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### Social Transfers and Income Distribution in Cyprus

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# **Social Transfers and Income Distribution in Cyprus**

**Christos Koutsampelas**

## ***Abstract***

The urgent need of the Cypriot state for fiscal adjustment puts considerable pressure on social spending. Yet, this process entails the danger of derailing the long-term goals of the government for tackling inequality and poverty. The present paper employs micro data from the 2008/9 Family Expenditure Survey with a threefold aim. Firstly, to measure the ability of the Cypriot welfare system to tackle inequality. Secondly, to assess the anti-poverty impact of social transfers with regard to incidence, intensity and inequality of poverty. Finally, based on the empirical results of the analysis, to provide policy recommendations that serve as useful input for the challenges that policymakers are going to face in the near future.



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# **Κοινωνικές παροχές και κατανομή εισοδήματος στην Κύπρο**

**Χρήστος Κουτσαμπέλας**

## **ΠΕΡΙΛΗΨΗ**

Η ανάγκη της Κυπριακής οικονομίας για δημοσιονομική προσαρμογή ενδεχομένως να συμπιέσει τον προϋπολογισμό των κοινωνικών δαπανών. Ωστόσο, η πρακτική αυτή ενέχει τον κίνδυνο εκτροχιασμού των μακροπρόθεσμων στόχων της Κύπρου αναφορικά με την καταπολέμηση της ανισότητας και της φτώχειας. Η παρούσα μελέτη χρησιμοποιεί τα δεδομένα της πιο πρόσφατης Έρευνας Οικογενειακών Προϋπολογισμών της Στατιστικής Υπηρεσίας, έχοντας έναν τριπλό στόχο: α) να εκτιμήσει ποσοτικά τη συμβολή του Κυπριακού κοινωνικού κράτους στη μείωση της ανισότητας, β) να μετρήσει την επίπτωση των κοινωνικών μεταβιβάσεων στις τρεις διαστάσεις της φτώχειας (ποσοστό, ένταση και ανισότητα ανάμεσα στους φτωχούς) και γ) να προσφέρει προτάσεις πολιτικής που ανταποκρίνονται στις προκλήσεις που ενδέχεται να αντιμετωπίσουν οι κυβερνώντες στο εγγύς μέλλον.



## 1. INTRODUCTION

The present essay examines social benefits in Cyprus from the perspective of their anti-poverty impact and redistributive effect. Income inequality and poverty are not emergent concerns in Cypriot society. The very good performance of the economy over the past years, as well as the favourable conditions of the labour market, have contributed to lower inequality, poverty and social exclusion levels in comparison with most European countries. Yet, the Cypriot welfare state needs to meet the challenge of responding adequately to the changing macroeconomic environment. Socioeconomic conditions are transforming rapidly and pose increasing risk of derailing the anti-poverty and social inclusion targets.<sup>1</sup> Indeed, the social protection system possibly will come under pressure due to the need for fiscal consolidation and the macroeconomic effects of the ageing of the population. This means that the policymakers should, inter alia, consider the possibility of reforming the social benefits so as to improve their cost effectiveness. Furthermore, due to the slowdown of the economy, unemployment has increased. The deteriorating conditions in the labour market imply that more households depend on social transfers (unemployment benefit, social assistance, etc.) further exacerbating the problem. In spite of the fact that overall poverty is low in Cyprus (at least compared with what pertains in most other European countries), still, severe pockets of poverty and social exclusion are observed for vulnerable groups.

Income distribution in Cyprus was until recently a relatively under-scrutinised research area. Several comparative studies which include Cyprus in their analysis (for example, Lelkes and Zólyomi, 2008) highlight that elderly poverty in Cyprus is among the highest in Europe. However, only over the past few years has there been a systematic attempt to investigate thoroughly distributional issues through country-specific analyses. Hajispyrou and Nicolaidou (2007) analyse aggregate inequality in Cyprus over a twelve-year period (1991-2003). They find that the income position of several groups (lone parents, large families and the unemployed) deteriorated over that period. Their analysis also proposes measures that can reduce inequalities. Pashardes (2007) focuses on child poverty. According to the author the very low child poverty rates in Cyprus can be attributed to the generosity of the child benefit, the high labour market participation among parents

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<sup>1</sup> According to the Cyprus National Reform Programme, Cyprus sets the national target to reduce the number of people at-risk-of-poverty and social exclusion by 27,000 people (or reducing the percentage of people at-risk-of-poverty and social exclusion to 19.3%).

and the small proportion of lone parents in the population. Policy recommendations emphasise the need to reform the eligibility criteria of the means-tested part of the child benefit. Pashardes and Polycarpou (2008) use a consumer-based approach to estimate the extent of income under-reporting in Cyprus. They find that not taking into account tax evasion in income studies results in downward bias of inequality and poverty estimates. Their analysis suggests also that public services should take care to avoid the false entitlement of means-tested benefits. Andreou and Pashardes (2009) examine inequality and poverty from a comparative perspective. They find that income inequality and poverty in Cyprus is close to the EU average. They also estimate the distributional effects of the pension reform, which they estimate to be progressive, but they also detect potential harmful fiscal and incentives-related side effects. Finally, Pashardes and Polycarpou (2010) examine the depth of poverty and the employment behaviour of public assistance recipients in Cyprus. Their analysis proposes measures that aim at encouraging labour market participation of the beneficiaries. In the same spirit as the above studies, the present paper exploits the information derived from the 2008/9 Family Expenditure Survey conducted by the Statistical Service of Cyprus with a three-fold target. First, it aims at measuring the performance of the Cypriot welfare state on tackling inequality and poverty through cash transfers. Second, it examines how social transfers change the profile of poverty, and finally, based on the empirical results of the analysis, it provides policy recommendations that serve as useful input for the challenges that policymakers are going to face in the near future.

