Session 13:
Demographic Change and Care Needs

Maria Floro

American University, Washington DC

Discuss:

- What factors have brought about the increasing tensions experienced by women and men in balancing paid work and family responsibilities?

Longer-term Challenges Ahead

I.Demographic Change	II.Climate Change
 • Countries with high and low fertility rates • Aging population	

OUTLINE

I.   Fertility Trends and Childcare Needs

II. Understanding Fertility Choice, Family and Economic Development
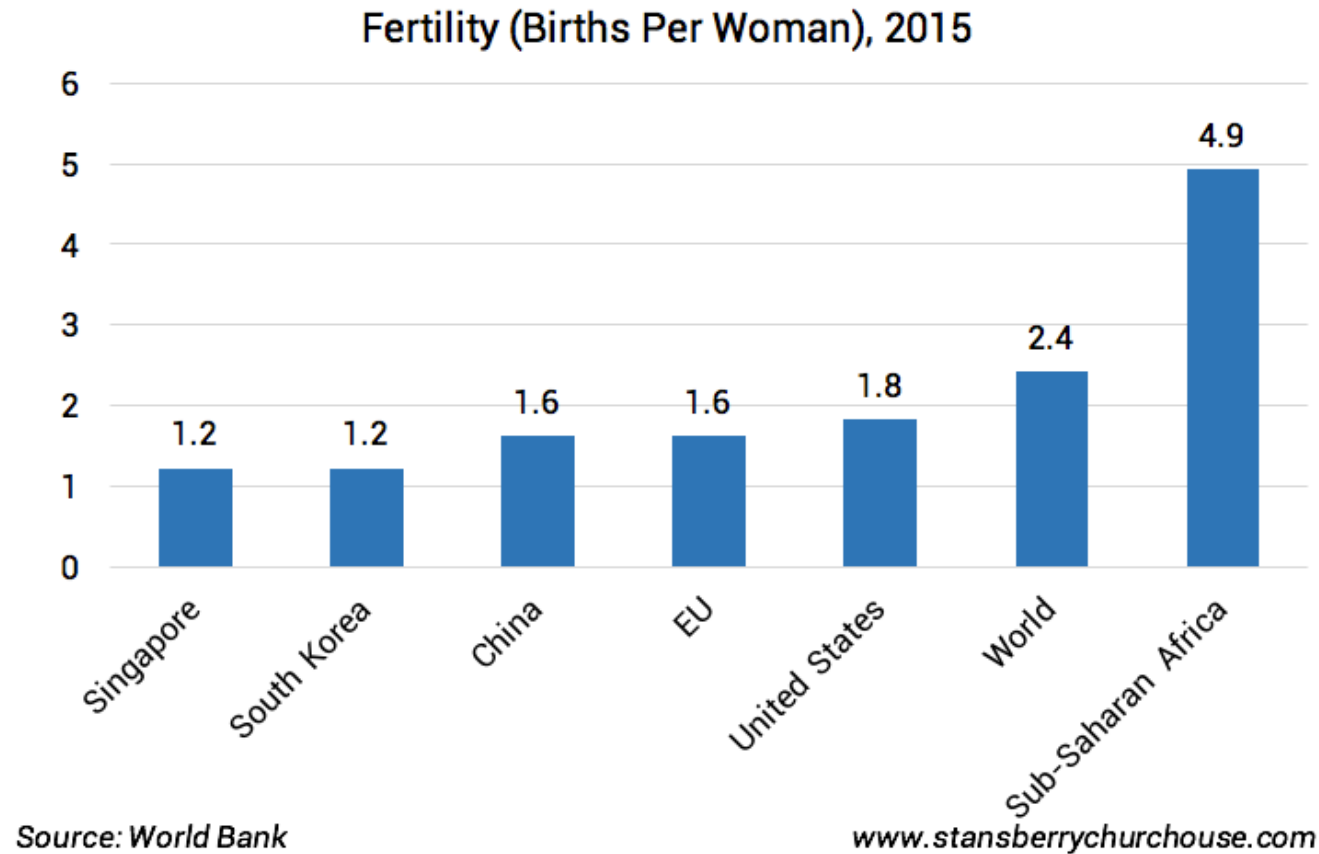
III. Aging and Eldercare Needs

Review of Concepts

- Total fertility rate: the number of children who would be born per woman (or per 1,000 women)

