

Did the reversal in the cross-country association between women's labor force participation and fertility really take place? A cohort view

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Short abstract

Numerous studies have consistently found that the cross-country relationship between the period Total Fertility Rate (TFR) and Female Labour Force Participation Rate (FLFPR) in Western OECD countries reversed from negative to positive. However, all these studies were based on period data, which, in the case of the period TFRs implies considerable year-to-year fluctuations and distortions due to changes in the timing of childbearing. Moreover, only a few studies paid attention to the “reasons” for the observed changes in the FLFP-TFR association and to the variety of employment-fertility trajectories in individual countries. In addition, these studies used the FLFPR for the broad age range of women in productive age (15-64) which is incompatible with the fact that most of the fertility rates are realised in a much narrower age range between 18 and 39 years. This study will address some of the shortcomings of the previous research. We will conduct our analysis in a cohort perspective, using completed cohort fertility rates (CFRs) and reconstructing cohort female labour force participation rates (CFLFPs) at ages 25-39. The cohort data allow us to provide consistent measures of labor force participation and fertility across the life cycle which are neither distorted by short-term fluctuations, nor by tempo effect due to fertility postponement. In addition to looking at the correlations between CFLFPR and CFR across cohorts, we will also (1) look at regional differences across Europe, (2) investigate temporal developments in cohort fertility and female employment in individual countries, and (3) perform simple simulations which indicate whether the observed changes in the CFLFP-CFR correlations were mostly driven by changing fertility rates or changing female employment rates.

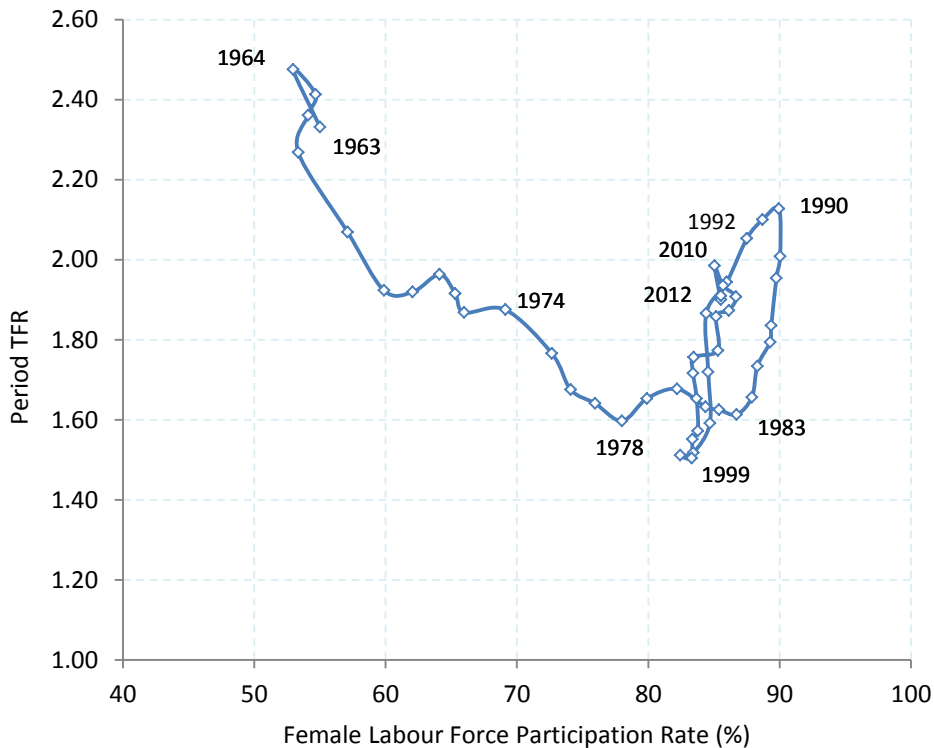
Extended abstract

The relationship between women's labor force participation and fertility has been one of the most frequently discussed topics in fertility research during the last decade. Numerous studies have consistently found that the cross-country relationship between the Female Labour Force Participation Rate (FLFPR) or Employment Rate and the period Total Fertility Rate (TFR) in Western OECD countries reversed from negative to positive and this reversal took place in the mid-1980s (Brewster and Rindfuss 2000, Ahn and Mira 2002, Rindfuss et al 2003, Engelhardt and Prskawetz 2004, Engelhardt et al 2004, D'Addio and D'Ercole 2005). Somewhat counter-intuitively countries with highest rate of women's labor supply / employment started displaying highest fertility rates. The emergence of the positive correlation between women's labor force participation and fertility has usually been explained by the reduction in incompatibility between childrearing and women's paid work, especially in countries with high female labour participation. The incompatibility was reduced through policies that support reconciliation of paid work and family, such as public childcare for children below age 3, and also through policies supporting gender equality. (Castles 2003, Rindfuss et al., 2003, Brewster and Rindfuss 2000, Luci-Greulich and Thévenon 2013, OECD 2011). Recently, Matysiak (2011a, 2011b) found that the cross-country correlation between the TFR and FLFPR / EMPR became positive also in former state-socialist countries of Central and Eastern Europe and attributed it to the emerging diversity of the region in policies supporting work-family reconciliation.

