

The Demographic Transition and The Baby Boom

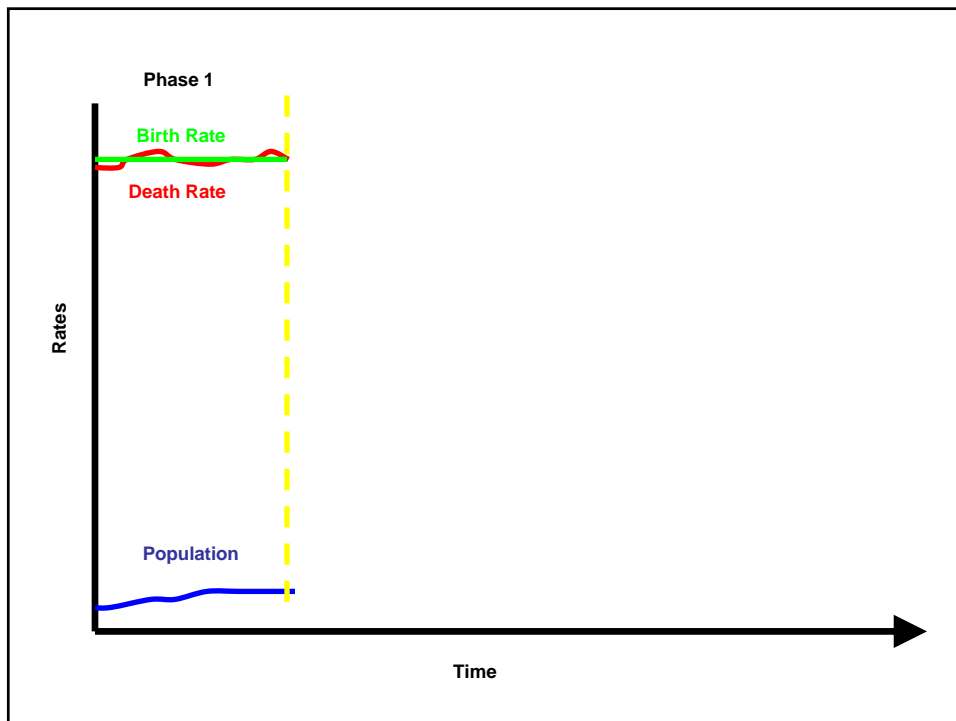
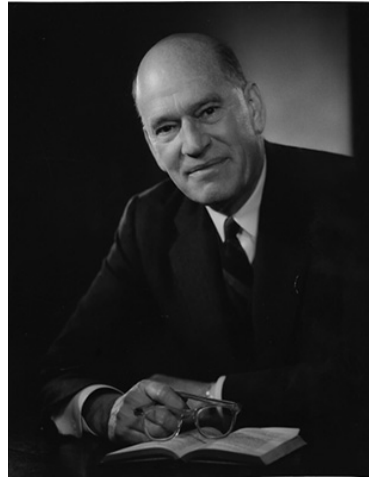
- Origins of the concept of demographic transition
- Four stages of the Demographic Transition
- Historical data
- The exceptions: France and the U.S.
- European Fertility Project
- Baby Boom
- Easterlin relative cohort size thesis

Warren Thompson (1929)

- Classified countries into three groups:
 - High birth rates and high but declining death rates
 - Declining birth rates and death rates, with death rates declining faster
 - Rapidly birth rates and death rates, with birth rates declining faster
- Assumed that these represented historical stages
- He had no data on a pre-transition population, and no post-transition population existed yet

Notestein (1945)

- Model of population change based upon *effects of economic development*.
- *Based on the experience of the Western world*, it was used for decades as a model to predict what should/would happen to developing countries eventually.
- All countries pass through four stages to a state of maturity.



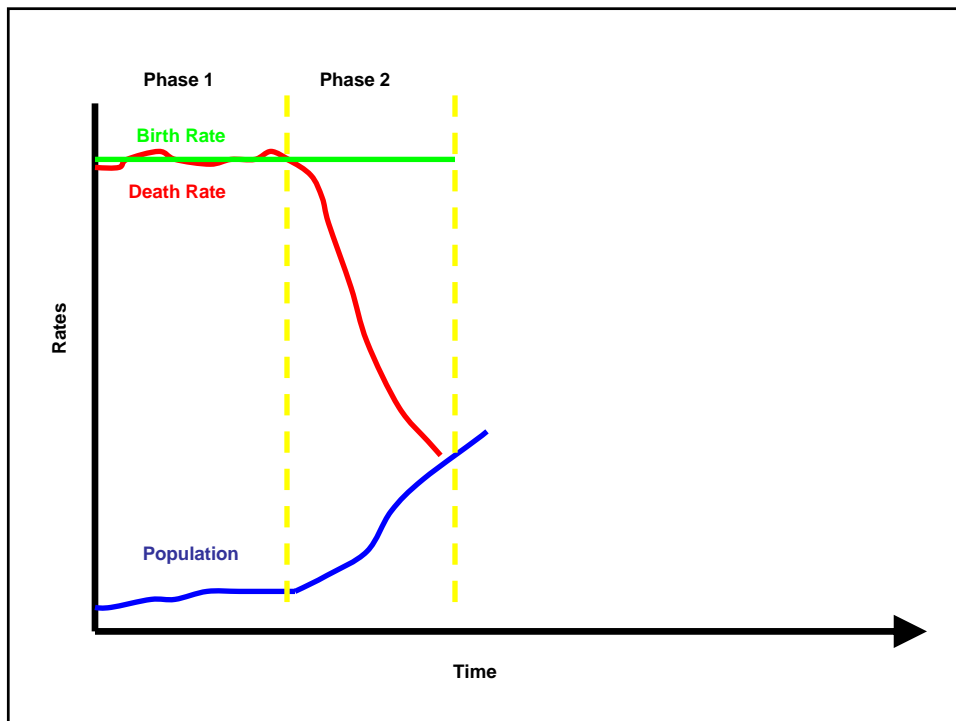
Stage 1: High steady birth rates and high but fluctuating death rates.

