The Determinants of Female Labor Force Participation for OECD Countries

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Abstract

Female labor force participation rate for women aged between 25 and 54 has increased from 54 percent in 1980 to 61 percent in 2013 in OECD countries. The reasons for this increase could be investigated by looking at the factors affecting labor demand and supply. Labor demand is mainly determined by the increase in production, the development of part-time and public sector employment. Whereas the factors affecting labor supply are considered as the increase in female educational attainment, postponement of fertility and the change in the attitude of female employment. Also economic, cultural and sociological issues are the factors affecting female labor force participation in the OECD countries. The aim of this paper is to analyze the determinants of female labor force participation in OECD countries which are per capita GDP, unemployment rate, ratio of female to male tertiary enrollment, fertility rate and the number of waged and salaried workers using panel logit model. The data is obtained from World Bank database and covers the period between 1990 and 2013. It is found that unemployment rate, gross domestic product per capita and fertility rate are affecting the female labor force participation rate positively and significantly. Fertility rate is found to be the variable with the highest effect on female labor force participation rate.

Keywords: Female labor force participation rate, panel logit model, OECD countries, unemployment rate, fertility rate.
JEL Codes: E24, J31, C52, C8

INTRODUCTION

In most of the Organization for Economic Co-operation and Development (OECD) countries, there has been an increase in female labor force participation over the past years (Kinoshita and Guo (2015)). The timing of the increase in female labor force participation has varied across countries, the increase in the United States and Nordics starting earlier, in Spain, Italy, Greece, Portugal, Ireland, Netherlands, Belgium, Luxembourg and Germany the increase is observed in the last two decades. The differences in the levels female labor force participation were still significant in the early 2000s (Thevenon, 2013).

Our aim in this paper is to investigate the female labor force participation rate in OECD countries in relation to socio-economic and cultural determinants covering data between 1990 and 2013 using panel data analysis. The determinants of female labor force participation rate are taken as fertility rate, gross domestic product per capita, the ratio of female to male tertiary enrollment, unemployment rate and waged and salaried workers. The analysis of female employment is not straightforward since labor market variables vary across OECD countries. Turkey has the lowest female employment rate according to OECD statistics for women aged between 25 and 54. Female labor force participation

was 23.5 percent in 2009, whereas the ratio was 62 percent for OECD countries in 2009. The female labor force participation rate in Turkey has the lowest rank among OECD, G8 and EU countries (Yenilmez and Işıklı (2010)). Urbanization and the decline in agricultural employment are the causes of declining share of female employment in Turkey (World Bank Report). There are differences in the female employment due to social preferences for work and educational attainment (Dvorkin and Shell, 2015). Yenilmez and Işıklı (2010) stated that unemployment is an important problem in Turkey and the capacity of Turkish economy to create new investments has decreased, and also informal economy has grown. Such factors have caused a decrease in female employment. Tansel (2002) argues that urbanization, schooling rates, ongoing structural changes in the economy and early retirement schemes are the causes of the decline in the female labor force participation.

Jaumotte (2003) quoted that according to Burniaux *et al.*, (2003), female labor force participation is the most important factor in explaining increases in aggregate participation rates besides cross-country variation of aggregate participation rates. Women's contribution is important since most of the OECD countries' population is aging and shrinking. As the population gets older and shrinks labor force participation rate also declines. Linacre (2007) mentions that as Australian population declines, labor force participation decreases and therefore economic growth slows down.

Economic growth and development are important determinants of labor force. High female participation implies both an improvement of economic and social position of women and also a higher potential for economic development (Özsoy and Atlama (2010)). The greater the female labor force participation the greater is the labor supply, so that economic growth is boosted. Employment increases in non-agricultural sectors while it decreases in agricultural sectors. The same applies for female employment. In developing countries female labor force is concentrated on agricultural sectors, while in developed countries it's mainly based on service sectors. The shift of employment to the service sector has created many job opportunities to females. Women prefer to work mainly in banking and education sectors. Thevenon (2013) quoted that O'Reilly and Fagas (1998) state that the expansion of service sector such as health, education, sales, hotels and catering mainly use part-time female workers, therefore, female labor force participation has increased. They state that the development of public sector has made easier for women to find job, so that development of public sector supports female employment. In developed countries instead of non-waged family employees, waged women employees take place (Berber and Eser, 2008). In Turkey 50 percent of the female labor force work in agricultural sector and the remaining 35 percent of them work in the service sector (Yenilmez and Işıklı (2010)).

