Unexpected and Unprecedented:
Fertility Trends by Birth Order through the Pandemic

Introduction

As the covid-19 pandemic spread in the second quarter of 2020, and lockdowns, furlough and working-from-home became the usual policy interventions, there was an expectation in the popular press that these would have a positive impact on fertility rates. For example, the Daily Mail online had this headline: "Coronavirus baby boom: Relationship expert predicts a ***surge in births*** in Britain in 2021 as quarantined couples seek intimacy during pandemic". Demographers, by contrast, were more ambivalent, extrapolating from previous crises with uncertainty inhibiting plans to have a child. For instance, Berrington et al (2021) wrote: "...we expect that the COVID-19 pandemic will ***depress fertility***...".

What actually happened? For the year 2020 there was little impact on TFRs from the pandemic: any change in conception rates would only be seen in 2021, at least nine months after the start of widespread lockdowns. TFRs had been declining across most low-fertility countries for a decade or more (Portugal being the exception to the rule). But when the data started to be compiled for 2021 there was a surprise (for some!): the TFR for that year, the one most impacted by pandemic measures, spiked. Across 25 countries with data in the Human Fertility Database, the TFR rose by an average of 0.03: not a huge uptick, but widespread. In addition, using data from national statistical offices, these countries also saw a marked rise in fertility in 2021: Germany, Australia, New Zealand. Following this micro Baby Boom, most countries saw a renewed sharp fall in 2022.

The question this study addresses is whether there were differentials in the TFR rise by birth order. We then compare the 2021 uptick to that seen in the year 2000.

Data source

We use the data published in the Human Fertility Database (https://www.humanfertility.org/). The TFR by birth order table is tfrRRbo.txt. There were 21 countries with birth order data for the years 2019 though 2022. Comparable data for the millennium uptick is available for only 17 countries.

TFR year-on-year changes by birth order

Figures 1, 2 and 3 plot the changes in TFR, decomposed by birth order, comparing each successive year with that of the previous year, from 2019 through to 2022. Apart from a very modest rise in TFR in Finland, the usual trend from 2019-2020 was a decline in overall TFR, driven mostly by declines in birth orders TFR2 and higher (Figure 1).

The sudden reversal of this trend in 2021 is seen in Figure 2. Notably, the change is not driven by a rise in first birth rates (TFR1) but in higher order births. In six of the 21 countries that had an increase in overall TFR, the change in TFR1 is actually negative. Even in countries that saw a small rise in the TFR1, the increase in higher order births is greater. In 3 of the 4 countries that had a decline in TFR, the fall in first birth fertility was much larger than that of higher order births (the changes in Taiwan were minimal).