Two rates are approximately equal, therefore, low natural increase rate.

Population grows slowly, if at all.

The death rate fluctuates due to war and disease.

Low income, agricultural society.



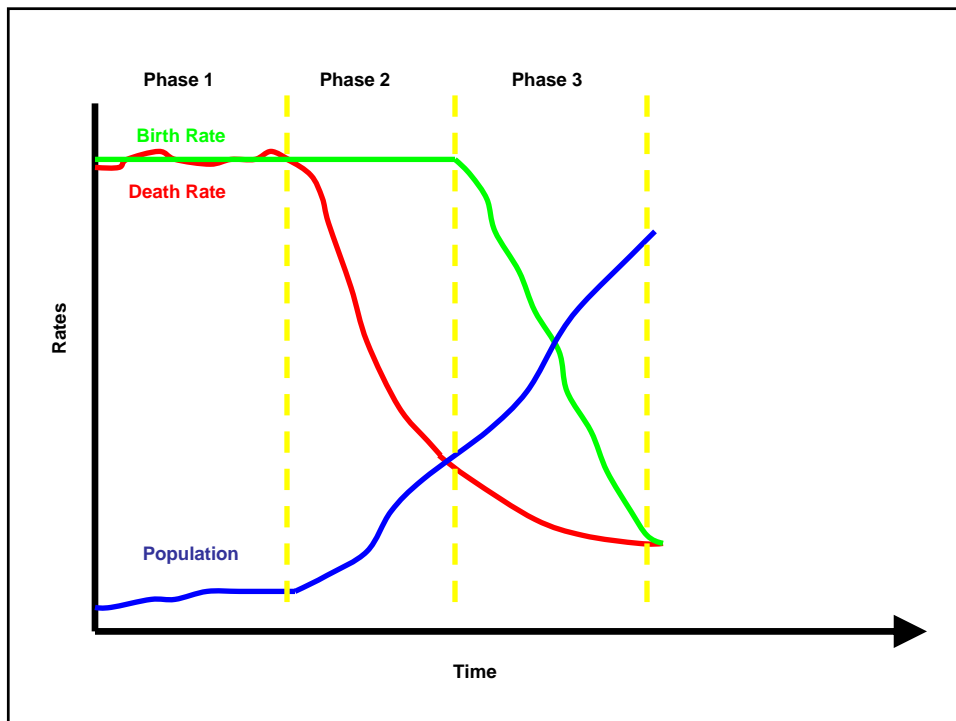
Stage 2: Dramatic decline in death rates; high birth rates remain high.

Onset of industrialization.

Improvements in health and medical advances.

Improvements in food production.

Population growth rate soars.

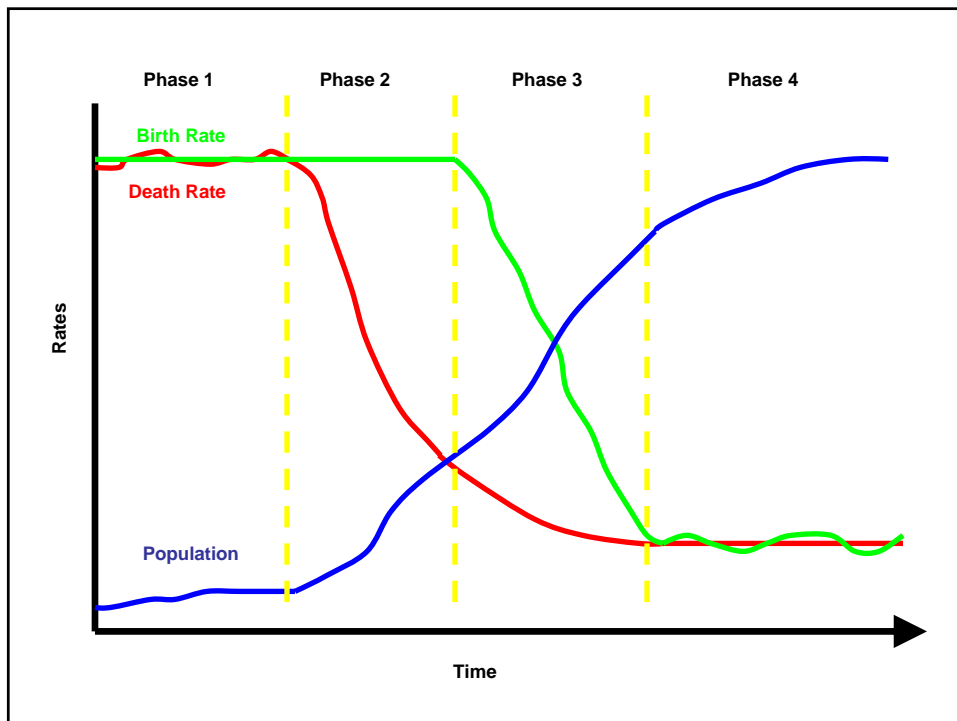


Stage 3: Low death rates; birth rates start declining.

Natural increase rate declines.

But population continues to grow.

Birth rate declines due to voluntary decisions to reduce family size aided by improved contraception and to improved standard of living.



Stage 4: Low steady death and birth rates.

