(Box 2) Increase in Dual-Income Households

The driver for the rise in employee income in recent years is the increase in the number of employees, particularly in female employees (Chart 23 [1], Box Chart 3 [1] and [2]). Among female employees, the increase in those with spouses has stood out in recent years, and the share of dual-income households has clearly risen since around 2013, deviating upward from the trend that is calculated by taking account of age and generation (Box Chart 3 [3]).[27] By age group, the labor force participation of women with spouses is on the rise in every age group, particularly in the groups of those aged 25-34 and 45-54 years (Box Charts 3 [3] and 4 [1]).

Several factors seem to work jointly behind the increase in dual-income households, and these largely can be divided into the following positive and negative aspects: the positive aspect is that, as the measures to promote female labor force participation that have been taken by the government and firms in the course of the growth strategy have worked well, the labor force participation of women with the motivation to work has risen, mainly within the younger generations; and the negative aspect is that middle-aged and senior women are newly entering the labor market because they have become more concerned about their financial situation in old age -- that is, they have lowered their expectations for permanent income levels -- against the background of the consumption tax hike, reduced pension benefits, and rising social security premium payments.

As concrete initiatives for promoting female labor force participation, with regard to the positive aspect noted above, the government amended the Child Care and Family Care Leave Act and is improving the environment for those workers who need to take care of

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[27] The wife's age dummy is an explanatory variable that captures the change in the share of dual-income households by age, such that the share tends to be high among those in the younger generations without a child and starts to decline after childbirth. The cohort dummy is an explanatory variable that captures the difference in the share of dual-income households depending on the generation, such that the share is low for those who were born in the 1960s and high for those born in the 1980s. Both of these dummies capture the changes in the share of dual-income households driven by demographic changes, and are treated as the trend in this analysis. The recent rise in the share of dual-income households above such trend implies that factors other than age and generation are working to raise the share.
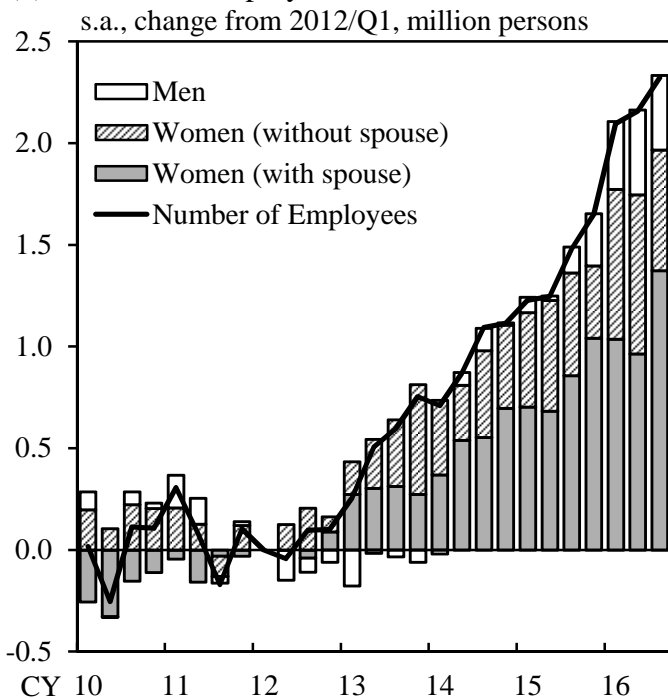
their children and families, such that they can continue in their work with a better sense of security. The government also amended the Act on Child and Childcare Support and encourages firms to set up in-house nursery centers. On the back of these initiatives, the ratio of women who keep working after marriage or childbirth has clearly risen in recent years, along with the increase in part-time female workers for non-job-market reasons related to themselves or their families (Box Chart 4 [2] and [3]). In addition, as one of the initiatives for promoting the empowerment of women, it is expected that the annual income requirement to be eligible for a tax deduction for one's spouse will be lifted from 1.03 million yen to 1.50 million yen as one of the tax code revisions for fiscal 2017. If firms start to revise the limit to spouses' annual income to be eligible for their own dependent spouse benefits, along with this tax code revision, it is expected that the working hours of spouses as part-time workers will increase to some extent, as they so far have been adjusting their working hours, taking the so-called "wall of 1.03 million yen" into consideration.