- Replacement rate: 2.1 births per woman

- Change in total fertility rate = change in the no. of women having any children (extensive margin) + change in the no. of children per woman (internal margin).
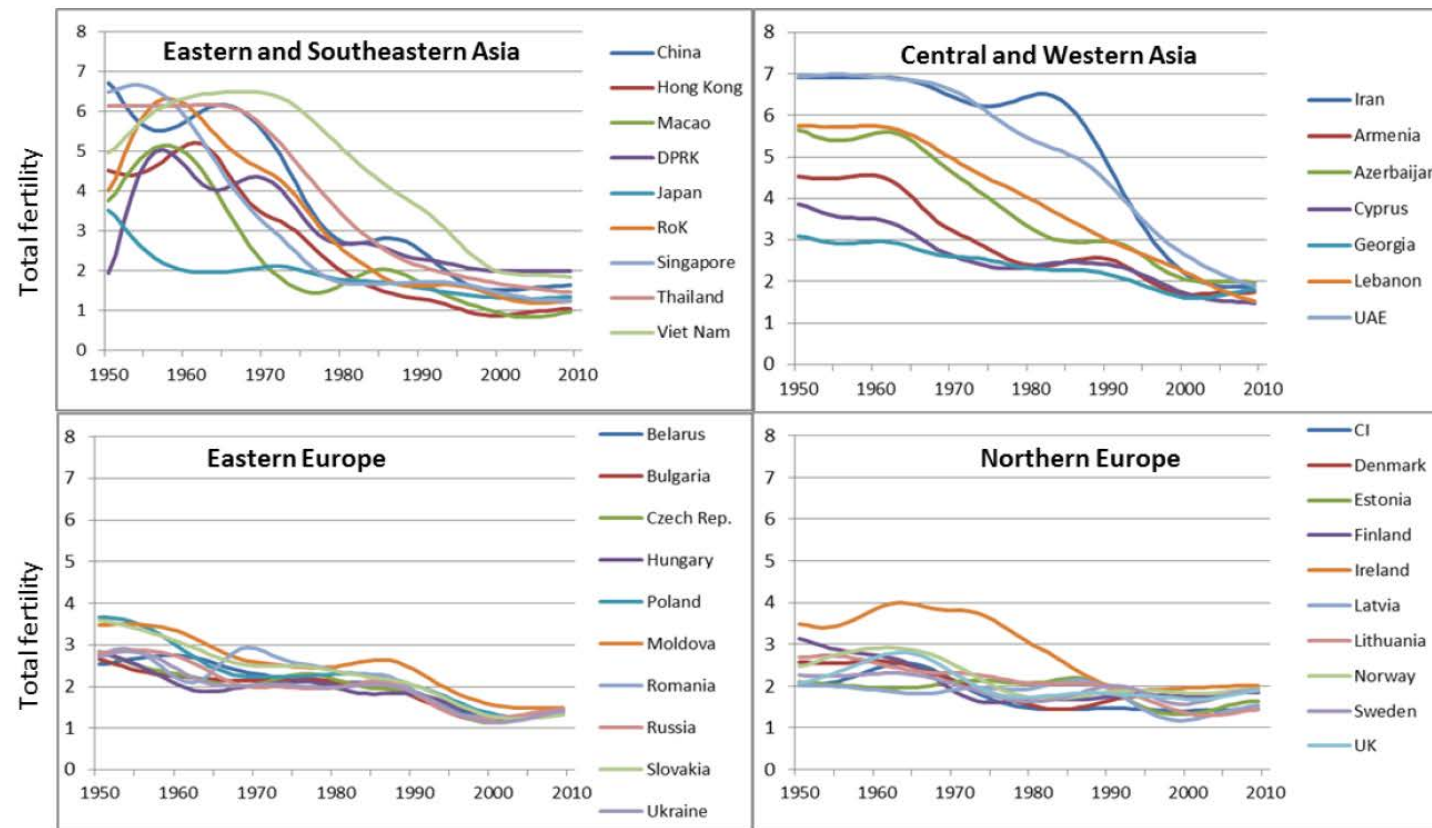
I. Fertility Trends and Childcare Needs
A. Global Trends in Fertility Rates
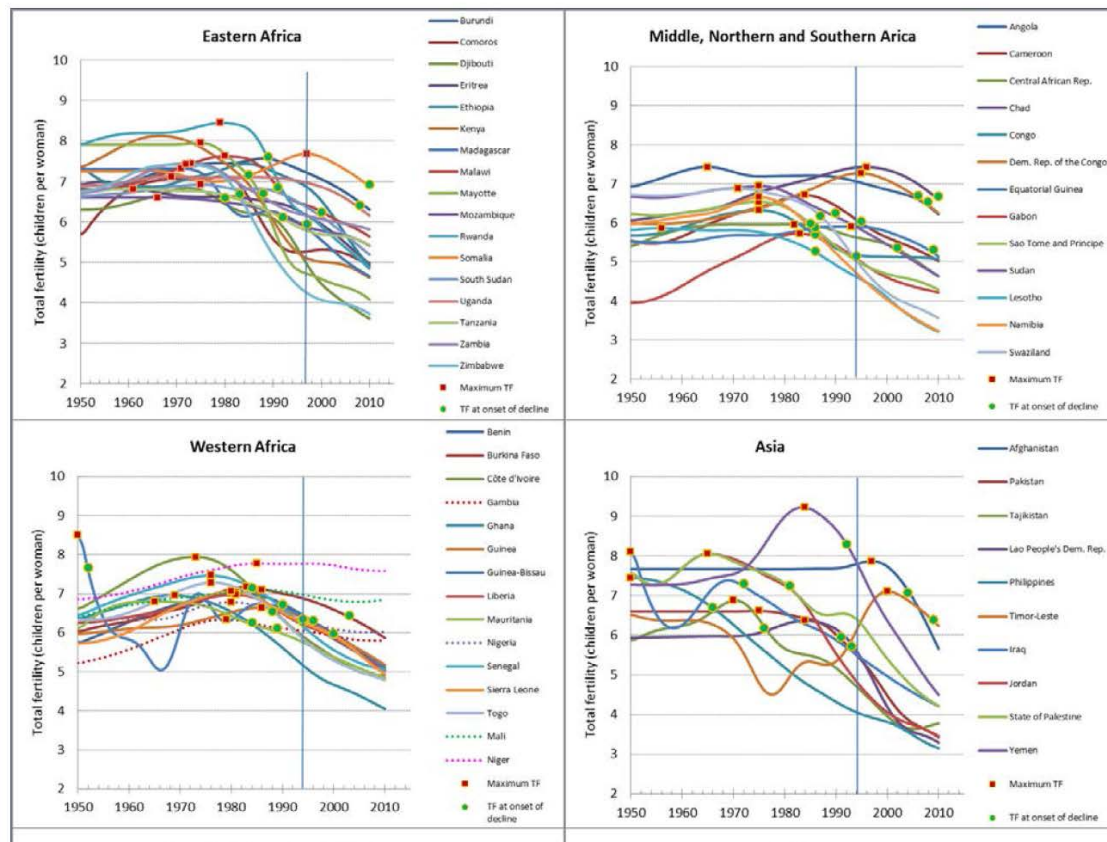
High and Low Fertility Rates in 2015

Fertility (Births Per Woman), 2015

Singapore 1.2, South Korea 1.2, China 1.6, EU 1.6, United States 1.8, World 2.4, Sub-Saharan Africa 4.9

Source: World Bank

www.stansberrychurchouse.com

Decline to low fertility rates in some countries….

