Lowest-Low Fertility in Europe: Exploring the Causes and Finding Some Surprises

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1. Introduction

In March 2005, the European Commission devoted an official document—a so-called *Green Paper*—to the issue of "Confronting demographic change: a new solidarity between the generations". The document started as follows:

> *"Europe is facing today unprecedented demographic change. In 2003, the natural population increase in Europe was just 0.04% per annum; the new Member States, with the exception of Cyprus and Malta, all saw falling populations. In many countries, immigration has become vital to ensure population growth. The fertility rate everywhere is below the threshold needed to renew the population (around 2.1 children per woman), and has even fallen below 1.5 children per woman in many Member States."* (European Commission 2005:2)

At the European level, fertility rates have become a clear matter of concern, and the links with population increase and immigration have been made clear at the very beginning of this document. Research on very low, and in particular on lowest-low fertility, has focused on the causes of these "new" fertility levels. Perhaps a bit less on the overall demographic balance.

This paper aims to give a contribution to bridging research on very low and lowest-low fertility with research on general population dynamics. The focus is on Europe, and on Italy and Spain—the forerunners of lowest-low fertility—in particular. The paper is structured in two parts. In the first part, I shall review the literature aimed at the explanation of the emergence of lowest-low fertility in Europe. In the second part, I will illustrate some (perhaps) surprising very recent trends in Italy and Spain, drawing some implications for the demography of countries that have experienced lowest-low fertility.

2. Lowest-low fertility and its causes

2.1 The emergence and spread of lowest-low fertility in Europe

Very low fertility is not necessarily a phenomenon that is exclusive to the last quarter of the Twentieth Century. Several cities in Europe had below replacement fertility already at the beginning of the Century; during wars, fertility was usually falling to particularly low levels. Entire regions in larger countries had already had below replacement fertility for a long time. In one of the key regions for its extremely low levels at the end of the Century, North-Western Italy, already the cohort of women born in 1922 had below-replacement fertility. The area of North-Western Italy (the regions of Lombardy, Piedmont, Liguria and Val d'Aosta), includes the so-called "Industrial Triangle" with the three cities of Milan, Turin and Genoa; the "Industrial Triangle" constituted the core of the economic boom that Italy experienced after World War II; sizable immigration contributed to keeping workforce size increasing in this historically low fertility area for over fifty years (Dalla Zuanna 2006).

Nevertheless, when Hans-Peter Kohler, José Antonio Ortega and I (Kohler, Billari and Ortega 2002) characterized the emergence of *lowest-low fertility* by looking at the situation of Europe in the early 1990s, time was ripe to understand the uniqueness of the situation that was visible at that time in Southern and Central and Eastern Europe. Despite past episodes of very low levels, fertility had never decreased below the threshold that we identified for the "lowest-low" level, i.e. 1.3 children per woman (or, in demographic jargon, a *Total Fertility Rate (TFR)* of 1.3) for national populations, with the exception of short periods (e.g. France during World War I, West Germany in 1984-85 and unified Germany in 1993-93). According to widely recognized estimates, Italy and Spain were the first countries to cross the 1.3 line in 1993. At the time of the 2002 study, data up to 1999 were available for most countries, and other countries had crossed the threshold among Southern European ones (Greece in 1998), Central and Eastern European countries now belonging to the European Union (Bulgaria, Czech Republic, Latvia and Slovenia in 1995; Estonia in 1996; Hungary and Romania in 1999), and countries formerly part of the USSR (Russia in 1996; Belarus and Ukraine in 1997; Armenia in 1999). The 1.3 threshold for TFR is peculiar for its historical meaning, but also for the direct implications on population dynamics. If the TFR remains for a

long time at or below 1.3, this implies a reduction of the annual number of births by 50% and a halving of the population size in less than 45 years. For this reason, the interest on the spread of lowest-low fertility towards East, both within Europe and towards Asia, is justified. By 2002, in Europe, the remaining Central and Eastern European countries of the European Union (Lithuania, Poland, Slovak Republic), together with Bosnia and Herzegovina and Moldova, have become lowest-low fertility countries. Also by 2002, many more miles, away, Korean Republic, Japan, Singapore, and Taiwan joined the virtual lowest-low fertility club of countries (Kohler, Billari and Ortega 2006). **Table 1** reports a snapshot of the levels of the total fertility rate in the period 1980-2005 for several European countries.

Table 1. Total fertility rates in several European countries 1980-2005 (sources: Eurostat, Council of Europe, ISTAT).

Country	1980	1990	2000	2005*
Belarus	2.04	1.90	1.31	1.20
Ukraine	1.95	1.89	1.09	1.22
Bosnia and Herzegovina	1.93	1.71	...	1.23
Poland	2.26	2.05	1.34	1.24
Moldova	2.41	2.39	1.30	1.25
Slovak Republic	2.31	2.09	1.29	1.25
Slovenia	2.10	1.46	1.26	1.26
Lithuania	1.99	2.02	1.33	1.27
Czech Republic	2.10	1.90	1.14	1.28
Bulgaria	2.05	1.82	1.26	1.31
Hungary	1.91	1.87	1.32	1.31
Latvia	1.90	2.01	1.24	1.31
Italy	1.64	1.33	1.24	1.32
Romania	2.43	1.84	1.31	1.32
Greece	2.23	1.39	1.29	1.33
Russian Federation	1.86	1.90	1.21	1.33
Germany	1.56	1.45	1.38	1.34
Spain	2.20	1.36	1.24	1.35
Malta	1.98	2.04	1.66	1.37
Cyprus	2.46	2.42	1.83	1.40
Portugal	2.25	1.57	1.55	1.40
Austria	1.65	1.45	1.34	1.41
Croatia	1.92	1.67	1.40	1.41
Switzerland	1.55	1.58	1.50	1.42
Macedonia	2.47	2.06	1.88	1.46
Estonia	2.02	2.04	1.39	1.50
Serbia and Montenegro	2.29	2.10	1.66	1.60
Belgium	1.68	1.62	1.66	1.64
Luxembourg	1.49	1.60	1.76	1.70
Netherlands	1.60	1.62	1.72	1.71
Sweden	1.68	2.13	1.54	1.77
United Kingdom	1.89	1.83	1.65	1.78
Denmark	1.55	1.67	1.77	1.80
Finland	1.63	1.78	1.73	1.80
Norway	1.72	1.93	1.85	1.84
Ireland	3.24	2.11	1.88	1.93
France	1.95	1.78	1.89	1.94
Iceland	2.48	2.30	2.08	2.05
Turkey	4.36	2.99	2.52	2.20

* 2005 or latest available year

In the excursion that follows, we shall briefly examine the causal factors that lead to lowest-low fertility. We will use a simple categorization, in two separate, even though unavoidably interdependent, demographic components of lowest-low fertility: the postponement of childbearing and the low progression to higher-order births (the "quantum" of fertility).

