

**AN ANALYSIS OF WOMEN'S ECONOMIC PARTICIPATION  
IN KOREA**

**By**

**Noh- Kyoung Kim**

**THESIS**

Submitted to  
KDI School of Public Policy and Management  
in partial fulfillment of the requirements  
for the degree of

**MASTER OF ECONOMICS AND PUBLIC POLICY**

2003



**AN ANALYSIS OF WOMEN'S ECONOMIC PARTICIPATION  
IN KOREA**

**By**

**Noh- Kyoung Kim**

THESIS

Submitted to  
KDI School of Public Policy and Management  
in partial fulfillment of the requirements  
for the degree of

MASTER OF ECONOMICS AND PUBLIC POLICY

2003

Professor Yoon-Ha Yoo



## **ABSTRACT**

### **AN ANALYSIS OF WOMEN'S ECONOMIC PARTICIPATION IN KOREA**

**By**

Noh- Kyoung Kim

Women's participation in economic activities and gender equality in the labor market have become matters of heated controversy in recent years in Korea. In the unlimitedly competitive society of the 21st century, it is recognized that the women's economic participation through gender equalization and the strengthening of national competitiveness by women's participation in economic activities are very closely related and an important part of the national agenda.

This study documents women's participation in economic activities in Korea. In Korea, women's participation in economic activities is continually increasing together with the fast economic development since 1980s.

Even though the sharp rise of women's economic participation, there is still pretty obstacle to women's economic activities; social recognition, distorted labor market for women and compatibility problem with family matters, etc.

I explain this by analyzing the statistics and also do the empirical works.

Women's participation in economic activities by the age shows the reversed U shape finally in 2001, it peaks in age group of 20s and 30s then gradually decreases. Women, who were interrupted from economic activities by marriage and childbirth, now continue to do economic activities in labor market after marriage and childbirth. However, the education still has no positive effect on women's economic participation.

In family view, the marriage, child under 6 and household income have clear negative effect on women's economic participation.

Also, the women themselves' recognition and husband's attitude to the women's economic participation have effect on women's economic participation in the empirical results.

From the regional viewpoint, living in metropolitan city has negative effect on the women's economic participation. Even with higher education standard and larger labor market, the women in big cities are not active in economic participation. I think this is also related with the family matters because the women in big cities are more educated and also have more household income, so they do not feel the necessities to get income in their own economic participation.

We, with the above empirical results, can infer very significant conclusion. Women's economic participation is going to the reversed U shape finally in 2000s, which is typical men's economic participation shape and also began to appear in the advanced countries in 1980s. Also, we can see that the reversed U shape of Korean women's economic participation is still imperfect reversed one and the important reason is the family matters, especially marriage and childcare.

So, in my opinion, we need more careful and strong policy measures for the childcare system and social agreements of the necessity of women's economic participation in Korea. Those can make women's economic participation in Korea to the perfectly reversed U shape and makes it possible for Korean economic development miracle to continue in the 21<sup>st</sup> century.

**Copyright by  
Noh-Kyoung Kim  
2003**

## **ACKNOWLEDGEMENTS**

This thesis was completed under the supervision of Professor Yoo Yoon-Ha whom I am especially grateful for his kind and helpful instruction and comments during the 4 years of my thesis preparation after graduation. Also, this thesis could not have completed without the help of Dr. Oh Jun-Byung who helped me analyze the data. Thank you so much.

KDI School has provided me with a clear understanding that there is always economic theory in all social phenomena and people's reaction in that state. I want to thank all the professors in KDI School for providing me with a new economic vision as a government officer. I would also like to extend my thanks to all the staffs for showing every kindness to all demands from the students.

Finally I want to express my appreciation and love to my parents, who have taught me to work hard in all aspects of my life, to my husband, Yoo Keun-Ho, who always assists and supports me, and to my baby, Ji-Seok.

## TABLE OF CONTENTS

<b>CHAPTER 1 THE RELATION BETWEEN ECONOMIC GROWTH AND WOMEN'S ECONOMIC PARTICIPATION IN KOREA .....</b>	<b>1</b>
<b>CHAPTER2. ANALYSIS OF KOREAN WOMEN'S PARTICIPATION IN ECONOMIC ACTIVITIES .....</b>	<b>5</b>
<b>2.1 CHANGE IN WOMEN'S PARTICIPATION IN ECONOMIC ACTIVITIES .....</b>	<b>5</b>
<b>2.2 PARTICIPATION IN ECONOMIC ACTIVITIES BY AGE .....</b>	<b>7</b>
<b>2.3 EDUCATION AND ECONOMIC PARTICIPATION OF WOMEN .....</b>	<b>7</b>
<b>2.4 MARRIAGE AND ECONOMIC PARTICIPATION .....</b>	<b>12</b>
<b>CHAPTER 3. THEORIES GOVERNING ECONOMIC PARTICIPATION FOR MARRIED WOMEN .....</b>	<b>16</b>
<b>CHAPTER 4. AN EMPIRICAL STUDY ON THE WOMEN'S PARTICIPATION IN ECONOMIC ACTIVITIES .....</b>	<b>20</b>
<b>4.1 DATA AND ECONOMETRIC MODEL .....</b>	<b>20</b>
<b>4.2 EMPIRICAL RESULTS .....</b>	<b>24</b>
<b>CHAPTER 5. CONCLUSIVE REMARKS .....</b>	<b>33</b>
<b>BIBLIOGRAPHY .....</b>	<b>36</b>

## LIST OF TABLES

Table 2-1 Economically Active Population by the Sex .....	6
Table 2-2 The Rate of Economically Active Women's Population by the Age (non agriculture) .....	8
Table 2-3-1 Economic Participation by the Education .....	10
Table 2-3-2 The Percentage of Economically Active Population of Each Education Level .....	11
Table 2-4-1 Economically Active Population by Sex and Marital Status .....	13
Table 2-4-2 Male and Female Employee Status .....	14
Table 4-1 Summary of Statistics for Variables in Regression Analysis .....	23
Table 4-2 Regression Results of Women's Economic Participation .....	25
Table 4-2-1 Regression Results of Women's Economic Participation - excluding the variable of Child under 6 or Marital Status .....	26
Table 4-3 Regression Results of Women's Economic Participation (Age 25~34) .....	30
Table 4-3-1 Regression Results of Women's Economic Participation (Age 25~34) – excluding the variable of Child under 6 or Marital Status .....	30

## LIST OF FIGURES

Figure 2-1 The Trend of Economic Participation .....	6
Figure 2-2 Change of Women's Economic Participation by the Age (non agriculture) ...	8
Figure 2-3-1 Education and Economic Participation Rate .....	10
Figure 2-3-2 Percentage of Each Education Level .....	11
Figure 3-1 Women's Economic Participation according to Wage Rate and Individual Inclination .....	17
Figure 3-2 The Effect of Other Source of Income .....	18
Figure 3-3 The Effect of Preschool Baby .....	19



## **CHAPTER 1**

### **The Relationship between Economic Growth and Women's Economic Participation in Korea**

Women's participation in economic activities and gender equality in the labor market have become matters of heated controversy in recent years in Korea. In the unlimitedly competitive society of the 21st century, it is recognized that the women's economic participation through gender equalization and the strengthening of national competitiveness by women's participation in economic activities are very closely related and an important part of the national agenda.

The policy measures, which increase the women's participation in economic activities and at the same time decrease the gender inequality in employment and wage, are continually enforced for strengthening the national competitiveness. For all the strong opposition and resistance from the management side, the Government enacted the Act of Motherhood Protection that made the maternity leave one month longer and introduced a quota system of women's entry in public office and the system is in force.