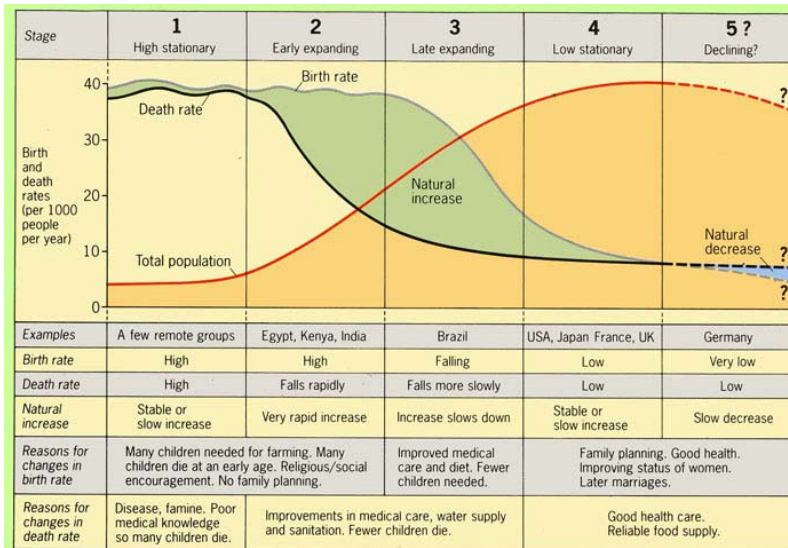
Low natural increase rate, similar to Stage 1.

Population growth rate falls.

Population is large but not growing.

Four stages

1. Birth rate and death rate are high and cancel each other out. Population fluctuates for short periods and growth is limited
2. Death rate declines but the birth rate experiences very little change, creating a period of rapid growth
3. The birth rate begins to drop and the death rate reaches a low level, pop growth continues but begins to slow down
4. Both the birth rate and death rate are low with small fluctuations: pop growth is limited and in some years it may decline

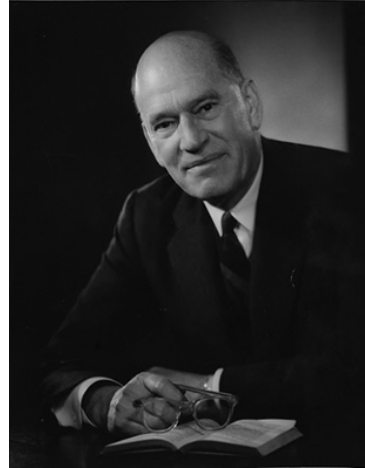


Fifth stage?

- Countries with an aging population where fertility has declined below replacement and the overall population has begun to decline
- Japan, Southern and Eastern Europe

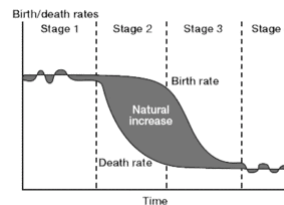
Notestein

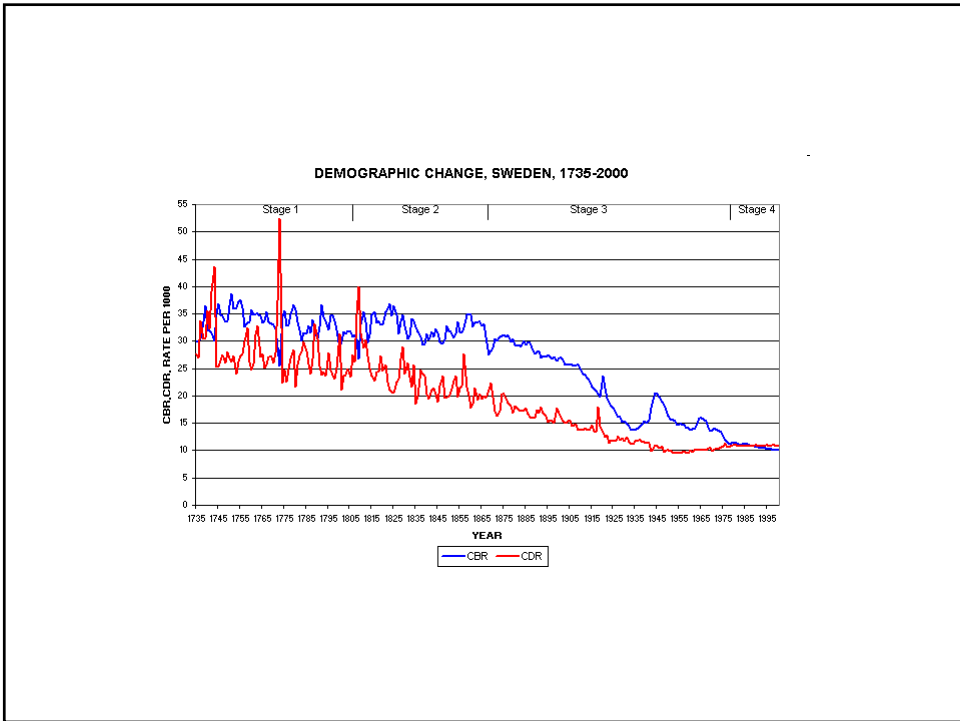
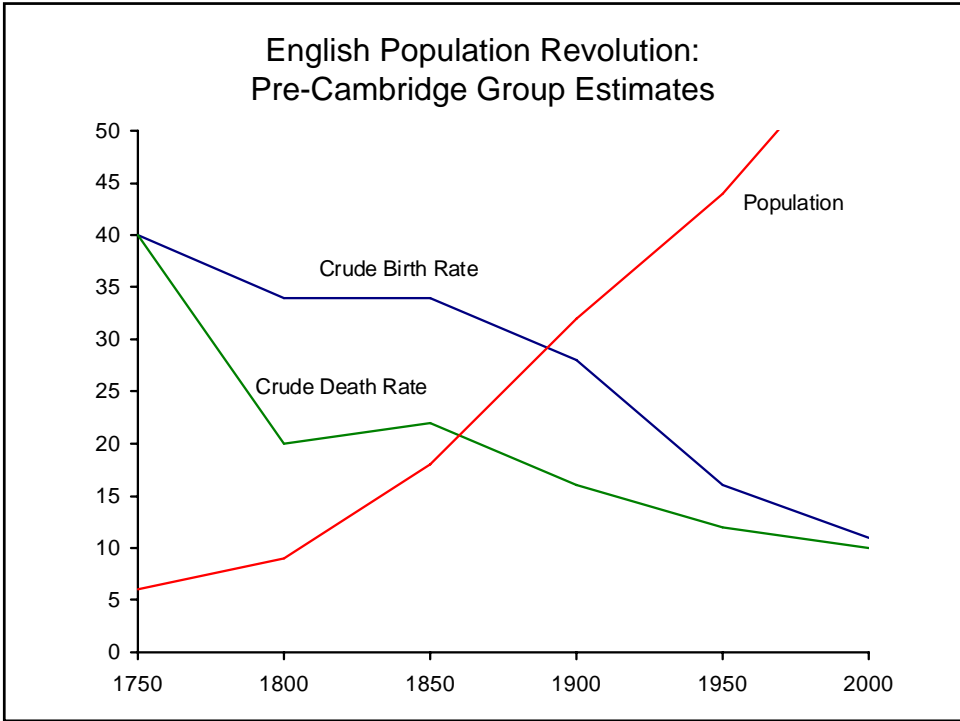
- Assumed that decreases in mortality were the direct consequences of improvements in:
 - Food supply
 - Standard of living and health



