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European Sub-Replacement Fertility: Trapped or Recovering?
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ABSTRACT

After at least two decades of sub-replacement fertility in virtually all European countries, some theories expect a reversal of the decline whereas others see a “low fertility trap.” In this article we take a longitudinal, life-cycle view of fertility rather than operate with the classic period TFR, and document how two clusters of countries and regions of respectively higher versus lower fertility have come into existence. We refute the statistical basis of fertility rising with improving human development (HDI) or any other such general composite index. Instead we show that the bottlenecks are much more specific and are due to particular mixes of factors in the various countries. We predict the continuation of structural below replacement fertility for the second decade of the 21st Century in Europe. German-speaking countries could escape from the low fertility trap if they adjust their child-care and school organization, but for southern and formerly Communist countries (FCCs), that escape will be more difficult given the existence of multiple disadvantages.
1. A brief history of trends and interpretations

Between 1970 and 1975 total fertility rates (TFRs) of Western and Northern Europe dipped below the so-called replacement level of 2.05 children, and Southern Europe followed at the end of that decade (Sobotka 2008: 33). At that time the dominant theory for the decline was Richard Easterlin’s cohort model of the confrontation of rising material aspirations during the formative years and the subsequent earning potentials during early adulthood (Easterlin 1976). This model was probably the most referred to explanation for the baby-boom and the subsequent baby-bust in the US and the West. But it was criticized, notably by Norman Ryder (1980, 1984) who pointed out, inter alia, that the cohort changes were much less pronounced than indicated by the period measures, and that Easterlin’s explanation was only apt for the “bread-winner” model of the family. A later version of the “Easterlin hypothesis” posited a cyclical evolution of fertility with smaller cohorts having higher fertility, and larger ones reacting to stiffer competition on the labour market by restricting the size of offspring (Easterlin 1980, Arthur 1983). In 1986, the “second demographic transition theory” (SDT) (Lesthaeghe and van de Kaa) advanced the idea that a new fertility regime had come into existence, characterized by substantial postponement of marriage and parenthood, driven not only by material considerations but also by the “higher order” non-material needs (self-actualization, emancipation, individual autonomy), advancing education, and facilitated by nearly perfect contraception (van de Kaa 1987,2001, Lesthaeghe 1983,1995, Lesthaeghe and Surkyn 1988). The outcome would be long-term structural below-replacement fertility rather than cyclically oscillating fertility around the replacement level. It should also be noted that the SDT theory solely predicted a later starting pattern and fertility postponement, but not of necessity a weak degree of catching up at later ages. In fact, at later ages the relationship may reverse since greater gender equity could foster better recuperation (see Lesthaeghe 2010: p. 233).

What the SDT-theory did not predict in 1986 was the advent of the “lowest-low fertility” (Kohler, Billari, Ortega 2002), i.e. TFR-levels lower than 1.3 during the 1990s. At that time a cleavage came into existence between two European clusters of countries:

1. In Scandinavian and several Western European countries (France, UK, Ireland, Belgium, the Netherlands) fertility only dipped to TFR minima in the 1.50 to 1.70 range for a few years only. Throughout the present paper we will refer to this group as the A-cluster.

2. In all the other countries a TFR of 1.50 to 1.60 became an upper limit, but in many cases there were periods of “lowest low fertility” below 1.30. This second B-cluster contains the three
mainly German speaking countries (Austria, Germany, Switzerland), the whole of Southern Europe from Portugal to Greece, and all the former Communist countries of Central and Eastern Europe.

Evidently, the massive postponement of fertility in the former Communist countries was a response to the complete restructuring of their societies after 1989 and the resulting insecurity that was felt at all ages (UNECE 2000, Philipov and Dobritz 2003, Macura and McDonald 2003, Billari, Liefbroer, Philipov 2006.). It comes therefore as no surprise that another notion was added by Lutz, Skirbekk and Testa (2006), i.e. that of “the low fertility trap”. The authors equally propose a long-term path of low fertility based on three mechanisms: (i) the negative population growth momentum with shrinking female populations in the reproductive age bracket, (ii) a “legitimation” of low fertility and childlessness with younger generations following the example set by the older ones, and (iii) adverse labour market conditions frustrating rising consumption aspirations (cf. also Easterlin 1976). The latter factor has also been stressed by several economists and sociologist (e.g. Adsera 2005, Blossfeld, Klijzing, Mills and Kurz 2005, Kreyenfeld, Anderson and Pailhé 2012). In this context continued low fertility can be viewed as one of the consequences of Europe’s weakening position in international markets. This is the so-called “globalization” hypothesis (Blossfeld et al. 2005).

As sub-replacement fertility is partly a result of postponement, it is only logical to expect that the period TFRs could rise again once that the postponement would come to a halt. The notion of a “tempo effect” in fertility had been described in the context of fertility in the US by Norman Ryder (1980), but it was eloquently re-actualized by Bongaarts and Feeney (1998) who proposed a “tempo-adjusted TFR”. In this virtual measure, each parity specific period TFR\(i\) is corrected by a factor in which \(r_i\) is the rate of postponement of the mean ages at motherhood for each of the parities \(i\) considered \(iii\). In periods of general postponement, the adjusted TFRs are always higher than the observed ones. One of the byproducts, however, has been the idea, or rather misconception, that once the postponement would come to a halt, actual TFRs would automatically rise to the Bongaarts-Feeney adjusted level. The literature of the 1990s and the beginning of the 21\(^{st}\) Century is largely dominated by the postponement feature and alternative TFR tempo adjustments (e.g. Philipov and Kohler 2001, Kohler and Philipov 2001, Kohler and Ortega 2002, Bongaarts and Sobotka 2010), and as a consequence low fertility tended to be viewed as a temporary and transitional phenomenon only. By contrast, other views were echoed by Lesthaeghe and Willems (1999), Frejka and Calot (2001), Lesthaeghe (2001), Frejka and Sardon (2004, 2007), Sobotka, Zeman, Lesthaeghe and Frejka (2011)
who abandon the artificial period measures used by the mainstream and follow the cohort view instead. Their argument is that, as the postponement transition progresses, also the degree of recuperation of fertility at older ages (typically after age 30) becomes a critical factor. Hence not only the rate of postponement is of essence, but equally the later degree of catching up on earlier foregone fertility. This re-introduces an important quantum aspect into the analysis which had hitherto been dominated by the tempo shift.

