

Japan As a Shrinking Society: What are the Conditions for Recovering the Replacement Level of Fertility?

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Mittwoch, 13. Januar 2016

15:30 – 17:00 Forum 1: Familienförderung The Secound Presentation (15:50 – 16:10)

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Introduction

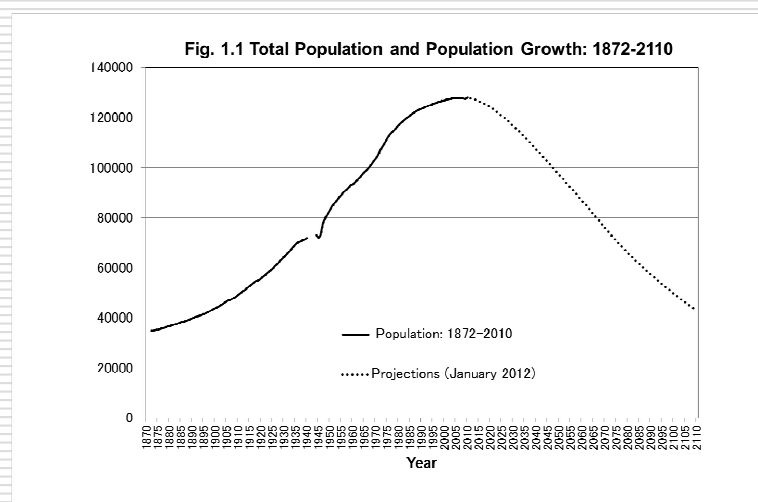
- ☐ Japan has entered the post-demographic transitional phase and will be the fastest aging- and shrinking country in the world.
 - ☐ This should be called "a shrinking society "(Kaufmann 2005), characterized with the below replacement fertility, rapidly aging and decreasing population.
 - ☐ Is this merely as the possible historical consequence of demographic transition from high birth and death rates to low ones ? Or is there any other way ?
 - ☐ It begins to threaten the sustainability of Japanese Society itself with the increasing dependency ratio.
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1. Population Prospects of Japan

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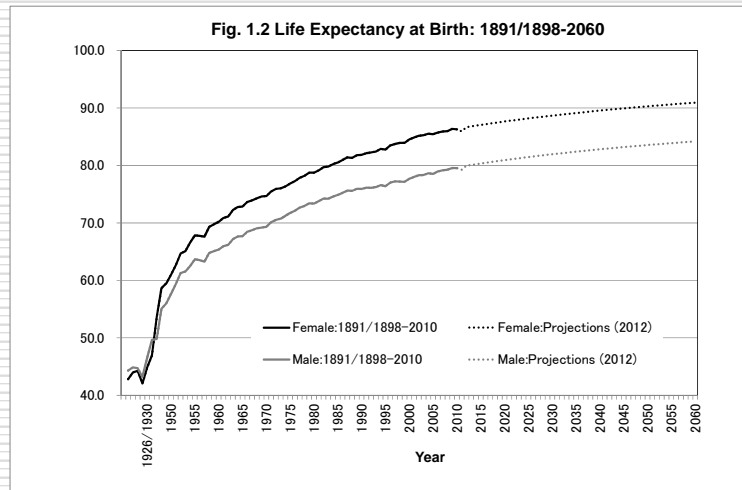
From Population Growth to Decline :1872—2110



Sources: from 1870 to 2005, Statistics Bureau (2006: 88-90), from 2010 to 2110(NIPSSR - 2012a).