In order to assess whether the increase in dual-income households is attributable to the heightened concerns about their financial situation in old age, raised earlier as the negative aspect, an econometrical analysis was made using the microdata from the "Survey of Household Finances" conducted by the Central Council for Financial Services Information (Box Chart 5). Specifically, a probit model was estimated with a dummy for double-income households being a dependent variable, and tests whether dummies representing how worried households are about their financial situation in old age are statistically significant or not, while controlling such variables as financial assets, age, number of family members, whether the household includes a child under age 6, house ownership, and factors specific to survey year (year dummies, or year effect). The estimated results show that, while heightened concerns about their financial situation in old age raise the probability for the group of wives aged in their 40s and 50s of changing the structure of their households to dual-income ones in a statistically significant way, such significant results are not observed in other age groups. Furthermore, when such concerns are controlled, the coefficients on year dummies show that the probability of changing the structure to dual-income households has clearly risen since 2013. It can be concluded from such results that the increase in dual-income households in recent years is attributable more to the government's and firms' initiatives for promoting female labor force participation working well amid the
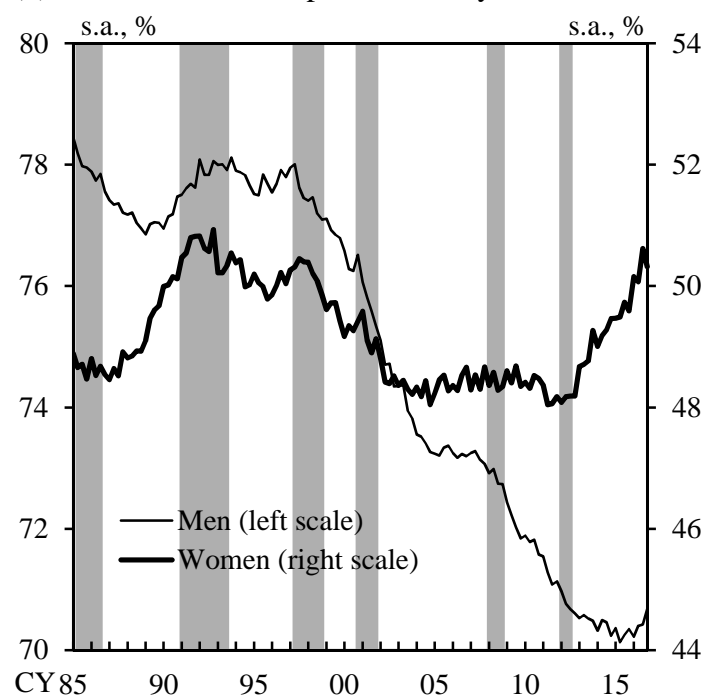
tightening labor market conditions than to the heightened concerns about their financial situation in old age.

