

Does one have to be healthy to opt to have children?

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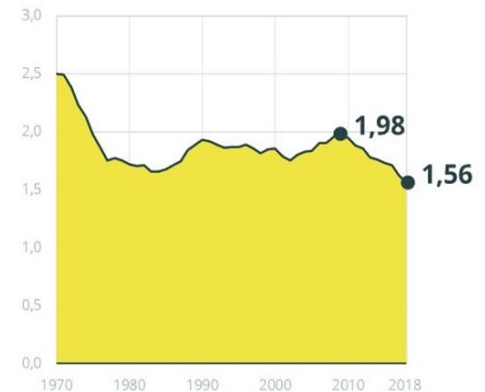
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Background

- Fertility all time low in Norway – TFR 1.56 in 2018
 - Declined steadily after 2009
- Research efforts directed to explain the decline
 - Also relevant for projections – will the downward trend continue?
- Extensively analyzed fertility determinants (e.g. education, income, labor market participation) influence fertility because they structure time and money available, and also proxy preferences
- Poor health may also constrain fertility
- Health still remarkably understudied as a fertility determinant



Aim

- Explore the association between health and fertility, using uptake of **doctor-certified sickness absences (SA)** and **long-term health-related benefits (LTB)** as proxies for health
- Examine whether compositional changes in health distributions or changes in health-fertility associations have contributed to the distinct fall in TFR in Norway since 2009, and perhaps should be included in discussions re. future fertility assumptions
- Investigate if health-related associations differ across socio-demographic characteristics, and thus influence fertility differently in various groups

Theoretical framework

- Many ways in which poor health may influence fertility
- Apply an economic-demographic framework
- Supply, regulation costs and demand (Easterlin & Crimmins 1987)
 - Supply defined as number of children one would have without regulation and depends on the chance of conceiving and for bringing a pregnancy to term (Bongaarts 1983)
 - Regulation costs refers to the availability, affordability and acceptability of contraception
 - Unlikely that poor health operate through this channel as several alternative contraception methods exist
 - Demand or fertility desires defined as number of children one would ideally like to have
 - Depends on purchasing power, costs of childbearing and -rearing, the preferences for spending time and money on raising children rather than on alternatives, and norms

Previous research I

- Many studies examine the possible impact of fertility on health, but few look at the reverse relationship
- Majority directed at supply side, centered around specific illnesses
- Less well explored for general health and/or self-reported health
- On demand side
 - Intended and unintended pregnancies
 - Fertility desires and intentions by health status
 - Counselling processes for specific conditions that might affect conception, pregnancy outcomes or the health of women/offspring

Previous research II

- Poor health may lower supply at a population level
 - Decrease in sexual desire among persons in poor health
 - Subfecundity (difficulties conceiving or carrying a pregnancy to term) due to illness or treatment
 - E.g. Nordic studies suggest many cancer forms reduce fertility
 - Other studies examine disabilities, mental health and nervous system disorders
 - Few studies on musculoskeletal disorders, but suggest lower fertility
 - Main focus on fertility intentions and adverse effects on the health of mothers/offspring
 - Poor health may influence the chance of finding (and keeping) a partner
- Demand side may also be affected
 - Poor health may reduce incomes, affecting purchasing power and fertility desires negatively
 - High treatment costs may have the same effect in countries where health care must be bought in the open market
 - Poor health in younger ages might result in a lower education
 - Poor health may also influence preferences, negatively or positively

Data and methods

- Nationwide registry data on women aged 16-45 from 2004-2018
- Analyze first, second and third births separately, using
 - Descriptive statistics
 - Logistic regressions
 - Marginal effects
- Health is proxied by the uptake of sickness absence benefits (SA) and health-related long-term benefits (LTB)
- Use annual observations with lagged time-varying covariates for education, income, employment, SA and LTB

Descriptives

- Pronounced differences in background characteristics between women at risk for a first, second or third birth
 - Especially true for educational enrollment and level of education
- Large share of women active in the labor market (80-90%)
 - First births more frequent among women who work
- The share receiving LTB is relatively stable across parities
- The share who uses SA is ~ 3x for mothers compared to childless women

