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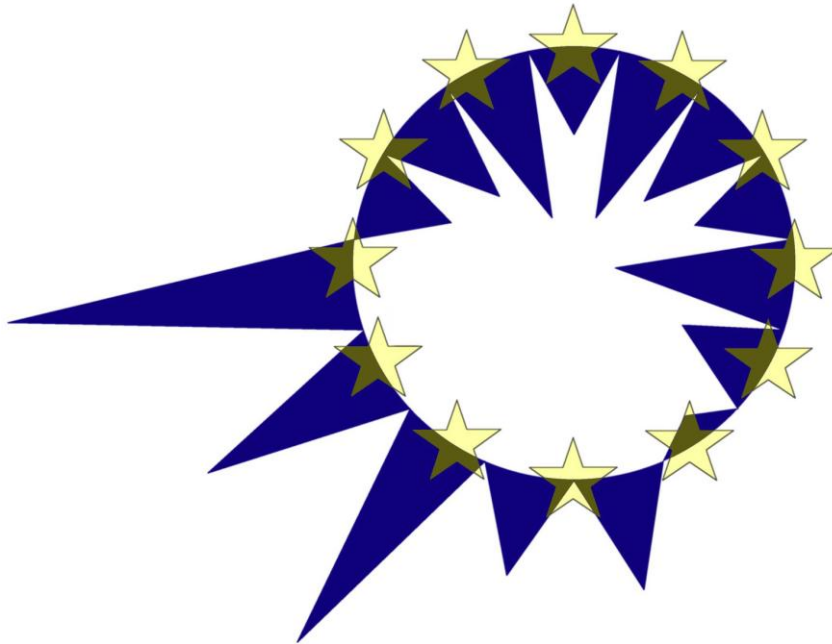
Austerity and the Income Distribution: The Case of Cyprus

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Abstract

The economic crisis affecting Cyprus is likely to have considerable impact on the income distribution. Our analysis provides an early assessment of the short-run distributional effects of austerity measures. We distinguish between fiscal measures that affect wages, taxes and contribution rates and measures that directly affect the function of the welfare system. Using the tax-benefit EUROMOD model we attempt to quantify the distributional implications of both. The analysis focuses on the policy changes introduced over the period between 2011 and 2012, i.e. before the expected bailout deal between the government of Cyprus and the consortium of international lenders which is expected in spring 2013. Specifically, we simulate the ceteris paribus impact of the reforms on inequality and poverty as well as estimate how the burden of austerity has been shared across income groups.

JEL Classification: C81, D31
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1. Introduction

The paper examines the fiscal consolidation measures which were implemented in Cyprus during the period of 2011-2012 in an effort to address fundamental economic imbalances. In retrospect, this attempt failed to prevent public debt from embarking on an unsustainable trajectory and the country is soon to agree a Memorandum of Understanding with international lenders. Here we consider the fiscal efforts of the pre-bailout period and assess their short-term consequences with particular emphasis on social policy. The focus on the idiosyncratic case of Cyprus merits attention because despite its small size the island faces a severe economic crisis fuelling further the European debate on austerity and its social and economic impacts.

The level and structure of social spending have been recently questioned by a growing number of economists and politicians throughout the world[2]. This phenomenon also existed in the past but in a rather different context. In the early eighties, for instance, economic globalization and the rise of liberal politics generated skepticism about the wisdom of the expansion of welfare state and in many cases put welfare state retrenchment on the agenda. Yet, welfare state institutions proved to be popular, well embedded in the economic life of people and ultimately very resilient to downsizing. Today, welfare state resilience is tested again, but in an entirely different context. What started as a financial crisis in some countries quickly morphed into a nearly global public debt crisis, which exerts severe pressure on state budgets in many countries.

The fiscal 'misery', as this situation is described by several commentators, triggered waves of cutbacks across the spectrum of public expenditures, not sparing social spending. In the political arena, fierce debates have been ignited. The advocates of retrenchment suggest that fiscal prudency is necessary to restore competitiveness, while the polemics of austerity contrast its overwhelming economic and social costs with the benefits, claiming that the former outweigh by far the latter. Yet, in many cases this kind of arguments are superficial.

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[2] In a recent interview with the Wall Street Journal, Mario Draghi's highly criticized the European Social Model: http://blogs.wsj.com/eurocrisis/2012/02/23/qa-ecb-president-mario-draghi/

The motives for welfare state cutbacks are deeper than the political rhetoric of competitiveness or social costs suggest and may stem from the specific configuration of the political system, the wider ideational framework and the dispositions or vested interests of the main players of the political game, (O'Connor and Olsen, 1998; Tanzi, 2002; Starke, 2006).