The optimistic view about the fertility rising potential embedded in the inflated adjusted TFRs is based on plain mechanics (Bongaarts and Sobotka 2010). But during the first decade of this Century, other optimistic views were being formulated. The most noteworthy one was proposed by Myrskylä, Kohler and Billari (2009) who plainly state in the influential magazine “Nature” (p. 741-743) that “Advances in development reverse fertility declines”. Here “development”, is measured by the set of indicators as summarized in the United Nations “Human Development Index” (HDI). Akin to this view is the one that focusses mainly on the “gender equality” aspect of development: the more countries would improve the socio-economic position and empowerment of women, the more rapidly fertility would rise again (e.g. Mc Donald 2000, Esping-Anderson 2009). Scandinavian countries often serve as the reference point (Olah 2003, Hoem 2005, Olah and Bernhardt 2008), but studies involving southern and central European populations equally show the positive effects of more gender equity (e.g. Tazi-Preve, Bichlbauer, Goujon 2004, Cooke 2009, Mills et al. 2008, Begall and Mills 2011). In the view of Esping-Anderson (2009), the current low fertility spell is again only a temporary phase, and with more gender equity fertility will rise again, presumably to pre-postponement levels.

To sum up, we are essentially dealing with (i) a pessimistic view, i.e. that of the “low fertility trap”, in part echoing the adverse effect of globalization on European employment and earnings, and (ii) a set of optimistic “restoration” views predicated on the mechanics of the end of postponement, or on the impact of advancing human development and gender equity. In this article we will critically review these two possibilities via a form of fertility analysis that approximates the cohort approach and by linking the outcomes to a set of specific social indicators that may serve as possible bottlenecks that keep fertility low in specific European countries and regions. We shall now proceed with a closer look at the Myrskylä et al. proposition that “Human development” promotes fertility in post-transitional countries.
2. Advancing human development (HDI) and rising fertility (TFR): reality or *fata morgana*?

The idea that from a certain point onward further rises in human development (here in education, health and wealth) would lead to rising fertility was proposed by Myrskylä, Kohler and Billari and attracted wide attention given its publication in the August 2009 issue of *Nature.* More specifically, the typical negative TFR-HDI relationship would persist as long as the classic (first) demographic transition is going on, but that relationship would become positive thereafter. The result is a sort of ski-jump pattern, as is shown in Figure 1 in which we reproduce the original Myrskylä et al. graph.

**Figure 1**: The relationship between the total fertility rate (TFR) and the UN human development index (HDI) in 2005 and 2008, and the “ski-jump” (red circle)

![Graph showing the relationship between TFR and HDI](image)


With this static picture, fertility would drop to an average level of 1.60 at a HDI-value of about 0.85, but rise to replacement level with further HDI advancements to the then maximum observable HDI of unity. Needless to say that a dynamic interpretation of a merely static cross-section is highly risky,
and constitutes a classic example of what Arland Thornton (2005) labelled as “Reading history sideways”vii. Furthermore, Harttgen and Vollmer (2012) indicate that the rise is not robust to a later revision of the HDI, and not to any of the HDI components either, whereas Furouka (2009) questions the mere existence of a new positive relationship.

By contrast, further work by Myrskylä, Kohler and Billari (2011), using a later HDI definition, claimed that the rise was observed in cohort fertility as well, and was mainly due to the rises in older age fertility, i.e. after age 30. This is not surprising given that differences during the recuperation phase matter more and more at the later stages of the overall postponement transition. Finally, the three authors also point out that it is the “gender equity” factor which would be responsible for the reversal. This is to some degree corroborated by Luci and Thévenon (2010), who point out that female employment is the main driver, but also indicate that the reversal is not strong enough to bring fertility back to replacement level.viii

In essence, in subsequent reactions the attention shifts away from the overall HDI and re-focusses on aspects of gender equity. Myrskylä et al. retest their hypothesis using the World Economic Forum’s Global Gender Gap Index ix(GGG)(Hausmann, Tyson and Zahidi 2010), whereas Luci and Thévenon mainly use the OECD female employment dimension.

With this discussion in mind, we will now proceed with a closer inspection of the data and the nature of the correlations involved.

3. **European fertility and the “split-correlation” fallacy**

The notion of “split-correlation” refers to a scattergram which contains 2 or several clouds of observation points combined with the feature that the correlation coefficient within each of these clusters is zero or insignificant. However, the clusters of points are not overlapping and aligned in such a way that the slope of the overall regression line and correlation coefficient are clearly different from zero. In other words, the best fitting regression line runs through the separate clusters and creates the impression of a noteworthy overall tendency linked to the predictor X. Split-correlation is indicative of the fact that the X-variable is not a causal antecedent of Y, and that the explanation has to be sought elsewhere. More specifically, attention should then being drawn to the variable(s) that produce the emergence of the clusters themselves.
In what follows we will show that the upward part of the “ski-jump” in the Myrskylä et al. graph linking the TFRs to the HDI is a textbook example of split-correlation. Moreover, we shall equally show that the split-correlation feature equally emerges when other predictors are used, such as gender (in)equality indices or indicators of the “second demographic transition” values.

The existence of the two clearly distinct main clusters throughout the first decade of the 21st Century is eloquently illustrated in Figure 2. The smaller top cluster A contains all Scandinavian countries, the Low Countries, France, the UK and Ireland. The elongated bottom cluster B contains four subgroups, namely the mainly German speaking countries with the higher HDI values (Austria, Germany, Switzerland), then the Southern European cluster (Portugal, Spain, Italy, Greece, Malta, Cyprus), the former communist countries of Central Europe (the Baltic countries, Poland, Czech and Slovak Republics, Hungary, Slovenia, Croatia and Serbia), and finally those of eastern Europe (Russian Federation, Belarus, Ukraine, Romania, Bulgaria) with the lowest HDI-scores.

**Figure 2:** Scatterplot of the Total Fertility Rates (TFR) and the Human Development Index (HDI) in European countries, 2008.
At the turn of the century the lower fertility levels in cluster A already constituted the upper limit for the cluster B countries. At the time of the 2008 crisis, however, TFR levels often reached their highest values, but the gap between the two clusters widens as virtually all countries have improving HDI-scores. This is predominantly caused by the fact that the cluster A countries had a slowing down of postponement before age 30 in tandem with a more substantial recuperation after that age. Four years after the onset of the crisis, TFR-levels have often slipped down again, but the fertility gap between the two clusters is still in evidence. To sum up, during the first decade of the 21st Century the HDI-values increased in every single country, and the two clusters just shifted to the left side of the figures but remained totally distinct. This is illustrated in Figure 3 in which the evolution of country locations is traced for the years 2000, 2008-09 (highest TFR) and 2011-12 (most recent). The striking feature here is that only one country changes clusters, namely Luxemburg which had falling fertility during the decade. The case of Sweden is also particular as Sweden hit an absolute low around 2000, but joined cluster A again afterward. For the rest, countries plainly stay in their respective clusters despite universal increases in HDI.