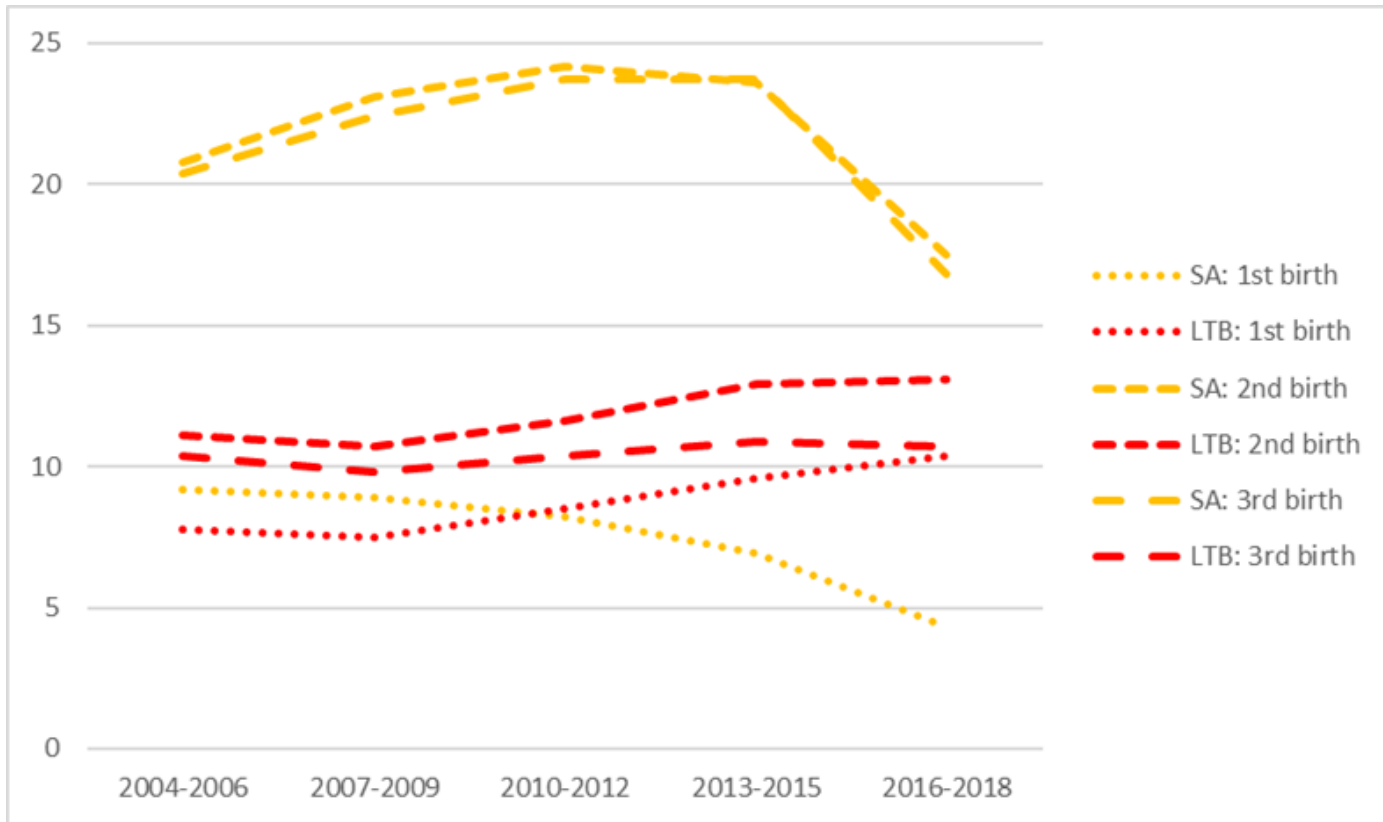
	First birth		Second birth		Third birth	
	Pyrs	%	Pyrs	%	Pyrs	%
General health						
Healthy	5674939	83.7	1681065	66.4	2517831	68.1
Only sickness absence (SA)	510154	7.5	557231	22.0	794340	21.5
Long-term benefits (LTB)	592227	8.7	294847	11.6	384596	10.4

Results

- Increased risk of birth for SA, decreased risk for LTB
- Weaker associations for higher parities
- The negative associations of LTB for higher parities driven by low educated