Especially, the Participatory Government announced that the growth rate of 7% shown as the public commitment of the government would be conducted through women's participation in economic activities. So, the expectation of the growth of women's participation in economic activities is also rising.

Looking into the American case of women's participation in economic activities, American women's economic activities before the 1940s were mostly carried out by unmarried lower aged women. When they married or gave birth to a child, they quit their job and went back home. This was recognized as a universal trend. The economic participation of married women is very low and the rate of re-participation in economic

activities after the reduction of the burden of the childcare is low. So, women's economic participation peaks when they are not married and declines continually after marriage.<sup>1</sup>

After the end of World War II, the shortage of a work force had deepened and the participation of married women of middle or advanced age in labor markets had drastically increased. So the shape of women's participation in economic activities had changed into the typical M shape. The most noticeable change since 1960 is that the rate of married women's economic participation has increased considerably in all age groups. The marriage or the delivery of a child no longer affected the decrease in women's economic activities. Women's participation in economic activities transformed into the reversed U shape, a shape typical of men's participation in economic activities.

It is estimated that many factors influenced the increase in the rate of women's economic participation and career development in all ages in the US. I can pinpoint the demand-side factor (the service and soft trend of the economy) and the supply-side factor (the higher academic achievements of women, the intensification of professional sense, the decrease in the number of children and the alleviation of household affairs) of the labor force.<sup>2</sup>

Other significant features have been introduced into the system and these have enabled married women to seek employment e.g. the expansion of nurturing institutions, the introduction of temporary rest from the office for childcare, the diversification in the type of employment and the enactment of the various laws or ordinances that bans the sexual discrimination and the introduction of the positive actions for the expansion of women's employment. All have played an important role.

---

<sup>1</sup> Blau, F. D. and M. A. Ferber, *The Economics of Women, Men, and Work*, NJ : Prentice-Hall, 1986, pp.71~72

<sup>2</sup> Jacob Micoer *International Comparison of Labor Force Trends and Related Development* Journal of Labor Economics 1985, S1~S32

In Korea, also, women's participation in economic activities and higher educational standards are continually increasing.

If we look at the rate of participation of men and women from 1985 to 2000, the men's rate has moved downward since 1995 and the women's rate has increased continually. This change is shown clearly in the case of college graduates.

The increase in the rate of women's participation in economic activities has some important meanings. Firstly, the development of human resources is the decisive factor for the national competitiveness in the future. From this point of view, the development and inducement in labor markets of the women's work force is a very important aspect of the agenda. Secondly, the women can do self-development through work. Thirdly, the shortage of a work force can be lessened with the increase in the supply of women's work force. Even though the general labor market is often over supplied in terms of its work force, each labor market can be under supplied in terms of its work force. It is expected that the solution to this problem will involve the positive participation of women in economic activities. By doing so the shortage of a work force in many sections will be settled. Finally, the state of income distribution can be improved. If the income of a family is increased with the participation of women in economic activities, the distribution structure of family income can be upgraded and this results in narrowing the distinction in wealth between the wealthy and the poor.

The increase in women's economic participation in Korea is attributed to mainly the demand side; rapid industrialization, economic growth. The Korean industrial structure has changed from an agriculture-centered economy to one centered on manufacturing- and services. And the economy had grown at an average rate of 8%. Therefore, the demand for a work force had continually increased and women's economic participation has rapidly increased.

In spite of the demand elements and Government policy measures to promote women's participation in economic activities, the supply side has had less effect on women's participation in economic activities. And the most significant factors are the interruption by the marriage and childcare.

I have assumed that marriage and childcare are the most important factors that restrict women from participating in economic activities.

Firstly, I will look at recent trends relating to women's participation in economic activities by means of age, education and marital relations.

I will then examine the reasons why women participate in economic activities using the cost and benefit theory.

Lastly, I will look at how marriage and childcare can affect women's participation in economic activities according to the raw data of the 4<sup>th</sup> Survey on Women's Employment.

## CHAPTER 2

### Analysis of Korean Women's Participation in Economic Activities

#### 2.1 Change in women's participation in economic activities

As shown in the table 2-1, the rate of women's participation in economic activities in Korea has been on the increase from 42.8% in 1980, 47.3% in 1990, to 48.3% in 2000. Of particular interest is the increase in married women's economic participation. On the other hand, the rate of men's economic participation has decreased from 76.4% to 74.0% during the same period.<sup>3</sup> The rate of women's economic participation is still 65% compared to that of men's in 2000, but it has continued to increase since 1980.

We can explain one of the important reasons of the increase in the rate of women's economic participation is decrease in wage disparity between men and women. That is, the reservation wage (the women's subjective value in the family and leisure, etc.) is more than the market wage (the objective wage to get in the labor market), so women decided to participate in the labor market.

In other words, the real wage received by women in the labor market increased between the 1970s and the 1980s. At the same time the reservation wage has decreased significantly with the development of electronics and processed foodstuffs. In addition there has been a decrease in birth rates. So women continue to participate in economic activities after marriage or childbirth because the opportunity cost to give up her job increases.

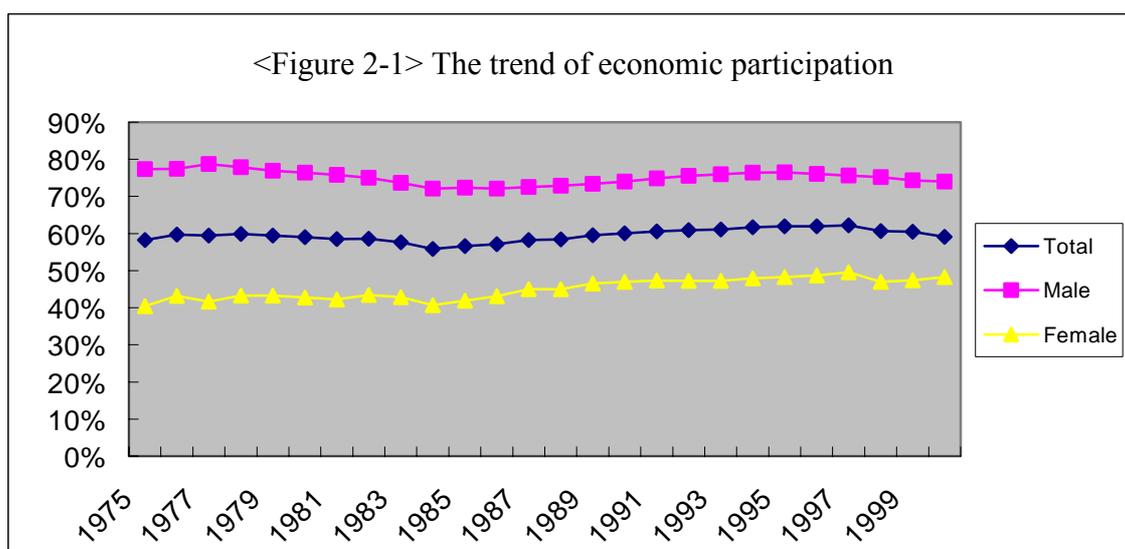
---

<sup>3</sup> The decrease of men's economic participation rate is the same in the advanced countries. This situation has arisen due to men prolonging their education before securing employment, retiring at an earlier age, the expanded social security system, and so on. There are different views from scholars on the each factor O. Ashenfelter. R. Layard ed.(1986)

Also, women themselves place a higher value on participating in economic activities and prefer to work outside their homes. Educational standards have also risen amongst women in recent times and this has contributed to greater numbers seeking work. Such are the reasons for the continuous increase in women's participation in economic activities.