Figure I.2. Trends in total fertility among current low-fertility countries, 1950-2010
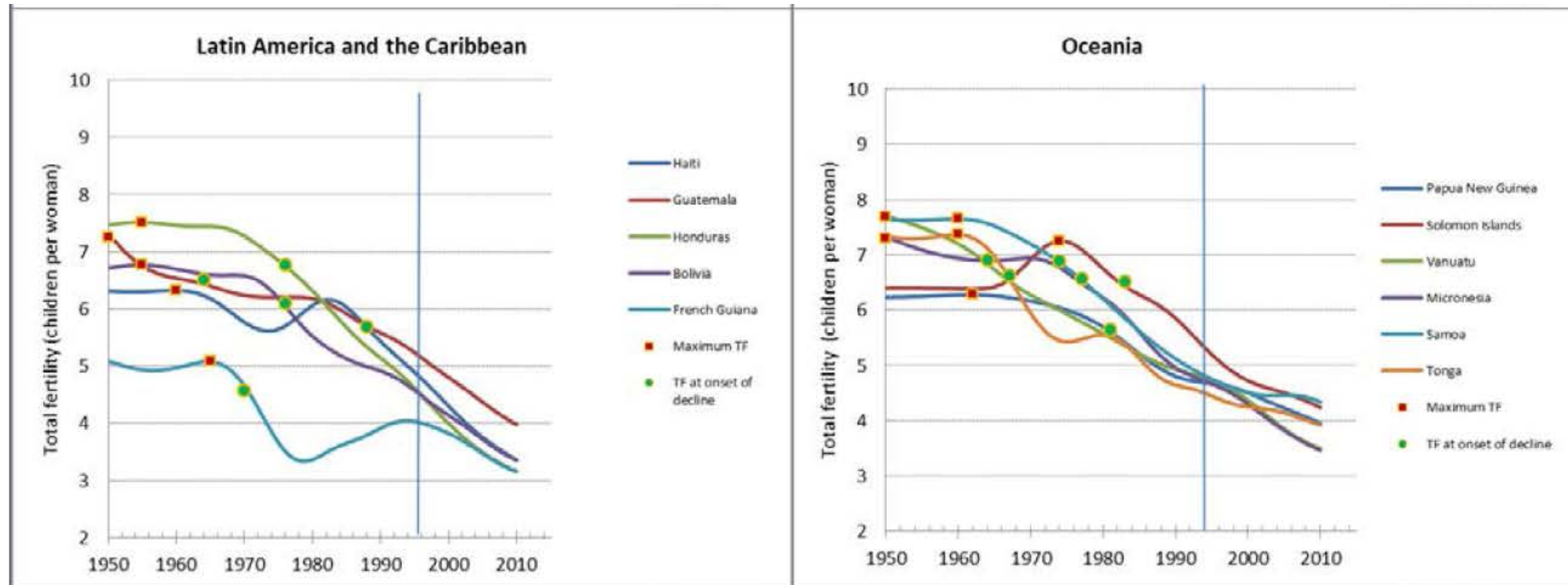
WHO: 2013 World Fertility Report

But high fertility rates continue in others.

Figure II.2. Maximum fertility and onset of fertility decline among high-fertility countries