Figure 1: Changes in TFR1, TFR2 and TFR3+ from 2019-2020

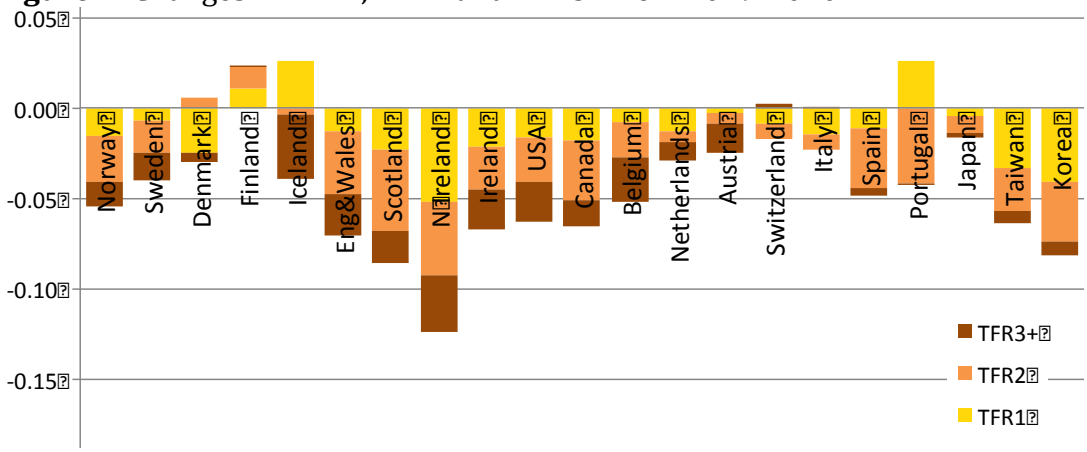


Figure 2: Changes in TFR1, TFR2 and TFR3+ from 2020-2021

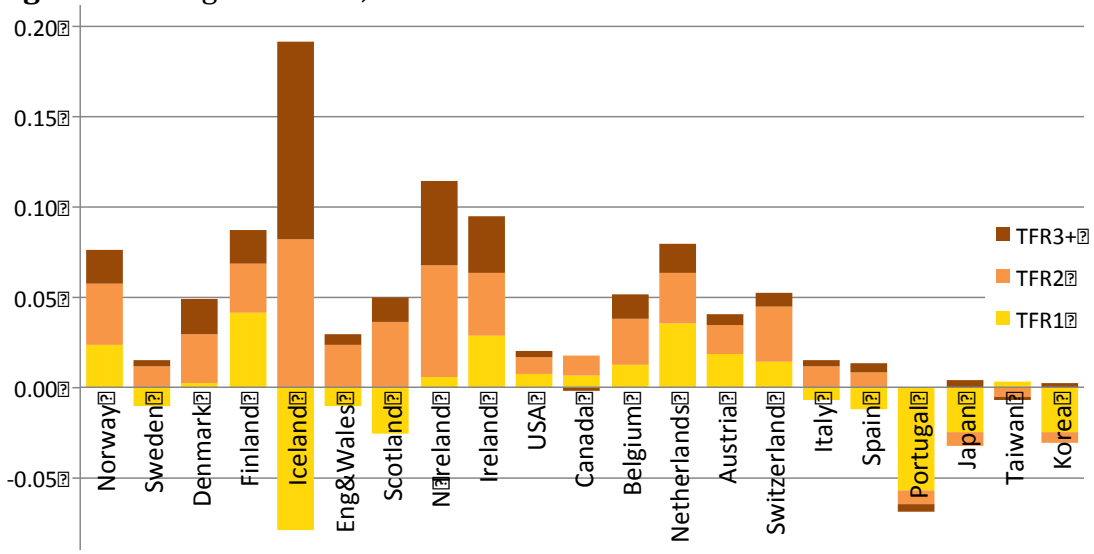
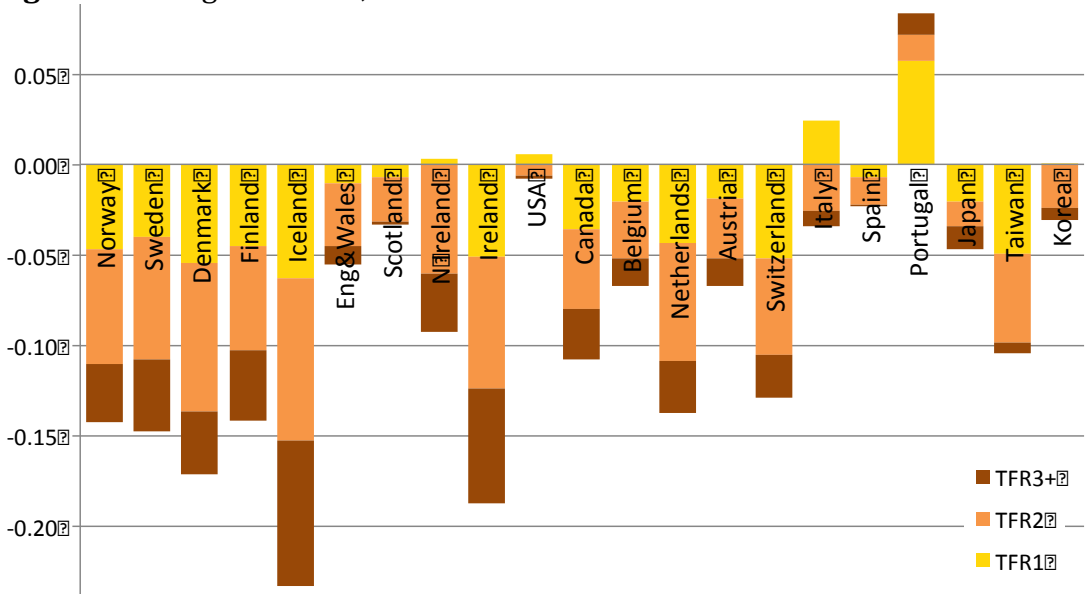


Figure 3: Changes in TFR1, TFR2 and TFR3+ from 2021-2022



In 2022 the decline in TFRs was sharp and particularly marked for birth order 2 and above. Only Portugal, that has bucked most of the fertility trends since 2000, saw a rise in its TFR (see Figure 3). Italy and the USA saw small rises in first birth fertility but these were exceeded by declines in higher order births.