< Table 2-1 > Economically Active Population by Sex

<i>Index</i>	75	80	85	90	95	2000
Male	74.5	76.4	72.3	74.6	76.5	74.0
Female	39.6	42.8	41.9	47.3	48.3	48.3
Wage rate	42.2	44.4	48.2	55.0	59.8	62.9



Source : National Statistical Office, Annual Report On The Economically Active Population Survey

## **2.2 Participation in Economic Activities by the Age**

The change over time in women's participation in economic activities according to their age can be seen in Table 2-2.

Table 2-2 shows the following characteristics:

Firstly, Korean women's economic participation rate displays the typical M shape, appearing initially in the 1960s and 1970s and disappearing in the early 1980s in the advanced countries. The M shape means that Korean women participate in the labor market between the ages of 20 to 24, and then leave the labor market for marriage, childbirth and childcare between the ages of 25 to 34. At 35 they frequently return to work. The household work still interrupts women's economic participation in Korea.

However, looking at the figure 2-2 we can examine the differences in women's participation in economic activities before the 1980s and after the 1990s. From the 1960s up until the 1980s the rate of economic participation among women is at its lowest in the 25~29 age group, but that changes in the mid 1990s. According to the data for 1995, the rate of economic participation in the 25~29 age group is almost the same as that of the 30~34 cohort, and the former is finally higher than the latter in 2000. In other words, the lowest point of the M shape shifts between age groups, moving from the a 25~29 age group pre 1990, via the 25~34 age band in the middle of the 1990s and onto the 30~34 age group in 2000s.

These changes were caused by the government labor policy for women's economic participation in the late 1980s. That is, the government regulated corporation's dismissal of women due to marriage or childbirth. Also late marriage and first childbirth are also linked to the change.

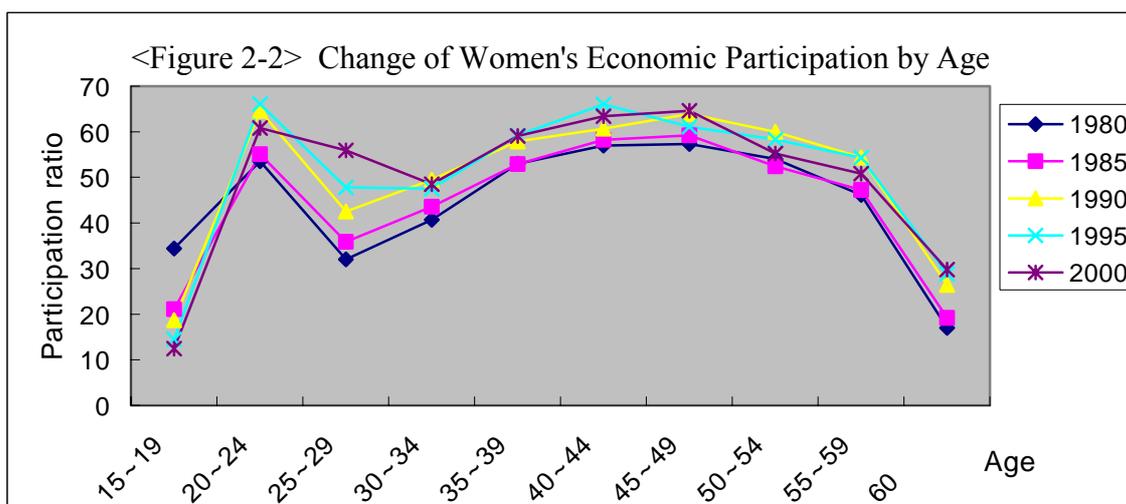
Another characteristic is that Korean women stay longer in the labor market, while women in advanced countries leave abruptly from the labor market in the 40s. The main

reason for such a difference is assumed to be the differences in social security systems and provision for retirement.

The third characteristic found in the table 2-2 is the decrease in women's economic participation between the ages of 15 and 19, caused by the rise of women's educational levels according to the economic growth and advances in gender equality.

< Table 2-2 > The Rate of Economically Active Women's Population by the Age (non agriculture)

	1980	1985	1990	1995	2000
15~19	34.4	21.1	18.7	14.5	12.5
20~24	53.5	55.1	64.6	66.1	60.8
25~29	32.0	35.9	42.5	47.8	55.9
30~34	40.7	43.6	49.5	47.5	48.5
35~39	53.0	52.9	57.9	59.2	59.1
40~44	57.0	58.2	60.7	66.0	63.4
45~49	57.3	59.2	63.9	61.1	64.6
50~54	54.0	52.4	60.0	58.3	55.2
55~59	46.2	47.2	54.4	54.3	50.8
Above60	17.0	19.2	26.4	28.9	29.8



Source : National Statistical Office, Annual Report On The Economically Active Population Survey

### **2.3 Education and Economic Participation of Women**

The qualitative improvement is no less evident in women's economic participation according to higher education than the quantitative increase.

As shown in table 2-3-1, men's economic participation decreases slowly in each education level from 1980 to 2000. The same trend can be seen in the total men's economic participation. However, women's economic participation shows a number of different phases; the economic participation ratio of women with middle school education increases slowly from 42.6% in 1980 to 43.6% in 2000, that of high school educated women increases sharply from 30.0% in 1980 to 49.4% in 2000. Beyond college education the rate increases sharply from 46.5% in 1980 to 64.4% in 2000.

Such sharp increase has been caused by women's achieving higher academic career and social advancement. Women with a higher academic background place far more value on education now and expect to participate in labor markets in this conservative society.

Table 2-3-2 shows the economic participation of each education level out of the total economic participation. Shown in table 2-3-2, the percentage of women with an under-middle school academic background decreases from 81.7% to 46.1% in the period between 1980 and 2000, while the percentage of women with a high-school academic background increases from 15.7% to 39.1% and the percentage of women with a university academic background increases from 2.9% to 18.4%. During the same period economically active men have also come from a higher academic background. However, the rate of change is slower compared to that of women. So we can infer that the academic gender inequality in economic participation is much decreased now.<sup>4</sup>

