

Europe between West and East: Converging Family Formation and Reproductive Patterns?

Ovest ed Est Europeo: Convergenza dei Comportamenti Familiari e Riproduttivi?

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Riassunto: Nel presente lavoro si studia la convergenza dei comportamenti familiari e riproduttivi nel contesto europeo attraverso l'analisi delle recenti dinamiche degli indicatori trasversali di fecondità e di nuzialità. Verranno messi in luce due aspetti della convergenza che riguardano l'andamento nel tempo della dispersione dell'indicatore (σ -convergenza) e la velocità di convergenza (β -convergenza). L'eterogeneità nei livelli di intensità della fecondità tende a diminuire nel tempo e viene confermata l'ipotesi di β -convergenza. Risultati meno netti si riscontrano per l'intensità della nuzialità. Andamenti divergenti si notano, invece, nel caso degli indicatori di cadenza.

Keywords: Demographic Convergence, Europe, Fertility Trends, Nuptiality Trends

1. Introduction

In the last decade a notable amount of literature on demographic convergence has been developed. The question on whether demographic patterns, in particular fertility trends, are converging at the global level has been recently raised (Wilson, 2000). Cross-national differences within Europe have also been investigated. Some authors defend the hypothesis of demographic uniformity (van de Kaa, 1987; Roussel, 1992; Jones, 1993). Others, on the contrary, note that convergence of basic demographic indicators in Europe is by no means an immediate conclusion of the analysis of recent trends (Kuijsten, 1996; Billari and Wilson, 2001; Coleman, 2002). Differences in demographic patterns may be heavily determined by differences in cultural and socio-economic factors (Reher, 1998) and in institutional experiences (Mayer, 2001). Consequently to the geo-political changes that occurred in the former socialist countries of Central and Eastern Europe (CEE) and in the perspective of EU enlargement, the interest for studying convergence of demographic behaviour across Europe has grown recently. During the past decade changes in family formation patterns and fertility behaviour have been registered in the countries of CEE up to then characterised by early marriage and childbearing and higher fertility levels. The abrupt fertility decline and the onset of later marriage and childbearing could make us expect a fast diffusion of the Western European family and reproductive model where low fertility levels, postponed marriage and first birth prevail. However, apart from recent evidence of the onset of the postponement transition also in CEE countries and the sharp fertility decline, it is difficult to assess to what extent recent demographic changes could lead to the adoption of similar family and reproductive models around Europe. The aim of the study is to test

the convergence hypothesis for family formation and reproductive behaviour across both Western European and CEE countries in the recent decades focusing on two aspects of convergence developed in the economic literature.

2. Data and Methods

We use period data for nuptiality and fertility in Europe. Data are derived from the Council of Europe and Eurostat. We rely on the following *tempo* and *quantum* indicators: the Total Fertility Rate (TFR), the Mean Age at First Birth (MAFB), the Total First Marriage Rate (TFMR) and the Mean Age at First Marriage (MAFM). We build upon the literature on economic growth and adopt two main concepts of convergence that have been developed to test economic convergence: σ - and β -convergence (Barro and Sala-i-Martin, 1995). In our research the concept of σ -convergence concerns the cross-section dispersion of the variable under study measured through the standard deviation. Convergence occurs if the dispersion across countries of the variable of interest declines over time. β -convergence studies the relationship between the initial level of the variable under study and its average annual change. In particular, the presence of β -convergence in a cross-section of countries implies a negative relation between the average annual change of the variable under study and its initial level. That is, countries that initially exhibit higher levels of the indicator, are characterised by lower levels (in algebraic values) of the indicator average annual change. The empirical test for β -convergence for variable x across European countries is derived by estimating the following equation using non-linear least squares:

$$\frac{x_{i,t} - x_{i,0}}{t} = -\frac{1 - e^{-\lambda t}}{t} x_{i,0} + \frac{b}{\lambda} \frac{1 - e^{-\lambda t}}{t} + u_{i,t} \quad (1)$$