Nowadays, at least in the case of Cyprus, one may be inclined to adopt the view that arguments based on politics or ideology enjoy limited appeal to the general public opinion as the need to find functional solutions is considered urgent priority. Therefore, pragmatism tends to dominate over ideology. Perhaps this is the reason that even highly-averse to austerity left-wing governments (as the incumbent government of President Christofias in Cyprus) proceed to the implementation of austerity measures. Indeed, the power of externally driven economic changes appears to be overwhelming. Economic globalization, competitiveness, population ageing and fiscal imbalances are among the chief causal factors of retrenchment. These forces interact with institutional factors such as the constellation of power within the political system (which triggers tacit struggles about decisions of distributional importance) and the existing welfare arrangements so as to shape the profile of austerity.

Today, the distributional consequences of austerity policies have gained the interest of several scholars. These studies are relevant not only to the academic discourse but also to the ongoing national and pan-European political debates on the latest developments. Matsaganis and Leventi (2012) provide an assessment of the effects of crisis in Greece using the EUROMOD model. Besides computing the direct impact of austerity policies on inequality, they attempt to estimate the distributional impact of the recent rise in unemployment by adjusting the model's input dataset using the most recent Labour Force Survey data. Callan et al (2010) assess the distributional impact of the government's policy response in Ireland with respect to direct tax, social welfare and public sector pay using the Irish SWITCH tax-benefit model. Callan et al. (2011) and Avram et al. (2012) employ the EUROMOD model and proceed to comparisons of six[3] and nine[4] EU countries, respectively, regarding the effects of austerity on income distribution. Matsaganis (2011, 2012) provides an analysis of the impact of the crisis on the

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[3] Estonia, Ireland, Greece, Spain, Portugal and the UK

[4] Estonia, Greece, Spain, Italy, Latvia, Lithuania, Portugal, Romania and the UK

labour market and the distribution of income and evaluates the capacity of the Greek welfare state in dealing with the effects of the crisis. These studies have several commonalities. First, their empirical analysis is based on cross-sectional microdata. Secondly, they emphasize the relative impact of measures both at the aggregate level but also at the micro-level (i.e. they measure how the relative income position of various socioeconomic groups changes). Thus, the heterogeneity of economic agents is earnestly taken into account. And finally, they overcome the important problem of lagged income data by applying microsimulation techniques. Essentially these techniques consist of comparisons between various counterfactual scenarios of what would have happened in the absence of measures vis-à-vis what has actually happened.

Prognosticating distributional changes is a difficult errand. For, economic inequality is the outcome of complex income-generating processes. Soaring unemployment is likely to have a much harsher effect on low-income households, (for example, low-educated persons face higher unemployment risk). Top incomes are affected in absolute terms as capital income has been considerably reduced the last years, but it is not clear whether their relative income position has improved or not. Pensioners are less affected since their income is relatively inelastic to the effects of the crisis, but austerity measures may target them too. Pivotal is also the capacity of welfare state to absorb the shocks of the crisis. Last but not least, the behavioral responses of individuals to structural changes and economic incentives should not be underestimated. Microsimulation attempts to give answers to these questions under certain conditions and assumptions which describe the structure of economic systems and the behavior of economic agents. Our analysis is based on the EUROMOD model, which is a static tax-benefit microsimulation model which is able to provide robust answers to specific empirical questions.

The aim of the paper is to assess the distributional effects of the austerity measures that were taken during the 2011-2012 period in Cyprus. This time span marks the pre-bailout period as at the time of writing Cyprus is in the process of agreeing a bailout deal with international lenders of the last resort (IMF, EE, ECB) in order to avoid financial collapse. Results are preliminary, but even so they can guide policymakers about the impact of the measures on income distribution, even though the precise size of this impact cannot be accurately assessed

until more recent income data become available. Given the slow pace of the collection and processing of household data in Cyprus, the micro-simulation approach used in our analysis offers a compromise between not being able to assess the distributional impact of the austerity measures at all and assessing this impact with a statistically high degree of precision. The fact that the analysis is limited to the pre-bailout deal (as the exact terms of the deal are not yet known) offers an interesting perspective for future researches, namely to compare 'unconstrained' public policy choices with future policies which are going to be externally constrained by exogenous agents (the tripartite coalition of lenders). The structure of the paper unfolds as follows: section 2 presents briefly the EUROMOD model and the methods followed for deriving the results, section 3.1 and section 3.2 are devoted to the results. In section 4, the political and economic developments of the period set the narrative background for an elaborate discussion of the results. Finally, conclusions close the essay.

