

in Yamagami and Morita, and at 1% level in Oyama. Yamagami's fertility function shows that a rise in husband income by 10 thousand yen per year would raise the number of children by 0.00244. Oyama's analysis shows that an increase of 10 thousand yen per month would elevate the number of children by 0.01. Morita's OLS result implies that the elasticity of fertility to husband income is 0.043.

However, these income effects are so small that very high allowance is required to produce a visible effect. The table also shows the amount of child allowance that is necessary to raise the number of children by 0.1. If Morita's elasticity were correct, no economic support policy could make a significant effect on fertility. Even if we rely on Yamagami's coefficient, the child allowance of 34,000 yen per month must be paid to raise the TFR by 0.1. In Sweden, 950 krona (15,000 yen) is paid per month per child under 16 years old (METI, 2005). Thus, the required amount is more than twice as much as Sweden that is famous for very generous family allowance.

In Korea, Lee SS and coauthors showed that family income has no effect on fertility (2004, p. 95). If this result were correct, economic support measures including child allowance, tax relief, or one time cash benefit would not make sense. On the other hand, the multiple regression model by Lee IS (2005, p. 79) showed that a rise in family income by 10 thousand won per month would elevate the number of children by 0.001. To raise the TFR by 0.1, the monthly allowance of 100 thousand won is required. According to a newspaper, the Uri Party is planning a means tested allowance system that provides with 10,000 won monthly to the second and subsequent children (Money Today, July 14, 2006). In 2004, approximately 49% of all births were the second and higher birth orders. If 100,000 won per month were given universally, the TFR would rise by $0.01 \times 0.49 = 0.0049$. The effect would be invisible if the allowance were strictly means tested, as in the proposal of Uri Party.

4-3. Childcare Leave

The childcare leave was approved in the Diet of Japan in May 1991 and enforced in April 1992. Although the law allowed a female worker or her husband to leave until the first birth day of their child, there was no cash benefit at that time. The amendments in June 1994 legalized a cash benefit of 25% of wage and exemption from social security premiums during the leave. These revisions were enforced in April 1995. The amendment in November 2001 raised the cash benefit to 40% and was enforced in April 2002. Under the current system, 30% is paid monthly during the leave and 10% is paid after returning to work. Although the leave is basically allowed until the first birthday of a child, public servants can leave until the third birthday. Other workers can prolong the leave for six months if a daycare center is not available. However, no cash benefit is paid in either case for the prolonged period.

According to the Basic Survey of Employment Management of Women in 2003,

73.1% of female workers who gave birth in fiscal year 2002 took childcare leave. However, many women retire from work before childbearing and are not included in the denominator (Atoh, 2005, p. 46). A female worker who was not continuously employed for a year or who does not plan to come back to her job is also excluded. There were 103,478 cases that received cash benefit during childcare leave in 2003 (NIPSSR, 2005, p. 381). This was only 9.2% of the number of annual births.

In Korea, childcare leave was defined in 1987. After several amendments, 400 thousand won per month is paid since 2004. According to the Committee for Low Fertility and Aging Society (2006, p. 67), only 26% of mothers who took maternity leave in 2005 took childcare leave. The number of mothers who took childcare leave in 2004 was 9,304. This was only 1.9% of the number of annual births and was much lower than 9.2% in Japan. The degree of family friendliness in Korea seems to be very low. Even when taking maternity leave (90 days), Korean women have to worry about many things (Chang JY, 2005, p. 49; Choi EY, 2005, p. 278).

Table 3. Effect of Childcare Leave in Japan

Literature	Suruga and Nishimoto (2002)	Shigeno and Matsuura (2003)	Yamaguchi (2005)	Suruga and Chang (2003)
b	0.0231	0.1244	0.1886	0.22298
$\exp(b)$	1.0234	1.1325*	1.2076*	1.2498
Fertility without leave (f_0)	0.0368	0.0364	0.0362	0.0361
Fertility with leave (f_1)	0.0376	0.0411	0.0434	0.0447
Proportion of leave takers (p)	0.092	0.092	0.092	0.092
Required p to raise TFR by 0.1	--	0.424	0.709	0.490

* $\exp(b/5)$

There are several studies that evaluate the effect of childcare leave on fertility in Japan. Table 3 shows partial regression coefficients in four studies. Since each coefficient b is supposed to show a log-odds ratio of fertility between a female who can take childcare leave and one who cannot, $\exp(b)$ gives an odds ratio. Because Shigeno and Matsuura (2003) and Yamaguchi (2005) analyzed fertility of a five-year period, $\exp(b/5)$ is shown in the table. While Suruga and Nishimoto (2002) used Basic Survey of Employment Management of Women by the former Ministry of Labour, other three studies used Japanese Panel Survey on Consumers by the Institute for Research on Household Economics. Thus, the difference in magnitude seems to come from the difference in data source.

If we express the average fertility rate of a female who cannot take childcare leave with f_0 and that of one who can take with f_1 , the odds ratio is:

$$\exp(b) = \frac{f_1}{1-f_1} / \frac{f_0}{1-f_0}.$$

If the proportion of women who can take childcare leave is expressed as p , then the TFR can be written as follows.

$$TFR = 35 \{(1-p)f_0 + pf_1\}.$$

The multiplier 35 comes from the length of reproductive period. The expressions above give the following quadratic equation of f_0 .

$$(1-p)(1-e^{-b})f_0^2 + \{p + (1-p)e^{-b} - \frac{TFR}{35}(1-e^{-b})\}f_0 - \frac{TFR}{35}e^{-b} = 0.$$

Though the expression is a little messy, it is possible to determine the value of f_0 if one gives an adequate value for each parameter. In Table 3, TFR=1.29 and $p=0.092$ were applied. Once the values of f_0 and f_1 are determined, we can simulate the effect of rise in p , the proportion of women who take childcare leave. The hypothetical proportion that is required to raise the TFR by 0.1 is shown in Table 3. If the reality is close to the analysis by Suruga and Nishimoto, it is impossible to elevate the TFR by 0.1 with the use of childcare leave. Even if we rely on other three studies, an extremely impressive improvement from 9% to more than 40% is required. It would be difficult to make such an advance within a decade.

4-4. Childcare Service

The compatibility between female work and childrearing has been the primary political goal of the Japanese government. The Angel Plan announced in 1994 had “support for simultaneous child rearing and work” at the top of its list. In accordance to this guideline, a major revision was made to the Child Welfare Law in 1997 and public daycare service shifted from the municipality assignment system (administrative measures) to a system to allow parents to select their preferred daycare center. The New Angel Plan in 1999 sustained the emphasis on compatibility. The New-New Angel Plan in 2004 also contained a chapter on “Compatibility between Work and Family and Reconsideration of Work Customs.” However, childcare service was discussed in other chapter entitled “Renewed Support and Solidarity for Childcare.” The chapter contained various issues such as reinforcing local childcare centers, supporting a variety of childcare services, assisting volunteer activities on childcare, expanding public daycare services, running after-school clubs at primary schools, etc.