The structure of the paper is the following: section 2 provides a brief overview of the Cypriot welfare system, which is valuable for the meaningful interpretation of the results, section 3 describes our methodological choices, section 4 is the core of the study, namely it presents our empirical analysis and finally, section 5 discuss the main policy implications of the results.

## **2. THE CYPRIOT WELFARE STATE**

After the independence of Cyprus, in 1964, social policy became the responsibility of the Social Welfare Services under the administration of the Ministry of Labour and Social Insurance. Until the invasion of the Turkish army in 1974, social expenditures represented a small proportion of the GDP. After the invasion and the military occupation of the northern part of the island the vast number of Greek-Cypriot refugees created urgent social problems that needed to be addressed by the state. Since then the Cypriot welfare state has gradually developed into a relatively complex net of social benefits and publicly provided services. Essentially, it consists of three parts: social insurance, social assistance and universal

protection. The social insurance scheme is compulsory and contribution-funded. Its aim is to protect the working population against certain risks. Social assistance provides a safety net to those families that lack sufficient economic resources to support themselves, and universal protection provides income protection to all households that satisfy certain criteria irrespective of their income.

## **2.1 Social insurance**

The first compulsory Social Insurance Scheme in Cyprus was introduced in January, 1957.<sup>2</sup> The Scheme of 1957 provided a limited number of benefits and covered part of the population. Nowadays, it provides a wide array of benefits and services that promote the well-being of individuals and families through providing protection against certain risks. The Social Insurance scheme provides for the following social benefits: marriage grant, maternity grant, funeral grant, maternity allowance, sickness benefit, unemployment benefit, missing person's allowance and employment injury benefits. All employed persons are entitled to all of the above benefits if they fulfil certain eligibility criteria set by the law. Table 1 provides a brief overview of the most important contributory benefits that are provided by the Social Insurance Scheme.

The most common contribution conditions in the Cypriot Social Insurance Scheme are: a) that the claimant should have been insured for at least 26 weeks and has paid contributions on insurable earnings not lower than 26 times the weekly amount of the basic insurable earning; and b) to have paid or been credited with contributions in the previous contribution year on insurable earnings not lower than 20 times the weekly amount of the basic insurable earnings. Another distinct characteristic of the contributory benefits is that all the periodical benefits consist of a basic part and a supplementary part. The basic part is universal and the supplementary part is earnings-related.

## **2.2 Social assistance**

Social assistance programs exist across all European countries and are central elements of their social policies. Although spending on those programs is equal to a relatively small part of total social expenditures, they are important sources of

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<sup>2</sup> Certain occupational categories were exempted.

income for those who receive them and act as a last safe net for the most vulnerable population groups.

**Table 1: Overview of main contributory social transfers**

<b>Benefit</b>	<b>Conditionality</b>	<b>Potential Beneficiaries</b>	<b>Eligibility Criteria</b>	<b>Rate of the benefit</b>
Wedding grant	Wedding	Both spouses	contribution conditions	Flat rate
Birth grant	Birth of a child	Mother of a newborn	contribution conditions	Flat rate
Funeral grant	Death of household member	Family of the deceased	contribution conditions	Flat rate
Maternity benefit	Birth of a child	Mother of a newborn	contribution conditions	Flat rate
Sickness benefit	Health problems	Employees incapable of work	contribution conditions	Depending on insurable earnings and number of dependants
Unemployment benefit	Loss of job	Employees and optionally insured in the service of a Cypriot employer abroad	contribution conditions	Depending on insurable earnings and number of dependants
Missing person allowance	Victims of invasion	Employees, self-employed and optionally insured	contribution conditions	Depending on insurable earnings of the deceased
Orphans benefit	Orphanage	Dependents of deceased employees	contribution conditions	Depending on insurable earnings of the deceased
Employment injury benefits	Industrial accidents and occupational diseases	Employees	Depends on the degree/type of injury	Depends on insurable earnings and degree/type of injury

Source: Social Insurance Services, Euromod Country Report-Cyprus.

Social assistance in Cyprus is a means-tested benefit targeted to families with income that is not enough to cover their basic and special needs. Eligible for social assistance are all Cypriot, EU citizens and third country citizens legally residing in the country, refugees, asylum seekers, people temporarily staying in the country for humanitarian reasons, as well as underage victims of trafficking and sexual exploitation. The basic needs refer to nutrition, clothing and footwear, water supply, electricity and sanitary living. Social Welfare Services estimate the amount which is needed for a family to cover necessities and recalculates it each year. On the other hand, special needs refer to rent allowances, medically prescribed diet allowances, home-care, day-care, house equipment, house repairs, allowances for mortgage interest deriving from a house loan, transportation for work or treatment and other specific needs that are assessed by the administrative officers. The Social Welfare

Services calculate the amount needed for covering the needs of the recipient family as well as its current income. If the former amount exceeds the family income,<sup>3</sup> then the difference is paid to the family in the form of a cash benefit. Therefore, the amount of the benefit is not fixed, but varies from recipient to recipient and acts as a top-up on his/her own economic resources.

Also, it should be noted that beneficiaries should fulfil certain employability conditions. The benefit is not paid if the applicant is employed full-time.<sup>4</sup> Also, the benefit is not paid to voluntarily unemployed persons or individuals who refuse to attend training programs or take gainful employment. Furthermore, the benefit can be paid in-kind in cases where the Social Welfare Service officers consider that the cash would not be spent appropriately by the recipient.