2. Data and methods

The analysis marries microsimulation techniques with traditional income distribution analysis. Microsimulation outcomes have been produced via the EUROMOD model. EUROMOD is a multi-country tax benefit model which simulates a series of policy instruments using a micro-dataset and the existing rules of the tax-benefit system[5]. The Cypriot module of the EUROMOD micro-simulation model is the product of joint work between the Economics Research Centre of the University of Cyprus and the Institute for Social & Economic Research (ISER) of the University of Essex. EUROMOD simulates the effects of tax-benefit policy reforms on the income distribution at national or EU level and is a valuable tool for the assessment of the distributional impact of tax-benefit changes in the context of planned or already implemented reforms (Sutherland, 2007). The model simulates a variety of instruments (contributory and non-contributory benefits, social assistance, social insurance contributions and direct taxes). The informational base of the model consists of the policy rules and the underlying micro-dataset. Our analysis is based on the Cypriot microdata

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[5] Visit https://www.iser.essex.ac.uk/euromod for an in-depth presentation of the model.

provided by the European (UDB) version of EU-SILC 2008. The dataset provides information about the demographic and socioeconomic characteristics of the households as well as their reported incomes earned in 2007. This is a drawback and it is due to the very fact that income data are published with a considerable delay. To overcome this problem, the model follows two steps; firstly the tax and benefit rules are updated so as to correspond with 2012 and secondly every income component is updated using appropriate uprate factors (e.g. consumer price index, GDP growth, benefit rates). An additional limitation of the model is that it assumes full compliance with the rules. In other words, tax evasion and mistargeting of benefits are not accounted for[6]. We note also that not every policy instrument can be simulated. The values of unsimulated instruments are equal to those reported by the household units. Overall, the EUROMOD model has been laboriously tested in several applications and has been successfully employed in a plethora of academic analyses, (Sutherland, 2007; Figari et al, 2010).

For the purposes of the study, disposable income is used as proxy of the unobservable welfare of the household. The definition of income includes all monetary income components (wages, income from self-employment, passive income, pensions and cash transfers) except of non-cash incomes which are not taken into account due to lack of information. The unit of analysis is the individual in the context of the household and the distributions used are distributions of equivalised household disposable income. Thus, 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. We use the 'modified OECD equivalence scales' which 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).

Relative inequality 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

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[6] Several national versions of the model have attempted to tackle this problem, see for example Matsaganis and Flevotomou (2010a, 2010b).

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. By setting arbitrary values at the inequality aversion parameter that characterizes the index, the analysis can capture a wide range of distributional preferences. For the purposes of the study, the parameter was set at 0.5 and 1.5, thus covering a wide range of social preferences. 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 per cent of the median of the corresponding distribution. The poverty indices selected for measuring relative poverty belong to the parametric family of the so called FGT index, while the poverty aversion parameter is set at 0, 1 and 2 successively (Foster et al., 1984).

The estimation of the distributional effects of the policy reforms consists of the following tasks: Firstly, the 'true' distribution of equivalised income, which serves as a benchmark, is estimated. Then, we estimate counterfactual distributions of income that would prevail in the absence of a particular reform (or group of reforms)[7]. Each counterfactual distribution is compared with the baseline distribution using the aforementioned tools of income distribution analysis. The comparison of pre- and post-reform distribution reveals the redistributive and poverty effects of the reforms under investigation. An apparent limitation of this methodology is that it implicitly assumes that the reforms do not elicit behavioural responses. This assumption is common in the relevant literature (Atkinson, 2003), and it is considered to provide good approximations of the truth especially for marginal policy changes, (Bourguignon and Spadaro, 2006).

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[7] For example, with respect to the reform of child benefit in 2012, we calculate the benefit amount so as to reflect what it would have been in absence of a reform.

3. Short-run distributional effects of austerity measures

3.1 Tax hikes and contribution increases

EUROMOD offers the potential to simulate a wide range of reforms (in our context; tax hikes, wage cuts and social benefits reforms). However there are policies that cannot be simulated, for example reforms of non-simulated policy instruments or other measures that do not affect directly the income distribution (i.e. rationalization of health care costs). Our analysis gives particular emphasis to social benefit reforms but we also present an overview of the impact of the tax hikes and wage cuts so as to obtain a more comprehensive picture of austerity policies and their economic repercussions. The analysis focuses in 2012[8], when a series of austerity initiatives were implemented:

- The tax rate for dividends increased from 15% to 20%, interest taxation increased from 15% to 17% and the personal tax rate increased from 30% to 35% for gross income above 60,000 euro[9]. Only the latter change is simulated by the model (see column A of Table 1 that follows).

- A special contribution was levied on the gross wages of public sector employees: 0% for 0-2,500 euro, 2.5% for 2,500-3,500 euro, 3% for 3,501-4,501 euro, 3.5% above 4,500 euro per month, (column B).

- The same contribution scheme was later extended for private sector employees, self-employed (column C) and pensioners (column D). The contribution rates remained the same.

- A 3% pension contribution calculated on the gross salaries of public sector employees[10], (column E).

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[8] A newly introduced contribution imposed on public sector employees was voted on 6, December 2012. The government announced also a flat cut on public sector wages which shall be in effect in 2014. These measures have not been taken into account in the present analysis.

[9] The government also increased the special contribution for defence from 10% to 15%. However this contribution affects mostly private firms.

[10] Note that newcomers (defined as those hired 30/09/2011) and elder employees (defined as those with over 400 monthly insurance contributions) are exempted from the contribution.