	FIRST BIRTHS		SECOND BIRTHS		THIRD BIRTHS	
	OR	95% CI	OR	95% CI	OR	95% CI
Model 1: General health^a						
Healthy	1	ref	1	ref	1	ref
Only sickness absence (SA)	1.32	1.31-1.34	1.17	1.15-1.18	1.06	1.04-1.07
Long-term benefits (LTB) ^b	0.52	0.51-0.53	0.57	0.56-0.59	0.73	0.71-0.75
Model 2: Health and educational level						
Healthy, low education	1	ref	1	ref	1	ref
Healthy, high education	1.36	1.34-1.37	1.98	1.95-2.00	1.88	1.85-1.91
SA, low education	1.40	1.38-1.43	1.28	1.26-1.30	1.16	1.14-1.19
SA, high education	1.67	1.64-1.71	2.12	2.08-2.15	1.82	1.78-1.87
LTB, low education	0.50	0.49-0.51	0.57	0.56-0.59	0.77	0.74-0.80
LTB, high education	0.84	0.81-0.87	1.20	1.15-1.25	1.25	1.18-1.33

Changes over time in health



SA



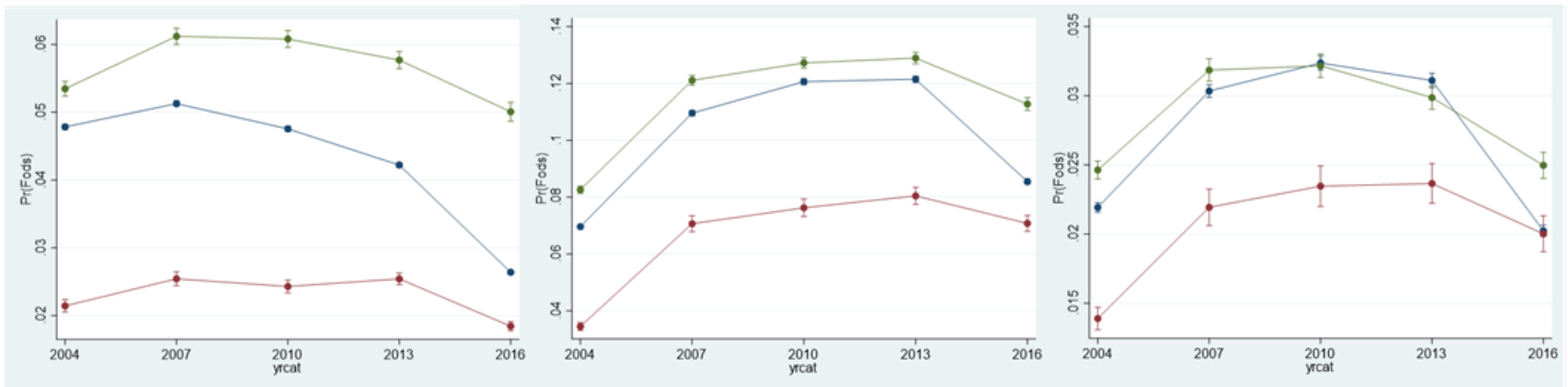
LTB

Changes over time in sickness absence (SA) and long-term benefits (LTB) for women at risk for a first, second or third birth.



Changes over time in fertility by health

- Sharpest decline for healthy women (blue lines)
- LTB uptake is negatively associated with fertility (red lines)
 - The association weakens over time
- SA uptake is positively associated with fertility (green lines)
 - The association strengthens over time



Adjusted predictive probabilities of a first (left panel), second (mid-panel) or third (right panel) child for women by proxies for general health.

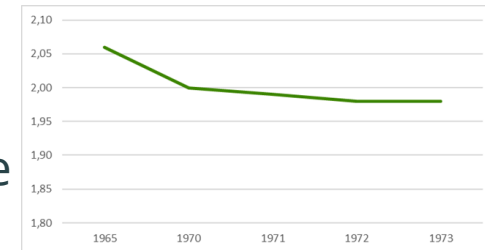
Preliminary conclusions

- LTB uptake is negatively associated with fertility
 - The association weakens over time
 - In addition, such uptake is relatively rare
- SA uptake is positively associated with fertility
 - The association strengthens over time
 - SA uptake is common but decreases over time
- If the decrease in SA reflects a strong labor market preference or attachment, it may explain parts of the observed decline
 - But the fertility decline is most pronounced for healthy women
- Health as fertility determinant warrants further research
 - Maybe worth considering in the work on fertility assumptions?



Implications for fertility projections

- In general: Difficult to make fertility assumptions
- Period-TFR relatively unstable, cohort-TFR more stable
- Supply/demand framework warrants information on many factors
 - Education, income and labor market participation well studied
 - Health rarely studied
 - Norms and preferences unstable over life course and calendar time, and difficult to obtain from readily available data sources
- Using results from previous studies has not enabled us to adequately project the recent fertility decline
 - Unlikely that this will get easier in the future
- Other methods warranted?



Thanks!

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