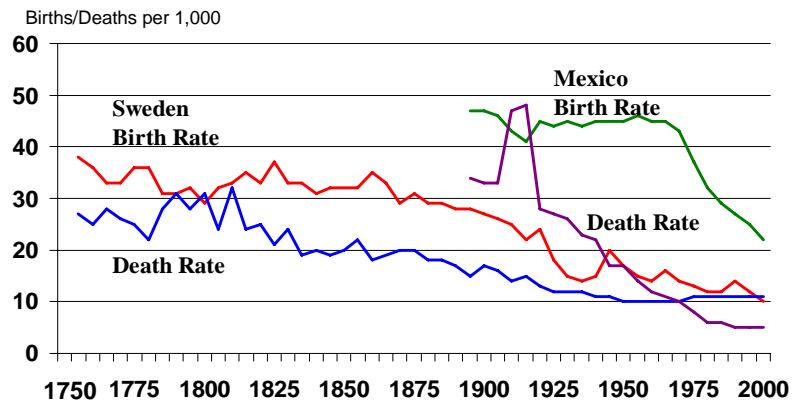
Limitations of the demographic transition model

- Based on Europe's historical experience
- Was the analysis accurate?
- Is it applicable to the rest of the world?





Demographic Transition in Sweden and Mexico



Sources: B.R. Mitchell, *European Historical Statistics 1750-1970* (1976): table B6; Council of Europe, *Recent Demographic Developments in Europe 2001* (2001): tables T3.1 and T4.1; CELADE, *Boletín demográfico* 69 (2002): tables 4 and 7; Francisco Alba-Hernandez, *La población de México* (1976): 14; and UN Population Division, *World Population Prospects: The 2002 Revision* (2003): 326.

Exceptions:

- France
- United States

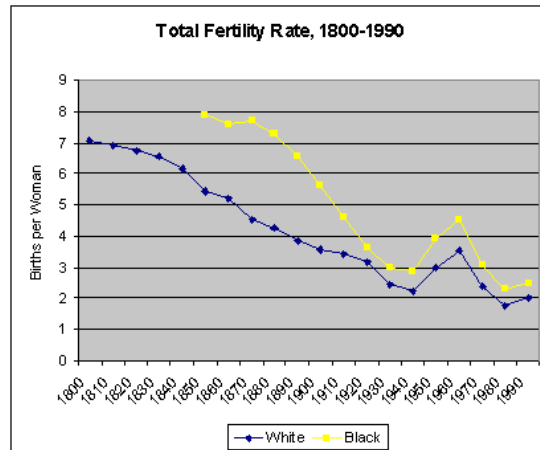
Index of Marital Fertility: France 1740-1900 (measured as % of Hutterite fertility)



France

- Both fertility and mortality appear to start declining around 1800.
- Fertility declined due to increased spacing, not early stopping.
- No evidence of contraceptive use.
- French Revolution theory: consolidation of land meant that for many peasants the value of child labor declined.
- But: fertility declined for richest groups first, and fertility declined fastest in places with the most social mobility.

United States: Coale and Zelnik Estimates (1963)