**Table 2: Benefit structure of public assistance**

Year	Head	Dependent>14	Dependent<14
2005-2006	€331.47	€165.73	€99.44
2006-2007	€364.17	€182.09	€109.25
2007-2008	€379.31	€189.66	€113.79
2008-2009	€425	€212.5	€127.5
2009-2010	€452	€226	€135.6

Source: Social Welfare Services

### 2.3 Universal benefits

The Cypriot welfare state provides for universal benefits that are equally available to all citizens irrespective of their income or employment status. Responsible for their administration is the Grants and Benefit Services of the Ministry of Finance. The most important benefits in terms of coverage and generosity are the child benefit and the student grant. Other benefits provided by the Grants and Benefit Services are the mother's allowance, the financial assistance to multi-child families for purchasing a car, the special grant to blind persons, the transportation benefit for the disabled and other special grants or benefits. The following paragraphs provide a brief description of the child benefit and the student grant.

<sup>3</sup> Several income components are excluded from the calculation of the family income.

<sup>4</sup> Disabled persons and lone parents are exempted from this rule.

The child benefit system in Cyprus changed from an in-work (based on tax allowances for children) to a cash benefit system as a result of the 2003/4 tax-benefit reform. The cash benefit is paid to families with children and consists of a universal basic part and a supplementary means-tested part. The basic part is paid to all families permanently residing in Cyprus for each child that lives under the same household and meet the provisions of the Law.<sup>5</sup> Table 3 presents the structure of the benefit.

**Table 3: Structure of child benefit**

No of children	Basic annual benefit	Supplementary annual benefit for families with gross income during 2008:	
		Up to €19,500	Between €19,500 and €39,000
1 child	421.29	105.33	52.67
2 children	842.61	421.29	315.97
3 children	2527.8	947.91	789.9
4+ children	1390.29 per child	463.43 per child	289.64 per child

Source: Grants and Benefits Service, Ministry of Finance.

The student grant in Cyprus is paid to every student in tertiary education. The student grant is universal, but it provides supplementary amounts to families with three or more children, as well as to those families that pay university fees. Students should be Cypriot citizens, live permanently in Cyprus and be above the age of 17. The grant is paid only for the normal duration of studies, which naturally varies across academic fields. Non-Cypriots students are eligible if one of the parents is Cypriot and as long as they have graduated from a secondary school in Cyprus. The student grant is attributed to the parents of the student and it is non-taxable. The amount of the benefit equals to €1708 per student for every academic year. There is also a supplementary part of €854.30 if the student belongs to a multi-child family or he/she is enrolled in a private institution and pays tuition fees. The rate of the benefit has remained stable over the last years.

<sup>5</sup> According to the law in Cyprus, families receive the child benefit if they have unmarried children who are (a) under the age of 18 or between 18-23 years in full time education, (b) between 18-25 years serving in the National Guard or between 23-25 in full time education and (c) permanently incapable of self-support, irrespective of age.

### 3. DATA AND METHODOLOGY

The data used in the study are the micro-data of the 2008/9 Family Expenditure Survey (FES) conducted by the Statistical Service of Cyprus. For the purposes of the study, income is defined as proxy of the unobservable welfare of the household. The definition of income used in the study includes all monetary income components (wages, income from self-employment, passive income, pensions and cash transfers), as well as non-cash income components (imputed rents,<sup>6</sup> consumption of own production and fringe benefits). The unit of analysis is the individual in the context of the household and the distributions used are distributions of equivalised household disposable income per capita. In order to compare meaningfully the incomes of different households with a different number of household members, household income is “corrected” using the appropriate equivalence scales. Equivalence scales take into account a household’s economies of scale related to the consumption of certain goods, as well as different needs. In the analysis, the “modified OECD equivalence scales” are adopted, that assign weights of 1.00 to the household head, 0.50 to each of the remaining adults in the household and 0.30 to each child (person aged below 14) in the household (Haagenars et al., 1994). Furthermore, cost-sharing within the household is assumed. The household is treated as a single spending unit and all incomes are added up in order to form total household income. Consequently, equivalised household income serves as a proxy of individual economic welfare.<sup>7</sup>

Relative inequality in Cyprus is estimated using the Gini index and the parametric family of Atkinson indices (Atkinson, 1970). Both indices satisfy the basic axioms of inequality measurement (symmetry, mean independence, population invariance and principle transfers). The Atkinson index is explicitly based on a social welfare function. Its welfare interpretation is simple; the index measures the proportion of total income that could be redistributed with no loss of social welfare, if the remaining income were to be equally distributed (Lambert, 2001). By setting arbitrary values at the inequality aversion parameter that characterises the index,

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<sup>6</sup> We use the self-assessed monetary values of the homeowners. However, a more robust approach would have required the application of econometric techniques that estimate imputed rents as a function of housing characteristics.

<sup>7</sup> A particularity of the Cypriot microdata is that domestic workers are treated as members of the household. Despite that they may benefit from housing amenities or other in-kind provisions of the household, it is erroneous to assume that their economic welfare is approximated by the equivalised household income of the household they are employed by. Therefore, we treat them as separate households. Their employment income is augmented by the imputed value of the free provision of housing, which was arbitrarily set to €250.

the analysis can capture a wide range of distributional preferences. For the purposes of the study, the parameter was set at 0.5, 1.0 and 1.5, thus covering a wide range of social preferences with regard to aversion to inequality.

The measurement of poverty presupposes the choice of a poverty measure and a poverty line and here the approach of Eurostat is used with a relative poverty line equal to 60% of the median of the corresponding distribution. The poverty indices selected for measuring relative poverty belong to the parametric family of Foster et al., (1984), (FGT index), while here the poverty aversion parameter is set at 0, 1 and 2 successively.

