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31 August 2018

Online at <https://mpra.ub.uni-muenchen.de/92525/>
MPRA Paper No. 92525, posted 06 Mar 2019 11:15 UTC

Unemployment and Health in Spain During the 2008's Financial Crises*

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August 2018

Abstract

The main objective of this paper is to examine the contribution of high unemployment rate on the health status of the society during and after the 2008 global financial crisis in Spain. Secondary household survey data from the European Union data base (EU_SLIC) for 2008 and 2014 was used for the descriptive and inferential statistics. The two years are chosen purposely since 2008 was the year that the global financial crisis was begin, and 2014 was the year that unemployment rate was very high and Spain's economy was starting to revive from the crisis. Ordered Probit regression is used for inferential statistics since the dependent variable (General Health Status) is an ordered variable and basic activity status (with four categorical variables), capacity to face unexpected financial expenses (with two dummy variables), household disposable income and pollution, crime or other environmental problems (with two dummy variables) are used as explanatory variables.

Based on the descriptive and inferential statistics results, even if there was high increment of unemployment during the financial crises and even if unemployment rate was at its pick level in 2014, the effect of unemployment on general health of the household was not as high as expected compared with its effect in 2008. Keeping other things constant, the probability of very good and good health is increasing as the capacity to face unexpected financial expenses and household income increases; but it decreases as the probability of being unemployed, retired, inactive and pollution increases both in 2008 and 2014. On the other hand, the probability of fair, bad and very bad health status increases as the probability of being unemployed, retired, inactive and pollution increases but decreases as the capacity to face unexpected financial expenses and household income increases both in 2008 and 2014.

Key Words: General Health Status, Unemployment, Financial crisis, Ordered Probit Model

*Essay for Health Economics, a course by: Prof. Silvana Robone

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1 Introduction

Spain, which is bordered by France, Portugal, Morocco, Gibraltar and Andorra, was one of the European countries which was affected by the financial crises in 2008. As of 2017 estimation, the total estimated population of Spain is 48.95 million with a growth rate of 0.78 and around 45% of its population is youth. The growth rate of its real GDP was 1.1 %, -3.6% and 1.4% in 2008, 2009 and 2014 respectively which indicates the huge impact of the financial crisis of 2008 on Spain's economy (Eurostat, 2016).

The 2008 financial crisis mainly affects the manufacturing sector specifically the construction industry which took significant proportion of the country's active labor. Due to the collapse of the construction industry, mainly because of the collapse of real state development, the unemployment rate increases from 8.2% of active population in 2007 to 11.3% of active population in 2008 and 24.5% in 2014 which is an increment of 13.2% within 6 years (Eurostat, 2016; C.Y.-Y. Lin et al., 2013).

Since labor is the most important source of income for the households in the country, the highly increment in unemployment rate increases the vulnerability of the households to being poor and unhealthy, and to suffer the consequences. Hence, the government of Spain forced to increase its share of social security expenditure from 21.4% of GDP in 2008 to 25.4% of GDP in 2014 (Eurostat, 2016).

Even if the government increases its social security expenditure by more than 4% of GDP, as scholars argue, the highly increment of unemployment and high decrements of per capita income were most drivers of the increment of poverty in Spain during and after the financial crises (Duiella and Turrini, 2014). Herranz Aguayo et al. (2016) also argue that huge increment of unemployment rate was the most influential factor for the growth of poverty rate in Spain during and after the 2008's global financial crisis. This huge increment of unemployment and job loss due to the financial crises may also affect the health status of the society since as of Dooley et al. (1996), job loss and being unemployed increases psychiatric problems such as depression and substance abuse. McKee-Ryan et al. (2005) on their meta analysis on the relationship between unemployment and health in 104 countries also argue that unemployed individuals had lower psychological physical well-being than employed individuals and being unemployed may had more adverse effect on mental health than other demographic and human capital factors.

Bambra and Eikemo (2009), Dorling (2009) and Jin et al. (1995) argue that the relationship between unemployment and health is not only one direction; rather as of the huge adverse effect of unemployment on health, being unhealthy may also have influential effect on being unemployed since it will be difficult for individuals, who have poor health, to find a job and to work. There is a strong, positive association between being unemployed and many adverse health outcomes including mortality and morbidity (Bambra and Eikemo, 2009; Jin et al., 1995).

