



A Study on the Correlation Between Women's Re-Employment Problems and Economic Growth in Japan in The Context of Population Aging

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Abstract. Against the backdrop of an aging population, the shortage of workers in Japan is becoming increasingly serious, and it is proposed to increase female re-employment in the current situation to ease the pressure and stimulate economic growth. Analyzing the current situation of women's re-employment in Japan, it is summarized that women are in a disadvantaged position in the job market, and the scope of re-employment choices is small; in the process of empirical analysis of the mechanism of the impact of women's re-employment on economic growth, using the Solow growth accounting theory, optimizing the traditional measurement model, and obtaining the relationship between the changes in economic factors and the growth rate of women's employment and the coefficient estimation results between the variables, it can be seen that women's re-employment has a close relationship with the economic growth, which is mainly reflected in the fact that the economic growth can improve the environment of women's re-employment and raise the level of income to facilitate the development of the economy and the promotion of the development of the society. Based on the above analysis, in order to promote women's employment and achieve high-quality economic development, countermeasures to solve the problem have been proposed at the governmental and social levels, respectively; social security should be provided, a system for recognizing the value of domestic work should be introduced, and society's awareness of shared childcare should be strengthened.

Keywords: Population Aging; Female Re-employment In Japan; Economic Growth; Labor Market

1 Introduction

Japan's economy is highly developed, and its economic strength and competitiveness are among the leading ones in the world. However, as Japan's society ages, its population structure shows a trend of a gradually increasing proportion of elderly people and a gradually decreasing proportion of young people. Population aging is a

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major social issue globally, and Japan, as one of the countries with a high degree of population aging, is facing equally serious problems of population aging in its socio-economic development. As early as 1990, Japan's aging population reached 31.8% of the total population. Since the beginning of the 21st century, Japan's aging population has continued to increase, reaching 28.2% of the total population in 2011[1]. Due to the impact of the post-World War II "baby boom" fertility boom in Japan, the proportion of females in the Japanese birth population is generally higher than that of males. After the peak of fertility, the gap between the number of men and women entering old age has been narrowing, with the number of elderly women gradually exceeding the number of elderly men. Against the backdrop of an aging population, the issue of women's re-employment in Japan has attracted much attention. This paper takes the female re-employment problem in the context of population aging in Japan as the research object, and analyzes the correlation between the female re-employment status and economic growth in Japan by collecting and organizing relevant literature and data. According to the data of the Ministry of Internal Affairs and Communications of Japan, the employment rate of Japanese women has been declining continuously since 2010. This trend is more obvious among young women aged 30~40. In addition, the number of middle-aged women aged 45-54 who are re-employed is also on the decline. Against this background, the Japanese government has taken a series of measures to address the issue of women's re-employment in the context of population aging, including the improvement of re-employment-related policies and the introduction of the "flexible employment system". This paper discusses and analyzes the correlation between women's re-employment and economic growth in Japan from a macroeconomic perspective, using quantitative empirical methods[2-3].

2 Study on the Re-Employment Situation of Women In Japan

2.1 Women's Disadvantaged Position in the Job Market

Since the 1960s, the employment rate of men in Japan has remained above 90%, while the employment rate of women has been declining, due to factors such as the greater risk of childbirth and the burden of childcare on women in the workplace. The long-term stagnation of the Japanese economy, coupled with the growing problem of an aging population, has made Japan the world's first aging nation. Since the 1960s, the number of employed people in Japan has shown a downward trend year by year. In the 21st century, Japan's unemployment rate has remained at around 3%, and the unemployment rate for women is even higher, at 15.8%[4]. Research data from the Japan Society for Economic Policy Research show that more than one third of Japanese society is jobless. The shortage of the total number of employed people is one of the main reasons for the aging of the Japanese population and the high unemployment rate. Therefore, increasing employment is one of the most important ways to solve the aging problem and the demographic problem. In terms of types of

employment, women tend to work in non-production fields in companies, institutions and organizations more than men. Prior to the 1980s, the number of women employed was relatively large due to the relatively liberal employment environment[5]. After the 1980s, the number of women employed in Japan declined year by year due to factors such as changes in birth policies and demographic changes in society. By the end of the 1990s, the female employment rate had been lower than the male employment rate for nine consecutive years[6].