Comparison with the millennium uptick

Brief but widespread upticks in the TFR are rare. However, there was one recent example and it is enlightening to compare the 2021 uptick with that seen in the year 2000, which was of a comparable order of magnitude (though not quite as large except in Taiwan). See Figures 4-6 for the year-on-year changes from 1998 through 2001. During the 1990s fertility rates had been declining but were generally bottoming out (Burkimsher 2015). The year 2000 was a single year uptick, prompted by some couples who fancied the idea of a new baby for the new millennium. Taiwan reflects Chinese culture and the year 2000, being a Dragon Year, was considered auspicious for having a child; a similar uptick for the same reason was seen in 2012. To summarise, the millennium uptick was driven by a very different demographic to that seen in 2001: the first by childless couples; the pandemic uptick by couples who had already started a family.

Figure 4: Changes in TFR1, TFR2 and TFR3+ from 1998-1999

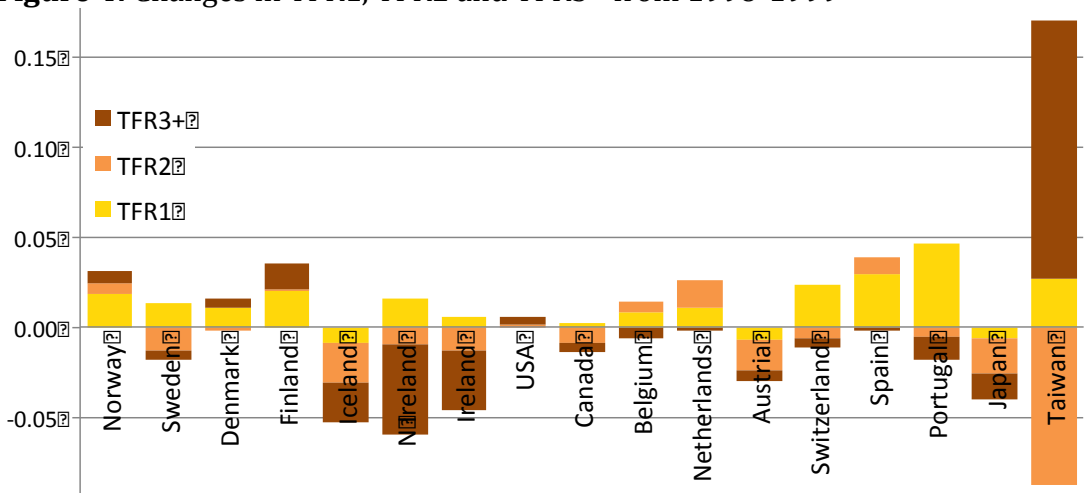


Figure 5: Changes in TFR1, TFR2 and TFR3+ from 1999-2000

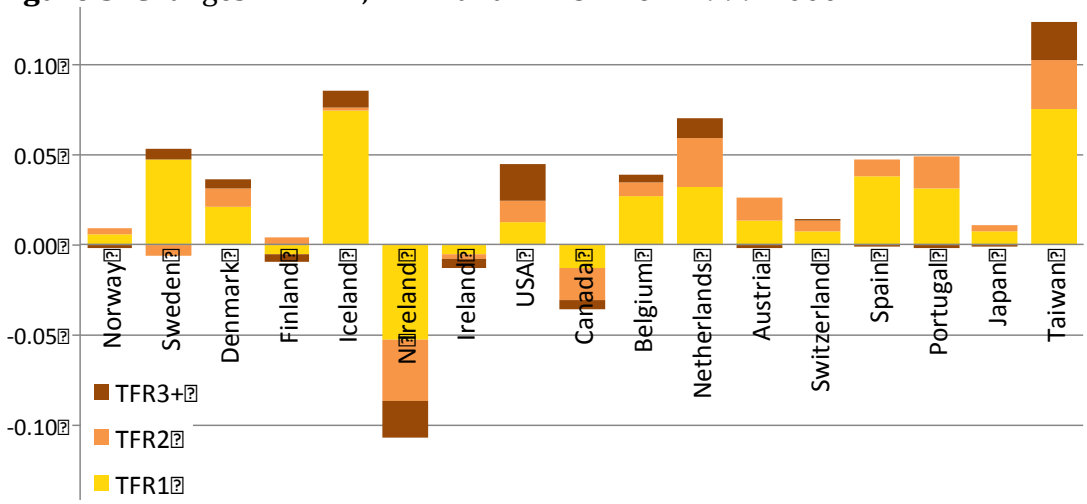
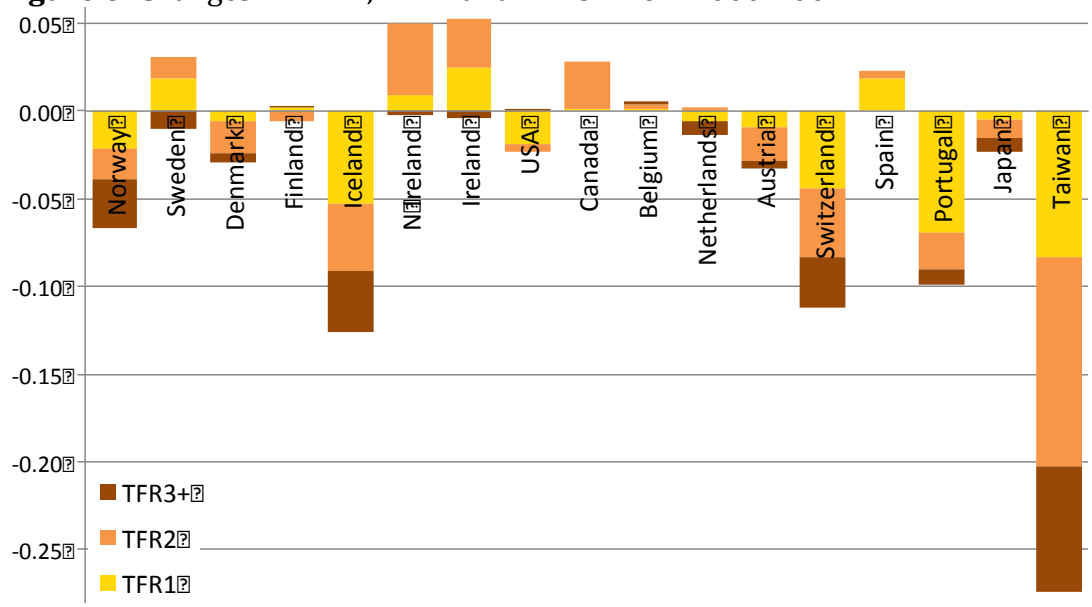


Figure 6: Changes in TFR1, TFR2 and TFR3+ from 2000-2001



Conclusions and policy implications

The sharp uptick in TFR in 2021 as by-product of the pandemic was a surprise to many. The fact that it was driven by second and higher order births is unprecedented and surely could not have been forecast? 