The cabinet of Japan adopted “Zero Waiting List for Daycare Program” as a political goal in July 2001. The governmental effort was partially successful at least in very recent years. According to the Children and Families Bureau, the number of children on the waiting list decreased from 26,383 in 2003 to 23,338 in 2005. However, daycare service is still less available in Japan for very early childhood. Of the 23,338 children on the waiting list, 15,831 (67.8%) were under two years old. This accounts for 0.47% of the population under age two.

There were 632,011 children under age two (18.6% of the population) in daycare center in April 2005. Since the proportion was 13.4% in 1998, there was an increase by 5.2 percentage points by 2005. However, such an improvement in childcare service does not seem to have contributed to fertility in Japan. According to Choi EY (2004, p. 30), the enrollment rate was 14.1% in 2003, which was lower than 17.0% in Japan in this year.

The simplest measure of compatibility between wife’s work and childbearing would be the proportion of working mothers among all wives. This measure is the key to understanding the micro-macro paradox of the relationship between fertility and female labor force participation. Let g be the proportion of working mothers, m be that of all mothers, and w be that of all workers. Then, a two by two contingency table can be written as follows:

	Not Mother	Mother	
Not Worker	$1 - w - m + g$	$m - g$	$1 - w$
Worker	$w - g$	g	w
	$1 - m$	m	1

For all four cells to be positive, the following condition is necessary in addition to $0 < g < m$ and $0 < g < w$.

$$1 - w - m + g > 0.$$

For the work status of a wife and presence of a child to be negatively correlated, g must be smaller than the expected value of the independence model.

$$g < w m.$$

If we coordinate the proportion of workers (w) on the horizontal axis and that of mothers (m) on the vertical axis, the area enclosed by a straight line and a hyperbola simultaneously satisfies two conditions above. Figure 13 shows such areas for $g = 0.2, 0.4$ and 0.6 . When the compatibility is raised, the area moves in the upper-right direction. Then, the paradoxical situation can be understood as a result of an

increasing compatibility. When wife's work and childrearing was less compatible, all the countries were located at lower-left region of the graph. However, some countries succeeded in improving the compatibility and moved to upper-right direction. In this way, the positive correlation appeared at macro level while the negative correlation is sustained at the micro level.

One implication of Figure 13 is that the higher the compatibility, the narrower the area in which the micro-macro paradox holds. Then, it is expected that a country with high compatibility may easily escape from the area and the micro level correlation may turn to be positive. This expectation is materialized in Sweden where recent micro level analyses showed the positive impact of women's works on fertility (Hoorens, et al., 2005, pp. 226-227). However, Figure 14 suggests that in a country with low compatibility such as Japan and Korea, there is a wide room of fertility decline.

Figure 13. Area with Negative Correlation for Different g

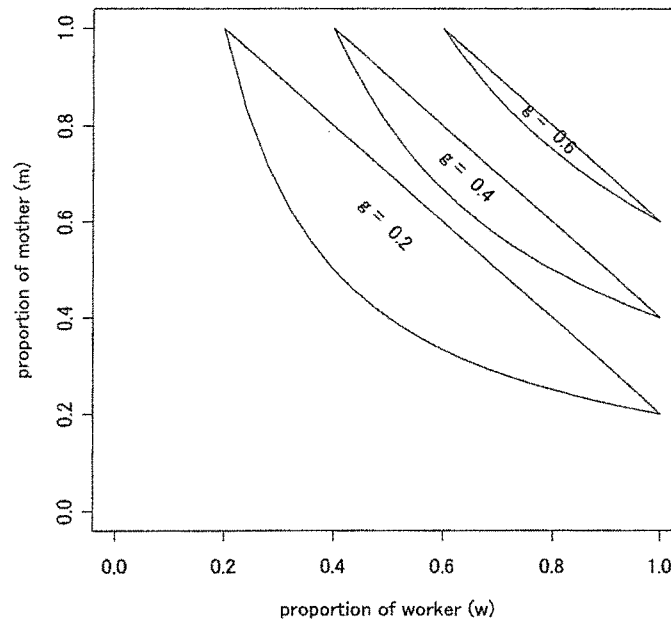


Table 4 shows contingency tables of work status and the presence of a child of married women aged 30-34 in Japan and Korea. This age group is the bottom of the M-shaped labor force participation pattern in both countries (see Figure 12), implying the compatibility is most crucial. In Japan, the governmental policy failed to increase the proportion of working mothers and the increase in labor participation resulted in fertility decline. In Korea, the proportion of working mothers is slightly higher than in Japan. However, it is difficult to say that Korean wives enjoy higher compatibility considering their earlier marriage and older age of their children than Japanese wives.

Some analyses of micro data in Japan identified the effect of childcare services on the work status of wives. For example, Oishi (2003) found that the cost of daycare service has negative impact on a wife's labor force participation. However, recent multivariate analyses did not identify a significant effect of childcare service on fertility. Shigeno and Ohkusa (1999) included such indices as waiting list for daycare service, availability of infant care and night-time care into their model but none of them had significant effect on recent birth. Shigeno and Matsuura (2003) included respondent's substantive evaluation for local childcare service into their fertility function but its *t* value was 1.19. One statistically significant result was obtained but it was bivariate analysis and was not a net effect (Shigeno, 2006, p. 109). Thus, even if there is a net effect of governmental effort for childcare service, its magnitude is too small to be verified clearly. Considering that the net effect of childcare service has been asserted in Western countries (Kojima, 2005; Choi EY, 2006), there seems to be a cultural pattern that intercepts the effect.

Table 4. Labor Force Participation and Motherhood of Married Women Aged 30-34 (%)

Japan (1997)		Not Mother	Mother
	Not Worker	9.6	47.1
	Worker	11.9	31.4
Japan (2004)		Not Mother	Mother
	Not Worker	8.2	48.7
	Worker	12.9	30.2
Korea (2000)		Not Mother	Mother
	Not Worker	3.7	60.9
	Worker	3.2	32.2

Source: Employment Status Survey (Japan),
Census (Korea)

5. Low Fertility and Policy Intervention in Comparative Perspective

5-1. Spread of Lowest-Low Fertility in Europe and Asia

Lowest-low fertility appeared in Europe during the 1990s causing a drastic change in the demographic map of the region. The second demographic transition theory (van de Kaa, 1987) described the novelty of Western and Northern European countries in terms of below replacement fertility and emergence of postmodern behaviors such as cohabitation and extramarital births. However, while these forerunners stayed at moderately low fertility, latecomers showed unexpected declines to lowest-low fertility. This change caused not only a reverse in the geographic pattern of European fertility but also that in the correlation with fertility of the total

first marriage rate, the proportion of extramarital births, and the female labor force participation rate (Kohler et al., 2002, pp. 643-644).