2.2 Small Range of Choices for Women's Re-Entry into the Workforce

In Japan, women's reemployment choices are smaller and mainly concentrated in the service sector, which is related to the employment structure of Japanese women. The service industry in Japan mainly includes wholesale and retail trade, finance and insurance, and real estate. Among them, the wholesale and retail industry is divided into two parts: wholesale and retail, and retail includes department stores, general supermarkets and convenience stores. Wholesale and retail are mainly oriented to enterprises, while the household service sector is dominated by self-employed persons[7]. In 2018, for example, the number of Japanese women employed in the service sector was 1,286,000, accounting for 48.3% of the total labor force, while the number of women employed in the manufacturing sector was 1,292,000, accounting for 46.6% of the total labor force; The two together accounted for more than half. This reflects the fact that the number of Japanese women re-employed in the service sector is much higher than in the manufacturing sector. As a result, the predominance of men in the labor market in Japan cannot be broken due to the fact that women's reemployment is mainly concentrated in the service sector. In addition, in terms of occupational composition, the high mobility of jobs in the service sector and the technological advantages of female workers have led to a higher proportion of female re-employed workers.

3 Empirical Analysis

In collecting literature, relevant data were mainly obtained from the official website of the Japanese government, relevant experts and scholars and governmental organizations, as well as the news media. Methods such as correlation analysis and multiple regression analysis were used in the analysis to analyze the correlation between women's re-employment status and economic growth in the context of population aging in Japan. Through the collection and organization of related literature and data, this paper examines the correlation between the re-employment problem of Japanese women and economic growth in the context of population aging in the following two aspects: firstly, it analyzes the mechanism of the role of employment in influencing the economic growth; and secondly, it discusses the empirical test of the correlation between the employment of Japanese women and economic growth in the context of population aging. In this chapter, an empirical analysis of the female re-employment problem in Japan will be conducted with a view

to understanding the impact of the female re-employment problem in Japan on economic growth in Japan[8]. First, data were collected from the Japan Demographic and Social Survey and categorized by gender and age in accordance with Japan's social survey system. Second, relevant literature was collected, from which representative articles and data were selected for analysis. Finally, the data were processed and analyzed using SPSS statistical software to examine the relationship between women's re-employment and economic growth in Japan. The Solow Growth Accounting Theory was used in the process of analyzing the mechanism of the effect of employment on economic growth. In terms of research methodology, this paper firstly adopts the traditional econometric modeling, process that sets the aggregate production function as:

$$Y = AF(L, K) \quad (1)$$

where Y is aggregate output, L is the amount of input labor, K is the amount of input capital, and A is an economic technology parameter. We improved the traditional econometric model by adopting a generalized autoregressive conditional heteroskedasticity model based on generalized moment estimation. Replacing each variable in the above equation with a variable component yields an expression for the Solow growth accounting equation:

$$\Delta Y = MP_L \times \Delta L + MP_K \times \Delta K + F(L, K) \times \Delta A \quad (2)$$

MP_L is the marginal production of labor and MP_K denotes the marginal production of capital. From the above equation, it can be seen that the use of the model based on generalized moments estimation in the relationship of the variables in the above equation is able to deal with the nonlinear problem, and is able to analyze the data effectively, and has obvious advantages in data processing and parameter estimation. According to the above equation, it is possible to obtain the relationship between the impact of changes in economic factors and the growth rate of female employment, as shown in the figure below:

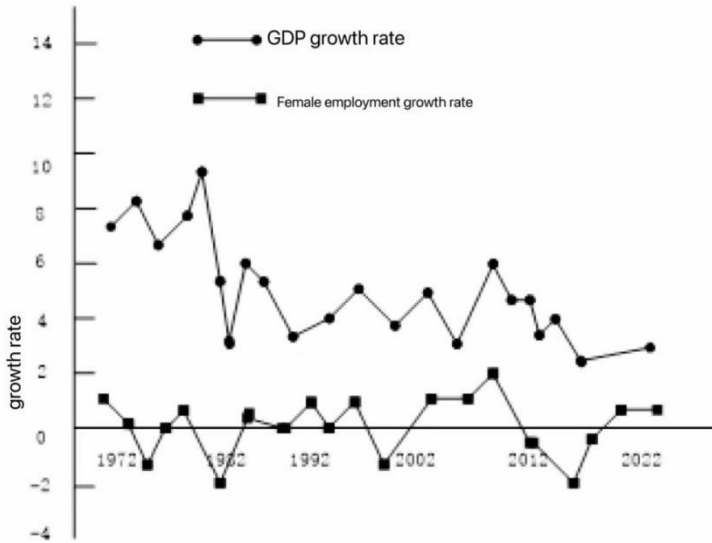


Fig. 1. Japan's economic growth rate and female employment growth rate

As can be seen from the above graph, there is a correlation between the female employment rate and economic growth in Japan. In the above figure, when the Japanese economy rises, the female employment rate is also in a state of growth, but there will be a certain lag[9].