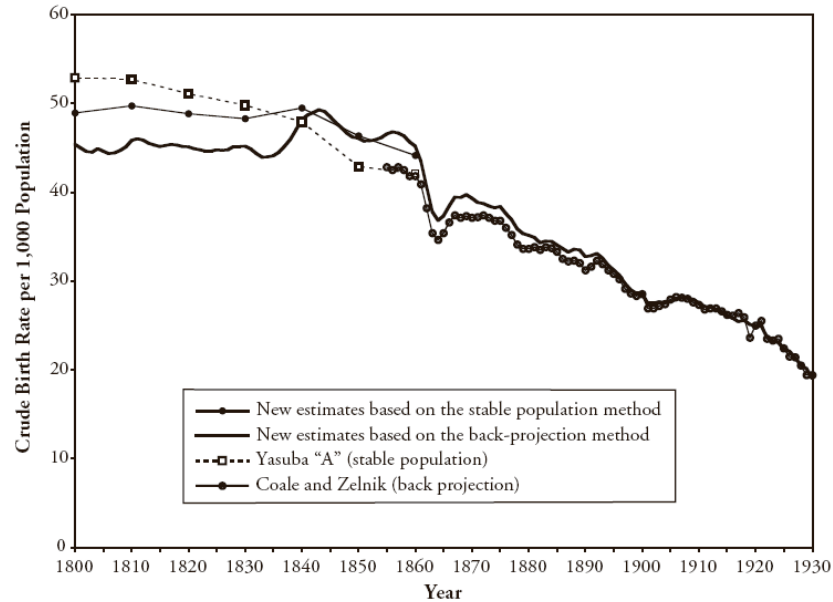
RETHINKING THE “EARLY” DECLINE OF MARITAL FERTILITY IN THE UNITED STATES*

J. DAVID HACKER

In this article, I rely on new estimates of nineteenth-century mortality and the Integrated Public Use Microdata Series to construct new estimates of white fertility in the nineteenth-century United States. Unlike previous estimates that showed a long-term decline in overall fertility beginning at or before the turn of the nineteenth century, the new estimates suggest that U.S. fertility did not begin its secular decline until circa 1840. Moreover, new estimates of white marital fertility, based on “own-children” methods, suggest that the decline in marital fertility did not begin in the nation as a whole until after the Civil War (1861–1865).

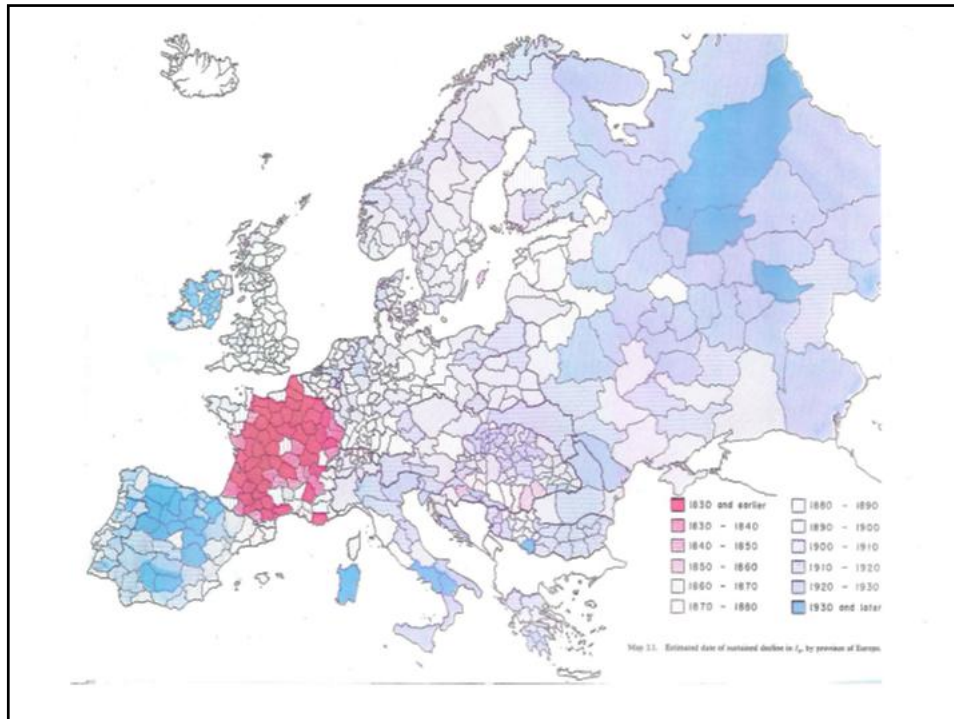
A sustained decline in marital fertility is believed to have begun in France and the United States in the late eighteenth century, at least three-quarters of a century before marital fertility began to decline in other nations (Binion 2001). Unfortunately, empirical data on the “early” decline of marital fertility in the United States are weak. Most estimates of fertility before 1880 have been based on the age structure of the population reported in federal censuses, and thus are sensitive to changes in mortality, immigration, and census underenumeration. The lack of information on marital patterns also hinders interpretation. Upon the weak foundation of child–woman ratios and indirect estimates of crude birth rates, however, demographic historians have built increasingly sophisticated

Figure 1. Comparison of New Estimates of the Birth Rate for Whites in the United States, 1800–1930, to Previous Estimates



European Fertility Project

- Led by Princeton University in 1970s and 1980s
- Used aggregate county-level statistics to assess geographic and chronological correlations between mortality decline, economic development, and fertility decline



KEY RESULTS OF THE EUROPEAN FERTILITY PROJECT

1. Prior to the demographic transition there was little individual initiative to regulate family size.
2. The death rate declined all across Europe at about the same time, but the timing of subsequent birth rate decline varied markedly across the continent.
3. The decline in the birth rate exhibited a threshold behavior: once birth rate had declined by about 10%, thereafter it always declined very rapidly.
4. The timing of the birth rate decline (e.g., the year in which it reached this threshold) was spatially clustered.

European Fertility Project

- Found little effect of socioeconomic characteristics
- Concluded that the change was “ideational,” not due to economic development
- Coincided with “Cultural Turn”.