2.2 Causal factors that mainly affect the postponement of fertility

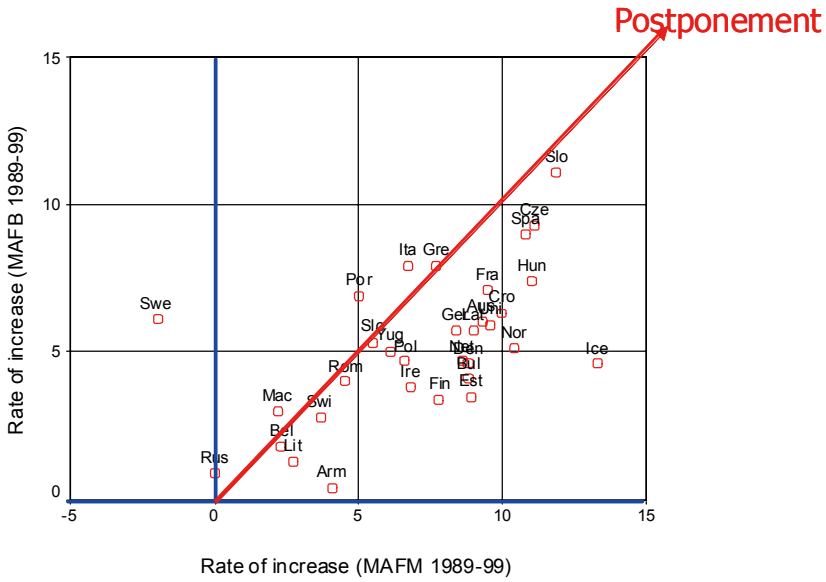
Why has lowest-low fertility emerged? Causal factors are, not surprisingly, multifaceted, and this is recognized by the wide majority of researchers challenged by these developments. Various authors have pointed to different key explanations and this is not surprising given the variety of social and economic situations in which lowest-low fertility has been detected. There is, however, at least one case, the paper by Caldwell and Schindlmayr, which criticizes researchers in this area on the ground that they lack the desire to "search for commonalities" (Caldwell and Schindlmayr 2003). While in this paper we shall reject the view that a general explanation exists for the emergence and spread of lowest-low fertility and focus on some of the specificities that are common in subsets of societies with lowest-low fertility, a general common feature (with very limited exceptions) exists: the *postponement of fertility*. This postponement is so general that the idea that an irreversible "postponement transition" accompanies the emergence of lowest-low fertility has become attractive (Kohler et al. 2002). In fact, the postponement of fertility has also put Italy at the top in the ranking of countries as far as the relative weight of births from women aged 40 or above is concerned—however this trend is visible also for other societies without very low fertility such as Sweden or the United States (Billari et al. 2007).

The postponement of fertility, i.e. the fact that individuals and couples are having children at an increasingly later age, depends itself on a number of factors (Sobotka 2004b). Such factors deserve on the one hand thorough exploration, on the other hand useful classification and simplification. To simplify, three types of causal factors can be distinguished the driving forces of the postponement of fertility (Billari, Liefbroer and Philipov 2006). First, ideational change and the "Second Demographic Transition. Second, the rise of women's education. Third, the increasing uncertainty during young adulthood and the emergence of "latest-late" transition to adulthood. Let us shortly analyze their importance in turn.

First, the general trend towards the postponement of irreversible demographic choices to later ages has been an important element of the idea of the *Second Demographic Transition (SDT)*. According to Ron Lesthaeghe and Dirk van de Kaa, the SDT started in Northern Europe during the 1960s and has diffused since across the industrialized world (See, e.g., Lesthaeghe 1995; Lesthaeghe and van de Kaa 1986; van de Kaa 1987). The concept of SDT embeds several demographic changes, including the postponement of childbearing, as due to a large extent to ideational change, in particular to the increased emphasis on individual autonomy, the rejection of institutional control, the rise of values associated with the satisfaction of individual's "higher order needs", and the growth in gender equality (Surkyn and Lesthaeghe 2004). These ideational changes have led to the emergence of "postmodern fertility preferences" (van de Kaa 2001). These same themes emerge in the sociological literature, where the emergence of "new" family behaviors (like cohabitation and non-marital childbearing) has been considered as one of the signs of a process of individualization of life courses and as one aspect of the evolution of Western European and North American societies towards a "new modernity" (see, e.g., Beck 1992; Buchmann 1989; Giddens 1990). An example of trends that are consistent with this view is the simultaneous postponement of first births and first marriage in European countries: **Figure 1** represents the percentage rate of increase in the mean age at first marriage and the mean age at first birth in several European countries in the period 1989-1999. All countries exhibit the postponement of fertility (i.e. are above the x axis); only Sweden and Russia exhibit no postponement or anticipation of marriage.

Second, a frequently discussed driving force behind the postponement of fertility is the general rise that has been observed in *women's educational attainment*. Several mechanisms that cause higher educated women to delay motherhood have been put forward. Economic models of the timing of first births predict that the higher the woman's educational level the later is her transition to motherhood (See, e.g., Gustafsson 2001; Happel, Hill and Low 1984). The basic premise in these economic models is that the focus of decision-making in the transition to motherhood is on timing, and that opportunity costs of childbearing and subsequent long-term financial consequences of motherhood depend on the age at motherhood. The importance of women's educational enrolment, i.e. of the fact of being a student, next to that of level of educational attainment, in explaining postponement of childbearing is emphasized by a

Figure 1. The postponement of first births and first marriages in European countries during the 1990s. FFS data (Source: Billari 2006).



stream of papers that are mostly based on sociological theories adopting a life-course perspective and on empirical studies based on event history analysis. Blossfeld and Huinink (1991) suggest that "… When a woman is attending school, university … she is economically highly dependent on her parents. Further, there exist normative expectations in society that young people who attend school are 'not at risk' of entering marriage (and having children)…" Educational enrolment is thus hypothesized to have a direct effect on postponement in so far as during the period of study people concentrate their time and energy on studying and not on starting family life. Given the consistency of the various findings and the diverse theoretical approaches in the literature, trends in female education can be seen as a major force shaping the postponement of childbearing in Europe. In most European countries, educational enrolment is scarcely compatible with childbearing, even if the length of education is in part determined by the same factors that drive the timing of first birth, and even if the extent of incompatibility differs between countries (Billari and Philipov 2004). Moreover, trends in educational expansions are correlated with the ideational change that has been previously discussed as accompanying the Second Demographic Transition, i.e. both driving forces push in the same direction.

Third, *uncertainty* during young adult years can be seen as a primary driving force for the postponement of childbearing in Europe. This has been put forward for the case of Southern Europe (Kohler et al. 2002); moreover, perceived uncertainty has been shown to influence the postponement to parenthood in the Netherlands (Liefbroer 2005). Many scholars have linked the high uncertainty faced by young adults, in terms of labor market and economic stability, to the general delay of all events characterizing the transition to adulthood. In Southern Europe in particular, lowest-low fertility has been associated with l*atest-late transition to adulthood* (Billari 2004; Billari et al. 2002; Billari, Philipov and Baizán 2001; Billari and Rosina 2004). More specifically, Southern European young adults are world leaders for what concerns the length of stay in the parental home. The delay in the transition to adulthood has been used also to explain differential fertility levels in Eastern Asia (Suzuki 2005). Uncertainty, in particular, is of primary importance for the transition economies of Central and Eastern Europe, although in some of these countries the postponement of childbearing started somewhat later with respect to Northern, Western, and Southern Europe. In most transition economies, fertility declined very steeply during the 1990s, sometimes immediately following the fall of socialist regimes, sometimes with delay of a few years (Macura and Mac Donald 2003; Philipov and Dorbritz 2003; UNECE 2000). Under conditions of economic uncertainty, people's income becomes less reliable, and young people are likely to postpone childbearing until their income becomes more stable and reliable (Blossfeld et al. 2005). The evidence for the role of rising uncertainty in relation to the sharp fertility decline in Eastern Europe is, however, still

ambiguous (Kohler and Kohler 2002; Ranjan 1999). An analysis of fertility intentions in Bulgaria and Hungary documents that uncertainty might be reinforced by anomy and disorientation, factors that both contribute to the postponement of childbearing (Philipov, Spéder and Billari 2006). An additional factor that might have driven postponement in Central and Eastern Europe is related to policy changes, or to the uncertainty surrounding specific policies. Aassve, Billari and Spéder (2006) analyze the impact of the transition from a universal to a means-tested type of family allowance in Hungary during the mid-1990s. The impact of the policy change was to broaden the age gap in the transition to motherhood between high and low social strata (as represented by educational levels). As soon as the family allowance became universal again, the differences returned to their initial level.