Table 5 lists up the countries having lowest-low fertility since 2000. While Kohler and his coauthors (2002) listed 14 countries in 1999, there are 20 countries on this new list. Small countries and areas such as Singapore, Hong Kong, Luxemburg, Andorra, and San Marino were excluded. Korea arrived at the threshold of 1.3 in 2001, followed by Japan and Taiwan in 2003. Bosnia-Herzegovina, Hungary, Poland, Romania, and Lithuania joined the group after 2000. On the other hand, Estonia, Armenia and Russia escaped from lowest-low fertility. Belarus was excluded from the table because of the lack of recent data.

Table 5. Lowest-Low Fertility after 2000

Region	Country	2000	2001	2002	2003	2004	2005
Eastern Asia	Japan	1.36	1.33	1.32	1.29	1.29	1.25
	Republic of Korea	1.47	1.30	1.17	1.19	1.16	1.05
	Taiwan	1.68	1.40	1.34	1.24	1.18	1.12
Southern Europe	Bosnia and Herzegovina	1.28	1.44	1.23			
	Greece	1.27	1.25	1.27			
	Italy	1.24	1.23	1.26	1.29		
	Slovenia	1.26	1.21	1.21	1.20		
	Spain	1.24	1.26	1.27	1.30		
Eastern Europe	Bulgaria	1.30	1.24	1.21	1.23		
	Czech Republic	1.14	1.14	1.17	1.18		
	Hungary	1.32	1.31	1.30	1.28		
	Poland	1.34	1.29	1.24	1.22		
	Romania	1.31	1.27	1.26	1.27		
Former USSR	Slovak Republic	1.30	1.20	1.19	1.20		
	Armenia	1.11	1.02	1.21	1.35		
	Latvia	1.24	1.21	1.24	1.29		
	Lithuania	1.39	1.30	1.24	1.26		
	Moldova	1.30	1.25	1.21	1.22		
	Russian Federation	1.21	1.25	1.32	1.32		
	Ukraine	1.09		1.13	1.17		

(Source) Japan: Statistics and Information Dpt, MHLW
 Korea: Korea National Statistics Office
 Taiwan: Taiwan Directorate-General of Budget, Accounting and Statistics
 Europe: Council of Europe, Recent Demographic Development in Europe 2003&2004

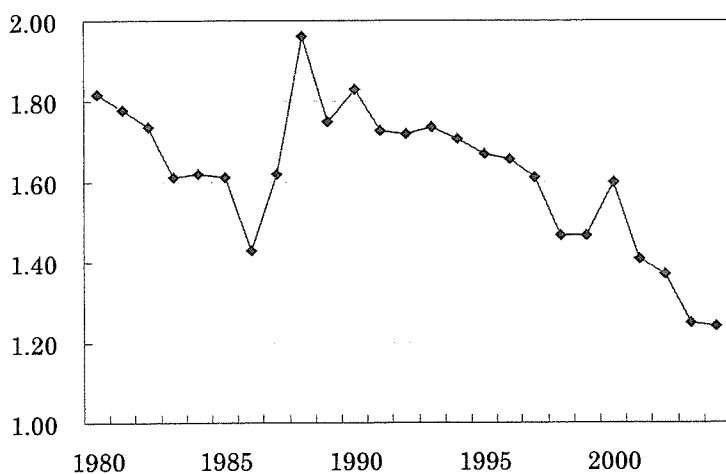
5-2. Ineffectiveness of Pronatal Policy

As shown in the sections above, the performance of governmental intervention to fertility has not been very impressive. It turned out that the elasticity of fertility to income is so small that unrealistically large amount of economic support is required to induce a significant fertility recovery. The effect of childcare leave is also so small that a significant rise in fertility via this channel is either impossible or requires a

revolutionary change in labor custom. Governmental efforts for daycare services have not succeeded in raising the compatibility between work and the family. The net effect of daycare service has not been verified statistically.

There is considerable evidence that the pronatal policy has some effects. Cases frequently referred to include France after the Second World War, German state of Saar under French rule, Eastern European socialist countries until the 1970s, and Sweden around 1990 (Chesnais, 1998, pp. 98-99; Atoh, 2000, pp. 198-199; Caldwell et al., 2002, p. 18). Besides these historical cases, abundant quantitative analyses of micro data have proved the effectiveness of various policy measures (Kojima, 1989; 2003). Thus, it is widely accepted that the effect of pronatal policy is not zero. However, the critical question here should be "Can Japan achieve moderately low fertility with policy interventions?". It seems to be very difficult to narrow the difference between Japan and moderately low fertility countries in Western and Northern Europe and English speaking developed countries, considering the small elasticity of fertility to policy measures.

Figure 14. TFR Singapore



Even if policy intervention is successful, its effect is not necessarily lasting. Figure 14 displays the trajectory of the TFR in Singapore. In March 1987, Singapore started a new population policy. Under the slogan of "Have three or more, if you can afford it", such pronatal measures were enforced as tax relief for

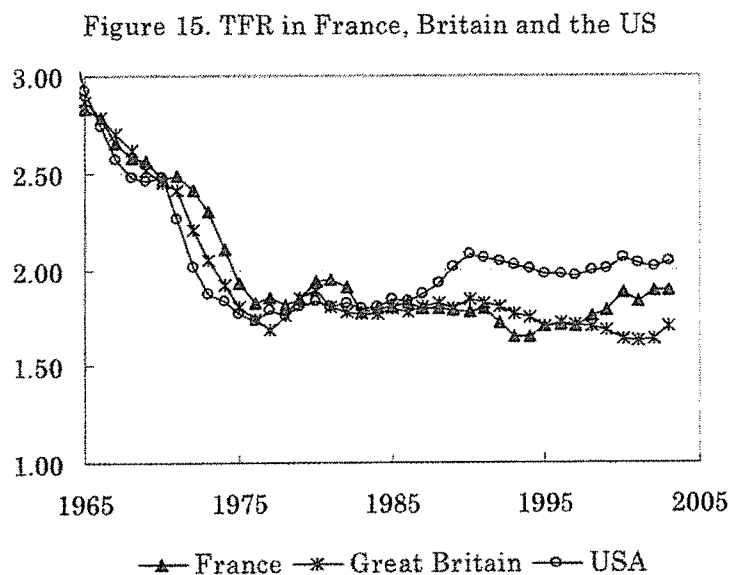
the third and subsequent children, subsidization of daycare cost, and housing privilege for a large family (Sasai, 2005, pp. 466-467). As a result, the TFR jumped from 1.43 in 1986 to 1.96 in 1988. However, the TFR started declining again from 1989, though it took 15 years to drop to the level of 1986.

There is diversity in attitudes among Korean demographers toward the effectiveness of pronatal policies. Park ST (2002, p. 653) suggested that educational policy that gives an advantage to a large family would be effective in addition to measures already applied in Japan. Kim SK (2004, p. 31) expressed an optimistic view that an efficient development of governmental policy can raise Korean TFR to 1.6 within a decade. Jun KH (2005) also emphasized the effectiveness of pronatal policy, referring to experiences of France in the 1950s and of Eastern Germany in the 1970s.