The huge increment of unemployment rate in Spain due to the global financial crises of 2008 makes the country to suffer huge collapse of its economic growth (-3.6 % in 2009) with huge increment of unemployment and it erodes the funding base of the government directly and increases the demand for welfare (social security) indirectly (Saunders P., 2002; C.Y.-Y. Lin et al., 2013). Hence, the main objective of this paper is to estimate the effect of high unemployment on the health status of the society in Spain during the 2008's financial crisis. In addition, the comparison and estimation of the effect of unemployment on general health for 2008 and 2014 will undertake. The two years are selected purposely since, 2008 was the year that the global financial crisis was started and 2014 was the year that unemployment rate was at its peak point even if the country's economy started to revive from the crises.

2 Variables of Interest, Source of Data and Methodology

To see the contribution of high unemployment rate for poor health, basic activity status with four categorical variables (Working, unemployed, Retired or give up on business and inactive) is taken as main explanatory variable. The additional variables used as a control explanatory variable are: capacity to face unexpected financial expenses (with two dummy variables), log of household disposable income and pollution, crime or other environmental problems (with two dummy variables).

For all explanatory variables and for all estimations of unemployment impact on general health status, the data is taken from EUSLIC data base and the data set is 2008 and 2014 cross section survey micro data in household level. The total number of households included in this study in 2008 and 2014 are 29,926 and 26,361 households respectively.

Since the dependent variable (General Health Report) is an ordered variable, an ordered probit regression model is used to estimate the effect of huge increment of unemployment on general health in Spain during the financial crisis. The general ordered probit regression model, based on Cameron and Trivedi (2009), is formulated as:

$$y_i = j \text{ if } a_{j-1} < y_i^* < a_j \quad (1)$$

Where $j = 1, 2, \dots, m$ and $a_0 = -\infty$ and $a_m = \infty$. In addition, the latent variable can be defined as:

$$y_i^* = x_i \beta + \varepsilon_i \quad (2)$$

Where $\varepsilon \sim N(0, 1)$ and y is the dependent variable, x_i stands for the regressors or explanatory variables, β_i indicates the coefficients for each regressors and ε_i is for error terms.

From equation (1) and (2), the dependent variable has ordered multinomial outcomes; and for self assessed health status in particular, the ordered multinomial outcome can be 1 if the health status is poor, 2 if the health status is good and it can be 3 if the health status is very good. For this paper in specific, the latent variable for the ordered probit model is specified as:

$$y^* = \beta_1 Un + \beta_2 R + \beta_3 Inc + \beta_4 Uf + \beta_5 Pe + \beta_6 ld + \varepsilon \quad (3)$$

In which y^* is the latent health status variable with five ordered outcomes (1 for very good health, 2 for good health, 3 for fair health status, 4 for bad health status and five for very bad health condition), Un stands for unemployed members of households, R stands for households members who retired or give up on business, Inc stands for inactive members in the household, Uf is for capacity to face unexpected financial expenses, Pe indicates the pollution, crime or other environmental problems happens during the research period, ld is log of household disposable income, ε is the error term and the rest are coefficients. The explanatory variables are; basic activity status with four categorical variables (working, unemployed, retired or give up on business and inactive); capacity to face unexpected financial expenses (with two dummy variables), household disposable income and pollution, crime or other environmental problems (with two dummy variables). Since basic activity status has four categorical variables, three dummy variables are created using working as a reference. Similarly, for capacity to face unexpected financial expenses (with two dummy variables) and pollution, crime or other environmental problems (with two dummy variables) the reference are having

a capacity to face unexpected financial expenses and presence of a pollution, crime or other problems. Dummy variables are created from those variables with (n-1) to overcome the multicollinearity problem, as most scholars argue including Salvatore and Reagle (2002) .

3 Descriptive and Inferential Estimation Results

This section discusses both the descriptive summary and statistical estimation results using STATA 14.2 version software. The impact of unemployment on general health in two years (2008 and 2014) during the 2008's world financial crisis is discussed.

3.1 Descriptive Summary Statistics

The following two tables show the frequency summary of general health status of the sample and the frequency distribution of general health and unemployment. As we can see from the table1 below, around 56% of the household in the sample were in good health and more than 30% of the household had fair, bad or very bad health condition in 2008. On the other hand in 2014, 5 around 55% of household are in good health condition 29% of the household had fair, bad or very bad health condition, which shows in the two years, the general health condition of the household in the sample is relatively same. The other interesting thing from this summary is that, only 14% and 16% of the household had very good health condition in 2008 and 2014 respectively.