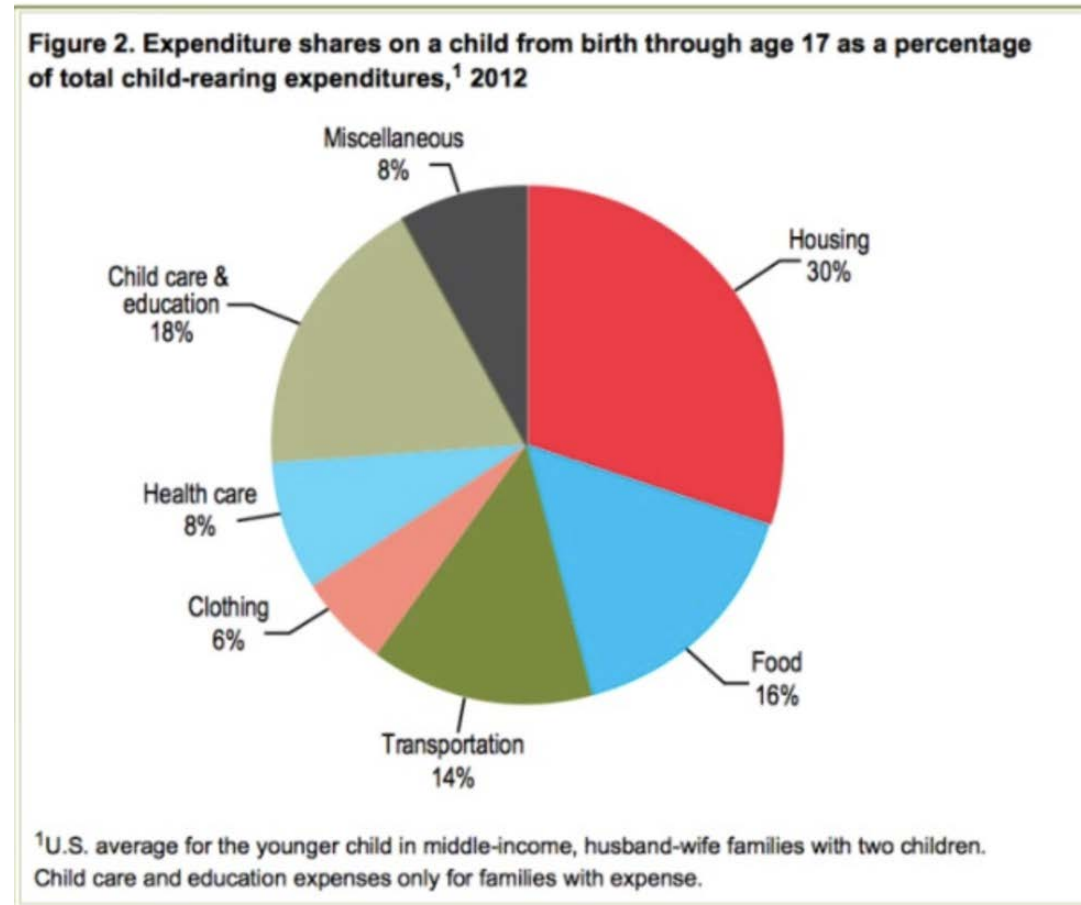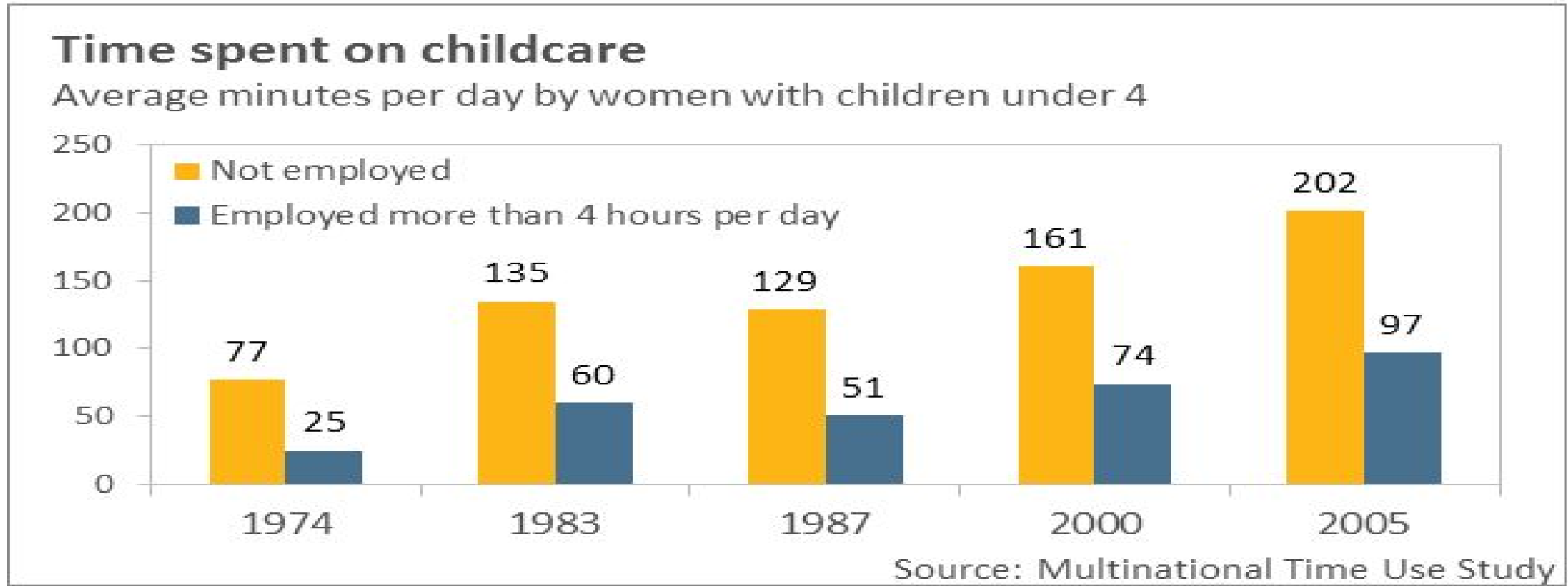WHO: 2013 World Fertility Report

In Latin America and Oceania…

Source: United Nations (2013a).

WHO: 2013 World Fertility Report

Monetary Cost of Raising Children (US 2012)

Figure 2. Expenditure shares on a child from birth through age 17 as a percentage of total child-rearing expenditures,[1] 2012

- Housing 30%
- Child care & education 18%
- Food 16%
- Transportation 14%
- Miscellaneous 8%
- Health care 8%
- Clothing 6%

[1]U.S. average for the younger child in middle-income, husband-wife families with two children. Child care and education expenses only for families with expense.

Source: https://www.workingmother.com/this-is-what-day-care-looks-like-around-world

Childcare cost in terms of unpaid labor time of women.

Time spent on childcare

Average minutes per day by women with children under 4

- ■ Not employed
- ■ Employed more than 4 hours per day

Year	Not employed	Employed more than 4 hours per day
1974	77	25
1983	135	60
1987	129	51
2000	161	74
2005	202	97

Source: Multinational Time Use Study

II. Fertility Choice and Economic Development

The decision to have children (and how many) is an important decision families make that has profound implications on people's lives and on society.

1. Affect women's choice of working or not in labor market; their choice of job

2. Subject to bargaining and the extent of women's autonomy to make decisions

3. Economic incentives affect fertility choices (cost and benefit of having children).

Hence,

Economic development affects fertility rates.

But fertility rates also affect economic development.

A.Unitary Household Theory of Fertility Choice

- Assumptions:

  Children are 'goods' to consume.

  Having children has opportunity cost (women's use of their time).

