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Inequality and Poverty in Greece After the Access in EMU

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Inequality and poverty in Greece after the access in EMU

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Abstract

The present work is trying to estimate inequality and poverty in Greece after the access in EMU. The data used in this study came from the last Household Budget Survey (HBS) which covers the entire population of Greece conducted from February 2004 to January 2005 by the National Statistical Service of Greece (NSSG). For the purpose of this study, we used data on both consumption expenditure and household income.

In regard of the methodological issues, we chose the individual as the unit of analysis and the “family equivalence scales” that used by Eurostat.

Introduction

Inequality and poverty problems' are always in the center of social policy. Policy makers purpose the elimination or, at least, the restriction of poverty and economic or other inequalities.

Welfare is a basic issue for social equilibrium and development. However, welfare is not directly observable, thus a reasonable close approximation has to be used instead, such as expenditure or income distribution. Current consumption is usually considered as a better approximation to life-cycle income than current income, because individuals and households tend to save and dissave in different periods of their life-cycles in an attempt to smooth out their consumption and thus maximize their welfare. On the other hand, the use of current income is a good indicator of the ability of an individual or a household to achieve a particular welfare level.

This study uses data both of consumption expenditure and income data to measure economic inequalities and poverty.

Inequality and poverty in Greece: Relative elements and studies

There are several empirical studies of income or expenditure distribution, but they use different statistical data, different inequality indices or different methodology, so it isn't always easy to combine or compare the results. Contradictious results are common and can be explained by the different sensitivity of various indices in different income transfers or, similarly, the intersection of Lorenz curves of distributions in use.

Most studies consider income data unreliable because of the extended of tax evasion and the fact that until recently not everyone was obliged to submit a tax return. Many studies indicate education as an important factor that determining income inequalities.

Other studies characterize inequality differences as justified if they are the result of normal functions of the market, or unjustified if they are connected with social group's interests. More recent studies conclude that inequality within social groups contributes impressively in total inequality than inequality among groups. So, policy attempting to eliminate inequality within groups is more effective than those that attempts eliminate inequality among groups [Mitrakos, Tsakloglou]

In brief, it is clear that the choice of source and the level of analysis of data as the methodological and other choices of researchers (reference unit, equivalence scale, and inequality and poverty measures) are determinants for the results.

Statistical material and research methodology

This study uses the micro-data of a Household Budget Survey which was carried out by the National Statistical Service of Greece between February 2004 and January 2005. The survey covered all the non-institutional households of the country and its sampling fraction was 2/1000 (around 6500 households or 17000 individuals, selected using a multi-stage stratified random sampling procedure). It contains detailed information about consumption expenditures (actual and imputed), current disposable incomes (after taxes, social security contributions and transfer payments) and a number of socio-economic characteristics of the households and their members. In order to approximate “welfare” as close as possible, the concepts of both consumption expenditure and current income used in this study include, as part from actual consumption expenditures and net disposable incomes, the value of consumption of income-in-kind (including imputed rent for owner-occupied accommodation) evaluated at market prices.

Results coming from processing HBS data, underlie, sampling or other, errors. Sampling errors are those caused by using a sample than the population itself. Other errors can be recall errors, especially for dated expenses that households have to recall even if they took place the year before. Other errors could be related with interviewer’s capacity to convince household members to unveil relative information or to explain the exact content of questions. These errors are very difficult to be estimated, though it is believed that proper training, experience and supervision of interviewer’s work, reduce these errors.

Some researchers believe that it is better to “clean” primary HBS data before using them. These corrections (deflation, different time correspondence, zero incomes and outliers, sample weights, consumption and income definition) concern both consumption expenditures and income and intent to lead to a better approach of real welfare level of households or individuals through common poverty and inequality indices. These corrections also smooth primary data variations and so decrease total

inequality level based on total expenditure. For this reason, in this study, no correction is made.

Equivalence scales are used to describe difference in needs among adults and children (known as “family equivalence scales”). Therefore, we use equivalence consumption expenditure and equivalence income distributions that we obtain by dividing household income and expenditure by equivalence number of adults and assigning it to every household member. Family equivalence scales we use are those of Eurostat and give weight 1.0 to household head, 0.5 to other household members aged above 13 and 0.3 to children aged up to 13. The economies in scale they imply lie somewhere in the middle of the range.

