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# Does a Wife's Employment Affect her Husband's Retirement Decision? Evidence from Japanese Longitudinal Data

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## Abstract

Based on a large longitudinal dataset on Japanese middle-aged and older individuals, the purpose of this study is to investigate whether women's labor force participation affects their husbands' retirement decisions. Employing a simple fixed-effects model, a significant positive effect of wives' labor force participation on husbands' retirement decisions was found, which seems to imply that a husband's leisure is complementary to that of his wife. However, when employing instrumental variables such as the wife's health condition, the existence of care needs in the household, and statutory pensionable age, no significant effect of the wife's employment on her husband's retirement decision was found, regardless of employment type. This result indicates that a Japanese wife's retirement decision is *independent* of her husband's employment and marks a sharp contrast with those of western industrialized countries.

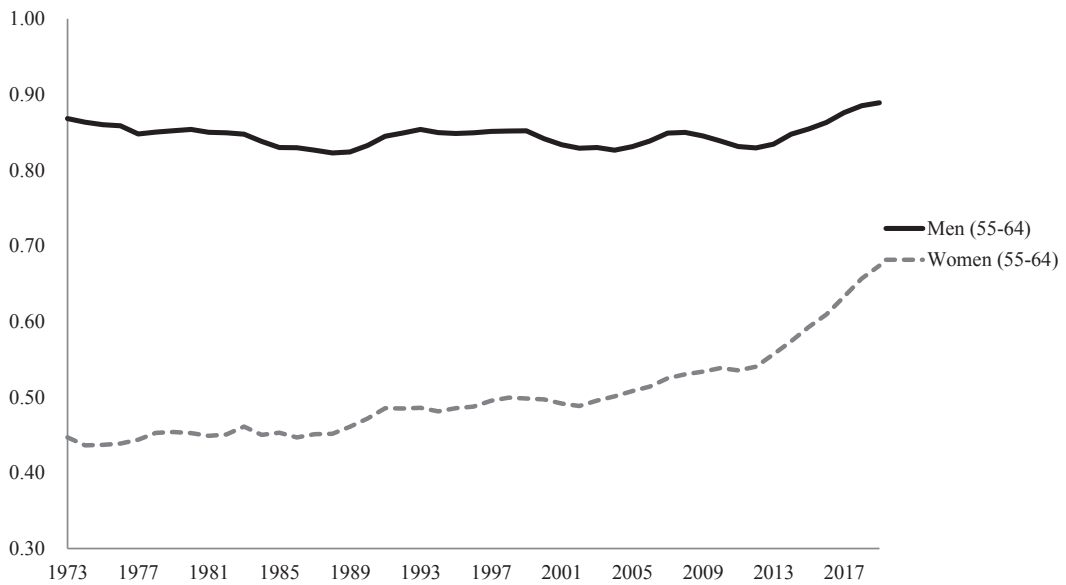
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**JEL Classification Codes:** J14 (Economics of the Elderly); J22 (Time Allocation and Labor Supply); J26 (Retirement)

## 1. Introduction

It is known that the retirement decisions of men in western industrialized countries are affected by their spouses' employment. According to Schirle (2008), husbands' responses to the rise in their wives' labor force participation account for one-fourth, one-half, and one-third of the increase in the recent labor force participation by older men in the United States, Canada, and the United Kingdom, respectively. This means that a husband's leisure is complementary to that of his wife.

Is this complementarity of leisure time between husband and wife also found in East Asian countries? Whether a husband's employment complements or substitutes for his wife's employment is important, especially in Japan, which is facing a steady labor force decline due to population aging



**Figure 1. Participation rates of individuals aged 55–64 by sex**  
**Source: Statistics Bureau of Japan, *Labour Force Survey***

and increases in statutory pensionable age; thus, there is an urgent need to raise the labor force participation rate of older individuals.

