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Determinants of Household Income in European Countries

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Abstract: Household incomes are one of the key indicators of economic growth, which characterizes purchasing capacity, consumer demand of households and quality and level of people's lives. Correspondingly, the topical issue is recognition of determinants of household income, which will allow giving them quantitative estimation and define consequences of changing outer environment's influence on them. The subject of this research was to define main factors that influence differentiation of household incomes. The object of the research is 31 European countries. We have applied comparative and regressive analysis for verifying hypotheses about influence of demographic, macroeconomic and indices of labor market in household incomes. Non-uniformity of household incomes in European countries was justified by means of dividing the countries into three groups. Comparative analysis on demographic factors, work activity, household type, education level and tenure status allowed detecting dependencies in the level of household incomes. Determinants of household incomes were macroeconomic factors and labor market factors which was proved by built regressive models. Results of this research include key factors that influence household incomes, which should be considered at conduction of social and economic policy in European countries. European countries common factors in the level of household incomes. Determinants of household incomes are macroeconomic factors and factors of labor market which is proved by built regressive models. The results of the study performed includes key factors that influence household incomes which should be considered at adoption of social and economic policies in European countries.

Key words: Household income, determinants of income, demographic factors, macroeconomic factors, labor market

INTRODUCTION

Necessity of studying household incomes is subjected by the role of this index in development of economic system. On the one hand, incomes define the level of households' consumer spending which form part of country's gross domestic product. On the other hand, incomes play an important role not only in macroeconomic system but also in development of households and particular members of society (Khondoker *et al*., 2015). A number of studies prove that there is a direct interrelation between people's income and quality of life (Atkinson and Marlier, 2010; Etheridge, 2015). Thus, in studies of Doorslaer and Koolman (2004), Eikemo *et al*. (2008), it was proved that differentiation in incomes influence health inequality. Wilkinson (1992) showed that incomes influence sickness rate and lifetime at birth. In these studies, income is analyzed as a factor that causes direct impact on quality of people's lives and its separate components.

An important part in household incomes in modern economy requires analysis of factors that cause changes of this indicator. In scientific literature among determinants of household incomes, indicators of labor market and economic policy of the state are detached. Perugini and Martino (2008) in their research prove that qualitative and quantitative aspects of labor market take central place among factors of income' inequality. Checchi and Garcia-Penalosa (2008) justify that inequality in incomes is a function from differentiation according to salary level and unemployment rate in OECD countries.

Other researches are directed at analysis of the influence that economic policy causes on incomes (Guner *et al*., 2014; Reynolds and Rohlin, 2015). Afonso *et al*. (2008) show that state incomes and educational system cause a great impact on income distribution.

MATERIALS AND METHODS

The subject of this research was identifying the factors that cause influence at household incomes. Set sample was represented by 31 European country (there is no data on Turkey, that's why, this country is not present in regression analysis). The main methods of research were comparative analysis and regressive analysis.

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During the course of the research, the following hypotheses have been checked. First, household incomes depend in household's characteristics. Second, household incomes should be determined by internal characteristics of households, indicators of development of labor market and macroeconomic situation in general.

Methodology of the research is built in usage Median Equalized Net Income (MENI) as a base indicator, which allows comparing countries with various individual taxation systems and consider inequality at income distribution.

RESULTS AND DISCUSSION

Results of comparative analysis: Determinants of household incomes are both internal characteristics that are typical for household incomes and external traits which are defined by general macroeconomic situation. We mark the following factors as internal ones:

- Demographic characteristics of household
- Conditions of activity (type of occupation, intensity of work)
- Education
- Availability of possessions
- Social transfers

If we compare mean MENI level of all population in studied countries and households in active working age, it is natural that income index in active working age is higher (16,472 €) in comparison with mean level among population in general (15,558 €). There are significant distinctions between groups; average excess of MENI level of working-age population equals 6% in all countries in question.

We should note a strongly marked dependency in excessing men's incomes over women's income. If we analyze the difference between MENI of men of 18-64 years old and similar index among women of the same age, it is evident that in 29 countries out of 30 in 2012 the difference was 3%. Obtained result relates with conclusions of European Commission on wage differentiation of men and women in European Union.