Female labor force participation should be interpreted together with economic, socio-economic and socio-cultural factors. Social and economic factors affect a woman's choice to work. Traditional roles together with intra family roles and relationships are important determinants of labor market in Turkey (World Bank Report). Other than social and cultural factors, education, urbanization, marital status and economic cycle are considered as the determinants of female labor force participation in the literature. Female labor force participation and policies concerning family life shows that there could be a tradeoff between policies that made women to handle both work and family life and improvement at work (Blau and Kahn (2013)).

In the second section of this paper, the studies on female labor force participation are investigated. The section three describes the data, model and the methodology used in the analyses. The section four presents the empirical findings. Finally the section five concludes.

1. Literature Review on Female Labor Force Participation

According to labor-leisure theory, labor participation rate is considered together with expected market wage and the value women give to the time they spend for housework. Neoclassical theory states that labor supply is the choice between work and leisure and is an increasing function of real wage. Labor demand is a function of real wage. Neoclassical theory is based on the assumption of free market competition. On the other hand, labor seeking theory states that neither employees nor firms have full information about labor market. Labor seeking theory has the alternative cost of sacrificing free time

as well as getting information. It accepts the existence of unemployed individuals and empty job positions which corresponds to these individuals (Korkmaz and Korkut).

The reasons for low level of female labor force participation in Turkey is stated as childcare, low level of women education, labor market conditions, unavailability of part-time work, shortcomings of legislation about women employment, slow transition of traditions related with women employment by Küçükkalay (1998) quoted by Berber and Eser (2008). Another factor in the decrease in female employment is that women prefer not to work after marriage. According to Tansel (2002) there are three reasons for the low rate of female labor participation in Turkey. The first reason is that younger populations have longer years of schooling. Increases in enrollment rates of schooling delay entry into labor market. The second reason is the changing of labor force from agricultural sector to non-agricultural sector. The participation rates are higher in agriculture sector compared to non-agriculture sector. The third reason of the decline is the early retirement scheme. The earlier the retirement age the earlier is the exit from the labor force.

Özer and Biçerli (2003) investigate the determinants of female employment for Turkey using panel data regression of restricted least squares, fixed effects model and random effects model. It is found that female labor force participation is affected significantly by variables such as unpaid family workers, ratio of housewives to the female labor force and the ratio of the retired people in the population. It is seen that there is not a significant relationship between female employment and some macroeconomic variables such as inflation rate, unemployment rate and growth rate. The authors argue that female workers aren't integrated to the labor markets. Women take traditional tasks which are considered to be women's traditional jobs in Turkey. Therefore female employment is related to sociological factors.

Berber and Eser (2008) analyze the sectoral distribution of women employees in Turkey both in national and regional bases. It's seen that female labor force participation has declined after 2002. Berber and Eser observe that in 2005 the ratio of waged employees was 43.8 percent, the ratio of non-waged family employees was 41.7 percent. It is seen that female employment varies in sectors in terms of regional development. In the western part in some of the regions, female employment is concentrated on services sector, whereas in some other regions despite the concentration on agricultural sector, there is not much difference between other sectors. In the eastern side there is no much difference between agricultural sectors and others.

Özsoy and Atlama (2010) investigated the reasons of the decline in female employment in Turkey. Structural transformation from agriculture to industry and urban migration, economic constraints and family characteristics are defined as the causes of the decline. The others are given as follows: increases in the enrollment rates at all levels of schooling delay entry into the labor market of younger people, cultural values against female employment in market, the level of educational attainment, labor market conditions, wage inequality and exclusion from social security. The authors argued that child care is important for socio-economic development. Several progresses are achieved including the following: the level of female education, the change in the social attitude toward working women, the later age for women to get married, declining fertility rates, the opportunities for micro finance.