  Couples have identical preferences – unitary model

Maximization Problem

Maximize utility subject to budget constraint
U = f (n, X) s.t. where
Y= p_xX + cn where c= cost of each child and p_x = 1

Where

n = no of desired children

X = all other goods

c_{is}= *cost of each child*

Y = level of household income

P_x = price of all other goods

Unitary Household Model of Fertility Choice

FIGURE 8.1 Determination of a couple's fertility

Changes in income and cost of children

Case 2: Effect of Higher Income (Figure 8.2)

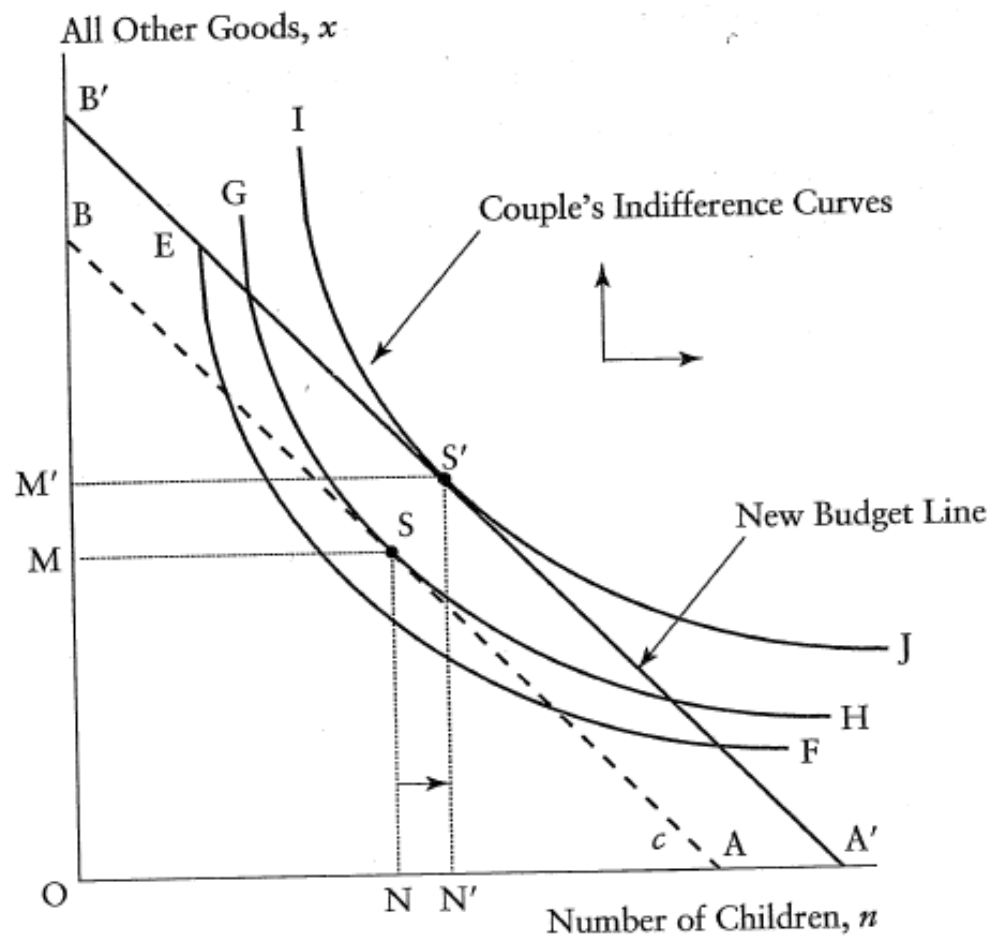Case 3: Effect of higher cost of children (Figure 8.3)

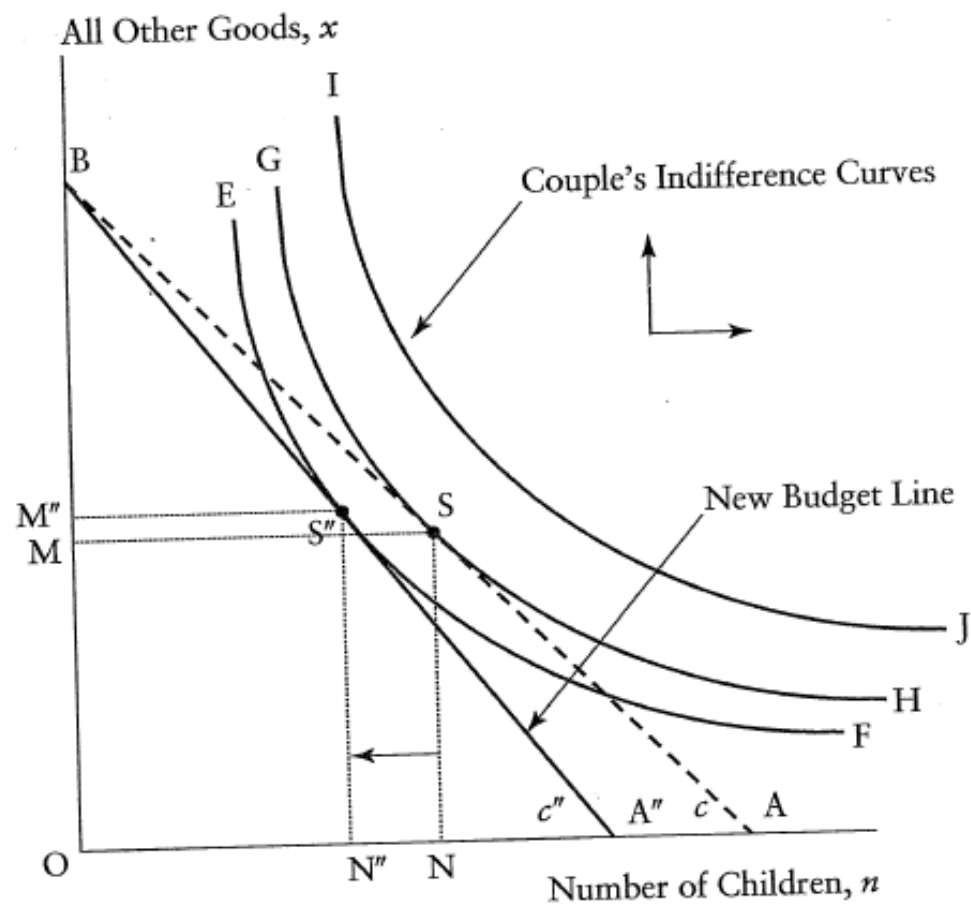**FIGURE 8.2** The effect of higher income on fertility

FIGURE 8.3 The effect of the cost of children on fertility

Role of Female Autonomy in Fertility Choice

- Female autonomy – determined by women's bargaining power within the household.

