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## **AIM-AP**

### **Accurate Income Measurement for the Assessment of Public Policies**

Specific Targeted Research or Innovation Project

*Citizens and Governance in a Knowledge-based Society*

#### **Deliverable 1.4: Methods of estimation and distributional impact of home production and fringe benefits**

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Panos Tsakloglou

Athens University of Economics and Business, IZA and CERES

**Distributional effects of home production  
and fringe benefits**

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## ABSTRACT

Fringe benefits and, especially, home production are likely to be important determinants of a household's ability to reach a particular welfare level and, therefore, should be included in the concept of resources used in distributional studies. The evidence reported here for three countries (Germany, Italy and Greece) suggests that fringe benefits are small in size and inequality increasing. Their importance seems to be rising in most industrialized countries. Consumption of own production of commodities is also likely to be relatively small in size in most industrialized countries and of declining importance but, unlike fringe benefits, its inclusion in the concept of resources reduces measured inequality. On the contrary, including home production of services in the concept of resources used in distributional studies leads to very substantial declines in the values of inequality and (relative) poverty indices. However, unlike the other items examined here, whose monetization is relatively straightforward, the monetization of the home production of services is not problem-free. Several issues related to the proper shadow wage rate used in imputations, a clear selection of its sub-components so as to avoid including in it leisure activities, or, even the very treatment of leisure are issues that deserve more scrutiny in future research.

## 1. Introduction

Most empirical studies analyzing cross-national differences in the levels of inequality and poverty as well as the redistributive effectiveness of welfare state policies utilize data on the disposable income of the population members, thus ignoring non-cash income components from private or public sources. As the importance of private non-cash incomes as well as the share of social transfers in total income and the balance between cash and non-cash transfers and social benefits in kind vary between countries, it is recognised that such income components should be taken into account in order to be able to make meaningful cross-country comparisons (Atkinson, Rainwater and Smeeding (1995), Atkinson, Cantillon, Marlier and Nolan (2002), Marical Mira d'Ercole, Vaalavuo and Verbist (2006)). The distributional effects of the two most important social transfers in kind, namely public education and public health care services in the countries included in the AIM-AP project have been analysed in Callan, Smeeding and Tsakloglou (2007) and Smeeding, Tsakloglou and Verbist (2008), respectively. Likewise, the distributional consequences imputed rents in these countries were reported in Frick, Grabka, Smeeding and Tsakloglou (2008). The present paper focuses on private non-cash incomes other than imputed rents.

Private non-cash incomes other than imputed rents consist of home production and fringe benefits. Fringe benefits are normally provided by the employers to their employees and are, generally, considered as near cash compensation. In fact, in a number of countries fringe benefits are taxable, in all or in part. The most well-known form of fringe benefits are company cars and private health insurance schemes provided to employees by their employers. This form of compensation is more common in developed rather than developing countries. Home production can be subdivided into production of commodities and services by household members that are consumed directly by the household or exchanged in barter with others without the intervention of the market mechanism. Auto-consumption and, to a lesser extent, barter of home produced agricultural products is very common in developing countries, but not so common in modern industrial societies. On the contrary, the substitution of home production of services for their market provision is common in developed and developing countries alike.

The present report aims to bring together the evidence from a number of countries participating in the AIM-AP project regarding the distributional effects of including home production and fringe benefits in the concept of resources. Due to severe data limitations, no substantial cross-country comparisons are feasible and the present report simply summarises the main findings of the four corresponding national reports.<sup>1</sup> The remaining of the paper contains three sections. Section 2 provides a short methodological overview. Section 3 reports the main empirical findings of the national reports and Section 4 concludes the paper.

## **2. A short methodological overview**

The distributional impact of home production and fringe benefits is a rather underdeveloped field of income studies. An omission that can be explained only by the informational limitations of existing consumption expenditure and income surveys and not by their importance in the evaluation of well-being. Home production and fringe benefits improve the standard of living of a household without being reflected in its cash income, consequently their omission can lead to biased inequality and poverty statistics. Furthermore what makes the study of these non-cash income components more interesting is that there exists implicit evidence that their distributional impact affect both tails of the distribution, so it is not easy to know a priori their combined distributional effect. As far as in-kind benefits provided by the employer are concerned, the findings of the relevant literature indicate that they are disproportionately concentrated towards the upper part of the income distribution. Pierce (2001) adopting a rather wide definition of employer provided fringe benefits reports that the level of inequality in the distribution of worker compensation is higher when voluntary fringe benefits are included in the definition of compensation than when only monetary wage is considered. Moreover his findings indicate that across time fringe benefits became even more regressive: “the fringe benefits have become less equally distributed through time, and compensation inequality rose over the past 10-15 years by a greater amount than did wage inequality” (Pierce, 2001, p. 1520). A similar result was also found by Chung (2003) who reported that inequality in the wage distribution in the U.S. increased

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<sup>1</sup> D’Ambrosio and Gigliarano (2008), Verbist and Lefebure (2008), Koutsambelas and Tsakloglou (2008) and Frick, Grabka and Groh-Samberg (2007).

after the inclusion of fringe benefits. As far as the distinction between skilled and unskilled workers, Chung claims that if distributional analysis ignore fringe benefits then inequality among skilled workers would be overestimated, inequality among the less skilled underestimated and overall inequality in the labor market also underestimated.