Yenilmez and Işıklı (2010) compared female labor force participation rate in Turkey with the world country groups. They stated that together with social values, religion has an important effect on female labor employment. Yenilmez and Işıklı quote that Kuzgun and Sevim (2004) stated that there is a negative relationship between the attitudes towards women's work and religious tendency. It is found that as the level of education increases, positive attitudes towards women's work increases and religious tendency decreases. High level of religious tendency describes the first task of women as devoted to her home and family. Yenilmez and Işıklı argued that due to unavailability of care services at the requested level, women are forced to back off from work life in Turkey. Policies considering family life of women should support female employment. In order to encourage female employment in agricultural sectors the level of education of women should be enhanced. Measures should be taken so that women should gain their legal rights and be more active in work life. Wage equality should be boostered and pay gap should be reduced as well.

Dayıoğlu and Kırdar (2010) used the Household Labor Surveys of Turkish Statistical Institute including 23000 households per quarter in 2000. In this survey, demographic and economic factors of female labor force participation are analyzed. Dayıoğlu and Kırdar found that the geographical shift in the shares of rural population could partly account for the decline in female labor force participation. It is seen that females in the rural areas with a higher expectation to participate in the labor market are also likely to migrate, which causes the female labor force participation rate to decline. Another reason is the decline in the share of households in rural areas engaged in agriculture. Furthermore, the labor force participation of highly skilled females is found to have stagnant participation rates (%70) after 2000. Dayıoğlu and Kırdar suggested that non-employed females could be investigated in order to understand why both low and high skilled females in urban areas have stagnant labor force participation patterns in recent years.

Korkmaz and Korkut (2012) stated that female labor force participation in Turkey is lower than OECD and EU countries. One of the main reasons is that women couldn't take their part in the labor market yet. There're several barriers against their participation. They investigate these barriers including socio-cultural factors such as the attitude towards women employment, marital status, the education level of the spouse, migration from rural areas to urban areas, wage inequality; demographic factors such as the number of children in the family and their age groups, education level of the women.

Kızılgöl (2012) analyzed the determinants of female labor force participation in Turkey between 2002 and 2008. The author examined the reasons of women participation in both rural and urban areas and also the difference between single and married women participation using Household Budget Survey data. For both married and single women the factors affecting women employment are educational level, household income, dependency ratio, ownership of the property and women's age. It's found that in urban areas the number of children reduces the labor force participation, whereas in rural areas it decreases. It is found that the number of children doesn't have a significant effect on women's decision about joining the labor force for married women. It's seen that women with higher age groups of children have less tendency to join the labor force. As the women gets older, the married women prefer not to work, whereas single women stay in the labor force. It's observed that educational level isn't important in rural areas for women employment. On the other hand, it is one of the most significant factors in urban areas.

Linacre (2007) argued that female labor force participation is lower than men's in many OECD countries; however Linacre described women's participation as the main determinant of increase in the overall participation rate. The author mentions about employment of women with children, child care regulations, level of education of women and part-time work. It's observed that in 2003 labor force participation for men with university level education was 13 percent higher than for those less than upper secondary level education. The ratio for women labor force participation with university level education was 26 percent higher than those for less than upper secondary level education.

Mishra and Smyth (2010) investigated the female labor force participation and fertility rate for 28 OECD countries. They used panel unit root, panel cointegration and panel Granger causality tests. They tested the role of incompatibility and societal response hypotheses using female labor force participation rate for women aged between 15 and 64 in the first group and for women aged between 15 and 34 in the second group. It is found that the causality runs from labor force participation rate to total fertility rate for the period 1980-2005; however there is bi-directional causality for the period 1995-2005. It is found that there is a negative relationship between these two variables, justifying the role of incompatibility hypothesis.

