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**Wives' Economic Contribution to the Household Income
in Japan with Cross-national Perspective**

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1. Introduction

Drastic changes in the demographic structure in Japan, that is, the decline in the fertility rate and the growth in the aged population, and their possible consequences have been seriously discussed by scholars, policy makers, and the media. The continuous decline of the fertility rate raised people's concern over the reduction in the productive labor force and the potential imbalance in the future between contributions and benefits of the social security. The ratio of young workers to the retired population has been declining rapidly, and the support of the elderly is becoming the burden of the working-age population.

Historically the Japanese social security system paid attention to older people as exemplified in the old age pension and medical care (Tsumura 2002). However, government has been aware of the importance of supporting families with small children, more precisely assisting mothers, since there was no sign of significant improvement in the total fertility rates recently. The main reason for the continuously low fertility rate is largely due to the low rate of marriage among the younger generation since the overall rate of the fertility among married women has not declined substantially (NIPSSR 1998). In Japan where the rate of the out-of-wed birth is very low, delaying marriage and remaining as a single would directly lead to lowering the fertility rate. The marriage and childbirth are very closely related in contemporary Japan (Atoh 2000; Shirahase 2000a).

Siaroff (1994) explored three types of welfare regimes advocated by Esping-Andersen (1990) and classified Japan as "a late female mobilization welfare state" (p.99), similar to Switzerland. Siaroff argued that Japan is one of the least family-friendly societies with poor working conditions for women. Gauthier (1996) also claimed that Japan is located at the lower end of the level of family support by the

government, based on the amount of family allowance, the length and benefit of maternity and parental leave.

In 1985, the Equal Employment Opportunity Law (hereafter EEO Law) was passed and went into effect in 1986 to improve gender gap at the workplace. However, the pattern of married women's labor force participation has remained intermittent (Hamami 2000; Knapp 1995; Gelb 1998). More than 70 percent of mothers stopped working at the time of giving birth to their first child, according to the 1998 National Family Survey (hereafter the 1998 NFS) conducted by the National Institute of Population and Social Security Research. The proportion of those who were full-time housewives after their marriage and childbearing has increased during the high economic growth era of the 1960s (Ochiai 1995; Osawa Mari 1993; Ueno 1990), and the entry of married women into the labor market as part-time workers has increased during the 1970s (Iwai 1990). The M-shaped pattern of labor force participation of married women was firmly established during the 1960s and 1970s.

Shintani (1998) claimed that the proportion of those who stopped working at the time of childbearing declined from the late 1970's to the early 1980's, but increased afterwards. Nagase (1999) also showed the similar result on mother's working profile at the time of childbearing, based on the eleventh National Fertility Survey in 1997; the proportion of married women in their early 30s who were out of the labor force after the first childbirth was higher than the corresponding figure for those in their late 40s, controlling for the educational attainment. Nagase (1999) claimed that the separation between the economic activity in the labor market and childbearing was enhanced despite the parental leave act started in 1992.

Fertility rate declined sharply in the 1950s, and there is a gradual decline in the 1980s. The drop from 1.66 in 1988 to 1.57 in 1989 attracted public attention as it was called "1.57 shock." In response to this decline of fertility rate in the late 1980s, the Japanese government took specific actions. Based on the agreement among four Japanese ministries, that is, the Ministries of Education, Health and Welfare, Labor, and Construction, the government formulated in 1994 the Angel plan which laid out the basic direction for future child-rearing support in Japan. There has been, however, no

clear indication so far of improving fertility rate. The total fertility rate in 2000 was reported to be 1.35 in Japan.

Japan has been characterized by the least favorable work setting for women, as exemplified by the discontinuous pattern of work among mothers, the large extent of wage gap between men and women, and the very low proportion of women holding managerial positions. In this paper, I would like to explore what affect mother's decision to work and the extent of their contribution to the household economy. This paper is divided into the three parts. First, I will show the trend in the fertility rate and the female labor force participation rate in Japan since 1960, and provide an overview of recent studies on married women's labor force participation. Second, I will examine mother's working pattern, especially focusing on the continuation of work before and after the first childbirth in Japan. Third, I will compare mother's work in Japan with that in other industrial nations, focusing on the extent of their contribution to the household economy.

2. Trend in the fertility rate and the female labor force participation rate in Japan

Figure 1 shows the female labor force participation rate and the total fertility rate since 1965. The rate of the female labor force participation has not constantly increased in Japan since the end of World War II, unlike American and European societies. The decline in the female labor force participation rate until 1975 derived mainly from the fact that less and less married women worked as unpaid family workers in the farming sector. The increase in the female labor force participation rate after 1975 is due to the fact that the influx of women as employees in the secondary and tertiary sectors surpassed the decline in the farming sector. The overall participation rate in Japan has declined in post-war Japan hitting the bottom in 1975, increased thereafter reaching 50 percent in 1990, and slightly declined to 49.3 percent in 1999.

Although the overall rate of female labor force participation has not strikingly increased, some significant changes took place if we examined the economic activity of women more in detail. One of them is the growth of women's entry into the labor force as employees. As seen in Figure 2, the distribution of employment status among

the female labor force has largely changed since 1960. In 1960, about 60 percent of them were self-employed or family workers, but 40 years later, family workers who were mostly unpaid declined dramatically. In 2000, more than 80 percent of working women were employees. Thus, the way women worked has changed in Japan, while the overall level of economic activity has not largely changed over 40 years. Women used to work on the family farms while taking care of the domestic duties, but the separation of work place from family made them more difficult to reconcile work with family responsibilities. The double-peaked pattern of Japanese women's economic activity by age group has emerged in the 1960s and has remained basically the same in the 1990s, as shown in Figure 3, although the extent of drop in the participation rate among the 25-29 group has become less dramatic from 1975 to 1995.