Rise in Female Labor Force Participation and Dual-Income Households
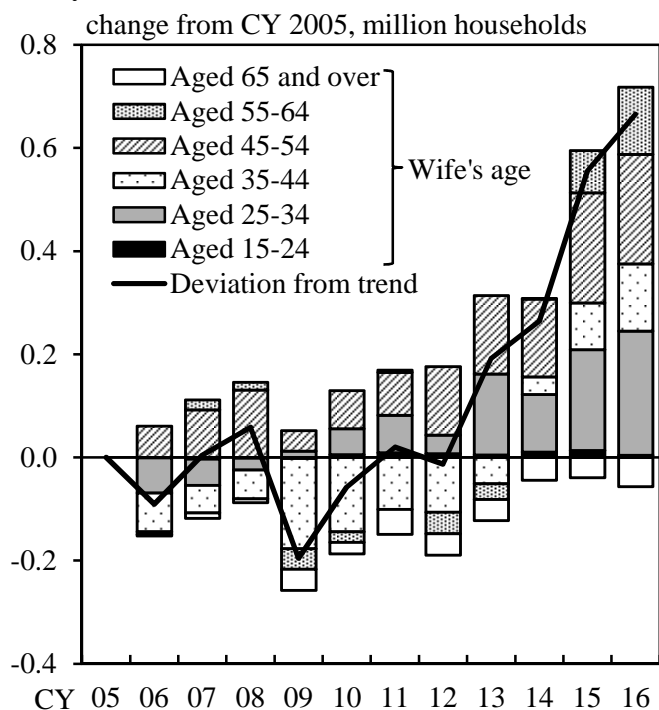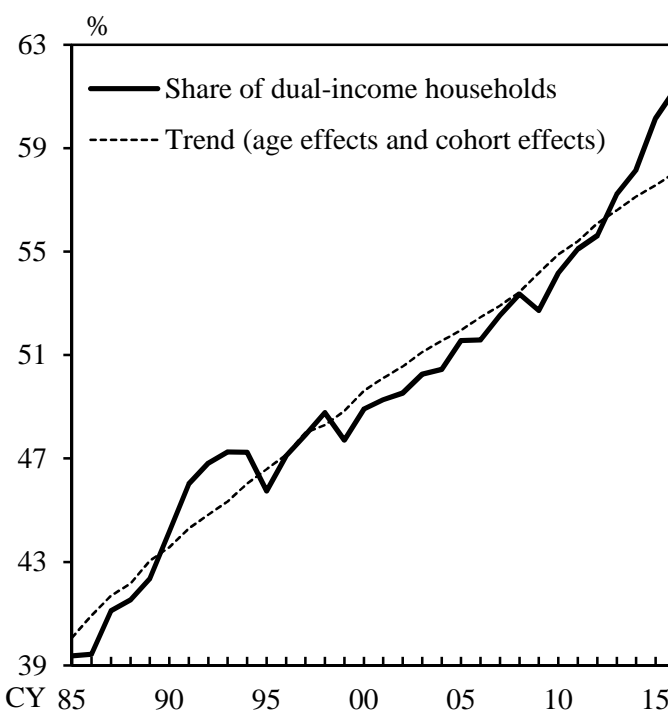
(1) Number of Employees

s.a., change from 2012/Q1, million persons

- □ Men
- ▨ Women (without spouse)
- ▦ Women (with spouse)
- — Number of Employees

(2) Labor Force Participation Rate by Gender

s.a., %　　　　　　　　s.a., %

- — Men (left scale)
- — Women (right scale)

(3) Share of Dual-Income Households and Trend Implied by the Cohort-Based Model

%

- — Share of dual-income households
- --- Trend (age effects and cohort effects)

change from CY 2005, million households

- □ Aged 65 and over ⎤
- ▦ Aged 55-64
- ▨ Aged 45-54
- ⠄ Aged 35-44　　⎬ Wife's age
- ▦ Aged 25-34
- ■ Aged 15-24 ⎦
- — Deviation from trend

Specification of the Cohort-Based Model:

$$Share\ of\ dual-income\ households_{j,t} = \beta_{1,j} \cdot Wife's\ age\ dummy_j + \beta_{2,k} \cdot Cohort\ dummy_k + \varepsilon_{j,t}$$

$$t = CY\ 1985\text{-}2016,\ j = aged\ 15\text{-}24, ..., aged\ 55\text{-}64,\ and\ aged\ 65\ and\ over,$$
$$k = t - j = born\ in\ the\ 1910s, ..., born\ in\ the\ 2000s.$$

