

Fertility evolution in Belgium and France during the 20th century

Filling the statistic gap with retrospective data

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BACKGROUND AND OBJECTIVE

Whereas the onset of fertility decline since the 19th century has been a popular topic in European historical demography, much less attention has been given to fertility changes in the early 20th century.

Fertility transition in Belgium and France has been widely studied, not only at the aggregate level in the Princeton Project (Van de Walle, 1974; Lesthaeghe, 1977), but also in several local individual-level studies of cities (Van Bavel, 2002; Brée, 2011), industrial areas (Leboutte, 1988; Eggerickx, 2004; Pétilion, 2006) and rural towns (Neven, 2003; Alter et. al., 2010).

However, changes in fertility before 1940 and between 1950 and 1960 remain largely unexplored due to the lack of appropriate data. On the one hand, the use of individual data from public archives which are less than 100 years old (thus covering the 20th century) are prescribed by law. On the other hand, aggregate data are rather poor, as they are mostly available in the form of simple cross-sectional fertility indicators at the district level and only for the periods surrounding censuses (i.e., every 5 or 10 years). These data are not suitable for detailed studies of fertility evolution in the 20th century. The lack of chronological precision, for instance, makes it impossible to apprehend the impact of wars and crisis on reproductive behaviour. Likewise, cross-sectional indicators may hide adaptation strategies to these crises, such as postponement or birth spacing.

In this context, data from recent censuses in Belgium and France offer new perspectives to the study of fertility in the 20th century. Using a retrospective approach, census data can be used to reconstruct the reproductive histories of female cohorts born since the end of the 19th century.

The objective of this study is to examine the reliability of a retrospective approach of fertility using Belgian and French censuses. Several tests are run to evaluate the risks of biases in this approach, and assess its potential to fill the 20th century gap in fertility studies.

ADVANTAGES AND POTENTIAL LIMITS OF RETROSPECTIVE DATA

In the Belgian recent censuses (1961, 1981 and 2001), as well as in French surveys (Enquêtes Famille (1954, 1975, 1982 and 1990) and 1946 census, each female respondent was asked about the number of live births during their reproductive life, as well as the year in which each birth took place. Using this retrospective information, it is possible to reconstruct the entire reproductive histories of several female cohorts born since the end of the 19th century.

The retrospective approach of census data offers several advantages in the study of fertility. First of all, a longitudinal approach of fertility allows us to produce a large range of fine fertility indicators, such as progeny, completed fertility, birth intervals, age at maternity, etc. Fertility behaviour can also be analysed using socioeconomic variables included in the censuses (e.g. education, occupation, etc.). Furthermore, the exhaustive data from censuses allows taking into account the spatial dimension of fertility and compare different regions, districts or even cities and towns, as there are no representativeness issues.

However, the use of retrospective data for the analysis of fertility may be affected by a series of biases:

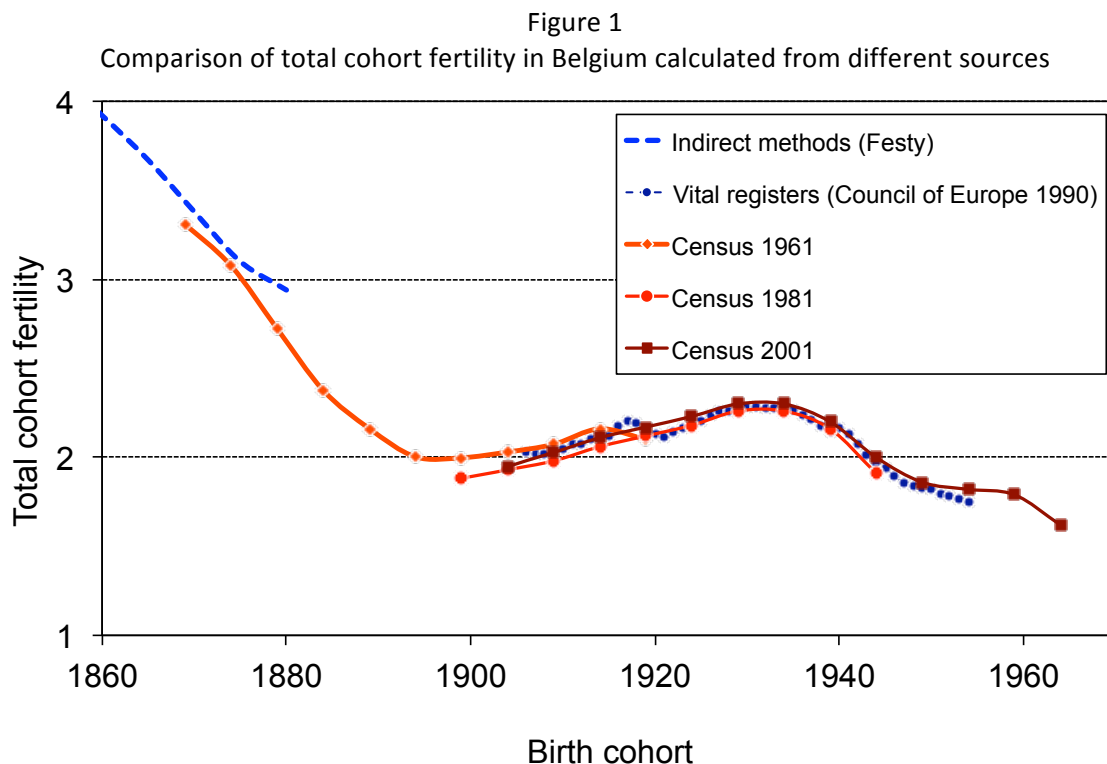
- Memory errors both in terms of number and date of events may affect the quality of the data.
- The number of non-responses may also have an impact, especially if they are determined by socioeconomic selection.
- Selection effects induced by mortality and migration could invalidate a retrospective approach. In fact, such approach is based on the hypothesis that unobserved women (which out-migrated or deceased) would have had the same reproductive behaviour as the observed women.
- In the case of a spatial approach of fertility, internal migration is a potential problem. Whereas the geographic location of women at the census date is determined by their place of residence, they could have lived their reproductive history elsewhere. In other words, the longitudinal fertility indicators in a given place at a given time do not necessarily correspond to cross-sectional indicators of the same place and time.

