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FERTILITY PROSPECTS IN JAPAN:

Trends, Recent Rise, and Lifecourse Projection

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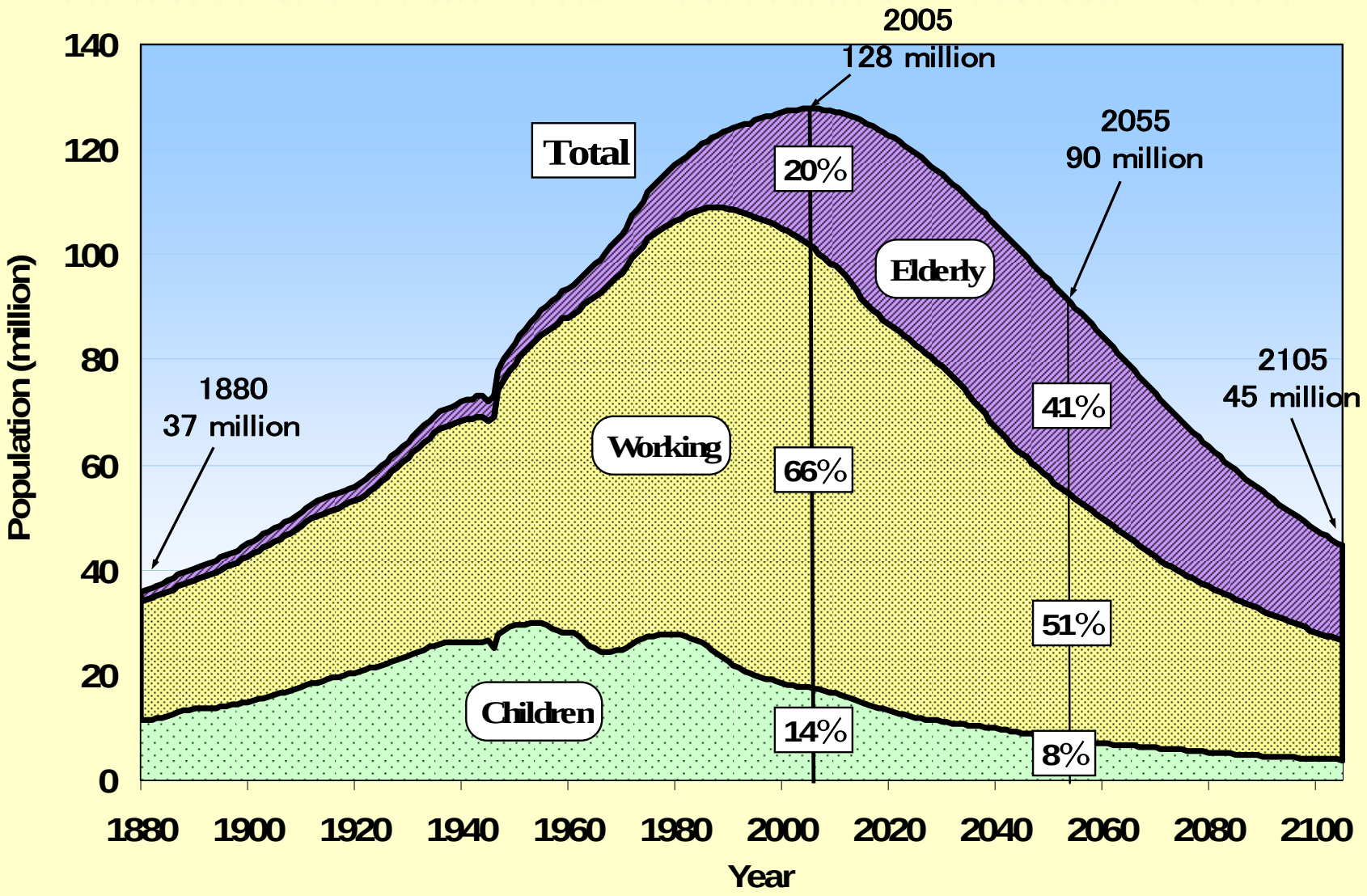
Outline

- Demographic Situation of Japan
  --- in terms of Fertility Prospects
- Recent Upturn of Fertility Rate
  --- Some analyses
  and implication for future prospects

POPULATION OF JAPAN: 1880-2105

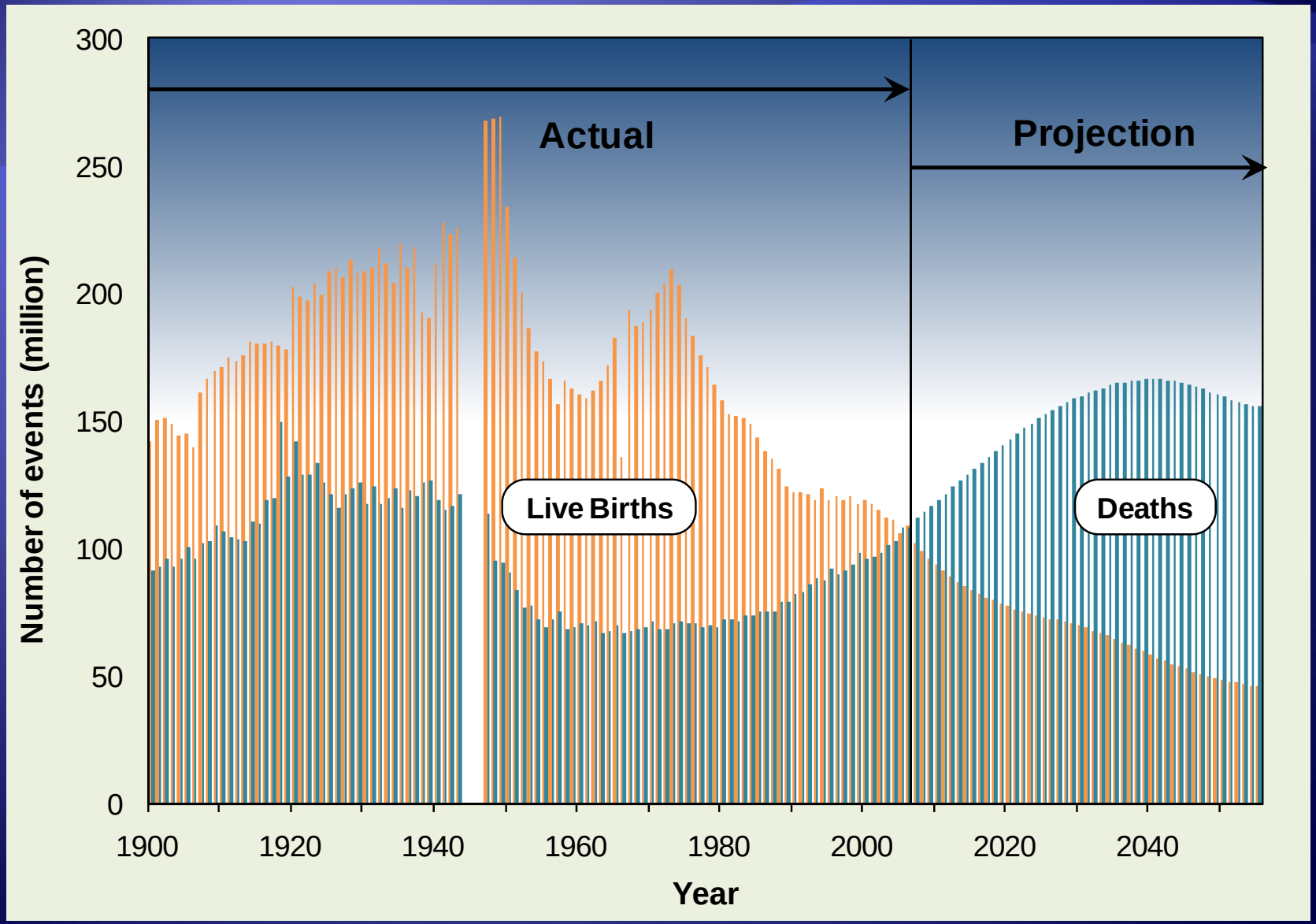


Source: Ministry of Internal Affairs and Communications, Statistics Bureau, *Census*, NIPSSR(2006), Population Projection for Japan:2006-2055.

Population Decline

- The population in Japan peaked in the period from 2004 to 2007 and gradually started to decline by now.
- The depopulation accelerates: losing more than 500,000 people every year from 2017, and more than 1 million people per year from 2039 and onward (IPPS projection).

Figure1 Japanese Cross



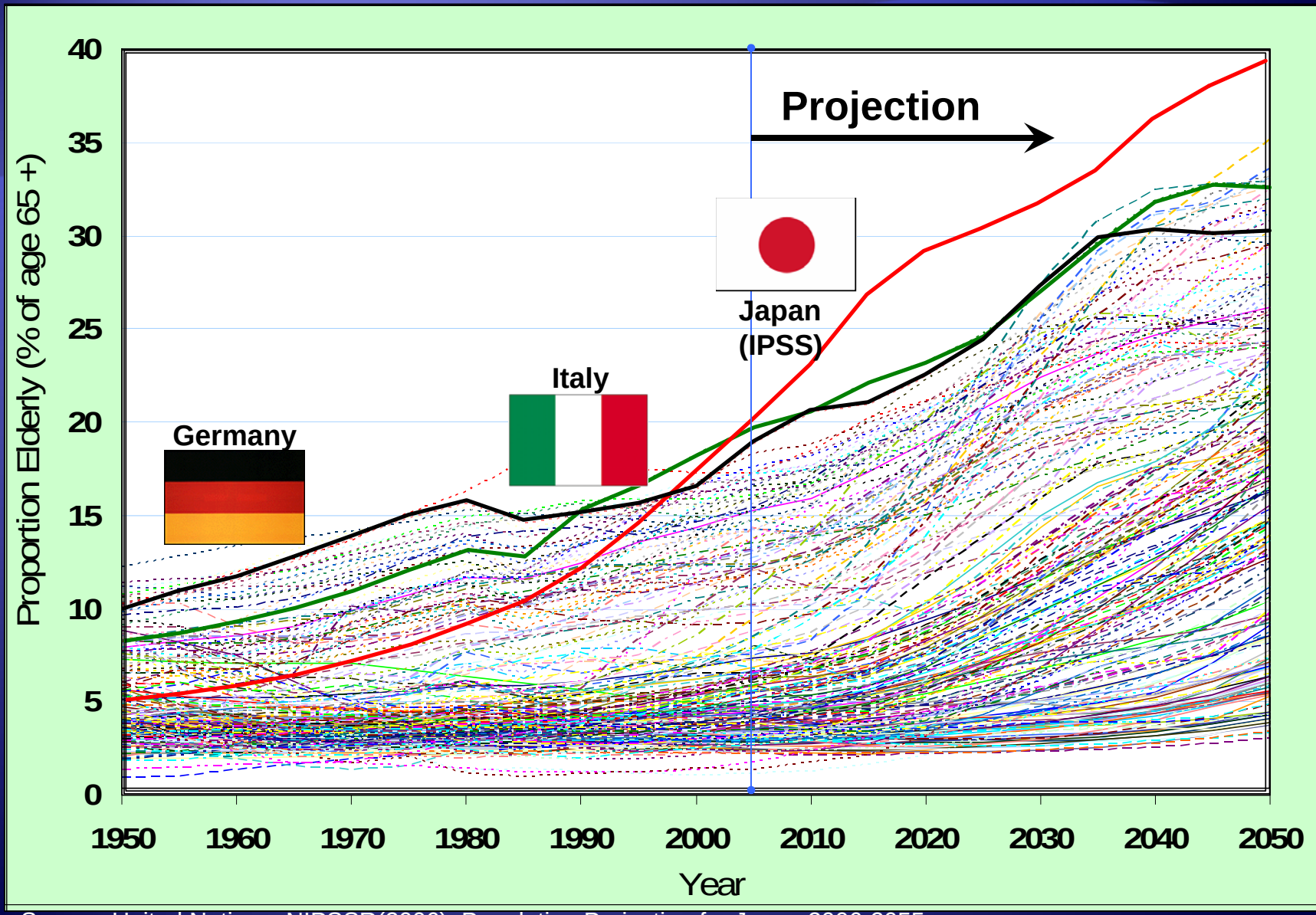
Source:. NIPSSR(2006)

Population Ageing

- Japan has had the highest proportion elderly (% 65) in the world since approximately 2005,

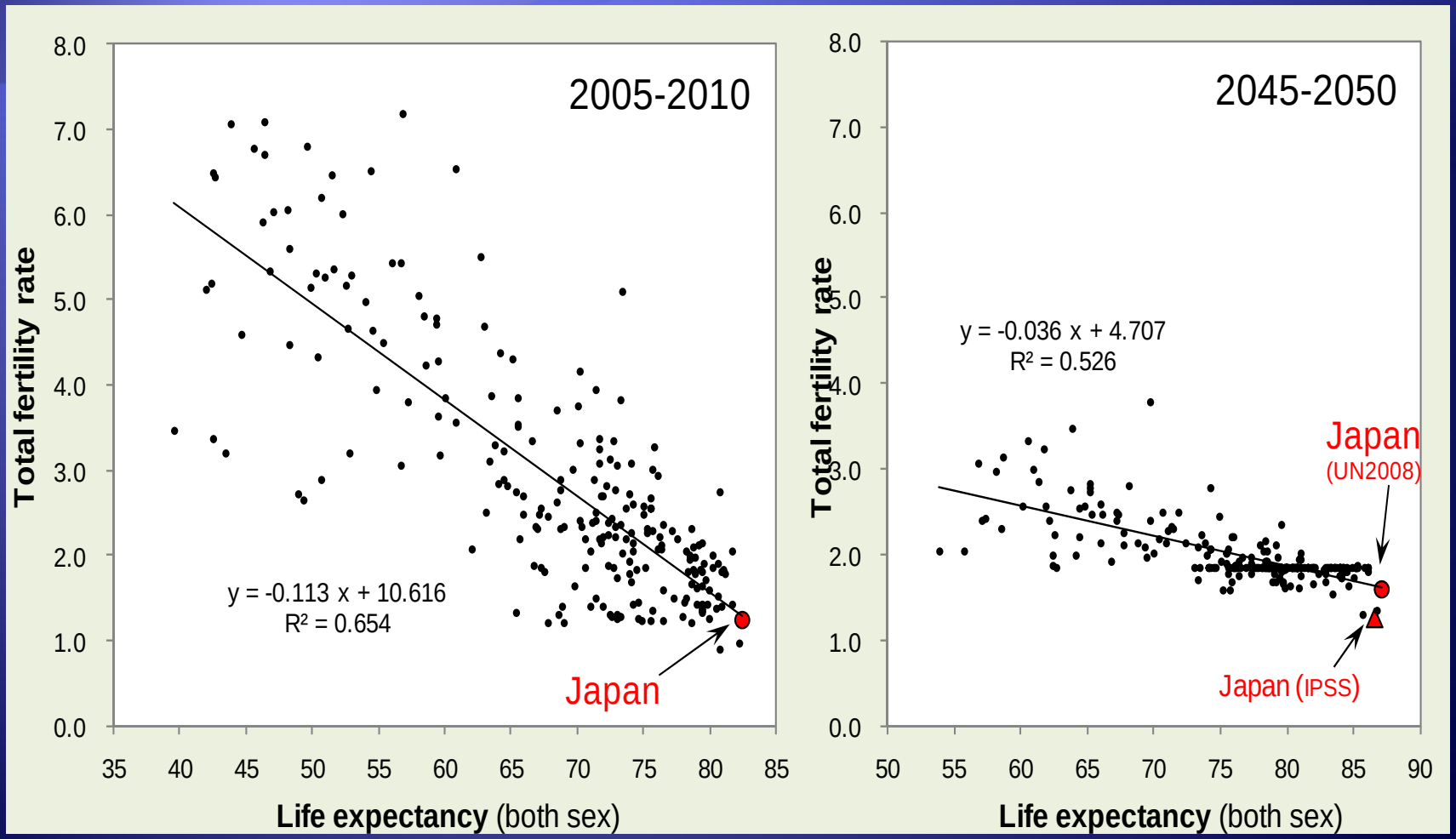
- and continue to be so at least until 2050.