What is typical for the HDI, is equally in evidence for any other indicator of social development. More specifically, we have related the TFR to the two indices of gender (in)equality (UNDP 2012 and Permanyer 2013a, 2013b), and an index of values associated with the SDT (Sobotka 2008). The difference between the UNDP Gender Inequality Index (GII) and the Permanyer Gender Equality Index (GEI*) is that the latter is not influenced by the countries’ wealth or GDP, and is therefore a purer measure of the gender dimension only.

The results are shown in Figure 4. As panels 1 and 2 of this figure indicate, the distinct clusters do not disappear when the attention shift towards the dimension of gender (in)equality. When using the latest TFR-values of 2011-12 and the most recent UNDP Gender Inequality Index (GII) of 2013, the two clusters are again in evidence, and the overall relationship vanishes when considering the two clusters separately. Furthermore, the Netherlands and Denmark had a noticeable fertility reduction in the years after 2008 despite their low gender inequality levels, whereas the UK stands out as a case of higher fertility combined with higher gender inequality as well. The Permanyer “purified” gender equality index (GEI*) for the EU-countries, but for the same dates, produces a similar pattern, with only Ireland being an outlier. It is, however, interesting to note that with the latter “purified” indicator the lower cluster B shifts to the right so that the number of countries with similar GEI*-values but with contrasting TFR-levels has been reduced. More specifically, in the band with GEI*-values between 70 and 79, we find Belgium, France, Ireland and the UK with TFRs above 1.8, and Germany, Spain, Latvia, Lithuania, Poland and Slovenia with TFRs below 1.6 and as low as 1.30.
Figure 3: Relationship between the Total Fertility Rates and the Human Development Index (HDI) for three dates: 2000, 2008-09 (highest) and 2011-12 (latest)
**Figure 4**: Relationship between the Total Fertility Rate 2011 or 2012, and the UNDP Gender Inequality Index (GII) 2013 (top panel) and the Permanyer Gender Equality Index (GEI*) 2013 (bottom panel, EU countries only)
The relationship with the SDT-values as operationalized by Sobotka (2008: 86-87) for the turn of the Century produces of course the same clusters, but compared to the previous results the band with SDT-values comprised between 5 and 7 has different members in the upper and lower TFR-clusters respectively. The fertility contrast is now between France, Belgium, Iceland, Ireland and the UK with the high TFR-levels and Austria, Germany, Spain, the Czech Republic and Slovenia with the much lower fertility levels between 1.32 and 1.58.

The striking feature in all these examples is the upward slope of the best linear fitting line. As indicated, this overall positive relationship is merely the outcome of the location of the two clusters, and not of any tendency within each of the clusters nor of a shift over time. This means that in any econometric and regression analysis using merely cross-sectional data with both clusters together, a typical positive relationship is likely to emerge, also after controls for other variables. This would obviously be a spurious relationship (see also Kalwij 2010: 514). These features are illustrated in Table 1, in which the correlation coefficient and percentages explained variance are shown for regressions involving the TFR and various indicators of development (HDI), gender inequality (GII)
or equality (GEI*), the female employment rate (FER) and Sobotka’s SDT-values index. The FER has been added given the OECD’s (2013) continued use of it in fertility research. The outcomes are shown for all countries together and then within each cluster.

Table 1: Correlation between the TFR and social indicators (HDI, GII, GEI*, FER, SDT)

<table>
<thead>
<tr>
<th></th>
<th>ALL Corr r</th>
<th>Rsq</th>
<th>Cluster A Corr r</th>
<th>RSq</th>
<th>Cluster B Corr r</th>
<th>Rsq</th>
</tr>
</thead>
<tbody>
<tr>
<td>TFR-HDI 2000</td>
<td>+.54</td>
<td>.29</td>
<td>-.05</td>
<td>.00</td>
<td>+.13</td>
<td>.02</td>
</tr>
<tr>
<td>TFR-HDI 2008</td>
<td>+.59</td>
<td>.36</td>
<td>+.05</td>
<td>.00</td>
<td>+.14</td>
<td>.02</td>
</tr>
<tr>
<td>TFR-HDI 2012</td>
<td>+.54</td>
<td>.29</td>
<td>-.09</td>
<td>.01</td>
<td>-.03</td>
<td>.00</td>
</tr>
<tr>
<td>TFR-GII 2012</td>
<td>-.33</td>
<td>.11</td>
<td>+.38</td>
<td>.15</td>
<td>+.11</td>
<td>.01</td>
</tr>
<tr>
<td>TFR-GEI*2013</td>
<td>+.58</td>
<td>.33</td>
<td>-.56</td>
<td>.28</td>
<td>-.05</td>
<td>.00</td>
</tr>
<tr>
<td>TFR-FER 2000</td>
<td>+.27</td>
<td>.07</td>
<td>+.06</td>
<td>.00</td>
<td>-.08</td>
<td>.01</td>
</tr>
<tr>
<td>TFR-FER 2009</td>
<td>+.40</td>
<td>.16</td>
<td>-.28</td>
<td>.08</td>
<td>+.25</td>
<td>.06</td>
</tr>
<tr>
<td>TFR-SDT 2000</td>
<td>+.52</td>
<td>.27</td>
<td>-.68</td>
<td>.46</td>
<td>+.15</td>
<td>.02</td>
</tr>
</tbody>
</table>

As expected, in all instances the correlations for the set of all countries together indicate the existence of a relationship. However, this relationship either vanishes within each cluster or gets the opposite and wrong sign (typically in cluster A). The diagnosis of this is indeed “split-correlation”.