The total fertility rate has continuously declined since 1965, as shown in Figure 1. Whereas more and more women entered the labor market as employees, the fertility rate has declined. The labor force participation of mothers with small children is still limited in Japan. Among mothers who have children aged three or younger, only 28 percent are engaged in employment, including part-time work. Among mothers who have children aged between four and six, the percent of those who work jumps to 50 percent, but 45 percent of them work part-time (Statistics Bureau 1997). When the mothers work on the full-time basis, 42 percent of the mothers with children less than four years old rely on the kinship ties for child-care while 49 percent of the mothers enroll their children in day-care facilities in 1993 (Fujin Shonen Kyokai 1994).

In order to encourage women to pursue their careers despite their family responsibilities, Japanese government launched parental leave policies. Beginning in 1995, every employee is entitled to take child-care leave in order to take care of a child who is younger than the age of one, thanks to the Parental Leave Act. Following the amendment to the Employment Insurance Law, insured persons who take child-care leave are paid 40 percent of her/his wage before leave. In 1996, 44 percent of female workers who worked in firms which had child-care leave policy took child-care leave while less than 1 percent of men did (Ministry of Labor 1996). Workers who take child-care leave are overwhelmingly women.

3. Recent studies on female labor force participation in Japan

Most of the empirical analyses using micro data have been conducted by labor economists in Japan. Higuchi (1991) and Osawa Machiko (1993) presented the negative relationship between the level of educational attainment and the economic behavior after their marriage in Japan. Osawa Machiko (1993) claimed that Japan is peculiar compared with the American society since the extent of human capital accumulation based on formal education is not positively associated with their working profile. The effect of the husband's economic status on their wife's labor force participation supported the Douglas-Arisawa hypothesis: the higher the income of their husbands, the less likely their wife to be in employment (cf. Matsuura and Shirahase 2002). Although many more young women obtained higher education, they do not always pursue their career along with their family formation (Osawa Machiko 1998). The high degree of homogamy among those with higher education in Japan is probably one of the reasons why the husband's economic status is significant in explaining married women's economic behavior (Shirahase 1999). The attainment of higher education is a very important instrument for women in the marriage market (c.f Brinton 1993; Ueno 1998).

The labor force participation of mothers with small children is limited in Japan. According to the special report of Labor Force Survey in 2000, among the nuclear families where only parents and their unmarried children are constituted, only 28.3 percent of mother with children aged three or younger are engaged in employment, and as the age of their children becomes 4 and older, the proportion of mothers who are in the labor market increase to about 50 percent. The proportion of mothers with small children aged 3 and younger who are at work has not changed since 1996.

Most labor economists agreed that the parental leave act encouraged married women to stay in the labor force (Higuchi and Abe 1992; Tomita 1994; Higuchi 1994; 1996; Japan Institute of Labour 1996; Higuchi, Abe, and Waldfogel 1998; Shigeno and Ogusa 1998). The Institute for Health Economics and Policy (1997) examined how much the lack of childcare facilities led women leave their work, based on the analysis of the cross-sectional data including the number of daycare centers, the number of

daycare centers with overtime care, the number of childcare centers that provide childcare services at night, the number of daycare centers that provide the care for sick children. According to their analysis, the growth of the number of childcare centers and the increase in the variety of the child-care services probably increased the female labor force participation rate. Nagase (1997) analyzed cross-sectional data of the municipal level and showed that the fee for caring infants was negatively related with the labor supply of married women, while the number of daycare centers for children aged zero to two was positively associated with the labor supply of married women. Morita (2002) showed that the increase of the number of licensed daycare centers raise the likelihood of mother's work on the non-regular basis.

Shigeno and Ogusa (2001) examined the impact on women's work of various childcare support policies. These policies include not only public daycare centers and the parental leave arrangements but also other kinds of fringe benefits related to childcare support that were provided by the company such as childcare center attached to firms and the introduction of flexible working time arrangement for employees. They showed that the parental leave arrangement and shortening of working time affect positively the continuous work profile of married women. On the other hand, the work arrangement of guaranteeing the place to return for workers after the temporal withdrawal from work does not significantly increase the likelihood of married women to stay in the labor market. Shigeno and Ogusa (2001) further speculated that the increase in the number of daycare centers would probably affect positively the working profile of married women. They concluded that the increase of the number of daycare centers would be more effective way in which more married women stay in work than introducing the parental leave system.

Matsuura and Shigeno (1996; 2001) claim a significant negative impact of childbearing on women's working profile and urge the improvement of social policies to support reconciliation between family responsibilities and childrearing. Tsuya (1999) shows that mothers with small children have a high expectation towards childcare supports including day care centers attached to firms and parental leave policies at firm level. As the proportion of co-residence with their parents who used to be the main

care provider to the children of working mothers has declined, the importance of childcare services provided by the state and private companies has increased. Higuchi (1996) and his colleagues (Higuchi, Abe, and Waldfogel 1998) state that the introduction of parental leave act encourages women's working profile to be continuous. Morita and Kaneko (1998) claim that parental leave system is positively associated with the childbirth, using the simultaneous equation models. Thus, a large number of studies report positive effect of parental leave act on women's continuous labor commitment (Higuchi and Abe 1992; Tomita 1994; Japan Labor Institute 1996; Shigeno and Ogusa 1998). Yamagami (1999) takes into account the living arrangement of mothers with small children, and shows that parental leave arrangement in private firms affects significantly the likelihood of full-time work only for those who do not live with their parents.

Sociologists who examine the female working profile, using the micro data, are not as many as labor economists. Iwai and Manabe (2000) and Nakai and Akachi (2000) examined female working profile, using the 1995 Social Stratification and Mobility Survey. Iwai and Manabe (2000) state that the M-shaped pattern of female labor force participation in Japan is peculiar compared with other nations, but the wage gap between gender has declined since the 1970s. They also claim that while those who show a continuous working profile are still a minority, the slight change in working profile among women with higher education is observed: they are more likely to stay in the labor force than before. Hirao (1999) also finds that married women with college degree are more likely to stay in the labor market over the marriage and childbearing than those with lower educational attainment.