The second table below shows the frequency distribution of general health and unemployment in 2008 and 2014 in Spain. As shown from table 2, out of households who had very good health condition, only 7% of households in 2008 and 15.3% of households in 2014 were unemployed. In addition, out of households who had good health condition, only 6.6% of the household in 2008 and only 17.6% of households in 2014 were unemployed. On the other hand, out of the total households only 6.3% in 2008 and only 15.8% in 2014 were unemployed. These shows how the unemployment increases during the 2008s' global financial crises in Spain from 2008 to 2014. That increment in unemployment had also an effect on the health status of households in which we can see from the table 2 below that the percentage of unemployed households who had fair, bad and very bad health condition increases from 5.3% in 2008 to 12.5% in 2014 which is an increment of 135.8% from 2008.

Table 1: Frequency Summary of General health Status in 2008 and 2014

General health	2008			2014		
	Freq.	Percent	Cum.	Freq.	Percent	Cum.
1	4,171	13.94	13.94	4,263	16.17	16.17
2	16,969	56.70	70.64	14,443	54.79	70.96
3	6,205	20.73	91.38	5,288	20.06	91.02
4	2,040	6.82	98.19	1,803	6.84	97.86
5	541	1.81	100	564	2.14	100
Total	29,926	100		26,361	100	

Source: Own computation using STATA

Table 2: Frequency Summary of General Health and Unemployment in 2008 and 2014

General health	unemployment(2008)			unemployment(2014)		
	0	1	Total	0	1	Total
1	3,879	292	4,171	3,607	656	4,263
2	15,838	1,131	16,969	11,893	2,550	14,443
3	5,865	340	6,205	4,528	760	5,288
4	1,931	109	2,040	1,630	173	1,803
5	527	14	541	540	24	564
Total	28,040	1,886	29,926	22,198	4,163	26,361

Source: Own computation using STATA

3.2 Estimation Results and Interpretation

This section discusses and interpret the estimation results ad compare the 2008 estimation results with the estimation results in 2014 to see the main contribution of high unemployment rate on general health status in Spain during the financial crisis. The estimation results are based on the estimation using ordered probit model since the dependent variable is an ordered variable (with five ordered outcomes: very good, good, fair, bad and very bad health status). As discussed above, the reference categorical variable for basic activity status is “working”.

As table 3 below shows, keeping other things constant, the latent health status variable is increasing with all explanatory variables except household disposable income and capacity to face unexpected financial expense both in 2008 and 2014 (the command is attached in the Annex). Which implies, when unemployment, being inactive, being retired and pollution, crime and other problem increases in the household, the health status of the household becomes lower and lower. This is because since the order of the latent health status variable is decreasing from 1 to 5 (based on the data from EUSILC), as unemployment, being inactive, being retired and pollution, crime and other problem increases in the household increases, the health status will decrease. On the other hand, when the household disposable income of households and the capacity to face unexpected financial expenses increases, the health status of the household will increase or will become better. In 2008, all explanatory variables are highly statistically significant at 1% level of significant and in 2014, except the explanatory variable “unemployment” (which is statistically significant at 10% level of significant), all regressors are also highly statistically significant at 1% level of significant. The other thing is that, both in 2008 and 2014, even if the value of Pseudo R² is low, the probability of chi² is highly significant which implies the model is good.

Table 3: Estimation Results in 2008 and 2014

	2008			2014		
phs	Coef.	Std. Err.	P> z	Coef.	Std. Err.	P> z
uf	-0.29407	0.015009	0.000	-0.25457	0.01529	0.000
Pe	0.084766	0.019703	0.000	0.091249	0.023067	0.000
un	0.09031	0.027729	0.001	0.033734	0.021193	0.090
ret	0.967965	0.018497	0.000	0.949228	0.019366	0.000
inac	0.482478	0.015947	0.000	0.385164	0.017647	0.000
ld	-0.18938	0.009356	0.000	-0.14108	0.009968	0.000
/cut1	-2.98755	0.095021		-2.3564	0.100602	
/cut2	-1.21357	0.094089		-0.70274	0.09987	
/cut3	-0.27578	0.093972		0.178986	0.099954	
/cut4	0.539343	0.094893		0.928465	0.100921	
Prob > chi2	=		0.000			0.000
Pseudo R2	=		0.068			0.054

Source: Own computation using STATA

As of Salvatore, D and Reagle (2002), Multicollinearity is violated when two or more explanatory variables are correlated in the regression model. To see the violation of multicollinearity, a test is undertaken using Variance Inflation Factor (VIF) in STATA to see whether there is interdependence between the explanatory variables in the regression model, and the result shows that there is no problem of multicollinearity since the value of VIF is less than 10 in both years.

