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## Very Low Fertility

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Nan Astone, PhD  
Johns Hopkins University

# Objectives of the Lecture

- At the end of this lecture and the accompanying readings, students will be able to:
  - Describe fertility trends in industrialized countries since 1970
  - Identify some potential reasons for the decline to below replacement fertility
  - Identify the potential problems associated with very low fertility
  - Identify the potential policy solutions



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## Section A

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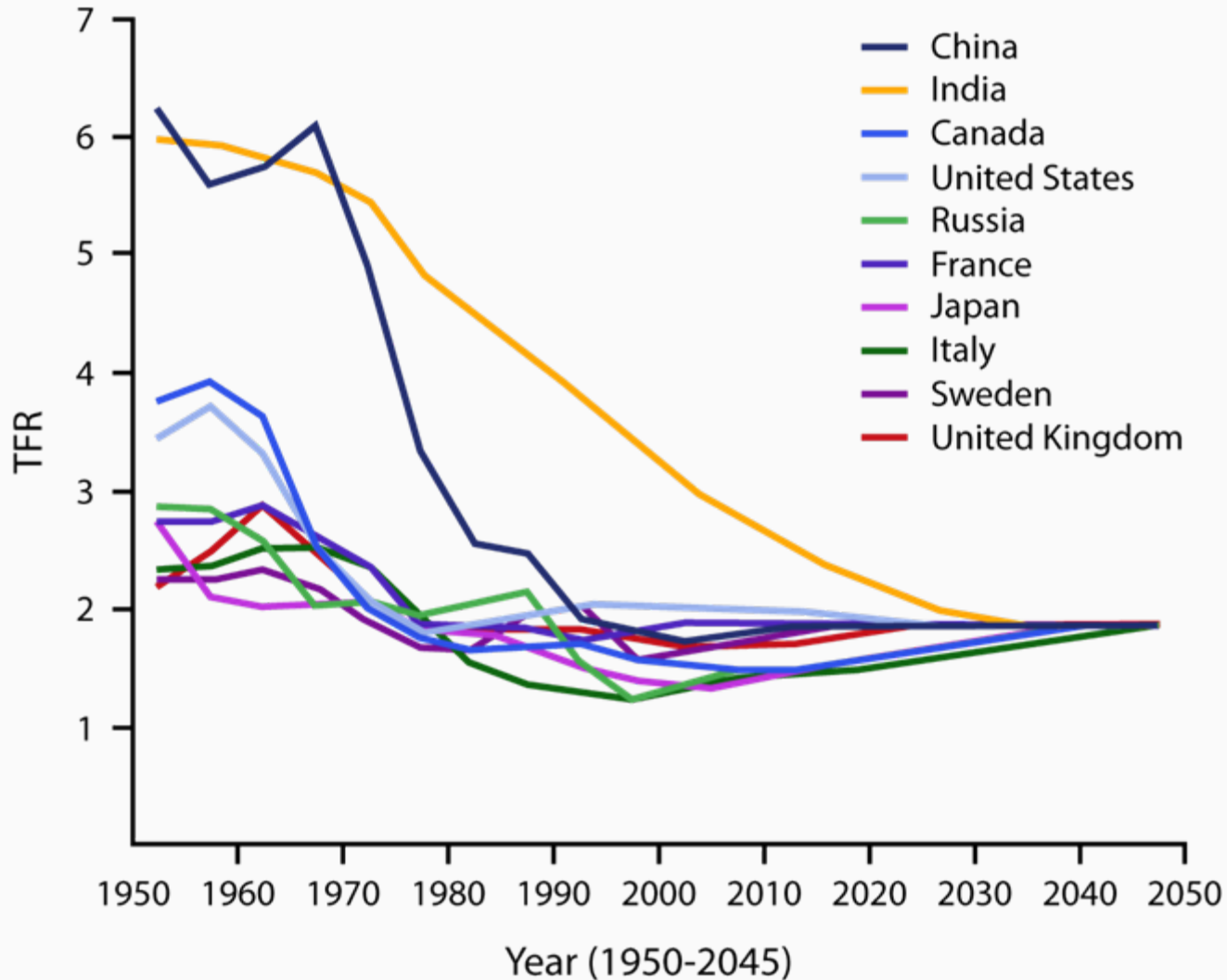
### Fertility Trends in Industrialized Countries

