WORKING WIVES AND HOUSEHOLD INCOME

Kazuko Tanaka

As the rising trend of married women's paid employment continues, the question of whether working wives contribute to a widening or a narrowing of the income gap between rich and poor families becomes to receive greater attention. During the latter half of the 1970s, married women accounted for more than 50% of female paid employees, and by the end of the 1980s, this proportion increased to 60%. In the late 1980s, about 30% of two parent households earned two-paychecks.

Female labor supply theory suggests that there are two major countervailing effects of wives' earnings on household income distribution. The income effect implies a reduction in income inequality across households since wives of highly paid men participate less in the labor force. On the other hand, the wage effect implies an increase in inequality since husband's income and wives' earning power are positively related due to marital homogamy. (Mincer, 1974) Reviewing previous studies, Treas (1987) concluded that greater work force involvement by married women has had an equalizing influence on family incomes in the United States. During the postwar period, growing inequality in male earnings has been counterbalanced by working wives' contribution to household income.

In Japan, there are few studies on the impact of wives' earnings on household income distribution. However, comparison of one-paycheck and two-paycheck families in the Survey on Household Expenditure is suggestive. The financial situations of one-paycheck and two-paycheck families in 1988 are shown in Table 1. Since household income structure changed little in the 1980s, the most recent data is provided.

Table 1. Yearly Average of Monthly Receipts per Household
Comparison of One-paycheck and Two-paycheck Households in 1988.

Items	Actual Amount (yen)		Distribution of Income Source (%)		Proportion (%)
	Both Husband and Wife Are Employed ①	Only Husband is Employed ②	Both Husband and Wife are Employed	Only Husband is Employed	① / ②
Income	509 248	445 105	100.0	100.0	114.4
Wages and Salaries	483 324	422 533	94.9	94.9	114.4
Husband	378 436	422 533	74.3	94.9	89.6
Wife	104 615	0	20.5	—	—
Other Household Member	273	0	0.1	—	—
Business and Homework	9 604	1 630	1.9	0.4	589.2
Others	5 161	9 940	1.0	2.2	51.9

Source: Annual Report on Household Expenditure, 1988, p.37. Prime Minister's Office, Statistics Bureau

From this table, we observe that the husband's income of a two-paycheck family is about 10% less than that of a one-paycheck family. The husband's relatively lower income becomes the trigger for the wife to start workning for pay. The working wife's contribution boosts household income of a two-paycheck family to about 15% more than that of a one- paycheck family. On average, the wife's earnings constitute 20% of total family income, and her contribution to household income is more than just marginal.

These findings indicate that working wives' earnings have improved family finances. However, in assessing whether wives of men with lower earnings are more likely to engage in paid employment, it is important to take into consideration the influence of life cycle stages. Paid employment rates among younger wives are still lower than that of older wives even though their husbands' earnings are lower than that of older husbands, because mothers with younger children are largely out of the workforce. This study examines whether the wives' income has an influence on the inequality of household income distribution by explicitly taking into account the influence of life cycle stages on women's employment decisions.

Data and Methods
Data

The data used for this study was obtained from an Occupational Mobility Survey in the Tokyo Metropolitan Area, which was sponsored by the National Institute for Employment and Vocational Research. In this survey, 1,800 selected women aged 20 to 59, residing within 50 kilometers of the center of Tokyo, were interviewed in 1975. The response rate was 78.1% (1,405 valid cases).

Life cycle stages are conceptualized into four stages as follows:

Stage 1: the period between marriage and the birth of the first child

Stage 2: the period when preschool-age children are present

Stage 3: the period when the youngest child has reached school-age but at least one child stays at home as a dependent

Stage 4: the period when all children have reached 18 years old or

        have become independent
Each stage of the life cycle constitutes a distinctive familial context.

    The information available in this data set is based on after-tax income, better enabling us to measure the inequality of direct consumption power among families.

    In this study, only employee-households are included. Family members of self-employed households can use the resources and assets belonging to the family firm. The distinction between personal and official usage is especially difficult since family businesses are often located within the household. Furthermore, earnings of wives in self-employed households are usually not specified when they work as family workers for the family business. Thus, this study focuses only on families with husbands who are paid employees.

Methods

    In order to measure the degree of inequality of household income distribution, the Gini index (G), Thiel's measure (T), and the coefficient of variation (V) are often used. Even though these measures have different features, they can be expressed in terms of the variance of the logarithm (L) as follows:

$$G = 2M(L/2)^{-1} ;$$
$$T = L/2 ;$$
$$V = (e^{L} - 1)^{1/2} ;$$

    where $M(.)$ is the cumulative distribution function for a standard normal variable (Allison, 1978:874). Therefore, testing the difference in the level of inequality between two distributions, using one of these three measures, is testing exactly the same null hypothesis, that is, the variance of the logarithm from one distribution (L_1) is the same as that from the other (L_2). This is because $L_1 = L_2$ implies that $T_1 = T_2$, $V_1 = V_2$, and $G_1 = G_2$.