European households differ significantly from each other, according to their type. There is no unified tendency in distribution of MENI among households without dependent children and households with dependent children. If we consider MENI of households with dependent children and households without dependent children, we should divide the countries into subgroups, in which:

- MENI of households without dependent children is less than MENI of households with dependent children (Belgium, Denmark, Cyprus, Lithuania, Slovenia and Finland). This phenomenon may be explained by strong social policy, aimed at supporting families with children
- Incomes of households without dependent children and income of households with dependent children (<10%). In this category Norway, Iceland, Sweden, Slovakia, Netherlands, Hungary, Croatia, Germany, Czech Republic and Bulgaria are included
- Significant excess of MENI of households without dependent children under similar index of households with dependent children (>10%). Ireland, Greece, Spain, France, Italy, Luxembourg, Malta, Austria, Poland, Portugal, Romania, United Kingdom and Switzerland form this group of countries. At the same time, we should note that the highest exceed of indices (32%) is observed in two countries: the lowest one belongs to Romania and the highest one to Luxembourg.

As for households that include two adults,the following tendency was detected: the more number of children is in the household, the more significant is difference in incomes. On the average, in MENI sample of households that consisted of two adults is less than similar index for two adults with one child by 2%. Let us emphasize that MENI of households without children through all types of households is higher than similar index of households with children at an average of 8% and single households at an average of 13%.

Incomes of multi-child families are comparatively lower. Incomes of households that consist of two adults are higher than incomes of households that consist of two adults with two children at an average of 6%, with three and more children at an average of 40%. For households that consists of two adults with three and more children, there is tendency of exceeding incomes over households without children and this tendency is true for all the countries from the sample. In Bulgaria and Romania, the difference between incomes of two adults and two adults with three and more children is >140%. These dependencies prove studies performed by Eurostat which showed that pooling of income is more typical for households with married couples or for a single member of a household, who get income, in comparison with more educated or wealthy couples.

MENI of households depends on their most frequent activity status. Employed persons' incomes are by 86% higher than that of unemployed persons which is an expected dependency. The least difference is observed in

Iceland 43%, the largest one in Germany, Estonia, Lithuania (>130%). Thus, social policy, aimed at support of the unemployed, keeps stimuli to employment in form of higher incomes.

Noorderhaven *et al.* (2014) also emphasize substantial influence per capita income on occupational choice. Difference in incomes of retired persons in comparison with employed persons is significantly lower on the average of 30%.

Education of an important determinant of household incomes. Switch from ere-primary, primary and lower secondary education (levels 0-2) onto Upper secondary and post-secondary non-tertiary education (levels 3 and 4) add, on the average, 26% of income. Obtaining of first and second stage of tertiary education (levels 5 and 6) brings another 36% in comparison with previous level. This, we should note significant correlation between the level of household's education and obtained incomes, which coincides with results of a study, performed by Eikemo *et al.* (2008).

Difference in households' incomes that depend in their tenure status reflect an expected dependency: incomes of households that consist of owners are by 6% higher than incomes of tenants. On the one hand, tenure is one of the sources of income. On the other hand, owners of property save money, since they don't need to pay rent. Developed European countries (except for Norway) demonstrate more significant difference between incomes of owners and incomes of tenants, while in Eastern European countries there two indications almost coincide.

Influence of social policy on households' income may be assessed with the help of the volume of social transfers. The difference between MENI of population before and after social transfers (pensions excluded from social transfers) averaged 11%, it means that social transfers at an average of 11% increase MENI level of population in European countries. The highest index is observed in Ireland (28%), which proves the hypothesis of policy of distributing income in the country in connection with severe economic condition.

Results of regressive analysis: Table 1 and 2 demonstrate coefficients at independent variables and they demonstrate general quality of multiple regression equations. For building the model, we have used a sample that was compiled according to official statistical data.