# Replacement Level Fertility

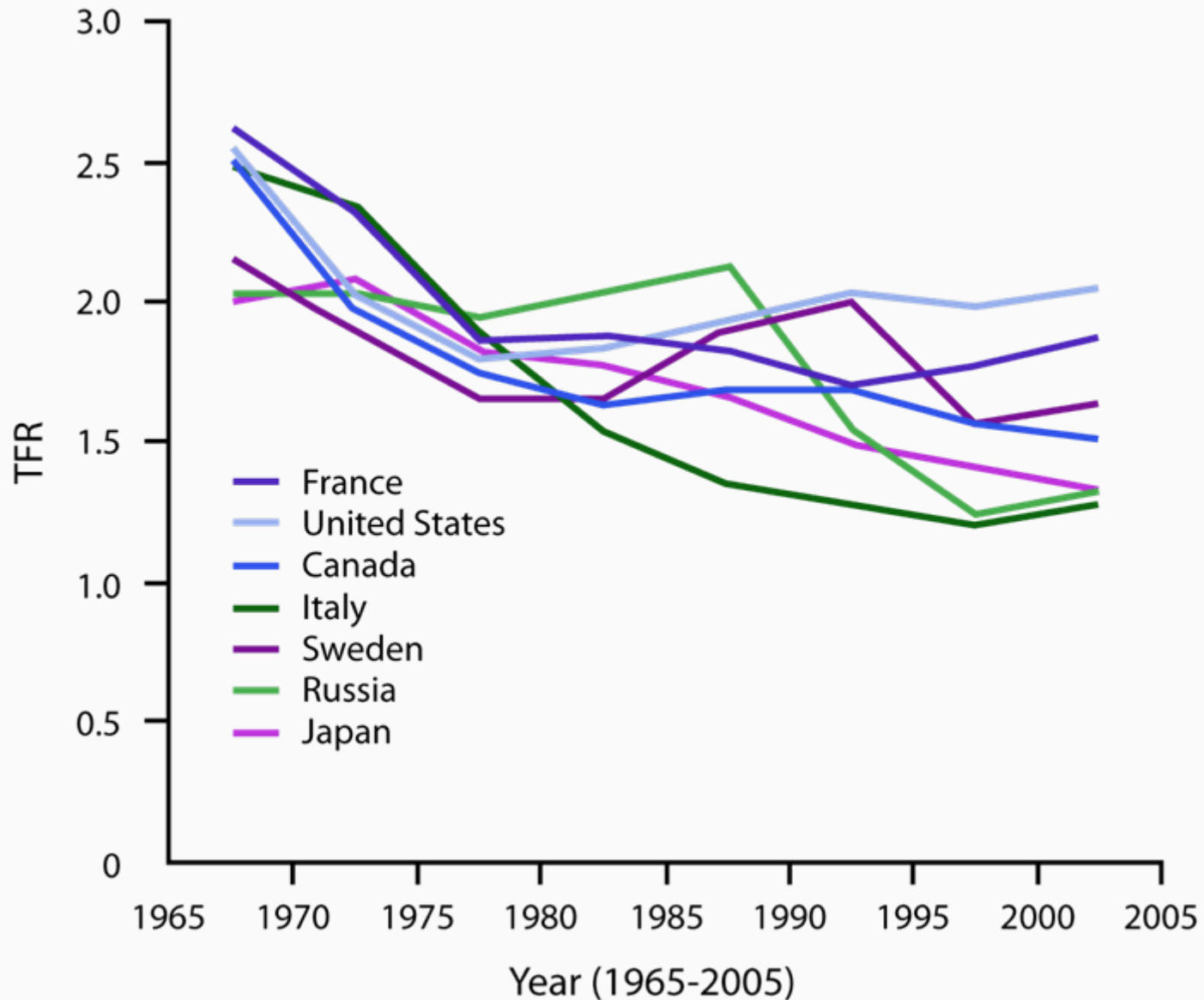
- Fertility in many industrialized countries has fallen below “replacement level”
- **Replacement level fertility** is that level that will eventually (after population momentum has run its course) cause a population to stop any positive or negative growth
  - In low-mortality settings, 2.1
  - In higher-mortality settings, could be as high as 3