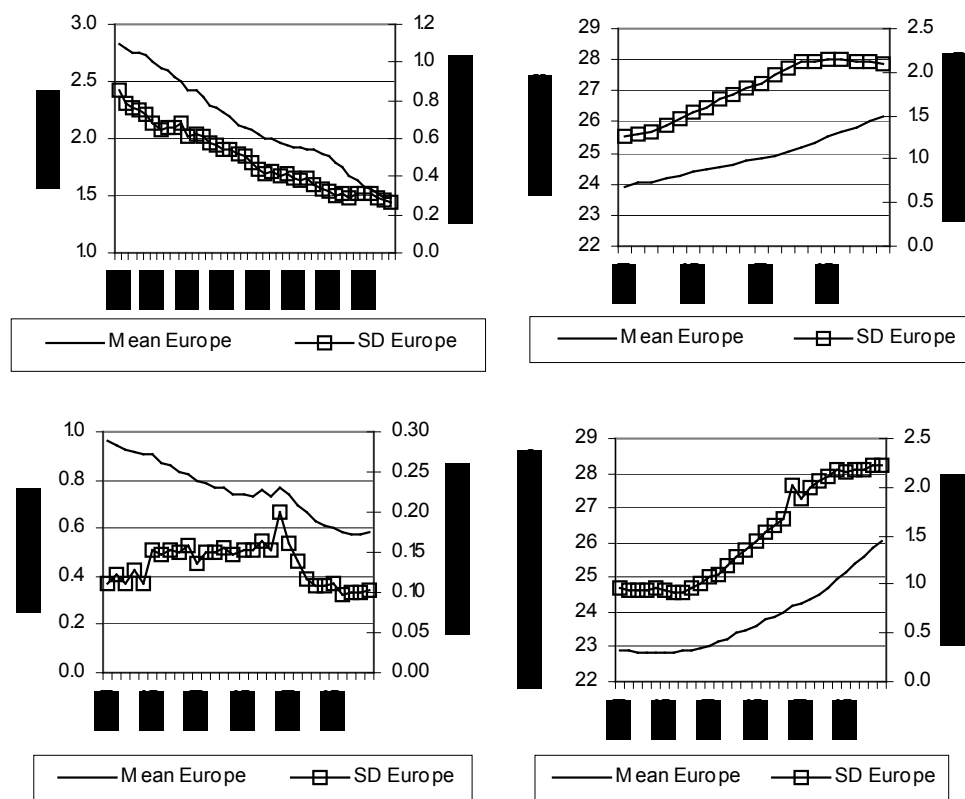
t denotes the length of the time interval, $x_{i,t}$ is the demographic indicator for country i at time t and $u_{i,t}$ is a disturbance term. λ is the convergence coefficient to be estimated. If $\lambda > 0$, there is β -convergence. λ indicates the average annual rate at which the distance of x from the steady state between 0 and t decreases over time. In our study we, first, analyse the trend over time of the dispersion of fertility and nuptiality indicators and, second, we run single cross-section regressions to investigate the relationship between the initial level of the indicator and its average annual change. We report results for unweighted data.

3. Main Results

TFR trends for European countries from 1960 to 1999 show a prevailing declining pattern that in less than forty years brought the TFR below replacement level. The clear downward trend in the average TFR levels across Europe was accompanied by a decreasing standard deviation during the whole period up to the 1990s and a slow down or even divergence thereafter (Fig. 1). The TFR standard deviation across Europe up to the 1990s would suggest the presence of σ -convergence. The variability trend in the last decade, conversely, shows that recent changes in TFRs across Europe and the emergence of lowest-low fertility (see Billari and Kohler, 2002) have affected the

dispersion of the indicator and definitely stopped the downward pattern. Significant and persistent increase in the mean age at first birth has been registered all around Europe. We investigate the presence of σ -convergence in the timing of first births across Europe in the period 1980-99 relying on the standard deviation of the distribution. The variability in Europe raised since the beginning of the 1980s and confirms increasing divergence in the timing of first births up to the 1990s (Fig. 1). At the beginning of the last decade the divergence process slowed down markedly or even stopped. By that time all the countries considered registered upward trends in the average age at first child. The observed stability in the variation of the mean age at motherhood since the beginning of the last decade suggests the onset of parallelism of trends across European countries but sheds no light on cross-country convergence.

Figure 1: *Europe. TFR, MAFB, TFMR, MAFM. Mean and Standard Deviation*



Since the 1970s the downward trend in first marriages has spread in the majority of European countries. However, in countries of Western Europe and CEE the formation of first marriages followed rather different patterns in the past thirty years. The dispersion of TFMRs across Europe followed, therefore, a clearly uneven pattern in the period from 1970 to 1999 and it might suggest the presence of σ -convergence in the European context only since the early 1990s (Fig. 1). Europe has shown a strong cross-country heterogeneity as regards the postponement of first marriages. A significant upward trend in the dispersion of the mean age at first marriage has been observed for the period that goes from the end of the 1970s to the early 1990s (Fig. 1) and it hides the effects of strong heterogeneity in the onset of the postponement of union formation across European countries. Currently observed stability in the dispersion suggests that postponement of first marriages has already involved the majority of

European countries. However, a period of parallel trends in the timing of first marital unions is more likely to be observed rather than a decline in cross-country heterogeneity. Finally, let us consider the results about β -convergence. The results for TFRs confirm the β -convergence hypothesis: countries that exhibited at the beginning of the period higher levels of the indicator experienced greater declines than those with lower initial levels. Moreover, countries show a faster speed of convergence if taking into account the time interval prior to the 1990s. The estimated λ coefficient is 0.0403 for the period 1960-99 and 0.0506 for the period 1960-89 (both sign. at 1% level). In case of TFMRS a significantly (5% level) positive λ coefficient is estimated only for the countries of Western Europe and it equals to 0.0383 for the period 1970-99. We test the β -convergence hypothesis for the mean age at first child and at first marriage. The purpose is to explore whether countries that exhibited lower average age at first child and first marriage tend to catch up with countries that are characterised by late childbearing and marriage patterns. The estimated λ coefficient for the period 1980-99 is -0.0181 for the MAFB and -0.0245 for the MAFM (both sign. at 1% level). The negative λ estimate leads us to conclude that the average age at first child and first marriage has not been converging across European countries in the sense of β . For both the indicators, however, the divergence process was faster in the period prior to the 1990s.

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