To empirically test the correlation between female employment and economic growth in Japan based on the conclusions above, this paper uses the VAR model to conduct the causality test. In this paper's empirical analysis of the test, mainly to Japan's female employment growth rate and economic growth rate of the two variables for analysis, from the above can also be seen, the correlation between the two variables, but there is a certain lag, so the use of these two variables lagged P-period unrestricted vector autoregressive model, expressed as follows:

$$y_t = u + A_1y_{t-1} + \dots + A_p y_{t-p} \quad (3)$$

In the above equation, y_t denotes the column vector in the endogenous vector, A_p denotes the parameter matrix of different order lag terms, and u is the intercept in the model. Based on the above model, the coefficient estimates between the variables obtained are as follows:

Table 1. Results of coefficient estimation between variables

Variables	GDP growth rate (g)	Female employment growth rate (e)
(g-1)	0.341*** (0.121)	-0.114** (0.024)

(g-2)	0.368*** (0.211)	0.133* (0.087)
(e-1)	1.014*** (0.212)	0.423*** (0.147)
(e-2)	-0.73*** (0.214)	0.047 (0.142)

From the results of the above table, it can be seen that out of the four variables, only the e-series of lag 2 order is not significant in estimating the coefficient of VAR on e-series, while the remaining three variables have a significant effect. Among them, the estimated coefficient of VAR of lagged 2nd order g-series on e-series is significant at the 10% level, and the other two are significant at the 5% level. It is verified that there is a significant correlation between female employment and economic growth in Japan[10].

4 The Economic Impact of Female Re-Employment in Japan in the Context of Population Aging

4.1 Improving the Environment for Women's Re-Employment

According to statistics, as of the end of 2014, 16.2% of the total population in Japan were aged 65 and over, of which 12.7% and 9.4% were men and women aged 65 and over, respectively. In Japan, the number of elderly people over the age of 60 has exceeded one-fourth of the total population. Meanwhile, according to the data released by the Ministry of Health, Labour and Welfare of Japan on May 2, 2015, as of April 1, 2016, the population of males over the age of 65 in Japan was approximately 17.6 million, and the population of females over the age of 65 was approximately 66 million. With the aging of the population becoming more and more serious, the problem of how to solve the labor shortage caused by the aging society has become an urgent issue. In response to the crisis of an aging population, the Japanese government has introduced a series of policies and measures in recent years, including a series of policies and measures aimed at the re-employment of women to promote the development of the re-employment market for women. In an aging society, there are large vacancies in the re-employment market for women in Japan. In particular, the Labor Standards Law stipulates that "the age limit for employment is 40 years of age or older", and the Law for the Protection of Labor Conditions stipulates that "men must be under 45 years of age and women must be over 40 years of age"; The Measures for the Employment and Pension Security of Elderly Workers and Nursing Care Workers, etc. stipulates that "special care should be given to women over 50, 60 and 65 years of age." The Policy on Living Support Organizations for the Elderly provides for "living support services for the elderly."

4.2 Raising Income Levels and Promoting Economic Development

The re-employment of women in Japan has not only alleviated the problem of labor shortage, but also promoted economic development. On the one hand, with the policy support of the Japanese Government, Japanese enterprises have encouraged women to participate in re-employment, which to a certain extent has solved the problem of labor shortage due to the aging of the population. On the other hand, the Japanese Government also subsidizes women's re-employment through policy measures and supports women's self-employment. In this regard, the *Nihon Keizai Shimbun* published an article in 2014 entitled "Can the 'three arrows' policy proposed by the Abe government stimulate Japan's economic growth?" The article pointed out that "the Abe administration has proposed 'three arrows' policies, namely tax cuts, increased spending and promotion of innovation. However, whether these policies are effective in stimulating economic growth requires subsidies for re-employed groups. If there are no subsidies for the re-employed group, then the re-employed group will lack motivation, which is not conducive to promoting economic growth." In order to promote economic growth and create employment opportunities, the Government of Japan has introduced a series of policy measures. For example, the Measures for the Promotion of Women's Re-employment, which was enacted on January 30, 2015, stipulates that the Government will provide "supportive subsidies" to businesses in order to promote women's re-employment and business development.