Thevenon (2013) investigated the determinants of female labor supply in 18 countries between 1980 and 2007. The influence of labor market and policy characteristics on female labor force participation is examined. Labor market characteristics such as the share of employment in the services and the public sector, the proportion of part-time jobs and employment in the public sector, the OECD indicator on the strictness of employment protection legislation and unemployment rates are used. Policy characteristics such as paid leave, childcare services for children under the age of three, financial incentives to work are considered. It's found that the growth of employment in services

sector and the rising incidence of part-time work had a positive effect on female employment. When full time employment is used as dependent variable, the expansion of the service sector is found to be correlated with full time employment, however in the model with part-time employment as the dependent variable the correlation is found to be less clear. The effect of the public to female labor force participation is found to be unclear, since employment protection differs from country to country. Educational attainment measured by the average number of years spent in education is found to be important. Each additional year decreases the chances of working full time due to the availability of high wage jobs. When policy characteristics are considered, it is found that an increase on spending on leave decreases female labor force participation. It is seen that there is a positive correlation between provision of childcare services and full time and part time female labor force participation.

Jaumotte (2003) investigated the determinants of female labor force participation in 17 OECD countries between 1982 and 1999. The explanatory variables used are a number of policy instruments such as the tax treatment of second earners, childcare subsidies, child benefits, paid maternity and parental leaves, and tax incentives to sharing market work between spouses. It is found that there is a positive impact on female participation of a more neutral tax treatment of second earners (relative to single individuals), stronger tax incentives to share market work between spouses, childcare subsidies, and paid maternity and parental leaves. It is seen that child benefits reduce female participation. Female education, labor market conditions, and cultural attitudes are considered to be main determinants of female participation.

Blau and Kahn (2013) stated that female labor force participation rate for United States has decreased to 17th place from 6th highest rate among OECD countries in 2010 compared to 1990. Due to parental leave and part-time work choice in other OECD countries, US female labor force participation decreased by % 28- % 29. It is found that in US women's wage distribution is higher than men's which is not observed in other countries. Family friendly policies encourage part-time work and employment in lower level jobs. It is found that US women prefer to have full-time jobs and work as managers.

Ozerkek (2013) investigates the relationship between unemployment and labor force participation using panel cointegration for a panel of European countries between 1983 and 2009. Discouraged workers are not considered in the calculation of unemployment rate. It is found that there is no a long run relationship between labor force participation rate and unemployment rate for males; suggesting that there is no evidence for added worker or discouraged worker effect. It is seen there exists a long run relationship between labor force participation rate and unemployment rate for females. This finding suggests that there is hidden unemployment for females.

Kinoshita and Guo (2015) stated that the female labor force participation is lower than the OECD average in Japan and Korea due to rapidly aging population and low fertility rate. They investigated the female employment in Japan and Korea in comparison to the Nordic countries. The Nordic countries are the countries where female labor force participation is high since women are well represented in employment. The structural vector autoregressive (SVAR) model is estimated for Japan, Korea, Norway and Finland between 1990 and 2012. The variables used are child allowances, the gender wage gap, the fertility rate and female tertiary school employment rate. The SVAR shows how long it takes for the shocks to be transmitted to female labor employment. It's found that child allowances for Korea and Japan decrease female employment. However, child allowances in the Nordics increase female regular employment. It is seen that gender wage gap reduces female labor force for all countries since wage gap has a discouraging effect. Gender wage gap is found to be largest in Japan. It is seen that tertiary enrollment increases regular employment in countries other than Japan.

Siah and Lee (2014) investigated the effects of mortality rate on fertility for Malaysia. The findings suggest that mortality rate is the main determinant of fertility. It is found that falling mortality is reducing fertility in the long run. It's seen that female labor force participation is mainly affected by falling fertility rate using autoregressive distributed lag model and Granger causality test. It is seen that women's child bearing decisions aren't affected by their employment. The presence of children

doesn't seem to affect re-employment and continuous female employment. It is found that mortality changes have a significant and positive effect on fertility rate.

2. The Data, Model and Methodology Used in the Analysis

The panel data set which is used in the analysis of female labor force participation rate for 32 OECD countries covers 1990 and 2013 period. Data is obtained from World Bank database for Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States. In order to investigate female labor force participation the dependent variable is created whether female participation is lower than OECD average or not. In this respect the dependent variable has two alternatives. The explanatory variables used in the estimation of the model are fertility rate, gross domestic product per capita and ratio of female to male tertiary enrollment, unemployment rate and the number of waged and salaried workers. The definition of the variables is given in Table 1.