Measurements of poverty in Greece

An individual is classified as poor if his consumption expenditure or income falls below a predefined level, which is the “poverty line”. There are two ways to define poverty line: a “conventional” or an “objective” approach. The objective approach, defines poverty line as the minimum amount to purchase at least those necessary goods to maintain physical ability. The conventional approach defines poverty line as a fraction of the median expenditure (or income) in the society. The mean or median income reflects the usual level of living conditions, so this approach defines the minimum amount for a tolerable life in the society. Main difference of these two approaches is that conventional poverty line increases with the same rate as the mean level of living conditions, unlike objective poverty. For Greek economy, where large population groups have ensure the necessarily goods to maintain and reproduce life, conventional poverty approach seems more appropriate. Eurostat also supports the use of the conventional poverty approach.

The next step is to select the index or indices to measure the magnitude and intensity of poverty. In this study, we use poverty percentage (P) and Foster index (F) of Foster, Greer and Thorebecke (1984). Unlike P, Foster index is sensitive to the magnitude and intensity of poverty gap as well as the distribution of resources among poor people. Index P violates some of the desired properties of poverty indices (symmetry, mean independence, population size independence, principle of transfers among poor people, focus axiom, and monotony) but provides a clear indication of the

magnitude of poverty in population. In particular, index P does not take into account how much poor those people are, but carefully use of it and many different poverty lines give a wide image of poverty. Index F satisfies all the desired properties, and we use “poverty aversion parameter” values $a = 1$ and $a = 2$.

Results are showed in table 1.

Table 1: Poverty indices based on various poverty lines and different variables.

Poverty Percentage			
	Total Expenditure	Purchases	Income
Based on 40 % of median	2.88	6.60	3.96
Based on 50 % of median	8.03	12.20	9.40
Based on 60 % of median	15.69	19.27	16.18
Based on 70 % of median	23.13	27.27	25.42

Foster et el index		
	Total Expenditure	Income
a = 1	3.03	3.76
a = 2	0.89	1.34

Using the 60 % poverty line, 15.69 % of population is poor if we use total expenditure (that includes imputed expenses), whereas the percentage increases to 19.27 % of population using only purchased expenses. This difference was expected, since most households in Greece live in their own residence, thus if we include imputed rents in our analysis less people are characterized as poor.

If we use income distribution, 16.18 % of population are poor, a result close to that given by total expenditure. A closer inspection of these results shows that income distribution reveals more poverty than total expenditure. Nevertheless, we can not rely on income data because of the extended of tax evasion.

As we increase poverty aversion parameter from $a = 1$ to $a = 2$, we see a large decrement of Foster index which measures the poverty gap, from 3.03 to 0.89, using

total expenditure distribution, or from 3.76 to 1.34 respectively using the income distribution.

Measurements of economic inequality in Greece

Inequality is the divergence from the ideal state of equality, where each member of the population receives equal shares from whatever is to be shared, income, welfare etc. We can measure inequality through Lorenz curves and inequality indices. When the Lorenz curve approach does not lead to a classification of distributions, the problem of measuring inequality turns to be the selection of proper index since different indices leads to different results. An inequality index is a statistical measure that attempts to incorporate the characteristics and the dispersion of a distribution. Every inequality index corresponds directly or indirectly in a different welfare function therefore is more or less sensitive in different type of transfers. Therefore every choice of index implies subjectivity.

We use a set of indices that satisfy all the desired axioms (symmetry, population size independence, mean or scale independence, principle of transfers) and have different sensitivity towards total inequality transfers. In this study we use Gini coefficient (G), the variance of logarithms (L), Theil index (T), the mean logarithmic divergence (N), and Atkinson index for aversion parameter values $\varepsilon = 0.5$ and $\varepsilon = 2$. We choose those indices based on their different sensitivity towards transfers. In this framework, mean logarithmic divergence (N) and Atkinson index for $\varepsilon = 2$, are relatively more sensitive in transfers in lower incomes, whereas Theil index (T) and Atkinson index for $\varepsilon = 0.5$ in upper edge of distribution and Gini coefficient (G) in middle incomes. [Lambert (1993), Cowell (1995)]. We also use the deciles shares of income/expenditure distribution in order to calculate the S_{80}/S_{20} index that indicates the gap between the first and the last two deciles shares.