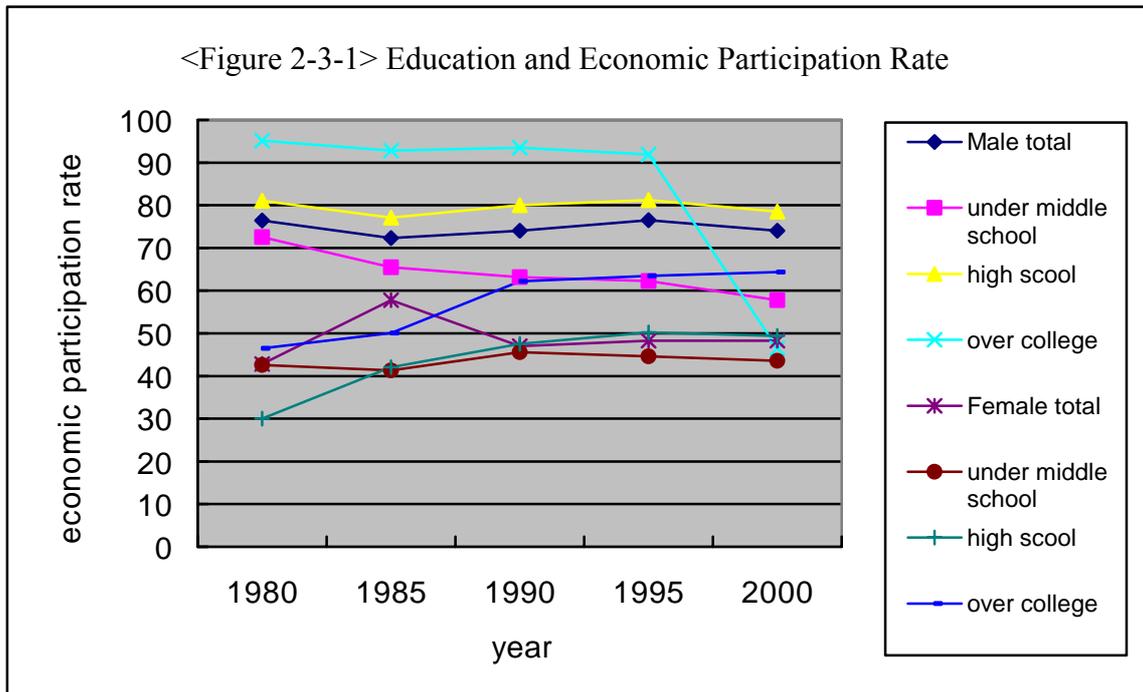
---

<sup>4</sup> However, from the antecedent study using the microeconomic data, there is little education effect on the women's participation in economic activities in Korea. (Kim Young-Hwa 1988, Lee Ju-Ho 1995, etc.)

<Table 2-3> Economically Active Population by the Education Standard

Table 2-3-1, Economic Participation by the Education (both men and women)

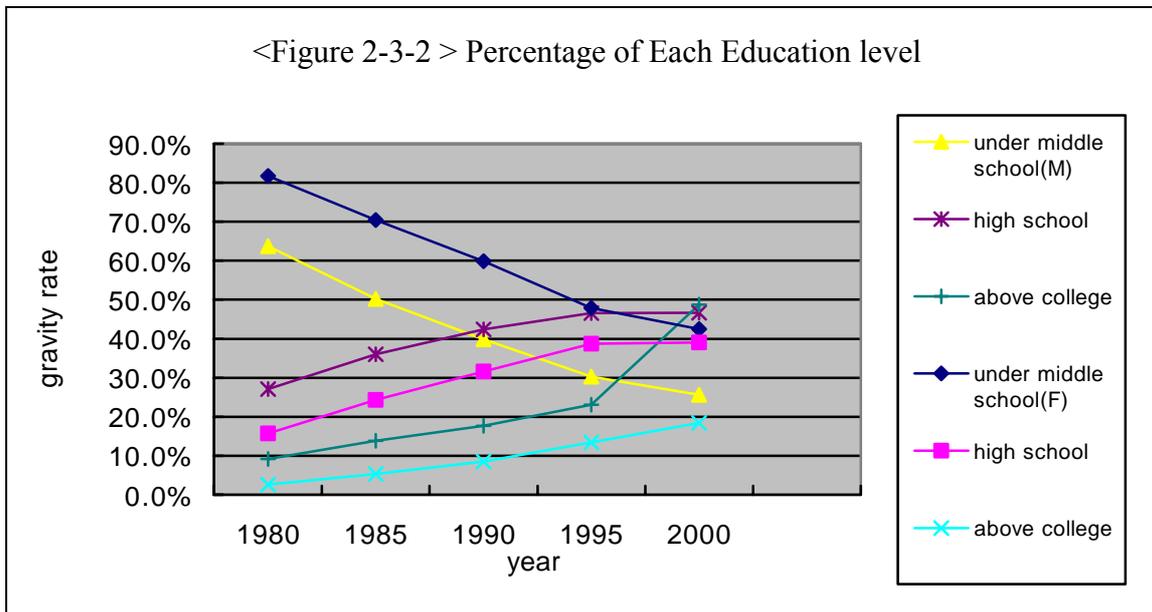
Index	Male					Female				
	1980	1985	1990	1995	2000	1980	1985	1990	1995	2000
Under Middle School	5,743 (72.5)	4,830 (65.5)	4,398 (63.2)	3,773 (62.3)	3,315 (57.8)	4,424 (42.6)	4,207 (41.3)	4,497 (45.6)	4,019 (44.6)	3,821 (43.6)
High school	2,445 (81.1)	3,461 (77.1)	4,682 (80.0)	5,806 (81.2)	6,034 (78.5)	847 (30.0)	1,451 (42.1)	2,372 (47.5)	3,253 (50.2)	3,518 (49.4)
Above College	832 (95.1)	1,326 (92.8)	3,479 (93.5)	2,878 (94.2)	6,299 (91.9)	142 (46.5)	319 (50.1)	640 (62.2)	1,125 (63.5)	1,660 (64.4)
Total	9,019 (76.4)	9,617 (72.3)	11,029 (74.0)	12,456 (76.5)	12,950 (74.0)	5,412 (42.8)	5,974 (57.8)	7,509 (47.0)	8,396 (48.3)	9,000 (48.3)



Source : National Statistical Office, Annual Report On The Economically Active Population Survey

Table 2-3-2, The Percentage of Economically Active Population of Each Education Level (both male and female)

Index	Male					Female				
	1980	1985	1990	1995	2000	1980	1985	1990	1995	2000
Under Middle School	5,743 (63.7)	4,830 (50.2)	4,398 (39.9)	3,773 (30.3)	3,315 (25.6)	4,424 (81.7)	4,207 (70.4)	4,497 (59.9)	4,019 (47.9)	3,821 (42.5)
High School	2,445 (27.1)	3,461 (36.0)	4,682 (42.4)	5,806 (46.6)	6,034 (46.7)	847 (15.7)	1,451 (24.3)	2,372 (31.6)	3,253 (38.7)	3,518 (39.1)
Above College	832 (9.2)	1,326 (13.8)	3,479 (17.7)	2,878 (23.1)	6,299 (48.7)	142 (2.6)	319 (5.3)	640 (8.5)	1,125 (13.4)	1,660 (18.4)
Total	9,019 (100.0)	9,617 (100.0)	11,029 (100.0)	12,456 (100.0)	12,950 (100.0)	5,412 (100.0)	5,974 (100.0)	7,509 (100.0)	8,396 (100.0)	9,000 (100.0)



Source : National Statistical Office, Annual Report On The Economically Active Population Survey

## 2.4 Marriage and Economic Participation

Let us now examine economic participation of men and women according to their marital status. The married men's economic participation ratio has remained at 88% between 1980 and 1995. Unmarried men's economic participation ratio has decreased from 52% in 1980 to 43.5% in 1990 and then increased again to over 50% in 2000.

On the other hand, women's economic participation according to their marital status shows different phases during the same period. In 1985 the unmarried women's economic participation ratio is much higher than that of married women. However, the latter is higher than the former in 1990. The women's economic participation ratio increases sharply from 41.9% in 1985 to 47% in 1990.

However, between 1990 and 1995 the rate of unmarried women's economic participation increases while the rate of married women's shrinks. We can compare the change in women's economic participation by marriage to that by age. As table 2-2 shows, the rate of women's economic participation in the 20~24 age range increases by 1.5% from 64.6% in 1990 to 66.1% in 1995, while that of women aged 25~29 increases by over 5% from 42.5% in 1990 to 47.7% in 1995. In the 30~39 age group, it is almost the same from 1990 to 1995. It becomes evident that unmarried women's economic participation in the 25~29 age range increases more than that of married women. That is, the increase of economic participation of 25~29 age group is caused more by the rise of the marriage age of women than rise of the economic participation of married women.

Again the rate of married women's economic participation exceeds that of unmarried women between 1995 and 2000<sup>5</sup>.