While building regressive analysis as an interpretable variable, we used median equalized net income (ln MENI). Interpretable variables are divided into three groups depending in the hypothesis being checked. Macroeconomic indices:

Table 1: Macroeconomic indicators

Parameters	ln MENI
ln GDP	0.821(0.076)***
ln Taxes	-0.149 (0.064)**
Tax Rate	0.006 (0.007)
Housing Price Index	0.006 (0.003)*
HICP	-0.015 (0.006)**
ln Publ Exp	0.136 (0.067)*
R^2	0.987

Table 2: Labor market indicators

Parameters	ln MENI
ln Employees	0.009 (0.074)
ln Work Hour	-5.29 (0.064)**
dSelfEmp	-0.014 (0.018)
dUnempRate	0.122 (0.06)*
LCwages	0.061 (0.023)**
R^2	0.609

Figures in brackets are standard errors; *p<0.1; **p<0.05; ***p<0.01

- ln GDP; gross domestic product (GDP) at market prices
- ln Taxes; total receipts from taxes and social contributions (including imputed social contributions)
- ln PublExp; public expenditure (DG EMPL)
- ln Housing Price Index; House price index (2010 = 100)
- HICP; harmonized index of consumer prices

As it is shown in Table 1, analysis allowed detecting close negative interconnection of incomes with taxes and inflation. When inflation takes place, country's general level of prices for all products and services increases and, consequently, national currency is deprecated. This has a negative impact on households and they are forced to spend more money at essential products and services, prices for which are constantly increasing. Taxes are also direct index, which influences incomes and their growth leads to corresponding decline in incomes.

The strongest positive correlation was observed between incomes and GDP. GDP characterizes general level of country's economic development and more often is used in econometric models as a main factor that influences incomes and expenses of households which was proved by our research as well. Moreover, we obtained additional confirmation of necessity of well-thought-over conduct of adequate economic policy: we have detected interconnection between household incomes and public expenditure.

Labor market: Condition of labor market has a direct impact on the level of household incomes, since one of the main sources of income salary is formed at labor market. The main indices in this sphere are:

- ln Employees; employees
- ln Work Hour; average number of usual weekly hours of work in main job
- dSelfEmp; absolute increment of self-employment rate
- dUnempRate; absolute increment of unemployment rate
- LCwages; Labor Cost index

Table 2 demonstrates statistically significant close correlation between household incomes and LC wages and dUnempRate indices which speaks of need in investments into labor force. At the same time, the number of working hours does not obligatory make a positive effect on population's incomes which was shown in our research.

We have considered the following demographic characteristics: average size of household, income group, urbanization, population, adults with children. However, we have not defined any statistically significant correlations with household incomes.

Summary: As a result of this research, we analyzed influence of various factors on household incomes. Demographic characteristics (sex, age), type of household, levels of education, availability of property and character of occupation represented internal determinants of household incomes that were analyzed. Analysis of real sector proved our hypothesis about the fact that more developed economic medium positively influences the level of household incomes. Econometric analysis allowed detecting macroeconomic factors and factors of labor market, which influence incomes.

Results of the research reflect strong correlation between economic indicators and level of households' incomes. Understanding of this correlation may help in conducting effective social and economic policy, aimedat successful development and growth of economy's competitive ability.

CONCLUSION

Household incomes in European countries depend in endogenic and exogenic determinants. The following endogenic factors were analyzed: sex, age, type of households, presence of children, activity status and social transfers. Thus, results of comparative analysis showed than in studied countries men's incomes are at an average of 3% are higher than women's incomes. Incomes of multi-child households among all set sample is lower than incomes of households that consist of two adults with no children.

Activity status also influences the volume of household incomes. Employed persons get relatively higher incomes in comparison with unemployed and retired persons, higher levels of incomes was observed at households with higher level of education and the ones that owned a property.

Influence of social policy in household incomes was noted earlier in difference of incomes among families that consisted from one adult and one child, multi-child families, in the volume of social transfers, unemployed persons and retired employees.

Results of econometric analysis showed that there is a strong interconnection between the level of wages and incomes. Moreover, a positive correlation between various macroeconomic indices like taxes, GDP and public expenditurewas detected. Obtained results give evidence of necessity to conduct corresponding policy for supporting quality and standards of life of households.

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