In Table 1, each column presents the percentage change in equivalized disposable income per income quintile before and after each policy change[11]. By concentrating on equivalized income, we essentially capture the short-term welfare impact of the measures. Note also that we refer to income quintiles (i.e. income units have been ranked into five income classes from the poorest to the richest). This means that we compute the average impact of measures on the average income unit of each quintile[12]. Obviously, the impact on those units that are indeed affected by the measures is larger than the average impact. Two interesting observations emerge from the results. First, the relative welfare effects of the austerity measures are very moderate. Note that the special contributions (columns B, C, and D) are exempted from income taxation, thus their pre-tax impact is partly neutralized. Secondly, the low income quintiles have not been directly affected; only the equivalized disposable income of middle and high income households is slightly reduced.

Table 1: Distributional effects of austerity measures

Quintile	A	B[13]	C	D	E	All
Percentage changes in equivalent disposable income by income quintile						
1 (poorest)	0.00	0.00	-0.01	0.00	-0.05	-0.06
2	0.00	-0.01	-0.04	0.00	-0.20	-0.25
3	0.00	-0.04	-0.04	0.00	-0.41	-0.50
4	-0.02	-0.12	-0.08	-0.01	-0.71	-0.94
5 (richest)	-0.45	-0.27	-0.24	-0.14	-0.81	-1.95
All	-0.17	-0.13	-0.12	-0.05	-0.55	-1.04
Proportional changes in inequality and poverty indices						
Gini	-0.46	-0.20	-0.20	-0.13	-0.48	-1.50
Poverty	-0.00	-0.00	-0.00	0.00	0.97	-0.97

Source: Own calculations based on EUROMOD 6.0 model

For example, the increase in the income tax rate for the richest tax payers causes almost one half of one percentage point reduction in the disposable income of the households of the fifth

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[11] The baseline distribution of 2012 serves as the reference point. Then each policy reform is revoked and thereafter we compare the actual 2012 system with a counterfactual scenario under which the policy change is cancelled.

[12] Income quintiles are computed on the basis of the equivalised household disposable income of the baseline distribution and are kept constant across calculations.

[13] The impact of the special contribution is modelled separately for public employees (column B), private employees and self-employed (column C) and pensioners (column D).

quintile and has no effect to the other quintiles. In similar progressive fashion the special contributions target well-paid employees and pensioners and cause a small but levelling effect on the income distribution. The flat pensions' levy which was imposed only on the employees of the public sector has also a progressive effect but this time a number of low- and middle-income workers of the public sector are affected. Finally, the overall impact is expectedly progressive. The last rows of the column report the change in relative inequality and poverty. The poverty line is kept stable across calculations in order to avoid variability caused by small changes in the poverty line as the median income slightly decreases due to the measures. For this reason, aggregate poverty remains unchanged. Column E is an exception, as the pension levy causes a small increase in poverty rate. Finally, the Gini index shows a 1.5 per cent decline in relative inequality.

In reality, the impact of austerity is larger since indirect taxes have risen in tandem with the other measures. However, the model does not simulate consumption taxes[14], but even if we could have simulated the whole spectrum of measures, we conjecture that the qualitative findings of the analysis would not have changed[15]. In terms of the ongoing political debate, these results show that the effects of the measures are milder than the reactions of the trade unions and political opposition would suggest.

3.2 Social policy reforms

During 2011-2012 the government reformed the rules of a number of social benefits having in mind two goals according to its announcements; first to curb social expenditures and secondly to preserve (or even improve) their poverty-reducing effects. The shift from universality to selectivity was considered as a policy option that could reconcile these seemingly opposing targets. On that basis stricter means-testing criteria were introduced for the child benefit and the student grant while the eligibility rules of the social assistance scheme changed. At the same time a new benefit was introduced that targets monoparental families. The single parent benefit is given on top of the child benefit to single parents that are already eligible for the

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[14] Decoster et al (2011) propose a method for integrating indirect taxation within the EUROMOD framework.

[15] For example, according to another analysis of Economics Research Centre, the VAT increase (from 15% to 17%) disproportionately affected the high-income households, (see 'Measures for Combatting Economic Crisis', Commentary, Issue 24, September 2011, http://www.ucy.ac.cy/goto/ecorece/en-US/Commentaries.aspx).

child benefit on the basis of certain income criteria. Before we proceed to the results of the simulation, a detailed description of policy changes follows.

Child benefit is considered as a means to reduce income inequality as well as to encourage fertility. Indeed, the benefit is considered to have contributed substantially to the fact that child poverty in Cyprus is among the lowest in the EU, Pashardes (2007). The child benefit consists of a basic universal part and a supplementary part which is means-tested. The basic part is paid to all Cypriot citizens. Its level depends on the number of children and family income.

Table 2: Child benefit scheme (prior to reform)

No of dep. children	Basic annual benefit (in euro)	Supplementary annual benefit for families with gross income during 2008:	
		Up to 19,500 euro	Between 19,501 and 39,000
1 child	421.29	105.33	52.67
2 children	842.61	421.29	315.97
3 children	2527.80	947.91	789.90
4+ children	1,390.29 per child	463.43 per child	289.64 per child

Source: Cyprus Euromod Country Report

In 2011, the rules were revisited:

- The government changed the definition of child in an effort to curb expenditures. Henceforth, only families with children up to 18 years old (or up to 20 years old for children in military service[16]) are enjoying the transfer.