4. The European double fertility regime at the regional level

The genesis of the European dual fertility regime is not only a feature that emerges for national aggregates, but is even more clearly in evidence when considering some 460 regions (provinces, Länder, départements …), i.e. at the Eurostat NUTS-2 level. This is clearly shown in the three panels of Figure 6 in which regional TFRs are plotted against HDI-like values that were also computed especially for themxiii. As of 1999 the gap between the regions of clusters A and B is just beginning to unfold. By 2005 that duality is clearly in evidence, and by 2011, regional TFRs between 1.5 and 1.7 have become a rarity in this bimodal unfoldingxiv. It is equally clear that rises in the HDI of the cluster B regions has done very little to improve the fertility levels, and that it is mainly the cluster A regions, which already tended to be wealthier, healthier and better educated to start with, that had rising fertility. Furthermore, European regional human development levels vary considerably, but there are about as many cluster A higher fertility regions in the middle HDI-band, i.e. between values of 0.6 to 0.8, as cluster B lower fertility regions. Hence, the “split correlation” phenomenon is again in full view: the low HDI-regions in 2005 and 2011, i.e. those with values below 0.6, would be responsible for an overall positive slope, but no such positive TFR-HDI relationship is visible in the separate clusters.
Figure 6: The TFR-HDI relationship in ca 460 European regions, 1999-2011
The conclusion from this brief regional inspection is that European regions now exhibit a bimodal TFR-distribution as well, and that this cannot be accounted for by their HDI-levels. This strengthens the conclusions formulated in the previous section, and also points in the direction of national features that may be responsible for this duality.

The conclusions drawn from the comparisons in these two sections are:

1. The contrasting high and low fertility clusters emerge with all indicators used, irrespective of whether they measure general human development, gender (in)equality or SDT-values.
2. This means that there is always a set of countries which have similar values for their social development indicators, but belong to the two contrasting fertility clusters.
3. The configurations in figures 2 to 5 and the results of table 1 are unambiguously illustrating the feature of “split-correlation”, meaning that there is no correlation between fertility and any of the social indicators within each of the clusters separately, and furthermore that the correlations and slopes for all the observations together are misleading.
4. The Myrskylä et al. conclusion of 2009 that advancing human development produces rising fertility is spurious and a wrong inference about dynamics from a static cross-section. All countries had increases in their HDI during the last 2 decades, but not a single one of the low fertility cluster crossed the TFR boundary of 1.60 or moved into the higher fertility cluster. In
other words, the clusters shifted slightly, but countries stayed within the same cluster. Moreover, also the later 2011 claim that it is the advancing gender equity which produces a fertility rise cannot be substantiated on the basis of such macro-level cross-sections of country values either.

5. The emergence of two fertility-human development clusters and the phenomenon of split correlation associated with them can also be neatly observed when working at regional level with Eurostat’s NUTS-2 areas.

6. The situation is much more complex, and very different causal mechanisms may be at work in different national context. Moreover, the fertility clusters are also formed by much longer historical forces and not just by contemporary ones.

7. The period total fertility rate TFR is an inadequate measure since it fails to capture the more precise nature of the postponement and recuperation phases in the various countries and violates the true life-cycle perspective by pasting together pieces of history of different generations – an issue that will be explored in detail in the following sections.

5. **Heterogeneity in fertility postponement and recuperation**

   In order to gain a better view of the actual fertility situation in each of the countries, we propose to simply disaggregate fertility in 4 age segments:\footnote{v}

   1. Teenage fertility, which is an indicator for the trial and error start of adult life, and which captures, *inter alia*, inadequate knowledge and use of contraception mixed with attitudes of various youth cultures or patterns of disadvantage;

   2. Early adult fertility in the age group 20-29 years which is connected to all the major life-course transitions such as the end of schooling, partner choice, type of union formation, start of employment, becoming a parent, etc. This is the most crucial phase of the entire adult life-cycle.

   3. Later adult fertility in the age group 30-39, in which “corrections” can be applied to the pathways chosen in the previous phases. This involves for instance divorce/separation and re-partnering, ending the postponement of parenthood, changing jobs or retraining etc.

   4. The ultimate fertility correction in the age group 40-44, either as a consequence of contraceptive failure (typical for the “First Demographic Transition FDT”), or increasingly the result of medically assisted fertilization (typical for the SDT).
Since decisions and events in any later phase are dependent on those in the previous phases, we need to arrange the four fertility segments in a longitudinal way, and hence respect the life-cycle unfolding of real cohorts. This means that we should follow each of these four segments in their own right over time, or if we want an overall measure, that we should add them together as follows:

\[
\text{LCS TFR} = F(15-19,t-5) + F(20-29,t) + F(30-39,t+10) + F(40-44,t+15)
\]

in which \(F(a,a+n)\) is the cumulated fertility in the age group, and \(t\) the time index.\(^{xvi}\) As such we respect the longitudinal sequencing of the course of fertility over the life-cycle, and this is why we would suggest the label of the “Life-cycle sensitive TFR” or LCS TFR for this overall measure. It is obvious that this is not the exact cohort TFR, but an efficient and easily calculable approximation of it.\(^{xvii}\) Furthermore, this very simple longitudinal disaggregation facilitates the measurement of both the postponement and the degree of subsequent recuperation.

In what follows, we will restrict ourselves to a more detailed analysis of fertility between ages 20 and 40, since teenage fertility and “old-age” fertility (40+) are two much smaller components of the LCS TFR, but, more importantly, these are topics that deserve a specific treatment of their own. At this point it suffices to point out that in most European countries \(F(40+)\) has increased and that teenage fertility has declined. In FCCs the decline in the latter tends to be somewhat more important than the rise in \(F(40+)\), but in the other European countries these two extreme components either cancel out or the rise in \(F(40+)\) is slightly more important.

The results for \(F(20-29, 2001)\) and \(F(30-39, 2011)\) are presented in figures 7 and 8.\(^{xviii}\) These data pertain to the cohorts born between 1972 and 1981. In Figure 7 we have ranked the countries according to their cumulated fertility between ages 20 and 29 in 2001, and added the values of 10 years later, i.e. \(F(30-39, 2011)\), on top of them. In that fashion one can see to what extent postponed fertility is being “caught up” after the age of 30. Figure 8 juxtaposes \(F(20-29, 2001)\) and \(F(30-39, 2011)\), and puts in the diagonal lines corresponding to their sum. The arc separates the countries of cluster A and B. This figure highlights even more the heterogeneity with respect to both postponement and recuperation patterns in European countries.