# Long-Term Declines in a Variety of Countries

- Long-term declines in a variety of countries, including China and India



# Focus in on Selected Countries with No Projections





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## Section B

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### Explanations for Very Low Fertility



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# Why?

- Logical extension of the rising costs of children
- Risk aversion
- Materialist values
- Differential levels of gender equity in the family and the marketplace
- Tolerance of nonmarital childbearing

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# Logical Extension of the Rising Costs of Children

- Children get more and more and more expensive, particularly as wages to the poorly educated decline

# Logical Extension of the Rising Costs of Children

- Assumes the motivation to have children does not differ by parity
  - First: affective, generative, identity
  - Second: sibship norms (heir and spare, dunderhead theory)
  - Third: economic

# Logical Extension of the Rising Costs of Children

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# Why?

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# Risk Aversion

- Increased likelihood of divorce
- Increase in cohabitation (less stable than marriage)
- Employment insecurity



# Why?

- Logical extension of the rising costs of children
- Risk aversion
- **Materialist values**
- Differential levels of gender equity in the family and the marketplace
- Tolerance of nonmarital childbearing

# Materialist Values

- Changes in demographic behavior are primarily driven by growth in the values of individual self-realization, satisfaction of personal preferences, and freedom from the strictures of traditional authority, particularly religion

# Generative Notion

- Generative notion—people have children to work hard at something and experience a certain amount of self-realization
- It's been argued that the time period of very low fertility has been accompanied by a period during which people have sought that generative satisfaction in activities other than having children

# Differential Levels of Gender Equity

- Logical extension of the rising costs of children
- Risk aversion
- Materialist values
- Differential levels of gender equity in the family and the marketplace
  - Fertility has declined the most in places where women's position in the educational and labor market spheres have dramatically improved, but where norms still keep women home after motherhood and men do very little of the work of childrearing
- Tolerance of nonmarital childbearing

# Why?

- Logical extension of the rising costs of children
- Risk aversion
- Materialist values
- Differential levels of gender equity in the family and the marketplace
- Tolerance of nonmarital childbearing

# Tolerance of Nonmarital Childbearing

- Strong correlation between percentage of births outside marriage and TFR
- Many of the issues of risk aversion have to do with marriage, not parenthood
  - In countries where parenthood outside marriage is not tolerated, parenthood gets delayed along with marriage



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## Section C

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Is Very Low Fertility Cause for Concern?