    The variance of the logarithm computed from the distribution of total family income will be compared with that from the distribution of husband's income. The formula for calculating L is as follows:

$$L = 1/n(Z_i - Zmeans)^2$$

where $Z^i = \log X_i$,

X_i = individual income, and

n = sample size.

The test statistic is L_1/L_2 which has an F distribution with $N_1 - 1$ and $N_2 - 1$ degrees of freedom.

Impact of Wifes' Earnings on Family Income

Husband's income, wife's income, and total family income are shown for both one-paycheck and two-paycheck families at each life cycle stage in Table 2. Husband's income consistently increases across the life cycle stages (Table 2-(a) and (b)). Reflecting the seniority wage system prevailing in Japan, wages initially are very low, but increase with age. On the other hand, the participation rate of working wives shows marked changes reflecting the influence of life cycle stages (Table 2-(c)). This paid employment participation rate is lowest during the stage with preschool-age children.

Comparison of the average husband's income between one-paycheck and two-paycheck families shows that in every stage, it is lower in the two-paycheck families (Table 2-(d)). On average, husband's income in two-paycheck families is 10% lower than that in one-paycheck families. This figure is consistent with that provided by the Survey on Household Expenditure shown in Table 1.

However, the difference in average husband's income between one-paycheck and two-paycheck families varies across life cycle stages. It is about 15% and largest in the stage with preschool-age children, while in the stage where all children are grown up, it is only 5%. Working mothers with small children are typically from low income families. Their earnings are lowest among working wives, but their contribution constitutes an important part of their family income.

Due to wives' earnings, the average family income of two-paycheck families is higher than that of one-paycheck families. Although two-paycheck families receive about 20% more income on average, the wives' contribution is greatest in the stage before the first birth. In this stage, the average family income of a two-payckeck family is about

Table 2. Wife's Contribution to Family Income

	Stage 1	Stage 2	Stage 3	Stage 4	All Stages
(a) One-Paycheck Family					(unit=1,000 yen)
Hus.Inc.	2,018	2,329	2,903	2,989	2,554
Wife's Inc.	0	0	0	0	0
Family Inc.	2,018	2,329	2,903	2,989	2,554
(N)	(28)	(271)	(142)	(61)	(502)
(b) Two-Paycheck Family					(unit=1,000 yen)
Hus.Inc.	1,811	1,980	2,565	2,838	2,311
Wife's Inc.	868	577	622	919	698
(Contribute)	(32.4%)	(22.6%)	(19.5%)	(24.5%)	(23.2%)
Family Inc.	2,679	2,557	3,187	3,757	3,009
(N)	(35)	(62)	(79)	(34)	(210)
(c) Proportion of Working Wives					(%)
	55.6	18.6	35.7	35.8	29.5
(d) Proportion of (b) over (a)					(%)
Hus.Inc.	.897	.850	.884	.949	.905
Family Inc.	1.300	1.123	1.132	1.168	1.201

note: Family Income is Husband's Income plus Wife's earnings.

30% higher than that of a one-payckeck family. Since the husband's income is lowest at this stage, the contribution of wives' earnings is relatively large. Also, without heavy family responsibilities, wives have a greater possibility of working on a full-time basis. Their average earnings are the second highest following that of wives in the stage with independent children.

In summary, the data supports the argument that lower husband's income operates as a trigger for wives to work for pay. With the wives' contribution to the family, a two-payckeck family has a greater amount of family income than a one-paycheck family. These findings are consistent with previous studies on the family budget (see

Shinozuka 1982; Yashiro, 1983). In addition, this examination reveals that the wives' contribution to family income varies across life cycle stages.

In the stage before the first birth, a relatively large proportion of wives work for pay. Their contribution constitutes a relatively large proportion of the family income. However, wives in the stage with preschool-age children generally do not engage in paid work. Working mothers in this stage earn the lowest amount on average, typically working for shorter hours or doing piece-work at home. However, their contribution to the household income is more than marginal. After children have reached school-age, more mothers move into the workforce and earn more income, while their husbands earn more for the family. In the last stage, working wives contribute 25% of household income, and help create the most comfortable financial situation for the family.