On the other hand, Kim DS (2005) gave a pessimistic prediction that pronatal policy will not work considering rapid population aging and negative attitude toward marriage and childbearing among young Korean women. Lee SS (2006, pp. 13-14) showed that there is no correlation between budget for pronatal measures and fertility and stated that such measures can be expensive but fruitless.

5-3. Cultural Deterministic View on Fertility

France is famous for its long history of pronatal policy intervention. The Family Code that imposed family allowances was enacted as early as in 1939 and was integrated to social security system in 1945 (Kojima, 1996, p. 157; Caldwell et al., 2002, p. 8). In the background, there was an anxiety on French fertility that was lower than England throughout the 19th century (Chesnais, 1998, p. 92). On the contrary to France, the United Kingdom is famous as a country without pronatal policy (Hiraoka, 1996, p. 131; Atoh, 2000, p. 200; Kamano, 2003, p. 54). Parental leave is 26 weeks and no cash benefit is given (Fukuda, 2003, p. 12), which is less generous than Japan. Governmental effort for childcare service is low and non-profit organizations play a major role. Child allowance is lower for the second and higher order children (Neyer, 2002, pp. 62-67). In spite of this opposing policy orientation, TFRs in France and the United Kingdom showed a very similar trajectory. As depicted in Figure 15, it is only since 1998 that France has consistently overcome the United Kingdom in fertility.

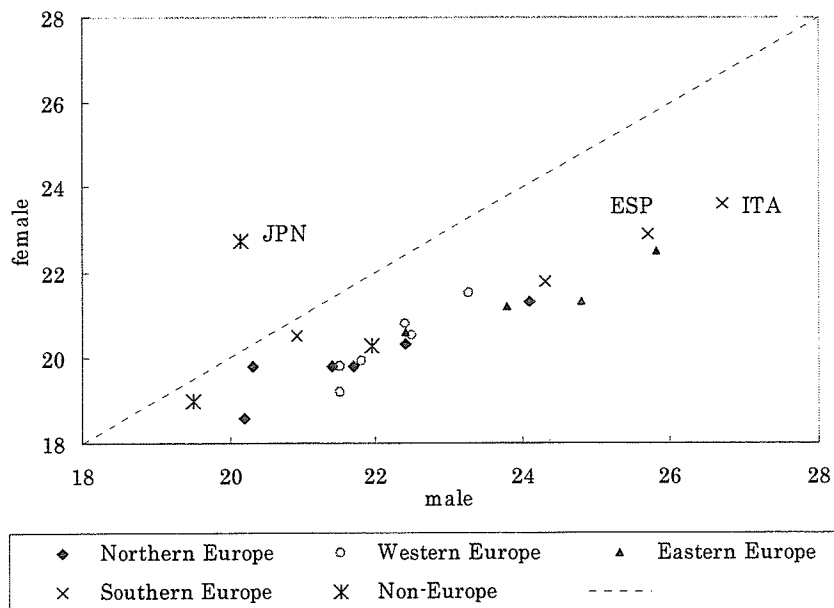


Weak explanatory power of policy intervention becomes clearer if we include another English speaking country. The United States is even more indifferent to family policy than the United Kingdom. There is no child allowance system. Parental leave is untouched to be 12 weeks without cash benefit (Kamano, 2003, p. 55).

Despite the lack of governmental effort, TFR of the United States has been considerably higher than France since the mid 1980s. Thus, there must be some socio-cultural characteristics in Anglo-Saxon countries that keep fertility higher than France. The distinctive feature of age pattern of fertility in English-speaking countries (Chandola et al., 2002) seems to support such an inference.

There is a cultural divide between moderately low fertility and lowest-low or very low fertility. As suggested in Table 5, all Western and Northern European countries and English-speaking countries have successfully avoided lowest-low fertility. McDonald (2005) chose the line of 1.5 to divide moderately low fertility and very low fertility. In his cultural divide, all Nordic countries, all English-speaking countries, and all French and Dutch speaking Western European countries have TFR of 1.5 or higher. The countries with very low fertility are all advanced Eastern Asian countries, all Southern European countries and all German-speaking Western European countries. While emphasizing the role of policy intervention, McDonald suggested that this divide has deep historical roots and is difficult to change. Atoh (2005, pp. 51-52) pointed out the influence of traditional values as one of factors beyond family policy.

Figure 16. Median Age at Home-Leaving of Cohorts Born around 1960



Source: Billari, et al. (2001), Goldscheider & Goldscheider (1994), Ravanera et al. (1995), Suzuki (2003b)

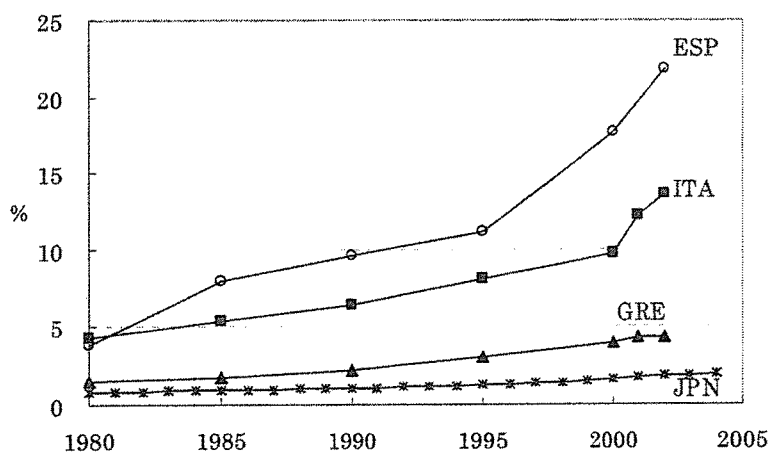
When lowest-low fertility was a phenomenon within Europe, it was natural to look for features common in lowest-low fertility countries. However, once lowest-low fertility has spread out from Europe, the appropriateness of this attempt is questionable. Because lowest-low fertility has appeared in very different cultural settings in Southern Europe, Eastern Europe and Eastern Asia, the phenomenon seems to be a natural response to socioeconomic changes in the postmaterial era. In this respect, those countries that have avoided lowest-low fertility should be seen as exceptional and requiring explanation. This section expands the discussion in Suzuki (2003a) and examines cultural determinants of moderately low fertility in Western and

Northern Europe and advanced English-speaking countries.

Reher (1998) asserted that the contrast between weak family ties in Western and Northern Europe and strong family ties in Southern Europe has deep historical roots. In contrast to the Oriental family system that affected Southern Europe, the “Occidental” structure was based on the conjugal pair and women’s position was high in the northern part of the continent. The Reformation changed the meaning of marriage from a sacrament to a civil contract, enhanced women’s position further, lowered parental authority, and promoted individualism (Reher, 1998, pp. 213-214). Thus, gender equity and compatibility between wife’s work and childcare in today’s moderately low fertility countries have long historical background. This is why these countries developed non-parental childcare activities by baby sitters, tutors, childcare workers and other professionals. In contrast, countries with strong family ties are still clinging to maternal cares. According to the Third National Family Survey in 2003 (NIPSSR), 82.9% of Japanese wives agreed that “A mother should not work but take care of her child for three years after the birth”. Such an emphasis on mother’s supreme role could be the factor that intercepts the effect of childcare service on fertility.