Nakai and Akachi (2000) report the prevalence of discontinuous working profile among Japanese women. According to their analysis on women's work decision at the time of marriage, the first occupation and the co-residence with their mother are significant factors in determining their work profile. However, the husband's occupation is the crucial determinants of the married women's employment at the time of the survey. Nakai and Akachi (2000) speculate based on their results that women's work decision is largely affected by the husband's income level after marriage.

The M-shaped curve of the pattern of female labor force participation rate by age group dominated since the 1960s and 1970s (Ochiai 1996; Shirahase 1997; Manabe 1998), and this discontinuous working pattern of women is still valid in contemporary Japan. However, we can witness the change in the timing of withdrawal from the labor market. Imada (1995) claims that more women stayed in the labor market at the time of marriage than before, and Nagase (1999) reports the decline in the likelihood of the departure from the labor force at the time of marriage among the younger generation. Manabe (1998) claims that the timing of the transition out of the labor market shifts from marriage to childbearing, while there is no significant increase in those who show a continuous working pattern before the age of 30.

4. Mother's work at the time of the first childbirth

In this section, I would like to analyze the micro data to examine the determinants of mothers to work at the first childbirth. The data set that is used in this study is the 1998 National Family Survey (hereafter, the 1998 NFS). The 1998 NFS in Japan was conducted by the National Institute of Population and Social Security Research, and it was a nationally representative survey on family in Japan. I will focus on married women with child(ren) in our analysis.

While in most industrial societies, including the United States, women and men show a similar working pattern, Japan shows significantly different patterns of work between men and women: women are more likely to show discontinuous work trajectory. In fact, more than 70 percent of mothers stopped working at the time of giving birth to their first child, according to the 1998 NFS. According to the NFS, about a half of married women state that the temporal withdrawal from the labor market when the children are small is the ideal way of work by mothers. Respondents who think that the continuous pattern of work by mothers is ideal are less than 20 percent.

As far as married women are concerned, the belief in which mothers had better stay at home and take care of small children is still predominant even in the late 1990s.

A national attitudes survey conducted in 2000¹ asked the respondents what would be the ideal work pattern for mothers whose youngest child has not reached the school age. The responses of the respondents who were in their twenties were the following: full-time work (6.8%), part-time work (24.8%), no work (43.2%), and don't know (25.2%). Therefore, even among the younger generation, the conservative attitudes towards the mother's work is dominant in contemporary Japan.

When women withdraw from the labor market, more than 80 percent of them reported personal reasons for quitting their job (Somucho 1997). Among those who were in their 20s and 30s, women who stopped working because of marriage and childbearing were 42.8 percent and 37.7 percent, respectively. Thus, among the younger generation of the 20s and 30s, marriage and childbearing are the main reasons for being out of the labor market.

Table 1 shows the results of logistic regression analysis of whether respondents stayed in the labor market or not at the time of the birth of the first child, based on the 1998 NFS. The analysis is restricted to the respondents who were married and had child(ren). The explanatory variables in the analysis are the age of the respondents, the respondent's educational levels represented by years of education, her husband's education measured by years of schooling, the urban area dummy, three dummy variables representing the occupation of the respondent before the first childbirth², a dummy variable representing the respondent's job before the first childbirth was in the government sector. Variables that show statistically significant effects are the age of the respondent, the husband's education, the urban dummy, the self-employed dummy, the white-collar dummy, and the government sector dummy. The older the respondents, the more likely they are to stay in the labor market at the time of their first childbirth. The net positive effect of age on the chances of continuing work probably derives from the fact that women who were married and had children in their 20s are

¹ The data come from the National Survey of Welfare and Attitudes conducted by a group of sociologists (headed by Professor Shogo Takegawa, University of Tokyo) in April 2000.

² I constructed three occupational dummy variables with "blue-collar occupation" as the reference. They were self-employed dummy including family workers, professional dummy, and white-collar occupation dummy such as clerical and sales.

more likely to hold conservative attitudes toward work and childrearing than young unmarried women in their 20s, who tend to delay their marriage, as well as married women in their 30s and 40s. In other words, the positive effect of age on work continuity at the time of the first childbirth is probably due to the greater tendency of withdrawal from the labor market among the young mothers in their 20s. The husband's education has a negative effect on continuing their work, while women's own education does not show any significant effect; The higher the husband's educational attainment, the less likely their wives are to stay in the labor market. Since the socio-economic status of the husband at the time of the first childbirth was not included in the survey, the educational level of the husband can be regarded as a proxy for the husband's socio-economic status. The wife's decision about whether to stay in the labor force at the time of childbearing is more associated with the husband's socio-economic status, rather than their own, and this finding suggests that women's decision appears to be based on the family strategy, rather than women's individual choice.

In addition to the husband's situation, their own employment is also a critical factor in making the decision about their subsequent work trajectory. Women who worked as the self-employed or family workers before the first childbirth are more likely to stay in the labor force, compared with those who were blue-collar workers. Being self-employed or family workers is positively associated with the continuous work profile, and it is consistent with the claim that the growth of employees among the female labor force leads to a discontinuous working trajectory. In fact, respondents who worked as white-collar employees are more likely to withdraw from the labor market after the childbirth than those who worked as blue-collar employees. White-collar work, which has expanded along with industrialization, is closely related to the discontinuous work profile.