Proportion Elderly: 1950-2050



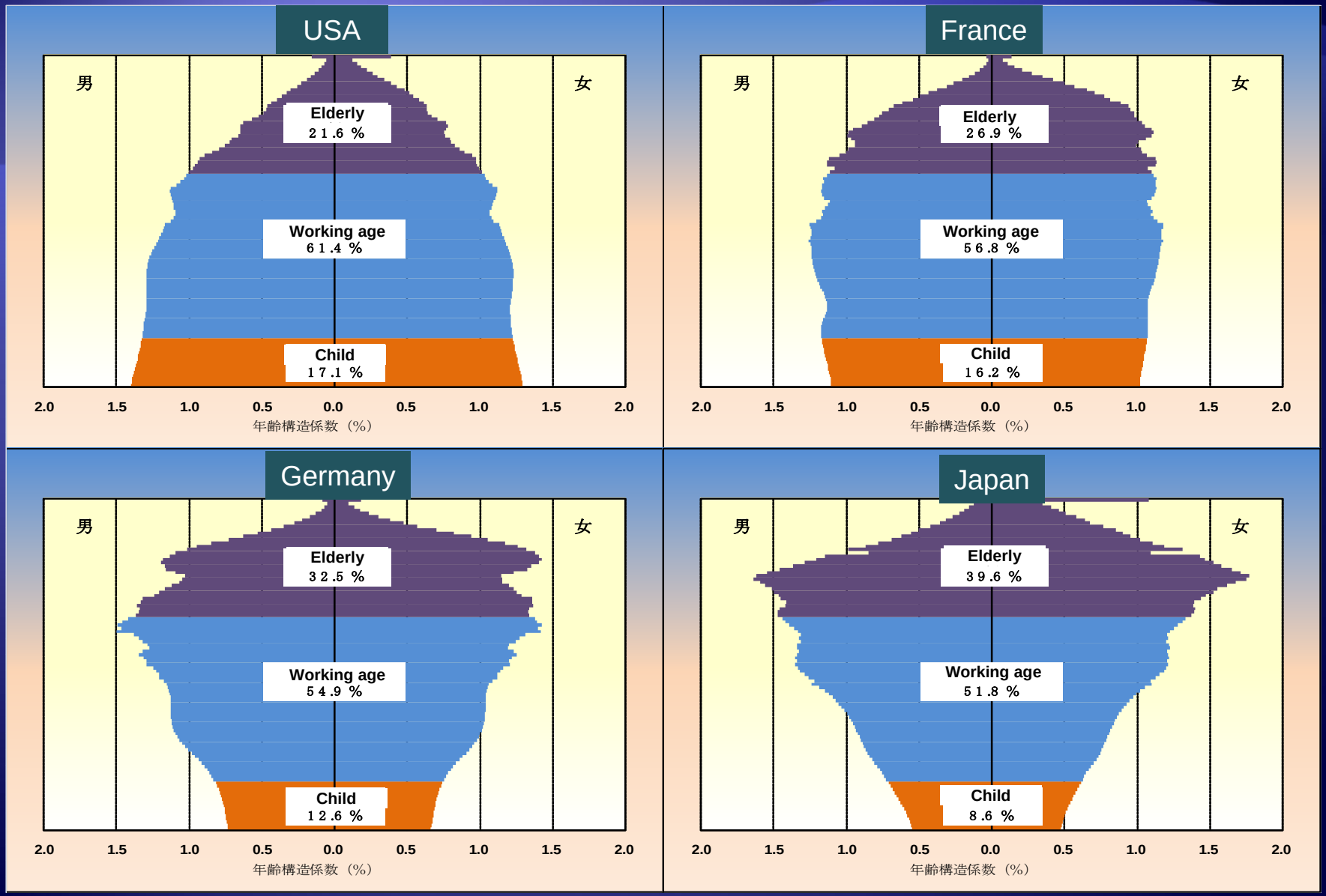
Source: United Nations, NIPSSR(2006), Population Projection for Japan:2006-2055.

Figure2 Japan's Distinguishing Position: Present and Future



Source: United Nations (2009), NIPSSR(2006)

Population Pyramids: 2050

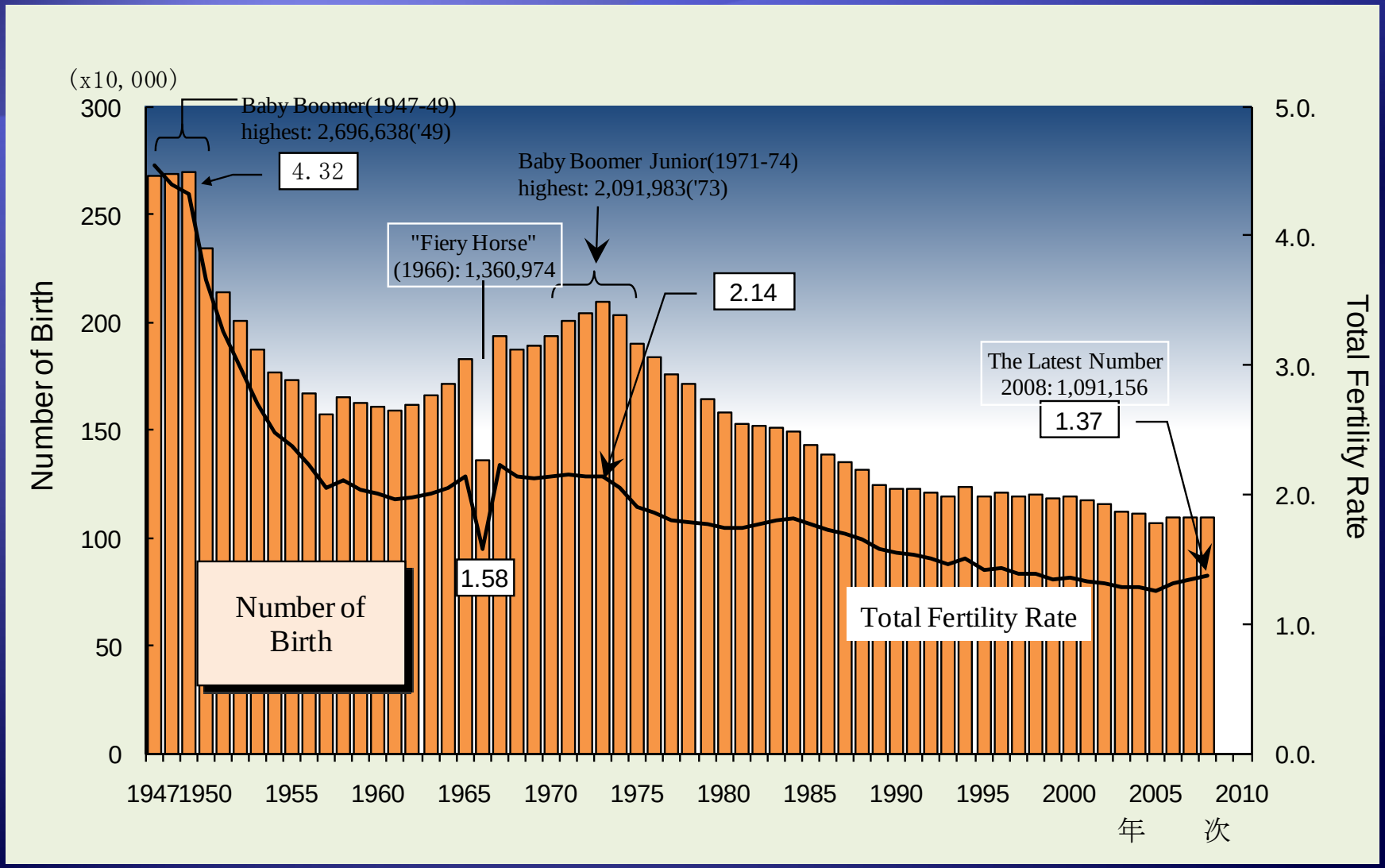


Source: United Nations (2009), *World Population Prospects: The 2008 Revision*. NIPSSR (2007), *Population Projections for Japan*.

Fertility Trends

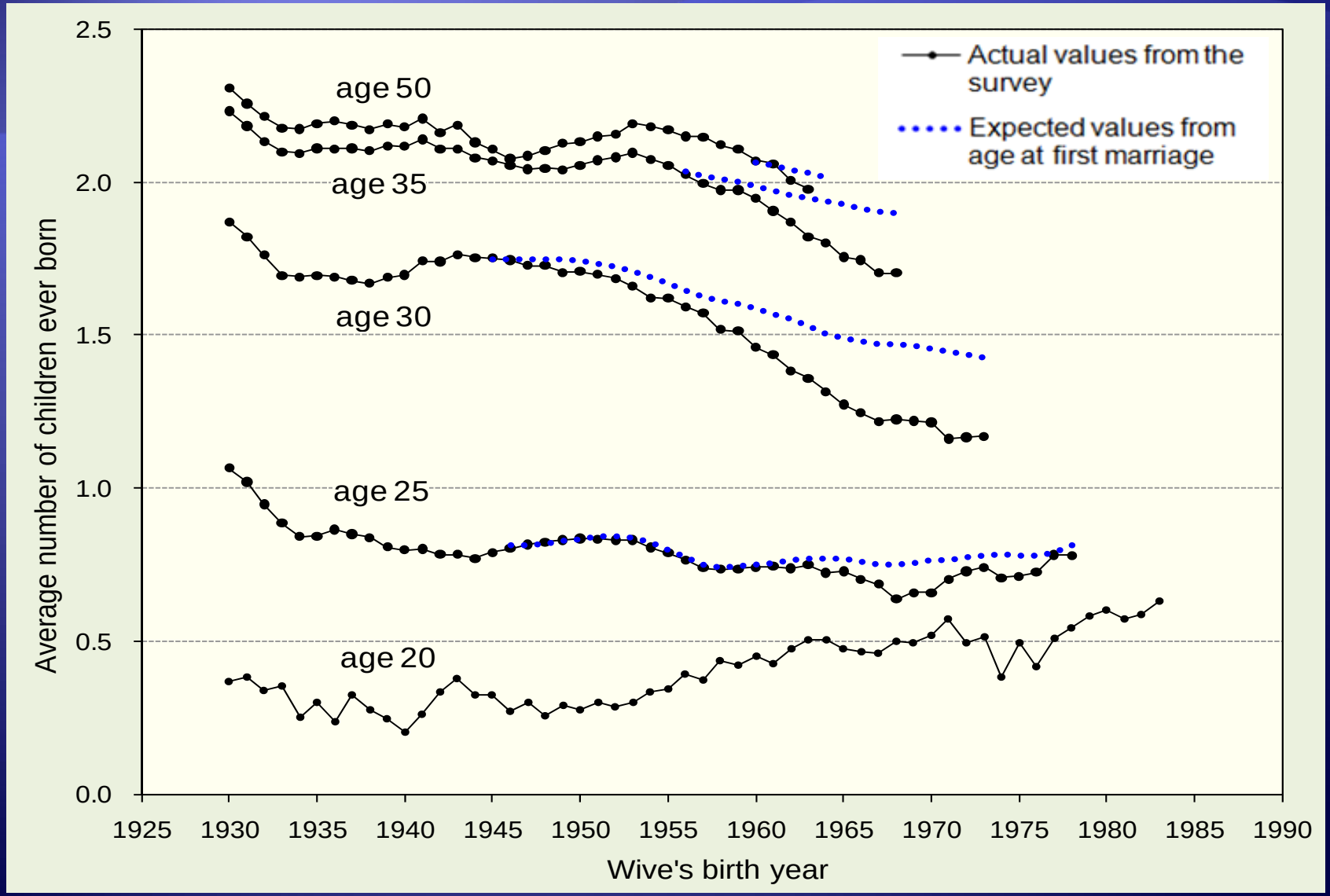
- The six decades of Japanese postwar trends may be divided into three phases.

Figure 3 Numbers of Live Births, and Total Fertility Rate: 1947-2008



Source: NIPSSR (2007), *Population Projections for Japan*.

Figure 4 Cohort Trends of CEB to Married Women by Age: Actual & Expected from MAFM



Source: The National Fertility Survey (NIPPSR).