Table 2: Inequality indices in terms of different variables

	Total Expenditure	Purchases	Income
Gini coefficient (G)	29.8	32.3	17.8
variance of logarithms (L)	27.8	35.5	29.1
Theil index (T)	14.8	17.4	15.1
mean logarithmic divergence (N)	14.4	17.5	14.8
Atkinson index (A, $\epsilon = 0.5$)	7.1	8.4	11.2
Atkinson index (A, $\epsilon = 2$)	24.3	30.3	28.6
S₈₀/S₂₀	5.7	5.7	5.7

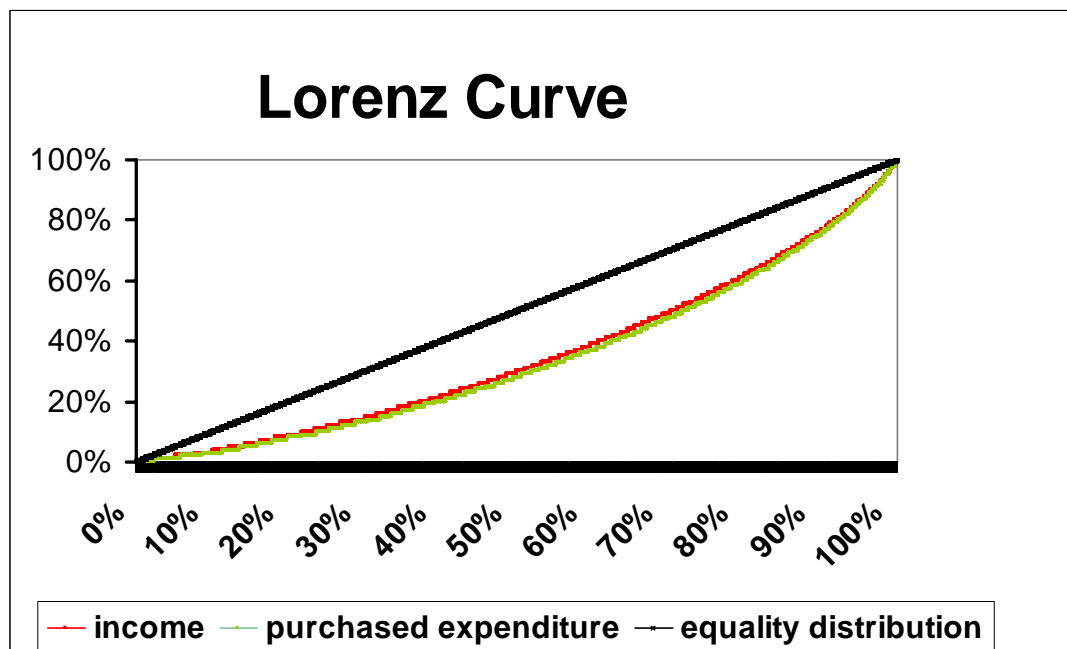
Table 2 reports the inequality indices used in this study. We observe that, in most cases, total expenditure distribution indicates lower inequality than purchased expenses. Gini coefficient has values 29.8 for total expenditure distribution, 32.3 using purchased expenditure distribution and 17.8 using income distribution respectively. Results correspond to different sensitivity these indices show in different transfers.

We mark that income distribution reports contradictory results, as regard the other two distributions. As mentioned before, we do not rely on income data.

The deciles shares of income/expenditure distribution indicate the same gap between the first and the last two deciles shares, as the identical value of S₈₀/S₂₀ index of all distributions shows. The resemblances of these distributions are pictured in correspondent Lorenz curves.

Lorenz curve is a graphic way to present and analyse the characteristics of a distribution. It is used widely to compare economic inequality in time. Lines that approach the diagonal line are socially preferable because it encounters a lower level of inequality. In our study, Lorenz curves based on total expenditure and income are practically identified, thus we present in picture 1 the curves of purchased expenditure and income.

Picture 1: Lorenz curves for inequality based on income and total expenditure



Conclusion

Using a wide variety of indices, we measure inequality and poverty in Greece after the access in EMU. We use both consumption and income data from the last Household Budget Survey (HBS) 2004 – 2005. We choose the individual as the unit of analysis and use economies of scale (“family equivalence scales”) given by Eurostat.

Using the 60 % poverty line and total expenditure, 15.69 % of population is poor, a percentage that increases to 19.27 % if we use only purchased expenses. This is a clear indication of the contribution of imputed rents in Greek economy. As we increase poverty aversion parameter from $a = 1$ to $a = 2$, Foster index increases from 3.03 to 0.89, using total expenditure distribution.

In most cases, total expenditure distribution indicates lower inequality than purchased expenses. Gini coefficient has values 29.8 for total expenditure distribution, 32.3 using purchased expenditure distribution and 17.8 using income distribution respectively. Results correspond to different sensitivity these indices show in different transfers. S_{80}/S_{20} index indicates the same gap between the first and the last two deciles shares of all distributions. The resemblances of these distributions are also pictured in correspondent Lorenz curves.

We also mark that income distribution reports contradictory results thus are unreliable.

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