The methodology comprises the following tasks: Firstly, to estimate the “true” distribution of equivalised income, which serves as a benchmark. Then, to estimate counterfactual distributions of income that would prevail in the absence of a particular benefit (or group of benefits). Each counterfactual distribution is compared with the baseline distribution using selected tools of income distribution analysis. The comparison of pre- and post-benefit distribution reveals the redistributive and anti-poverty effect of the social benefits under investigation. An apparent limitation of this methodology is that it implicitly assumes that:

(a) Transfers do not elicit behavioural responses. In other words, there are no behavioural responses that would cause pre-benefit income to deviate from observed post-benefit income. This assumption is common in the relevant literature (Atkinson, 2003).

(b) There are no important interrelations between tax and benefit instruments.<sup>8</sup>

Most probably taking into account in our analysis such complexities would induce marginal quantitative changes in the results, yet their qualitative robustness would be preserved.

Finally, the empirical analysis would be complemented with decomposition analysis by population subgroups so as to examine formally how social benefits change the structure of poverty in Cyprus. Decomposition by population subgroups assumes that the income units are distinguished into attributes that partition the population into non-overlapping and exhaustive population groups. Thereafter, overall poverty

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<sup>8</sup> Tax-benefit microsimulation models partly address this problem, however it is impossible to simulate meaningfully all policy instruments.

can be expressed in terms of the poverty prevailing within these specified population groups. For the purpose of our study the population is partitioned according to household type, socioeconomic status of the household head, educational status of the household head and age of the population member.

#### **4. EMPIRICAL RESULTS**

The FES database contains disaggregated information about the following social benefits: child benefit, student grant, public assistance, mother's allowance, maternity benefit, birth grant, funeral grant, wedding grant, elderly care allowance, unemployment benefit, scholarships, injury benefit, disability benefit, missing persons' allowance, sickness benefit, heating allowance, fostering child grant, special grant to the blind, and financial assistance to multi-child families for purchasing a car. Any other social benefit received by the household unit was categorised as "other benefit". For the purposes of this analysis, the above-mentioned benefits were grouped as follows:

- Family benefits are the sum of maternity benefit, mother's allowance, birth grant, elderly care allowance, wedding grant and funeral grant.
- The child benefit, student grant, public assistance and unemployment benefit were separately examined.
- Other benefits are the sum of the remaining benefits
- Total benefits are the sum of all the above benefits.

##### **4.1 Quintile-based statistics**

The redistributive effect of a benefit is the actual decrease in overall inequality caused by the benefit. It depends on two factors; the location of the beneficiaries in the income distribution and the size of the benefit relative to disposable income. Table 4 describes how beneficiaries are distributed across the five quintiles<sup>9</sup> of the

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<sup>9</sup> All income units are ranked in ascending order (from the poorest income unit to the richest). Then, the ordered income units are divided to five equal-sized subsets called quintiles.

income distribution. The analysis assumes that all income from benefits is equally shared among household members.<sup>10</sup>

The recipients of family benefits are more concentrated in the lower half of the distribution, while the frequencies of beneficiaries for the middle and upper income quintiles are lower. Child benefit recipients appear to be distributed almost equally across the middle and upper part of the income distribution (note that a perfectly equal distribution of recipients would require that 20 per cent of them be located in each quintile). Interestingly, only 14.0 per cent of the total number of recipients belongs to the poorest quintile. This finding partly reflects the very high rates of elderly poverty in Cyprus. The elderly are disproportionately concentrated in the poorest quintile and do not benefit from the child benefit (yet in some cases benefit indirectly if they cohabit with families with children). The distribution of student grant beneficiaries is skewed towards the middle and upper part of the distribution. Only 9.1 per cent of the total recipients belong to the poorest quintile, while the overwhelming majority of recipients are located in the middle of the income distribution (23.6%, 25.0% and 24.3% at the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> quintile, respectively). This finding is in accordance with several studies in the field of the economics of education that demonstrate that young people from low income households face barriers to university entrance (Dickert-Colin and Rubenstein, 2009). The overwhelming majority of persons that benefit from public assistance are located in the two poorest quintiles. About 44.5 per cent of the beneficiaries belong to the poorest quintile and 26.0 per cent belongs to the second poorest quintile. However, there is a small number of recipients that belong to the upper part of the distribution (even in the richest quintile). This is evidence that social assistance is imperfectly targeted.<sup>11</sup> Moving to unemployment benefits, most recipients are located in the three lower quintiles, reflecting the fact that high earners are more immune to unemployment risk than low- or middle-paid workers. Regarding “other benefits”, recipients are almost uniformly distributed across the five quintiles. Finally, the last column of the table shows that social benefits are mostly captured by the middle classes. It could be argued that the concentration of social benefit recipients in the middle of the income distribution reflects partly the median voter theorem. However, much more empirical investigation is needed in order to validate this assertion.

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<sup>10</sup> This is a very plausible assumption given the strong intra-family ties in Cyprus.

<sup>11</sup> However, it should be noted that the definition of income used in our analysis differs considerably from the definition of income that Social Welfare Services use for means-testing of the benefit.

**Table 4: Distribution of beneficiaries**

Quintiles	Family benefits	Child benefit	Student grants	Public assistance	Unemployment benefit	Other benefits	Total benefits
1(poorest)	22.8	14.0	9.1	44.5	20.7	19.0	15.9
2	22.3	21.5	23.6	26.0	25.5	22.4	21.2
3	15.8	22.9	25.0	14.5	29.5	19.5	22.3
4	19.6	22.2	24.3	8.7	14.9	21.3	21.5
5 (richest)	19.4	19.3	18.0	6.3	9.3	17.8	19.0
All	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: FES 2008/9, own estimations.