Upturn in 2006 and onward

Figure 5 Trends of Total Fertility Rate: Observed and Assumed

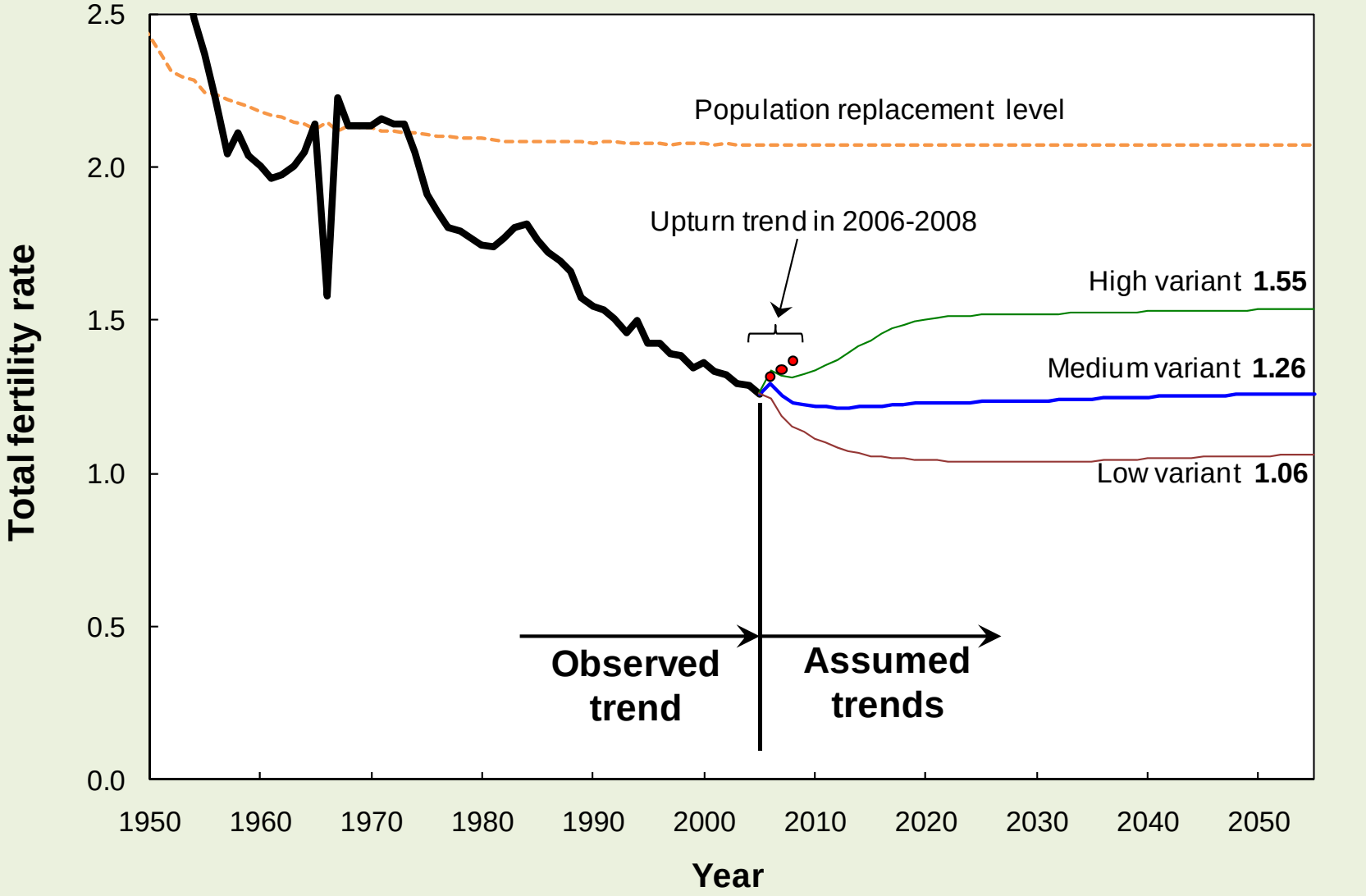


Figure 5 Trends of Total Fertility Rate: Observed and Assumed

Figure 6 Monthly Progresses of Fertility Rates by Birth Order: 2002-2009

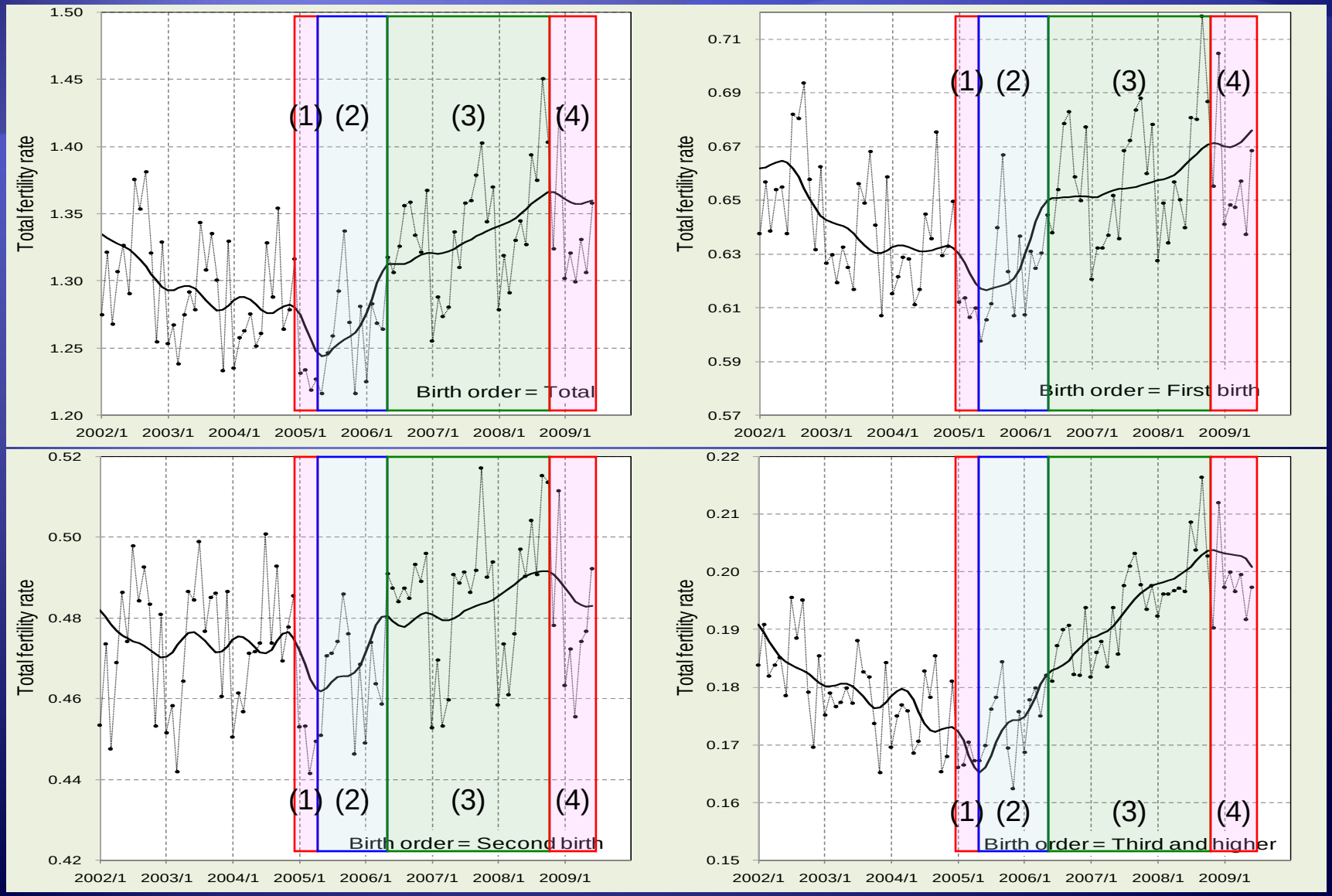
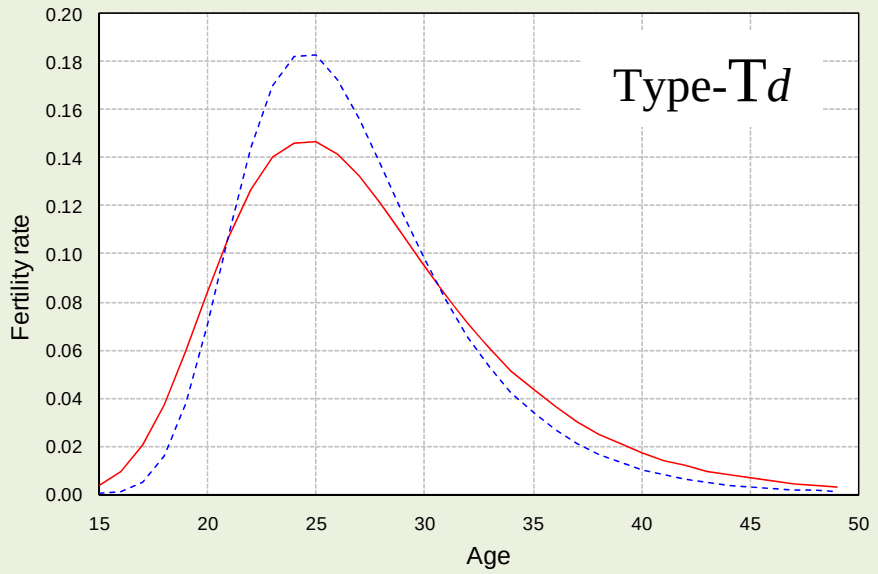
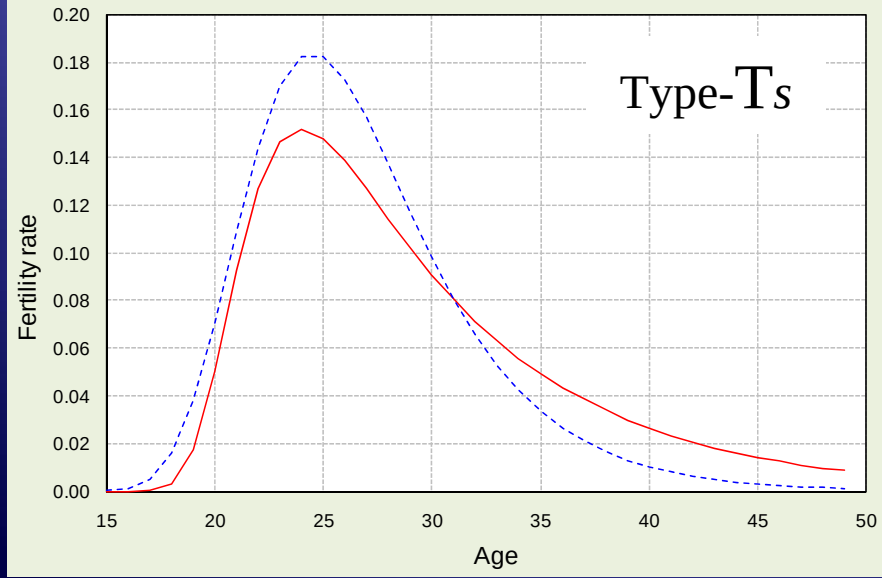


Figure 7’ Types of Period Effect in Terms of Cohort Fertility Schedule





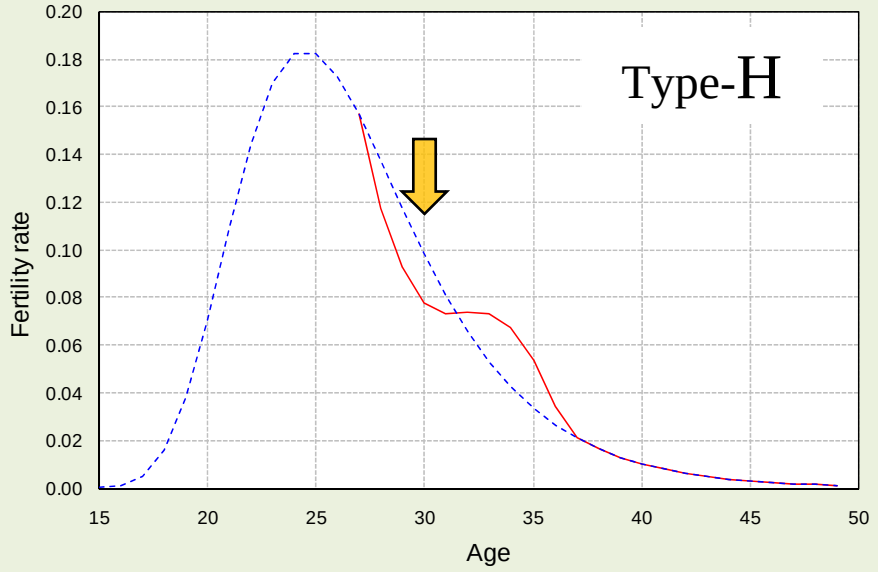
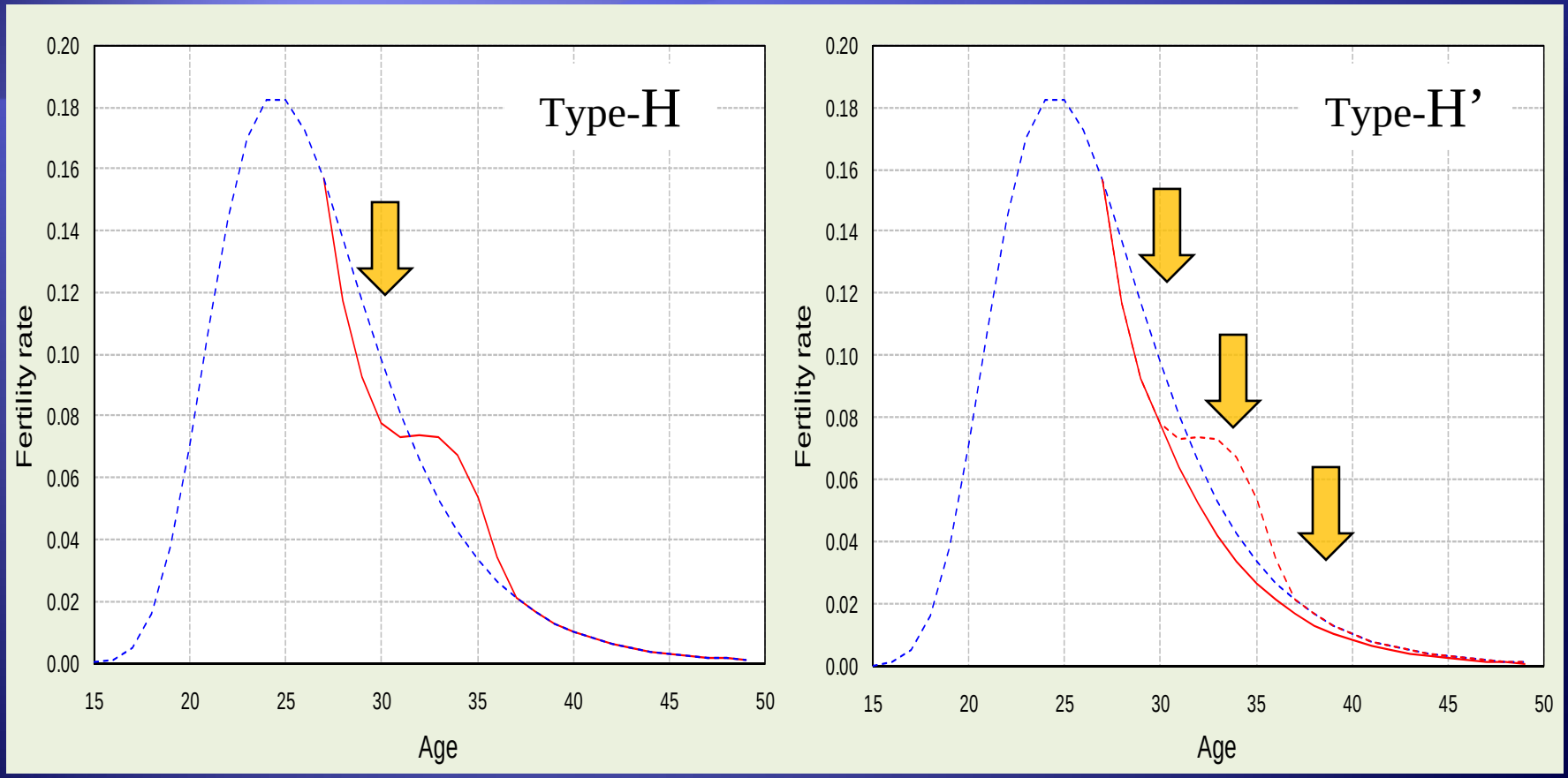


Figure7’ Types of Period Effect in Terms of Cohort Fertility Schedule



Type-H’ is not a genuine period effect, because it changes cohort completed fertility. It rather be classified a *period-cohort effect*.