Besides being important per se, the postponement of fertility has a technical role in shaping the emergence and spread of lowest-low fertility. In fact, it is widely known that when the timing of fertility is changing, period fertility measures (such as the TFR) may be a relatively bad measure of final cohort fertility (a phenomenon known as *tempo distortion*). More specifically, when childbearing is postponed, the TFR is biased downwards. This feature is used for instance by Sobotka (2004a) to argue that lowest-low fertility in Europe is a temporary phenomenon, and that TFRs below 1.3 should not be foreseen at the cohort level.

2.3 Causal factors that mainly affect "quantum" (or the propensity of couples to have two or three children)

The postponement of childbearing has certainly contributed to the emergence and spread of lowest-low fertility, as we argued in the last section. From a technical point of view, lowest-low fertility could be a pure technical result of the impact on fertility measures of the postponement of fertility (although even when measurement bias is taken away fertility remains at very low levels in the countries we listed). There is strong evidence, at the individual level, becoming a parent later causes having a smaller number of children: for a given man or woman, having the first child later, all else being equal, implies a lower overall number of children. Therefore, policies that cause the postponement of fertility will, directly or indirectly, cause fertility to be lower in rich societies (*postponement effect*). Nevertheless, this postponement effect on the total number of children has a different importance in different societies (Billari and Borgoni 2005; Kohler et al. 2002).

The differential postponement is also shaping what we can see as two main patterns of lowest-low fertility (Billari and Kohler 2004). The emergence of lowest-low fertility in Southern Europe has been characterized by a strong postponement and a decrease in parity progression to the second and third birth. In general, childlessness, while on the rise, has not attained particularly high levels in countries like Italy and Spain (e.g., in Italy it is lower than 15% for the 1960 female birth cohort). In Central and Eastern European countries, lowest-low fertility emerged in some cases (e.g., Bulgaria or Russia) without or with very weak postponement of first births. The decreasing progression to second (especially) and third births has been the key compositional factor that made these countries reach lowest-low levels. Childlessness remained rare (e.g., in Bulgaria 3% for the 1960 female birth cohort), and generally lower than the levels it has in some countries with higher fertility. For instance, the 1960 female birth cohort exhibits 20.5% childlessness in England and Wales and 17.7% in the Netherlands). Clearly then, lowest-low fertility in Europe has been a combination of postponement and "quantum" effects on fertility, with postponement not playing a key role in several Central and Eastern European countries.

The causes of the emergence and spread of lowest-low fertility have then to be connected to the question of why couples stop when they have one child (or, sometimes two children), i.e. what demographers call the *quantum* of fertility. What happens once people have (finally) decided to become a parent? In this brief overview, we shall mention three possible causal factors: 1) familism and welfare regimes; 2) gender regimes; 3) policies and the economic cost of children.

One of the issues that come to our eyes immediately is that lowest-low fertility emerged in countries characterized by "strong" family ties, *familistic* attitudes and welfare, a possibly counterintuitive circumstance (see, for instance, Esping-Andersen 2007). Focusing on Southern Europe's lowest-low fertility, some scholars have argued that in a strong family ties situation, the emphasis on quality may drive fertility downwards (Dalla Zuanna and Micheli 2004). The work of Esping-Andersen (1999) on the varieties of welfare capitalism in particular describes four types of welfare regimes in Western Europe (and other industrialized societies): social-democratic (with Nordic countries included, and often the Netherlands), liberal (including in Europe Ireland, the United Kingdom and Switzerland), familialistic (typical of Southern Europe), and conservative

(the remainder, i.e. most Western European countries). Central and Eastern Europe tend to shape in the long run a welfare state which is similar to one of these ideal-types. The main paradox is that the familialistic welfare states of Southern Europe are associated with lowest-low fertility; in this context the welfare lacks attention towards young adults and their children, and has a lower attention towards the compatibility of parenthood with other choices (i.e., education, work). The general idea that welfare should not crowd out family relationships that is embedded in familistic welfare thinking is then in fact working against fertility: this is probably a key factor in explaining why Italy, Spain, and Greece reach fertility levels among the lowest; an intermediate situation is found in the so-called conservative welfare states (i.e. Germany, Austria)—some of them (i.e. France) have in fact a different attitude towards parenthood (Billari 2004). For what concerns Central and Eastern Europe, the evidence is that family policies have become less favorable for families after the fall of the Iron Curtain, with a result that has become similar to the one of familistic welfare states (Macura and Mac Donald 2003).

A second characteristic of Southern European societies is their *gender regime*. In particular, there is a low level of gender equity in households, and to the related division in labor markets between insiders (usually, the main "male" income provider) and outsiders—this latter division being far more widespread in other European countries. One of the key differences between Italy, Spain and countries with higher fertility is in gender equality. McDonald (2000) argues that low fertility is the result of a growing gender equity in individual-oriented institutions (i.e. a higher equality in education and in working life) which is combined, however, with a low gender equity in family-oriented institutions (with the family being the primary of such institutions): as there has been growing equity in education among men and women, traditional gender inequality in the family (including child rearing, household chores

Table 2. Percentage of respondents who agree that a pre-school child is likely to suffer if his or her mother works. Source: own elaboration on micro-data files of the European Values Study/World Values Survey 1999-2001 and Table 1.

Country	% pre-school child suffers	TFR (2000)
Italy	81	1.24
Greece	78	1.29
Poland	77	1.34
Latvia	75	1.24
Russian Federation	73	1.21
Ukraine	73	1.09
Portugal	72	1.55
Lithuania	71	1.33
Germany	66	1.38
Estonia	65	1.39
Croatia	64	1.40
Hungary	63	1.32
Slovak Republic	63	1.29
Bulgaria	61	1.26
Belarus	60	1.31
France	56	1.89
Belgium	51	1.66
Czech Republic	47	1.14
Romania	47	1.31
Slovenia	47	1.26
Netherlands	46	1.72
Spain	46	1.24
United Kingdom	46	1.65
Finland	41	1.73
Sweden	38	1.54
Iceland	33	2.08
Denmark	18	1.77

and care for the elderly) has remained. Women are therefore facing the rather daunting task of both performing well in education and the work place, whilst at the same time keeping up with traditional roles within the household. Gender relationships and the societal settings influence also the progression to first birth in diverse ways in different European countries (González and Jurado-Guerrero 2006). For what concerns quantum, there is evidence that a stronger involvement of men would increase the progression to higher order births (Mencarini and Tanturri 2004). The general attitudes of the population show consistently the relevance of the gender-compatibility-fertility nexus. **Table 2** documents that lowest-low fertility is associated with the presence of a vast majority of people who think that pre-school children suffer if their mother work (indeed, the cross-country correlation coefficient between attitudes against working mothers of pre-school children and total fertility rates around 2000 is -0.60).