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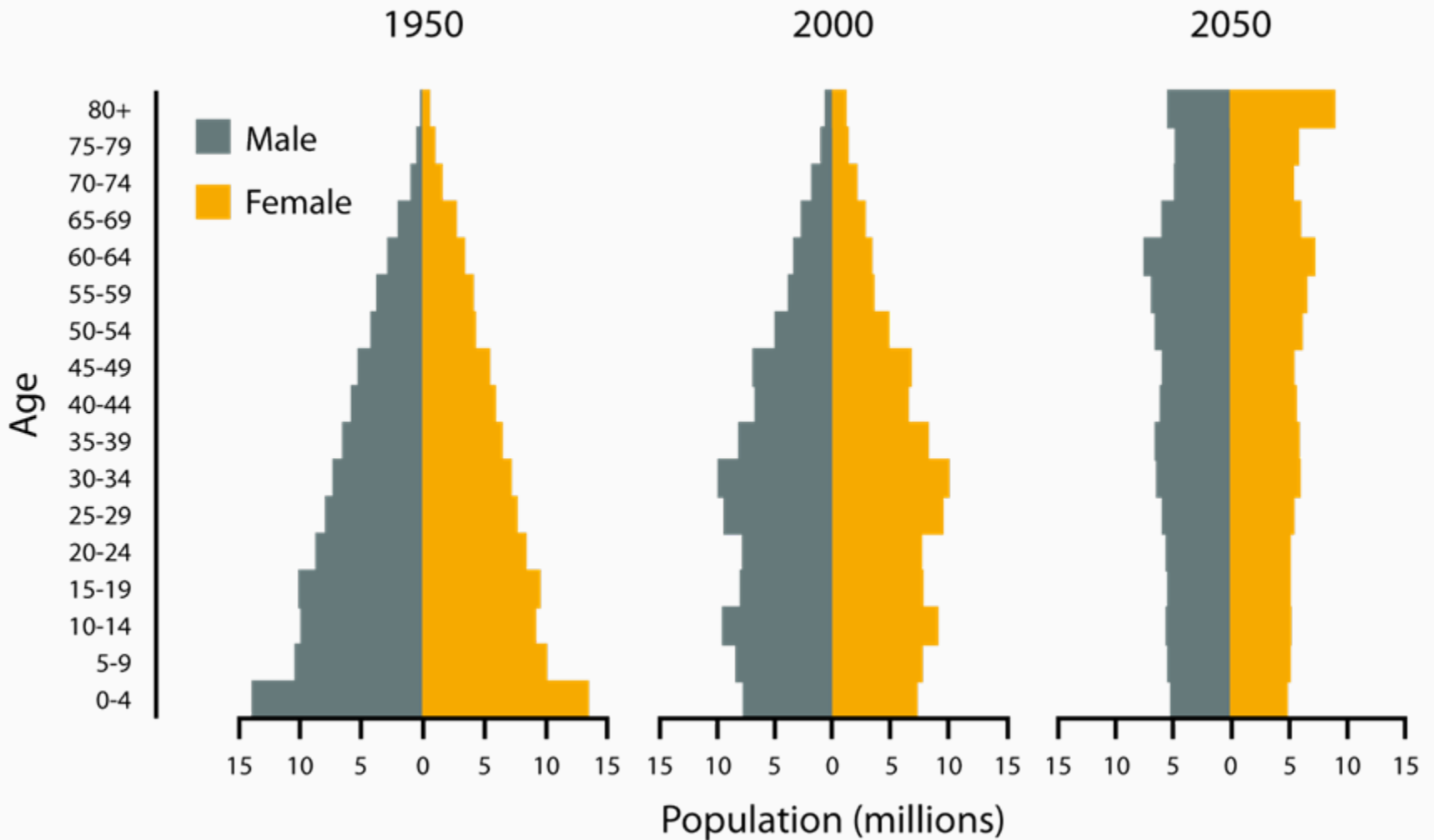


# So What?

- Three issues
  1. Aging populations
  2. Negative growth
  3. Countries with strong sex preference