- One-child families having gross annual income higher than €39,000 are excluded from the scheme.

- Finally, the amount of the benefit is reduced in a further effort to contain costs. The reduction is related with family income as follows: 10% reduction for family income between €39,000 and €49,000, 20% for family income between €49,000 and

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[16] Currently, families receive child benefit if they have unmarried children who are (a) under the age of 18 or between 18-23 years and in full time education, (b) between 18-25 years serving the National Guard or between 23-25 and in full time education and (c) permanently incapable of self-support, irrespective of age.

€59,000, 30% for family income between €59,000 and €69,000, 40% for family income between €59,000 and €69,000, and 50% for family income between €69,000 and €79,000.

Student grant is designed to promote participation in higher education. It is an important instrument in terms of size and coverage. The grant is given to to all Cypriot students during the normal duration of their studies. It consists of a basic universal part of €1,708 per academic year and a supplementary part which is given to families with three or more children (and those paying fees to private institutions). The amount of the supplementary part is equal to a flat rate of €854 given on top of the basic benefit. In 2011, the government pressed by the need for budget consolidation linked the student grant with family income. The amount of the grant was reduced by: 7.5% for families with income between €30,000-€40,000, 15% for families with income between €40,000-€50,000, 22.5% for families with income between €50,000-€60,000, 30% for families with income between €60,000-€70,000, 40% for families with income between €70,000-€80,000, and 50% for families with income between €80,000-€90,000. PhD students were excluded from the scheme while those enrolled on Master's programmes are still eligible only if their family income is under €30,000.

Public assistance in Cyprus is a means-tested benefit targeted to families with income that is not enough to cover their basic and special needs. The basic needs refer to nutrition, clothing and footwear, water supply, electricity and sanitary living[17]. Social Welfare Services (SWS) estimate each year the amount which is needed for a family to cover necessities as well as its current income. If the basic needs amount exceeds the family income, then the difference is paid to the family in the form of a cash benefit;

$$Public\ assistance = \min\ (basic\ income - family\ income, 0)$$

Thus, 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. In essense, public assistance acts as a quasi-minimum income scheme. However not every income is taken into account for the calculation of family income. In 2012, the SWS shorthened the list of incomes which are excluded from

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[17] 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.

the calculation (thus in principle reducing the total cost of the programme). At the same time, monoparental families were excluded from the scheme. The latter gap was filled by a newly introduced cash transfer.

The *single parent benefit* is designed to provide income support to mono-parental families echoing concerns about the high poverty risk of this vulnerable group, Pashardes (2007). The benefit is given only to families which already receive the child benefit according to the following scheme:

Table 3: Single parent benefit scheme

Family income in 2011	Monthly amount of the benefit
0 - 39,000	200 per child
39,000-49,000	180 per child
49,000-59,000	160 per child
49,000-69,000	140 per child
69,000-79,000	120 per child
79,000-89,000	100 per child
above 99,000	0

Source: Cyprus Euromod Country Report

3.2.1 Distributive impact of the reforms

Our scope is to assess the partial impact of the reforms on the income distribution. As explained later, our methodology requires to compare an actual with a counterfactual state. The actual state corresponds to reality (as captured by the model) and serves as a benchmark. Then, each counterfactual scenario is estimated by revoking the reform and re-establishing the old rules of the system. As a result, not only policy changes themselves but their full interaction with other instruments of the tax benefit system are fully taken into account. As metrics of the distance between different states serve our preferred tools of income distribution analysis. Each reform is consecutively revoked, thus estimating its impact on the income distribution, and finally the entire menu of reforms is cancelled so as to obtain the overall effect of welfare state reforms.

Table 4, which shows the number of beneficiaries per quintile prior and after the reforms, indicates that the beneficiaries of child benefit have been reduced across all quintiles, but the

largest decrease is observed for the top quintile (from 14.6 per cent to 5.5 per cent). The case of student grant is more straightforward. The new rules do not change significantly the number of beneficiaries but rather reduce the rate of the benefit (as we will see in the next Table). The exclusion of child benefit from the income-test of the public assistance does not affect the number of public recipients while has a marginal effect on the value of the transfer. Finally, the newly introduced single parent benefit appears to be more concentrated at the lower part of the income distribution.

Table 4. Share of beneficiaries by income quintile (prior and after the reform)

	Distribution of beneficiaries (prior)				Distribution of beneficiaries (after)			
	Child benefit	Student grant	Public assistance	Single parent benefit	Child benefit	Student grant	Public assistance	Single parent benefit
1(poor)	11.3	3.6	1.8	-	10.6	3.6	1.8	1.0
2	17.9	5.5	3.3	-	15.8	5.6	3.3	1.6
3	18.1	6.3	2.1	-	14.8	6.3	2.1	2.1
4	17.4	6.4	1.3	-	10.7	6.7	1.3	1.2
5	14.6	5.5	0.8	-	5.6	5.6	0.8	0.5
All	15.9	5.5	1.9	-	11.5	5.6	1.9	1.3

Source: Authors' estimations based on the EUROMOD 6.0 micro-simulation model.