Regarding the effects of home production on the income distribution, findings of the literature report an opposite result from a distributional point of view. Home productions seems to be relatively more important for low income households than for high income households and the prediction of economic theory that households with less income will produce more goods at home is confirmed. Bryant and Zick (1985) explore how rural and urban income distributions change if the value of home production is added to money income. An opportunity cost approach is adopted in order to estimate the value of a spouse's home work time. The authors conclude that when the value of the home production is included in the money income the average rural household still enjoys a lower material welfare than the average urban household; however accounting for home production decreases income inequality in rural households more than it does for urban households. Jenkins and O'Leary (1996) employed time use data to estimate the extent and the monetary value of home production by multiplying the number of hours spent in home production by a fictitious hourly wage. Their results showed that the augmented income distribution (produced by the inclusion of the value of home production) is substantially more equal than the distribution of monetary income. This happens, according to the authors, because the household production does not vary so much in absolute terms with money income. More recently Frazis and Stewart (2009) reconfirm the equalizing effect of home production, however they disagree with other previous studies (for example Jenkins and O'Leary) that weak correlation between imputed home production and money income is the driving force of the effect.

The items under the general heading of "home production and fringe benefits" can be grouped into four categories: Consumption of own production of commodities, consumption of own production of services, company cars and other fringe benefits. Different methodologies are usually employed for collecting information on these items.

Regarding consumption of own production of commodities as well as consumption of commodities obtained through barter with other economic units without the intervention of the market mechanism, typically such information is collected through Household Budget Surveys. Households are asked detailed questions about quantities consumed and the Statistical Services carrying out the survey apply to them the relevant prices. The important question is what is the most “relevant price” for such imputations. Usually, the price applied is the price prevailing in the local market, but this approach may become problematic if there is no local market for such commodities or the existing market is very “thin”.

Information on consumption of own production of services is typically collected through the use of time use surveys. Household members are asked detailed questions about their use of time in a typical period (usually, a week) and, then, for the activities for which a market exists the corresponding time used is evaluated in monetary terms. Two important issues arise in this case. First, it is the question of “where you draw the line”. In other words, there are several activities that are difficult to classify as productive or leisure activities. A related issue is the maximum number of hours (per day or, better, week) that can be considered as devoted to productive activities. Further, there is the treatment of leisure. Standard microeconomic theory suggests that leisure increases our welfare and that the shadow price of leisure is the wage rate. However, this may apply only to voluntary leisure. It is hard to argue that the leisure time of an involuntarily unemployed worker gives him the same utility as the consumption of commodities that would be obtained if he was working. Even after providing a solution to these problems, a very important question is related to the shadow wage assigned to the non-market productive activities. It can be plausibly argued that the corresponding shadow wage should be the typical wage of workers involved with such activities (cleaning, cooking, etc). However, there is also an alternative view arguing that the shadow wage of a worker involved in paid or non-paid activities should be the wage rate that he would have obtained in the labour market (in other words, his opportunity cost). Despite some theoretical appeal, this valuation method implies that household

chores are more valuable when performed by a highly qualified worker than by his/her less qualified partner.<sup>2</sup>

In the case of company cars information is usually collected in the framework of Household Budget Surveys or Income Surveys. Users of company cars are asked detailed questions both about the specific characteristics of the car (make, year, etc) and about the use of the car for private rather than work purposes. Then, using elaborate techniques, members of the Statistical Services carrying out the survey impute a value for the use of the car corresponding to the specific period of information collection, so that it is comparable to the figure reported for the monetary compensation of the employee.