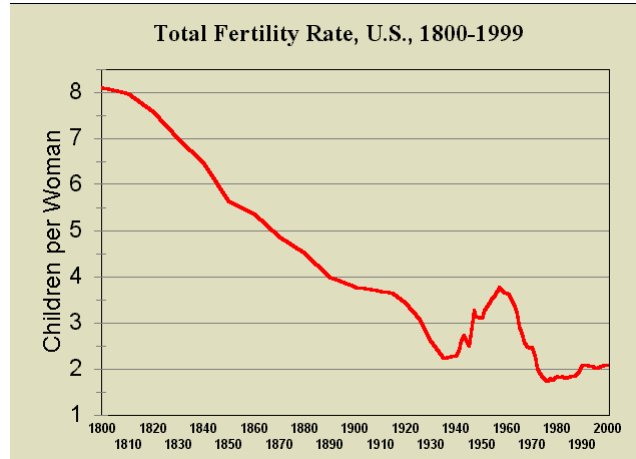
European Fertility Project

Results have been criticized:

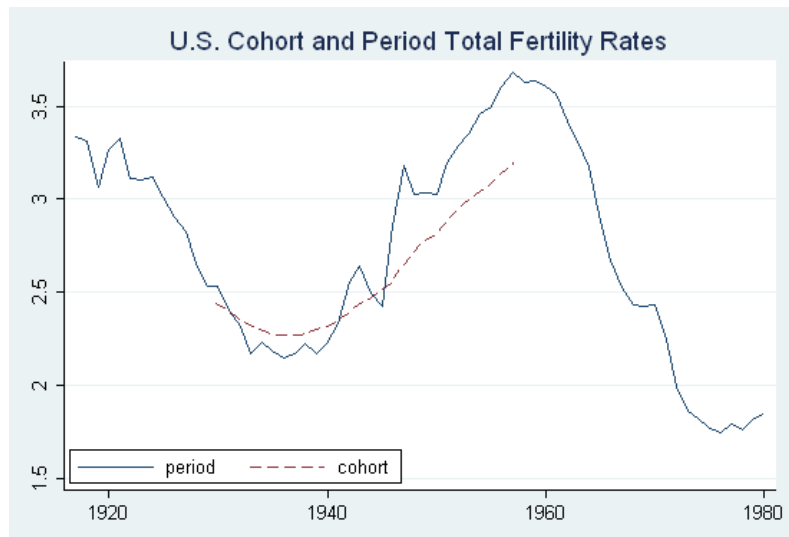
- Inadequate data
- Poor measures
- County-level data inadequate to detect economic effects

Stimulated a broader critique of the whole model of the Demographic Transition

Baby Boom



Baby Boom



Easterlin Relative Cohort Size Hypothesis

- The standard of living you experience in late childhood is the base from which you evaluate your chances as an adult.
- If you can improve your income as an adult compared to your childhood level, you are more likely to marry early and have several children.



Richard Easterlin

Easterlin Relative Cohort Size Hypothesis

- Fertility rates and economic conditions will fluctuate in cycles.
 - Large birth cohorts do poorly in the job market and have smaller families.
 - Small birth cohorts do well in the job market and have large families

Relative Cohort Size and the Demographic Transition

“The increase in relative cohort size (defined as the proportion of the population aged 15 to 24 relative to that aged 25 to 59) which occurs as a result of declining mortality rates among children and young adults during the demographic transition, appears to act as the mechanism of transmission which determines when the fertility portion of the transition begins. As hypothesized by Richard Easterlin, the increasing proportion of young adults would generate a downward pressure on young men's relative wages, which in turn causes young adults to accept a trade-off between family size and material well-being, setting in motion a "cascade" or "snowball" effect in which total fertility rates tumble as social norms regarding acceptable family sizes begin to change. (Macunovich 2000)

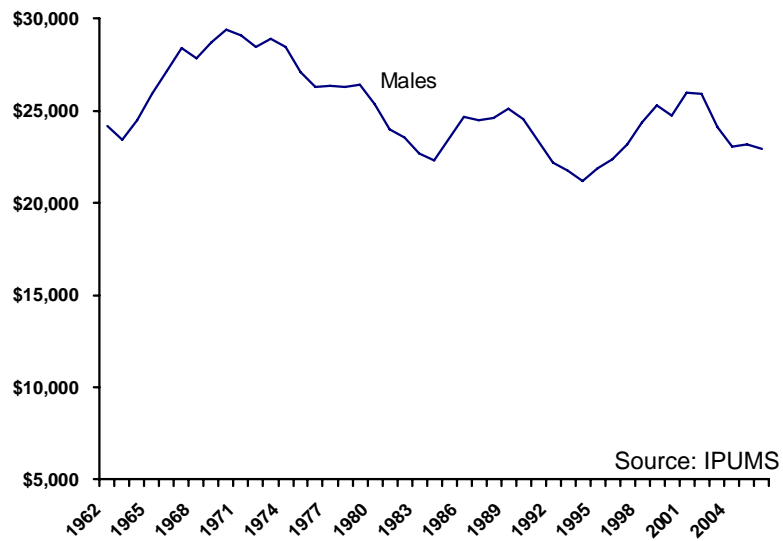
Relative Cohort Size and the Demographic Transition