---

<sup>5</sup> The analysis is influential that increase of the married women's economic participation between 1995 and 2000 is attributed to the increase of irregular workers in labor markets under the IMF economic systems and that is especially peculiar in married women

In general, as we can see in women's participation rates based on age and marital status, the M shape becomes more lax as time elapses. This is caused mainly by the increase in married women's economic participation. In the other words, women's economic interruption by marriage is much decreased now compared with 1980s.

However, married women's economic participation rate was still 48.7% in 2000. The corresponding married male participation rate was 84.3%. This is a significant difference when compared to the one that existed between unmarried men and women i.e. 47% and 50.2% respectively.

< Table 2-4-1 > Economically Active Population by Sex and Marital Status

Index	1980		1985		1990		1995		2000	
	Female	Male	F	M	F	M	F	M	F	M
Total	42.8	76.4	41.9	72.3	47.0	74.0	48.3	76.5	48.3	74.0
Married	40.0	88.3	41.0	86.8	46.8	88.2	47.6	88.8	48.7	84.3
Unmarried	50.8	52.4	44.7	43.5	45.6	43.2	50.4	49.6	47.0	50.2

Source : National Statistical Office, Annual Report On The Economically Active Population Survey

It becomes apparent that men are participating in economic activities throughout their lifetime, well into their old age regardless of their marital status. What is more, the economic participation rate of married men- as the main family supporter- is much higher than that of unmarried men. On the other hand, married women's participation in economic activities is just supplementary to the husband's economic participation, and restricted by household affairs and childcare.

< Table 2-4-2 > Male and Female Employee Status

Index	Status	1980	1989	1990	1995	1999
Total	Total	13,684	14,970	18,085	20,432	20,281
	Unpaid Worker	7,220	6,866	7,135	7,649	7,759
	Independent	4,651	4,679	5,068	5,694	5,841
	Family Worker	2,569	2,187	2,067	1,955	1,918
	Wage Worker	6,464	8,104	10,950	12,784	12,522
	Regular	5,164	6,714	5,938	7,429	6,050
	Temporary			3,171	3,545	4,183
	Daily	1,300	1,390	1,840	1,809	2,289
Male	Total	8,462	9,137	10,709	12,176	11,978
	Unpaid Worker	4,047	3,842	3,949	4,272	4,407
	Independent	3,433	3,440	3,686	4,077	4,177
	Family Worker	614	402	263	195	230
	Wage Worker	4,415	5,295	6,759	7,905	7,571
	Regular	3,548	4,543	4,361	5,358	4,542
	Temporary			1,512	1,558	1,925
	Daily	867	752	886	989	1,104
Female	Total	5,222	5,833	7,376	8,256	8,303
	Unpaid Worker	3,173	3,024	3,185	3,378	3,351
	Independent	1,218	1,240	1,382	1,617	1,663
	Family Worker	1,955	1,784	1,804	1,761	1,688
	Wage Worker	2,045	2,805	4,190	4,879	4,952
	Regular	1,615	2,171	1,577	2,072	1,508
	Temporary			1,659	1,987	2,258
	Daily	434	638	954	820	1,186

Source : National Statistical Office, Annual Report On The Economically Active Population Survey

Examining male and female employee status in table 2-4-2, women's participation in economic activities has been centered on irregular work and daily employment. Compare these figures with those for men. This can be attributed to the elasticity of the labor market. However, the main differences that exist between the figures/data for men and women, is due to women's economic career interruption by marriage, childbirth and childcare.

Therefore, women are still restricted from economic activities both in quantitatively and qualitatively by marriage, even though women's participation in economic activities has steadily increased through higher education, career guidance and government support.

## **CHAPTER 3**

### **Economic Theories Governing Economic Participation of Married Women**

The economic theory regards the labor force as one of the units (goods) and the general economic principle can be applied in the labor market. From this principle, the laborer decides his labor supply of working hours to maximize his satisfaction with the given market wage.

In labor supply theory, the labor supplier decides his labor supply at the maximization of his satisfaction trade-offs of the reservation time and wage from the labor market with limited time. That can be compared to the consumer's choice theory in which the consumer decides the consumption to maximize his satisfaction with limited budgets.

Similarly, the married women's participation in economic activities is determined by the trade-offs and expected market wage she will receive in the labor market and the value of her leisure time (shadow price). So, factors likely to increase the expected market wage will increase the participation in economic activities. Factors introduced to increase the shadow price of married women's leisure time decreases participation in economic activities.

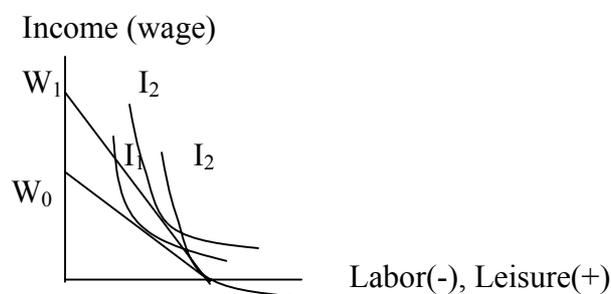
The main factors influencing married women's participation in economic activities are as follows:

First is the real wage married women can command from their participation in economic activities. When real wages increase, there will be a simultaneous income effect and substitution effect. The increase in the real wage brings about a substitution effect that makes the cost of leisure (remained time out of labor) more expensive than before. Women decide to decrease their leisure time and increase the labor supply. On the other hand, an increase in real wages also brings about the income effect that leads to the

inclination to expend more leisure time. This is seen as superior time and preferable to work, which is viewed as the inferior good. As a result, the women decrease their participation in economic activities. Demonstrations by numerous economists, for a long time have, proved that the substitution effect, out of the two contrary effects on the labor supply from the real wage increase, is larger than the income effect. So the increase in the real wage leads to an increase in married women's economic participation. That can be explained in the figure 3-1. That is, the two axes represent the wage and the working hours (labor supply), and the inclination of the indifference curve is the disparity of the reservation wage rate and the real wage rate. Then, the labor supplier decides the labor supply (working hours) at the point maximizing her satisfaction, where the wage rate line is at a tangent to the indifference curve.

From figure 3-1, there is fixed wage rate line with  $W_0$  wage rate and the  $L_0$  leisure time (time not working) and two indifference curve  $I_1$  and  $I_2$ . The person with  $I_2$  has more inclination to indulge in leisure (less to wage) and will not participate in economic activities with that wage rate. However, if the wage rate increases, the person with indifference  $I_2$  will participate in the economic activities.

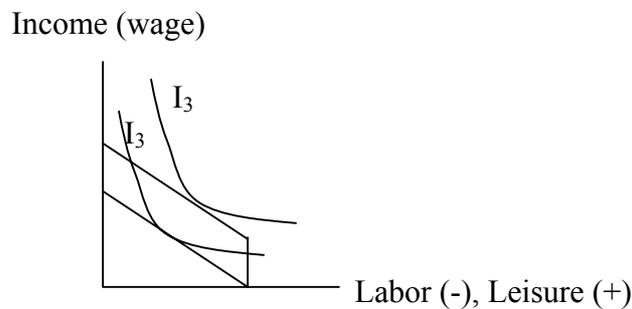
< Figure 3-1 > Women's Economic Participation according to Wage Rate and Individual Inclination



Secondly, the income of other family members and any income not earned from working (for instance, assets income, etc.) have also influence on the labor supply.

Because the labor supplier is a family member, there is close interdependence among the family members. That is, the participation in the economic activities can be activated or inactivated when the other family members already have some income. The figure 3-2 explains this relationship.