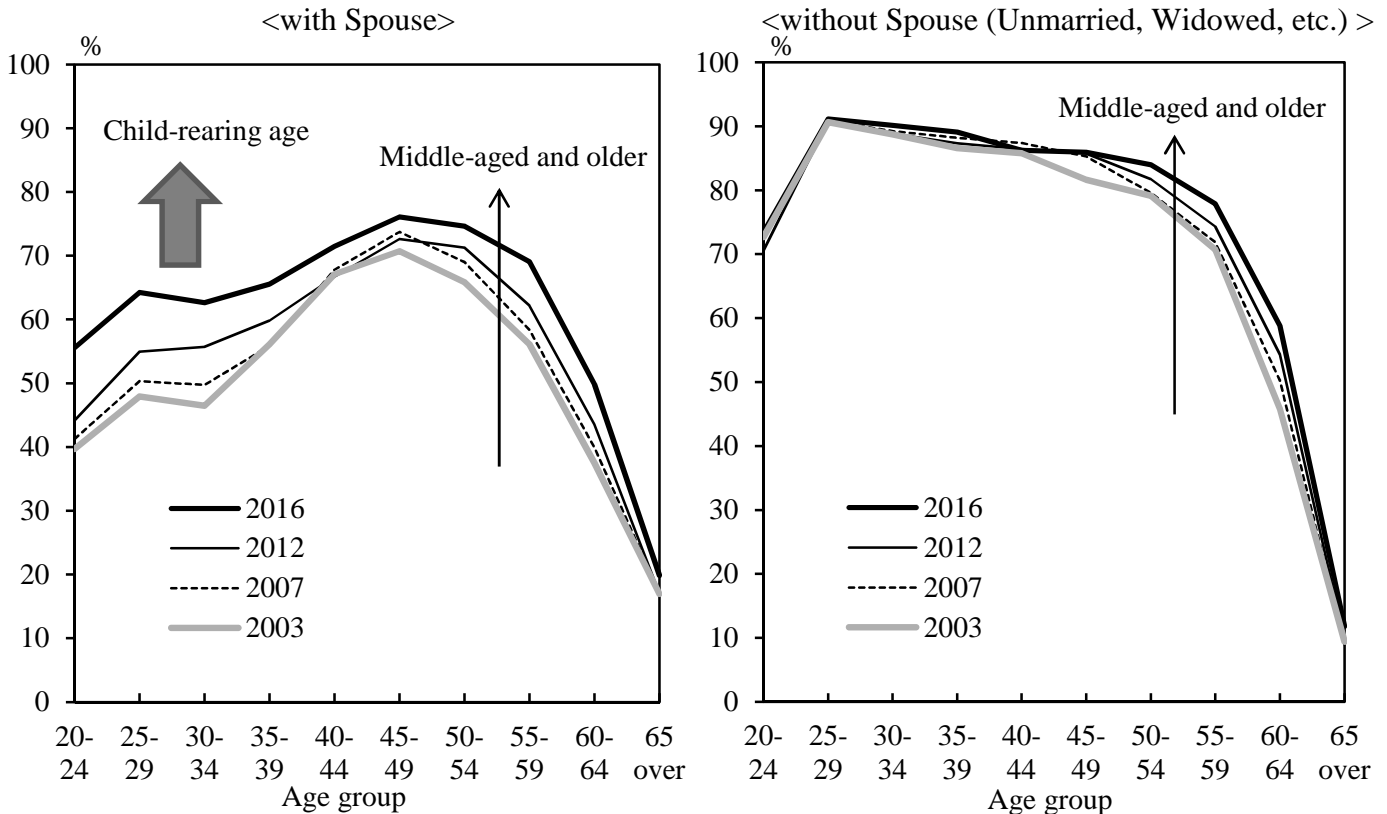Notes: 1. Shaded areas in (2) indicate recession periods.

　　　2. The share of dual-income households is the share of households in which both the husband and wife work as (non-agricultural) employees in the total number of households in which at least the husband works.