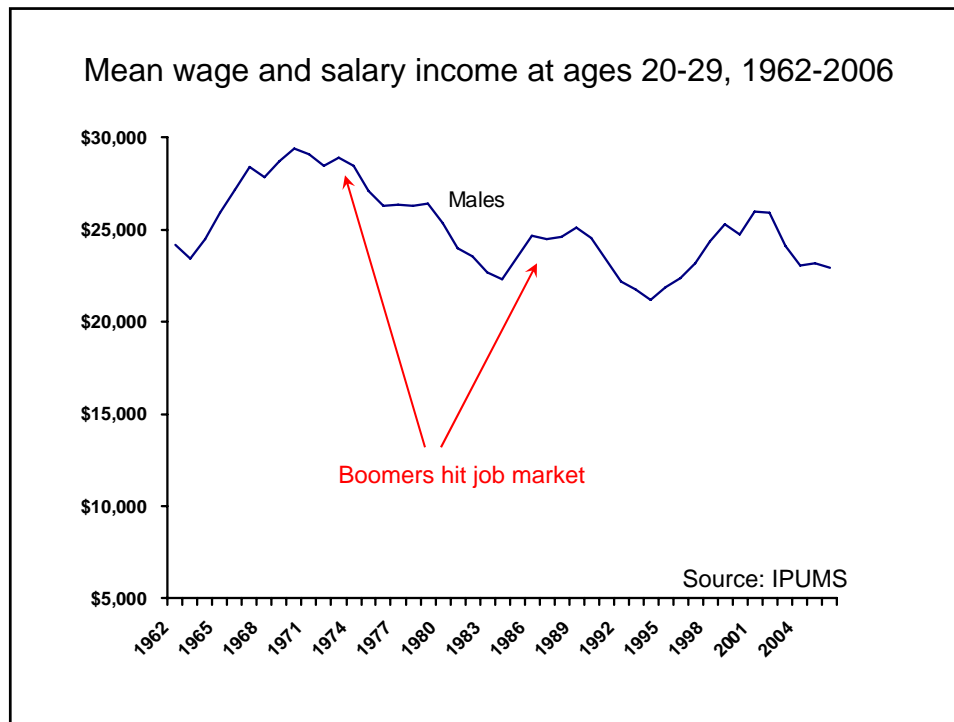
Thus relative cohort size can be thought of as the mechanism which prevents excessive rates of population change--reducing fertility when previous high rates, in combination with low mortality rates, have caused relative cohort size to increase, and increasing fertility when previous low rates have caused relative cohort size to decline. (Macunovich 2000)

Relative Cohort size, wages, and female labor force participation

- Increased competition as boomers entered labor force forced wages down
- Wages for young men peaked around 1970 and have never recovered

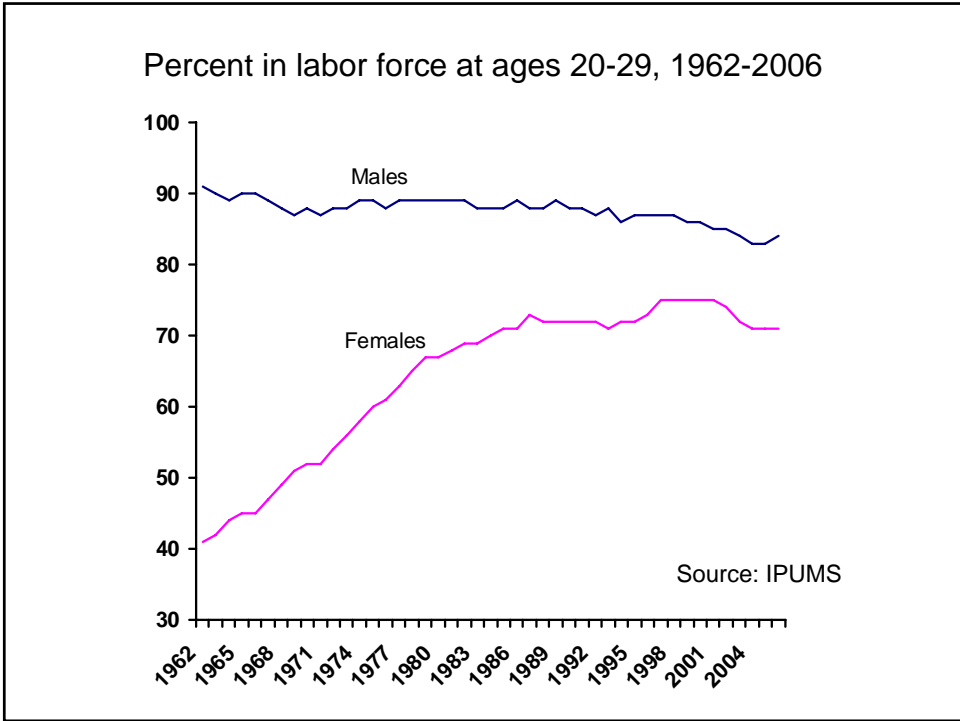
Mean wage and salary income at ages 20-29, 1962-2006





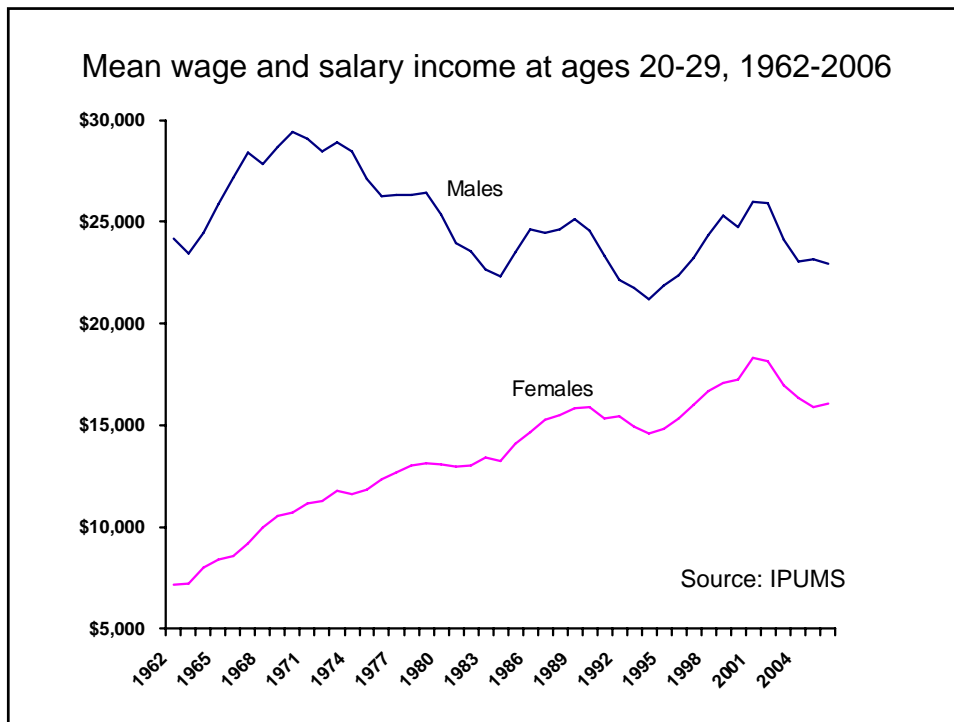
Relative Cohort size, wages, and female labor force participation