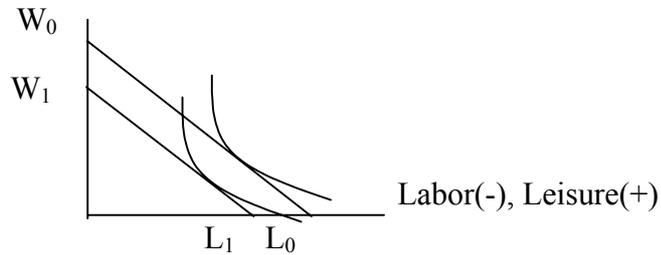
< Figure 3-2 > Effect of Other Source of Income



Therefore, the person, who decides to participate in economic activities at the point where the  $I_2$  indifference curve is at a tangent to  $LW_0$  wage line with no income from other family members, decreases the participation in economic activities at the point  $L_3$  where the different wage rate line  $LW_1$  with the income from other family member and  $I_3$  meet together.

Thirdly, the decision to have or to not have a child has an influence on the married women's participation in economic activities. The married woman with a pre-school baby has less time for economic activities due to childcare. This restricts the participation in economic activities. That is, the need to take care of the baby decreases the total useable time of the parents (especially mother) from  $L_0W_0$  to  $L_1W_1$  and also decreases the participation in economic activities, just like the figure 3-3.

< Figure 3-3 > Effect of Preschool Baby



Married women's participation in economic activities show unusual aspects compared to those of men or unmarried women. These aspects are affected by various factors. Men and unmarried women's participation in economic activities can be determined by independent factors such as the demand for wages, educational standard and age from the supply side etc. However, the married women's participation in the economic activities is affected interdependently by various factors centered on the family.<sup>6</sup>

---

<sup>6</sup> The general understanding about the role of women has had a huge influence on their participation in economic activities. This has proved to be very important when creating labor market environments. Goldin 1990; Kessler-Harris

## CHAPTER 4

### **Empirical Study on the Women's Participation in Economic Activities**

As discussed above, women's participation in economic activities seems to be positively associated with economic growth, education, the change of social culture, and the implementation of various government policies.

However, despite the overall increase in women's job participation rate, the raw data suggests that the economic behavior of women in Korea still face restrictions due to marriage and the onset of childcare.

Below we perform an empirical study that examines whether marriage and childcare has an effect on economic participation.

#### **4.1 Data and Econometric Models**

For the empirical study, we used the 4<sup>th</sup> Survey on Women's Employment data collected by Korean Women's Development Institute (KWDI) in 2002. The data includes 1876 observations from women not in school, and in the age range of 15 to 65. Any observations that have not registered a proper answer on any questionnaire are excluded from the sample data set.

For this analysis we used the Logit model. The dependent variable has been assigned a binary value of 1 if a woman is economically active and 0 otherwise. We define a woman as 'economically active' if she is employed or unemployed seeking work.

The econometric model includes several explanatory variables that seem to be an important determinant for women's economic activities. It includes education, age, women's recognition, marital status, household income, husband's attitude, area, and children under 6.

The central issue of this study is to test whether a woman's economic activity is significantly restricted by the status of marriage and childcare.

The equation (1) shows the Logit model that we have employed.

$$\text{Logit}(Y)^7 = \alpha + \beta_1 \text{Education} + \beta_2 \text{Age} + \beta_3 \text{Women's recognition} + \beta_4 \text{Marital Status} + \beta_5 \text{Household Income} + \beta_6 \text{Husband's Attitude} + \beta_7 \text{Child under 6} + \text{Metropolitan City Dummy} \dots\dots\dots (1)$$

The independent variables are divided into individual, family and regional variables. The individual independent variable includes education career, age and women's recognition of themselves engaged in economic activities.

Educational career is grouped into under middle school, high school graduate, 2-year college graduate, and above college graduate. The Under Middle school group is used as a reference group. The age ranges have been grouped into 15~24, 25~34, 35~44, 45~54 and 55~65. We assigned the age group 55~65 as a reference. Women's recognition of economic activities shows whether an observed woman considers her income as subsidiary to men's or her husband's income. The classification is from 5(Very yes) to 1(Very no).

The explanatory variables for the family include marital status, household income, husband's attitude to women's economic activities, and whether she has a child under the age 6.

The marital status is divided into unmarried, married with spouse, married but no spouse (divorced, separated or bereaved). Unmarried is the reference group. The householder's

---

<sup>7</sup> In this formula,  
 $\text{Logit}(Y) = \ln\{P(Y=1)/[1 - P(Y=1)]\}$

income variable is included to investigate the influence of the household's income on the women's economic activities. We believe that the husband's attitude to a woman's participation in economic activities and childcare can have a positive effect. The attitude of the husband is categorized from 5 (very favorable) to 1 (very unfavorable). Lastly, the young child under 6 may reduce the married women's economic participation, so having a child under the age of 6 is taken the dummy variable, ranging from 1 'with' - 0 'without'.

The region where an observed woman lived seems to be related to the job opportunity that they can expect and the need for living expenses. A cultural recognition may also affect the women's choice of economic activities. For these reasons, I inserted a regional dummy variable to compare the women's economic participation in metropolitan areas with other regions. If an observed woman lives in a metropolitan area, we assigned a scale of 1 and 0 otherwise.

Table 4-1 is the summary of the statistics.

After excluding improperly answered observations, the sample data set describes that out of 100 women, only 45 females participate or are trying to participate in economic activities.

With our sample, around 30% of women had a child under six years old, and about a 56% of the sample is living in a metropolitan area. In addition, about 47% of observed women have high school degrees but not college degrees, and 20% of women graduated from college.

<Table 4-1> Summary of Statistics for Variables in Regression Analysis

	Mean	Std. Dev.	Min	Max
<b>Dependent Variable</b>				
Economic Participation	.452	.338	0	1
<b>Independent Variable</b>				
<b>Individual Variable</b>				
<b>Education</b>				
Under Middle School	.292	.454	0	1
High School Graduate	.466	.499	0	1
2 Year College Graduate	.046	.211	0	1
Over College Graduate	.193	.395	0	1
<b>Age</b>				
15~24	.033	.179	0	1
25~34	.296	.457	0	1
35~44	.302	.459	0	1
45~54	.195	.396	0	1
55~65	.173	.378	0	1
Women's Recognition	2.761	1.147	1	5
<b>Family Variable</b>				
<b>Marital Status</b>				
Married with Spouse	.946	.224	0	1
Married without Spouse	.015	.123	0	1
Unmarried	.037	.191	0	1
Household Income	162.748	143.791	0	1
Husband's Attitude	3.113	1.050	1	5
Child Under 6	.293	.455	0	1
Metropolitan City	.562	.496	0	1
Number of Sample	1876			

Data Source : The 4th Survey on Women's Employment (2001), Korea Women Development Institute

## 4.2 Empirical Results

The overall review and remarkable characteristics in our empirical results are summarized as following 3;

Firstly, the educational standard of women still has negative effect on the women's economic participation in 2001. It is general that higher education leads to more active participation in economic activities in men as well as the women in the advanced countries. But, the education effect has no statistical ground for the women's economic participation in Korea. It is clear that the 'over college graduate' variable has negative effect on the economic participation according to the results.

However, it is different in the women's economic participation by the age and that is second surprising feature in our work<sup>8</sup>. The empirical result shows that younger women are more active in economic participation, and it is much different from that of before 2000s. That means that the interruption from the economic activities by the marriage and childbirth in young women is decreased and Korean women's economic participation is changed to the reversed U shape, which is that of advanced countries. That may be contributed to the government policy for childcare system as well as the policy to regulate the men-centered labor market structure.