Table 1: Definitions of Variables

Variable	Abbreviation
Dependent Variable	
Female Labor Force Participation Rate	FLFPR
Explanatory Variables	
Fertility Rate	FR
GDP Per Capita	GDP
Ratio of Female to Male Tertiary Enrollment	FMTE
Unemployment Rate	UNEMP
Number of Waged and Salaried Workers	WSW

Table 1 shows the definitions and abbreviations of the independent variables are given. GDP per capita, ratio of female to male tertiary enrollment, number of waged and salaried workers are expected to affect female labor force participation rate positively, whereas unemployment rate affect participation rate negatively. Fertility rate could either affect positively or negatively.
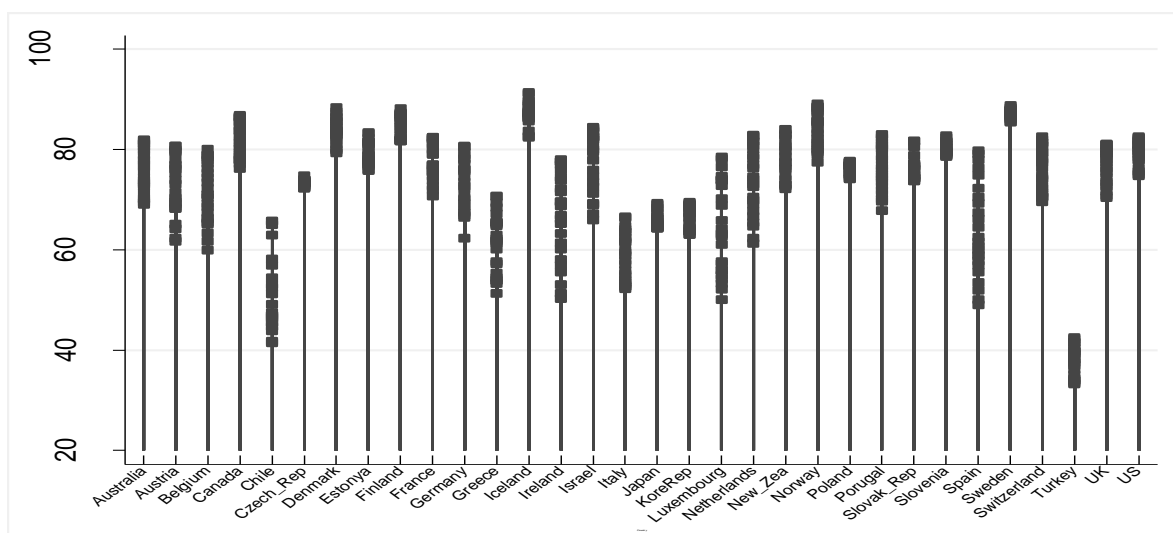

Figure 1: Labor Force Participation Rates in the OECD Countries

Figure 1 shows the mean levels and the variability of labor force participation rates for OECD countries. As can be seen from Figure 1 Turkey has the lowest participation rate. There are several obstacles for women to join the labor market in Turkey. The marital status of women, educational

attainment, the number of children between 0 and 5, immigration, the attitude towards female employment in the society, fertility rate and divorce rate, off the record employment, economic crises and the insufficient legal regulation about female employment are the factors causing these obstacles. The labor force participations in rural and urban areas are different. The participation decreases in rural areas, whereas it seems to increase in urban areas lately.

Table 2. Descriptive Statistics for Female Labor Force Participation Variable

Labor	
Mean	73.188
Standard Deviation	11.406
Maximum	91.332
Minimum	33.286
Sum	56208
Skewness	-1.255
Kurtosis	4.490
N	768

Table 2 shows the descriptive statistics for female labor force participation rate for the period between 1990 and 2013 in the OECD countries. It can be seen that the mean level of female labor force participation is 73 percent. The distribution is negatively skewed and pointed.

In the econometric analysis, an efficient approach for describing the features of the economic variables is to define the dependent variable having two or more options. The models which have dependent variables under investigation, is called as qualitative preference models. The models having two preferences are called bivariate preference models, whereas the models with three or more preferences are defined as multiple preference models. Such models determine the probability of the occurrence of the related preference on economic size depending on the explanatory variables.