2020-2022 was a period of widespread government interventions aimed at slowing the spread of covid-19 and shielding the vulnerable. We may draw tentative conclusions that at least some of those interventions stimulated fertility: these included furloughs, the expansion of flexible working (working from home, flexible hours, etc.) and financial support. But which of those was most supportive of couples thinking of having another child? The Generations and Gender surveys carried out in some countries at that time may illuminate the decision-making process.

The contrast between the 2000 and 2021 upticks in TFR is significant and has important policy implications: there are different decision-making processes at work for couples planning a first child compared to those wanting a second or higher order child. The preconditions for the childless to start a family are (we postulate): stability (in employment) and the ability to plan ahead; suitable housing; and finding (and having the possibility to live with) the right partner: these all became complicated during the pandemic. Without addressing those challenges then governments will not see any sustained rise in fertility rates. Short-term upticks can happen with extra financial support, childcare availability and policies to improve the work-life balance, especially helping couples who have at least one child, but without couples starting a family then sustained fertility rate rises cannot happen. A new millennium and its temporary incentive for starting a family happens rather rarely!

Reference

Berrington, Ann, Joanne Ellison, Bernice Kuang, Sindhu Vasireddy, and Hill Kulu. 2021. Recent Trends in UK Fertility and Potential Impacts of COVID-19. CPC Working Paper 95, ESRC Centre for Population Change.

Burkimsher, Marion, 2015. Europe-wide fertility trends since the 1990s: Turning the corner from declining first birth rates. *Demographic Research*, *32*, pp.621-656.