The reversal in the correlation between period fertility and women's labor force participation has important policy implications. It suggests that moderate fertility levels close to replacement are compatible with high involvement of women in the labour market if the institutional conditions in the country support work-family combination. However, the research so far on this topic has been conducted purely in a period perspective, which may limit robustness of some findings. Specifically, the existing studies have four important drawbacks. First, they disregard tempo effects in period fertility rates, linked to the on-going shift towards later timing of childbearing, which have depressed period TFRs in many rich countries during the last four decades. This might be particularly a problem for countries where fertility postponement has been particularly strong, especially in Southern Europe and (post-socialist) Central Europe in the 1990s and early 2000s. Some studies (Koegel 2004, Matysiak 2011) tried to adjust for tempo effects in fertility by using tempo-adjusted period TFRs using formula by Bongaarts and Feeney (1998). The adjustment was implemented only for selected time periods, however. Furthermore, the Bongaarts-Feeney adjusted TFR shows stronger fluctuations than the conventional period TFR (Sobotka 2003), especially in times when the variance in fertility schedule changes rapidly (Zeng Yi and Land 2001). Second, period TFRs are not only unstable due to tempo effect mentioned above, but also due to fluctuations in time that reflect economic conditions, policy changes or other institutional factors. This may also affect the research on the FLFP-TFR associations. Consider, for instance, the case of Sweden, where the period TFR fluctuated in the wide range between 1.5 and 2.1 between 1983 and 2012. In figure 1 we illustrate the shifts in the association between female labour force participation at ages 25-39 and period TFR in Sweden in the last five decades. Between 1964 and 1978 there is a consistent downward trend in the period TFR and a corresponding upward shift in the FLFP. Since the early 1990s the FLFP and TFR are disconnected: while the first one stays stable, the TFR

shows strong ups and downs. No similar problem is observed when looking at cohort measures of fertility and female labor force participation. The third drawback of the research on the aggregate association between fertility and women’s employment is its concentration on cross-country correlation. Much less attention has been paid to time series correlation. This is very unfortunate as looking into the association between both variables from a temporal perspective may shed light on the “reasons” for the observed changes in the FLFP-TFR association. The studies that dealt with this issue concluded that the reversal in the cross-country correlation between women’s labour force participation is driven by the variation in the magnitude of the change in fertility and women’s employment (Koegel 2004, Engelhardt et al 2004). In particular, Engelhardt and Prskawetz (2004) reported that in countries with high share of women in employment the period TFR stabilised or even somewhat “recuperated” sooner and at a higher level than in the countries with lower female employment rate. However, the authors have reached a country grouping by the FLFP that was redefined each decade, a move that might have affected the results. Fourth, previous research relied on the aggregated measures of fertility and female labour force participation which might have hidden age-specific interactions between fertility and employment. Moreover, the use of the FLFPR defined for all women in the productive age included also women in their fifties and early sixties, whose employment arguably had little or no causal link to their fertility that has been mostly completed in their thirties. In contrast, at younger ages FLFP has been increasingly “limited” by the rise of women’s participation in tertiary education—a shift which may further limit the usefulness of the FLFPR defined across the broad age range 15-64.