The predicted probabilities for each of the five outcomes (which is obtained by using the STATA command “predict p1oprobit p2oprobit p3oprobit p4oprobit p5oprobit, pr”) is summarized below in table 4 and 5 for 2008 and 2014 respectively (the command is attached in the Annex). As we can see from the two tables below, the average predicted probability for outcome 3, 4 and 5 together (which accounts for being in fair, bad and very bad health status) is 0.294 and 0.292 in 2008 and 2014 respectively.

Table 4: Summary of Predicted Probabilities for each outcomes for

Variable	Obs	Mean	St.Dev.	Min	Max
p1oprobit	29,733	0.140386	0.082931	0.000395	0.340167
p2oprobit	29,733	0.56472	0.081881	0.056354	0.624913
p3oprobit	29,733	0.211034	0.082917	0.075874	0.360856
p4oprobit	29,733	0.066368	0.053431	0.009811	0.316091
p5oprobit	29,733	0.017493	0.022908	0.00092	0.432408

2008

Table 5: Summary of Predicted Probabilities for each outcomes for

Variable	Obs	Mean	Std. Dev.	Min	Max
p1oprobit	26,187	0.162361	0.084261	0.001496	0.375225
p2oprobit	26,187	0.546067	0.064868	0.092766	0.591668
p3oprobit	26,187	0.203961	0.071366	0.077537	0.340687
p4oprobit	26,187	0.066893	0.0475	0.011795	0.291669
p5oprobit	26,187	0.020719	0.023558	0.001505	0.37591

2014

To see the magnitude of the effect of explanatory variables, specially the effect of high unemployment rate, on the general health status,

the Average marginal effect is used. As most scholars argue, in discrete choice model estimation the marginal effect is used to check the magnitude of the partial effects of explanatory variables. There are two types of marginal effects; marginal effect at mean and Average marginal effect. Both marginal effects give the same result with same magnitude but as scholars argue, using the first one may lead to meaningless interpretation specially when the dummy variable is like gender. Hence, using the latter one, Average marginal effect, is preferable.

Here also, Average marginal effect is used to see the partial effect of unemployment, capacity to face unexpected financial expenses and other used control variables on general health in Spain during the 2008s'global financial crises (the command is attached in the Annex). As we can see from the following table 6 and table 7, keeping other things constant, the probability of very good and good health is increasing as the capacity to face unexpected financial expenses and household income increases; and decreases as the probability of being unemployed, retired, inactive and pollution increases both in 2008 and 2014. On the other hand, the probability of fair, bad and very bad health status increases as the probability of being unemployed, retired, inactive and pollution increases but decreases as the capacity to face unexpected financial expenses and household income increases both in 2008 and 2014. The other thing is that, even if in 2014, unemployment was at its pick level in Spain during the financial crises, its effect on health status of households was less significant compared with 2008. This is may be due to the high involvement of the government in the social contribution and hence huge increment of government budget for social services (as explained in the first section) including health after 2008 and during the global financial crises.