What determines women's bargaining power (threat utilities position)?

1. Kinship systems/arrangements
2. Employment
3. Relative earnings level ($w_f/w_m \uparrow$)
4. Asset/property ownership
5. Religious, cultural and social norms

B. Bargaining Household Theory of Fertility

- Assumptions:

    Different preferences

    Each child requires time for care: t

    Cost per child = c = w_ft [opportunity cost to wife)

    Women's wage: w_f

    Husband's wage: w_m

- Budget constraint:

    $$Y = w_f + w_m$$

Bargaining Model Fertility Choice Maximization Problem

Maximize utility subject to budget constraint

$U = h(n_h, X)^a + f(n_f, X)^b$ subject to

$a + b = 1$

$Y = p_x X + c(w_f t)(n_h^{a} = n_f^{b})$

Where

n = no of desired children

X – all other goods

c_{is} *cost of each child* children

Y is the level of household income

a, b are measures of bargaining power of husband and wife respectively.

Bargaining model (contd).

Case 1: Suppose w_f increases.

- Y increases (income effect), c also increases (substitution effect)

- The net effect is likely to be negative, so fertility declines
- Note that it's the wife's wages that matters.

It is when her wage increases that we expect a decline in opportunity cost.

It is also when her relative wage increase that matters, bec. that determines the relative cost of women's opting out of market work to care for children.

Exercise: Suppose it's w_m that increases. What happens to fertility rate?

III Declining Fertility, Aging and Care Needs

A. The Demographic Transition

- Stage I: High birthrates and death rates
- Stage II: Continued high birthrates, declining death rates
- Stage III: Falling birthrates and death rates, eventually stabilizing
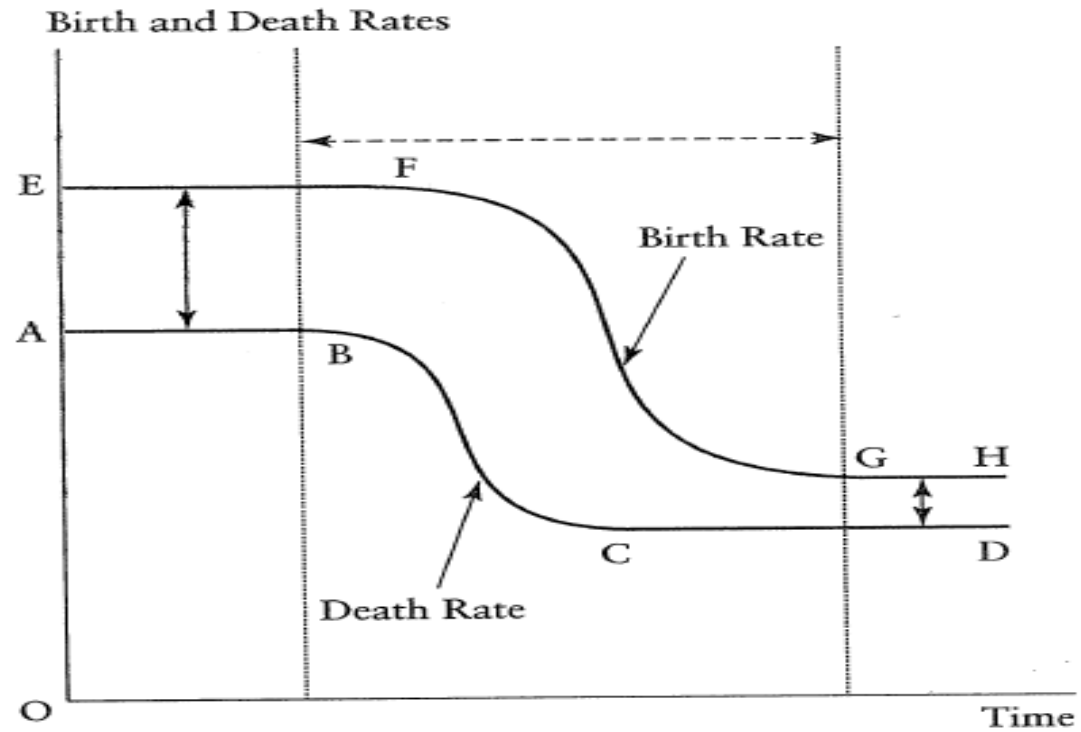
Demographic Transition

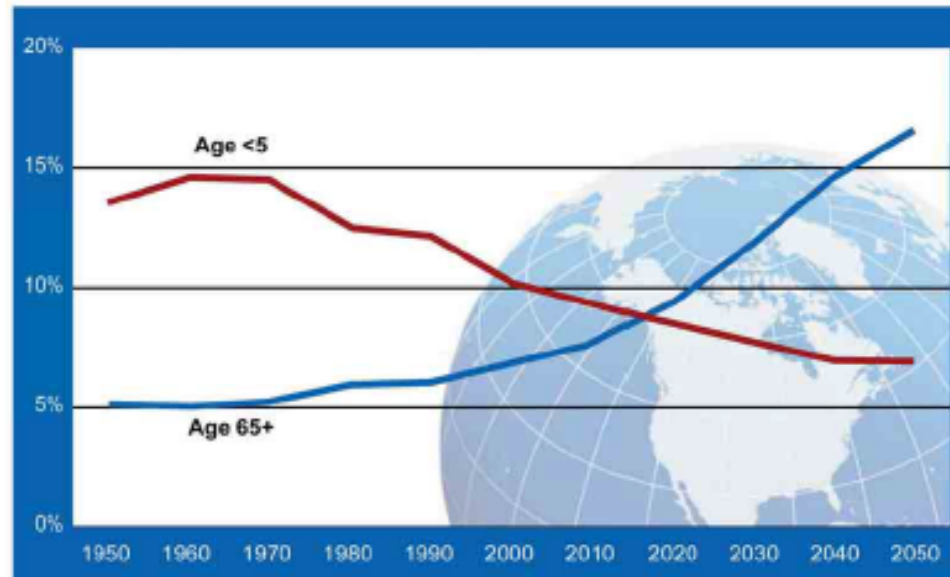FIGURE 8.4 The demographic transition

Demographic Transition

- Move from high fertility to low fertility
- Introduction of universal, compulsory education (increase in female literacy*)
- Decline in infant and child mortality rates
- Cost of children went up
- Availability of birth control and family planning services