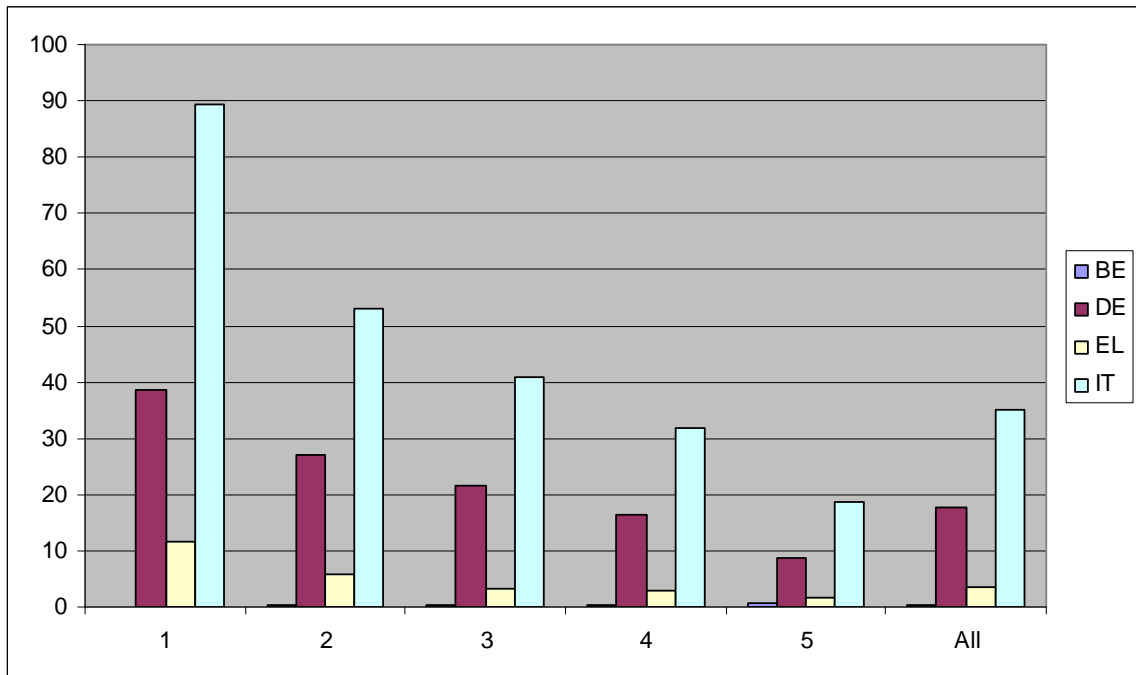
Table 1. Information availability on consumption of own production and fringe benefits in core AIM-AP surveys

	Auto-consumption (commodities)	Auto-consumption (services)	Company car	Other fringe benefits
Belgium			+	
Germany		+	+	+
Greece	+		+	+
Ireland				
Italy		+	+	+
Netherlands				
UK			(+)	

Likewise, in the case of fringe benefits other than company cars, information is usually collected through Household Budget Surveys or Income Surveys and is self-reported. However, in this case the imputation methodology corresponds more to the methodology applied in the case of consumption of household production of commodities.

<sup>2</sup> It should be noted that, unlike the rest of the non-cash components examined in this report that, at least in theory, are included in the concept of income of National Accounts, home production of services is not. Therefore, the imputation method selected is likely to have implications for the implementation of broader measures of aggregate welfare (Gronau, 1980, Blundell, Preston and Walker, 1994).

Graph 1. Consumption of own production and fringe benefits as a share of disposable income in core AIM-AP surveys



It should be noted that it is highly unlikely that a single survey will contain information on all the above items (consumption of own production of commodities, consumption of own production of services, company cars and other fringe benefits). Therefore, researchers interested in estimating the combined distributional effects of the inclusion of these items in the concept of resources, have to rely on statistical matching techniques of varying sophistications and accuracy. To our knowledge, no such attempt can be found so far in the literature.

The information availability regarding these items in the data sets used in the framework of AIM-AP is shown in Table 1. It is immediately evident that the information available is not comparable across countries. In two of the national data sets used (Ireland and the Netherlands) there is no such information at all, in one case information is available but could not be used in the framework of this project (UK), in one case there is only information about company cars (Belgium). Only in the Greek data set there is information about consumption of own production of commodities, while only in the Italian and German data sets there is information about time use (and, hence, consumption of own production of services).

Table 2. Proportional changes in inequality and poverty indices after the inclusion of consumption of own production and fringe benefits in the concept of resources in core AIM-AP surveys

	BE	DE	EL	IT
Gini	0.4	-13.9	-3.2	-19.3
Atkinson 0.5	0.8	-25.7	-6.6	-35.3
Atkinson 1.5	0.5	-31.3	-7.9	-40.6
FGT0	0.9	-19.7	-6.1	-32.8
FGT1	0.6	-33.7	-13.1	-49.2
FGT2	0.6	-45.0	-18.9	-61.3

Naturally, under these circumstances, it is not possible to obtain comparable results even for the countries where some information is available. This is evident in Graph 1, where the value of consumption of own production and fringe benefits per quintile is shown as a share of the quintile's disposable income. The corresponding effect on inequality and poverty indices is shown in Table 2. The indices used are Gini and Atkinson for values of the inequality aversion parameter set at 0.5 and 1.5 in the case of inequality and Foster-Greer Thorbecke (FGT) for values of the poverty aversion parameter set at 0, 1 and 2.<sup>3</sup> Cross-country differences appear to be enormous, but they are not "genuine"; i.e. they results from differences in information availability. Therefore, in the remaining of the report we report selective results for the three countries where more detailed information was available, namely Germany, Italy and Greece. In fact, the information available in Germany and Italy is relatively similar, but rather different than the information available in the case of Greece.