Thirdly, the economic participation by marital status is higher in unmarried women than in married women, and higher in married without spouse than in married with spouse women. Also, having a child under 6 makes the women's economic participation decline. Besides, the empirical results show that the women themselves' aggressive attitude and husband's affirmative attitude toward the women's economic participation have positive influence in women's participation in economic activities. So we can infer that the social recognition is one of the important factors to change the men-centered Korean labor market.

---

<sup>8</sup> Moon You Kyung(1998), Kim Young Ok(1999).

<Table 4-2> Regression Results of Women's Economic Participation

	Coefficient (Standard Error)	P >  z
Education		
Under Middle School		
High School Graduate	- .135 (.211)	.522
2 Year College Graduate	- .008 (.344)	.980
Over College Graduate	- .536 (.276)*	.052
Age		
15~24	1.678 (.450)***	.000
25~34	1.227 (.315)***	.000
35~44	.606 (.288)**	.036
45~54	.418 (.286)	.144
55~65		
Women's Recognition	- .126 (.064)*	.053
Marital Status		
Married with Spouse	- .628 (.350)*	.073
Married without Spouse	- .452 (.770)	.557
Unmarried		
Household Income	- .001 (.0007)**	.046
Husband's Attitude	.235 (.070)***	.001
Child Under 6	- .205 (.199)	.302
Metropolitan City	- .317 (.141) **	.025
Constant	-1.844 (.526)***	.000
<b>Number of Sample</b>	1,876	

\*, \*\*, \*\*\* indicates the significance level at 10%, 5%, 1% level respectively

<Table 4-2-1> Regression Results of Women’s Economic Participation – excluding the variable of child under 6 or marital status in each

	Coefficient (Std. Error)	Coefficient (Std. Error)
Education		
Under Middle School		
High School Graduate	- .133 (.212)	- .135 (.211)
2 Year College Graduate	- .023 (.344)	- .020 (.343)
Over College Graduate	- .533 (.276)*	- .511 (.274)*
Age		
15~24	1.547 (.432)***	2.064 (.376)***
25~34	1.094 (.289)***	1.331 (.297)***
35~44	.584 (.288)**	.602 (.280)**
45~54	.430 (.286)	.396 (.278)
55~65		
Women’s Recognition	- .117 (.064)*	- .121 (.064)*
Marital Status		
Married with Spouse	- <b>.774 (.322)**</b>	
Married without Spouse	- <b>.708 (.730)</b>	
Unmarried		
Household Income	- .001 (.000)**	- .001 (.000)**
Husband’s Attitude	.236 (.070)***	.236 (.070)***
Child Under 6		- <b>.330 (.182)*</b>
Metropolitan City	- .311 (.141)**	- .318 (.141)**
Constant	-1.746 (.517)***	-2.454 (.390)***
<b>Number of Sample</b>	1,876	1,876

\*, \*\*, \*\*\* indicates the significance level at 10%, 5%, 1% level respectively

The table 4-2 reports results from Logit model analysis, and it shows how the women's economic participation is influenced by each variable.

At first I analyze the empirical results with the individual variables.

As for the women's participation rate in economic activities by the education, the earlier study shows that the education has weak or negative effect on the participation rate. Table 4-2 shows that the education affects negatively on the women's participation in the economic activities in 2001. Other thing being equal, high school graduate, 2-year college graduate, or over college graduate work less than under middle school group. Especially over college graduate even less participate in economic activities than high school graduate.

With all the change of social or women's recognition on economic activities, it is surprising that the women with higher education work less in 2001. The highly educated women may be married to the highly educated men with high income, so we can infer that women's economic participation is still supplementary to men's one regardless of women themselves' education or capability<sup>9</sup>.

But the survey cannot explain accurately the women's labor market because the survey investigate whether she works or not and do not consider the job status (regular or irregular) or the salary.

The low economic participation of the highly educated women leads to the loss of the national high quality labor force. Therefore we can make the policy remarks that we need something to solve this kind of phenomenon.

As for the age variable, the age group 15-24, 25~34, 35-44 work more than the age group 55-65. If we categorize the age, it is shown that the age group 15~34 participate in economic activities very actively and the older women work less. It is much different

---

<sup>9</sup> This can also be inferred from that the household income has negative effect on the women's economic participation.

from that of before 1990s. In 1980s and 1990s, women participate in economic activities in their tens and early twenties, then leave the labor market in their twenties and early thirties, then begin to work again after in their late thirties. However, the statistics shows that women in 2002 work more actively in their twenties and thirties than in their forties and fifties. So the women's economic participation in lifetime shows the reversed U shape finally in 2001, which is that of the advanced countries.

The women themselves' recognition for the importance of women's economic activities does important role in women's economic participation. The empirical result shows that women's passive recognition ("women's economic participation is supplementary to the men's one") has negative effect on women's economic participation with the significance level at 5%. That is, the more the women recognize women's economic activities and their income are supplementary to men's, the less the likelihood of women's participation in the economic activities is.

The family factors are as follows;

Firstly, regarding to the marital status, the unmarried women participate in economic activities more actively than married women. Also the married without spouse women are more active than the married with spouse in economic participation. In above chapter 2, we can look into that the marriage is the obstacle to women's economic participation. That is same in the empirical results.

The household income has a negative influence on the women's economic participation, even though it is very weak. The fact that the more the household income is, the less the women's economic participation is, implies that it is socially accepted in Korea that the women's economic participation is supplementary to men's one and it depends on the men's income.

The husband's affirmative attitude to the women's economic activities is positively

related to the married women's economic participation. The husband's attitude is changed to more positively by the times, and that may be reflected in the sharp rise of the married women's economic participation rate. The empirical result shows this trend. The husband's friendly attitude to the women's economic participation has positive influence on the women's economic participation rate with the significance level at 1%. The child under 6 has negative effect on the women's economic participation, so we can infer the childcare is a big hindrance of the women's economic participation still in 2001. In chapter 2, we can make the supposition of the interruption of women's economic participation by the childbirth and childcare, and it is proper in the empirical result. I took the regional factor of big cities because I thought the women in big cities (metropolitan cities) might be more active in economic activities with good chance of the education and big labor market. However, the regional factor of metropolitan cities negatively affected the women's economic activities. In my opinion, it is because the household in the metropolitan cities are generally the over the middle-class family with high education career and high income. Also I can infer that the women's economic activities in Korea is still centered in small cities, small and medium companies, irregular jobs and farming industry. I do two additional works like the table 4-2-1, in which the marriage or child under 6 is excluded in independent variable, because I thought that the marriage and child under 6 might be dependent on each other. The results are a little different but the effect of each variable on women's economic participation is similar. However the effect of marriage and that of child under 6 are more significant statistically in each result.

< Table 4-3 > Regression Results of the Women’s Economic Participation (Age 25~34)

	Coefficient (Std. Error)	P >  z
Education		
Under Middle School		
High School Graduate	- .201 (.549)	.714
2 Year College Graduate	- .205 (.646)	.750
Over College Graduate	- .685 (.591)	.246
Women’s Recognition	- .295 (.105)***	.005
Married with Spouse <sup>10</sup>	- .889 (.427)**	.037
Household Income	- .001 (.001)	.489
Husband’s Attitude	.184 (.111)*	.096
Child Under 6	- .407 (.261)	.120
Metropolitan City	- .513 (.229)**	.025
Constant	- .427 (.812)	.599
<b>Number of Sample</b>	<b>555</b>	

\*, \*\*, \*\*\* indicates the significance level at 10%, 5%, 1% level respectively

<sup>10</sup> There are just 10 of women ‘married without spouse’, so I drop out the variable of ‘married without spouse’ in this regression (table 4-3 and 4-4).