The next table replicates the structure of Table 4 but the focus is given on the relative importance of the benefits (measured by the ratio of the sum of transfers received by all beneficiaries of the quintile/sum of disposable income received by all individuals of the quintile). First, the figures show that the relative importance of the child benefit remains negatively correlated with income after the reform. Both high and low income families lose, but the loss is greater for the former. Indeed, the importance of the benefit for the top quintile decreases considerably. The same pattern is observed for the student grant. The relative contribution of the grant to the top quintile's disposable income is narrowed.

Table 5. Social transfers as % of disposable income (prior and after the reform)

	Transfers as % of disposable income (prior)				Transfers as % of disposable income (after)			
	Child benefit	Student grant	Public assistance	Single parent benefit	Child benefit	Student grant	Public assistance	Single parent benefit
1(poor)	2.49	1.08	1.07	0.00	2.20	1.08	1.07	0.97
2	2.37	1.32	1.21	0.00	2.15	1.28	1.21	1.36
3	1.34	1.09	0.71	0.00	1.18	0.97	0.71	1.22
4	0.96	0.89	0.28	0.00	0.57	0.71	0.28	0.54
5 (rich)	0.45	0.49	0.11	0.00	0.14	0.29	0.11	0.12
All	1.19	0.86	0.50	0.00	0.91	0.72	0.50	0.66

Source: Authors' estimations based on the EUROMOD micro-simulation model.

The analysis proceeds with the simulation of the first-round distributional effects of the reforms. The results are presented in Table 6. The last row of the Table shows also the fiscal effect of each reform defined as the estimated cost of benefit prior and after the reform. The upper part of the Table focuses on changes in overall inequality and the lower part focuses on poverty.

Table 6. Distributional and fiscal impact of social benefits reforms (%)

Index	Child benefit	Student grant	Public assistance	Single parent	Combined effects
Inequality					
Gini	0.06	-0.13	0.00	-0.83	-0.81
Atkinson (0.5)	0.16	-0.18	0.00	-1.38	-1.20
Atkinson (1.5)	-0.06	-0.24	0.00	-1.19	-1.18
Poverty					
FGT(0)	1.04	-0.45	0.00	-4.47	-1.56
FGT(1)	0.85	0.00	0.00	-4.31	-0.77
FGT(2)	0.61	0.00	0.00	-3.00	-0.30
Fiscal effect	-30.3 mln	-15.2 mln	-0.0 mln	70.8 mln	25.3 mln

Source: Authors' estimations using EUROMOD 6.0 model, Notes: Poverty line is kept stable across calculations.

The distributional effects of the child benefit reform are presented in the first column of the Table. It is difficult to prognosticate a priori the direction of the impact of the reform due to the existence of two counteracting changes. The benefit rate has been decreased progressively (thus affecting more the well-off households) but the definition of child is narrowed (thus a number of poor households lose eligibility of the benefit). The 'verdict' of microsimulation is that child benefit cuts result to a very mild increase in overall inequality and a one percentage point increase of the incidence of poverty. The cuts also induce a 0.9% and 0.6% increase in poverty as measured by the FGT(1) and FGT(2) indices that take into account the intensity of poverty and the inequality of income among the poor, respectively. The distributional effect of student grant reform is moderate and progressive. All indices of inequality decrease after the reform while the poverty effect is negligible. The result reflects not only the progressive nature of the reform but also the fact that the student grant is among the less progressive benefits of the Cypriot welfare state, as participation in higher education is positively related with family income (Koutsampelas, 2011). Finally, the introduction of the single parent benefit seems to exert a levelling effect on the income distribution. Inequality is reduced by -0.8% to -1.2% depending on the choice of the index and poverty is also considerably reduced

according to all indices adopted in the analysis. Yet, as the last row of the Table indicates, this comes at a significant fiscal cost.

4. Discussion of the results

The period 2008-2009 proved to be a critical juncture for the Cypriot economy. Before 2008, Cyprus exhibited an impressive economic performance characterized by robust growth and job creation. The halcyon years ended in 2009 when the economy contracted by -1.9% only to return to tepid growth in 2010. The rate of unemployment drifted up from 3.8% in 2008, to 5.5% in 2009 and to 7.9% in 2011. Public spending and, possibly, the workings of automatic stabilizers softened the initial impact of the crisis, but it came at the cost of increases in fiscal deficit and public debt. The fiscal balance as a percentage of GDP changed form a surplus of 0.9% in 2008 to a deficit of 6.3% in 2011; while the debt-to-GDP ratio rose from 48.9% in 2008 to 71.1% in 2011. In July 2010, the ECOFIN announced that Cyprus is placed under the excessive deficit procedure. The troubles of Cypriot economy were amplified by the overexposure of Cypriot banks to Greek debt. Even worse, the bank crisis brought to the surface several structural weaknesses. Today, most experts on Cypriot economy agree that large fiscal imbalances, low competitiveness, a hypertrophic banking sector and an unbalanced allocation of human capital between the various sectors of the economy are at the heart of the problem, (Pashardes, 2011; Clerides, 2012).