Figure9 Trends of the Total Fertility Rates with/without Tempo-adjustment

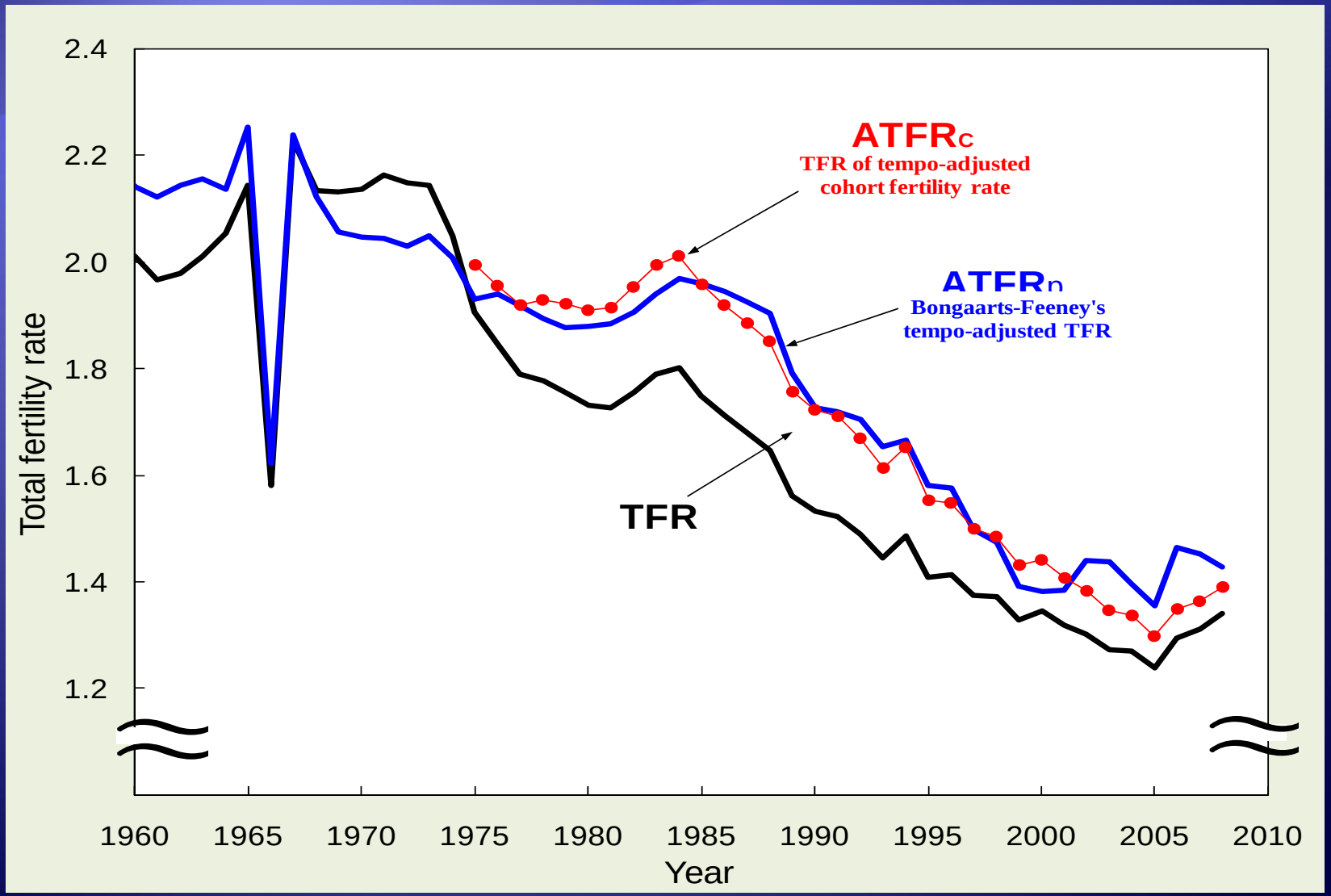
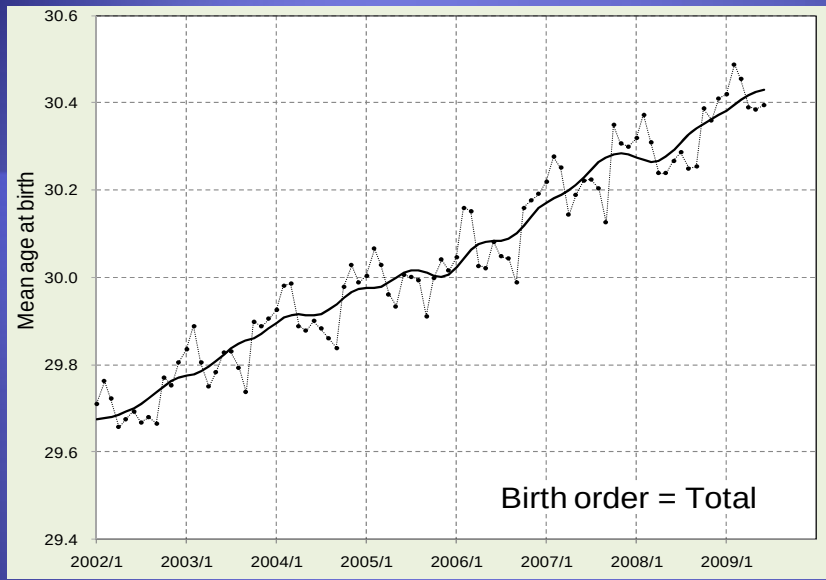
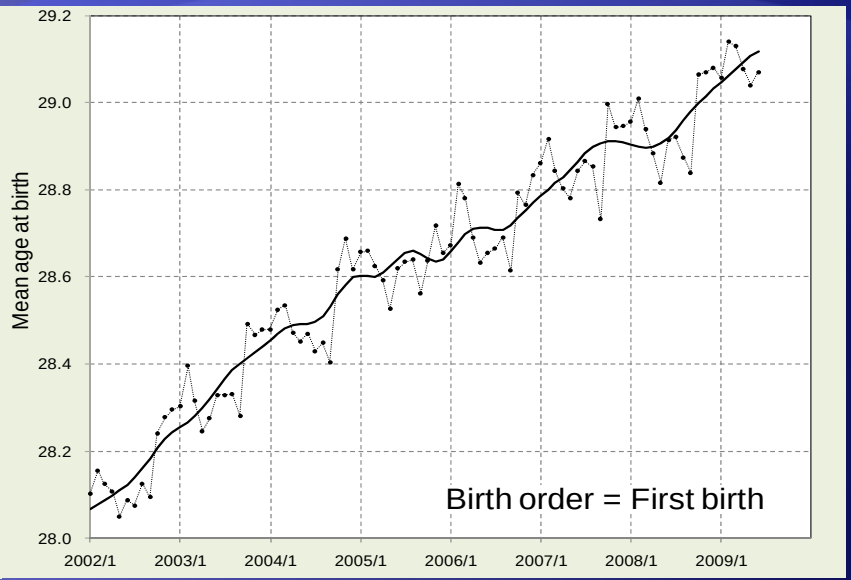
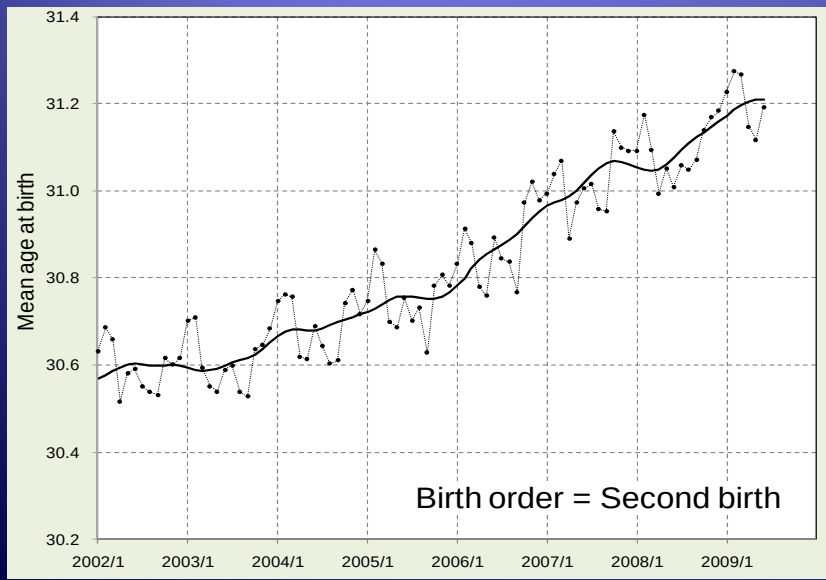


Figure 8 Monthly Progresses of the Mean Age at Birth by Birth Order: 2002-2009







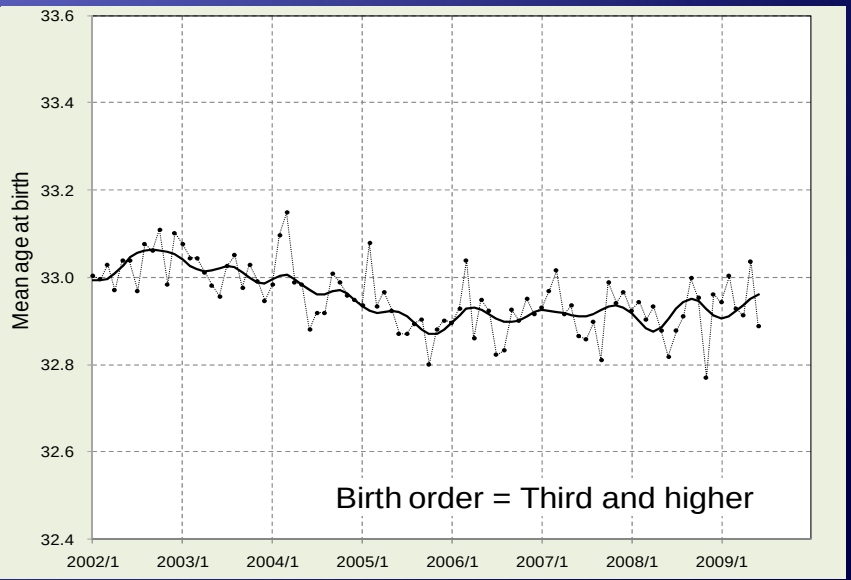


Figure 10 Actual and Modeled Cohort Fertility Rates by Birth Order

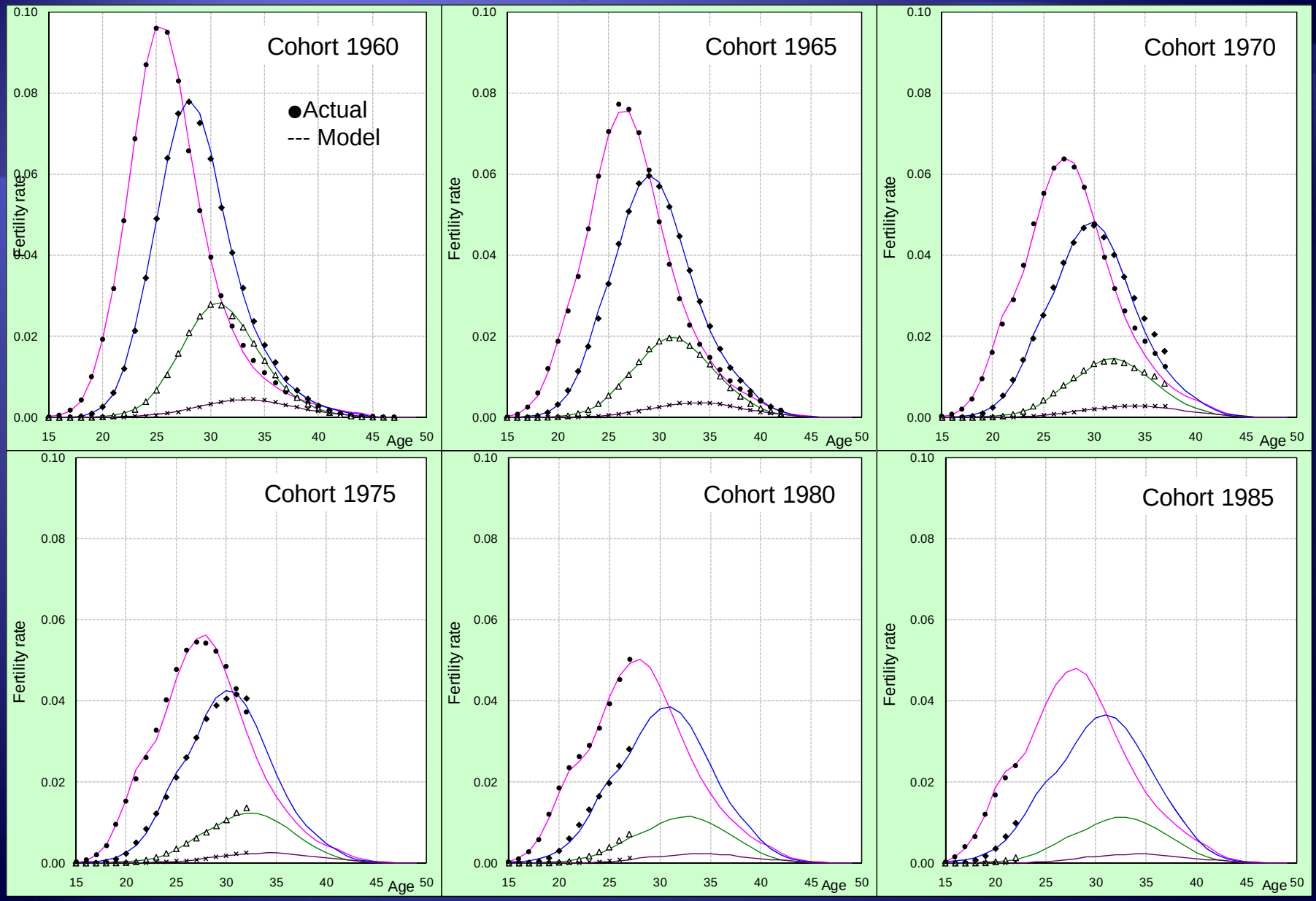
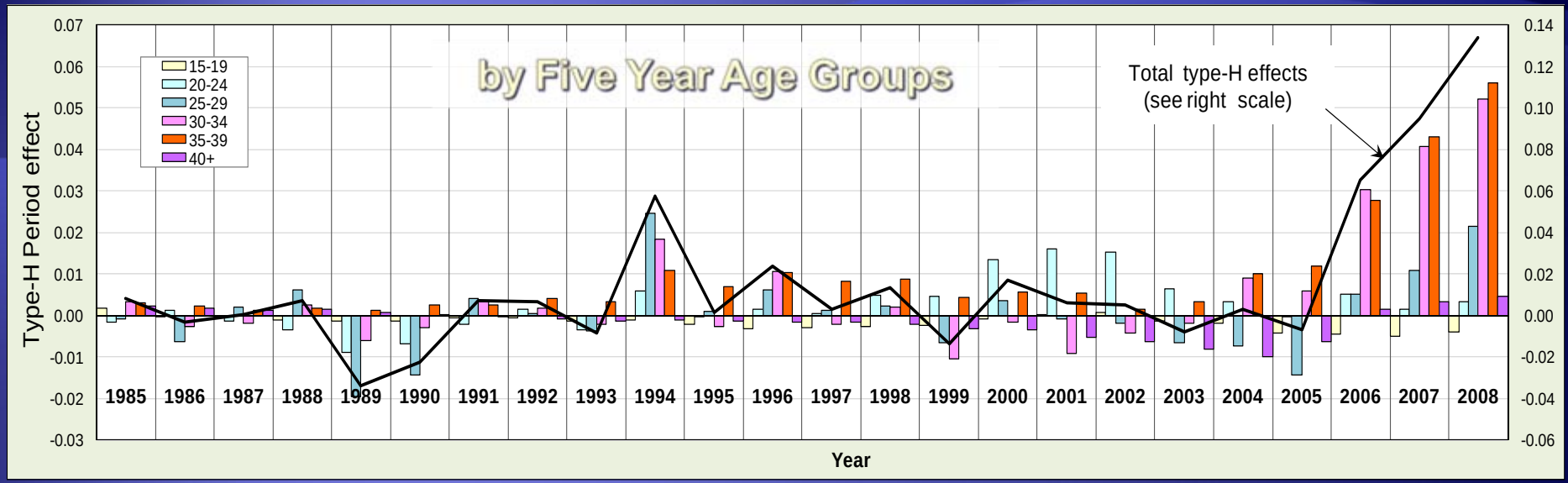