Another prominent feature of Western-Northern Europe and its descendents is early home-leaving. In these countries in the pre-industrial era, young men and women left the parental home before marriage to work as servants (Reher, 1998; Wall, 1999). The tradition of the majority of men and women leaving home before marriage still remains today (Billari et al., 2001, pp. 18-19). Premarital home-leaving is supposed to promote union formation through both consensual union and formal marriage, while Southern European adolescents are suffering from postponement syndrome, which discourages autonomy and decision making ability in their own lives (Dalla Zuanna, 2001; Livi-Bacci, 2001). As shown in Figure 16, Japan occupies a

Figure 17. Proportion of Extramarital Birth



Source: Council of Europe, NIPSSR

singular position in that men leave as early as Northern Europeans while women leave as late as Southern Europeans. However, since late leaving of either sex discourages union formation, Japan may suffer from the same problem as Southern Europeans.

Last but not least, a clear cultural divide in cohabitation and extramarital birth has been observed. These postmodern behaviors were once related to the fertility decline to below replacement level. Today, however, the low frequency of such behaviors is a good predictor of lowest-low fertility. Japan is characterized by very robust marriage institution. As shown in Figure 17, the proportion of extramarital births in Japan has been extremely low even compared with lowest-low fertility countries in Southern Europe. The proportion in 2004 was 1.99%, which hardly changed from 0.80% in 1980. As long as the Japanese people cling to reproduction via marriage, it would be difficult to avoid postponement syndrome, cease overprotecting children, flatten continuously rising cost of children, and socialize childrearing.

Patterns of home-leaving, cohabitation and extramarital births are unclear in Korea. It seems that no Korean demographer is interested in home-leaving behavior of young people. Some Korean demographers asserted that premarital cohabitation is recently on an increase without showing any evidence (Jun KH, 2002, p. 110; Byun HS, 2002, pp. 244-245). However, the Frontiers of Gender Studies Survey in 2004 by Ochanomizu University showed that, in Seoul capital region, the proportion of unmarried persons who experienced cohabitation was as low as in Japan (Takezawa, 2005, p. 50). Thus, the proportion of currently cohabiting young women is supposed to be practically zero². No data are available for extramarital births, even though it is widely believed that such cases are rare in Korea (Cho BY et al., 1999, p. 31; Eun KS, 2003, p. 577; Lee SS et al., 2004, p. 74).

Conclusion

Japan has been adopting and extending policy measures to cope with low fertility. However, those efforts have not been successful in preventing fertility decline. Quantitative analyses have shown that the effects of policy interventions are weak. Thus, a large part of the difference from moderately low fertility should be attributed to direct effects of cultural features, not to governmental efforts. This might apply to Korea and Taiwan. It is just a fantasy that TFR would come back to moderately low level if Eastern Asian countries adopted policy interventions used in Western and Northern Europe. Although gender equity is a widely accepted political goal, it would be difficult to catch up Western-Northern Europe that has long historical background. It is questionable if a consensus can be made that a government should promote early home-leaving of young people. A government definitely should not induce extramarital births by increasing the number of welfare mothers. Then, continuous fertility recovery would be impossible without a radical change in family

² The proportion for Japan is estimated to have been 0.48% in the late 1990s (Suzuki, 2003a, p. 6).

pattern. Although there is a sign of assimilation to Western-Northern weak family pattern in Southern Europe, such a change would be more difficult to take place in Eastern Asia. Then, it would be possible that lowest-low fertility in Eastern Asia lasts longer and falls further than that of European forerunners.

References

(in English)

- Becker, Gary S. (1991) *A Treatise on the Family, Enlarged Edition*, Harvard University Press, Cambridge, Massachusetts.
- Billari, Francesco C. and Hans-Peter Kohler (2002) "Patterns of Lowest-Low Fertility in Europe," Max Planck Institute for Demographic Research Working Paper WP-2002-040.
- Billari, Francesco, Dimiter Philipov and Pau Baizán (2001), "Leaving Home in Europe: The Experience of Cohorts Born around 1960," Max Planck Institute for Demographic Research Working Paper WP 2001-014.
- Bongaarts, John (1978) "A Framework for Analyzing the Proximate Determinants of Fertility," *Population and Development Review*, Vol. 4, No. 1, pp. 105-132.
- Bongaarts, John and Griffith Feeney (1998) "On the Quantum and Tempo of Fertility," *Population and Development Review*, Vol. 24, No. 2, pp. 271-291.
- Bongaarts, John and Griffith Feeney (2000) "On the Quantum and Tempo of Fertility: Reply," *Population and Development Review*, Vol. 26, No. 3, pp. 560-564.
- Caldwell, John C., Pat Caldwell and Peter McDonald (2002) "Policy Responses to Low Fertility and Its Consequences: A Global Survey," *Journal of Population Research*, Vol. 19, No. 1, pp. 1-24.
- Chandola, T., D. A. Coleman and R. W. Hiorns (2002) "Distinctive Features of Age-Specific Fertility Profiles in the English-Speaking World: Common Patterns in Australia, Canada, New Zealand and the United States, 1970-98," *Population Studies*, Vol. 56, pp. 181-200.
- Chesnais, Jean-Claude (1998) "Below-Replacement Fertility in the European Union (EU-15): Facts and Policies, 1960-1997," *Review of Population and Social Policy*, No. 7, pp. 83-101.
- Choi, Eunyong (2005) "Lowest Fertility and Policy Challenges in Korea," paper presented at International Conference on Low Fertility and Effectiveness of Policy Measures in OECD, 15-16 December, 2005, Seoul, Republic of Korea.
- Dalla Zuanna, Gianpiero (2001) "The banquet of Aeolus: A Familistic Interpretation of Italy's Lowest Low Fertility," *Demographic Research*, Vol. 4, No. 5, pp. 131-162.
<http://www.demographic-research.org/volumes/vol4/5/4-5.pdf>

