

# The Relationship between Socioeconomic Status and Marital Fertility in 18<sup>th</sup> Century France

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## Why?

The Princeton project on the history of European population concluded that the decline of marital fertility during the late 19th century was unrelated to socioeconomic changes. Recently, there has been a rise in the number of revisionist studies; while not arguing that the economy was the prime driver behind fertility change, insist that this role has been underplayed by the project. Many of these studies push for further research into the relationship between socioeconomic variables and the change in fertility during this period

## Our interest

We are interested in the relationship between socioeconomic status and the level of marital fertility in France. It was here, in the late 1790s, that marital fertility entered a sustained widespread decline, long before anywhere else in the World

## The data

The data to be analyzed is taken from Louis Henry's national random sample of 41 villages, roughly covering a span of over 2 centuries, from the late 17th to early 19th centuries. This data is the result of the application of the techniques of family reconstitution to parish registers



## Our Hypothesis

### Pre-modern/pre-fertility decline

Take, for example, a pre-modern community whose average living standards oscillate between subsistence and below subsistence levels. Assuming natural fertility is the norm, it is clear that the wealthier members of this hypothetical community will, on average, have higher fertility rates than those who are poor. This is because wealthier members will have better and more consistent nutrition, will suffer less still births and can afford to get married at a younger age.

### Early-modern/early-fertility decline

However, as this community develops and fertility control begins to be practiced on a wide scale we expect the relationship between socioeconomic status and fertility to change. The initiation of fertility decline may itself be caused by socioeconomic

forces, amongst the wealthy, where some families who for generations maximized their fertility, grow concerned about the division of wealth among their offspring and begin to reduce their fertility accordingly. Further, amongst the middle and upper classes, a greater premium is placed upon human capital accumulation, and parents are induced to rationally control their fertility and substitute child quantity for quality. For these reasons, we expect a trend towards lower family size to originate from the wealthy/elite class of society and diffuse through the social order until finally a fertility transition is complete.

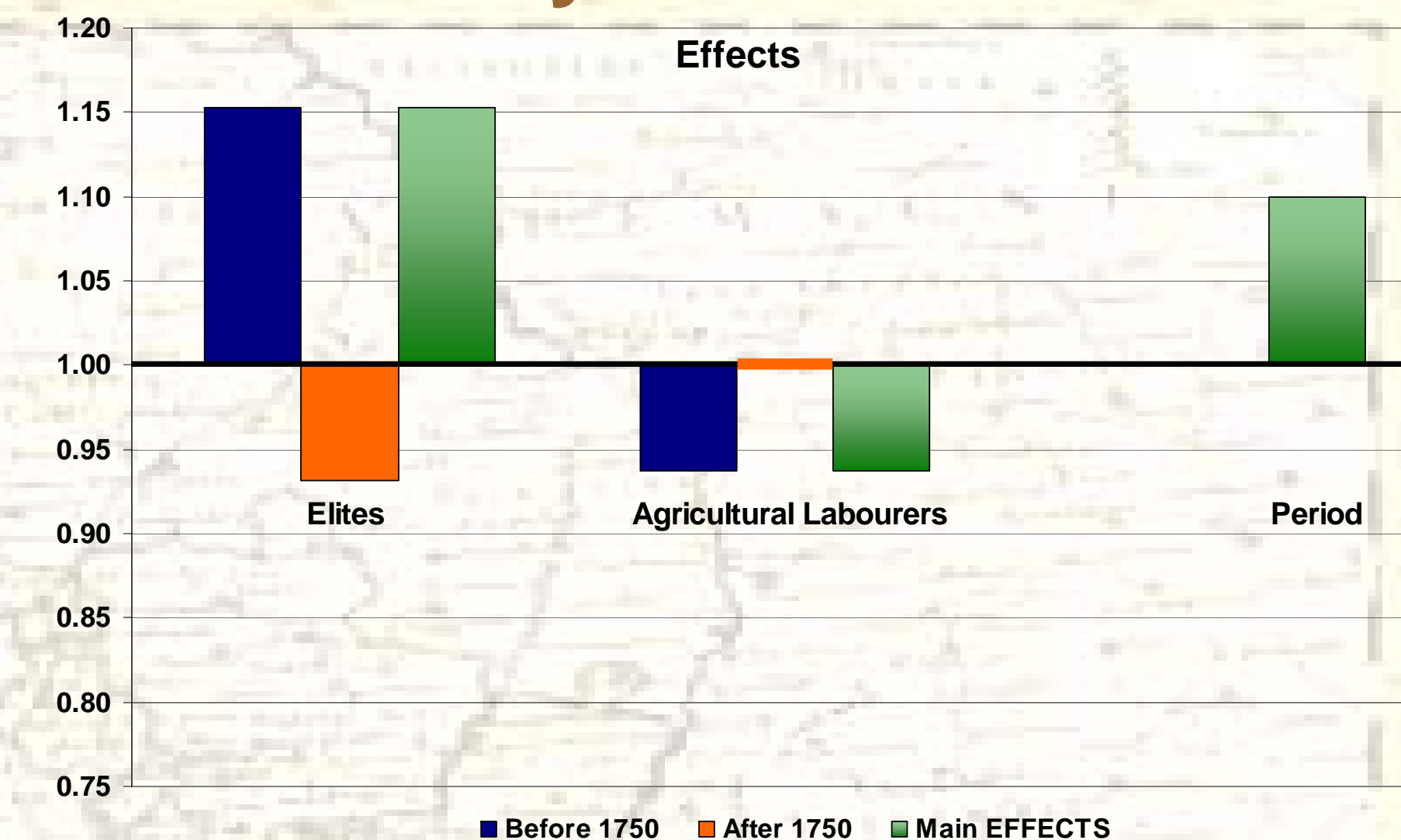
	Relationship between Socioeconomic Status and Fertility Rate	Correspondent years w.r.t France
Pre-modern/pre-transition	+	1675-1750
Early-modern/early-transition	-	1750-1800