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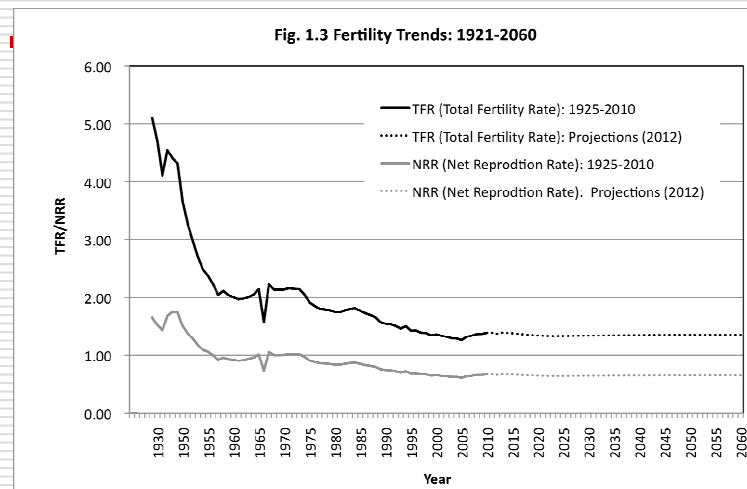
Expanding Life Expectancy 1891—2060



Sources: from 1930 to 2005 (NIPSSR 2012b), from 2010 to 2060 (NIPSSR 2012a). Medium variants

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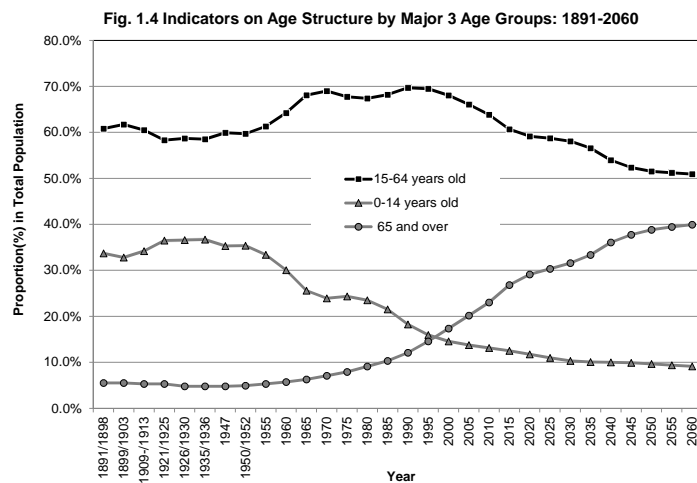
Declining Fertility 1930—2060



Sources: from 1930 to 2005 (NIPSSR 2012b), from 2010 to 2060 (NIPSSR 2012a). Medium variants

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Changing Age Structure 1891/1898 – 2060



Sources: from 1891 to 2005, Statistics Bureau (2006: 88-90), from 2010 to 2110(NIPSSR 2012a).

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2. Effects of the life expectancy and fertility on the dependency ratio

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Demographic Care Cost (1)

- Intergenerational Contract: The generation in working age is responsible for growing up the following generation in pre working age and for taking care of the preceding generation in post working age (Kaufmann 2005).

A) Actual value $\hat{=}$ Dependency Ratio

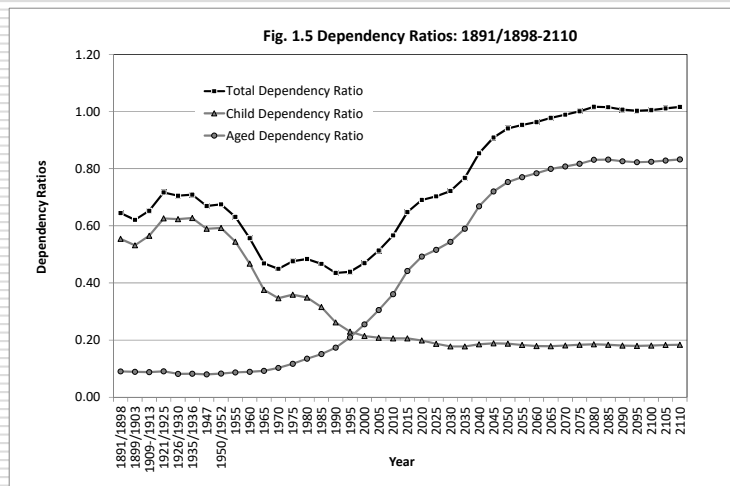
$$\text{Total Care Cost}_{\text{actual}} = \text{Child Care Cost}_{\text{actual}} + \text{Elderly Care Cost}_{\text{actual}}$$

$$\text{Child Care Cost}_{\text{actual}} = \frac{\text{number of population aged 0 - 14}}{\text{number of population aged 15 - 64}}$$

$$\text{Elderly Care Cost}_{\text{actual}} = \frac{\text{population aged 65 and over}}{\text{population aged 15 - 64}}$$

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Historical Change of Dependency Ratio :1891/1898—2110



Sources: from 1891 to 2005, Statistics Bureau (2006: 88-90), from 2010 to 2110(NIPSSR 2012a).