Both figures illustrate that the three major Mediterranean countries (Spain, Italy and Greece) have very low fertility prior to age 30, and do not catch up sufficiently afterwards to make it to a level of 1400 children per 1000 women 20-39. A very similar pattern prevails, but in an attenuated fashion for Switzerland, Germany and Portugal. The immediate contrast is provided by Ireland, the Netherlands and Sweden which also have low fertility to start with, but exhibit a strong degree of recuperation after age 30. The other countries belonging to cluster A are located at the other end of
the spectrum with a combination of both higher early and later fertility. This is especially in evidence for Finland, Denmark, Belgium, France, Norway and Iceland. As a result these countries already have a total fertility of more than 1600 children per 1000 women 20-39. Austria and the UK fall in the middle of the distribution as far as F(20-29) is concerned, but in the latter country the cohorts concerned added a noticeably higher fertility after age 30.

The former Communist countries exhibit a high degree of heterogeneity as well, and this was largely due to differences in the onset and degree of their postponement transition. More specifically, Ukraine, Slovenia, Latvia, the Czech and Slovak Republics, Hungary and Bulgaria already have lower fertility prior to age 30 than the UK, whereas Russia, Estonia, Poland, Romania, Lithuania, Belarus, Croatia and Serbia still have not completely abandoned their earlier procreation pattern. By contrast, what all these countries have in common is low fertility after age 30. In other words, large differences for F(20-29) and more uniformly low levels of F(30-39) account for their presence in the B-cluster.

**Figure 7:** Cumulated fertility per 1,000 women in the age groups 20-29 (F20) in 2001 and 30-39 (F30) in 2011. European countries
Figure 8: Plot of cumulated fertility per 1000 women in the age group 30-39 (F30) in 2011 against their values 10 years earlier in the age group 20-29 (F20). European countries

The data in Figure 8 are identical to those in Figure 7, but the two fertility components are now plotted against each other. This brings out a few more points. For instance, with similar values for F(20-29) between 700 and 800 births, some countries add less than 500 births at ages 30-39 (Ukraine, Bulgaria), whereas others add more than 900 (Ireland, Sweden, Netherlands). Similarly, for values of F(20-29) comprised between 800 and 900 births, several countries add less than 600 births per 1000 women (Russia, Poland, Belarus, Romania), whereas others add more than 800 (Luxemburg, Finland, Denmark). This suffices to illustrate that not only the postponement and the decline in earlier age fertility is to be looked at, but that later age fertility has become a major player in differentiating between overall fertility levels of European countries. This is exactly what some of the cohort-based analyses of the 1990s had forecasted (e.g. Lesthaeghe and Willems 1999, Lesthaeghe 2001).

In Figures 7 and 8 use has already been made of the cumulated fertility values for the later ages (30-39) at the end of the first decennium, but the data for the younger ages (20-29) are those for 2001. Hence, we need to follow up on the evolution of F(20-29) for the subsequent years, bearing in mind...
that these are the ages that are most vulnerable to period shocks, and that any further shortfalls would ideally have to made up in later ages. This will be done in Figures 9 and 10 for the Northern, Western and Southern European countries (NWS) and for the formerly Communist countries (FCCs) respectively.

Figure 9 not only illustrates the large differences in younger age fertility in the NWS countries of Europe, but also noticeable differences in trends. Some countries have had rising fertility prior to age 30 and then a slight reversal after the crisis of 2008-09, whereas others exhibit a steady downward trend during the entire decennium. The most striking cases with an initially slight recovery, but with a subsequent “crisis”-reversal are Iceland, Belgium, the Netherlands, the UK, Denmark, Sweden, Italy and Spain. Countries with a steady decline during the entire period are Portugal, Austria, Switzerland and especially Germany.

**Figure 9**: Evolution of the cumulated fertility at ages 20-29 in Northern, Western and Southern Europe, 2000-2011
Figure 10 shows the evolution of F(20-29) in the FCCs. During the first half of the decennium, the trends in most of these countries ran parallel to each other, and exhibited the continuation of further postponement. The only two exceptions were Russia and Ukraine, which had a small recovery between 2001 and 2004. After 2005, however, most countries experienced a halt to the postponement trend, and had a temporary increase instead. However, there are signs that these reversals came to an end as well in the years after 2008-09. Clear cases of such recently renewed fertility declines are Belarus, Estonia, and the Czech Republic. And finally, Hungarian younger age fertility continued to drop during the entire period, and even experienced a further acceleration of its downward trend after 2008.

**Figure 10:** Evolution of the cumulated fertility at ages 20-29 in the formerly Communist countries, 2000-2011
The evolution in older age fertility during the first decennium is much more linear and homogeneous in the European countries. This is illustrated in figure 11 in which the values of F(30-39) are reproduced for the years 2000, 2008 (when sometimes a maximum value was reached during the decade), and 2011. Also, the countries are ranked from high to low on the basis of F(30-39, 2000).

Rises in the classic period TFRs of European countries owe tribute to a *universal* increase in later age fertility. This outcome is the perfectly logical outcome of generations “correcting” for postponed fertility during their earlier life-cycle phase. Only, as shown before, countries vary tremendously in the *degree* to which this is done. For instance, Figure 11 illustrates that F(30-39) in 2000 in Ireland was almost 5 times that in Bulgaria. Such extremes are no longer observed at the end of the decade since the FCCs have reduced their lag in this respect, without, however, compensating for the lower fertility at ages 20-29.

**Figure 11:** Cumulated fertility per 1000 women in the age group 30-39 in European countries for the years 2000, 2008 and 2011
6. Different clusters, different explanations?

In this section we propose to delve a bit deeper into the possible causes of differential fertility, and abandon the use of composite indices as being too general. More specifically, we shall explore the issues of child-care in terms of availability and costs and the issues of the gender division of work. The literature on the subject is extensive and we will not make an attempt to review and summarize it here. It should be borne in mind, however, that current differences have much longer historical and even cultural roots, and that some are more resistant to change than others. With this caveat in mind, we shall seek an explanation for the fact that Southern European and German-speaking countries fall in the low fertility cluster B, whereas comparable countries in terms of general composite indicators (HDI, GII, GEI*) such as France, the UK or the Low Countries have been in the high fertility cluster A for more than 2 decades.