Turning to the impact of the wives' contribution to household income distribution, table 3 shows the variances of logged husband's income and those of logged family income by life cycle stage. In the last row, F-statistics are indicated. For both husband's and family income, inequality increases across life cycle stages. Differentials are lowest in the stage before the first birth while the larger variances in the latter stages are largely due to the seniority wage system. Male wages increase along with age, but their earnings trajectories differ greatly

Table 3. Impact of Wife's Earnings on Household Income
Distribution: At Each Stage and All Stages

	Stage 1	Stage 2	Stage 3	Stage 4	All Stages
	Variance of Logged Figure				
Hus.Inc.	.10246	.13449	.17067	.32541	.17975
Family Inc.	.12503	.14047	.15712	.31571	.17986
(N)	(63)	(333)	(220)	(95)	(711)
	F-Statistic				
	1.220	1.044	1.086	1.031	1.001

across educational levels (Table 4). Average wages at age 20–24 are quite similar across educational levels, except for highly educated men who command slightly higher salaries. However, wages increase more rapidly for highly educated men compared to their less educated counterparts. Thus, wage differentials between men increase markedly with age.

The relative size of the differential between husband's income and family income varies by life cycle stage. The differential of logged husband's income is smaller than that of logged family income in the first two stages, but larger in the last two stages. That is, by adding the wife's earnings, the inequality in household income distribution increases in the earlier life stages, while it is reduced in the later stages. However, the overall impact of wife's earnings is very small. In fact, F-statistics are all statistically non–significant at the .05 level.

In view of the increase in the variances across life cycle stages, differences in the inequality of income distribution across stages are examined for husband's income only, and for family income including wife's earnings (Table 5). Inequality in the last stage is significantly greater than that in other stages of the life cycle. This phenomenon is observed for both the husband's income and family income.

Differences in inequality in income distribution across the first three stages differ with respect to husband's income and family income. The inequality of husband's income distribution is significantly greater in the stage with school age children than in the stage without children or with preschool–age children. On the other hand, inequality of family income distribution is not significantly different across these three stages. These findings suggest that wives' income partially offsets the increasing inequality in husband's income distribution.

Table 4. Average Fixed Monthly Payment of Male Regular Workers in 1988

(a) Average Wages of Male Regular Workers by Educaton and Age group

(unit＝1,000 yen)

Age	Compulsory	High School	University
under 17	110.8	—	—
18～19	127.6	132.1	—
20～24	156.0	154.0	170.0
25～29	189.7	194.6	207.0
30～34	227.0	246.9	269.1
35～39	262.6	294.2	344.4
40～44	295.3	358.5	415.7
45～49	334.3	415.4	504.9
50～54	354.7	454.6	570.2

(b) Relative Proportion when Wages at Ages 20～24＝100

Age	Compulsory	High School	University
under 17	71.0	—	—
18～19	81.8	85.8	—
20～24	100.0	100.0	100.0
25～29	121.6	126.4	121.8
30～34	145.5	160.3	158.3
35～39	168.3	191.0	202.6
40～44	189.3	232.8	244.5
45～49	214.3	269.7	297.0
50～54	227.4	295.2	335.4

Source: *Basic Survey on Wage Structure*, Ministry of Labor, June 1988. Regular Workers are those who have worked at the same companies continuously.

Table 5.　Income Inequality Across Stages: F-Statistics

| | Family Income | | | |
	Stage 1	Stage 2	Stage 3	Stage 4
Hus.Inc. only				
Stage 1		1.123 (62,332)	1.257 (62,219)	2.525*** (62,94)
Stage 2	1.313 (62,332)		1.119 (332,219)	2.248*** (332,94)
Stage 3	1.666*** (62,219)	1.269** (332,219)		2.007*** (219,94)
Stage 4	3.176*** (62,94)	2.420*** (332,94)	1.907*** (219,94)	

note: Upper half of this table shows F-statistics indicating the differences in family income distribution across stages, while the lower half is for the husband's income only.

Degrees of freedom are indicated in parentheses.

** 　p<.05

*** 　p<.01

Summary and Discussion

This study examines the impact of wife's earnings on household income distribution within the context of life cycle stage analysis. It is evident that average husband's income is lower in the two-paycheck family than in the one-payckeck family throughout every life cycle stage. Lower husband's income encourages wives to work for pay. Reflecting the contribution of wives' earnings, the overall family income of two-paycheck families is higher than that of one-paycheck families. Wives' contribution is especially significant in the stage before the first birth.

It is also found that the impact of wife's earnings on household income distribution varies across life cycle stages. The wife's earnings appear to increase inequality in the stage before the first birth and in the stage with preschool-age children, while reducing it in the stage with school-age children and in the stage where all the children become independent. Previous studies show that less educated married

women increasingly enter or reenter into the work force after all children reach school-age (Tanaka, 1989). Even though the impact is very small and not statistically significant in this study, our analysis suggests that further analysis from a life cycle perspective is important to capture the significant changes that influence womens' role and impact as breadwinners.