4.3 Promoting Social Development

The Government of Japan has introduced a series of policy measures in recent years aimed at promoting the development of the female re-employment market in order to alleviate the labor shortage caused by Japan's aging society. On this basis, it has also promoted social development. In the process, the maternity insurance system has been strengthened. In order to encourage female employment, the Japanese government has vigorously promoted the "maternity insurance" system. As of the end of 2014, there were approximately 3 million women enrolled in maternity insurance in Japan, accounting for 18.7% of Japan's total population. According to a survey conducted in May 2014, 59.5% of women chose maternity insurance as a means of protection. In terms of demographic structure, women aged 65 and over account for 12.7% of the total population, with women covered by maternity insurance accounting for 64.6% of the total number of women aged 65 and over. It can thus be seen that the maternity insurance system is an important tool for promoting the development of the female re-employment market. The process of social development has increased public welfare. In response to the crisis of an aging population, the Japanese Government has increased its efforts to build public welfare facilities. According to statistics, as of the end of 2014, there were approximately 180 million square meters of public facilities throughout Japan. Of this, approximately 19 million square meters were "facilities for the elderly" and approximately 16 million square meters were "facilities for children." In addition to improving the public welfare system, these facilities also provide the basis for women's re-employment.

5 Countermeasures to Promote Women's Employment to Achieve High-Quality Economic Development and Recommendations

5.1 Provision of Social Security and Introduction of A System for Recognizing the Value of Domestic Work

Since the 1980s, the Japanese Government has been implementing a system of re-employment for women after retirement. The Government has taken a series of measures to support women's re-employment and has made it possible for women to engage in a second career after retirement. Not only that, the Japanese Government has also introduced policy measures to encourage women to actively participate in social production, such as tax relief and the provision of loans. At the same time, the Japanese government also provides more social security and welfare benefits to women who are re-employed. For example, in Japan, a system of sharing household chores between husband and wife is widely practiced in households. Women are in the majority of households where they are responsible for the main part of household chores. In order to reduce the burden and pressure on women in taking care of their families, the Government has introduced many policies and measures to encourage and support women's participation in social production. Population aging is the greatest challenge facing Japan, and women, as the largest human resource in society, have a very important role to play in coping with population aging. In recent years, the Japanese government has been actively taking measures to address the issue of women's re-employment, which has played a very significant role in easing the economic pressure on Japan.

5.2 Strengthening Social Awareness of Shared Parenting

The Government of Japan has introduced a series of policies to address the issue of women's re-employment. In terms of legislation, the Government has enacted the Children's Labor Security Law and the Measures for the Re-employment of Housewives and Other Women Overburdened with Childcare. In terms of social insurance, the Japanese Government has implemented the National Health Insurance to protect women's rights and interests. From the above analysis, it can be seen that while there are some similarities between Japanese women and Chinese women in terms of employment, there are also many differences. For example, Chinese women face difficulties in changing their social roles and an excessive burden of domestic work during childbirth, while Japanese women face problems such as high economic pressure and unstable employment. However, the comparison reveals that there are some similarities between China and Japan in terms of these same or different problems. As the only country in the world that has never experienced a large-scale war, China has not experienced the effects of economic and social crises in the face of difficult economic development. Although China is facing problems such as aging and childlessness, it also has a complete and large industrial system and large-scale market potential; at the same time, China has not yet experienced an economic and

social crisis as serious as that in the United States. It is therefore possible to draw on a series of policy measures adopted by the Japanese Government to address the problem of women's re-employment in response to the aging of the population.

6 Conclusion

There is a strong correlation between the development of women's re-employment and the country's economy, and the "promotion of women's employment" is an important national policy proposed by the Japanese Government to address the problem of an aging population. Female re-employment, as a new idea to solve the problem of an aging population, can alleviate the pressure of old age and economic development brought about by an aging society. Through empirical evidence, this paper analyzes the economic impact of women's re-employment in Japan in the context of population aging, improves the environment for women's re-employment, raises the income level, promotes economic development, and promotes social development. Analyzed from an economic point of view, women's re-employment increases the supply of labor and helps to alleviate the problem of insufficient labor supply in economic growth, thus promoting economic growth. At present, Japan has entered an aging society, and its population structure, population age distribution, and elderly dependency ratio are undergoing profound changes. Against the backdrop of an aging population, the issue of women's re-employment is a major challenge for Japan's future economic development, and how to make it play a positive role has become an urgent issue for the Japanese Government.

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