The causes of low fertility of Southern Europe have already been addressed in extenso by several authors (e.g. Reher 1998, Dalla Zuana 2001, Livi-Bacci 2001) and they can be summarized as follows. To start with, gender relations in the partnership market have evolved to a situation in which, to quote Albert Esteve, “women are looking for men of the future, whereas men are looking for women of the past.” In other words, men have not sufficiently adapted to female rises in education and emancipation, and partnership formation is postponed as a result of a persistent “cultural lag”. In the southern “strong family” context the outcome is not the rise of single living or sharing, but prolonged residence in the parental household. This is strongly enhanced by enduring adverse labour market conditions and high housing costs in urban areas. Furthermore, even within a partnership the skewed gendered division of domestic work still persist to a higher degree than in the rest of Europe (see below). The outcome is pronounced partnership and parenthood postponement. And, although fertility after age 30 falls within the European middle range (similar to that in Belgium or the UK for instance – see figure 11), it is not high enough to correct for the vast postponement prior to age 30. The combination of cultural factors and several adverse economic ones forms a force to be reckoned with, and Southern European countries may therefore face the issue of a late starting pattern for quite some time to come. They may not slide back to the level of “lowest-low” fertility as the postponement phase nears completion, but fertility rising to the levels of the cluster A-countries does not seem likely under present conditions.
The issue of the low fertility in the three mainly German-speaking countries of Europe is a totally different matter. Firstly, Switzerland and Germany are among the wealthiest countries on the continent and have low unemployment levels. Neither do they have lower Human Development or Gender Equality indices than their immediate western neighbours. However, Germany and Switzerland have never made a fertility recovery that brought them back to the levels of France, Belgium, the Netherlands or Denmark. To some extent, Austria fits that picture too, but, by now, so does the Czech Republic for instance. This begs the question whether more idiosyncratic forces are at work or whether a more general Central European pattern is currently coming into existence in which the legacy of the old East-West border is being obliterated.

The common feature for the three German-speaking countries is that of high work-family incompatibility. Two key issues here are the availability of childcare facilities for young children and, for older ages, the early ending of classes and inadequate school-based supervision for afternoons and early evening hours. This implies that mothers either need to stop working or leave work early in the day, or seek much more expensive private child-care solutions, if these are überhaupt available. All of this also reflects the persistence of the “breadwinner model” as a cultural lag, which led to the structural inadequacies in the organization of child-care and schooling hours (see also Kreyenfeld and Wagner 2000). Theoretically, and in contrast to the Southern European situation, this specific schooling and child-care bottleneck in the German-speaking countries could be addressed much more quickly and probably with greater effect. Only, conservative rigidities die hard in many European regions.

It is also very important to note that child-care and schooling hours are often regulated at the regional or even local level. The same can also apply to children allowances, parental leave regulations or even tax benefits. Hence, there may be substantial differences due to policy decentralization, and national statistics may not do justice to the actual situation. For instance, there are large differences in schooling hours and childcare facilities between the Western and Eastern German Länder, with the latter having far better arrangements (Stock et al. 2012: 270-275, Bertram and Bujard 2012). In fact, East-German fertility has recovered from the great crisis of the 1990s and is now higher than in West-Germany. The fault line coincides exactly with the old GDR border and reflects indeed the two traditions with regard to female employment and childcare that historically came into existence.
before the 1989 Wende. In Austria, the situation is equally regionally diverse, and by now only the city of Vienna seems to have made significant improvements with respect to pre-school childcare and after-school supervision (Baierl and Kaindl 2011). The importance of contrasting childcare policies and situations is also documented by Klüsener, Neels and Kreyenfeld (2013) who compared the Belgian but German-speaking East Cantons (arrondissement of Verviers, Liège province) to the German neighbours. The “European fertility cleavage” follows the national border and not the linguistic one (German-French) despite the more similar cultural and political traditions of both German-speaking entities across the border. The key difference producing the higher fertility on the Belgian side seems to be the significantly higher availability of crèches, longer school hours and longer supervision after regular class hours, and hence reduced work-family tension.

The dimensions that we used so far, i.e. (i) later home-leaving, (ii) the skewed gender division of domestic work, and (iii) the development of public childcare, can be illustrated in figures 12, 13 and 14 for most European countries.

As is well known, all the Southern European countries have high proportions of persons 20-34 living with their parents and very few living independently as singles. This equally applies to a number of Central and Eastern European countries, but in contrast to the southern pattern, as part of a long historical tradition they also have cohabiting or married couples sharing a household with their parents. In the latter cases, partnership formation is postponed much less than in the Mediterranean countries, and the overall postponement trend started almost about a decade later as well. There are few differences in Western Europa: countries belonging to the higher fertility A-cluster (Netherlands, France) have very similar residential patterns as the three German-speaking countries with their much lower fertility. The Scandinavian countries obviously have the higher percentages of young persons living independently and the lowest percentages residing with their parents. Hence, it is only in Southern Europe that late home-leaving is a major factor responsible for low fertility prior to age 30.
The gender gap in domestic activities is illustrated in figure 13, using the percentage of men 15+ who do one hour or more of domestic work per day and the ratio of that percentage of women 15+ over that of men 15+. These two aspects are neatly related in a curvilinear fashion. Over 40 percent of men devote more than one hour per day to domestic tasks and up to twice as many women in Northern Europe (Scandinavia, two Baltic States) and in the British Isles. The gender gap increases in the Low Countries, with about 2.5 times more women doing such regular domestic work than men. This ratio becomes just larger than 3 in France and Slovenia, and increases further to 4 in Lithuania and the three German-speaking countries. Thereafter, ratios up to 8.5 in tandem with very meagre male involvement in domestic work become the hallmark of the rest of Central, Eastern and Southern Europe. It should be noted that Spain is a noticeable exception when using the EIGE data bank, but not when checking the harmonized time use surveys (HOTUS 2) data base. In the later source the ratios indicate that women do close to 4 times more than men in Spain and Italy, which is significantly higher than in Central and Eastern Europe. For the rest there are no major discrepancies between the two data sources.
This particular domestic time-use aspect of the gender relations is more in line with the fertility ranking than the overall HDI, GII and even GEI* indicators. It furthermore illustrates that low fertility in Central and Eastern Europe can also be partly accounted for by the domestic gender imbalance, and that this is by no means solely a Southern European feature. Also the three German-speaking countries score noticeably poorer on this indicator than their neighbours in the Low Countries and slightly poorer than France.