For what concerns the *policy* context and its effect on quantum, it is not easy to make a separate assessment from the general "welfare regimes" that prevail in lowest-low fertility countries and from the gender regimes. It is however clear that in the countries in which lowest-low fertility emerged, the compatibility between work and family is particularly low, i.e. in economic terms the opportunity costs of childbearing are particularly high. Before the emergence of lowest-low fertility, fertility was higher in countries with low female labor force participation; however, already during the 1980s, the correlation turned the other way around and fertility has become higher in countries in which women participate more to the labor market. It is clear then than the lack of policies that favor the compatibility of work and family, especially for women, is a causal factor that depresses the probability of progressing to higher order births. However, the cross-country correlation between fertility and expenditure in services for families is relatively low indicating that the compatibility issue is not simple. On the other hand, money matters, as the share of monetary transfers is positively correlated with fertility (Hantrais, Philipov and Billari 2006).

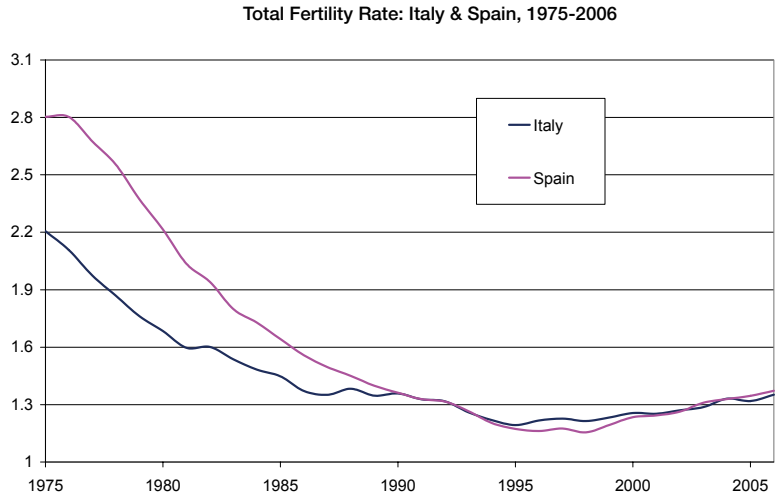
3. New trends: how surprising? The escape from lowest-low fertility and "highest-high" immigration rates in Italy and Spain

The emergence, and above all the persistence, of lowest-low fertility have profound implications for the economies and the societies in which it takes place. A demographic implication that is commonly mentioned is the decline in population size, which is usually embedded in population forecasts (see, e.g. Kohler et al. 2006). Rightly so, the persistence of lowest-low fertility is supposed to increase social problems rather than contribute to the advancement of modern societies, especially for the implied speed in population aging. In this part, therefore, we look at what happened to the population of the two forerunners in lowest-low fertility, Italy and Spain, during the last decade. Perhaps surprisingly—although possible homeostatic reactions to lowest-low fertility had been indicated earlier (Kohler et al. 2002) —the population in Italy and Spain *has increased*, and many things have, quickly, changed. According to Eurostat figures, at the beginning of 2007, Italy's population is 59,131 thousand; this is more than 2,5 million higher than the beginning of 1997 (56,876 thousand), close to the nadir in Italian low fertility. Corresponding figures for Spain are even more impressive, with a five-million increase: 44,475 thousand (January 1, 2007) and 39,525 thousand (January 1, 1997). We know that a population might continue to increase because of a favorable age structure (and part of the increase is indeed due to the peak number of baby-boom children in the two countries). But this is not the whole story. In fact, two factors have contributed to this increase in population: higher fertility and higher migration. Before examining this issue more in detail, let us have a look at raw figures. In Italy, there were 528 thousand live births in 1996. The figure in 2006 is 560 thousand. In Spain live births increase from 363 thousand (1996) to 481 thousand (2006). The number of net international migrants (immigrants minus emigrants, including corrections) was 56 thousand in Italy in 1996; the estimate for 2006 is 377 thousand (i.e. 67.4% of live births). For Spain net migrants increased from 83 thousand (1996) to 606 thousand (2006, i.e. 126% of live births). These figures clearly show that it is crucial to examine the increase in fertility and in international in-migration to Italy and Spain, which appear to be clearly linked to lowest-low fertility in ways that deserve being investigated in a more specific way.

3.1 A partly unexpected "Second Demographic Transition" and the rise of fertility in Southern Europe

Can countries leave lowest-low fertility? And should we be surprised if they do so? We now focus on the specific situation of Italy and Spain, the forerunners in lowest-low fertility. A first issue that we need to take into account is the effect of tempo distortion, already mentioned earlier in this paper. When countries experience lowest-low fertility (in its standard definition, i.e. a TFR lower

Figure 2. Total Fertility Rate: Italy & Spain, 1975-2006 (Source: INE and ISTAT).



or equal than 1.3) in coincidence with the postponement of fertility, the fact that some years later fertility might rise for the same technical reasons – at least part of the postponed births being recuperated – is not a real surprise (see for instance Kohler et al. 2002; Sobotka 2004a). According to McDonald, who refers to the 1.5 low fertility threshold, this is a rooted idea: "in the 1970s and 1980s, demographers tended to interpret low fertility as a temporary phenomenon related to the delay of marriage and childbearing (a so-called tempo effect)" (McDonald 2006). It is natural then to expect Italy and Spain to reach a TFR greater than 1.3 after some years.

Consistently with these expectations, **Figure 2** documents the dynamics of the total fertility rate in Italy and Spain during the period between 1975 and 2006. Spain crossed from below the lowest-low fertility threshold in 2003 (1.31), Italy a year later (1.33). The latest estimates available for 2006 indicate 1.35 for Italy and 1.37 for Spain. If we go back to the data of table 1, in fact the 2005 figures were above the lowest-low threshold for Greece and for most of the Central and Eastern European countries that had experienced lowest-low fertility (Bulgaria, Estonia, Hungary, Latvia, Romania, and Russia).

The rise of fertility above the lowest-low threshold in Italy and Spain is however not only a technical matter, linked with the recuperation of foregone births at ages 30 or 35 and above. Something else has happened in the years following the emergence of lowest-low fertility (a similar argument is developed, for instance, in Castiglioni and Dalla Zuanna 2007). Using the ideas developed by Lesthaeghe and van de Kaa, cited earlier in this paper, other aspects of the "Second Demographic Transition" have spread to these countries, and coincided with what Gianpiero Dalla Zuanna defined a "new demographic spring" for Italy (Dalla Zuanna 2005). In particular, we here refer to the following features of this phenomenon: 1) unmarried cohabitation, connected to a marked increase in extra-marital fertility; 2) marital instability.

