an evident postponement of the timing of fertility. Instead, in Turkey, where the end of the transition is close to an end, these conditions are not present except a recent change in the calendar of fertility. Reproductive behaviour in this country is particularly close to the traditional model.

On the contrary, the three countries of Maghreb seem better to be included in the theoretical scheme of a single evolutive model embodying the models of both the first and the second transition.

In these countries the decline of fertility encountered resistance but when it started it deployed by the most salient features of the SDT. This is particularly true for Algeria, the last country among the five countries considered to have entered the fertility transition and which began the process by a more and more postponed reproductive model. It is not too hard to conclude that in Algeria mortality has declined according to the scheme of the first transition while fertility has declined according to the scheme of the second one. However, the progress in transition is late as a whole.

In Tunisia, both the mortality and the fertility transition started earlier and seem nearly concluded. As regards fertility, it appears first to have the characteristics of the first then of the second transition.

Nevertheless, at least for these three countries the whole transitional process and its most recent phase should be reconsidered as the fertility decline was certainly overestimated.

Also for Turkey and Egypt the current level of fertility at least should be re-evaluated and the actual stage of fertility transition be resettled.

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