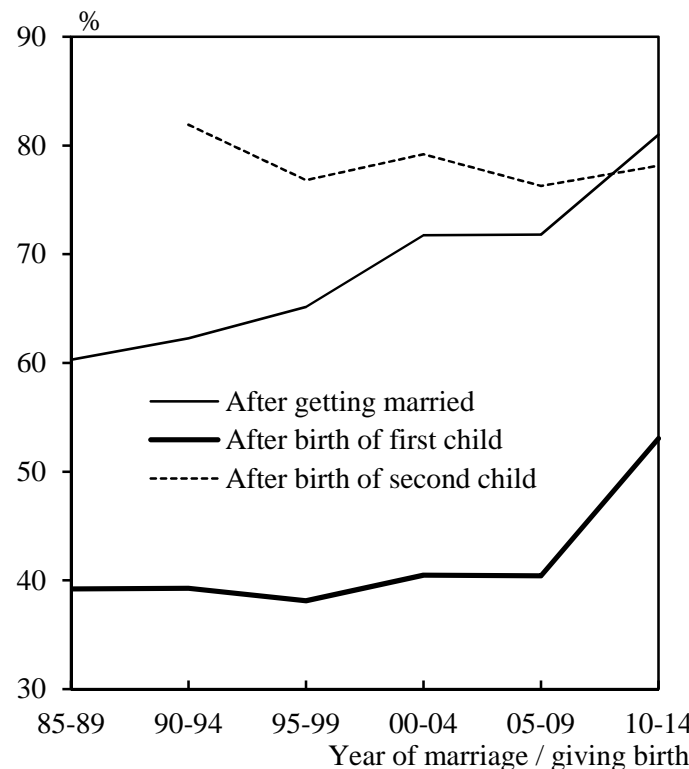　　　3. Figures for CY 2016 are Q1 to Q3 averages.

Source: Ministry of Internal Affairs and Communications.

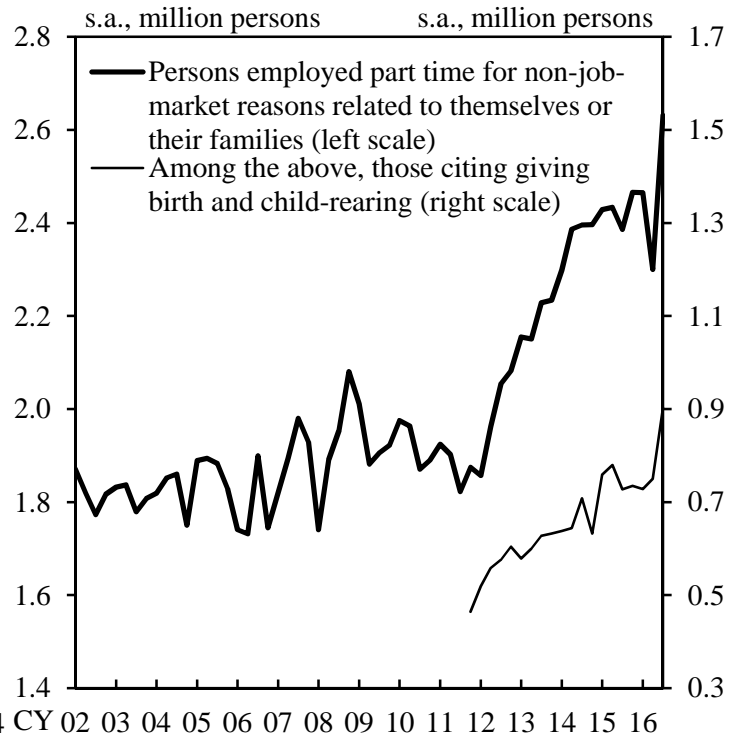# Factors Underlying the Increase in Dual-Income Households (1)

(1) Female Labor Force Participation Rate by Age Group and Marital Status

(2) Ratio of Women Who Keep Working after Life Events

(3) Reasons for Women to Work Part-Time

Notes: 1. Figures for CY 2016 in (1) are January-September averages (of seasonally adjusted values).

2. Figures in (2) are based on the "National Fertility Survey" of married women under the age of 50.

3. Persons employed part-time in (3) are those who worked between 0 and 34 hours in the last week of the survey month.

Sources: Ministry of Internal Affairs and Communications; National Institute of Population and Social Security Research.

Factors Underlying the Increase in Dual-Income Households (2)

(1) Data and Estimation Methodology

Data

Microdata from the "Survey of Household Finances" conducted by the Central Council for Financial Services Information was used.