Trends in *extramarital fertility* are documented in **Figure 3**, for what concerns the increase in extra-marital fertility. Starting from below 5% in 1980, and following a slight increase, the trend in the percentage of extra-marital births over all births has substantially increased after 2000. In Italy, while marital births are continuing to decrease (reaching their minimum level of about 451 thousands in 2006), extra-marital births have for the first time passed the 100 thousand threshold, and they account for 18.6% of all births. In Spain, starting from 3.9% in 1980, the share of extra-marital births has reached 26.6% in 2006. When almost a fifth (in Italy) and more than a quarter (in Spain) of all births are out-of-wedlock it is difficult to say that this is not a major contribution to rising fertility. Trends in fertility and in the share of extra-marital births are clearly common in the last decade. For instance, the correlation coefficient between the share of extramarital births and the TFR in Italy 1997-2006 is 0.96; the same level is reached for Spain 1996-2005.

For what concerns *marital instability*, Castiglioni and Dalla Zuanna (2006) document the steep increase in the instability of marriages in Italy: while 92% of marriages celebrated in 1969 are still intact after 30 years, this share is estimated to decline to 83% for marriages celebrated in 1983 and to 64% for marriages celebrated in 1998. In both Italy and Spain, separation (also because of legal restrictions) is often followed by divorce only at a

Figure 3. Extra-marital Births out of all Births: Italy & Spain, 1975-2006 (Source: Eurostat and own elaboration on ISTAT).

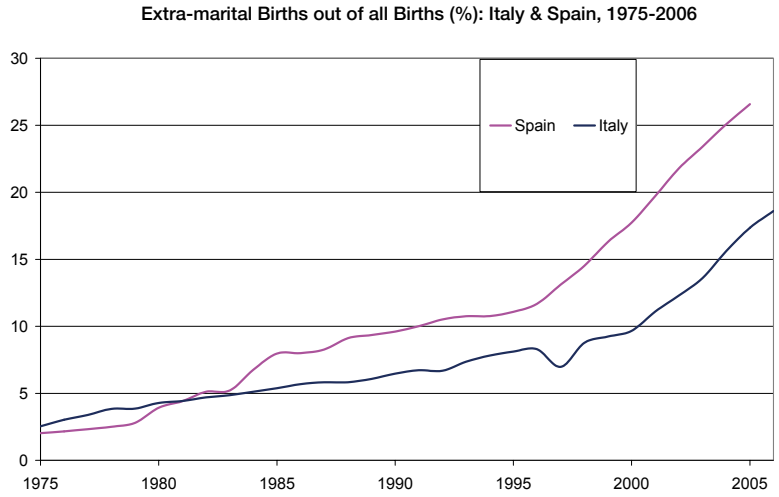
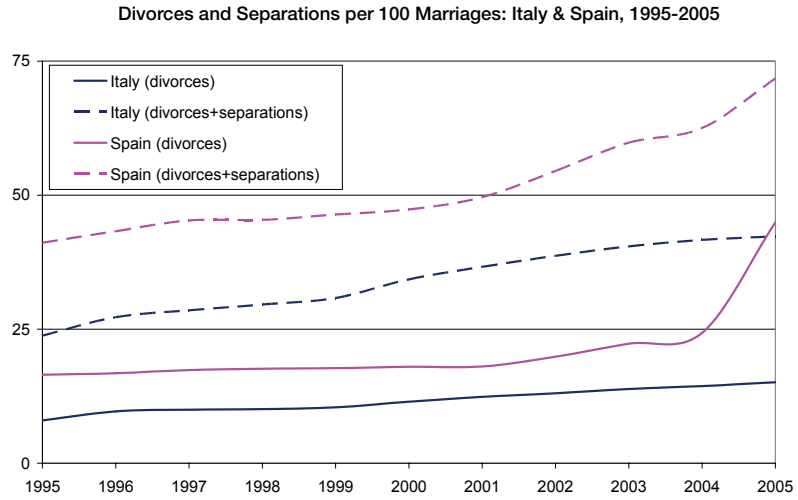


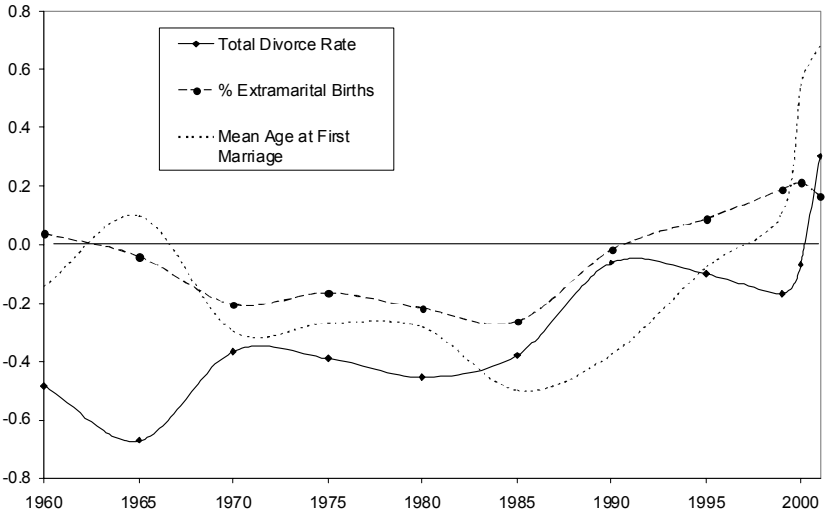
Figure 4. Marital instability (divorces and separations per 100 marriages): Italy & Spain, 1995-2005 (Sources: ISTAT and INE).



later stage (and sometimes spouses remain legally separated but not divorced). **Figure 4** documents the recent increase in marital instability in both countries during the last decade. While in 1995 the ratio of dissolution acts (including both divorces and separations) to marriages was 23.8% in Italy and 41.1% in Spain, the corresponding figures for 2005 are respectively 42.3% and 71.8%. Part of this increase is due to the diminishing number of marriages, but most of it corresponds to higher marital instability.

Trends in extra-marital births and in marital instability are consistent with what has happened above the Alps and the Pyrenees, the spread of such aspects of the Second Demographic Transition in Italy and Spain has also an own flavor. The former slowness for instance, could be explained with reference to the role of strong family ties: new behaviors related to married were limited before because of the role of parental pressure (which also included pressure on monetary and in-kind transfers that were necessary to build and maintain a family). Once ideational change hit the generation of parents (i.e. when youth who experienced the great movements at the end of the 1960s and during the 1970s), marriage could become less central also for their children, without fearing a loss of inter-generational transfers (Rosina and Fraboni 2004). In the case of Spain, this could have been slightly delayed by socialization during the Franco regime (until 1975), but also start with a faster speed after the fall of the regime. Moreover, some of the features we mentioned earlier, including the important labor market uncertainty for young adults, could have played a role: greater flexibility and instability in couple relationships,

Figure 5. Cross-country correlation between TFR and fertility-related behaviors (countries of the Council of Europe). Source: Billari (2005).



for instance, is consistent with uncertainty in the labor market.