Low Fertility Rates

- A serious social and economic problem

- Below replacement rates

- Rapidly aging population

- Increasing demand for eldercare, in addition to childcare

- Government strategies and policies to reverse and increase fertility rates

Increasing demand for eldercare

Figure 1.
Young Children and Older People as a Percentage of Global Population: 1950-2050
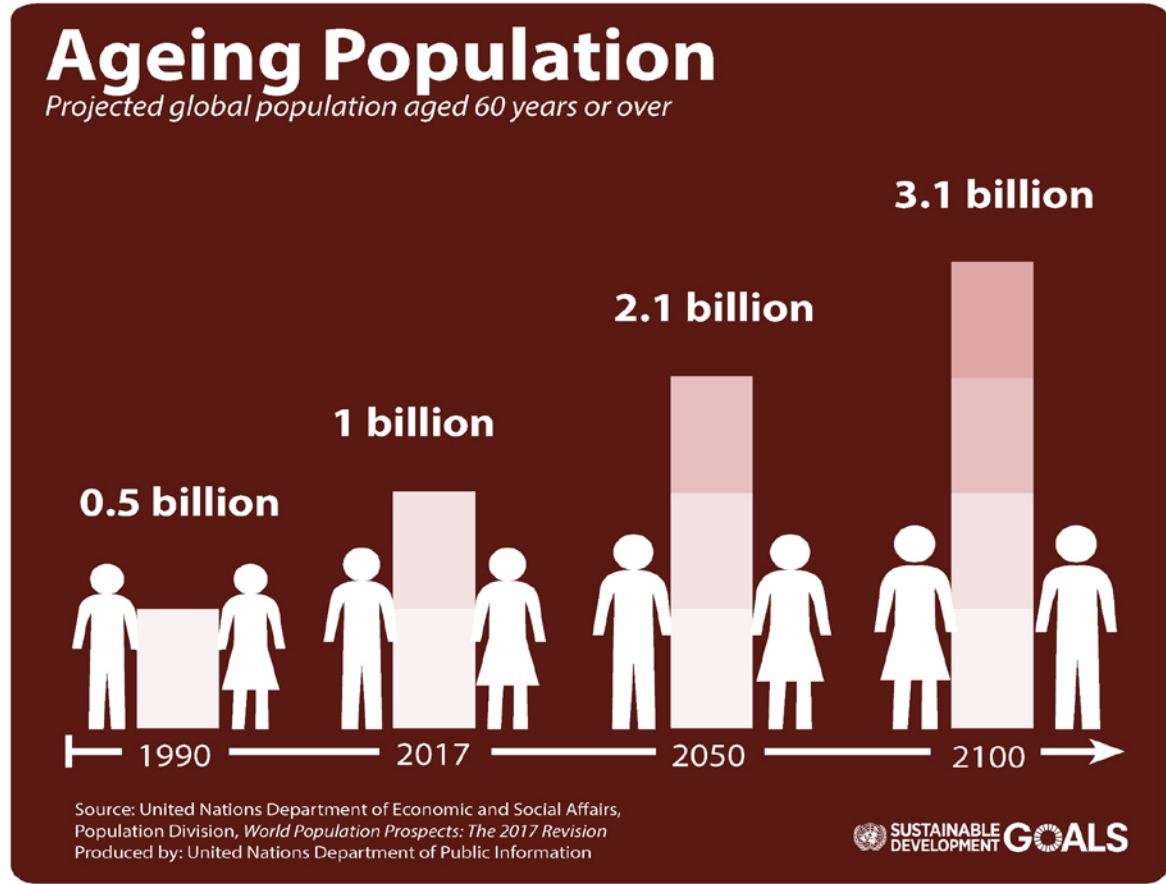
Source: United Nations. *World Population Prospects: The 2010 Revision.*
Available at: http://esa.un.org/unpd/wpp.
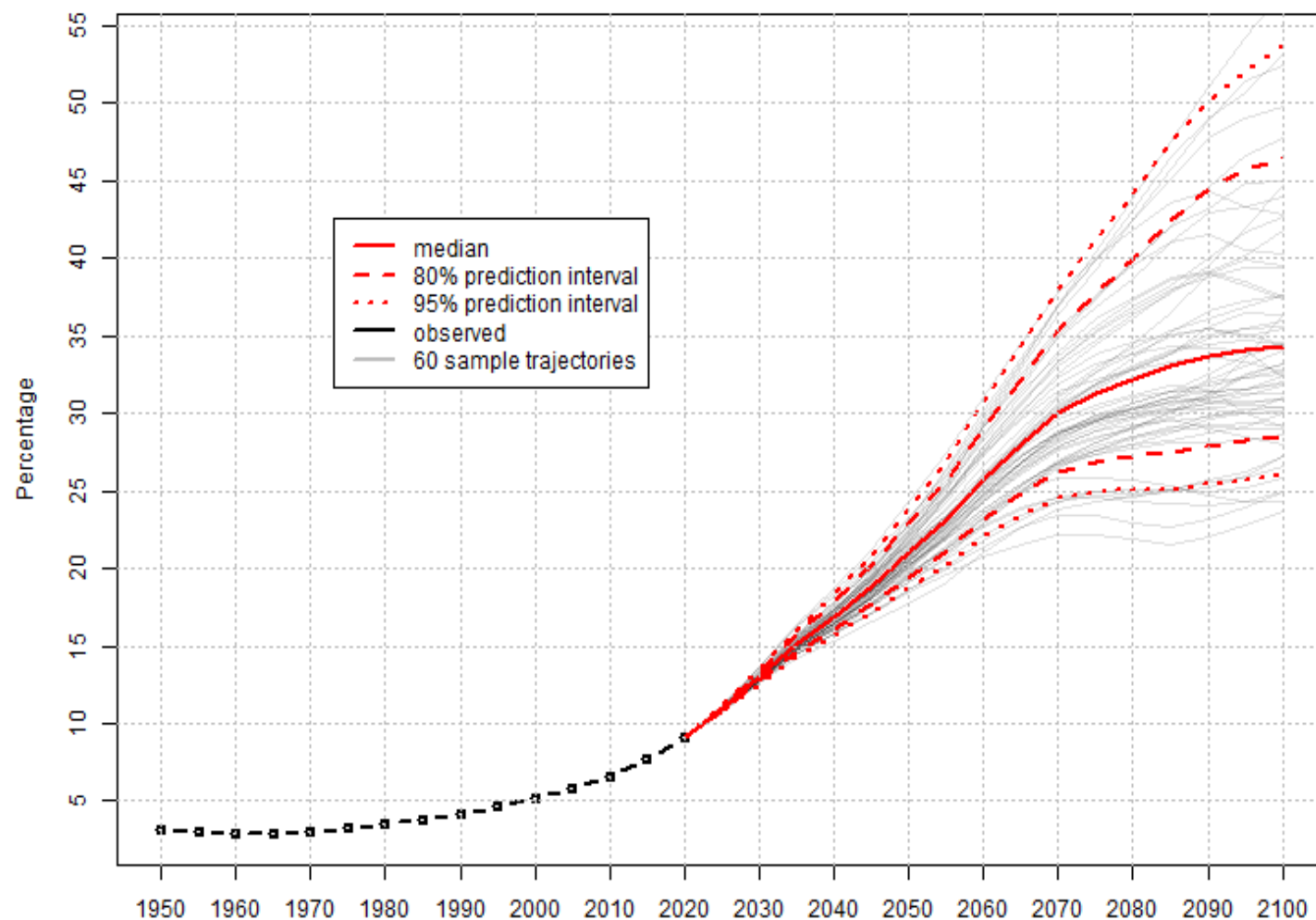
- In EU: 2.3% of Men