- Reduced male income, together with cultural change in female roles, contributed to unprecedented entry of women into the wage labor force
- Labor market not only had to absorb the male boomers, but also 100 million women who began working



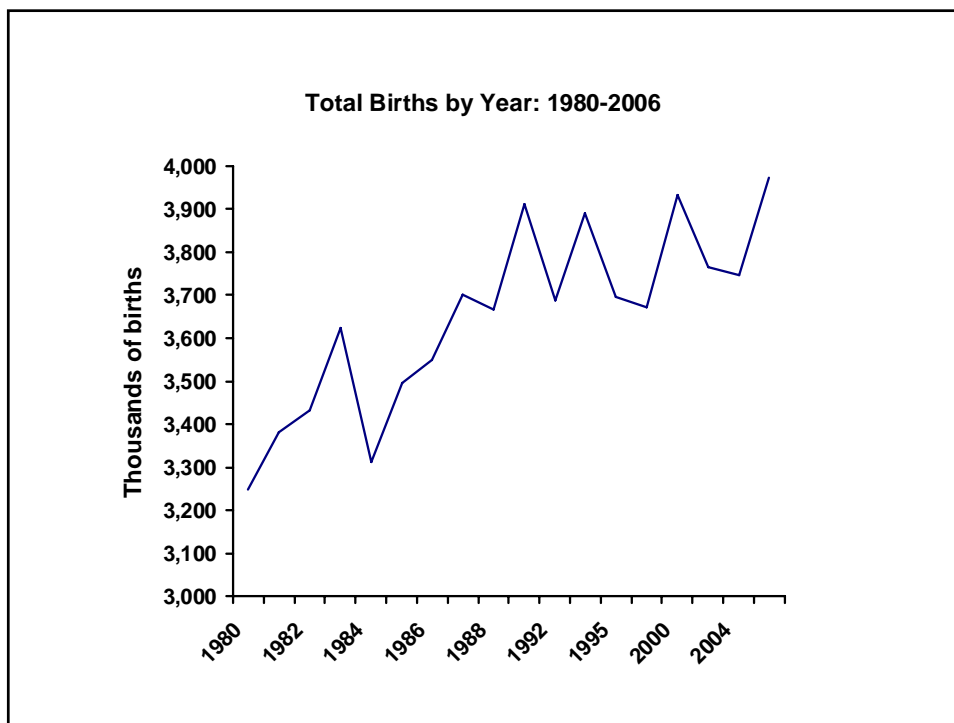
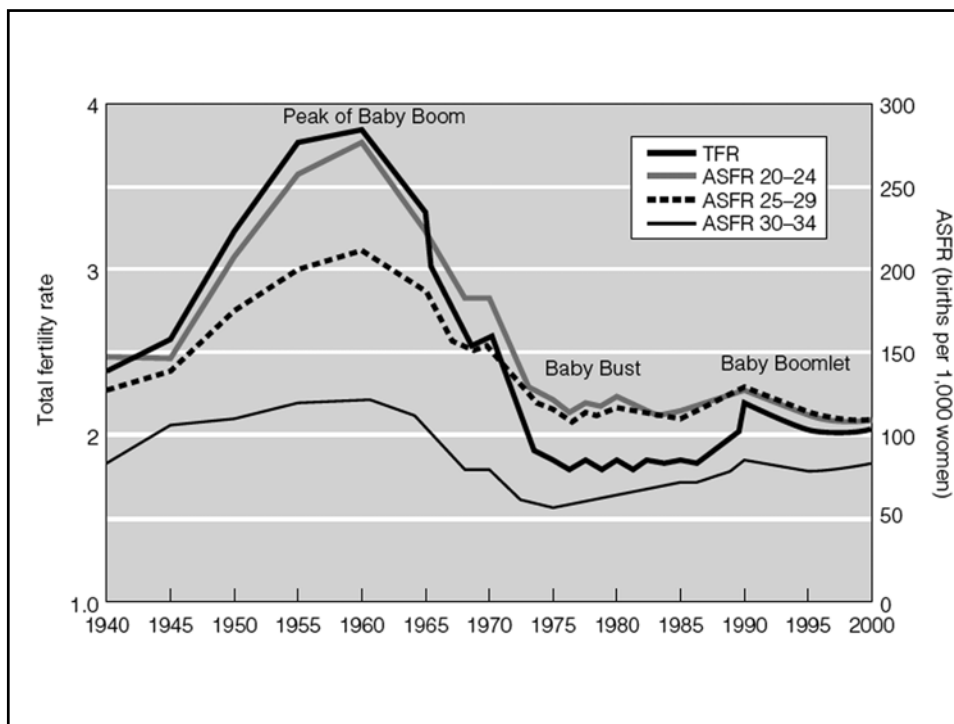
Relative Cohort size, wages, and female labor force participation

- As discrimination declined and women became more educated, wages for young women improved, but they have not yet caught up with men



What's happened lately

- Between mid-1980s and early 1990s, there was an uptick in fertility, which was an “echo” of the Baby Boom.
- If Easterlin is right, this could make life a bit more competitive for persons born about 21 years ago.
 - Consolation: nowhere nears as bad as it was for us



What we can expect

- Total fertility would already be declining below replacement were it not for immigration.
- Prospect: fertility is likely to decline, which may make it possible for wages to finally begin to rise.