Figure 11 Estimates of Type-H Period Effects
-Differences between Actual and Projected Fertility Rates-



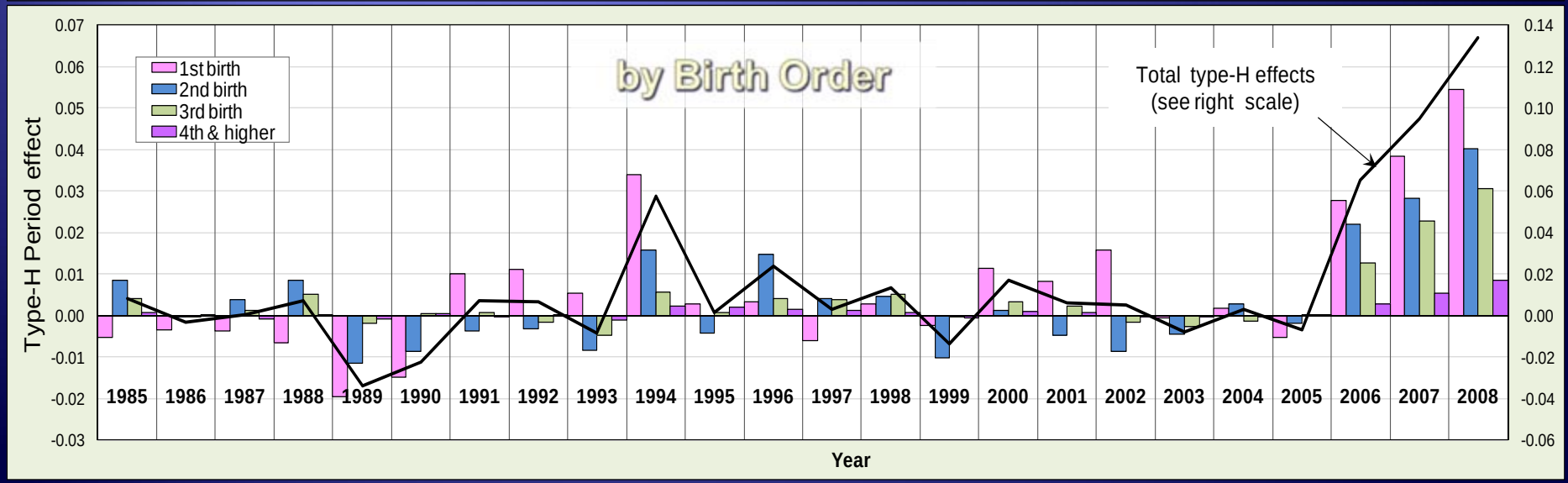
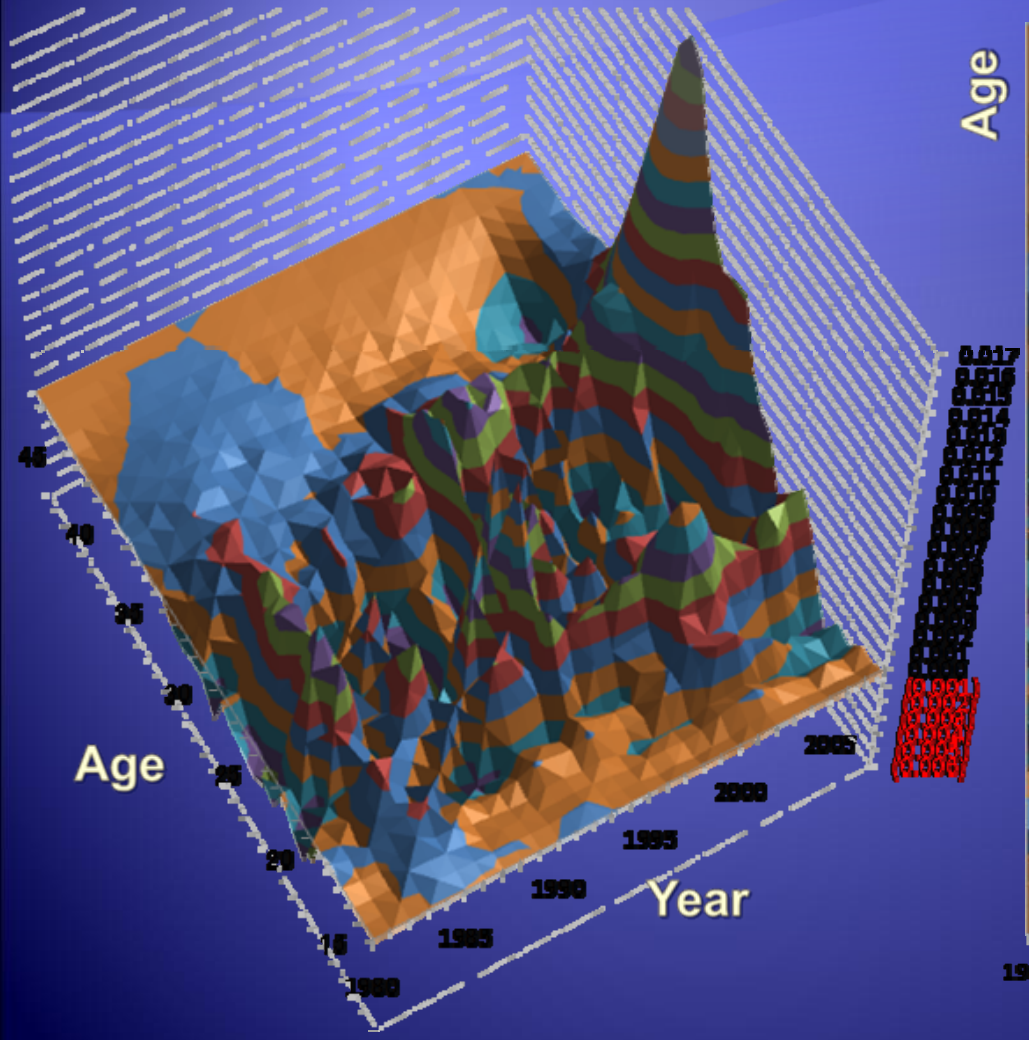
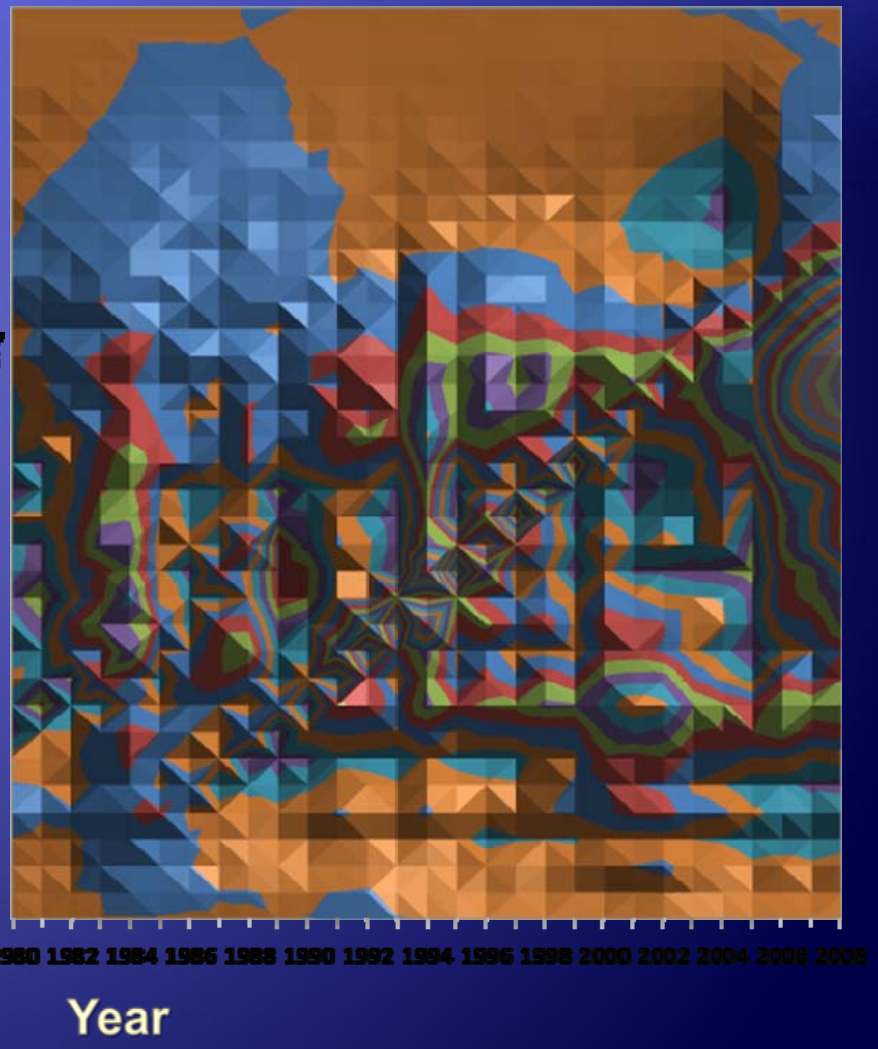


Figure 11 Estimates of Type-H Period Effects

-Differences between Actual and Projected Fertility Rates-

By Age and Year





Conclusion (1) General

- Due to its peculiar combination of population dynamics, Japan will experience, a very rapid population decrease, along with the highest proportion of elderly in the world.
- The prospect of continuing low fertility is mainly responsible for these changes.

Conclusion (2)

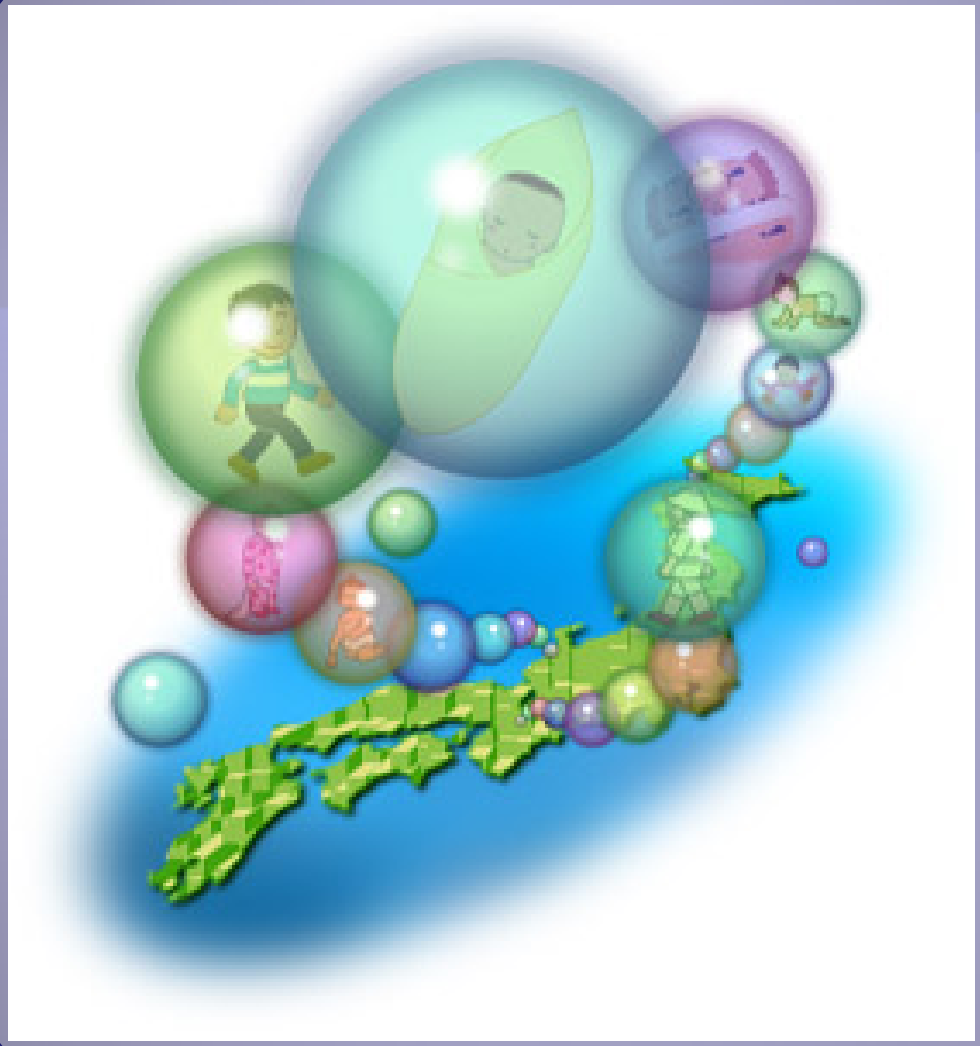
- The recent upturn could mainly be explained by the period effect, which would not change cohort completed fertility, and particularly the effects that temporally works and would be redeemed in other period (the type-H period effect).