Figure 1, which corresponds to Figure 1 of Schirle (2008), shows a long-standing gradual rise, and a recent rapid rise in the labor force participation rate of Japanese women aged between 55 and 64 years, whereas it shows a high, stable participation rate of Japanese men in the same age range <sup>1</sup>.

If complementarity of leisure between a husband and wife plays a key role in the retirement decision, the recent upward trend in Japanese women's labor participation will lead to a greater participation by older men. In contrast, if the income effect is important, the rise in the Japanese women's labor participation rate will serve as a disincentive for older men to work longer. The goal of this study is to determine which effect is dominant in the husband's retirement decision, using the largest longitudinal dataset on Japanese middle-aged individuals and the elderly.

Although interdependencies between husband and wife have long been considered a central issue in the study of labor supply, there is an impediment to a precise estimate of the impact; the husband and wife may *jointly (or simultaneously)* make decisions about working. This can cause a bias in the result of an estimation by a reduced form equation in which the spouse's labor supply is treated exogenously.

To avoid the bias, several studies exploit exogenous variations in the spouse's labor supply, which are generated by legal changes, such as regulations on the work week and tax reform (Goux et al., 2014; Gelber, 2014). In this study, instead of relying on experimental settings, health status, the existence of care needs in the household, and pensionable ages were used as the instrumental variables (IVs) determining the spouse's labor force participation <sup>2</sup>.

Compared to those in their thirties or forties, individuals near retirement age may be more

<sup>1</sup> Almost the same patterns were found when the age range was narrowed to between ages 60 and 64 years, although this is not shown in the figure.

<sup>2</sup> Yamada and Sakai (2016), whose study is based on the same dataset as the present analysis, find only women are likely to leave a job when there is a frail parent in the household. Fukahori et al. (2015) also find that the incidence of a frail individual in the household has a larger negative impact on women's employment than on men's employment.

responsive to their spouse's work-or-leisure choice. Several studies found a positive correlation between the husband and wife's retirement decision (Blau, 1998; Gustman and Steinmeir, 2000). Moreover, there is also evidence that the complementarities of leisure are *asymmetric*, that is, men are very responsive to their wives' employment, while women are not as responsive to their husbands' employment (Coile, 2004).

Our study contributes to the understanding of such interdependencies of married couples' work decisions that also exist in an East Asian country; Japan. To the best of our knowledge, this is the first study that explores such interdependencies by using a large longitudinal dataset on Japanese middle-aged and older individuals, as well as the IV technique.

To conclude, firstly, no significant relationship between a wife's employment and her husband's employment was found in any of the estimations with IVs, although a significant relationship was found in the estimations without IVs. This result marks a sharp contrast with those of existing studies in Europe and the United States, in which complementarity of leisure between a husband and wife has been found.

## 2. Empirical Model

To examine the interdependencies in spousal labor supply, the following IV fixed-effects model is estimated:

$$L_{it}^H = \gamma L_{it}^W + X_{it}^H \beta + \nu_t + u_i + \varepsilon \quad (1)$$

where,  $L_{it}^H$  and  $L_{it}^W$  denote the employment status of the  $i$ th husband and  $i$ th wife, respectively, in year  $t$  and  $L_{it}$  takes the value one if the individual is employed and zero otherwise.  $L_{it}^W$  is an endogenous variable for which the wife's health condition, the existence of care needs in the household, and pensionable age values are utilized as IVs. The health status of the wife consists of three dummy variables, which indicate that her health is "very good," "good," or "fair." The existence of care needs in the household is a dummy variable that equals one if the respondent is living with a family member who needs care. Two pensionable age values are used as IVs: pensionable age for the basic pension and pensionable age for the second-tier pension, both of which have been raised in stages since the 2000s in accordance with the 1994 and 2000 pension reforms. The variable  $X_{it}^H$  includes variables denoting age, health condition, homeownership, the amount of deposits, and a housing loan taken out by the husband.

