

Demographic Transition and Unmarital Fertility in Southern Sweden (1813-1909)

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Theory

Demographic transition theory predicts a gradual decrease in fertility after industrialization which was confirmed for the South Sweden (Bengtsson & Dribe, 2014).

However, the knowledge about unmarital fertility patterns is scarce. Single mothers may have followed different patterns of the first birth. Modernization of values and improved living standards that emerged after industrialization may have increased their capacities to give birth without having a marriage.

Hypotheses

(H1) The first-birth fertility rates among unmarried women increased after industrialization comparatively to a preindustrial period.

(H2) For unmarried women, first-birth fertility rates increased among those in urbanizing areas, upper social strata, and younger cohorts.

Data and Methods

We use longitudinal individual-level data from the Scanian Economic-Demographic Database 1813-1910, which contains both demographic and socioeconomic information. In the analysis we use Cox proportional hazard model:

$$\ln h_i(a) = \ln h_0(a) + \beta x_i$$

where $h_i(a)$ is the hazard of first birth for the individual i at duration a (time since turning 15 years or in-migration after 15, before 49 years), $h_0(a)$ is the baseline hazard, that is for the individual who has the value zero for all the covariates, and β is the vector of parameters for the covariates x_i .

As we want to keep both marital and unmarital individuals in one model, we separate them based on the:

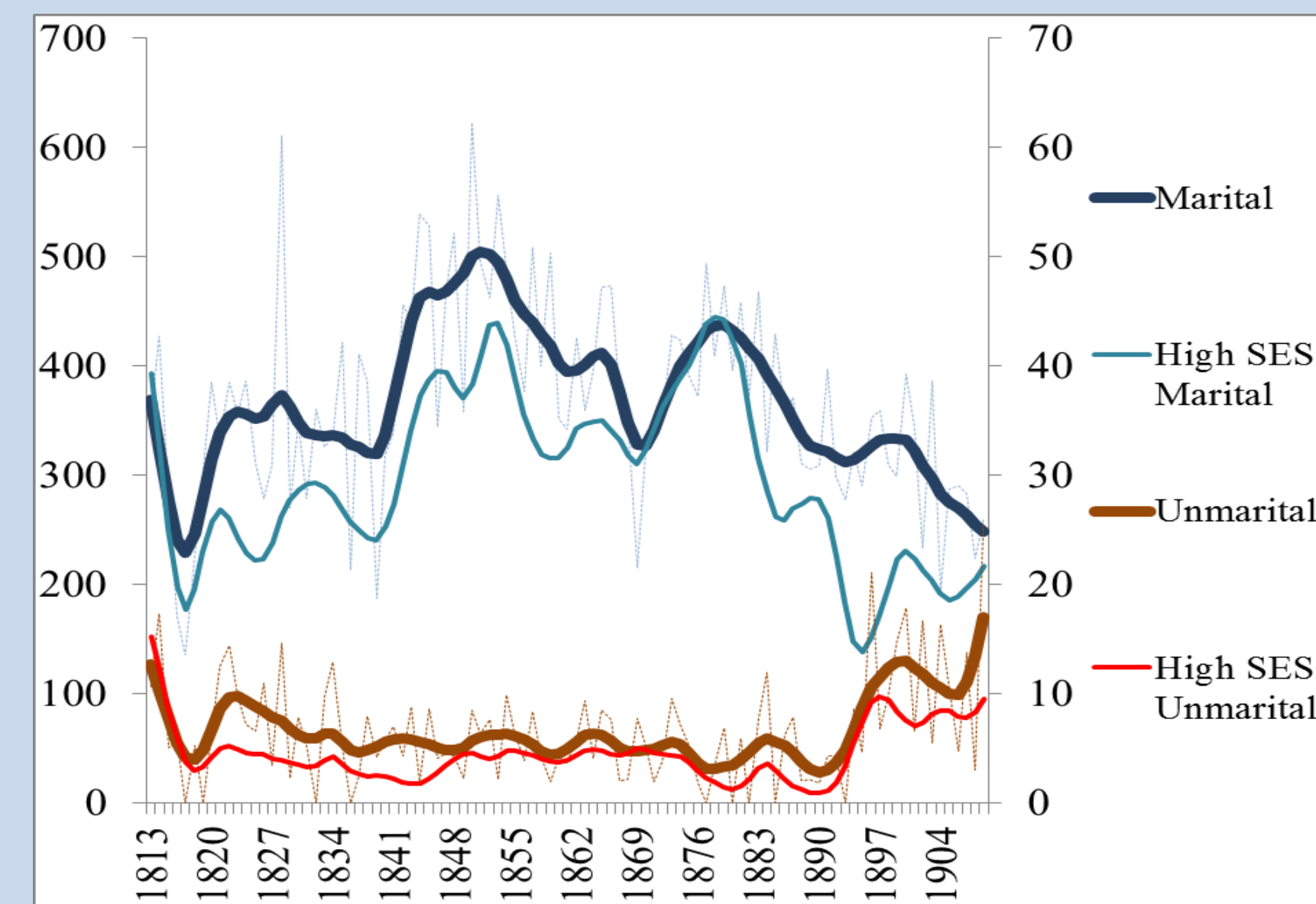
Periods: 1813-1839 (the beginning of agricultural transformation), 1840-1869 (agricultural transformation), 1870-1894 (early industrialization), and 1895-1909 (industrial breakthrough and modernization of values).