Conclusion (3)

- It seems to be caused by a rebound of the short term too-low fertility, followed by a boom among single's and under-parity family's market involving the second baby boomers.
- These are the different in causes from the upturns seen in the US and Europe due to so-called "the tempo transition. “
(type-T period effect in our terminology)

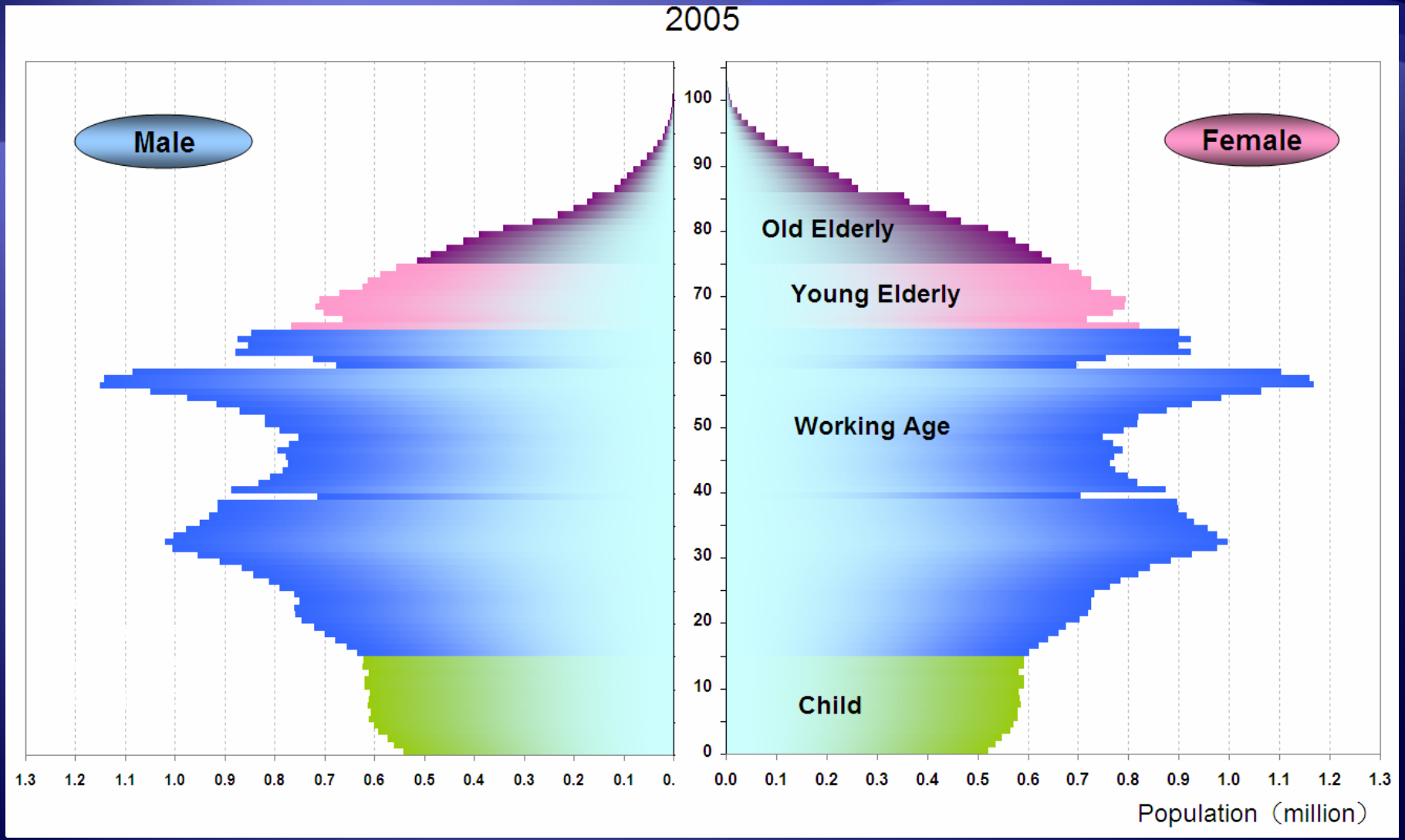
Conclusion (4)

- However, if boom continues for long enough to raise the levels of completed fertility (type-H‘ effect), the long term prospect should be higher than the presently assumed.
- It depends on whether the rise in fertility schedules of cohorts in their mid-thirties and beyond in this period is continually succeeded by the following cohorts ending up with rises in their completed fertilities



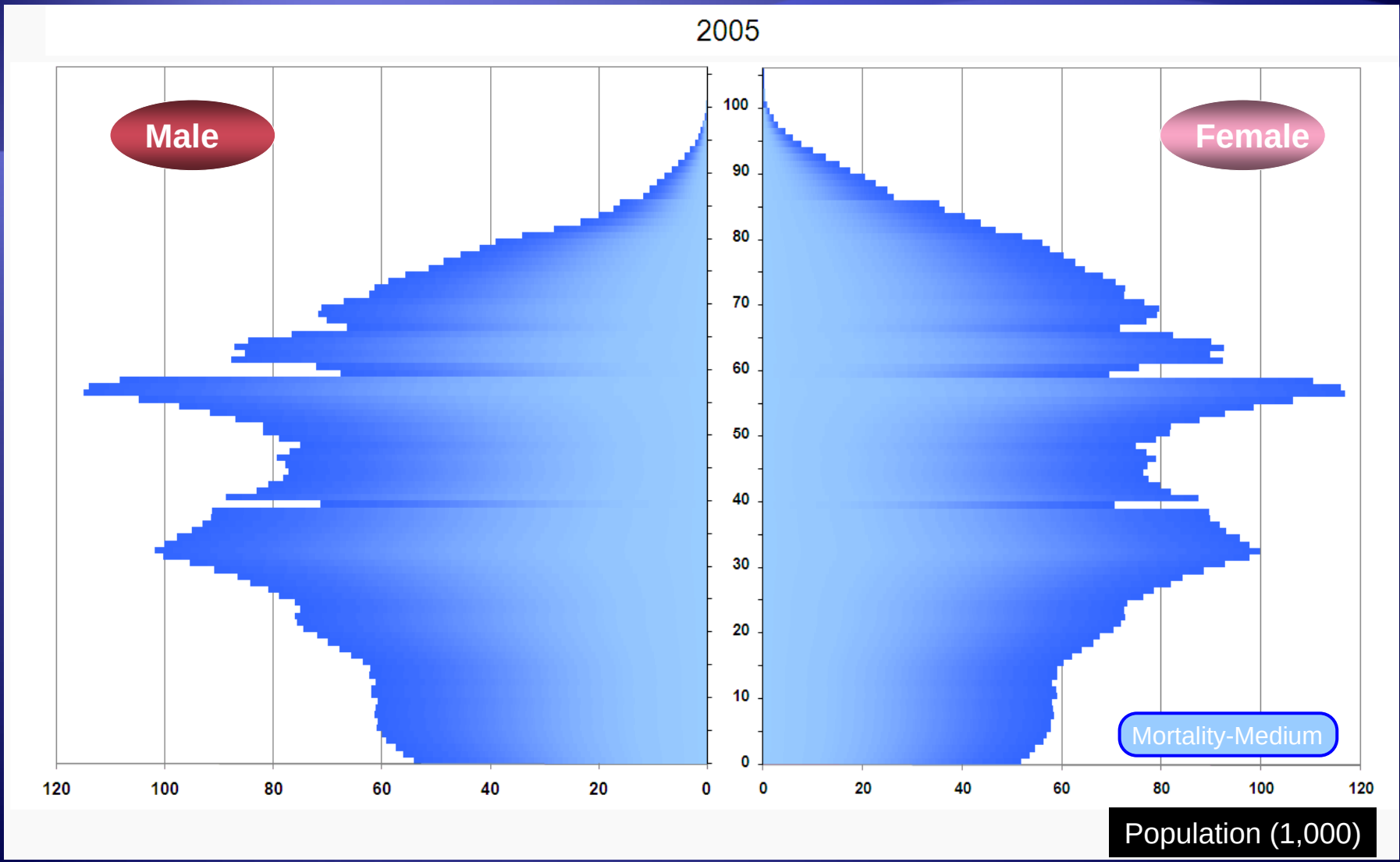
- Thank you …

Population Pyramid 2005



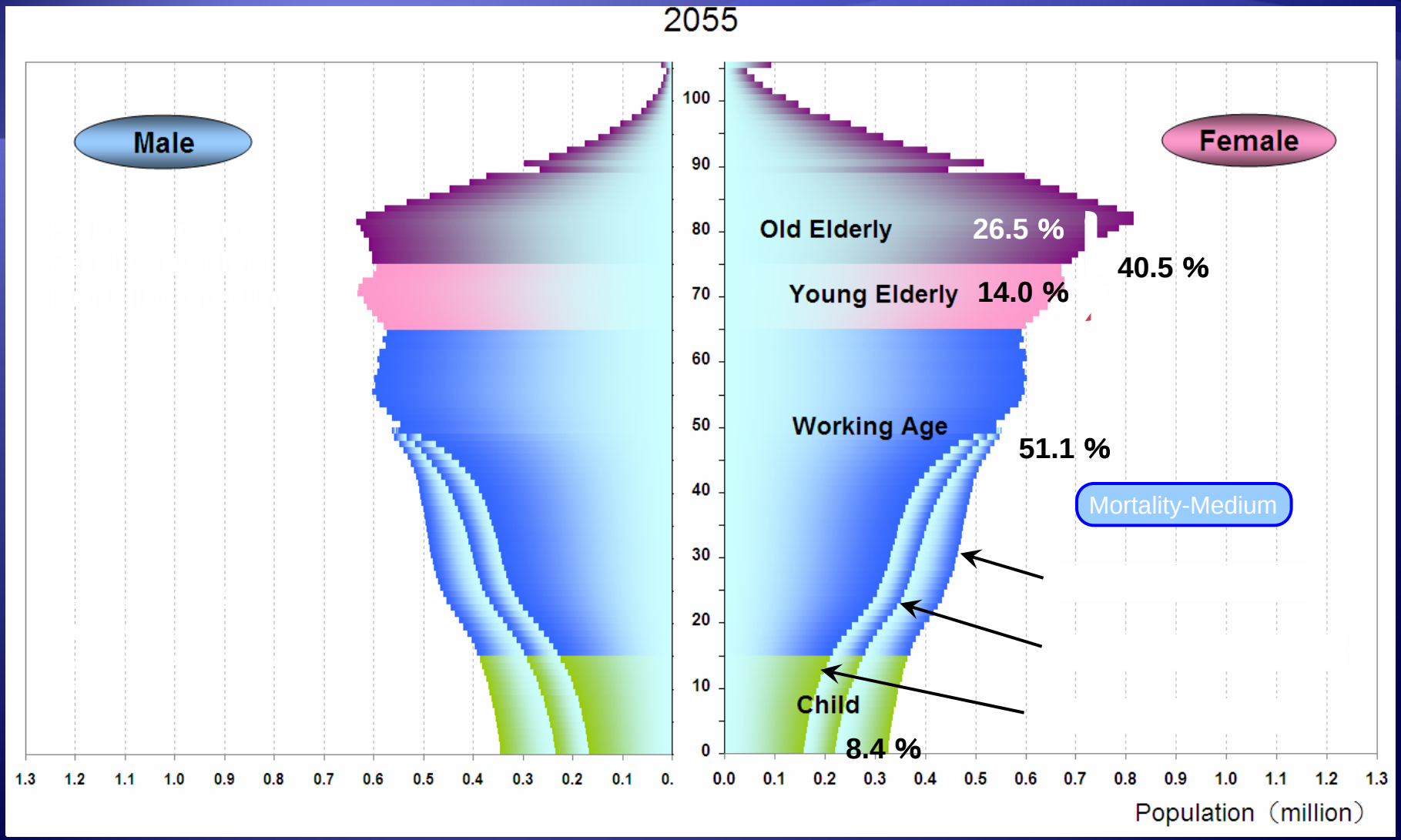
Source: Ministry of Internal Affairs and Communications, Statistics Bureau, *Census*, NIPSSR(2006), Population Projection for Japan:2006-2055.

Population Pyramid 2005 → 2055



Source: Ministry of Internal Affairs and Communications, Statistics Bureau, *Census*, NIPSSR(2006), Population Projection for Japan:2006-2055.

Population Pyramid 2055

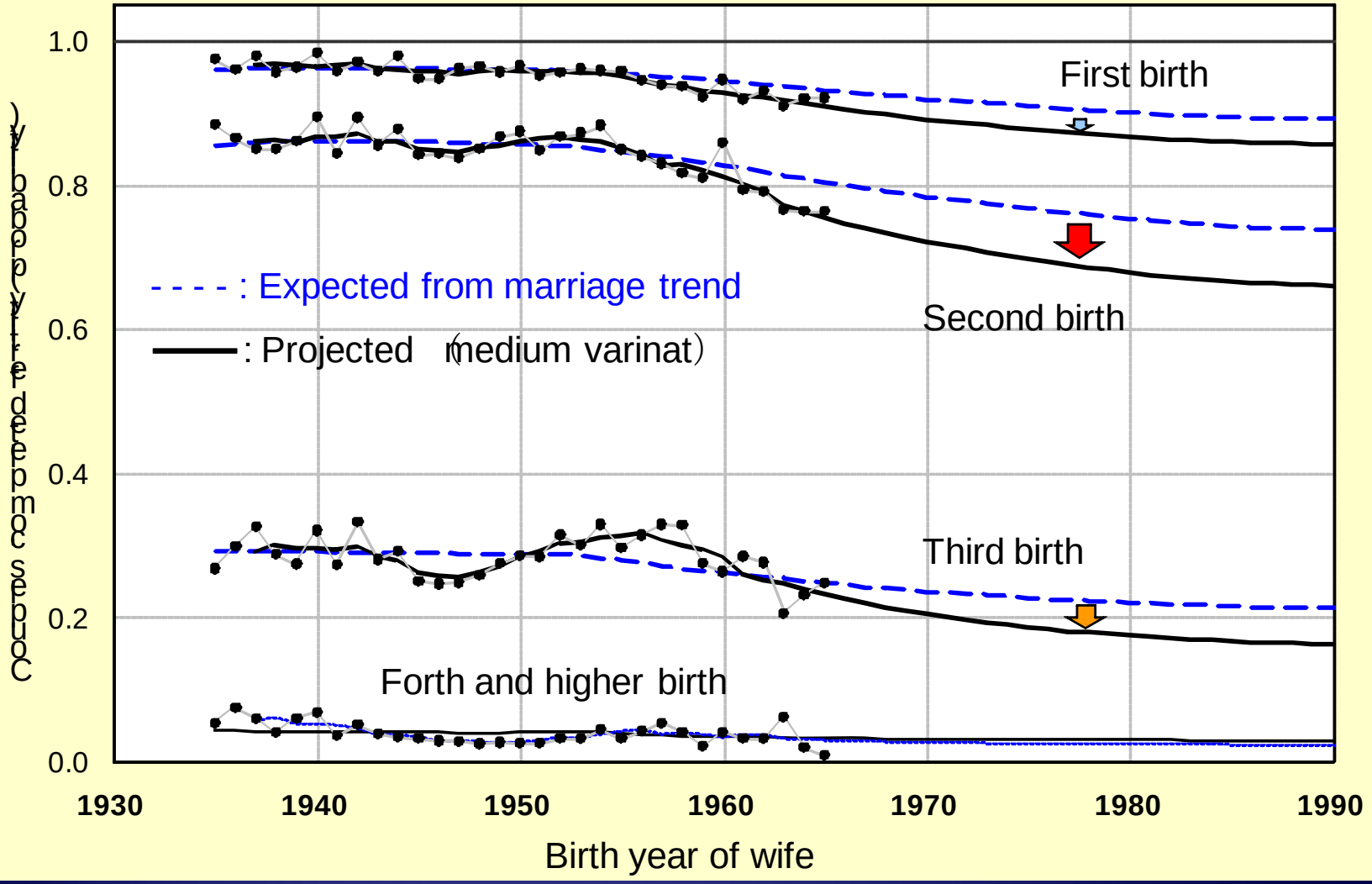


Source: Ministry of Internal Affairs and Communications, Statistics Bureau, *Census*, NIPSSR(2006), Population Projection for Japan:2006-2055.