- Easterlin, Richard A. (1978) "What Will 1984 Be Like? Socioeconomic Implications of Recent Twists in Age Structure," *Demography*, Vol. 15, No. 4, pp. 397-421.
- Engelhardt, Henriette and Alexia Prskawetz (2005) "A Pooled Time-Series Analysis on the Relation Between Fertility and Female Employment," IUSSP XXV International Population Conference, Tours, 2005.
- Eun, Ki-Soo (2003) "Understanding Recent Fertility Decline in Korea," *Journal of Population and Social Security*, Supplement to Volume 1, pp. 574-595.
http://www.ipss.go.jp/webj-ad/WebJournal.files/population/2003_6/20.Eun.pdf
- Goldscheider, Francis K. and Calvin Goldscheider (1994) "Leaving and Returning Home in 20th century America," *Population Bulletin*, Vol. 48, No. 4, pp. 1-35.
- Hirosima, K. (2003) "Another Tempo Distortion: Analyses by Age-specific Marital Fertility Rate," Max Planck Institute for Demographic Research, Internal Reports.
- Hoorens, Stijn, Andrew Parkinson and Jonathan Grant (2005) "Sweden's Varying Success in Offsetting Low Fertility," paper presented at International Conference on Low Fertility and Effectiveness of Policy Measures in OECD, 15-16 December, 2005, Seoul, Republic of Korea.
- Inaba, Hisashi (2003) "Resolving a Confusion in the Bongaarts and Feeney's Tempo-Adjusted Total Fertility Rate," 『人口学研究』 32 号, pp. 1-7.
- Jun, Kwang-Hee (2005) "The Transition to Sub-Replacement Fertility in South Korea: Implications and Prospects for Population Policy," *The Japanese Journal of Population*, Vol. 3, No. 1, pp. 26-57.
http://www.ipss.go.jp/webj-ad/WebJournal.files/population/2005_6/jun.pdf
- Kim, Doo-Sub (2005) "Theoretical Explanations of Rapid Fertility Decline in Korea," *The Japanese Journal of Population*, Vol. 3, No. 1, pp. 2-25.
http://www.ipss.go.jp/webj-ad/WebJournal.files/population/2005_6/kim.pdf
- Kim, Young J. and Robert Schoen (2000) "On the Quantum and Tempo of Fertility: Limits to the Bongaarts-Feeney Adjustment," *Population and Development Review*, Vol. 26, No. 3, pp. 554-560.
- Kohler, Hans-Peter, Francesco C. Billari and José Antonio Ortega (2002) "The Emergence of Lowest-Low Fertility in Europe during the 1990s," *Population and Development Review* Vol. 28, No. 4, pp. 641-681.
- Kohler, Hans-Peter and Dimiter Philipov (2001) "Variance Effects in the Bongaarts-Feeney Formula," *Demography*, Vol. 38, No. 1, pp. 1-16.
- Livi-Bacci, M. (2001) "Too Few Children and Too Much Family," *Daedalus*, Vol. 130, No. 3, pp. 139-156.
<http://www.ds.unifi.it/ricerca/interessi/demografia/bassa-fecondita/firenze/publicazioni/Livi02.pdf>
- McDonald, Peter (2005) "Fertility and the State: The Efficacy of Policy," XXV International Population Conference.
- Neyer, Gerda, (2002) "Family Policies and Low Fertility in Western Europe", *Journal of*

- Population and Social Security: Population Study*, Supplement to Vol. 1, pp. 46-93.
http://www.ipss.go.jp/webj-ad/WebJournal.files/population/2003_6/3.Neyer.pdf
- Reher, David Sven (1998), "Family Ties in Western Europe: Persistent Contrasts," *Population and Development Review*, Vol. 24, No. 2, pp. 203-234.
- Ravanera, Z.R., F. Rajulton, F., and T. K. Burch (1995) "A Cohort Analysis of Home-Leaving in Canada, 1910-1975," *Journal of Comparative Family Studies*, Vol. 26, No. 2, pp. 179-193
- Suzuki, Toru (2003a) "Lowest-Low Fertility in Korea and Japan," 『人口問題研究』第 59 巻第 3 号, pp. 1-16.
- Suzuki, Toru (2005) "Why is Fertility in Korea Lower than in Japan?" *Journal of Population Problems*, Vol. 61, No. 2, pp. 23-38.
- Tsuya, Noriko O. and Larry L. Bumpass (2004) "Gender and Housework," in Noriko O. Tsuya and Larry L. Bumpass (eds.), *Marriage, Work and Family Life in Comparative Perspective*, University of Hawaii Press, pp. 114-133.
- Tsuya, Noriko O. and Karen Oppenheim Mason (1995) "Changing Gender Roles and Below-Replacement Fertility in Japan," in Karen Oppenheim Mason and AnMagritt Jensen (eds.), *Gender and Family Change in Industrial Countries*, Oxford, Clarendon Press, pp. 139-167.
- van de Kaa, Dirk (1987), "Europe's Second Demographic Transition," *Population Bulletin* Vol. 42, No. 1.
- van Imhoff, Evert and Nico Keilman (2000) "On the Quantum and Tempo of Fertility: Comment," *Population and Development Review*, Vol. 26, No. 3, pp. 549-553.
- Wall, Richard (1999), "Leaving Home and Living Alone: A Historical Perspective," *Population Studies*, Vol. 43, No. 3, pp. 369-389.
- Zeng, Yi and Kenneth C. Land (2001) "A Sensitivity Analysis of the Bongaarts-Feeney Method for Adjusting Bias in Observed Period Total Fertility Rates," *Demography*, Vol. 38, No. 1, pp. 17-28.

(in Japanese)

- 浅見泰司・石坂公一・大江守之・小山泰代・瀬川祥子・松本真澄 (Asami et al., 2000) 「少子化現象と住宅事情」『人口問題研究』第 56 巻第 1 号, pp. 8-37.
- 阿藤誠 (Atoh, 1992) 「日本における出生率の動向と要因」河野稠果・岡田實(編)『低出生力をめぐる諸問題』大明堂, pp. 48-68.
- 阿藤誠 (Atoh, 2000) 『現代人口学 [少子高齢社会の基礎知識]』日本評論社.
- 阿藤誠 (Atoh, 2005) 「少子化と家族政策」大淵寛・阿藤誠編『少子化の政策学』人口学ライブラリー3, 原書房, pp. 33-58.
- 阿藤誠・赤地麻由子 (Atoh and Akachi, 2003) 「日本の少子化と家族政策：国際比較の視点から」『人口問題研究』第 59 巻第 1 号, pp. 27-48.
- 岩澤美帆 (Iwasawa, 2002) 「近年の TFR 変動における結婚行動および夫婦の出生行動の変化の寄与について」『人口問題研究』第 58 巻第 3 号, pp. 15-44.