**Figure 13:** The gender gap in time spent doing domestic activities.: Percent of men 15+ doing 1 hour or more of domestic work per day, and ratio of that percentage of women over men; observations during 1999-2006 period (EIGE data)

The third aspect to be viewed in greater detail is that of childcare amenities and their use. This aspect is illustrated in Figure 14 by the percentage of GDP devoted to childcare and pre-primary school expenditures, and by the participation rate of children under age 3 in these different forms of formal care. According to the OECD family database used here inadequate formal childcare is not only a problem which sets the three German-speaking countries apart from the rest of North-West Europe,
but also many FCCs fall in the same cluster with very low use and low expenditures. In fact, when it comes to enrolment rather than expenditure, the Southern European countries do considerably better than those just mentioned. Finally, France and the Low Countries are higher up on the scale, but still significantly behind the UK and the Scandinavians. Hence, this particular indicator can account for low fertility in the German-speaking cluster and in the FCCs, but less so for lower fertility in Italy, Spain or Portugal.

**Figure 14:** Expenditure for child-care and pre-primary schooling and participation in formal child-care up to age 3 (OECD-data)

The results presented here all point indeed in the direction of interacting sets of gender and child-care issues. Both are linked to “cultural” lags, one dealing with older perceptions of male roles and the other one connected to the mental survival of the bread-winner model and the concept of the “strong family” in the organization of all pre-school activities. However, these dimensions cannot be measured through composite indices, such as the HDI or GII. Instead, much more specific aspects need to be looked at, and explanations that may be helpful for some countries are simply not relevant for others.
The most common combination of negative factors is threefold: low male domestic involvement + inadequate share of GDP for pre-school amenities + high youth unemployment. This trio is valid for most of the FCCs and for Southern Europe. The Mediterranean belt furthermore adds the very slow start of partnership formation to this trio. The three German-speaking countries, by contrast, suffer mainly from an inadequate child-care system and above all from a schooling organization that is just still not adapted to the reality of full-time working women. Switzerland seems to stand out in this respect.

The bottlenecks in the low fertility cluster B countries also emerge in some of the high fertility cluster A, but not to the same striking degree. For instance, the gender gap in Belgium, France, the UK or Ireland is still noticeably wider than in the Scandinavian countries. Furthermore, investments in public child-care could also be improved upon, especially in the Netherlands.

7. Conclusions

The notion that fertility would increase with rising general human development as proposed by Myrskylä et al. in 2009 and reiterated in 2011 cannot be substantiated. Instead, a dual fertility regime came into existence in Europe during the first decade of the 21st Century. As a consequence, the presumed positive TFR-HDI link is plainly the result of the split-correlation syndrome. This critique equally holds for other such general links, such as the Gender (In)equality indices, the cultural SDT index, or female employment rates. Diagnosing (let alone, predicting) fertility increases on the basis of such general indicators does not seem to be a defendable procedure either. Instead, the root causes for low fertility are to be sought in a demographic “mechanical” feature in tandem with far more specific organizational factors that are emanations of the persistence of several cultural lags.

The “mechanical” feature is that countries which initiated the postponement transition are indeed very likely to be the starters of the recuperation phase as well. In this instance, these countries should have reached more stable or possibly rising fertility when those with a later take-off of the postponement phase are still falling further behind. A gap then comes into existence. This difference in the timing of postponement is indeed a first reason for the higher fertility in cluster A countries. However, this “mechanical” effect may be a necessary element, but it is by no means a sufficient one. For instance, if it had not been for other bottlenecks, the German-speaking countries, which were fairly early in postponing parenthood, should be in cluster A by now, together with their
western neighbours. Also, the decline in F(20-29) in several FCCs came to a stop around 2005, giving the impression that their massive postponement since 1990 had ran its course. And last, but not least, a major element of the gap between the high and low TFR-clusters is the substantial difference in F(30-39): the cluster A countries all do much better in “correcting” for earlier postponement than the cluster B countries.

Evidently, a strictly demographic explanation cannot fully account for the rising duality in European fertility levels at national and subnational levels. As indicated in section 6, different combinations of other potentially causal factors need to be added. Most of them deal with older cultural lags. Firstly, the notion that the “strong” Southern European family could continue to function as before, lead to very late home-leaving and very low fertility prior to age 30. Secondly, the gender gap in the division of domestic work is still very clearly in evidence, and this does not only hold in the Mediterranean populations, but almost just as much in most FCCs as well. Thirdly, child-care facilities and pre-primary school day-care are often still considered as secondary resources, i.e. as “back-ups” for mothers who are still presumed to be predominantly housewives. In the German-speaking countries this negative factor is further enhanced by poorly adapted primary school hours as well. The breadwinner model may not survive in terms of social security legislation, but it certainly does as a mental model for the organization of child-care and primary education.

The financial crises of 2008 and the subsequent rise in unemployment may indeed be partly responsible for the end of rises in younger age fertility F(20-29). But it should also be pointed out that two countries that were among the least affected, i.e. Germany and Switzerland, fertility prior to age 30 was falling throughout the first decade of this Century. With a continuously downward trend, it is difficult to put the blame on the economic turn-around in these two countries. By contrast, it could be that the post-2008 trend reversal in younger age fertility F(20-29) is only a temporary phenomenon, and that a slightly positive trend could be resumed. This would be an argument in favour of an optimistic scenario. On the other hand, youth unemployment levels are still far too high to warrant such an expectation.

The crisis of 2008 is much less in evidence for fertility after age 30, i.e. in F(30-39). Fertility kept on rising everywhere throughout the first decade. This is a normal feature for cohorts that had their major postponement of parenthood during the 1990s and early 2000s. Within the life-cycle perspective, values of F(20-29,t) + F(30-39,t+10) are all higher than those of the classic period cross-
section, i.e. $F(20-29,t) + F(30-39,t)$ for the same period (personal communication Sobotka and Zeman, 2013). Here, the Myrskylä et al. revision of 2011 is correct: essentially recuperation fertility at older ages is responsible for any TFR rises. However, as pointed out before, there are vast differences in $F(30-39)$ between countries, with still inadequate recuperation dominating in cluster B.

Rising or trapped? This is the question in the title. From the patterns and evidence sketched above, it seems to us that some countries could pick up again on a slow rise once the effect of the 2008 crisis has worn off. But these would be the cluster A countries given their overall better economic situation combined with fewer organizational bottlenecks and weaker cultural lags regarding gender and childcare.

For the cluster B countries, several elements suggest the continuation of the low fertility trap: both the slow start of fertility in Southern Europe and the weak recuperation at older ages in former FCCs are rooted in more problematic gender relations at the household level and inadequate child-care and school arrangements at the regional or national levels. Continued adverse employment conditions and emigration would of course favour the more pessimistic outcome. Possibly the German-speaking countries could escape from the low fertility trap more easily than the others given that they remedy the more specific bottleneck connected to child-care and schooling hours. For them, this is presumably more a question of “willingness” rather than of “ability”.