The work experience in the government sector increases the chances of mothers to stay in their job after the childbirth, and this effect is probably associated with better fringe benefits related to childbearing. The government sector is considered to be one of the most favorable places for women to work due to gender

equality in employment policies. About 50 percent of those who worked in the government sector before the birth of their first child managed to stay in their job, and this retention rate is exceptionally high in Japan. When we examine women who worked in the private sector prior to giving birth to their first child, the firm size is negatively associated with the proportion of those who stayed in the labor market after their childbearing: the larger the firm size, the lower the proportion of those who continued to work (Figure 4). Nowadays, more policy makers and managers are becoming aware of the importance of family-friendly employment policy, and some large firms have family-friendly work environment (Josei Rodo Kyokai 1999). Nevertheless, at the macro level, it is difficult to see the effect of better fringe benefits in large firms on the mothers' work behaviors, compared with those in smaller ones.

5. Determinants of mother's work within a comparative perspective

In this section, I will compare the determinants of mother's work in Japan with those in other nations. The data sets that I use in this analysis are the 1995 National Survey of Living Conditions (Kokumin Seikatsu Kiso Chosa), conducted by the Ministry of Health and, Labor, in Japan and the Luxembourg Income Survey data (hereafter, LIS data) for other nations. The LIS data is highly comparable dataset and is very valuable for cross-national comparison.

Six countries from the LIS dataset are selected for my analysis. They are Germany, Italy, Sweden, Taiwan, United Kingdom, and the United States. I analyze the datasets collected in mid 1990s of these countries. I chose Germany and Italy since the role of family is strong in these nations as welfare states. On the contrary, in Sweden, there is the high degree of gender equality, and it is regarded as one of the champion of welfare states by the Japanese government. Taiwan is included in our analysis because Japan is often compared with only European societies, leading to highlighting Japan's peculiarity. The United States is included because the growth of mothers with small children is one of important social changes since the 1970s. The United Kingdom is included in our analysis because similar to Japan, the proportion of part-time workers among married women is very high in Europe.

Table 2 shows the work status of mothers by nation. In Japan, 51.2 percent of mothers are out of the labor force, and among working mothers, one fourth is either self-employed or family workers. The proportion of mothers who do not work is not peculiarly high in Japan. The proportions of non-working mothers in Italy, Germany, are higher than that in Japan. On the other hand, in the United Kingdom and the United States, more mothers are in the labor force than in Japan. The proportion of working mothers is even higher in Sweden than in United Kingdom and the United States. Only less than one fourth of mothers are out of the labor market in Sweden. More than 70 percent of mothers work as employees in Sweden.

In this section, my analysis is restricted to employees since, as we have already seen, the working patterns between employees and self-employed/family workers are different. Female employees face more serious obstacle in reconciling career development with family responsibilities in Japan, and they are more likely to be dependent on family support services which are provided through by the state, local neighbors, and private companies than self-employed and family workers. I also restrict my analysis to only parents and unmarried children. Japan and Taiwan is characterized by high proportion of multi-generational household (Shirahase 2001), and this multi-generational households tend to provide their members with mutually beneficial services. For instance, elderly members enjoy economic security through co-residence with younger generation (Smeeding and Saunders 1998), and young parents benefit from asking their parents look after small children. In order to determine the importance of social support for childbearing and childrearing, I need to focus on mothers who do not enjoy services within the family and thus concentrate on mothers in two-generational household.

In Japan, the proportion of working mothers is not peculiarly low among the seven nations, but the proportion of mothers who work as self-employed or family workers is higher than other European nations, that is 11.9 percent. The proportion of working mothers as self-employed or family workers in Taiwan is even higher in Taiwan, that is 14.5 percent. This high proportion of working mothers as non-employees characterizes these two Asian societies. In fact, the working profile of

mothers in Japan is different between employees and self-employed/family workers. The propensity of staying in work is much higher among self-employed/family workers than among employees in Japan (Shirahase 1997).

Table 3 shows the proportional distribution of the mother's economic contribution to the household by nation. The figures are calculated as the proportion of mother's gross earning to the household gross income. Japan shows the highest proportion of mothers who earn less than 20 percent of the household income, that is 51.1 percent. Almost 90 percent of working mothers earn less than 45 percent of the household income in Japan. Japan is characterized by the low degree of the economic contribution to the household by working mothers, but other societies also show the similar situation where the gender gap of earning in the household can be seen. Even in Sweden, a majority of mothers earn less than 45 percent of the household economy. The United Kingdom also shows the relatively low extent of the wife's contribution to the household economy, where 43.3 percent of working mothers earn less than 20 percent of the household economy. While the proportion of mothers who are out of the labor force in Germany is almost the same as that in Japan, that is, 52.3 percent and 51.2 percent, respectively, once they are involved in the economic activity, their extent of contribution to the household income is higher in Germany than in Japan.

Mother's working rate varies depending on the age of the youngest child. Particularly, in Japan, the number of mothers with small children aged 3 and under are limited in number, as already pointed out. Even among the young generation, the majority support the idea that mothers had better devote themselves to their children when they are younger than 3, so-called the myth about taking care of children younger than the age of 3 (*Sansaiji Shinwa*). Table 4 presents the proportion of working mothers by the age of the youngest child. The highest proportion of working mothers with the very small child aged younger than 3 can be found in Sweden; nearly 90 percent of mothers are in the labor force, when their youngest child is younger than the age of 3. The proportion of working mothers with the youngest child aged younger than 3 in Germany is also high, that is, 80 percent, but we have to bear in mind that 80 percent of being in the labor force among mothers with the very small children were on

the parental leave in Germany.

Japan shows a very low proportion of working mothers with small children. The proportion of Japanese mothers with the child aged 3 and under is 17.6 percent. Only a small minority of mothers with small children are in the labor force in Japan. In Japan, the proportion of working mothers with children aged 3 to 5 is 22.4 percent, and the age of 6 is the legal minimum age for entering the primary school in Japan, and the time when the youngest child becomes the first grade is a critical point for mothers to return/start to work. However, the proportion of working mothers with children aged 6 to 9 remains low, 29.3 percent, that is the lowest among the seven countries.