8.4% of Women

Provide daily care to adults. Most frequent case: 20-39 hours per week. (Household Panel of EU, Durran 2012)

Source: World Health Organization (2017)
https://www.un.org/development/desa/publications/graphic/wpp2017-ageing-population

Colombia: Percentage of population aged 65 years or over

Legend:
- median
- 80% prediction interval
- 95% prediction interval
- observed
- 60 sample trajectories

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United Nations, DESA, Population Division. *World Population Prospects 2019*. http://population.un.org/wpp/

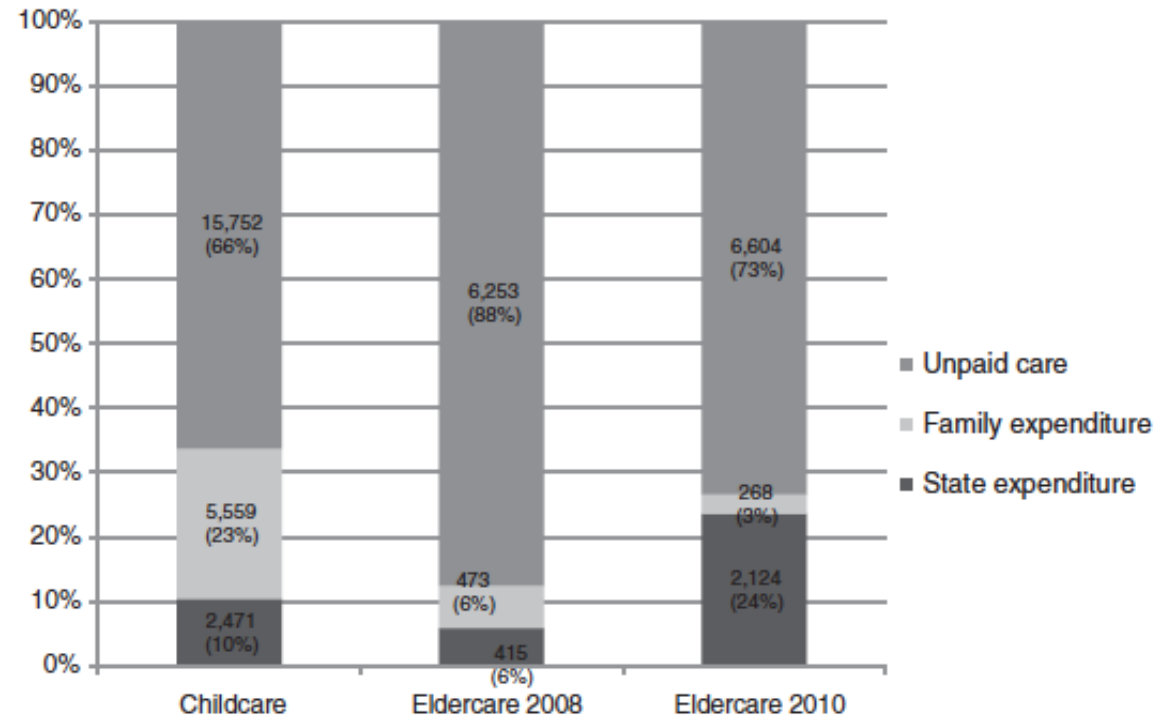# Who takes care of young children and elderly? The case of South Korea

Figure 3 Relative shares of unpaid care, family expenditure, and state expenditure
Note: Values are in millions of US dollars.
Sources: KLoWF 2008–09; KLoSA 2008, 2010.

Concepts for Review

Total fertility rate

- Replacement rate

- Demographic transition

- Empowerment of women

- Fertility choice model