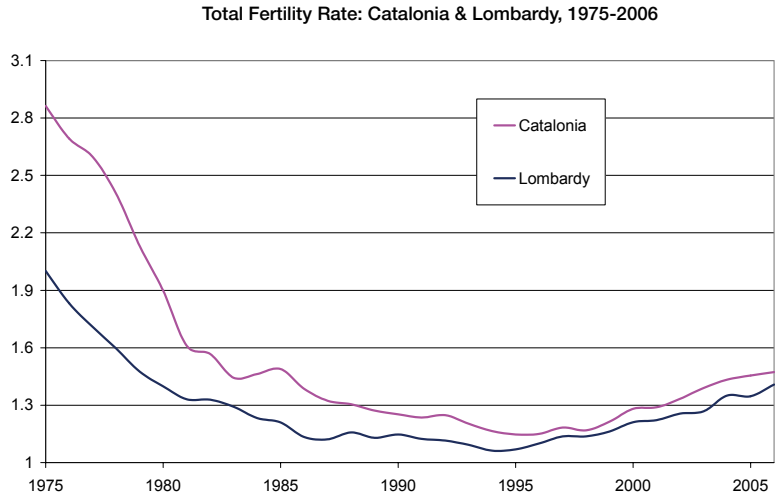
What is particularly important in this context is the relationship is the fact that the weakening of the role of marriage in European societies is positively related to fertility. As documented for instance by Billari and Kohler (2004), after the emergence of lowest-low fertility, total fertility rates have become inversely related to indicators on the centrality of marriage (the mean age at first marriage, the total divorce rate, the share of extramarital births). **Figure 5** documents such change in the period between 1960 and 2000 for the countries of the Council of Europe (see also Billari 2005). Although further research is needed, some analyses illuminate on the mechanisms through which this association switches. A simple mechanism is the flexibility on the type of union: Billari and Rosina (2004) estimate that, in Italy, starting cohabitation at about 25 years is roughly similar, in terms of final fertility, to marrying at about 27 years. Moreover, divorce might not hamper fertility if it is often associated with remarriage, although this is not yet the case given the high costs and long waiting time to divorce in Italy and Spain (in Spain a 2006 reform decreased substantially the costs and waiting time to divorce, but could not have yet an impact on fertility as measured in this paper).

If the increase in fertility is associated with new trends (including higher immigration, on which we will discuss further), this increase should be detected in area that are at the vanguard of demographic change in Italy and Spain. **Figure 6** analyzes the trends in two rich and vanguard regions of Italy and Spain, Lombardy (the region of Milan) and Catalonia (the region of Barcelona). Together with the German State of Baden-Württemberg and the French Region of Rhône-Alpes, Catalonia and Lombardy are associated as the "Four Motors for Europe". In Catalonia, lowest-low fertility could have been detected already in 1989 (with a TFR of 1.27), while in Lombardy, the first year below 1.3 was very early: 1983 (1.29). Catalonia reached a minimum of 1.15 in 1996, Lombardy a minimum of 1.06 in 1994. Catalonia has been below the national average of Spain almost all years since 1982, while Lombardy has been below the national average for the whole period. In any case, these differentials have reversed in very recent years. Catalonia has now fertility well above the national average (1.47 in 2006 versus 1.37 for Spain), and this is true for Lombardy as well (1.41 in 2006 versus 1.35 for Italy). In both regions income, female labor force participation, extra-marital births, marital instability and immigration are above the national average (see, e.g., Castiglioni and Dalla Zuanna 2007). Therefore, learning from the spatial diffusion theory that has been applied both to the First and to the Second Demographic Transition (Lesthaeghe and Neels 2002), we can therefore assume that new trends are going to continue spreading to Italy and Spain for the next years.

3.2 Replacement migration in action

When looking at the consequences of very low fertility on labor supply, Peter McDonald and Rebecca Kippen (2001) examine the contribution to future labor supply that can be made by a) a rise in fertility; b) an increase in women's labor force participation; c) additional immigration.

Figure 6. Total Fertility Rate: Catalonia (Spain) & Lombardy (Italy), 1975-2006 (Source: INE and ISTAT).



They conclude that while in the "short run"—in a demographic sense, which includes at least two decades—only an increase in women's labor supply and in migration (probably combined) makes up for the past "missing births", a rise in fertility becomes crucial in the medium-long term. The pragmatic approach of McDonald and Kippen reveals that the idea of *replacement migration*, i.e. that migrants replace, at least in the demographic short run, the "missing births" of about two decades earlier was discarded too early (UN 2000). Can we detect replacement migration in Italy and Spain, since they experienced lowest-low fertility for about 15 years and low fertility much earlier? In fact, one of the immediate implications of the quick population decrease implied (without migration) by lowest-low fertility is a potential demand for immigration. Let us therefore analyze the situation of Italy and Spain.

The change in net migration rates (this is the ratio between the number of immigrants minus the number of emigrants over the population, including corrections and per thousand) in Italy and Spain is documented in **Figure 7.** Besides fluctuation, net migration rates have been negative in both countries until the mid 1980s (in Italy) and 1990 (in Spain). Then, parallel to the emergence of lowest-low fertility, both countries clearly become countries of immigration, and this is accelerated in the very recent years. Indeed, during the last five years we have access to (2002-2006), the mean net migration rate is 7.6 per thousand in Italy and 14.7 per thousand in Spain. Taking these figures into account, the boost in the presence of foreign population in both countries, particularly in Spain, is not at all surprising. In **Figure 8** we can see that the share of foreigners living in Italy and Spain was around or lower than 1% in 1990, just a bit before the markers of lowest-low fertility emerged. In the year 2000, ten years after, the share of foreign population was 2.2% in Italy and 2.3% in Spain. The speed of migration in the recent years has been massive (and probably the earlier figures were underestimated due to illegal or unregistered presence): the latest estimates for 2006 are 4.5% for Italy and 9.1% for Spain. This is definitely a pace of growth in the foreigner population that caught many observers, including demographers, as a big surprise. Again, this is the main reason why the Italian and Spanish populations are not at all decreasing despite lowest-low fertility for more than a decade. Official forecasting agencies have been misled by too conservative assumptions on migration.

Moreover, it is well-known that migrants are initially concentrated in working ages and in childhood (see **Figure 9** for Italy), which makes it possible for them to have on the one hand an immediate effect on the labor market (as in the McDonald and Kippen scheme of replacement migration), on the other hand a potential effect on fertility. In fact, part of the very recent increase in fertility documented earlier in this paper is due to the new residents of Italy (Castiglioni and Dalla Zuanna 2007) and Spain. In a forthcoming paper, Sobotka estimates the contribution of foreigners to the total fertility rate in a number of European countries including Italy and Spain. The estimates of Sobotka come close to 0.1 additional children per woman due to immigration (see **Figure 10**), and they suggest that indeed part of the new higher fertility in Italy and Spain is due to immigration. Nevertheless, only a part of the increase can be

Figure 7. Net migration rates (per thousand): Italy & Spain, 1975-2006 (Source: Eurostat).