In Taiwan and Italy working mothers with small children aged 3 and younger is a minority, that is, 41.2 percent and 42.4 percent, respectively, but they are not as small as in Japan. Even though the age of the youngest child becomes older, the proportion of working mothers does not increase in these two societies. Therefore, while the total proportion of working mothers in Taiwan and Italy is low, that is, 50.8 percent and 54.8 percent respectively, once mothers enter the labor market, it appears that the age of the youngest child does not affect mother's economic behavior.

In the United States, working mothers with small children aged 3 and younger have become majority since the 1980s, but mother's work in the United States is not as common as in Sweden. Working mothers in the United States, however, are characterized by a high proportion of full-time workers: about two-thirds of working mothers are full-time workers. On the other hand, the proportion of part-time workers among working mothers is high in the United Kingdom. More than 70 percent of working mothers with the youngest child aged 3 and older are part-time workers in the United Kingdom. In Germany, the proportion of part-time workers among mothers with the youngest child aged younger than 3 is very high, but the proportion of part-time workers declines significantly as the age of the youngest child becomes older.

Table 5 shows the proportion of wife's earning to the household income by the age of the youngest child among dual-working couples. The proportions show how much wife contributed to the household income and indicate the importance of wife's work in household income. Let us look first at mothers with the youngest child aged

younger than 3. In Japan and Germany where most mothers with the youngest child younger than 3 do not work, the proportion of the wife's income is also relatively small, that is, 26.22 percent and 21.4 percent, respectively. In both countries, thus, the contribution of mothers with very small children aged younger than 3 to the household income is limited. On the other hand, Italy shows a high figure, that is, 43.3 %. While the proportion of working mothers is relatively low in Italy, once Italian mothers decide to work while having a small child, their extent of contribution to the household income is higher than in other societies. This selected group of working mothers probably face the situation where they must continue their work in order to maintain the income level of the household.

In Sweden, where the majority of mothers with small children younger than the age of 3 work, the extent of mother's contribution to the household income is highest, that is 52.91 percent, while the extent of mothers' contribution does not largely change as the age of the youngest child becomes older. This finding suggests that the extent of Swedish mothers' contribution to the household economy remains stable no matter how small their children. It would imply that the contribution of mother's work is expected over the life course regardless of the age of the child(ren) in order to make the economic well-being of the household stable.

What Japan stands out in Table 5 is that the contribution of the wife's earning is limited across almost all the age group of the youngest child. The overall proportion of the mother's earning to the household income is smallest in Japan, that is 22.90 percent. The highest value can be seen in Sweden, that is 52.72. This observation probably derives from the three points, that is, (1) the high wage gap in gender, (2) the high tendency of career interruption of mothers, and (3) the fact that the increase in the proportion of working mothers with school-aged children comes from those who return to work as part-time workers. In other words, the increase of the number of mothers who re-enter the labor market work with low pay, particularly as part-time workers, as the age of the youngest child becomes older. Correspondingly, the number of mothers who stay in the labor market throughout the family formation is still small in contemporary Japan.

The extent of the economic contribution of the mothers to the household income overall does not largely differ by the age of the youngest child among the seven countries. According to our results of Table 5 the extent of the wife's economic contribution does not largely change across the age group of the youngest child, and mothers who stay in work throughout the family formation appears to be relatively constant proportion. On the other hand, the extent of the average proportion of mother's contribution to the household income fluctuates more by the age of the children in Japan than in other nations. I will examine more in detail what such a relatively large extent of fluctuation in the extent of mother's contribution to the household economy in Japan means using the longitudinal data in the future.

Matsuura and Shigeno (2001) and Nagase (1997) have already shown that in examining the female labor force pattern, it is important to take into account part-time or full-time work distinction. Nagase (1997) presented that the determinants of part-time work is different from that of full-time work. The income level of the husbands affects the likelihood of wife's full-time work, but it does not affect wife's chances of part-time work. Matsuura and Shigeno (2001) suggested that women assess the choices among three alternatives of full-time work, part-time work, and not-working at the same time. Therefore, I resort to multinomial analysis of examining the determinants of three outcomes of full-time work, part-time work, and not-working.

Table 6 presents the results of multinomial logit analysis on mother's working behavior. In this analysis, I use the Social Stratification and Mobility Survey³ (hereafter, 1995 SSM survey) because the National Survey of Living Conditions does not include the educational variables and full-time and part-time distinction. In the LIS data, I made full-time and part-time distinction using the working hours per week.

³ The SSM surveys, which are national representative surveys, have been conducted by Japanese social scientists every ten years since 1955, and female respondents have been included in the survey since 1985. I would like to thank the 1995 SSM Survey committee for allowing me to analyze the data.

If the working hours are shorter than 35 hours, the employment is regarded as part-time⁴. There are three hypotheses to be tested. The first hypothesis is the human capital hypothesis in which mothers decide to work depending on the level of educational attainment. The higher the educational attainment, the more likely they are to work. The second hypothesis is the household income hypothesis in which women's economic behavior depends on the level of the household income, represented by the husband's income. According to the Douglas-Arisawa hypothesis, the husband's income level is negatively associated with the probability of their wife's working. The third hypothesis is the family-cycle hypothesis in which having small children is critical for mothers to decide whether they work or not, regardless of their educational level and of husband's income. The presence of a small child discourages mothers to work no matter how well they are educated and how high their husbands earn.

The dependent variable is the current work status of the mothers with children: full-time workers, part-time workers, and not-working (reference category). The explanatory variables are created corresponding to the three hypotheses. The educational level is represented by the two dummy variables; whether mothers obtained higher education or not, and whether they graduated from high school or not. Since the educational system differs greatly across societies, we constructed these dummy variables to present a wide range of educational systems. The log of husband's income (the husband income) and whether the youngest child is younger than the age of 3 or not (the child dummy) are entered as the explanatory variables, corresponding to the second and the third hypothesis, respectively. We add the mother's age to take into account the age effect, and we also add the square of the age to take into account the non-linearity in the age effect.