Constructing life course in population projection

Multistate life table technique

Birth Probability by Birth Order : Actual and Projected



Assumed Values for Measures of Fertility Components, and Fertility in Population Projection 2006 in Japan

Measures of Fertility Components		Observed: cohort born in **1955**		Assumptions of Population Projection: Female cohort born in **1990**		
				Medium	**High**	**Low**
(1) Mean age at first marriage		24.9		**28.2**	27.8	28.7
(2) Proportion never married at age 50		5.8 %		**23.5 %**	17.9 %	27.0 %
(3) Couples' completed fertility		2.16	→	**1.70**	1.91	1.52
(4) Effect of divorce, widowhood and remarriage		0.952		**0.925**	0.938	0.918
Children	0 (Childless Ratio)	12.7 %		**37.4 %**	28.6 %	43.3 %
	1 (Only-Child Ratio)	11.8 %	→	**18.2 %**	15.4 %	19.4 %
	2 and over	75.6 %		**44.4 %**	55.9 %	37.2 %
Cohort Total Fertility Rate (the rate only for birth from Japanese women)		1.94	→	**1.26 (1.20)**	1.55 (1.47)	1.06 (1.02)

Source: Ministry of Health, Labour and Welfare, *Vital Statistics*, NIPSSR(2006), Population Projection for Japan:2006-2055.

Woman's Lifetime Distributions by Eventual Family Status

Derived from Multistate Life Tables

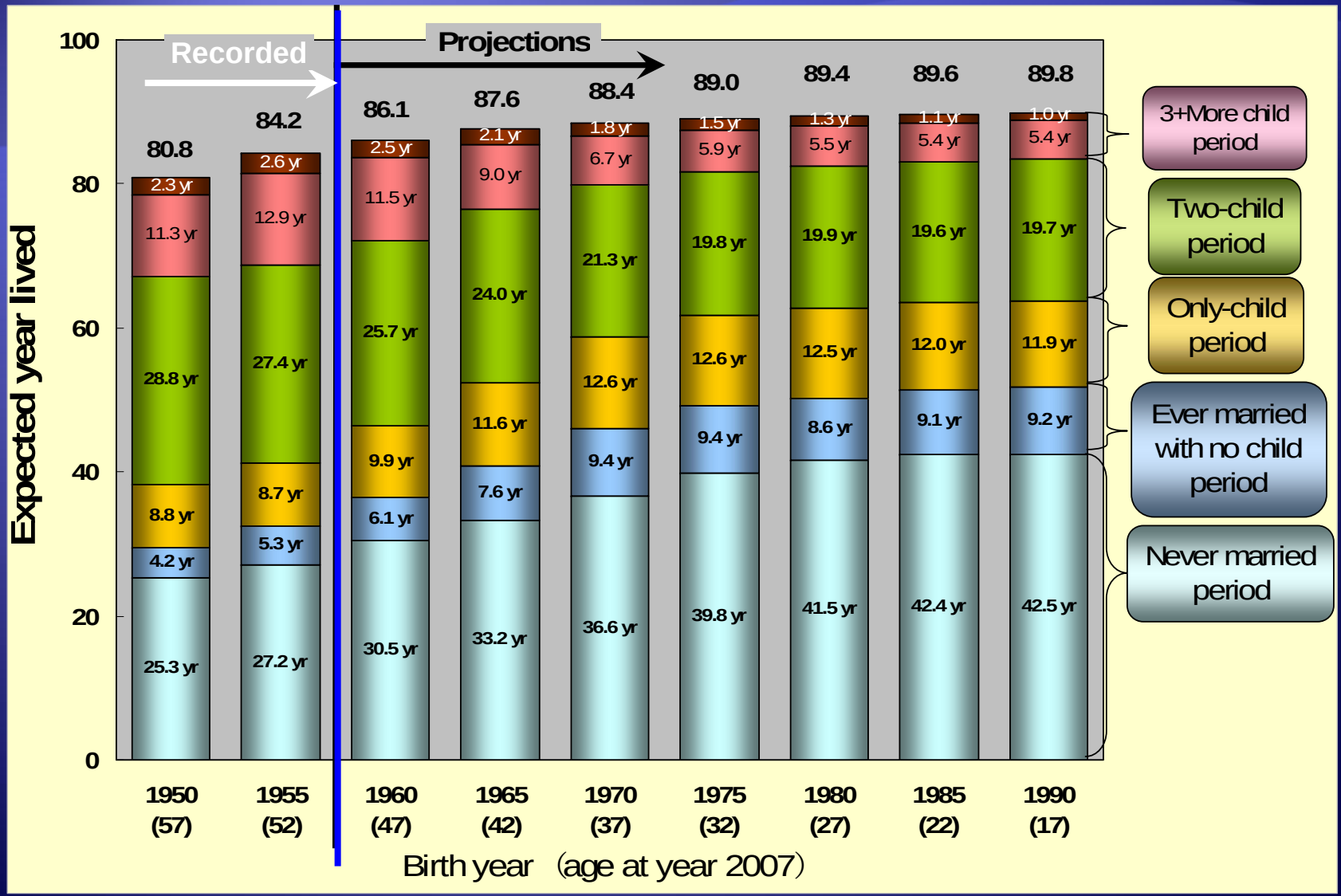
Table 3

Family Status	Birth year of woman's cohort								
	Recorded		Projected						
	1950	1955	1960	1965	1970	1975	1980	1985	1990
Life time distribution of woman by number of child (at birth)									
Childless	18.4	17.7	20.8	24.8	31.4	35.5	36.4	37.9	38.1
Never married	13.6	11.2	12.9	14.4	17.9	21.7	23.6	24.3	24.3
Ever married	4.8	6.5	7.9	10.5	13.5	13.8	12.8	13.6	13.8
Only child	11.2	11.2	13.3	16.5	18.7	18.8	18.8	18.1	18.0
Two children	46.8	44.4	41.8	39.5	35.2	32.9	33.0	32.6	32.8
Three children	19.4	22.0	19.6	15.3	11.5	10.1	9.4	9.3	9.3
Four and more children	4.2	4.7	4.5	3.8	3.2	2.7	2.3	2.0	1.9
Net Reproduction Rate	87.5	90.0	84.5	76.3	66.3	61.2	59.6	58.1	57.9
No grandchild	22.2	21.2	25.6	31.6	41.2	46.8	48.1	50.0	50.2

Derived from Assumption

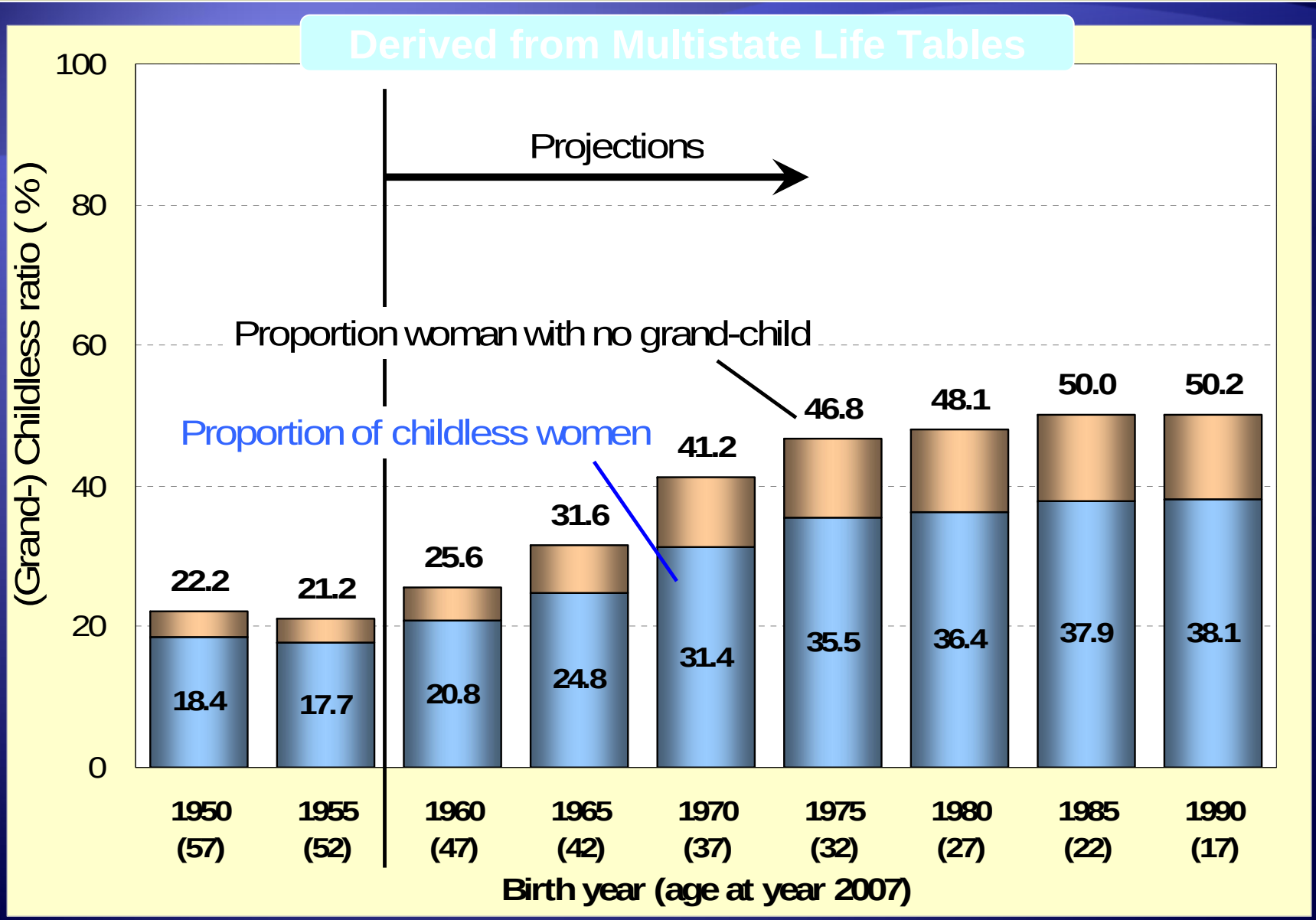
Life time proportion of woman (without mortality effect = directly derived from fertility assumption)									
Never married	5.0	5.8	9.3	12.0	16.2	20.4	22.6	23.5	23.5
Childless	10.3	12.7	17.5	22.7	30.0	32.8	35.7	37.1	37.4
No grandchild	12.1	15.0	21.3	28.8	39.3	42.9	46.8	48.9	49.4

Woman's Expected Lifetime Length Spent in Each Family Status

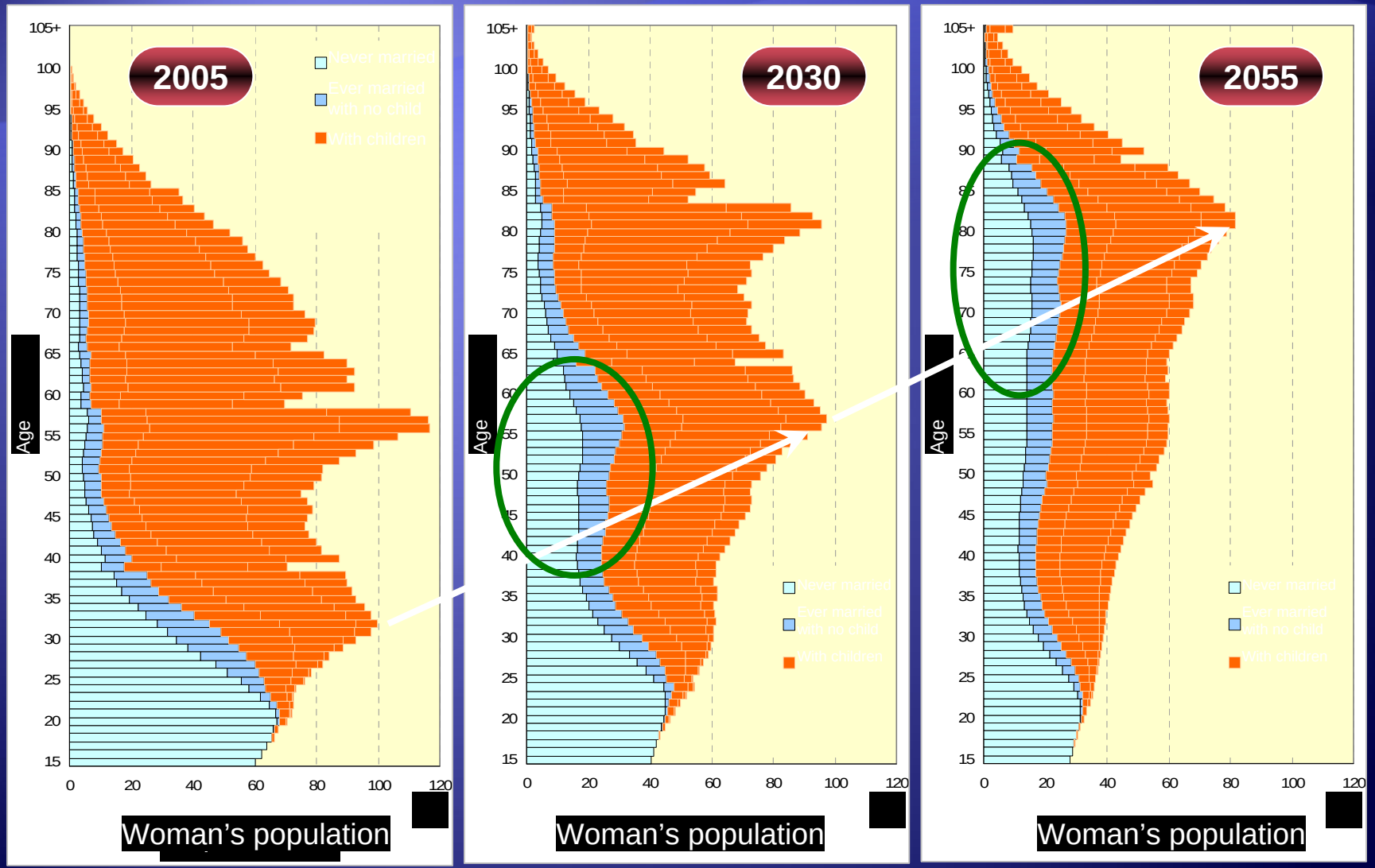


Source: The proportions are tentative values calculated by the author from the assumption of the Population Projection for Japan: 2006-2055, NIPSSR(2006).