Table 6:Average Marginal Effects with their level of significance for 2008

	dy/dx	Std. Err.	z	P>z	[95% Conf	Interval]
uf						
_predict						
1	0.060719	0.003134	19.37	0.00	0.054576	0.066862
2	0.030554	0.001687	18.11	0.00	0.027248	0.03386
3	-0.05078	0.002602	-19.51	0.00	-0.05588	-0.04568
4	-0.02912	0.001561	-18.65	0.00	-0.03218	-0.02606
5	-0.01138	0.000708	-16.07	0.00	-0.01276	-0.00999
Pe						
_predict						
1	-0.0175	0.00407	-4.3	0.00	-0.02548	-0.00953
2	-0.00881	0.002057	-4.28	0.00	-0.01284	-0.00478
3	0.014636	0.003403	4.3	0.00	0.007966	0.021305
4	0.008394	0.001957	4.29	0.00	0.004559	0.01223
5	0.003279	0.000771	4.26	0.00	0.001769	0.004789
un						
_predict						
1	-0.01865	0.005724	-3.26	0.00	-0.02987	-0.00743
2	-0.00938	0.002893	-3.24	0.00	-0.01505	-0.00371
3	0.015593	0.004788	3.26	0.00	0.006208	0.024978
4	0.008943	0.002753	3.25	0.00	0.003548	0.014338
5	0.003494	0.001079	3.24	0.00	0.001378	0.005609
ret						
_predict						
1	-0.19986	0.004168	-47.95	0.00	-0.20803	-0.19169
2	-0.10057	0.00275	-36.57	0.00	-0.10596	-0.09518
3	0.167132	0.003176	52.63	0.00	0.160908	0.173356
4	0.095857	0.002384	40.2	0.00	0.091184	0.10053
5	0.037445	0.001537	24.37	0.00	0.034434	0.040457
inac						
_predict						
1	-0.09962	0.00336	-29.65	0.00	-0.10621	-0.09304
2	-0.05013	0.001994	-25.14	0.00	-0.05404	-0.04622
3	0.083306	0.002757	30.22	0.00	0.077903	0.088709
4	0.04778	0.001803	26.5	0.00	0.044246	0.051313
5	0.018665	0.000902	20.69	0.00	0.016896	0.020433
ld						
_predict						
1	0.039103	0.001954	20.01	0.00	0.035273	0.042933
2	0.019677	0.001056	18.64	0.00	0.017607	0.021746
3	-0.0327	0.001621	-20.17	0.00	-0.03588	-0.02952
4	-0.01875	0.000973	-19.27	0.00	-0.02066	-0.01685
5	-0.00733	0.000448	-16.35	0.00	-0.0082	-0.00645

Source: Own computation using STATA

Table 7: Average Marginal Effects with their level of significance for

	dy/dx	Std. Err.	z	P>z	[95% Conf Interval]	
uf						
_predict						
1	0.058615	0.003535	16.58	0.000	0.051686	0.065544
2	0.021611	0.001452	14.89	0.000	0.018766	0.024456
3	-0.04325	0.002609	-16.58	0.000	-0.04836	-0.03813
4	-0.0254	0.001596	-15.91	0.000	-0.02852	-0.02227
5	-0.01158	0.000803	-14.43	0.000	-0.01316	-0.01001
Pe						
_predict						
1	-0.02101	0.005312	-3.95	0.000	-0.03142	-0.0106
2	-0.00775	0.001972	-3.93	0.000	-0.01161	-0.00388
3	0.015501	0.003919	3.96	0.000	0.007819	0.023183
4	0.009103	0.002307	3.95	0.000	0.004582	0.013624
5	0.004152	0.00106	3.92	0.000	0.002075	0.006229
un						
_predict						
1	-0.00777	0.004878	-1.59	0.090	-0.01733	0.001794
2	-0.00286	0.001804	-1.59	0.090	-0.0064	0.000671
3	0.005731	0.0036	1.59	0.090	-0.00133	0.012787
4	0.003365	0.002116	1.59	0.090	-0.00078	0.007512
5	0.001535	0.000966	1.59	0.090	0.00036	0.003428

2014

ret						
_predict						
1	-0.21856	0.004719	-46.32	0.000	-0.22781	-0.20931
2	-0.08058	0.002781	-28.97	0.000	-0.08603	-0.07513
3	0.161252	0.003318	48.6	0.000	0.154749	0.167755
4	0.094694	0.002519	37.59	0.000	0.089757	0.099631
5	0.043191	0.001767	24.44	0.000	0.039727	0.046655
inac						
_predict						
1	-0.08868	0.004078	-21.74	0.000	-0.09668	-0.08069
2	-0.0327	0.001813	-18.04	0.000	-0.03625	-0.02914
3	0.06543	0.003023	21.65	0.000	0.059506	0.071355
4	0.038424	0.001917	20.05	0.000	0.034667	0.04218
5	0.017526	0.000997	17.57	0.000	0.015571	0.01948
ld						
_predict						
1	0.032484	0.002301	14.11	0.000	0.027973	0.036994
2	0.011976	0.000918	13.05	0.000	0.010178	0.013775
3	-0.02397	0.001695	-14.14	0.000	-0.02729	-0.02064
4	-0.01407	0.001025	-13.73	0.000	-0.01608	-0.01207
5	-0.00642	0.000508	-12.63	0.000	-0.00742	-0.00542

Source: Own computation using STATA

4 Conclusion

In this study, the effect of high unemployment rate for the general health status of the society during the 2008 financial crisis analyzed by using the secondary data from Eu_SLIC Data base for 2008 and 2014 and by applying both descriptive and inferential statistics. The ordered probit model is used to undertake the inferential statistics since the dependent variable (general health status) is an ordered variable (with five ordered outcomes), and STATA 14 software is used.