The economic hardships continued with the repetitive downgrades of its economy and banking sector. The vulnerability of the fiscal budget did come into political focus only when the situation in Greece deteriorated very rapidly. The collapse of Greek bonds fuelled the underlying worries about the stability of Cypriot economy. The banks gradually revealed (despite occasional assurances about prudent financial management), that they were in deep trouble[18]. The government and the bankers initially tried to play down the problem (for example by claiming that Cyprus can finance bank recapitalization without the help of EU funds). In the end, these efforts proved futile. Politics of blame avoidance got rolling.

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[18] During the whole decade the domestic banks had engaged in credit expansion to the commercial and residential property sectors both in Greece and Cyprus.

Government blamed the banks and the opposition parties blamed the government for not enforcing a stricter financial regulatory regime. At the same time the governor of the Central Bank published reports which pinpointed the structural weaknesses of the economy and the reluctance of President Demetris Christofias to initiate reforms. The truth should be located somewhere between. Leaving aside the admittedly problematic banking sector, there would still be a growing fiscal deficit. These economic developments are very relevant for social protection because they put a twofold strain on the social protection system. On the one level, the increase in unemployment results in increased spending for unemployment benefits and social assistance. Namely, the demand for welfare protection increases. On the second level, fiscal imbalances cause downward pressures in social spending. In other words, there is trouble in sustaining the current level of supply for welfare protection. Hence, welfare state is placed on the rack. On top of that, the link between social benefits, redistribution and competitiveness is skeptically debated in the public discourse.

After increasing pressure (exerted by the interior as well as by EU and the markets) the government responded by introducing a series of pre-emptive fiscal measures in order to display commitment to market conformity and signal a credible and stable environment to international investors. Meanwhile it turned to Russia for financial help hoping to achieve access to credit without having to cope with the typical agenda of structural and fiscal reforms that a potential bailout deal would have entailed. Put it bluntly, the government of President Demetris Christofias tried to escape from austerity but it was not possible. Soon Cyprus was locked out of capital markets, on the mercy of the tripartite financial rescuers of ECB, EE and IMF.

Initially it was argued that financial assistance was needed only to contain the risks linked with the banking sector. The Troika's technocrats, however, after inspecting the fundamentals of the economy, rejected this view and opted for serious reforms. They recommended slashing public spending and implementing structural reforms. These reforms were proposed on top of the pre-emptive austerity measures the government had already implemented during 2011. The bargaining procedure between Troika and the government of Cyprus started in autumn of 2012 and is still in progress. Yet the final bailout deal is expected after the presidential elections which are going to be held on 17 February 2013. Conceptually, the austerity era in

Cyprus can be divided into two periods; the pre-bailout period when the government tried through pre-emptive measures to restore investors' confidence and the bailout period when Troika entered the fray. It is clear that in both cases the profile of the economic problems is the same, what differs is that at the pre-bailout period public policy is 'unconstrained' and the government blends its own cocktail of fiscal policy whilst at the post-bailout period the three supranational organizations (IMF, ECB, EE) change the rules of the game by imposing their agenda, constraints and predispositions.

The reaction of opposition parties and trade unions was hostile both against 2011-2012 austerity measures and the subsequent Troika's recommendations. This stance is at a certain degree anticipated but from a different angle, is paradoxical, too. If austerity is necessary (and inevitable) then it is the proper mode of action. And if the measures are designed in progressive manner then social justice is served, too. The first argument is out of our scope. The assessment of the second argument is approachable by the empirical analysis of the paper which shows that the government has made so far an attempt to distribute progressively the cost of austerity.

Furthermore, it is interesting to juxtapose these political and economic developments and the results of our analysis with the social challenges of the period. The available stock of data (see Table 7) gives us limited visibility of potential shifts in poverty, inequality and social exclusion. Relative poverty changes in a rather erratic way. Until 2010 it fluctuated slightly above 15 per cent but in 2011 decreased at 14.5 per cent. However this could be an artefact. An increasing number of households falls below the poverty line (because unemployment rate is increasing) but at the same time the poverty line decreases (for it is computed as a fraction of median income). Several authors choose to anchor in time the poverty threshold so as to eliminate the effect of a moving poverty line. If we follow this view then observed poverty apparently will increase. But this approach is not free of controversy. Therefore, the available data do not allow for a concrete conclusion regarding overall poverty. Nonetheless, the evidence of Table 7 suggests that a considerable re-allocation of poverty risk across age groups takes place. Child poverty remains at very low levels while elderly poverty steadily decreases (from a staggering 50.6 per cent in 2007 to 36.9 per cent in 2011). It appears that elderly's income is relatively inelastic to the effects of the crisis and, on top of that, the

gradual maturation of the Cypriot pension system is expected to contribute, ceteris paribus, to the improvement of the relative income position of the elderly, Koutsampelas (2012). On the contrary, the poverty risk experienced by working-age population increases, reflecting the worsening condition of the labour market. Finally, Gini index fluctuates around 29.0 indicating that despite recession relative inequality remains stable.