- 大井方子 (Oi, 2004) 「バブル崩壊前後の出産・子育ての世代間差異」樋口美雄・太田清・家計経済研究所編『女性達の平成不況：デフレで働き方・暮らしはどう変わったか』日本経済新聞社, pp. 117-151.
- 大石亜希子 (Oishi, 2003) 「母親の就業に及ぼす保育費用の影響」『季刊社会保障研究』第 39 巻第 1 号, pp. 55-69.
- 大山昌子 (Oyama, 2004) 「子どもの養育・教育費用と出生率低下」『人口学研究』第 35 号, pp. 45-57.
- 金子隆一 (Kaneko, 2004a) 「出生数変動の人口学的メカニズム」大淵寛・高橋重郷編『少子化の人口学』原書房, pp. 15-36.
- 金子隆一 (Kaneko, 2004b) 「少子化過程における夫婦出生力低下と晩婚化、高学歴化および出生行動変化効果の測定」『人口問題研究』第 60 巻第 1 号, pp. 4-35
- 釜野さおり (Kamano, 2003) 「英語圏諸国の出生率と家族政策－女性たちの経験と認識についての質的分析－」『人口問題研究』第 59 巻第 2 号, pp. 51-68.
- 河野果穂 (Kono, 1995) 「配偶関係と出生力」日本統計協会『現代日本の人口問題』大蔵省印刷局, pp. 63-110.
- 国立社会保障・人口問題研究所 (NIPSSR, 1997), 『日本の将来推計人口：平成 9 年 1 月推計』研究資料第 291 号.
- 国立社会保障・人口問題研究所 (NIPSSR, 2003) 『平成 14 年第 12 回出生動向基本調査（結婚と出産に関する全国調査）第 I 報告書：わが国夫婦の結婚仮定と出生力』調査研究報告資料第 18 号.
- 国立社会保障・人口問題研究所 (NIPSSR, 2005) 『社会保障統計年報：平成 16 年版』社会保障研究資料第 4 号.
- 小島宏 (Kojima, 1989) 「出生促進政策の有効性」『人口問題研究』第 45 巻第 2 号, pp. 15-34.
- 小島宏 (Kojima, 1996) 「フランスの出生・家族政策とその効果」阿藤誠偏『先進諸国の人口問題－少子化と家族政策』東京大学出版会, pp. 157-193.
- 小島宏 (Kojima, 2003) 「フランス語圏における出生動向と家族政策」『人口問題研究』第 59 巻第 2 号, pp. 1-19.
- 小島宏 (Kojima, 2005) 「少子化対策の潜在的効果の検討を中心とする序論」『人口問題研究』第 61 巻第 2 号, pp. 1-22.
- 佐々井司 (Sasai, 1998) 「近年の夫婦出生力変動とその規定要因」『人口問題研究』第 54 巻第 4 号, pp. 3-18.
- 佐々井司 (Sasai, 2005) 「シンガポールと香港における少子化のメカニズムと少子化対策」小島宏編『韓国・台湾・シンガポール等における少子化と少子化対策に関する比較研究』厚生労働科学研究費補助金政策科学推進研究事業・平成 16 年度総括研究報告書, pp. 455-476.
- 七條達弘・西本真弓 (Shichijo&Nishimoto, 2003) 「若い世代の夫婦の子供数に影響を及ぼす要因」『理論と方法』第 18 巻第 2 号, pp. 229-236.
- 滋野由紀子 (Shigeno, 2006) 「企業の育児支援と保育所の出生率回復への効果」樋口美雄＋財務省財務総合政策研究所 (編著) 『少子化と日本の経済社会－2つの親と1つの真実』日本評論社, pp. 81-114.

- 滋野由紀子・大日康史 (Shigeno and Ohkusa, 1999) 「保育政策が出産の意思決定と就業に与える影響」『季刊社会保障研究』第 35 巻第 2 号, pp. 192-207.
- 滋野由紀子・松浦克己 (Shigeno and Matsuura, 2003) 「出産・育児と就業の両立を目指してー結婚・就業選択と既婚・就業女性に対する育児休業制度の効果を中心にー」『季刊社会保障研究』第 39 巻第 1 号, pp. 43-54.
- 鈴木透 (Suzuki, 2003b) 「離家の動向・性差・決定因」『人口問題研究』第 59 巻第 4 号, pp. 1-18.
- 駿河輝和・張建華 (Suruga and Chang, 2003) 「育児休業制度が女性の出産と継続就業に与える影響について: パネルデータによる計量分析」『季刊家計経済研究』第 59 号, pp. 56-63.
- 駿河輝和・西本真弓 (Suruga and Nishimoto, 2002) 「育児支援策が出生行動に与える影響」『季刊社会保障研究』第 37 巻第 4 号, pp. 371-379.
- 仙波由加里 (Semba, 2002) 「不妊と生殖補助技術の現状と課題」『人口学研究』第 31 号, pp. 37-46. 総務省 (MIC) 『家計調査』各年版.
- 高山憲之・小川浩・吉田浩・有田富美子・金子能宏・小島克久 (Takayama et al., 2000) 「結婚・育児の経済コストと出生力ー少子化の経済学的要因に関する一考察ー」『人口問題研究』第 56 巻第 4 号, pp. 1-18.
- 竹沢純子 (Takezawa, 2005) 「結婚と交際」お茶の水女子大学『家族・仕事・家計に関する国際研究ー韓国パネル調査第 1 年度報告書』F-GENS Publication Series 5, pp. 49-55.
- 津谷典子 (Tsuya, 1999) 「出生率低下と子育て支援政策」『季刊社会保障研究』第 34 巻第 4 号, pp. 348-360.
- 津谷典子 (Tsuya, 2003) 「北欧諸国の出生率低下と家族政策」『人口問題研究』第 59 巻第 1 号, pp. 49-80.
- 永瀬伸子 (Nagase, 2002) 「若年層の雇用の非正規化と結婚行動」『人口問題研究』第 58 巻第 2 号, pp. 22-35.
- 平岡幸一 (Hiraoka, 1996) 「イギリスの人口・出生動向と家族政策」阿藤誠編『先進諸国の人口問題ー少子化と家族政策』東京大学出版会, pp. 121-156.
- 廣嶋清志 (Hirosima, 1999) 「結婚と出生の社会人口学」, 目黒依子・渡辺秀樹編『講座社会学 2 家族』, 東京大学出版会, pp. 21-57.
- 廣嶋清志 (Hirosima, 2001) 「出生率低下をどのようにとらえるか? 一年齢別有配偶出生率の問題性ー」『理論と方法』第 16 巻第 2 号, pp. 163-183.
- 福田亘孝 (Fukuda, 2003) 「子育て支援政策の国際比較: 日本とヨーロッパ」『人口問題研究』第 59 巻第 1 号, pp. 7-26.
- 福田亘孝 (Fukuda, 2004) 「出生行動の特徴と決定要因ー学歴・ジェンダー・価値意識ー」渡辺秀樹・稲葉昭英・嶋崎尚子編『現代家族の構造と変容: 全国家族調査[NFRJ98]による計量分析』東京大学出版会, pp. 77-97.
- 藤野敦子 (Fujino, 2002) 「家計における出生行動と妻の就業行動ー夫の家事育児参加と妻の価値観の影響ー」『人口学研究』第 31 号, pp. 19-35.
- 古郡頼子 (Furugori, 2003) 「日本、韓国、ニュージーランドにみる女性労働と育児問題」『季刊家計経済研究』第 59 号, pp. 47-55.
- 目黒依子・西岡八郎 (Meguro and Nishioka, 2000) 「『少子化』問題のジェンダー分析」『人口問題研究』第 56 巻第 4 号, pp. 38-69.