The next two tables report the absolute and relative size of the social transfers per quintile. Table 5 reports estimates of the mean annual transfer per household (the ratio of the sum of the transfers to the number of recipient households of each quintile). Mean family transfers vary from €636 to €747 annually, while no distinct distributional pattern emerges. On the other hand, mean annual child benefit is negatively related with disposable income. The average recipient household of the poorest quintile receives €2203. Within the richer quintiles, the mean transfer decreases from €2203 to €882 (richest quintile). This declining pattern reflects the structure of the benefit. The low income families benefit by both the basic part and the supplementary part of the benefit, while the richest households are excluded from the means-tested supplementary part of the benefit. It should be also mentioned that the absolute size of the benefit differs between families (it is especially large for multi-child families). These differences are “averaged out” in the calculations, however the size of the benefit is considerable so as to make a difference in the living standards of the households that receive it. The student grant follows a similar declining pattern. Mean transfer is equal to €3194 per recipient household for the first quintile and declines to €2772 for the richest quintile. Again, this pattern reflects the structure of the benefit which, as in the case of child benefit, consists of a basic and a supplementary part. As far as unemployment benefit and “other benefits” are concerned, their absolute size is very large for the recipients of the richest quintile (€4145 and €5126) due to the fact that the unemployment benefit and most of the “other benefits” are contributory earnings-related transfers. In the rest of the distribution, the unemployment benefit varies from €2174 to €2863 and the other benefits vary from €1160 to €2063. Finally, the last column reports the mean annual total social transfers per household. The largest value is observed for the poorest quintile (€2863); it decreases successively at €3276, €2883 and €2382 for the second, third and fourth quintile respectively and again increases at €2994 for those located at the richest quintile.

**Table 5: Mean annual transfers per household (only recipient households)**

Quintiles	Family benefits	Child benefit	Student grants	Public assistance	Unemployment benefit	Other benefits	Total benefits
1(poorest)	747	2203	3194	4002	2863	1160	3440
2	676	1616	2979	4372	2639	1776	3276
3	636	1259	2940	3796	2459	2063	2883
4	664	1017	3123	1978	2174	2013	2382
5 (richest)	642	882	2772	6957 <sup>a</sup>	4145	5126	2994
All	684	1321	2981	4036	2696	2388	2979

Source: FES 2008/9, own estimations, Notes: <sup>a</sup> Figure based on very few observations.

Table 6 measures the relative size of social transfers in Cyprus. The figures presented in the table are calculated as the ratios of the sum of each social transfer to the total disposable income of the recipient households per quintile. The redistributive effect of social transfers cannot be inferred by these estimates, yet they are informative because: a) a declining pattern of social transfers as a proportion of income is sign of progressivity, b) they show how important are the social transfers for the households they receive them. As the results of Table 7 indicate, the relative size of almost all social transfers is negatively correlated with income (the rather heterogeneous category of “other benefits” is an exemption). Also note that:

- The child benefit is an important income component for low income families with children (20.4% and 10.4% for the first and second quintile, respectively).
- The student grant is very important for poor families that support students (the grant is 27.5% of their income on average). However, the poor are underrepresented in tertiary education.
- Many poor families are heavily depended by public assistance (on average 40.5% of their income comes from public assistance). Yet, the results reveal signs of imperfect targeting, namely the benefit is falsely given to some households that do not need it.
- As a whole, social transfers in Cyprus redistribute a large part of total economic resources. About one third of the income of the poor is derived from social transfers.

**TABLE 6: Social transfers as a percentage of disposable income**

Quintiles	Family benefits	Child benefit	Student grants	Public assistance	Unemployment benefit	Other benefits	Total benefits
1(poorest)	7.0	20.4	27.5	40.5	28.3	10.8	33.0
2	4.5	10.6	19.2	28.7	17.8	11.6	21.5
3	3.3	6.5	15.2	19.6	12.7	10.9	14.8
4	2.8	4.1	12.6	7.8	9.0	8.2	9.6
5 (richest)	1.6	2.4	7.6	20.4 <sup>a</sup>	10.0	13.0	8.0

Source: FES 2008/9, own estimations. Notes: <sup>a</sup> Figure based on very few observations.

## 4.2 Income distribution analysis

The previous section provided some useful quintile-based statistics that offer a picture of how social transfers are distributed across the five quintiles of the distribution. However, thorough income distribution analysis is needed in order to measure the actual impact of social transfers on inequality and poverty.