As the results in the descriptive and inferential statistics shows, even if there was high increment of unemployment during the financial crises and even if unemployment rate was at its pick level in 2014, the effect of unemployment on general health of the household was not as high as expected compared with its effect in 2008. Keeping other things constant, the probability of very good and good health is increasing as the capacity to face unexpected financial expenses and household income increases; but it decreases as the probability of being unemployed, retired, inactive and pollution increases both in 2008 and 2014. On the other hand, the probability of fair, bad and very bad health status increases as the probability of being unemployed, retired, inactive and pollution increases but decreases as the capacity to face unexpected financial expenses and household income increases both in 2008 and 2014. Generally, during and after the 2008 Global financial crisis, high unemployment rate had a crucial effect on the health status of the society in Spain, and even if its effect in 2014 was less compared with 2008, this argument is inline with previous arguments by different scholars that unemployment contributes for poor health status of societies.

References

- [1] D'Ambrosio C., Deutsch J. and Silber J.(2009); Multidimensional Approach's to Poverty measurement: An Empirical Analysis of Poverty in Belgium, France, Germany, Italy and Spain, based on the European Panel; Applied Economics, Taylor & Francis (Routledge), 2009, 43 (8), pp.951. <10.1080/00036840802600129>. <hal-00582249>
- [2] Bambra, C. and Eikemo, T. (2009) 'Welfare state regimes, unemployment and health: a comparative study of the relationship between unemployment and self-reported health in 23 European countries.', Journal of epidemiology and community health., 63 (2). pp. 92-98.
- [3] C.Y.-Y. Lin et al. (2013), National Intellectual Capital and the Financial Crisis in Greece, Italy, Portugal, and Spain
- [4] Dooley D., Fielding J, and Levi L. (1996); Health and Unemployment, Annual Reviews Public Health 1996. 17:44945
- [5] Dorling, D. (2009). Unemployment and health: Health benefits vary according to the method of reducing unemployment. BMJ, 338, b829.
- [6] Duiella M. and Turrini A.(2014); Poverty developments in the EU after the crisis: a look at main drivers, ECFIN Economic Brief, ISSN: 1831-4473.
- [7] Eurostat (2016); Main Statistical Tables, http://ec.europa.eu/eurostat/web/national-accounts/data/main-tables?p_p_id=NavTreeprotletprod_WAR_NavTreeprotletprod_INSTANCE_7JJfnOXKXwXl&p_p_2&p_p_col_count=2
- [8] Herranz Aguayo I., Di´az Herra´iz E., Montenegro Marques E., Machado I., and Almeida S. (2016); Child at risk of Poverty or social Exclusion: comparative view between Spain and Portugal in the European Context, Social Indicators Research, Springer (2016) 129:961–978.
- [9] Jin R. L., Shah C. P., and Svoboda T. J. (1995); The Impact of Unemployment on Health: A Review of the Evidence, Systematic Review
- [10] Justino, P.(2005), Emprical Applications of Multidimensional Inequality Analysis, Poverty Research Unit working paper No. 23, University of Sussex, UK.
- [11] McKee-Ryan F. M., Song Z., Wanberg C. R. and Kinicki A. J. (2005); Psychological and Physical Well-Being During Unemployment:A Meta-Analytic Study, Journal of Applied Psychology, 2005, Vol. 90, No. 1, 53–76
- [12] OECD(2015), Adjusting Household income:Equivalence Scales-OCED.org
- [13] Saunders P., (2002); Direct and indirect impact of unemployment on Poverty and Inequality: SPRC (Social Policy Research Centre) Discussion Paper No. 118, Dec. 2002.

- [14] Salvatore, D and Reagle (2002), Theories and Problems of Statistics and Econometrics; McGrawhill, 2nd edition.