- 森田陽子 (Morita, 2006) 「子育てに伴うディスインセンティブの緩和策」樋口美雄+財務省
財務総合政策研究所 (編著) 『少子化と日本の経済社会- 2つの親和と1つの真実』日本
評論社, pp. 49-80.
- 八代尚宏 (Yashiro, 2000) 「少子化問題への経済学的アプローチ」『季刊家計経済研究』第 47
号, pp. 20-27.
- 山上俊彦 (Yamagami, 1999) 「出産・育児と女子就業との両立可能性について」『季刊社会保
障研究』第 35 卷第 1 号, pp. 52-64.
- 山口一男 (Yamaguchi, 2005) 「少子化の決定要因について: 夫の役割、職場の役割、政府の
役割、社会の役割」『季刊家計経済研究』第 66 号, pp. 57-67.
- 山田昌弘 (Yamada, 1999) 『パラサイト・シングルの時代』ちくま新書.
- 山地久美子 (Yamaji, 2003) 「韓国の人口政策-人口抑制政策から出生率回復政策へ-」『韓国・
台湾・シンガポール等における少子化と少子化対策に関する比較研究』厚生労働科学研究
費補助金政策科学推進研究事業平成 14 年度総括研究報告書, pp. 61-93.

(in Korean)

- 김승권 (Kim SK, 2004) 「최근 한국사회의 출산을 변화원인과 향후 전망」『한국인구학』
제 27 권제 2 호, pp. 1-33.
- 김승권, 조애저, 김유경, 박세경, 이건우 (Kim SK, et al., 2004) 『2003 년 전국 출산력 및
가족보건·복지실태조사』한국보건사회연구원 연구보고서 2004-23.
- 박경숙, 김영혜 (Park KS and Kim YH, 2003) 「한국 여성의 생애 유형: 저출산과 M 자형
취업곡선에의 함의」『한국인구학』제 26 권제 2 호, pp. 63-90.
- 박상태 (Park ST, 2002) 「인구정책」김두섭·박상태·은기수 편 『한국의 인구』통계청, pp.
645-673.
- 변화순 (Byun HS, 2002) 「혼인상태」김두섭·박상태·은기수 편 『한국의 인구』통계청, pp.
219-245.
- 서문희 (Seo MH, 2004) 「최근 보육 제도 및 정책의 변화와 과제」『보건복지포럼』97 호, pp.
5-21.
- 이삼식 (Lee SS, 2006) 「저출산 원인구조와 정책방향」『보건복지포럼』111 호, pp. 5-17.
- 이삼식, 변용찬, 김동희, 김형석 (Lee SS, et al., 2004) 『인구고령화의 전개와 인구대책』
경제사회연구회 연구기관 고령화대비 협동 연구시리즈 04-02, 한국보건사회연구원.
- 이인숙 (Lee IS, 2005) 「저출산의 요인분석과 사회복지적 함의」『한국사회복지학』Vol. 57, No.
4, pp. 67-90.
- 이장영 (Lee CY, 2002) 「교육수준」김두섭·박상태·은기수 편 『한국의 인구』통계청, pp.
283-313.
- 장지연 (Chang JY, 2005) 「여성의 경제활동과 저출산」『보건복지포럼』102 호, pp. 45-56.
- 장혜경 (Chang HK, 2004) 『저출산 원인 및 정책 욕구 관련 여성 대상 설문조사 결과』
2004 년 11 월 26 일, 국회보고자료.
- 전광희 (Jun KH, 2002) 「출산력」김두섭·박상태·은기수 편 『한국의 인구』통계청, pp.
81-113.
- 조병엽·박병전·이화영 (Cho BY et al., 1999) 「韓國의 제 2 차 人口變遷의 가능성」朝鮮大

學校統計研究所 『統計研究所論文誌』第1卷第1號, pp. 27-41.

최은영 (Choi EY, 2004) 「한국보육정책의 공공성 평가－공급과 재정부담을 중심으로」
『보건복지포럼』97호, pp. 22-30.

최은영 (Choi EY, 2006) 「취업여성의 일-가적 양립지연 정책방향」『보건복지포럼』111호, pp.
18-32.

(internet resources)

Council of Europe, Recent Demographic Development in Europe

http://www.coe.int/t/e/social_cohesion/population/demographic_year_book/

저출산고령사회위원회 (Committee for Low Fertility and Aging Society, 2006)

『제1차저출산고령사회기본계획(안) 2006~2010』

<http://library.mohw.go.kr/volcano/index.html> (보건복지부 행정자료실)

厚生労働省 (Ministry of Health, Labour and Welfare)

<http://www.mhlw.go.jp/index.html>

經濟産業省 (Ministry of Economy, Trade and Industry, 2005) 『平成17年版・通商白書』

<http://www.meti.go.jp/report/tsuhaku2005/index.html>

통계청 (Korea National Statistics Office)

<http://www.nso.go.kr/newnso/main.html>

人口統計資料集 2005年版 (NIPSSR, Latest Demographic Statistics 2005)

<http://www.ipss.go.jp/syoushika/tohkei/Popular/Popular2005.asp?chap=0>

OECD, Education and Training,

http://www.oecd.org/topicstatsportal/0,2647,en_2825_495609_1_1_1_1_1,00.html

內政統計資訊服務網 (Taiwan Department of Statistics)

<http://www.moi.gov.tw/stat/>

行政院主計處 (Taiwan Directorate-General of Budget, Accounting and Statistics)

<http://www.dgbas.gov.tw/mp.asp?mp=1>

United Nations Development Programme, Human Development Reports

<http://hdr.undp.org/reports/global/2005/>

日韓の極低出生力の要因と政策の非有効性

合計出生率が1.3以下と定義される極低出生力は、2000年代に入り東アジアに波及した。日韓とも最近の出生力低下には結婚力低下とともに結婚出生力低下も寄与しているが、日本では結婚出生力低下は性交頻度の低下と不妊の増加によると考えられる。配偶者や子への需要は必ずしも低くなく、子の費用の高騰、若年労働市場の悪化と不確実性の増加、女子の労働力参加等が需要の達成を妨げていると見られる。児童手当、育児休暇、保育サービス等の出生促進策の効果は、期待されるほど高くないことが示される。北西欧や英語圏先進国との出生力の差は、政府の努力よりは文化的パターンの差異に求められるべきである。

日韓의 極低出産力の 要因과 政策의 非有效性

合計出産率이 1.3 以下로 定義되는 極低出産力은 2000年代에 들어와 東北亞로 波及되었다. 日本과 韓國의 경우, 모두 最近의 出産力 低下에 結婚力의 低下와 함께 結婚 出産力の 低下도 寄與하고 있는데 日本에서는 結婚 出産力の 低下는 性交頻度 低下와 不妊 増加에 起因한 것으로 생각된다. 配偶者나 子女에 對한 需要는 반드시 낮은 水準이라고 할 수 없으며 子女費用의 急上昇, 青年 勞動市場의 惡化, 不確實性의 増加, 女性의 勞動力 參加 等이 이들 需要의 充足을 妨害하고 있는 것으로 보인다. 兒童手當, 育兒休職, 保育서비스 等 出産獎勵對策들의 效果는 期待만큼 크지 않는 것을 確認한다. 北西 유럽이나 英語圈 先進國들과의 出産力 差異는 政府努力의 差異보다는 文化類型的 差異에서 찾아야 한다.