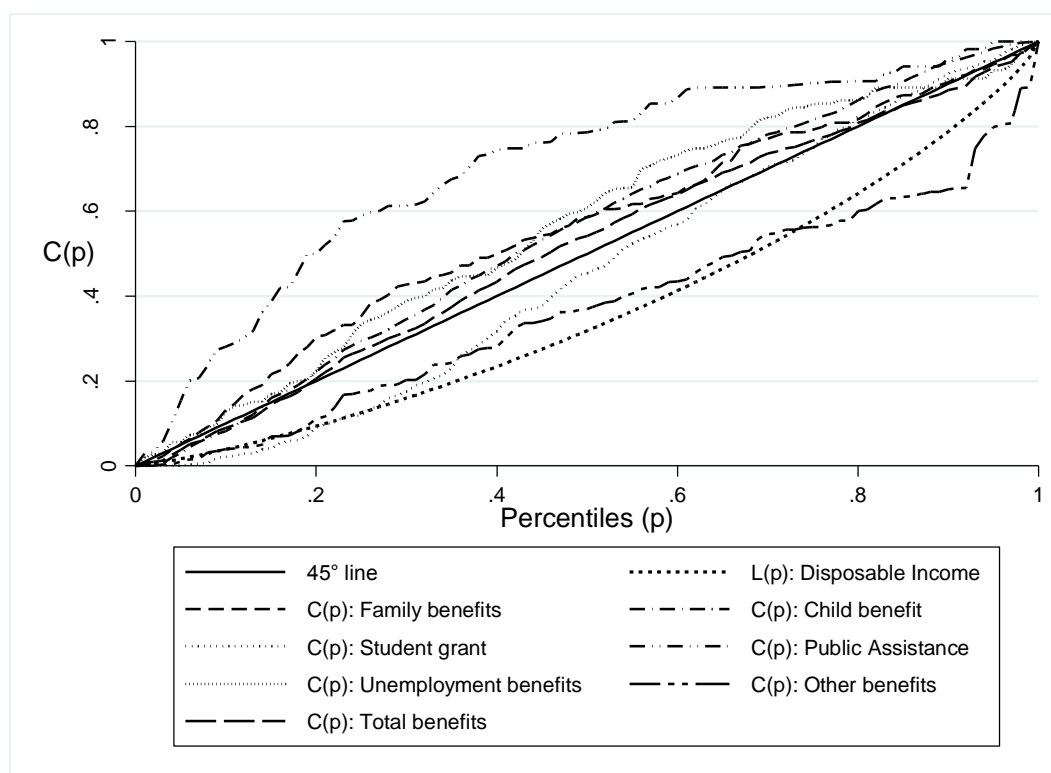
Figure 1 draws the concentration curve for each social transfer. Concentration curves have a similar architecture to the well-known Lorenz curves, but they differ in that they plot cumulative shares of one variable against shares of some other variable (in our case they plot cumulative shares of social transfers against cumulative shares of disposable income). The concentration curves do not capture the effective distributional effect of a benefit, but they describe visually its disproportionality (simply put, how the benefit is distributed). Figure 1 depicts seven concentration curves (for each social transfer under examination) and the Lorenz curve for disposable income. The latter serves as a benchmark. The 45<sup>0</sup> diagonal line is the line of complete equality that represents an “ideally” equal distribution (x per cent of the population receives x per cent of the transfer). Line of complete equality serves also as a natural benchmark.

Careful observation of the concentration curves of Figure 1 reveals some interesting results:

- Almost all concentration curves lie above the Lorenz curve for disposable income (purple line) leading to the conclusion that social transfers are distributed more equally than disposable income.
- Concentration curves for the student grant and “other benefits” are the only concentration curves that intersect the Lorenz curve for disposable income. They are also more closely located to the latter than the rest of the curves. These benefits are more unequally distributed than the rest.

- The concentration curves for child benefit, unemployment benefit and family benefits lie slightly above the line of complete equality. Therefore, these benefits are almost evenly distributed to the population.
- The concentration curve for public assistance departs significantly from an equal distribution. The benefit is disproportionately distributed to the bottom of the distribution in both relative and absolute terms.

**Figure 1: Concentration Curves**



Concentration curves provide useful qualitative insights, but indices of inequality are necessary in order to estimate the quantitative impact of social transfers in the income distribution. Table 7 reports the percentage changes in overall inequality between the pre-benefit counterfactual distribution and the post-benefit actual distribution. Two different indices of inequality have been used in the analysis; the Gini index and the parametric Atkinson index for three different values of the inequality aversion parameter. The Atkinson index belongs to the welfare-based indices of inequality and its parameterisation implies the social preferences with respect to inequality. Namely, the higher the value of the parameter, the more sensitive is the index to transfers at the lower part of the distribution.

The results indicate that all social transfers redistribute income (inequality of pre-benefit distribution is always higher). Yet, important differences are observed across the various social transfers. Family benefits and “other benefits” have the smallest redistributive effects. In both cases, their redistributive effect is estimated below 1 per cent. On the other hand, the strongest redistributive effects are observed for public assistance and the child benefit. Inequality declines by about -2.2 and -1.6 per cent due to child benefit and public assistance, respectively, according to the Gini index. The Atkinson index yields more fruitful results. According to it, the redistributive effect of the child benefit fluctuates around -4.2% irrespective of the value of the parameter. On the other hand, the higher the value of the inequality aversion parameter, the stronger is the observed redistributive effect of public assistance (from -4.30 to -7.40 per cent according to the value of the parameter). Similarly, the redistributive effect of the unemployment benefit steeply increases as higher values of the social aversion to inequality are assumed. The rather extreme percentage change of -10.3% [for Atkinson (1.5)] could be attributed to the high sensitivity of the index to transfers that take place at the very bottom of the distribution.

As a whole, this analysis estimates that social transfers significantly reduce the overall income in Cyprus. The redistributive effect of social transfers is estimated at -5.7% (Gini index). However, this result is the product of a purely statistical approach. If a welfare-theoretic approach is adopted, inequality is reduced from -12.3% to -27.8%, the result depending on the implied social aversion to inequality.

**Table 7: Distributional effects of social transfers**

% change in inequality between pre-benefit and post-benefit distribution:							
Quintiles	Family benefits	Child benefit	Student grants	Public assistance	Unempl. benefit	Other benefits	Total benefits
Gini	-0.22	-2.21	-0.81	-1.61	-0.70	-0.36	-5.73
Atkinson(0.5)	-0.44	-4.21	-1.38	-4.30	-1.60	-0.77	-12.33
Atkinson (1.0)	-0.46	-4.23	-1.15	-5.52	-2.53	-0.83	-14.99
Atkinson (1.5)	-0.48	-4.20	-0.90	-7.40	-10.29	-0.91	-27.83

Source: FES 2008/9, own estimations.