<Table 4-3-1> Regression Results of the Women's Economic Participation (Age 25~34) - excluding the variable of child under 6 or marriage in each

	Coefficient (Std. Error)	Coefficient (Std. Error)
Education		
Under Middle School		
High School Graduate	- .204 (.549)	- .243 (.544)
2-Year College Graduate	- .209 (.645)	- .197 (.642)
Over College Graduate	- .687 (.591)	- .646 (.587)
Women's Recognition	- .279 (.104)***	- .282 (.104)***
Married with Spouse	<b>-1.178 (.387)***</b>	
Household Income	- .001 (.001)	- .001 (.001)
Husband's Attitude	.195 (.109)*	.165 (.110)
Child under 6		<b>- .600 (.235)**</b>
Metropolitan City	- .487 (.228)**	- .516 (.228)**
Constant	.337 (.808)	- .159 (.767)
<b>Number of Sample</b>	555	555

\*, \*\*, \*\*\* indicates the significance level at 10%, 5%, 1% level respectively

I do empirical analysis with age 25~34 to look into more accurately how marriage and young child under 6 have influence on the women's economic participation. That is the table 4-3.

The women over 35 has less possibility to have young children under 6, and also according to the 4<sup>th</sup> Survey on Women's Employment the married women's age at first childbirth is 24.9 and at last childbirth is 27.6 on average. Therefore I take the condition of age 25~34.

In this result, the negative influence of marriage and child under 6 on the women's economic participation is more significant. This result can explain more accurately the interruption of women's economic participation by the marriage and childcare.

In the empirical result of the 25~34 women's economic participation, negative effect of the women themselves' passive recognition is more clear on the women's economic participation, while the positive effect of husband's affirmative attitude is less clear. It is interesting and may have the implication. The younger women are more independent of the men (husband) in deciding their own attitude.

The additional regression of table 4-3-1, excluding each of the variable 'child under 6' and 'marriage', shows the similar results to the table 4-3. Like the table 4-2-1, the table 4-3-1 shows that the negative effect of marriage and children under 6 is more significant.

## CHAPTER 5

### Conclusive Remarks

In Korea, women's participation in economic activities is continually increasing together with the fast economic development since 1980s.

This study documents women's participation in economic activities in Korea.

In chapter 2, I look into the change of Korean women's economic participation since 1980s. even though the sharp rise of women's economic participation, women's economic participation is still different from men's, in that women's economic participation by the age shows M shape while men's shows reversed U shape, education is not positive with economic participation in women and there is considerable gap between unmarried women's economic participation rate and married women's economic participation rate.

In chapter 3, I show there is not only the wage rate but also the family matters in women's labor market, and those family matters have somewhat effect on women's economic participation.

In chapter 4, I do empirical works with the factors that may have influence on the women's economic participation; individual factors of age, education and women themselves' recognition, family factors of marital status, husband's attitude, child under 6 and household income, and regional factors of metropolitan citizen.

Even with the surprising rise of women's education career as well as the remarkable rise of women's economic participation, the education itself still has no positive effect on women's economic participation. That means, there still remain many restrictions in women's participation in economic activities, such as given employment situation, social recognition, and incompatibility of family and economic activities.

However, it is striking and remarkable that women's participation in economic activities by age shows the reversed U shape. Women, who were interrupted from economic activities by marriage and childbirth, now continue to do economic activities in labor market after marriage and childbirth.<sup>11</sup>

It is also true that even though the Korean women's economic participation by age shows the reversed U shape, there is interruption from marriage and childbirth in their late twenties and late thirties. So we can infer there is partially M shape in age 25~34.

The result of women's economic participation by the age 'reversed U shape' shows us the optimistic view for Korean labor market and women's economic participation prospect.

However, the two aspects of Korean women's economic participation, the negative effect of education and the interruption from marriage and childbirth in younger age's women, implies that there is still partial M shape in women's economic participation. And this interruption from the family factors is conspicuous to the higher educated women.

So, we can lead to the conclusion that the policy measures and social agreements for the childcare system are very important to bring young and highly educated women to the labor market.

We need policy measures for social childcare system. Those social systems make women free from the worries about their child matters and keep working in the labor market after marriage and childbirth. Also we need social agreements that women's economic participation is not supplementary to men's economic participation and it is

---

<sup>11</sup> This kind of phenomenon is attributed to the quality upgrade of the women workers themselves as well as the increased compensation according to the working career in Korean labor market. In my opinion, the relation of the compensation system for the working career with the women's economic activities need more study. And this analysis can bring to the interesting policy remarks.

very reasonable and essential for national growth. Those social agreements change men and women's recognition and attitude to women's economic participation, and it makes women's economic participation more actively.

With those policy measures and social agreements, we can make women's economic participation in Korea into the perfectly reversed U shape, which appears in advanced countries and in the men's economic participation, and also makes it possible for Korean economic development miracle to continue in the 21<sup>st</sup> century.

## BIBLIOGRAPHY

Kang I-Su and Sin Kyung-A. *Women and Work: Understanding Korean Women's Labor-force*. Dong-Nyuk, 2001.

Kum Jae-Ho. *The Present Situation and Future Issue of Women's Labor Market*. Korea Labor Institute. 2001.

Kim Sun-Mi, Lee Kyung-Hee and Sun Ji-Mi. *Study on the Relation of Married Women's Labor Market Participation and Bringing-up Children*. Labor Economics Journal 23, 2000.

Kim Yong Ok. *Decisive Factors of Women's Labor Market*. Journal of Women Study, 57<sup>th</sup>, 1999

Kim Woo-Young. *Essays on the Interruption of Women's Economic Participation by Marriage and Childbirth*. Korea Labor Institute. 2002.

Park Kyung Suk. *Study of Women's Employment*. Journal of Women Study, 54<sup>th</sup>, 1998

Lee Mi-Jung. *High-educated Women Labor Market Participation*. Korea Women's Development Institute, 2002.

Lee Mi-Jung and Jung Jin-Sung. *Women's Higher Education Standard and Labor Market Participation concentrated in 1980s and 1990s*. Korean Society and Science 21, 2001.

Jang Ji-Yun. *International Comparison of High-educated Women Economic Participation*. Women Institute of Busan National University Press, 2001.

Jung Jin-Hwa. *Labor Policy Directions of High Academic Career*. Korea Institute for Industrial Economics and Trade, 1996.

Joh Jung-A. *College Graduate Women's Labor Market Experience and Change of Professional Consciousness*. Ewha Womans' University Press, 2000.

U Su-Bong. *Korean Women Labor Market*. Korea Labor Institute. 1991.

Hwang Su-Kyung. *Study on the Married Women's Economic Participation*. The 4<sup>th</sup> Korean Labor and Income Panel Study(2001). Korea Labor Institute, 2002.

Barrow, L. *An Analysis of Women's Return to Work Decision Following First Birth*. *Economic Inquiry* 37(3), 1999.

Goldin, Claudia. *Understanding the Gender Gap : an Economic History of American Women*. Oxford University Press, 1989.

Kessler-Harris, Alice. *Out to Work : A History of Wage-Earning Women in the US*. Oxford University Press. 1981.

Maria Vasilyevna Petukhova. *Essays on the Labor Supply of Women*. Brown University, 2000.

Kim Tae-Hong. *The 4th Survey on Women's Employment and Raw Data*. Korea Women Development Institute. 2002.

National Statistical Office. *Annual Report on the Economically Active Population Survey*. 1980~2000.