# China's Age Distribution

## Population Structures by Age and Sex



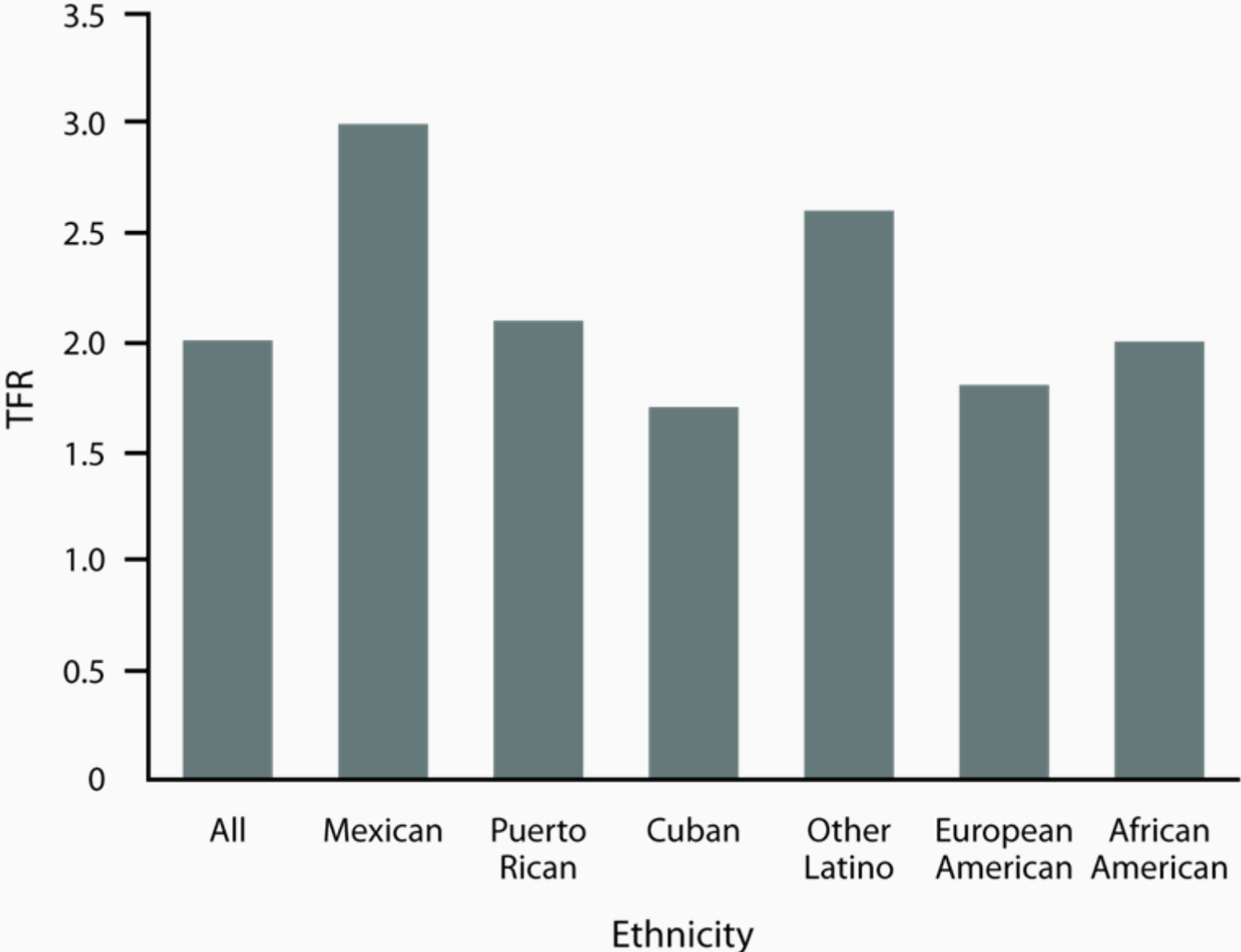
# What's Wrong with an Aging Population?

- In societies with strong welfare-state safety nets (organized on a pay-as-you-go basis) the burden on the working taxpayers is enormous
- In all societies, a high prevalence of one-child families gives couples the burden of up to four frail elderly parents

# Solution: Replacement Migration?

- Solves three problems at once
  1. Countries where fertility has recently declined can reduce surplus labor
  2. Countries with labor shortages can alleviate them
  3. Immigrants may have higher fertility

# Case of the U.S.



# Case of France

- Total fertility rates\* (children per woman) of foreign citizen women residing in France, compared with their country of origin and with French women

Citizenship	Residence	1980	1990	2000
Algerian	France	4.22	3.22	3.19
	Algeria	6.77	4.67	2.97
Moroccan	France	5.14	3.51	3.32
	Morocco	5.65	4.03	2.87
Tunisian	France	5.21	3.93	3.29
	Tunisia	5.30	3.62	2.16
Turkish	France	5.13	3.73	3.35
	Turkey	4.40	3.40	2.57
French	France	1.87	1.76	1.82

\*the TFR is the final average number of children born per woman, obtained as the sum of age-specific fertility rates from 15 to 49 years, during a given period of time

# Raises the Issue of Assimilation and Cultural Change

- For the U.S., Australia, and Canada, this is not a large issue
  - Recent debates over immigration in U.S., however bitter and acrimonious, are nothing new
  - Migrants have historically done well
- For Europe and Japan, this is far more controversial
  - Much more ethnically homogenous societies with no history of assimilating immigrants
  - Riots in France in 2005
  - Murder in the Netherlands

# Not the Solution Everywhere

- Nobody wants to emigrate to Russia



# Negative Growth

- What's wrong with negative growth?