Table 8 assesses the anti-poverty effects of social transfers under examination. For the purposes of the analysis, the parametric family of FGT index is employed. The poverty aversion parameter is set at 0, 1 and 2, respectively. If the parameter is set at zero, the index is equivalent to the popular headcount ratio (otherwise known as at-risk-of-poverty index), which simply reports the percentage of individuals under the poverty line. FGT(1) takes into account the depth of poverty

and FGT(2) is also sensitive to the inequality of income among the poor. The strongest anti-poverty effect is caused by the child benefit. The estimates suggest that it reduces the risk of poverty by -6.4%, while public assistance reduces it by -4%. Family benefits and “other benefits” have a considerable anti-poverty effect (-1.64% and -2.20%), unemployment has a negligible effect on overall poverty and the student grant has no effect at all. An analysis of other dimensions of poverty show that public assistance and the child benefit, besides reducing the poverty risk, reduce considerably the depth of poverty and the inequality of income among the poor. In particular, the FGT(1) and FGT(2) indices decrease by -14.7% and -26.1% due to public assistance. As a whole, social benefits exhibit strong anti-poverty effects. Headcount ratio is reduced by -13.8%, FGT(1) index by -26.9% and, finally, FGT(2) index by a staggering -38.5%

**Table 8: Anti-poverty effects of social transfers**

Quintiles	Family benefits	Child benefit	Student grant	Public assistance	Unempl. benefit	Other benefits	Total benefits
FGT (0)	-1.64	-6.40	-0.09	-4.02	-0.79	-2.20	-13.79
FGT (1)	-1.91	-9.48	0.78	-14.72	-2.81	-2.30	-26.92
FGT (2)	-1.89	-9.68	2.08	-26.10	-5.75	-2.96	-38.51

Source: FES 2008/9, own estimations.

Finally, how social transfers shape the structure of poverty is examined. The results of the poverty decomposition analysis are reported in Table 9. More particular, estimates are made of the group-specific risk of poverty as well as the relative contribution of each group to aggregate poverty (namely, what proportion of overall poverty is explained by the risk of poverty of each population group).

The results of the analysis show that the risk of poverty is not uniformly distributed across the various socioeconomic and demographic population groups. Indeed, older single persons or couples, mono-parental families, households headed by a non-employed person or low educated persons face higher risk of poverty than the rest of the population. In that case, the contribution of these groups to aggregate poverty is higher than their population share. Older single persons or couples represent 12.4% of total population, yet the relative contribution of the group to aggregate poverty is 30.3%. Also, individuals that live in households headed by low-educated persons represent 21.9% of the population, but the group contributes to almost 44% of aggregate poverty. The analysis of the structure of poverty shows that poverty in Cyprus, to a certain extent, is education- and age-related.

The last column of the table shows the change in the group-specific poverty risks that can be attributed to social transfers. Social transfers do not change the structure of poverty considerably. Yet, they reduce the poverty risk of several population groups. In the absence of social transfers, the poverty risk of mono-parental families would be almost double. Child poverty is also considerably contained due to social transfers (mostly because of the child benefit). Indeed, the child poverty in the pre-benefit distribution is measured at 18%, five percentage points higher than in the actual distribution. Surprisingly, the contribution of elderly to overall poverty in the actual distribution (28.3%) is higher than their contribution in the pre-benefit distribution (22.8%). This is because the income of the elderly mainly stems from pensions, while they capture a smaller share of social benefits than the rest of the population.

**Table 9: Poverty decomposition analysis**

<i>Household type</i>	<i>Population share</i>	<i>Value of the index</i>		<i>Contribution to poverty</i>		<i>Difference in risk of poverty</i>
		<i>Post-benefit distribution</i>	<i>Pre-benefit distribution</i>	<i>Post-benefit distribution</i>	<i>Pre-benefit distribution</i>	
Older single persons or couples	12.4	0.34	30.29	0.32	24.25	0.02
Younger single persons or couples	13.4	0.12	11.05	0.11	8.88	0.01
Couple with children up to 18	48.5	0.11	38.78	0.15	44.69	-0.04
Mono-parental household	3.2	0.26	5.94	0.42	8.11	-0.15
Other household types	22.5	0.09	13.95	0.10	14.08	-0.01
<i>Socioeconomic group of HH head</i>						
Blue collar worker	35.6	0.06	14.42	0.06	13.78	-0.01
White collar worker	27.0	0.11	21.69	0.15	24.61	-0.04
Self-employed	9.0	0.10	6.51	0.15	8.31	-0.05
Unemployed	8.5	0.24	14.33	0.31	15.85	-0.07
Pensioner	17.3	0.30	36.95	0.28	30.03	0.02
Other	2.6	0.33	6.10	0.47	7.43	-0.14
<i>Educational level of HH head</i>						
Primary education	21.9	0.28	43.99	0.31	41.76	-0.03
Secondary education	51.0	0.12	44.82	0.16	48.64	-0.03
Tertiary education	27.1	0.06	11.20	0.06	9.61	0.00
<i>Age of population member</i>						
Below 18	22.9	0.12	20.08	0.18	24.77	-0.05
18-64	64.7	0.11	51.64	0.13	52.45	-0.02
Over 64	12.4	0.32	28.28	0.30	22.77	0.02
All		0.141		0.16		

Source: FES 2008/9, own estimations

## 5. CONCLUSIONS AND POLICY IMPLICATIONS

The paper provided estimates of the redistributive effect and the anti-poverty impact of social transfers in Cyprus. Total social transfers were disaggregated to the following components: family benefits, child benefit, student grant, public assistance, unemployment benefits and other benefits. It was found that these transfers represent an important proportion of the disposable income of the recipients. Using income distribution analysis under the assumption that benefits are shared within the household and abstracting from any behavioural implications associated with social transfers, it was shown that social transfers are more equally distributed than cash income and that they induce considerable reductions in the measured levels of relative inequality and, especially, relative poverty. However, the ranking of the transfers in terms of inequality and/or poverty indicators differs. The child benefit was found to exhibit very strong redistributive effects and to reduce considerably all dimensions of monetary poverty (incidence, intensity and inequality among the poor). The anti-poverty effects of public assistance are also very strong. However, we found evidence of imperfect targeting, namely benefits are received by those who are not supposed to receive them (e.g., high earners). The redistributive effect of family benefits and other benefits is mildly progressive. Their anti-poverty effects are also mild. Finally, the student grant is the least progressive transfer. Its redistributive effect is marginally progressive, while its impact on poverty is ambiguous.