Let us start with the results of Japan. Age, age-squared, husband's income, and the small child dummy variable are statistically significant for the full-time work,

⁴ Taiwan is excluded from our analysis because I could not make full-time with part-time distinction from the data.

and the same variables show significant effects for the part-time work. The probability of working full-time increases as mothers get older and reduces at older age. As Douglas and Arisawa is predicted, the husband income is negatively associated with their wives' working behavior. Whether they have a small child younger than the age of 3 significantly affects the mother's work. Having a small children discourage mother to be in the labor force. The educational level of the mothers, on the other hand, does not exert any significant effect on whether the mothers are in the labor market. The same pattern of the effects of independent variables is found for the contrast between mothers working part-time and mothers not working. Thus, in Japan, the hypothesis about the negative impact of the husband's income level and the family-cycle hypothesis were supported, but the human capital hypothesis was not supported by our analysis.

In the United Kingdom, the effects of age, age-squared, higher-education dummy, and the child dummy are statistically significant in predicting the mother's work on the full-time basis. However, the husband's income does not show statistically significant effect. In the United Kingdom, how much their husbands earn does not change the probability of mother's work activity. In the analysis of predicting part-time work (as opposed to no work), only age and the child dummy are statistically significant.

In the United States, all explanatory variables are statistically significant for predicting full-time work (as opposed to no work). Even in the United States, the husband's income negatively affects the likelihood of mother's full-time work. The likelihood of working part-time is affected by the level of education and the presence of a very small child. Mothers with high-school diploma and higher education are more likely to have part-time job, and having a small child younger than the age of 3 discourages mothers to have part-time work. However, the husband's income level does not exert statistically significant effect.

In Sweden, all explanatory variables affect the likelihood of working both on the full-time basis and on the part-time basis. It is interesting to note that the husband's income level is positively associated with the mother's work, and having a

small child younger than the age of 3 increase the chances of work. I suspect that the positive effect of having small children on mother's work is partly due to the cohort effect in which the younger generation is more likely to have small children and at the same time more likely to work than the older generation. In Germany, the likelihood of working full time is affected by all the explanatory variables. While the educational attainment is positively associated with the mother's work, the husband's income and the child dummy are negatively associated with the mother's work. The effect of the husband's income disappears when we consider the likelihood of working part-time in Germany.

In sum, the husband's income produces significant effect on mother's work. While the Douglas-Arisawa hypothesis was proposed in Japan, mother's work is closely associated with the household income level in other western societies except for the United Kingdom. The finding suggests that mother's work is not only the results of the individual choice, but also the part of the family strategy. The human capital of the mothers represented by educational level is also an important determinant to mother's work, in all societies, except for Japan. The lack of the impact of educational attainment among married women in Japan is peculiar among industrial societies, and I will further analyze the role of higher education on mother's work in future studies.

5. Discussion

In this study, I examined the work profile of married women and the extent of mother's contribution to the household income in the late 1990s in Japan. The discontinuous work profile has remained dominant pattern among married women. Particularly, the growth of employees working outside the family resulted in the physical separation of work and family and led to an emergence of a discontinuous work profile beginning in the 1960s. Getting a white-collar job in clerical and sales occupation discourages women to stay in the labor market, because of the limited prospects for career advancement.

Looking at the work profile of mothers at the time of the birth of the first child, more than 70% of married women stopped working. The probability of quitting their

job becomes higher if they worked as a clerical worker or worked in the non-government sector. Married women who were employed in large firms with more than 1,000 employees are more likely to stop working than those who were employed in small-scaled firms. Even in the late 1990s, the majority of married women showed a discontinuous pattern of work profile due to their family responsibilities.

Having a small child, particularly younger than the age of 3, tend to discourage mothers to work, not only in Japan but also in other societies. The husband's income is above all negatively associated with their wife's economic activity. The pattern of determinants of mother's work is generally similar in all seven societies which were studied in this paper, but the level of the involvement of mothers to work varies across nations. In Japan where the number of working mothers with very small children is very limited, the extent of contribution of the wife's earning to the household economy is relatively low. The extent of contribution of the mother's earning to the household economy did not change largely as the age of the youngest child became older in our all societies. In our analysis, mothers who continue to work throughout the family formation were not distinguished with those who show an intermittent pattern of working, so we have to bear in mind the compounded effect of different work profile of mothers.

The majority of working mothers return to work after the temporal withdrawal due to childrearing in order to supplement the household economy in Japan. In other words, most of working mothers do not develop their career and are simply secondary earners in the family to help household economy in Japan. This low proportion of mothers who develop their career through continuous involvement in the labor force across their family formation period contributes to maintaining the M-shaped curve of female labor force participation on the macro level. How to offer an opportunity of better job for women and help them stay work throughout their family cycle would be crucial to lower the high cost of marriage and childbirth in Japan.

Under the current work setting in many Japanese firms, there is no assumption that family responsibilities are shared by both the husband and the wife. A strong male-breadwinner model of employment has been firmly established since the high

growth economic era (Ochiai 1995; Ueno 1990; Osawa 1993). The very important point which tends to be missed in the argument of family-friendly policies is how to make it possible for fathers as well as mothers to be involved in childrearing and caring for other family members. It is very difficult for fathers to share family responsibilities under the extremely long working hours. In fact, one of the significant factors in explaining the extent of the husband's participation in household chores is his work time. The longer the husband's working hours, the less likely he is to do family chore (Shirahase 2000b). Therefore, making the workplace more family-friendly could be accomplished by making the employment system more flexible for men and women. Because the continuous work of long working hours has been the basis of employment practices in Japan, the discontinuous pattern of work becomes a disadvantage. If a more flexible way of work, particularly during the early stage of family formation, is available for not only women but also men, the temporal withdrawal or temporal shift to part-time work will probably not have detrimental effect on the career development. Building a family-friendly welfare state requires reconstruction of the fundamental employment system, more than simply providing childcare support services to women workers.