Regions: *Urbanizing areas* include women residing in Kävlinge and Hög, *rural areas* include those lived in Sireköpinge, Halmstad or Kågeröd.

Social Economic Status (based on SOCP0): *low SES* (1 unskilled, 2 semiskilled and 3 skilled) and *high SES* (4 middle class and 5 elite)

Age groups: younger and older than 30

Marital and unmarital first births/population at risk (15-49), per 1000



Relative risks of first birth from Cox proportional hazard model

	(ALL)	(≤30)	(≥30)	(HighSES)	(LowSES)	(Urban)	(Rural)
1813-1839(ref)	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1840-1869	1.008	1.096	0.987	0.996	1.054	1.354***	0.982
1870-1894	0.898**	0.972	0.886	0.877	0.883**	1.344***	0.833***
1895-1909	0.879***	0.941	0.757***	0.677***	0.831***	1.075	0.790***
married(ref)	1.000	1.000	1.000	1.000	1.000	1.000	1.000
unmarried	0.009***	0.007***	0.0432***	0.003***	0.017***	0.008***	0.009***
widow or not together	1.139	1.374*	0.983	1.560	1.425**	1.153	1.331*
rural(ref)	1.000	1.000	1.000	1.000	1.000		
urban	0.913**	0.993	0.863**	0.849**	1.007		
15-24(ref)	1.000	1.000		1.000	1.000	1.000	1.000
25-29	0.836***	0.806***		0.844*	0.823***	0.823**	0.857***
30-34	0.535***			0.567***	0.520***	0.537***	0.554***
35-39	0.329***		0.670***	0.325***	0.342***	0.314***	0.346***
40-44	0.110***		0.242***	0.122***	0.114***	0.091***	0.121***
45-49	0.012***		0.029***	0.012***	0.014***	0.009***	0.013***
unmarried*1840-1869		0.720	0.737	0.821	0.576**	0.716	0.822
unmarried*1870-1894		0.685*	0.484*	0.496	0.551**	1.001	0.609**
unmarried*1895-1909		2.132***	0.769	4.554***	1.182	2.723**	1.798***
widow or not together*1840-1869		0.861	0.598	0.583	0.794	1.795	0.574**
widow or not together*1870-1894		1.047	0.563	1.735	0.828	1.758	0.782
widow or not together*1895-1909		0.825	0.737	0.782	0.603	0.711	0.710
Individuals	14812	11916	4444	8918	9034	4508	10313
Births	3953	2411	1542	2819	1134	1164	2789
Time at risk	55712	40177	15534	23782	23990	15533	40178
chi2	12676.1	9910.4	2242.1	4016.8	7079.8	3500.4	9255.8

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Results

As the graph for marital and unmarital first birth demonstrates, marital fertility indeed exhibited gradual pattern of declining in the end of observed period (during industrialization). This decline was observed earlier among women with higher SES indicating that different social groups experienced demographic transition not in the same way.

We continue this argument by separating one more social group—unmarried women. Modernization of values and improved living standards made it possible to maintain a household without a partner. Our analysis confirms this expectation. We find support to our hypotheses by analyzing the net effects of relative risks of the first birth.

H1. Relative risk of the first birth among unmarried women in 1895-1909 is 1,7 times of that in 1813-1839, and it is highly significant.

H2. We document a significant increase of unmarital fertility among women in the following subgroups in period 1895-1909 compared to 1813-1839:

- 3,1 increase for women with high SES;
- 2,9 increase for women residing in urbanizing areas;
- 2,0 increase for women younger than 30.

Discussion

To conclude, modernization and unmarital fertility are positively associated. However, the presence of women who tend to marry soon after the first birth among the unmarried may well bias our results. Nevertheless, the rise of nonmarital fertility in the later period compared to the previous stable movements points to some important socio-economic changes. We will continue to work on that further.



References

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