The IV fixed-effects model is employed at the cost of abandoning the nonlinear specification to deal with unobserved heterogeneity<sup>3</sup>. The result of the IV fixed-effects model is compared with that of the simple fixed-effects model to demonstrate the role of the IVs. Standard errors are clustered individually, as including fixed effects is not sufficient to control for all the within-cluster correlation of the error (Cameron and Miller, 2015).

## 3. Data

The data used to estimate the model described in Section 2 come from the Longitudinal Survey of Middle-aged and Elderly Persons (LSMEP), a nationally representative sample of middle-aged and elderly individuals between the ages of 55 and 59 at the end of October 2005. LSMEP is the largest

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<sup>3</sup> Following Schirle (2008), the recursive bivariate probit model was also estimated for a nonlinear specification to confirm the robustness of our results. Almost the same results as those in the IV fixed-effects model were found, but these are not shown in this paper.

**Table 1. Descriptive Statistics**

	N. of Obs.	Mean	Std. Dev.	Min	Max
Husband is currently employed	62,289	0.878	0.327	0	1
Health condition of husband: Very good	62,289	0.064	0.244	0	1
Good	62,289	0.318	0.466	0	1
Fair	62,289	0.424	0.494	0	1
Living in a privately-owned house	62,289	0.912	0.284	0	1
In the middle of paying back a housing loan	62,289	0.309	0.462	0	1
Amount of deposits (10,000 yen)	62,289	887.550	1,621.514	0	47,000
Non-answer to question on amount of deposits	62,289	0.330	0.470	0	1
Living with persons who need care	36,533	0.091	0.287	0	1
Wife is currently employed	62,289	0.630	0.483	0	1
Health condition of wife: Very good	62,289	0.052	0.222	0	1
Good	62,289	0.305	0.460	0	1
Fair	62,289	0.453	0.498	0	1
Wife's age is over pensionable age for basic pension	62,289	0.114	0.317	0	1
Wife's age is over pensionable age for second-tier pension	62,289	0.244	0.429	0	1

longitudinal survey of middle-aged and elderly individuals in Japan, and has been conducted annually by the Japanese Ministry of Labour, Health and Welfare since 2005. This survey included 34,240 respondents in the first year, approximately 70% of them remaining in the survey as of 2012.

The survey provides a rich set of information about the respondents' family background, health status, employment status, and financial situations. Since our main interest is a spouse's employment status, households that had both husband and wife as respondents were selected and their information was matched to create sub-samples of couples. This matched sub-sample is approximately 40% of the whole sample.

Although our base estimation relies on the first eight waves, the IV estimates are based only on the fourth through eighth waves. This is because the question on whether there is a household member in need of care was included only from the fourth wave onwards and the question item is essential to create one of our IVs.

The descriptive statistics of the dataset for the estimation are shown in Table 1.

## 4. Results

The estimation results of the fixed-effects model are presented in Table 2. In column (1), which shows the result of the estimation based on all couples, it is found that the coefficient of the wife's employment is positive and statistically significant. This result seems to imply that the leisure of a husband and wife are complementary to each other. It is also found that middle-aged and elderly men are more likely to work if they are healthier, do not own houses, and are in the middle of paying back their housing loans.

The models are also estimated on the basis of the sample respondents whose age is above 60 years (column [2] in Table 2). This is because a focus area of the present study is the investigation of elderly men remaining in the labor market beyond the mandatory retirement age<sup>4</sup>. A positive and statistically significant coefficient of the wife's employment is also observed in this case.

The result of the estimation based on couples where the wife is older is presented in Column (3) of Table 2. Among the couples where the wife reaches retirement age before the husband, the wife's employment status is considered to be more exogenous for the husband's retirement decision. In this case, it was found that the coefficient of the wife's employment is positive, but insignificant.

<sup>4</sup> Japanese firms are prohibited from setting the mandatory retirement age below 60 years.