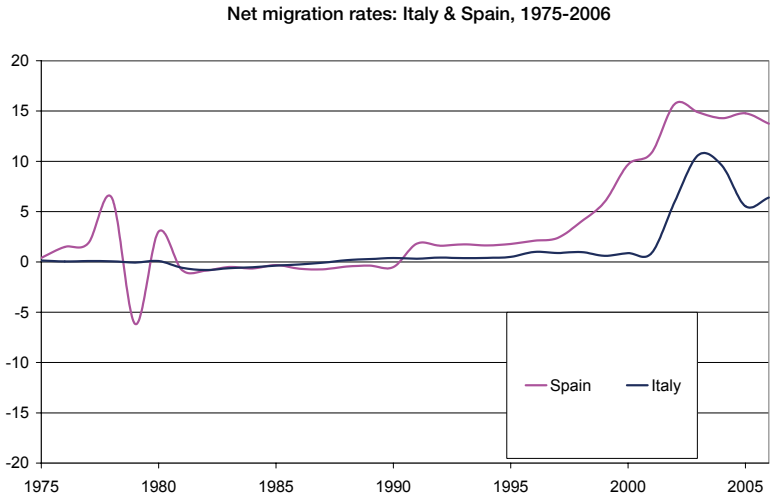


Figure 8. Share of foreign population (%): Italy & Spain, 1990-2006 (source: Eurostat).

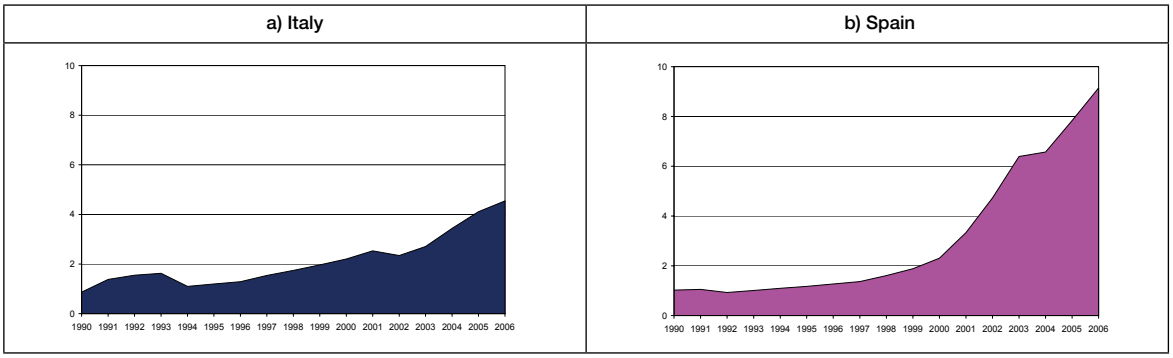


Figure 9. Share of foreign population by age (%): Italy, January 1st, 2006 (source: own elaboration on ISTAT data).

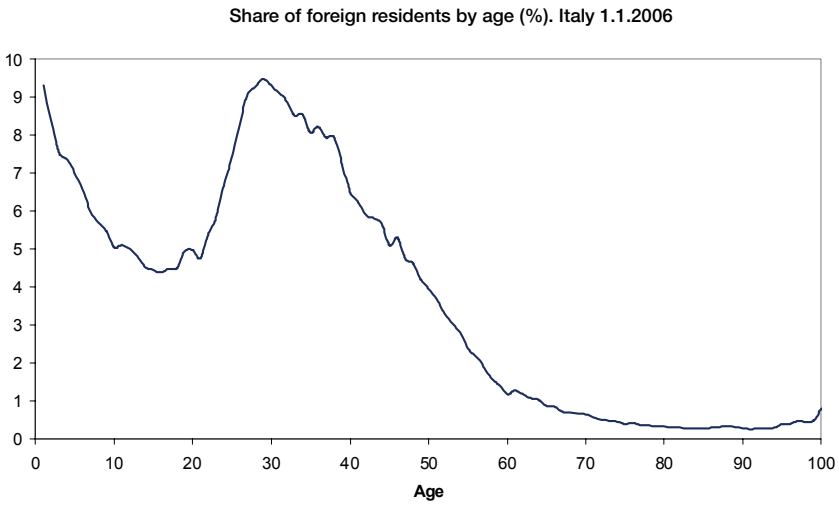


Figure 10. The effect of foreign TFR on TFR (source: Sobotka, forthcoming).

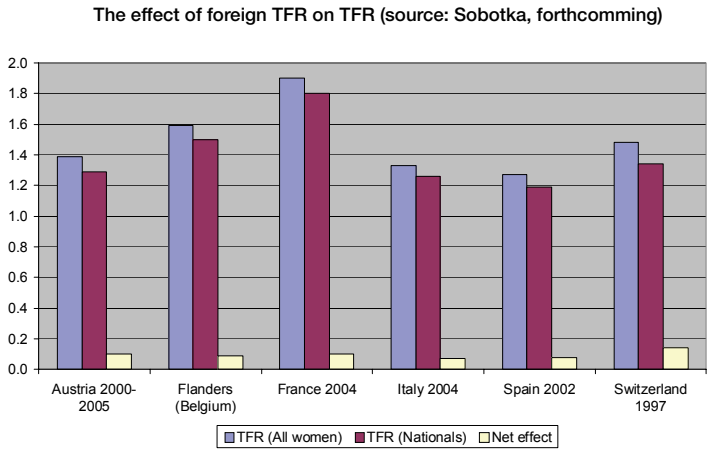
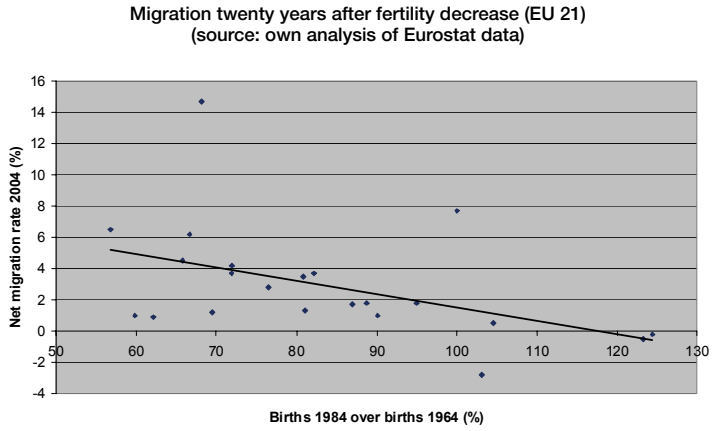


Figure 11. Migration twenty years after fertility decrease (EU 21). Source: own analysis of Eurostat data.



explained by a higher fertility of immigrants.

Can we detect replacement migration in general at a European level? In **Figure 11** we take a 40-year perspective for the EU-21 (the largest countries in the European Union). The horizontal axis represents the ratio of births in 1984 to those in 1964 (in percent): 100 would indicate that births have been the same. For most countries the figure is lower than 100 as a consequence of fertility decline; this measure is similar to the "Birth Replacement Ratio" proposed by Ortega (2006) as a measure of population replacement. The vertical axis represents the migration rate in 2004, i.e. twenty years after the potential effect on births having therefore in mind potential labor market needs. The figure documents the negative relationship consistent with the fact that replacement migration is indeed at work: where the decline in births has been more pronounced fertility is higher twenty years later. For instance, net migration is negative only for values of the birth ratio that are higher than 100.

4. Some concluding remarks

The emergence of lowest-low fertility in Europe implies fundamental changes in societies, in economies and—above all—in populations. The forerunners of lowest-low fertility, Italy and Spain, are leaving lowest-low fertility for a variety of reasons, some of which are directly related to it. In these concluding remarks we discuss some of the potential policy implications of the causes of lowest-low fertility and of the surprising trends we documented.