(a) Survey respondents: Households with at least two persons

(For the estimation, only data for households in which the wife is aged between 20 and 59 is used.)

(b) Number of respondents: 8,000 households (in CY 2015)

Estimation Methodology

In order to examine the effect of households' concerns about their financial situation in old age on probability that both the husband and the wife work, the following probit model is estimated,

$$P(Y = 1) = P(Y^* > 0)$$

$$Y^* = \beta_0 + \sum_j \beta_{1j} \times AGE_j \times DUM1 + \sum_j \beta_{2j} \times AGE_j \times DUM2 + Year\ Dummies + Controls$$

where Y is a dummy for dual-income households that equals 1 for dual-income households and 0 otherwise. *DUM1* and *DUM2* are dummies representing how worried households are about their financial situation in old age and are based on the following question in the survey: "In your household, how worried are you about your financial situation in old age? (Single answer required.) 1. Not very worried; 2. Somewhat worried; 3. Very worried."
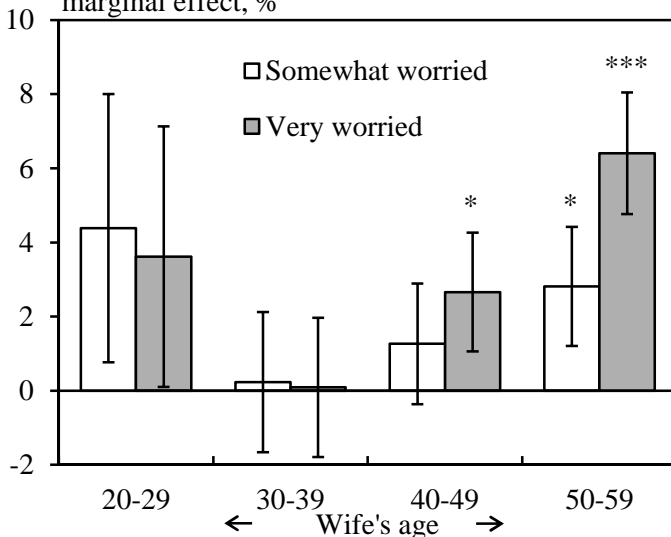
$$DUM1 = \begin{cases} 1 & Somewhat\ worried \\ 0 & Otherwise \end{cases} \qquad DUM2 = \begin{cases} 1 & Very\ worried \\ 0 & Otherwise \end{cases} \qquad AGE_j \ldots \begin{matrix} Dummy\ for\ wife's\ age \\ group\ (in\ 10\text{-}year\ intervals) \end{matrix}$$
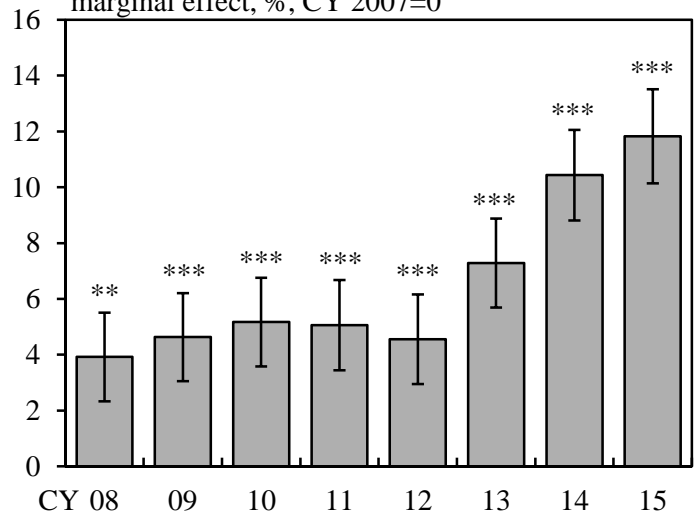
(2) Effect of Concerns about Old Age Finances on Probability that Husband and Wife Work

(3) Year Effect (Parameters for Year Dummies)