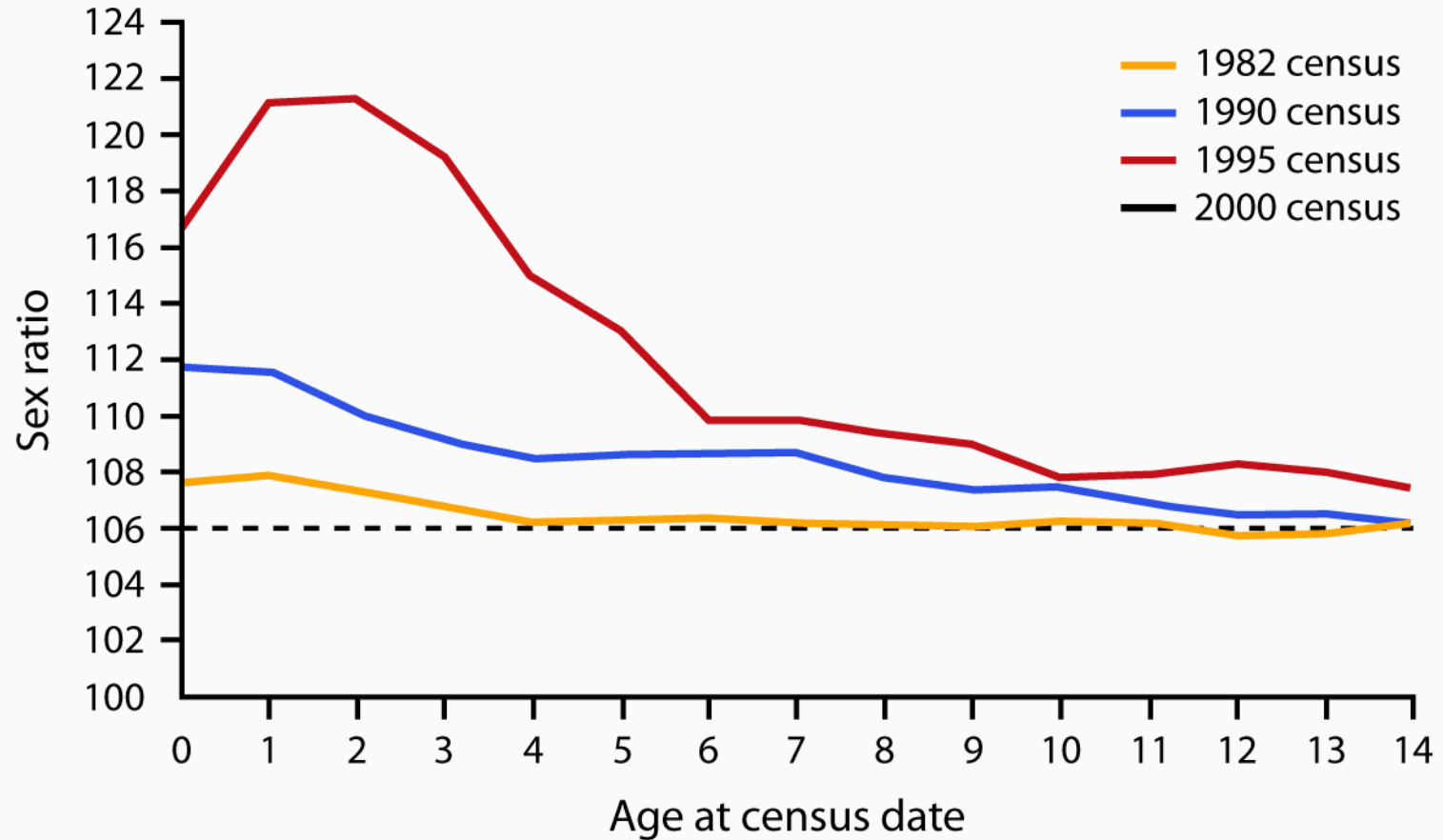
“Low fertility ... will reduce the proportion of the global population living in Europe and North America. ... For whom is this a problem? It clearly depends on one’s perspective. An African American colleague recently questioned my research agenda: ‘so you’re studying the disappearance of white folks.’ I was taken aback; this is not how I prefer to characterize my work. But he had made his point: for many, ‘fewer white people’ does not sound like the greatest crisis of the twenty-first century.”