In sum, a retrospective approach based on census data offers new perspectives to in-depth, longitudinal studies of fertility in Belgium and in France. Nevertheless, this approach can be biased by a certain number of factors, which need to be tested. This poster will present the series of tests made in order to evaluate potential bias problems and validate the use of census retrospective data.

PRELIMINARY RESULTS FOR BELGIUM

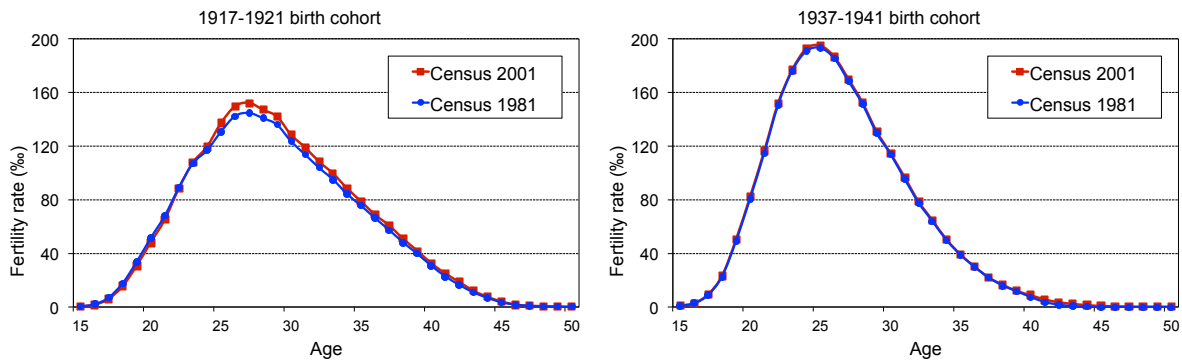
A series of tests have already been run with the Belgium 1961, 1981 and 2001 censuses. Two of them are presented below.

The first test (figure 1) compared the evolution of the total cohort fertility rate in Belgium calculated using three different approaches: a retrospective approach using census data, a direct method vital registers data and indirect methods using different sources. As shown, all the results are very similar.



The second test compared the fertility rate by age calculated for the same birth cohorts using data from the 1981 and 2001 censuses (Figure 2). The differences between the results from the two censuses would be due to selection effects of death or migration or to memory biases. The graphics below show that the differences between the results from the two censuses are very small, even for older birth cohorts. In other words, the biases seem to be insignificant.

Figure 2
Comparison of fertility rates in Belgium by age for given birth cohorts the 1981 and the 2001 censuses calculated from the 1981 and the 2001 censuses



In sum, the preliminary results for Belgium indicates a very low risk of bias associated to the retrospective approach of fertility using census data at the national level. The same tests are currently being made for the French 1946 census.

POSTER PROJECT

In the poster we will first give a brief explanation on the motivation behind this research, namely the interest of a retrospective approach based on census data to fill a 'fertility statistic gap' in the early 20th century. Then, the main validation tests run for Belgium and France will be presented. Finally, we will illustrate the richness of our approach using a selection of fertility indicators calculated for France and Belgium, showing the evolution of different aspects of fertility behaviour during the 20th century.

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