Details of Estimation Results

M. E.: Marginal effect on probability that both the husband and the wife work

	DUM1×AGE, DUM2×AGE	Financial assets	Wife's age	Wife's age squared	With husband having reached retirement age	Having a child under age 6	Number of family members
M. E., %	See Chart (2)	-0.090	4.210	-0.054	-15.606	-22.643	2.243
p-value		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

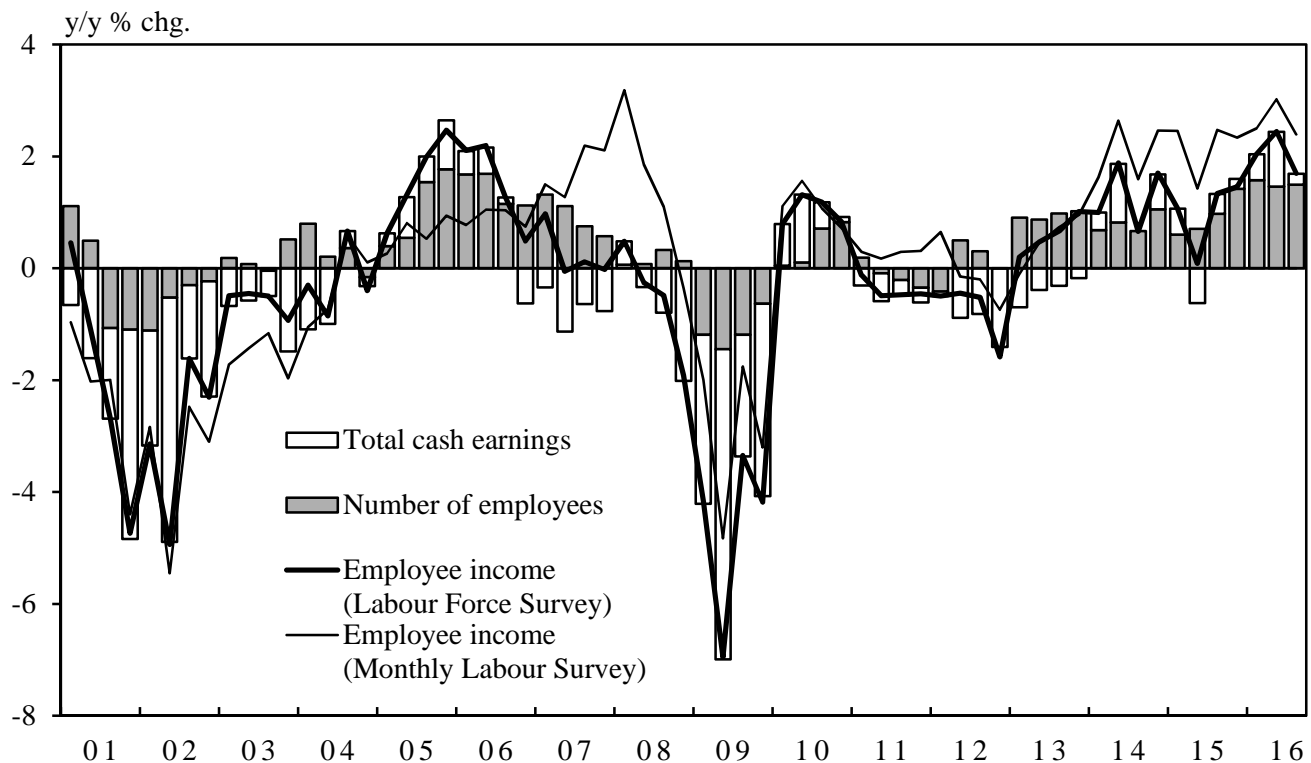|	House ownership	Wife's educational attainment	Husband's educational attainment	Year dummies	Estimation period	Observations	Pseudo R²	
M. E., %	-3.159	Included	Included	See Chart (3)	CY 2007-15	16,569	0.0437	
p-value	(0.42)							

Notes: 1. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

2. The error bands represent ±1 standard error.

Source: The Central Council for Financial Services Information.