**Table 2. Effects of Wife's Employment on Husband's Retirement: Fixed-effects Model (Linear Probability Model)**

	(1)	(2)	(3)	(4)	(5)	(6)
	Husbands whose wives were employed at age of 59					
Type of couple:	All	Husbands aged 60 and older	Husbands who are younger than their wives	Husbands who were regular workers at age of 59	Husbands who were self-employed at age of 59	
Wife is currently employed	0.023*** (0.004)	0.025*** (0.007)	0.010 (0.008)	0.046*** (0.004)	0.038*** (0.007)	0.055*** (0.006)
Husband's health condition: Very good	0.008 (0.006)	0.021* (0.012)	0.018 (0.014)	0.010 (0.007)	-0.018 (0.012)	0.023*** (0.009)
Good	0.020*** (0.004)	0.026*** (0.008)	0.024*** (0.009)	0.017*** (0.005)	-0.005 (0.008)	0.019*** (0.006)
Fair	0.025*** (0.004)	0.030*** (0.007)	0.030*** (0.008)	0.024*** (0.004)	0.003 (0.007)	0.017*** (0.005)
Living in a privately-owned house	-0.049*** (0.010)	-0.054** (0.022)	0.021 (0.023)	-0.029** (0.012)	-0.012 (0.022)	-0.019 (0.015)
In the middle of paying back a housing loan	0.034*** (0.004)	0.012 (0.010)	0.032*** (0.010)	0.033*** (0.005)	0.029*** (0.008)	-0.011* (0.006)
Amount of deposits (10,000 yen)	-0.000*** (0.000)	-0.000** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000 (0.000)
Non-answer to question on amount of deposits	-0.004 (0.004)	-0.005 (0.008)	0.015* (0.008)	-0.006 (0.004)	-0.006 (0.007)	-0.005 (0.005)
Constant	0.868*** (0.015)	0.621*** (0.025)	0.943*** (0.042)	0.842*** (0.018)	0.605*** (0.076)	0.881*** (0.055)
Observations	62,289	26,492	9,379	43,382	17,796	9,509
R-squared	0.101	0.077	0.066	0.089	0.166	0.045
Number of id	9,076	6,676	1,382	6,228	2,329	1,273

Note:

The dependent variable is a dichotomous variable which takes the value of 1 if a husband is currently employed.

All models include dummy variables for husband's age and survey year as independent variables.

Cluster-robust standard errors are in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Japanese wives often quit their jobs upon marriage and continue to be housewives in the years that follow. In such cases, the husband may not consider his wife's employment status in making his retirement decision. Hence, the same model is re-estimated, limiting the sample to those husbands whose wives are employed at the age of 59. This is done to capture the decision-making of those who may change the timing of their retirement on the basis of their wives' employment. The results are presented in column (4) of Table 2, where it is observed that the coefficient of the wife's employment is significantly positive, and much larger than the case that considers all couples.

To capture the fact that there is a substantial difference in the retirement process between employees and self-employed workers, the sample is divided by the husband's employment type at the age of 59 (columns [5] and [6] in Table 2)<sup>5</sup>. Column (5) shows the result of the estimation conducted on a sub-sample that consists of husbands who were regular workers at the age of 59 and whose wife had a job at the age of 59, whereas the result of the estimation based on the sub-sample

<sup>5</sup> Usui et al. (2015) found that Japanese workers in salaried jobs gradually move to part-time work or retire after beginning to receive pension benefits, while self-employed workers neither retire nor reduce their working hours once pension benefits commence.