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Demographic Care Cost (2)

B) Minimum Value : Age structure of Stable Population of Life Table (NRR=1) .

- The effects of the rising longevity on the demographic care cost of working age population in future (generation interval c.a. 30 years)

$$\text{Total Care Cost}_{\text{minimum}} = \text{Child Care Cost}_{\text{minimum}} + \text{Elderly Care Cost}_{\text{minimum}}$$

$$\text{Child Care Cost}_{\text{minimum}} = \frac{\text{stable population aged 0 - 14}}{\text{stable population aged 15 - 64}}$$

$$\text{Elderly Care Cost}_{\text{minimum}} = \frac{\text{stable population aged 65 and over}}{\text{stable population aged 15 - 64}}$$

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Demographic Care Cost (3)

C) Optimal Value (NRR < > 1, the effect of the fertility) : Age structure of Stable Population at Life Table + Fertility Level.

- The effects of the decreasing fertility on the demographic care cost at any given life expectancy in time series.

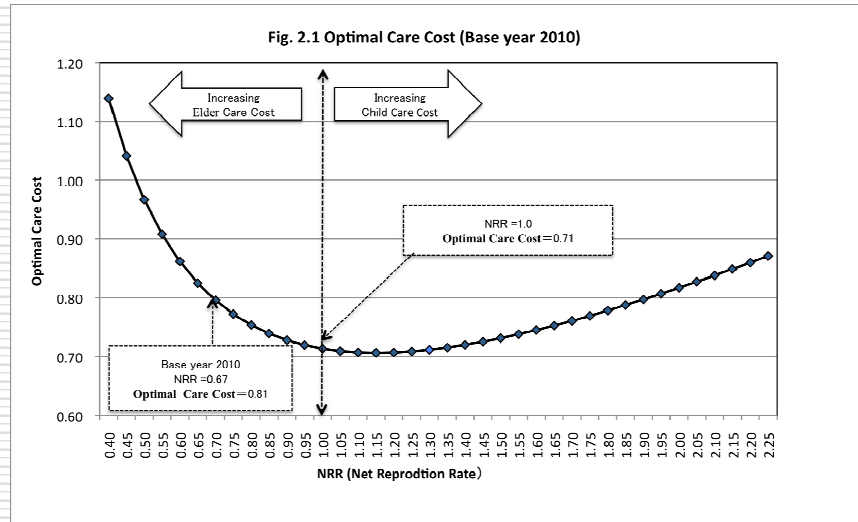
$$\text{Total Care Cost}_{\text{optimum}} = \text{Child Care Cost}_{\text{optimum}} + \text{Elderly Care Cost}_{\text{optimum}}$$

$$\text{Child Care Cost}_{\text{optimum}} = \frac{\text{stable population aged 0 - 14}}{\text{stable population aged 15 - 64}} \times NRR$$

$$\text{Elderly Care Cost}_{\text{optimum}} = \left[\frac{\text{stable population aged 65 and over}}{\text{stable population aged 15 - 64}} \right] \div NRR$$