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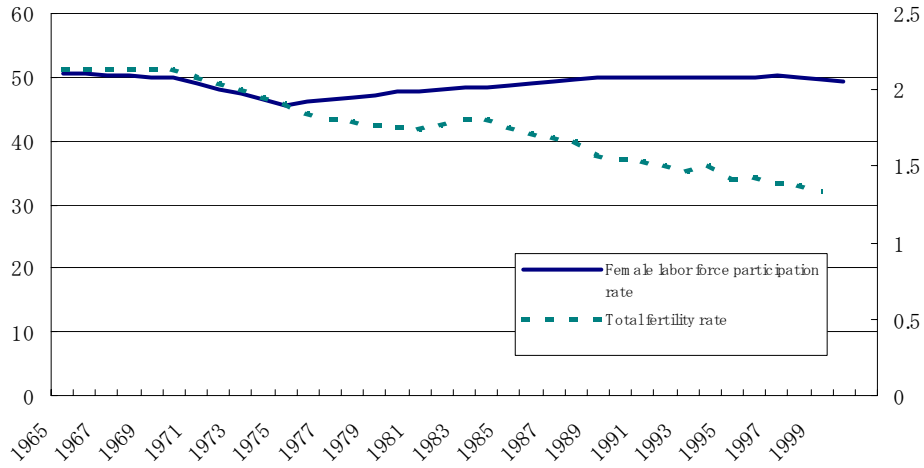
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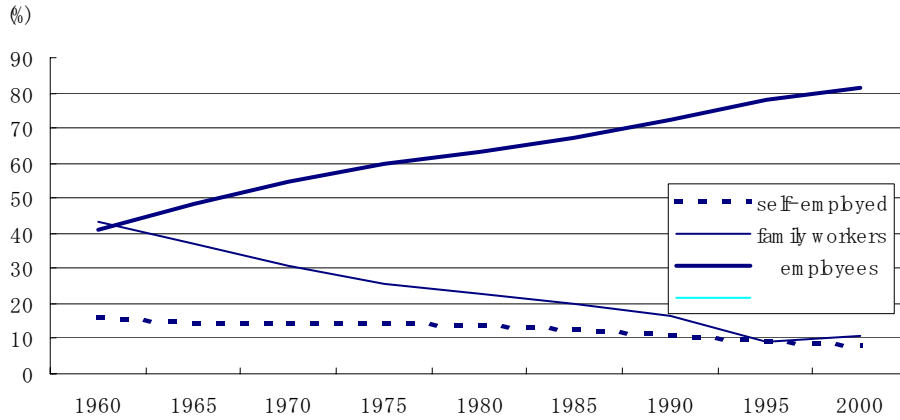
Figure 1 Trend in female labor force participation rate and total fertility rate since 1965



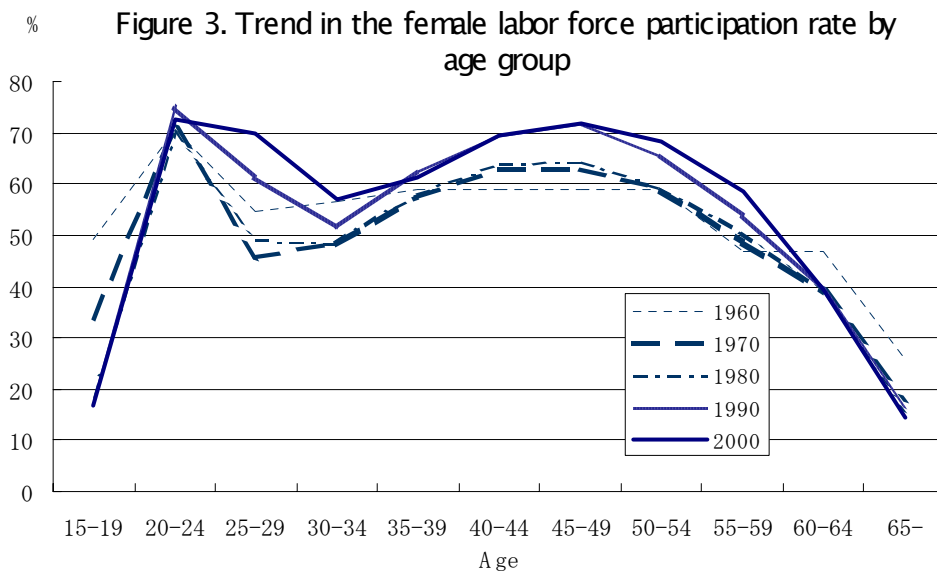
Source: Labor Force Survey, Japan Ministry of Labor, various years

National Institute of Population and Social Security Research 2000

Figure 2 Trend in the distribution of employment status among the female labor force since 1960

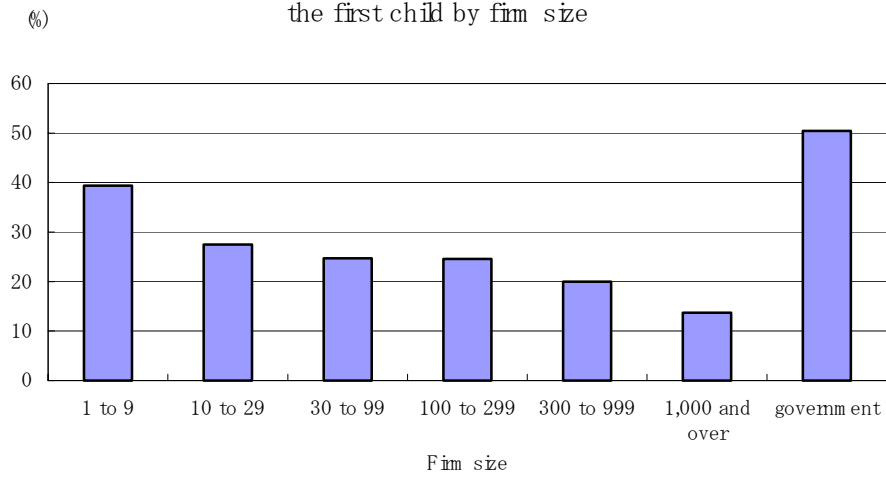


Source: Labor Force Survey, Japanese Ministry of Labor, various years



Source: Labor Force Survey, Japan Ministry of Labor, various years

Figure 4. Proportion of continuous workers after the birth of the first child by firm size