Panel data method is described as gathering the observations belonging to countries, firms, household etc. for a period of time (Baltagi (2008)). In the panel data analysis if the data has the properties which are mentioned above, panel qualitative models are used. Linear and nonlinear probability models are compared in the context of panel qualitative preference models. Linear probability model estimation is undertaken using ordinary least squares method. Error terms are not normally distributed and heterogeneous. In the linear probability models predicted values of the dependent variable could be different than the range of 0-1. In such models the determination coefficient is not suitable for measuring the goodness of fit (Heij, Boer, Franses, Kloek and Dijk, (2004)). In the estimation of qualitative preference models, the usage of ordinary least squares method is not preferred since it forces the relationship between the variables to be linear.

The negativity of linear probability models is recovered by using the cumulative distribution function of logit models. The logit model provides the dependent variables to take the values of 0 and 1 (Kennedy (2006)). In this respect, it is important to be cautious about considering the properties of the panel data in the logit model. In the studies using panel data it is possible to evaluate cross sectional dimension together with time dimension (Wooldridge (2003)). Therefore, cross section and time effects should be controlled in panel data. In the estimations undertaken using panel data methods, in order to incorporate the variation caused by the differences between the cross sections or the variation caused by the change in the cross and time dimension into the model is to assume that this variation has caused a change in some or all of the regression model coefficients (Pazarlıoğlu and Gürler,

(2007)). In the panel data logit models the estimation method should be preferred based on whether the parameters are constant according to cross sections and time.

The choice between homogeneous and heterogeneous panel logit models is important in order to obtain consistent estimators considering that the parameters do not change according to cross sections and time.

In the panel data model,

$$y_{it} = \alpha_i + \acute{\beta}x_{it} + \varepsilon_{it} \quad i=1,………,N \text{ ve } t=1,………T \tag{1}$$

the probability if heterogeneity is taken into consideration is:

$$P_{it} = P(y_{it} = 1) = F(\mu_i + \beta x_{it}) \tag{2}$$

$$P_{it} = \frac{\exp^{\mu_i + \acute{\beta}x_{it}}}{\left(1 + \exp^{\mu_i + \acute{\beta}x_{it}}\right)} \tag{3}$$

This equality is known as cumulative logistic distribution function (Davidson and MacKinnon (1999)). In the equalities, P is a nonlinear function of the explanatory variables and F contributes to the inclusion of heterogeneity. The cross sectional effects are described by μi. These effects could be fixed or random. In the fixed effects model the data in the sample is dealt with, whereas in the random effects model one focuses on the selection of a random sample from a huge population (Timurçin (2010)). The expected value of the dependent variable in the model is:

$$y_{it} = 1 \text{ ise } P_{it} = P(y_{it} = 1)$$

$$y_{it} = 0 \text{ ise } 1 - P_{it} = P(y_{it} = 0)$$

$$E(y_{it}) = 1. P_{it} + 0. (1 - P_{it}) = P_{it}$$

This equality defines the logit model with two values. In the bivariate or probit models, the modeling is constructed according to the "yes" or "no" answers (Asteriou and Hall, (2007)). In the bivariate panel logit models, value 1 is taken is the event at period t and cross section i has occurred, on the other hand value 0 is taken if otherwise. The regression coefficients show the decrease or increase in the probability of the investigated event as a result of the change in the independent variable (Pampel, 2000).

3. The Empirical Findings

The dependent variable which is female labor force participation rate can take two values: 1 for the participation rates higher than 50 percent and 0 for the participation rates lower than 50 percent. So that the 50th percentile (median) is used for classifying the dependent into two groups. In order to choose between maximum likelihood method and conditional maximum likelihood method which could be used in the estimation of logit model Hausman test is undertaken. In the Hausman test, it is possible to choose between conditional maximum likelihood estimators $(\hat{\beta}_{CMLE})$ and maximum likelihood estimators $(\hat{\beta}_{MLE})$. The result of Hausman test is given below:

$$H = (\hat{\beta}_{CMLE} - \hat{\beta}_{MLE})'[VAR(CMLE) - VAR(MLE)]^{-1}(\hat{\beta}_{CMLE} - \hat{\beta}_{MLE}) = 42.46 \text{ (prob: 0.0000)}$$

The null hypothesis states that there is no heteroscedasticity, in other words, both methods have consistent estimators and however, conditional maximum likelihood method estimators are not efficient estimators. According to Hausman test results, it is found that there is heterogeneity in the panel data model. The null hypothesis is rejected and conditional maximum likelihood method estimators are found to be consistent and efficient. Besides Hausman test results, fixed effect model is preferred since the variables affecting female labor force participation are obtained from OECD member countries' database. Fixed effect panel data model is estimated using conditional maximum likelihood method.