The bottom line is that we expect that the dual fertility pattern in Europe may have a longer life, and that fertility levels will not rebound to the above-replacement level in the foreseeable future. The SDT prediction of 1986 that Europe would develop generalized structural sub-replacement fertility is still valid and is very likely to remain so for the second decade of the 21st Century.
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ENDNOTES

i Ryder attributes the US large baby boom to the marriage boom, a concomitant forward shift of childbearing and to high unwanted fertility beyond parity 2. He also points out that the Easterlin hypothesis assumes a system dominated by the bread-winner model of the family (1984: 270-272).

ii Louis Roussel already described several of the demographic SDT characteristics in his 1984 chapter entitled “Une nouvelle révolution démographique?”.

iii More specifically the tempo-adjusted TFR* is the sum of the parity-specific TFR*s, which themselves are inflated as follows: $TFR^* = \frac{TFR_i}{1-ri}$ where $ri$ is the annual rate of change in the parity-specific mean age at motherhood for parity $i$ ($MAC_i$). The Bongaarts-Feeney adjustment resembles the operation in the following example. Suppose that a bank periodically reports the value of its investment portfolio. But as the returns have been shrinking due to falling interest rates, the current portfolio value is re-inflated by backwardly calculating what it would have been in the absence of such falling interest rates. Obviously, the latter would be many virtual dollars/euros higher than the actual value.

iv The United Nations HDI index is composed of three separate indices: the education index, the GNP and the health index. It does not contain any gender (in)equality index.

v At the plenary session of the European Population Conference of 2012 in Stockholm, Esping-Anderson made this clear by using a graph in which fertility would follow a U-shaped curve with advancing gender equity. In this curve, the end-point C would be just as high as the starting point A, with only a temporary through at point B. But when point C was to be reached remained undefined, and so were the TFR levels at points A and C as well.

vi It would of course be quite dramatic if the negative TFR-HDI relationship would have persisted as most developed nations would by now be on a course to zero fertility. The mere end of that negative relationship is hardly any finding. The emergence of a real positive relationship would indeed have been something new.

vii See also the blog by Edward Hugh (“Science or Hocus Pocus?”) and another article in Nature by Shripad Tuljapurkar 2009 (“Babies make a comeback.”)

viii It should be noted that “gender equity” and female employment or higher female earnings are not identical concepts.

ix The GGG-Index measures gaps between the two sexes (not mere levels) in political empowerment, economic participation, health and longevity, and education. Larger or smaller gaps can exist at any level of GDP.

x The only exception at the turn of the century was Sweden which then had a “roller coaster” fertility evolution (for reasons see Hoem and Hoem 1997) and had just hit an overall low TFR of 1.54.

xi The SDT index proposed by Sobotka is based on the European Values Surveys and contains items pertaining to the importance of leisure time, religious service attendance, sense of control over life, children needed for life fulfilment, marriage outdated institution, women need home and children, respect for parents, approval of abortion. See Sobotka 2008: p. 85.

xii The Permanyer Index of Gender Equality is based on differentials with respect to employment conditions (full-time employment rates, flexibility, earnings, sectorial segregation, flexibility, on-the-job training and safety), poverty, tertiary education; childcare, domestic and leisure activities, political representation, life expectancy and self-perceived health. The original GEI index proposed by the European Union (EIGE 2013) was largely driven by overall differences in development between countries.
(the “efficiency component”) rather than by the gender differences within them (the “equality component”). The Permanyer correction removes the “overall efficiency” component, and is therefore a purer measure of gender equality senso stricto.

The HDI-like indices plotted in Figure 11 are constructed using the following indicators: Life expectancy at birth by NUTS 2 regions, Pupils in primary and lower secondary education (ISCED 1-2) - as % of total population at regional level, Students in tertiary education (ISCED 5-6) - as % of the population aged 20-24 years at regional level and Gross domestic product (GDP) at current market prices by NUTS 2 regions. Even if the education component presented here is not the same as the one in the official HDI (our measure typically takes much smaller values), both the official HDI and the HDI-like measure proposed in this paper are highly correlated when comparing their values at the country level (r>0.9).

Other recent studies have used similar methodologies to construct local HDI-like measures that allow unfolding internal heterogeneity within countries (Permanyer 2013c).

The exceptions of the B cluster with higher fertility are the two Spanish cities of Ceuta and Melilla in North Africa, Crete, two Bulgarian regions (Severozapadan and Yugoiztochen) and Lithuania.

Of course a finer disaggregation in for instance 5 year age groups is equally feasible.

Note that the value of F(20-29) is connected to the reference year t, whereas the real reference point should be located at age 30, meaning that we should use F(20-29, t-5) and F(30-39, t+5) instead of the currently proposed one. The reason for using the latter is that period shocks (crises, unemployment etc.) tend to affect fertility particularly at the younger ages and less so after age 30.

Krystof Zeman compared the classic period total fertility for the age bracket 20-39 in European countries and over many years with the real cohort value and the LSC TFR, and showed that the latter is a far better predictor of the true cohort TFR than the classic period TFR (Rsq= 0.93 versus 0.75). If F(15-19, t-5) and F(40-44, t+15) would have been added in as well, the fit between the LCS TFR and the true cohort TFR would have been better still.

The data sources are Eurostat Data Explorer 2013 fertility rates by age, and the Vienna Institute for Demography (VID) Human Fertility Data Base.

Here we can refer to several comprehensive overviews such as these by Birgit Pfau-Effinger 2005, Gerda Neyer 2006, Olivier Thévenon 2011, and Elina Sleutker 2013.

Switzerland stands out in terms of very high fees in accredited childcare services. For a two year old, the OECD average for 2008 is 21 percent of the average wage whereas in Switzerland this is 44 percent. In Germany and Austria the fee is 23 and 14 percent. Also well above the OECD average are the Netherlands and Ireland. For a dual earner household the net childcare cost is highest in Switzerland, i.e. 51% of net family income, followed by the UK and Ireland with 27 and 26 percent. In the Netherlands, the employers pay part of the childcare fees, so that the net cost to the household is reduced to 10 percent of dual earner income. (OECD Family data base 2013: Childcare support PF3.4.A and B).

Belgium has a relative high incidence of living with parents, but it should be noted that for students this is mainly co-residence with parents during weekends only.
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