Proportion Childless and Non-grandchild Women by Cohort



Increases in People with No Offspring or Family



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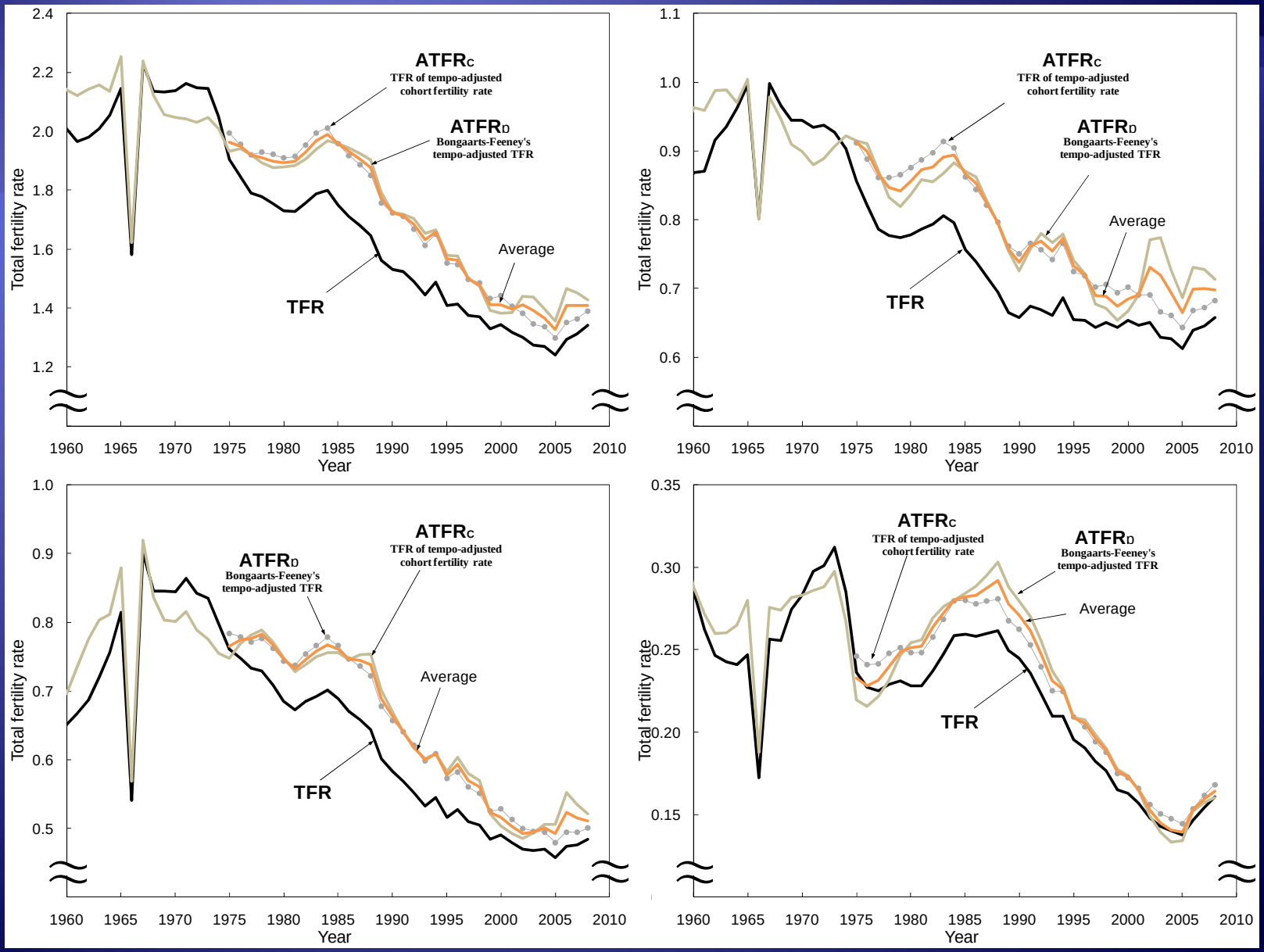

ATFRc
TFR of tempo-adjusted cohort fertility rate
ATFRD
Bongaarts-Feeney's tempo-adjusted TFR
Average
TFR
Total fertility rate
Year

Fertility indexedes by value in 2005 by Birth Order: 1975-2008

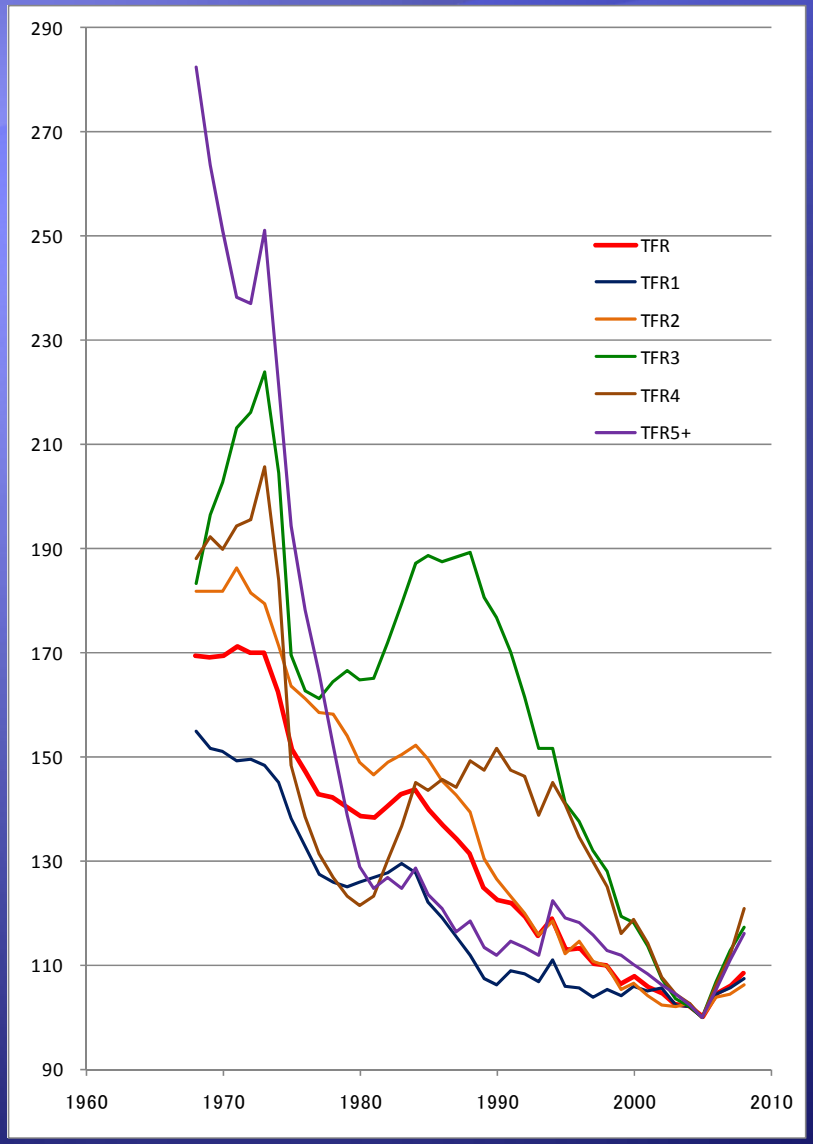
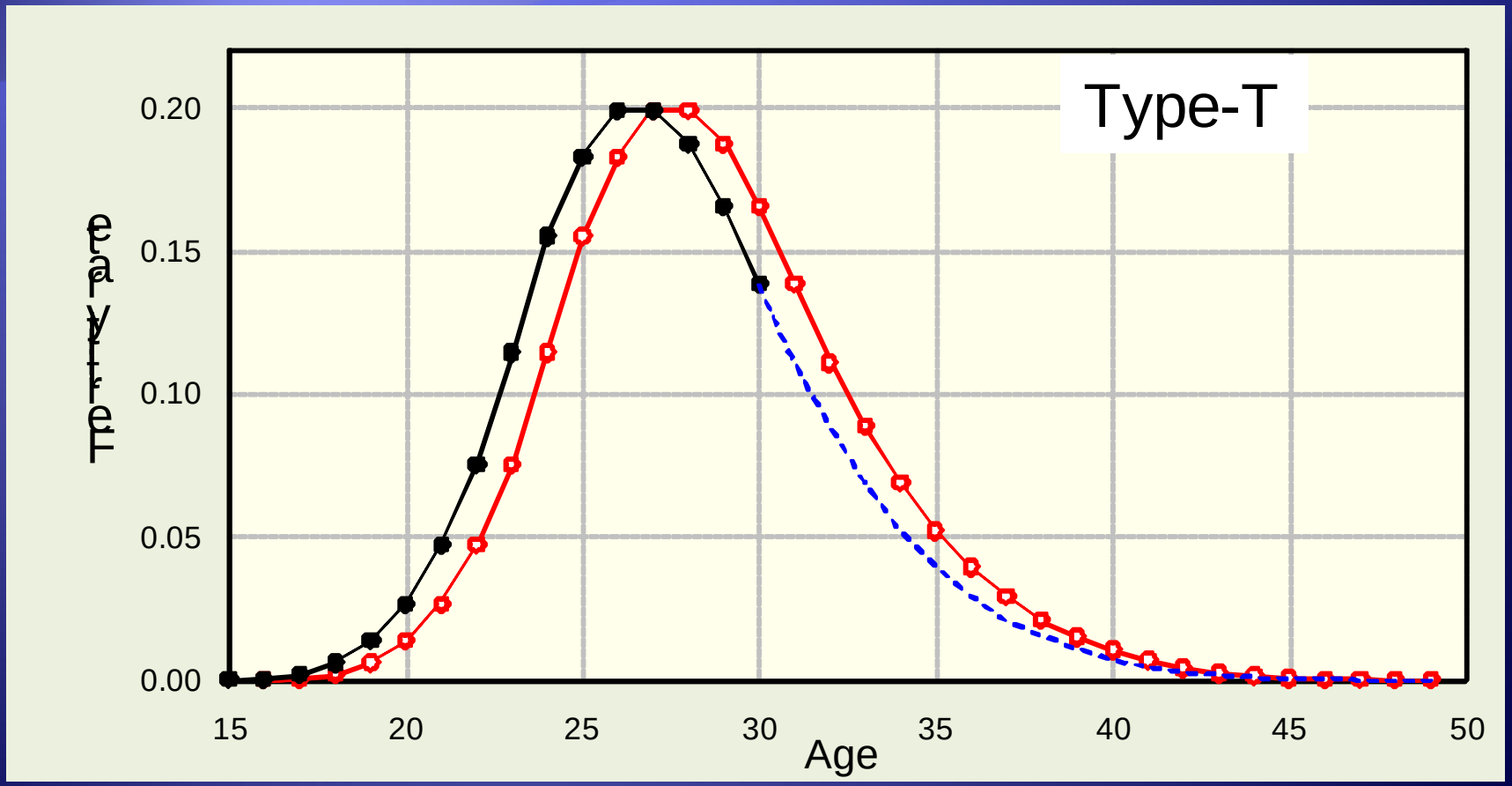


Figure 7 Types of Period Effect in Terms of Cohort Fertility Schedule



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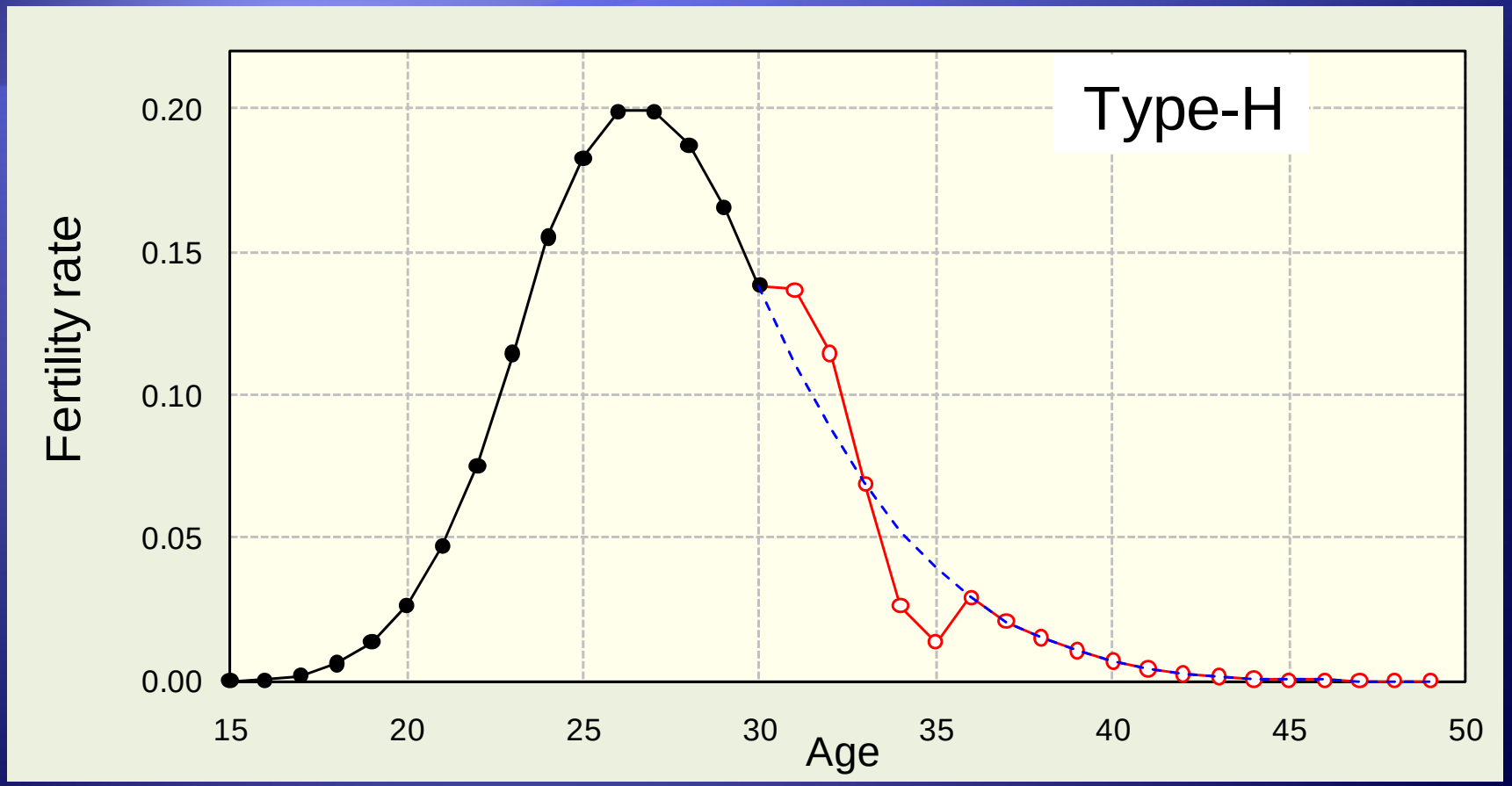

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