Figure 1: Period FLFP (age 25-39) and the TFR in Sweden, 1963-2012

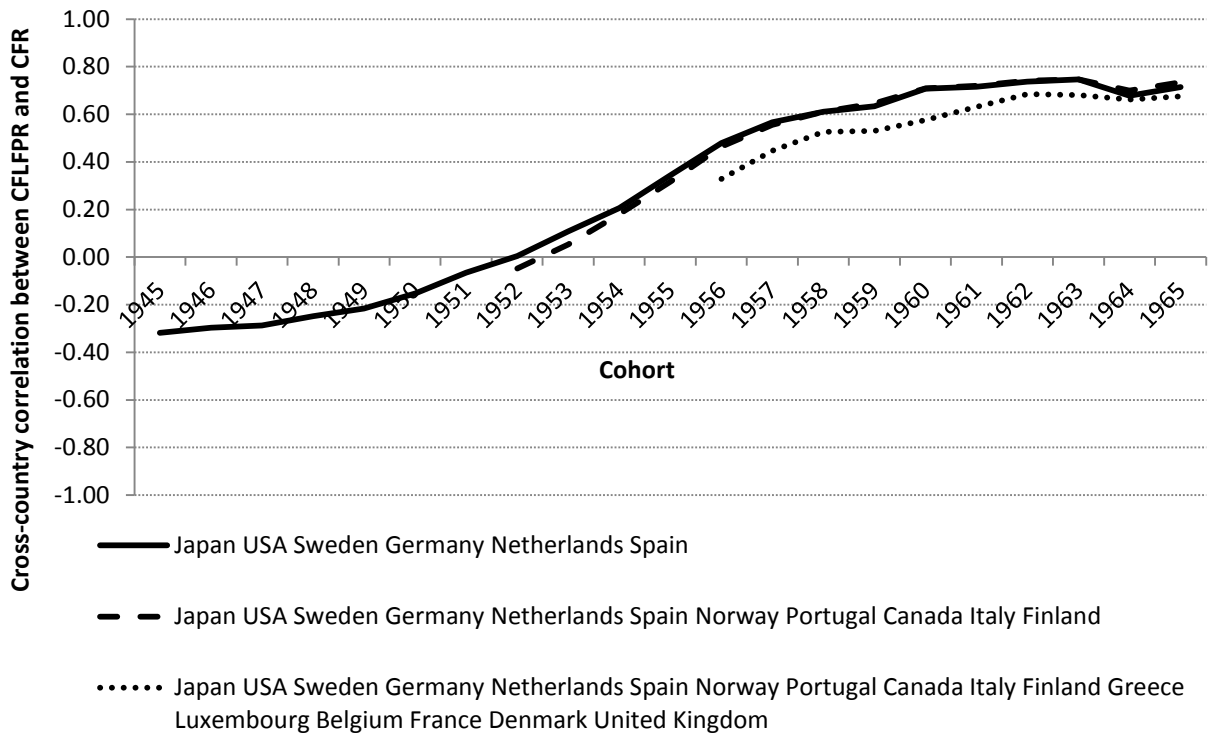


In this study we aim to address some of the shortcomings of the previous research. First of all, we conduct our analysis in a cohort perspective, using completed cohort fertility rates (CFRs) and reconstructing cohort female labour force participation rates (CFLFPRs) and employment rates (CEMPRs) at ages 25-39. We have omitted women in the early 20s so that CFLFPR is not affected by tertiary education expansion. The cohort data allow us to provide consistent measures of labor force participation, employment and fertility across the life cycle which are neither distorted by short-term fluctuations, nor by tempo effect due to fertility postponement. In addition to looking at the correlations between CFLFPR/CEMPR and CFR across cohorts, we will also (1) look at regional differences across Europe, (2) investigate temporal developments in cohort fertility and female employment in individual countries, and (3) perform simple simulations which indicate whether the observed changes in the CFLFP-CFR correlations were mostly driven by changing fertility rates or changing female employment rates.

We will mostly focus on the rich OECD countries, but will aim to include also several post-socialist countries of Central Europe for which it is generally difficult to obtain long comparable time series of the FLFP. While innovative, our study will have one obvious drawback: it will not be able to analyse the most changes in the employment-fertility relationship. The latest cohorts for which we can obtain almost complete fertility statistics and employment histories up to age 39 were born in the early 1970s and were in their prime reproductive period in the late 1990s and early 2000s.

So far we have conducted the study for the rich OECD countries, excluding the post-socialist countries of Central Europe. Our findings illustrate that the reversal in the cross-country correlation between the CFLFPR and CFR indeed took place. In countries where the labor force participation of women born in the late 1940s was high the cohort fertility was low. From cohorts born in the early 1950s the cross country correlation between CFLFPR and CFR started to be positive and for cohorts born in the late 1950s and in the first half of the 1960s the correlation coefficient reached the level of even 0.6. Our preliminary results are presented on figure 2. The black solid line represents the correlation for six countries for which we were able to collect the longest time series. It clearly shows the reversal in the cross-country correlation between the two variables. The dashed line represents the correlation for eleven countries for which the time series are already shorter. It does not go back to the times when the correlation was negative but it largely overlaps with the solid line for all the cohorts it covers. Finally, the dotted line presents the cross-country correlation for seventeen countries and encompasses cohorts born in the second half of the 1950s and first half of the 1960s. Consistently with the solid and dashed lines the dotted line shows that the cross-country correlation for the cohorts born in the late 1950s and early 1960s is positive. Altogether the pattern of the change in the cross-country correlation between CFLFPR and CFR seems to be robust to the number of countries covered.

Figure 2. Cross-country correlation between Cohort Female Labor Force Participation Rates and Cohort Fertility Rates for Western OECD countries



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