# Low Fertility in Countries with Strong Son Preference

- Availability of sonograms and abortion results in sex-selective abortion
- Particularly a problem in India and China

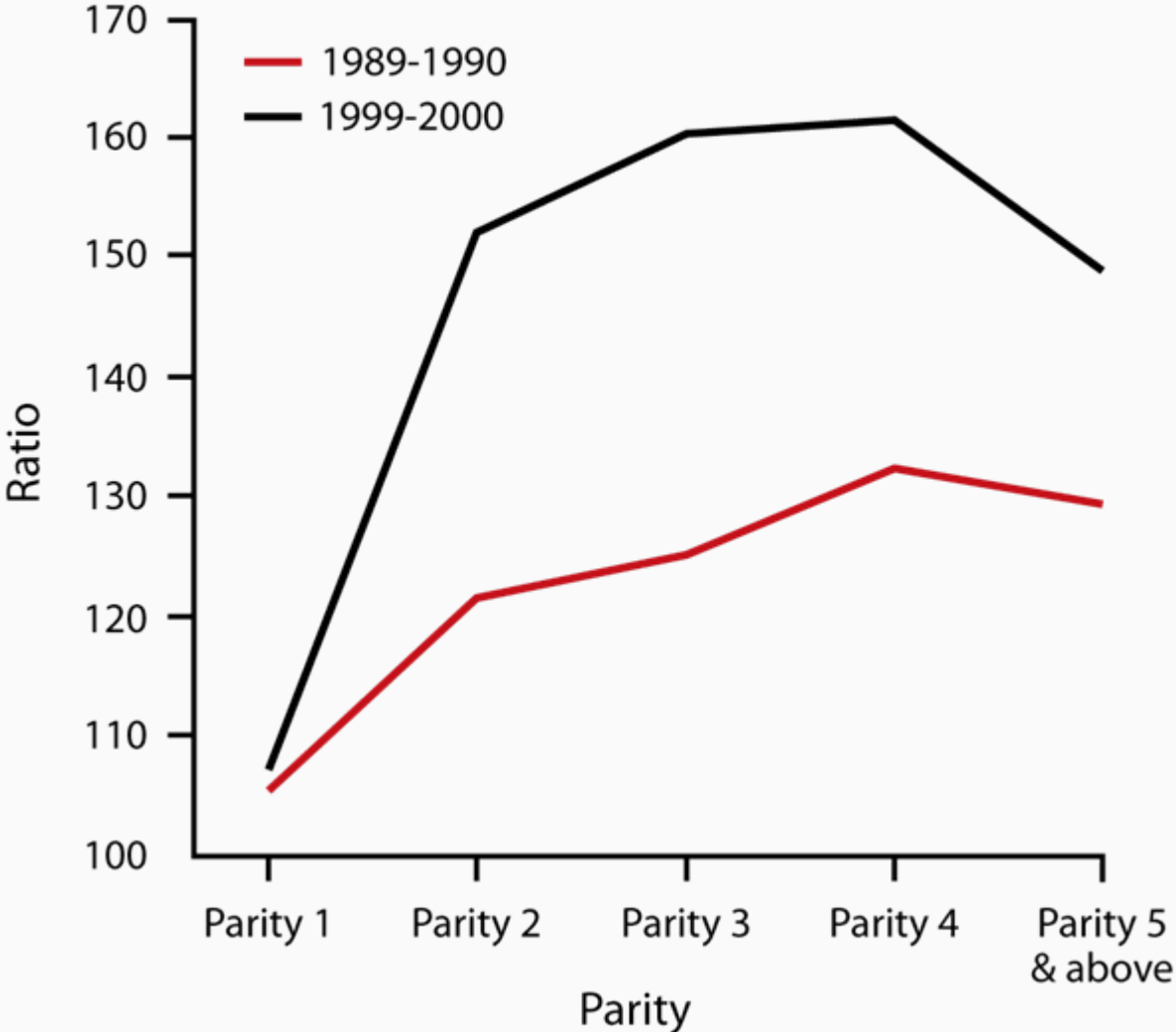
# China: Sex Ratios of Children by Age

China, Sex Ratios of Children by Age, Censuses of 1982 - 2000  
(Males per hundred females)



# China: Sex Ratio at Birth, by Parity

China, Sex Ratio at Birth by Parity, 1990 and 2000 Censuses



# China: Excess Female Infant Mortality, 1981-2000

- Infant deaths per 1,000 live births

Death rate measure	1981	1990	1995	1999-2000
Male IMR, reported data	38.12	28.29	27.37	21.98
Female IMR, reported data	36.12	32.77	36.29	30.98
Normal female IMR	31.77	23.58	22.81	18.32
Absolute excess female IMR	4.35	9.19	13.48	12.66
Percent excess female IMR	12%	28%	37%	41%

# What's Wrong With Unbalanced Sex Ratios?

- Ethical issues
- Social issues
  - Tucker and his colleagues
  - Mail-order brides
- Possibly self correcting?



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## Section D

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### Policy about Very Low Fertility



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# Concept of an Externality

- When a situation occurs where what is best for individuals creates problems for the group at large, or it is not best for individuals to do what would benefit the group at large
  - Pollution
  - Employment of people getting public assistance

# Concept of an Externality

- Pollution
  - The price of manufacturing is “too low,” manufacturers are not bearing the costs to society of pollution
- Employment of people on public assistance
  - The price of wages for people who are on public assistance is “too high,” employers are not being given credit for reducing the burden on taxpayers

# Concept of an Externality

- According to economists, a main role of government is to adjust prices in order to reflect externalities
  - Tax or fine polluters such that it costs less to avoid pollution than to cause it