Source: 1998 National Family Survey

Table1. Logit analysis of the continuation of work after the birth of first child

	Coefficient	
constant	-1.22	**
Wife's age	0.017	**
Wife's education	0.02	
Husband's education	-0.076	**
Urban dummy	0.695	**
Self-employment dummy	1.257	**
Professional dummy	0.122	
White-collar dummy	-0.406	**
Government dummy	1.106	**
occupation missing dummy	-1.282	**
size missing dummy	0.179	

Note: * significant .05 level, ** significant .01 level

Source: 1998 National Family Survey

Table 2. Mother's work status by nation

	employees	self-employed	not-working
Germany	43.6(69.9)	4.1	52.3
Italy	37.9(39.5)	8.1	54.8
Sweden	72.0(51.5)	3.7	24.2
Taiwan	34.4	14.5	51.1
U.K.	57.1(69.9)	4.7	38.3
U.S.	54.0(35.8)	6.7	39.3
Japan	36.9	11.9	51.2

Note: The data source for Japan is the 1995 National survey and Living Conditions and for other nations the LIS data. The survey year for Germany and the U.S. is 1994 and that of others is 1995.

The figures in the parentheses are the proportion of part-time workers among employees

Table 3 The proportion of working mother's contribution
to the household economy by nation

proportion of mother's earning	Germany	Italy	Sweden	Taiwan	U.K..	U.S.	Japan
less than 20%	18.5	8.4	20.3	10	43.4	28.8	51.1
20-45%	23.1	47	36.6	76.7	39.5	42.4	35.2
45-55%	37.2	26	17.9	9.2	7.4	15.3	8.9
55-75%	11.8	11.5	22.1	2.6	5.5	9.6	3.4
75-100%	7.5	4.8	2.9	1.5	4	3.3	0.9
100%	1.8	2.2	0.2	0	0.1	0.6	0.4

Table 4 The proportion of working mothers working full-time or part-time
by the age of the youngest child by nation

the age of the youngest child	Germany	Italy	Sweden	Taiwan	U.K..	U.S.	Japan
< 3	80.0 (94.5)	42.4 (41.9)	83.4 (50.2)	41.2	47.3 (65.6)	54 (33.6)	17.6
3 to 5	53.7 (67.0)	44.1 (43.3)	73.9 (64.6)	42.3	56 (72.7)	60 (33.7)	22.4
6 to 9	66.7 (54.1)	39.1 (36.7)	77 (63.0)	45.8	66.6 (71.0)	65.2 (36.9)	29.3
10 to 14	72.0 (45.1)	43.4 (36.5)	70.1 (45.1)	36.9	75.4 (71.4)	65.8 (34.8)	47.6
15 to 17	59.2 (30.0)	31.8 (36.7)	57.6 (47.3)	29.6	67.2 (70.2)	59.1 (37.7)	52.3

Note: The figures in the parentheses are the percentage of mothers working part-time out of all working mothers.

Table 5 The proportion of the wife's earning to the gross wages and salaries
among dual-working couples

The age of the youngest child	Germany	Italy	Sweden	Taiwan	U.K.	U.S.	Japan
<3	21.4	43.33	52.91	35.71	30.11	35.51	26.22
3 to 5	29.17	44.19	53.4	34.33	27.16	34.58	29.86
6 to 9	33.24	44.78	52.68	33.36	25.57	33.48	24.51
10 to 14	35.71	43.83	52.55	33.22	24	31.84	19.99
15 to 17	35.41	42.51	51.45	36.04	28	29.44	22.43
total	32.63	43.89	52.72	34.18	26.88	33.48	22.9

Table 6 Multinomial Logit Analysis on Mother's work by Nation

	Germany	Italy	Sweden	U.K.	U.S.	Japan
full-time						
constant	2.179	-2.931	-10.462**	-4.112*	-0.414	-10.228**
Age	0.141*	0.438**	0.542**	0.231**	0.291**	0.694**
Age2	-0.177	-0.523**	-0.635**	-0.292**	-0.038**	-0.078**
husband's earning	-0.55**	-0.368**	0.26**	-0.022	-0.329**	-0.977**
higher education	1.474**	1.501**	2.093**	0.985*	1.66**	0.247
high school diploma	0.648**	2.022**	1.433**	0.376	1.263**	0.403
kid younger than 3	-2.412**	-0.082	0.626**	-0.669**	-0.499**	-1.275**
part-time						
constant	-7.414**	0.274	-11.495**	-1.782	-0.946	-7.936**
Age	0.328**	0.339**	0.623**	0.119*	0.025	0.403**
Age2	-0.449**	-0.383**	-0.778**	-0.165*	-0.036	-0.049**
husband's earning	0.08	-0.404**	0.254**	-0.01	0.054	-0.493*
higher education	0.591**	2.052**	1.778**	0.386	0.987**	-0.515
high school diploma	0.808**	3.739**	1.565**	0.188	0.723**	0.18
kid younger than 3	-1.525**	-0.049	0.372**	-0.907**	-0.619**	-2.673**

Note: ** statistically significant at the .01 level, *statistically significant at the .05 level.