This study shows that husband's average income increases consistently across life cycle stages. At the same time, the degree of inequality in household income distribution increases. Regardless of whether or not wives' earnings are taken into consideration, inequality in the last stage is significantly larger than that in the other stages, further highlighting the importance of taking life cycle stages into account (see Sahota, 1978, Lehrer and Nerlove, 1984).

The equalizing effect of wife's contribution to household income has been observed in the stage after children reached school-age. Iga (1978) has reported that in the stage after the first child enters junior high school and stays at home as a dependent, mothers are more likely to seek employment in order to obtain additional income since any increase in the husband's income cannot meet the increasing demands on the family budget. These rising educational costs account for a large proportion of the family budget, and this proportion has kept increasing even though the number of children has declined. A recent survey in Tokyo indicates that education costs continue to escalate and currently account for about one fourth of the overall family budget (Tokyo Metropolitan Government, 1990). Educational costs are a heavy burden, especially for lower income families, heightening the need for a second income.

Economic pressures vary across the family life cycle. In general terms, Oppenheimer (1982) has argued that an "economic squeeze" occurs at the stage just after marriage and at the stage with adolescent children. Recently married couples are faced with the need to save money for acquiring housing, an especially onerous burden in Japan, and the myriad necessities for a newly established household. Although preschool-age children demand time intensive care, they are

relatively inexpensive. When children have reached school-age and become adolescents, they require less time of the mother, but become more costly. Thus, the family in this stage faces the added pressure of rising outlays on their childrens' education. In order to meet these increasing demands associated with the family life cycle, wife's contribution to the household tends to shift toward providing a second income.

It is wrongly assumed that wife's earnings only represent supplemental household income. Presently, wives from lower income families are more likely to be in the workforce during each life cycle stage. They make more than a marginal contribution to family income and significantly improve the financial situation of their families. However, due to the continuing rigid gender division of labor, women's primary responsibility remains confined to rearing children and taking care of household work. Working mothers with smaller children face the difficult prospects of reconciling the competing and onerous responsibilities of the home and workplace. The rapid aging of society is also putting additional pressures on wives who tend to be primary care providers for their elderly parents. While economic pressures and better opportunities induce married women to engage in paid employment, the allocation of household responsibilities continues to limit and influence the nature and extent of their career choices.

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既婚女性の雇用労働と家計所得

〈要　　約〉

田　中　かず子

　既婚女性の雇用就業率の増加にともない，妻の家計への貢献度が注目されるようになったが，本研究では妻の収入が所得分布に与える影響について考察する。この考察にあたっては，女性の就業にとってライフ・サイクル・ステージが特異な家族環境を形成することと，男性労働者に適用される明確に年功的な賃金システムの両者を考慮するために，各ステージ間の比較検討を行う点を特徴とする。

　女性労働供給理論の基本的モデルは，夫の所得が低いほど，妻の有業率が高まるという所得効果と，妻の賃金率が高まるほど有業率が高まるという代替効果の相反する要因に基づいている。しかし，学齢期前の子どものいる家庭では，比較的若い夫の収入は低いが，このステージでの妻の就業率は最も低い。一方，就学期のステージでは，賃金カーブの比較的低い所得層の妻の有業率が上昇している。それゆえ，妻の収入が所得分布に与える影響はライフサイクルによって異なると考えられる。

　分析の結果は次のとおり。(1)いずれのステージでも，共稼ぎの家庭の夫の平均収入は片稼ぎの場合より低いが，この格差は学齢期前の子どものいるステージで最も大きい。(2)共稼ぎ家庭の家計収入は，片稼ぎ家庭より平均20％増であるが，子どもができる前のステージでは30％増と最も高い。(3)夫の収入分布に見られる不平等性はステージがすすむにつれ増加し，家計収入分布もそれに呼応して変化する。しかし一方，学齢期前の子どもが

いるステージとそれ以前では，家計収入分布の分散のほうが大きく，すべ
ての子どもが就学したあとのステージでは，反対に家計収入分布の分散の
ほうが小さい。(4)夫の収入分布および家計収入分布をそれぞれステージ間
で比較すると，いずれも最後のステージ，つまりすべての子どもが独立あ
るいは18歳以上になったステージの分散が他のステージよりも有意に大き
い。一方前3ステージ間の分散の差については，夫の収入分布にみられた
有意な分散の差が，妻の収入を含めた家計収入にはみられなかった。以
上，所得分布の考察にはライフサイクルの視点が重要な意味を持つことが
明確になった。