Table 7: Inequality and poverty in Cyprus

	2007	2008	2009	2010	2011
Total poverty	15.5	15.7	15.3	15.3	14.5
Child poverty	12.4	14.4	12.6	12.8	12.0
Elderly poverty	50.6	46.4	44.4	40.0	36.9
In-work poverty	6.3	6.0	6.5	6.8	7.2
Gini index	29.8	28.3	29.1	29.2	28.8

Source: Eurostat Online Database, Note: Gini index is scaled at 0-100 range.

So, how well have social policy reforms responded to the new situation? Up to now, welfare state institutions appear resilient to the first waves of austerity. Benefits cuts were not extensive and designed in progressive fashion. The government even introduced a new social benefit in order to meet the needs of one of the most vulnerable social groups (lone parents). This development overwhelms the negative distributional implications of the child benefit reform while increases considerably the welfare of single parent families. Despite that the the worsening labour market conditions and the increase of unemployment will affect families with children, child poverty is likely to remain at relatively low levels. Elderly poverty is moving downwards but this is only because the income position of the elderly is improving in relative terms. In absolute terms, their economic well-being is likely to decrease. Finally, in-work poverty remains at low levels but most probably will increase in the upcoming years. The government should direct more resources to that direction especially because prolonged unemployment among the youth is likely to have negative long-run economic and social consequences. In this sense this problem should be at the top of the political agenda and deserves immediate action. Perhaps a more effective strategy to tackle the rising youth and long-term unemployment are structural reforms in the labour market to abolish occupational barriers and aligning public sector salaries and wages to those paid in the private sector. As regards the later, the goverment failed to remedy unbalances between the private and the

public sector insofar as the rate of the newly introduced special contributions are the same for both private and public sector.

Finally, it is worthwhile to comment that the welfare reforms were marked by a gradual shift from universalism to selectivity. Advocates of selectivity present means-testing as a panacea. States delivers selectively to those in need, while valuable resources are economized. However, means-testing is plagued by several weaknesses, (Sen, 1995; Atkinson, 1995). To proceed with means-testing, the government should find ways to combat tax evasion so as to avoid redistributing income from the tax compliant income units to tax evaders. Given that tax evasion in Cyprus is widespread, (Pashardes and Polycarpou 2008), it is likely that further emphasis on means-testing will not yield the expected fiscal and distributional results. Other problems associated with means-testing (and widely documented in the literature) are the creation of poverty traps and the loss of political support for social benefits. If social policy proceeds with selectivity, then these issues should be taken into account.

As of the time of writing, it is not clear how the level of social spending and its distribution among the various policy areas will be affected by the impending measures which will be agreed between Troika and the government. The first phase of the austerity era was not marked by shrinkage of the welfare state. In fact, social spending as a percentage of GDP increased as more people qualified for unemployment and social assistance benefits, while austerity measures contained costs with low distributional cost. However the rules of games change rapidly. It is likely that the budgetary constraints will soon exert pressure to the coverage and generosity of social benefits and a further shift from universal benefits to targeted benefits will take place. Furthermore, according to media reports, Troika technocrats suggest wide-scale welfare cutbacks on top of the standard fiscal measures. It is not clear whether the second phase of austerity (the post-bailout period) will be marked by a radical reform of the existent welfare state arrangements or the government would prefer to increase public revenue via tax hikes and public sector pay cuts.

5. Conclusions

In general, austerity in Cyprus adheres to progressivity principles. The microsimulation analysis shows that the first-round distributional impact of fiscal consolidation is mostly

progressive. In other words, the burden of adjustment falls mostly upon households located at the middle and upper part of the income distribution. Yet, the second-round distributional effects, which depend on the public spending multipliers and the behavioural responses of economic agents, are out of the reach of our model. Our conjecture is that the second-round effects are likely to affect mostly the low-income households. This implies that it is not possible to reform the economy without social costs. Austerity measures (as well as welfare retrenchment) even if they target middle and high incomes are responsible for falling economic activity and rising unemployment and thus indirectly raise the material deprivation of the poor given that unemployment risk is asymetrically distributed. Also, the specific configuration of the political system plays an important role in the allocation of costs. For small interest groups (but with large lobbying power) may try to derail policy decisions in order to minimise their own economic losses at the expense of the losses of the society at large. In the light of the points made above, a benevolent policymaker would seek to balance the need for faster economic recovery while maintaining social cohesion. Microsimulation modelling helps to preserve this balance through informing policymakers and the public.

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