Employee Income

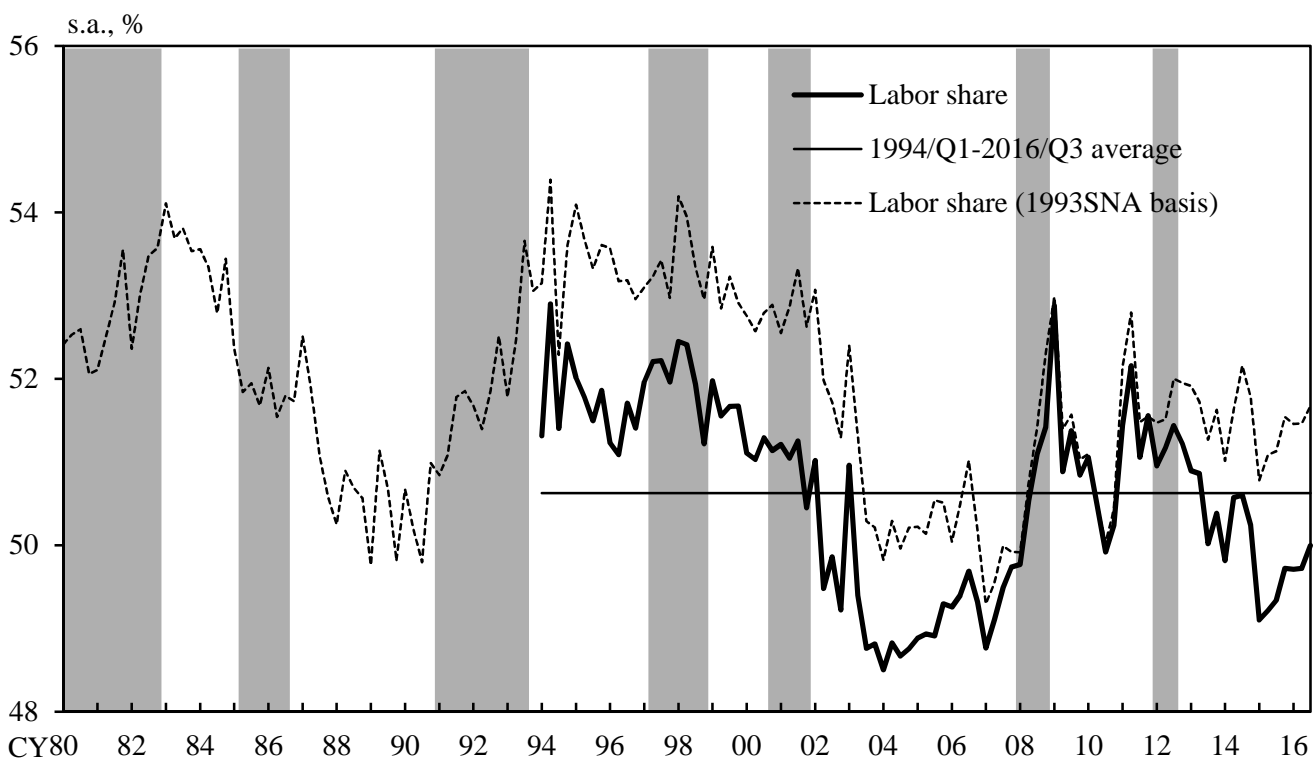## (1) Employee Income

y/y % chg.

Notes: 1. Q1 = March-May, Q2 = June-August, Q3 = September-November, Q4 = December-February.
2. Employee income (Labour Force Survey) = number of employees (Labour Force Survey) × total cash earnings
Employee income (Monthly Labour Survey) = number of regular employees (Monthly Labour Survey) × total cash earnings

(2) Labor Share (SNA Basis)

s.a., %

Notes: 1. Labor share = compensation of employees / nominal GDP × 100
2. Shaded areas indicate recession periods.

Sources: Ministry of Health, Labour and Welfare; Ministry of Internal Affairs and Communications; Cabinet Office.