All-time low period fertility in Finland: tempo or quantum effect?

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Abstract

This is a short description of my Master's thesis that I am currently working on. It deals with the decreasing period fertility rates in Finland since 2010 and forecasts cohort fertility.
*Keywords*: Period fertility, postponement, tempo effect, quantum effect, cohort forecasting

1 Introduction

In Finland, the number of live births decreased from 60 980 in 2010 to 50 321 in 2017. The most commonly used fertility index, the total fertility rate (TFR), did also decrease rapidly in the 2010s and experienced an all-time low rate of 1.49 live births per woman in 2017 (see picture 1). The recent years' decline in the number of births and in the TFR is a subject of concern that has been frequently in the Finnish news lately, and the aim with my thesis is to understand the rapid decrease in the 2010s.

The total fertility rate (TFR) is the average number of children that would ever be born to a woman if she were to experience the exact current age-specific fertility rates through her lifetime and she were to live to the end of her child-bearing years. Since period-based measures are by nature synthetic, meaning that no real group of women necessarily will experience the fertility rates of one calendar year through their lifetime, the TFR comes with limitations. Shifts in the TFR depends both on fertility timing, tempo, and by changes in the total number of children women have, quantum (Myrskylä et al. 2013). It is known that postponement of first birth is an ongoing and persistent process in most developed countries (Andersson et al. 2009) and that fertility rates are depressed when women delay childbearing in a given period (Bongaarts and Feeney 1998). Thus, the recent decrease in the TFR could be due to a tempo effect, meaning that women are postponing their births but not necessarily having less children, or it could be due to a pure quantum effect which by time would be seen as a decrease in the completed cohort fertility rate as well.

Picture 1: TFR in Finland in 1960-2017
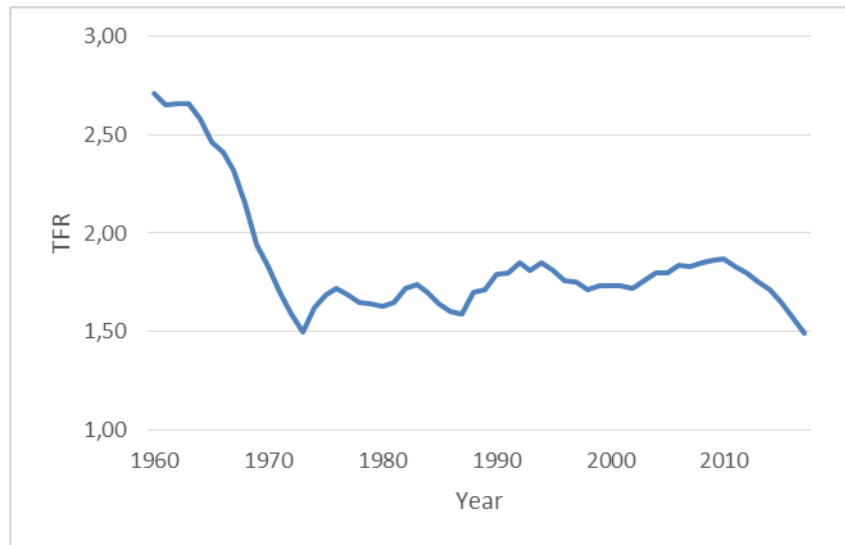
Source: Statistics Finland 2018

2 Goals and methods

My thesis has three main goals; (1) to describe period fertility trends in Finland among age, parity, regions and levels of education, (2) to calculate an alternative tempo adjusted fertility rate that adjust for fertility timing and (3) to forecast cohort fertility in Finland. Period fertility trends will be described by age-specific fertility rates and mother's mean age of childbearing at different points in time. The drop in the TFR will be examined by demographic decomposition (Andreev and Shkolnikov 2012) and the tempo adjusted fertility rate will be computed by the method developed by Bongaarts and Feeney (1998). Cohort fertility will be forecasted mainly by a Bayesian method developed by Schmertmann et al. (2014) but also by simpler methods like Freeze Rates (e.g. Frejka and Calot 2001a) and 5-year linear extrapolation (Myrskylä et al. 2013). By the time of the workshop in August, I will try to complete as many goals as possible. The results will be presented at the workshop.

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