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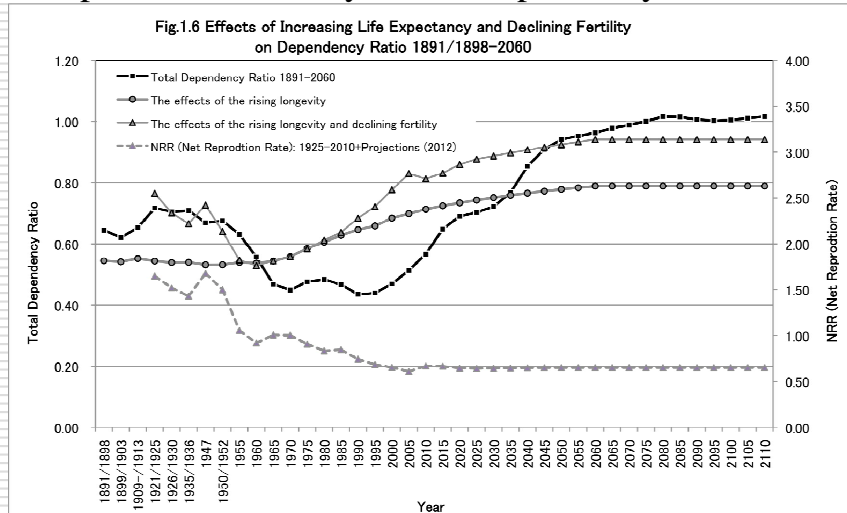
Optimal Care Cost and Net Reproduction Rate



Source: NIPSSR(2012b) Life Table (2010)

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Effects of the expanding life expectancy and Below Replacement Fertility on the Dependency Ratio



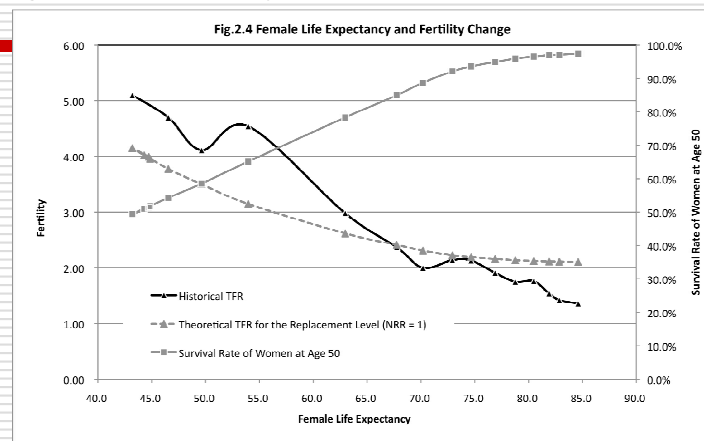
Sources: from 1891 to 2005, Statistics Bureau (2006: 88-90), from 2010 to 2110(NIPSSR 2012a).

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3. Historical relations between life expectancy of women and replacement fertility

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The Effects of the Rising Survival Rate of Women at Age 50 on Fertility

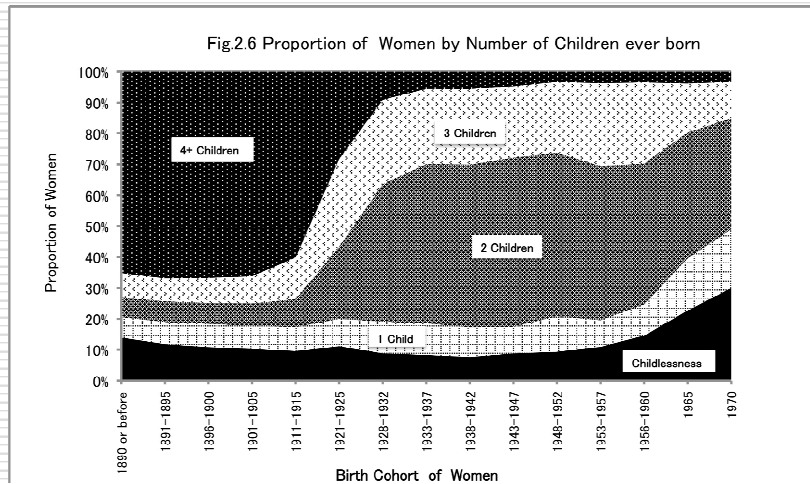


$$TFR_{\text{at replacement level}} = \left(\frac{1.00}{\text{Reproductive Survival Rate}} \right) \div \left(\frac{\text{Sex Ratio at Birth}}{100 + \text{Sex Ratio at Birth}} \right)$$

Sources: from 1891 to 2005, Statistics Bureau (2006: 88-90), 2010 (NIPSSR 2012b).