**Table 3. Effects of Wife's Employment on Husband's Retirement: IV Fixed-effects Model (Linear Probability Model)**

		(1)	(2)	(3)	(4)	(5)	(6)
		Husbands whose wives were employed at age of 59					
Type of couple:		All	Husbands aged 60 and older	Husbands who are younger than their wives	Husbands who were regular workers at age of 59	Husbands who were self-employed at age of 59	
Wife is currently employed		-0.014 (0.077)	-0.069 (0.105)	-0.233 (0.161)	-0.022 (0.069)	0.033 (0.103)	0.047 (0.127)
Husband's health condition:	Very good	0.013 (0.010)	0.033** (0.014)	0.021 (0.021)	0.013 (0.011)	-0.009 (0.019)	0.024* (0.014)
	Good	0.022*** (0.007)	0.035*** (0.009)	0.027* (0.016)	0.015** (0.007)	0.003 (0.013)	0.018 (0.012)
	Fair	0.025*** (0.006)	0.034*** (0.008)	0.027* (0.014)	0.022*** (0.007)	0.008 (0.011)	0.018* (0.010)
Living in a privately-owned house		-0.041** (0.020)	-0.035 (0.031)	0.035 (0.059)	-0.033 (0.026)	-0.008 (0.046)	-0.032 (0.054)
In the middle of paying back a housing loan		0.029*** (0.009)	0.014 (0.014)	0.043** (0.021)	0.033*** (0.010)	0.050*** (0.017)	-0.018 (0.014)
Amount of deposits (10,000 yen)		-0.000*** (0.000)	-0.000** (0.000)	-0.000** (0.000)	-0.000*** (0.000)	-0.000** (0.000)	-0.000 (0.000)
Non-answer to question on amount of deposits		-0.005 (0.006)	-0.009 (0.009)	0.031** (0.013)	-0.005 (0.007)	-0.006 (0.012)	-0.002 (0.008)
Observations		36,339	22,803	5,434	25,420	10,842	5,711
R-squared		0.069	0.058	-0.013	0.055	0.109	0.039
Cragg-Donald Wald F stat.		27.716	16.738	5.900	29.855	15.933	3.505
Hansen J stat.		11.684**	9.607*	2.026	9.083	10.771*	6.055
Number of id		7,814	5,781	1,175	5,464	2,256	1,227

Note:

The dependent variable is a dichotomous variable which takes the value of 1 if a husband is currently employed.

All models include dummy variables for husband's age and survey year as independent variables. Columns (2)-(6) are the results of estimations which rely on the 4<sup>th</sup>-8<sup>th</sup> waves.

Cluster-robust standard errors are in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

of husbands who were self-employed at the age of 59 is shown in column (6). In both columns, it is found that the wife's employment has a significant positive effect.

The estimation results of the IV fixed-effects model are presented in Table 3, in which each column corresponds to the various specifications of Table 2. It is found that the IVs are not weak in most of the specifications. However, the results are in sharp contrast to the results shown in Table 2, as it is found that all the estimated coefficients for the wife's employment from the IV fixed-effects model are insignificant<sup>6</sup>.

Although not shown in Table 3, the IV fixed-effects model with two additional sub-samples were also estimated. In the first, the husbands were non-regular workers at the age of 59, and in the second they were employed as non-regular workers in a company with less than 300 workers. Those who are a part of the above sub-samples are considered to have the relative freedom of choosing the

<sup>6</sup> Assuming that husbands who were self-employed at the age of 59 rarely receive the benefit of the second-tier pension, the pensionable age for second-tier pension as an IV is excluded from the first-stage equation for the estimation of column (6) in Table 3.

timing of retirement. However, even among these husbands, no significant coefficient was found for the wife's employment <sup>7</sup>.

## 5. Conclusion

In this study, it was found that a Japanese wife's retirement decision is *independent* of her husband's employment. The finding based on the IV model is robust, regardless of employment type and firm size. Even if this result may require further validation, the fact that it contrasts with results from the estimations that treat the spouse's employment as exogenous is, at least, noteworthy.

Our finding is inconsistent with similar existing studies in Europe and the United States, in which complementarity of leisure between a husband and wife has been found. This may imply that, in Japan, factors such as mandatory retirement age, post retirement employment, increases in pensionable age, and health may be the more important conditions determining retirement timing.

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<sup>7</sup> It was also found that even in the sample of husbands who work in firms that do not have a mandatory retirement age, the estimated coefficient for the wife's employment is insignificant.



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