Table 2: Estimation of the Broad Binary Logit Fixed-effect Regression Model

Parameter	Estimate	OR	Standard Error	z	z-prob
FR	*8.6878*	*5930.53*	*12102.05*	*4.26*	*0.000****
GDP	*0.0004*	*1.00043*	*0.00009*	*4.50*	*0.000****
FMTE	*0.0191*	*1.01932*	*0.02670*	*0.73*	*0.465*
UNEMP	*0.5411*	*1.71799*	*0.177702*	*5.23*	*0.000****
WSW	*0.3080*	*1.36081*	*0.198475*	*2.11*	*0.035***
LR Chi^2	*138.70*				
Prob>Chi^2	*0.000*				
Log Likelihood	-91.0659				
Pseudo R^2	0.4323				
AIC	192.1318				
BIC	211.2174				

Note: *** and **indicate significance at 1%, 5% and level, respectively.

Table 2 shows the results of logit model for panel dataset covering 1990 and 2013 period. LR statistics calculated instead of F test shows that the model is found to be significant generally. When the estimation results are examined, it is seen that the variables other than FMTE are found to statistically significant. Due to nonlinear relationship between the variables in panel logit model, the estimated coefficients could not be interpreted directly. Because of this the proportion of the differences (OR) should be taken into consideration. If the proportion difference is found to be greater than one and statistically significant, the explanatory variables are said to affect the possibility of female labor force participation being greater than OECD average significantly. A rise in these variables will increase female labor participation rate. UNEMP and GDP variables which are found to be significant, have very close proportion difference values. The variable which has a high effect on female labor participation is FR variable.

CONCLUSION

In the OECD countries together with the shrinking working-age population, the female labor force participation has increased, counteracted the shrinking of the workforce and boosted growth lately. The share of part-time employment among women is quite high in some of the OECD countries including Netherlands, Germany, Austria, Sweden, United Kingdom, Denmark, Belgium and Luxembourg, some of which have high female employment rates. Participation of women in the labor market decreases significantly for women with children. Child care facilities, the cost of child care and family structure are important factors affecting the female employment.

The female labor force participation is around 30 percent in Turkey, whereas it is 78 percent in Iceland, 74 percent in Switzerland and Norway, 72 percent in Sweden, 70 percent in Denmark and Holland. The development level of countries is closely related to the female employment. Turkey has the lowest female labor force participation rate among OECD countries. In this context an important determinant of female employment is educational attainment. But in developing countries the educational attainment is not sufficient. The educational attainment and opportunities for females in some OECD countries such as Norway, Denmark, Sweden and Finland are much better than other countries. Most of the women in developing countries and Turkey are employed in part time jobs. There are inequalities in finding jobs, wages and social rights. Women work for flexible hours in order to have more time for the housework and family life. Policies should be developed in order to reconcile work and family life in OECD countries.

In this paper the determinants of female labor force participation among OECD countries are examined using panel data analysis. It is found that unemployment rate, gross domestic product per capita and fertility rate are affecting the female labor force participation rate positively and significantly. As OECD countries grow, female employment and the contribution to production increases and therefore there is significant relationship between gross domestic product and female

participation. It is found that fertility rate is the variable with the highest effect on female labor force participation rate.

According to Özerkek (2014) there exists positive long- run relationship between female labor force participation and unemployment rate. Özerkek investigated the relationship between unemployment and labor force participation for a panel of European countries. It is seen that there exists a long run relationship between labor force participation rate and unemployment rate for females. This finding suggests that there is hidden unemployment for females. Because of the structure of Turkish economy, the dependency on the imported raw materials and the low employment opportunities cause the level of female employment to decrease in Turkey.

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