## Our Method

The structure of the original Henry data enabled us to apply Event History analysis to socioeconomic differentials in marital fertility. Since we were dealing with recurrent events, we used a 'counting process' approach within the framework of a Cox Proportional Hazard model. Here, our dependant variable is the hazard of a birth, with our independent variables being occupational groupings, period and interaction terms between these. We also include region, children ever died and age at marriage. The model was estimated with robust standard errors, which adjust the estimated variances of the regression coefficients.

$$h(t, X) = h_0(t) \exp[\sum \beta_i X_i]$$

Variable	Hazard Ratio	
<b>Occupations</b>		
Elites and Professional	1.15	*
Middle and Lower Occupations	-	
Agricultural Labourers	0.94	
<b>Period</b>		
Before 1750 (Pre-transition)	-	
After 1750 (Early transition)	1.10	**
<b>Interactions</b>		
Elites * After 1750	0.73	***
Middle* Before 1750	-	
Ag. Lab.*After 1750	0.97	
<b>Region</b>		
North East	-	
North West	0.94	
South East	0.82	***
South West	0.81	***
<b>Individual Characteristics</b>		
Children ever Died	1.84	*
Age at Marriage	1.02	**
Log pseudolikelihood	-33947.137	p<0.1 *
Number of observations	5698	p<0.05 **
Wald chi2(10)	76.71	p<0.01 ***
Prob > chi2	0.0000	



## Our Results

The hazard ratios for the independent variables, calculated by the Cox regression are reported in the preceding table. For ease of interpretation, we have translated these into marginal and main effects.

The main effects, illustrated above, indicate that the hazard for a birth was 10% higher after 1750, compared to before 1750. Regarding socioeconomic status, members of the elite and professional class had a 15% higher hazard of a birth, relative to the fertility of the mid-level occupations, while agricultural laborers had a 6% lower hazard.

The marginal effects combine the main effects with those of the interaction terms in our model. They reveal substantial differences between the 2 periods. Before 1750, the hazard of a birth for the elite and professional class was significantly higher (15%) relative to the mid level occupations, where as the agricultural laborer class had a hazard 6% lower. The relationship between socioeconomic status and fertility reverses after 1750, where the elite and professional classes have a 7% lower hazard than the mid level, with the agricultural class having a higher hazard, equal to that of the mid level.



## Our Conclusion

Our hypothesis predicted exactly the course of the changing relationship between socioeconomic status and fertility. However, we are worried about the Cox models assumption of proportional hazards, as it doesn't hold perfectly in this case. Problems of this nature require further time than was available, also, deeper consideration of other adjustments, for instance including more explanatory variables, should be pursued in any further research.