The results of the analysis have certain policy implications, especially in the current difficult economic environment. The impact of fiscal tightening on the real economy is not yet fully realised, but most probably it would hinder economic recovery. At the same time, the deterioration of Cyprus's sovereign ratings increases the cost of public debt, which in turn leads to cuts in welfare spending. As the analysis showed, social benefits amount to 1/3 of the total disposable income of the poor. A reduction of the average rate of social benefits, *ceteris paribus*, would result in an increase in the incidence and depth of poverty. Furthermore, it was shown that social benefits, in most cases, are far more equally distributed than income from other sources, therefore benefit cuts would exert an upward pressure to overall inequality. Hence, if social expenditure reductions are unavoidable, they should be designed so as to minimise unwanted distributional outcomes.

The results offer some guidance for policymakers given the twin goal of tackling inequality/poverty and consolidating the fiscal budget.

- More care is needed in order to improve targeting so that resources are channelled correctly to households in greater need. This recommendation is

also highlighted in previous studies (Pashardes and Polycarpou, 2011) and discussed in the public dialogue. Recent proposals by the government to reform the Public Assistance Law in order to correct some of these distortions are in the right direction.

- The child benefit contributes considerably to the low inequality and poverty levels in Cyprus. If the government aims at cutting economic resources directed to income support for families with children, it should design carefully the policy reforms in order to minimise income losses to families with children that are located near or under the poverty line. Such an exercise requires the use of ex-ante social impact assessments that would be based on microsimulation techniques.
- Means testing is a valuable tool, but it is not a panacea as it can encourage tax evasion. In addition, those who evade taxes, and who can be wealthy, frequently are recipients of such benefits. To proceed with means testing, it is therefore a priority to find ways to combat tax evasion. Otherwise, there lies the risk of implicitly redistributing income from the tax compliant income units to the tax evaders. Secondly, means-testing may create poverty traps. Poverty traps happen when individuals strive for more income, but end up having less because they lose entitlement to one or more social benefits. In that case, they lose incentive to increase their efforts in the labour market. Last but not least, politicians should be aware that if a social benefit becomes overly pro-poor, it may lose the political support of the electorate.
- The student grant most probably needs to be reformed. Currently, there is no academic study that examines the distributional effects of public education in Cyprus. This is a gap in the literature that needs to be filled. Yet, many international studies in the field show that the free provision of publicly provided tertiary education is regressive. The reason is that poor household members have a higher probability of dropping out from secondary education, as well as less means and motivation to prepare effectively and compete in the general examinations for university entry. The student grant is almost as unequally distributed as disposable income. Therefore, it most probably exacerbates these underlying educational inequalities. Abstracting from any behavioural responses related to the decision of the young to invest in their human capital and approaching the issue from a distributional point of view, the grant should be re-designed and re-considered.

## REFERENCES

- Andreou, M. and P. Pashardes (2009) 'Income Inequality, Poverty and the Impact of the Pension Reform', *Cyprus Economic Policy Review*, Vol. 3, No. 2, pp. 41-55.
- Atkinson, B.A. (2003) 'Income Inequality in the OECD countries: Data and Explanations', *CESifo Economic Studies*, 49(4), pp. 479-513.
- Atkinson, B.A. (1970) 'On the Measurement of Inequality', *Journal of Economic Theory*, 2, pp. 244-263.
- Cyprus National Reform Programme (2011) Europe 2020 Strategy for: Smart, Sustainable and Inclusive Growth, Planning Bureau, April 2011.
- Dickert-Colin, S. and R. Rubinstein (eds.) (2009) *Economic Inequality and Higher Education: Access, Persistence and Success*, New York: Russell Sage Foundation, December 2009.
- Foster, J.E., J. Greer and E. Thorbecke (1984) 'A class of decomposable poverty measures', *Econometrica*, 52, pp. 761-766.
- Hagenaars, A.J.M., K. de Vos and M.A. Zaidi (1994) Poverty statistics in the late 1980s: Research based on micro-data, Theme 3, Series C, Eurostat Luxembourg.
- Hajispyrou, S. and N. Nicolaidou (2007) 'Income Inequality in Cyprus', *Cyprus Economic Policy Review*, Vol.1, No.1, pp. 81-94.
- Lambert, P. (2001) *The Distribution and Redistribution of Income*, Manchester University Press, Third Edition.
- Lelkes, O. and E. Zólyomi (2008) 'Poverty Across Europe: The Latest Evidence Using the EU-SILC Survey, Policy Brief October 2008, European Centre.
- Pashardes, P. (2007) 'Why Child Poverty in Cyprus is so Low', *Cyprus Economic Policy Review*, Vol. 1, No. 2, pp. 3-16.
- Pashardes, P. and A. Polycarpou (2008) 'Income Tax Evasion, Inequality and Poverty', *Cyprus Economic Policy Review*, Vol. 2, No. 2, pp. 37-49.

Pashardes, P. and A. Polycarpou (2010) 'Poverty and Labour Market Participation of Public Assistance Recipients in Cyprus', *Cyprus Economic Policy Review*, Vol. 5, No. 1, pp. 23-42.

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