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Proportion of the Women by the Number of Children ever born



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The first phase

(life expectancy of women from 40 years to 70 years)

1. With the modernization, the infant mortality and the maternal deaths began to decrease.
2. The average life expectancy of female was extended and also the survival rate of women at reproductive age rose.
3. This made the replacement of fertility, lower than ever. It creates the pressure to keep the number of births/children small (If not, it should have canceled the new condition).
4. Despite the conflict between traditional social norm to maximize the number of births and the real interest of women (and her children) to minimize the risk, this process should have been gradually advanced.

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The first phase (continued)

5. As a result, the life expectancy of women was extended from 40 years to 70 years and the average number of children per married women was reduced from 5 to 2.
6. The increasing life expectancy and the decreasing fertility made the proportion of child population to the one of working age population smaller and reduced the child care cost of the Japanese Society. As for the elderly care, the proportion of aged population stayed at small. This advantage should have realized the rapid economic growth in 1960s.

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The second phase (life expectancy of women over 70 years.)

7. The life expectancy of women was extended beyond 70 years, the child/youth mortality and the death rates of the working ages are closing nearly to 0 and only the late mortality rates have rest to decrease. The elderly care cost grows continuously, as a sum, the total care cost exceeded 0.70.
8. On the other hand, the trend of late marriage and the timing shift of the child bearing toward the age of 30 and over were spreading among the women who chose the best timing to minimize the risk on the childbearing/child care.

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The second phase (continued)

9. This type of decision making does not exclude to remain single through the life, and also to be the women with only one child or with childlessness. As a result, the fertility was going lower than the replacement level.
10. This effect of the lowest low fertility was added to the effect of the rising longevity. The optimal total care cost increased from 0.8 to 0.9 and at last the population began to decrease.

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4. The conditions for recovering the replacement level of fertility

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Backgrounds of Below Replacement Level of Fertility

- ❑ The modernization of Japanese society was very adaptive and successful in the first phase. The demographic bonus brought the economic growth from 1960's to 1970's.
- ❑ In the same process, the individualization of reproduction was going on.
- ❑ The responsibility for the child/elderly care was shifted from family as a whole to woman as an individual.

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Backgrounds(continued)

- ❑ The reduction of average number of births changed the life course of women.
- ❑ The education and employment opportunities were expanded and the timing of marriage and the childbearing became more adjustable for decision making and basically shifted to higher ages.
- ❑ So called the 'masculinization' of female's life course (Esping-Andersen 2009) are going on.

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The conditions for recovering the replacement level of fertility

- ❑ To change the cost/benefit balance of childbearing and childcare, especially for the women, toward plus value.
- ❑ To grantee the reproductive right for having children as well as not having child.
- ❑ A society also should take the responsibility for the reproduction to keep itself sustainable.
- ❑ The massive shift of social investment for growing up the following generation from taking care of the preceding generation.

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The policy measures and social innovations

- ❑ Government sends the clear message to recover the replacement level of fertility as policy target.
- ❑ Governmental affirmative actions and the diversity campaign should be taken in central government agencies and major business enterprises to promote the gender equality.
- ❑ The budget amount for the family should be more than ten times of the present scale of family support expenditure (the income redistribution policy from the elder generation to next generation).

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The policy measures and social innovations (continued)

- ❑ The social security systems for elder population should be essentially constricted to the minimum guarantee (as safety net in a long life).
- ❑ To minimize the total amount of social security benefits for elder population and the burden of the current workers' contributions and taxes.
- ❑ That will create effective demand. It is also expected that the relative wealthy and healthy elder people will expend more money from their savings and means.

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Thank you for your attention !

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Acknowledgments • References

Acknowledgments:

I would like to thank Prof. Dr. Franz-Xaver Kaufmann for his brilliant work on Germany as a shrinking society, which gave me the basic idea of this paper.

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