  - Subsidize wages when employers hire someone who was receiving public assistance

# Fertility Externalities

- Population policies intended to reduce fertility are based on the concept of an externality
  - High fertility is good for individuals (e.g., women need to have sons to get status, so they continue to bear children until they have two sons (heir and spare), but bad for the group
  - Try to increase the cost of children (e.g., by providing employment opportunities for women so they have value to their households apart from being mothers of sons)

- We have reviewed the evidence, and plausible (if not totally convincing) arguments can be made that very low fertility is causing the externalities of aging, negative growth (?), and unbalanced sex ratios

# What Would Policies to Raise Fertility Look Like?

- Financial incentives
- Work and family initiatives
- Broad social change supportive of children and parenting

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- Financial incentives
- Work and family initiatives
- Broad social change supportive of children and parenting



# Financial Incentives

- Periodic cash payments
- Lump sum payments or loans
- Tax rebates, credits, or deductions
- Free or subsidized services or goods for children
- Housing subsidies

# What Would Policies to Raise Fertility Look Like?

- Financial incentives
- **Work and family initiatives**
- Broad social change supportive of children and parenting

# Work and Family Initiatives

- Maternity and paternity leave
- Childcare
- Flexible working hours and short-term family leave
- Anti-discrimination laws (gender equity in employment practices)
- Work hours

# What Would Policies to Raise Fertility Look Like?

- Financial incentives
- Work and family initiatives
- Broad social change supportive of children and parenting

# Social Change Supportive of Children and Parenting

- Employment initiatives
- Child-friendly environments
- Gender equity in household division of labor
- Marriage and relationship supports
- Positive attitudes toward children and parenting