A first set of causes of lowest-low fertility has to do with the postponement of childbearing. Some of the causal factors could hardly be affected by policies, or should not be target of policies at all. Ideas change (the Second Demographic Transition) and trying to "force" individuals to go back to old value systems is probably not useful and certainly not ethical. A small caveat

is in order here: changing ideas has never been a taboo when fertility is considered as too high, and many times behaviors feed back into ideas, as in the "low fertility trap" hypothesis developed by Lutz, Skirbekk and Testa (2006). Also the rise in women's education is irreversible, and rightly so. We have already seen that old cross-country correlations have reversed on fertility and fertility-related behavior, but we have not mentioned yet that the most studied case of reversal is on the relationship between fertility and female labor force participation. **Figure 12** reports the changing correlation for OECD countries (Engelhardt and Prskawetz 2004). Changing correlations suggest that policies should not be against cultural change and "modernization", as such forces do not necessarily work against fertility. A problem that countries with lowest-low fertility share, and this is especially true for Italy and Spain, but also Korea and Japan in East Asia is however potentially attackable by policies: the situation of youth. In many respects, the relative position of young people in these countries is worse than in other societies. One of the symptoms is the delayed transition to adulthood, and the extreme is the "latest-late" version of this transition. Youth-oriented policies will therefore become fertility-oriented policies; *youth empowerment* would probably help reducing the postponement of childbearing. Elsewhere, in the Italian context, which is subject to very tight budget constraints due to high public debt, I discussed that some policies related to youth empowerment can also be low-cost policies (Billari 2007), also because the symbolic aspect of policies might be the key to their efficacy (Neyer 2006). An example is tied to age norms on becoming an adult: Italians have the highest minimum age at which a person can be elected as a member of parliament in the EU 15. **Figure 13** documents the parallel between country rankings on such dimension and on youth economic independence (cross-country correlation using 2001 economic dependence data is 0.73). To be elected at the Senate, the highest chamber that has veto power on all laws, Italians have to be at least 40: this is a clear "legal" signal that before age 40 one is not fully an adult. A simple policy change would be to lower this age. To generalize outside the Italian case, policies that empower youth, but without imposing behaviors and leaving freedom of choice, are fertility-friendly policies. Of course, other aspects affecting uncertainty, such as the general economic conditions and direct policy support (or removal of such support) are particularly important in Central and Eastern Europe.

The second set of causes of lowest-low fertility had to do with quantum. Here the familistic nature of the Southern European welfare is clearly a problem. Individual-oriented welfare regimes have become much more fertility-friendly. Perhaps this is because individual-oriented welfare can be more *child-centered* and *woman-centered* (Esping-Andersen et al. 2002). Policies that are oriented towards promoting more gender equity within families (McDonald 2000) and better conciliation between work and family are fertility-friendly policies. If public policies have to be pursued, the balance between monetary transfer or tax reduction and services has to be drawn by keeping in mind the well-being of children and of women above all. This would automatically lead to protect children who have siblings (especially if more than one) and mothers.

Finally, we described the (partially) surprising

Figure 12. Correlation between fertility (TFR) and rate of female labor force participation in OECD countries (source: Engelhardt and Prskawetz 2004).

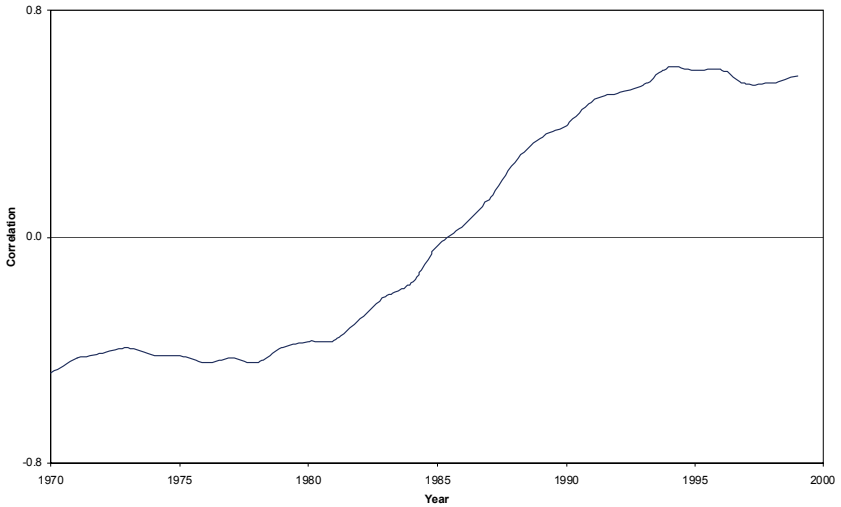
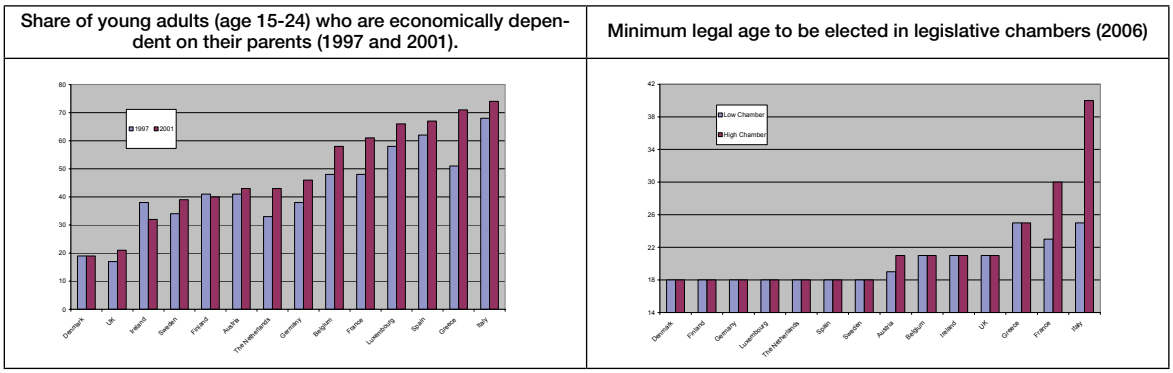


Figure 13. Youth economic dependence (source: Eurobarometer) and minimum legal age to be elected as a representative in legislative chambers (source: Forum Nazionale dei Giovani).



demographic implications of lowest-low fertility in Italy and Spain. First, cultural change together with the partial recuperation of postponed births have contributed to the escape from lowest-low fertility—to be fair in absence of specific policies (although the richest regions guiding the increase in fertility such as Catalonia and Lombardy might have put in place good strategies for balancing work and family). Second, the population balance has been reached through a remarkably quick increase in immigration: there is clear evidence that in-migrants have partially replaced the missing births (while giving a minor but positive contribution to the TFR). As expected, cultural change does not work against fertility. *Replacement migration* was less expected, but seems to be an inevitable avenue for all countries who have experienced lowest-low fertility, if they want to avoid the quick changes on working-age population that are an immediate consequence of extremely low birth rates. Replacement migration might not solve problems related to population aging, but taking into consideration the Italian and Spanish experience it seems a natural, homeostatic, way for a population to decrease the magnitude of fluctuation, without damaging individuals and the economy.

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