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<sup>3</sup> In the case of poverty measurement, a relative approach is adopted and, following the practice of EUROSTAT, the poverty line is set at 60% of the median value of the corresponding distribution. The equivalence scales used are also those used by EUROSTAT that assign weights of 1.0, 0.5 and 0.3 to the household head, other adult household members and children living in the household, respectively. All distributions used are equivalised in the sense that the total amount of resources available to all household members are pooled together and, then, divided by the household's equivalence scale. The resulting figure is assigned to each household member.

### 3. Empirical results

#### 3.1 Germany

Table 3.1 reports the proportional changes in the disposable income of population quintiles and the corresponding changes in quintile income shares after the inclusion of the home production of services in the concept of resources. The information for the calculation of these services is derived from a time use survey and three alternative methodologies were tried for the calculation of their monetary value. Since most of these services correspond to low levels of skills, it was first tried a value of 4 euro per hour, roughly corresponding to the level of the minimum wage. In the second approach, the value used was 8 euro per hour, roughly corresponding to the average wage. In the third approach, the value used for the shadow hourly wage rate was derived from the estimation of a Mincerian earnings function and, then, the corresponding predicted hourly wages were attributed to the members of the population.

Table 3.1 Proportional changes in disposable income and quintile income shares after the inclusion of home production of services in the concept of resources (Germany)

Quintile	Income Share			% Increase in disposable income			
	Baseline	plus transfers flat €4	plus transfers flat €8	plus transfers pred. wage	flat €4	flat €8	pred. wage
1 (bottom)	8.2	9.6	10.4	10.0	39.1	78.2	78.7
2	13.6	14.7	15.3	14.9	26.8	53.6	51.2
3	17.4	18.0	18.5	18.3	21.5	43.0	43.9
4	22.4	22.2	22.2	22.4	16.2	32.3	34.7
5 (top)	38.4	35.6	33.6	34.5	8.6	17.3	20.9
All	100.0	100.0	100.0	100.0	17.5	35.1	36.9

Irrespective of the imputation method used, home production of services in the as a share of the total disposable quintile income is higher the lower the quintile is located in the income distribution. As a consequence, the inclusion of home production in the concept of resources results in increases in the share of the poorest

three quintiles and a corresponding decline in the share of the top quintile. Overall, the reported resources rise between 17.5% and 36.9% depending on the method of imputation used.

Table 3.2 Proportional changes in inequality and poverty indices after the inclusion of home production of services in the concept of resources (Germany)

Inequality and poverty indices	Proportional change in indices %		
	Flat €4	Flat €8	Pred. wage
Gini	-13.9	-22.8	-18.3
Atkinson 0.5	-25.5	-39.6	-34.0
Atkinson 1.5	-31.5	-44.2	-38.9
FGT0	-18.7	-27.7	-19.9
FGT1	-33.2	-47.0	-41.5
FGT2	-44.4	-60.3	-56.5

The impact of the inclusion of home production of services in the concept of resources on measured levels of inequality and poverty is reported in Table 3.2. Inequality declines substantially, particularly when the Atkinson index, that is more sensitive than the Gini index to changes close to the tails of the distribution, is used (especially for higher values of the inequality aversion parameter). Depending on the index and the imputation method used, inequality declines between 13.9% and 44.2%. The largest effects are observed when the flat rate of 8 euro per hour is used. Taking into account that households close to the bottom of the distribution are likely to devote more time to home production than high-earning households close to the top of the distribution (where the opportunity cost of non-working is likely to be higher), the difference between the first and the second column of table 3.2 is not surprising. Likewise, the (relatively smaller) difference between the second and the third column is not surprising either, since persons located close to the top (bottom) of the distribution are likely to have higher (lower) skills and, hence receive a higher (lower) predicted wage than the flat average wage used in the second column of the table.

Table 3.3 Proportional changes in disposable income and quintile income shares after the inclusion of fringe benefits in the concept of resources (Germany)

Quintile	Income Share		% Increase in income plus fringe benefits	Population Share with fringe benefits
	Baseline	plus fringe benefits		
1 (bottom)	7.6	7.5	0.5	9.4
2	12.9	12.9	0.6	15.5
3	17.2	17.2	0.7	24.4
4	22.5	22.5	1.0	31.8
5 (top)	39.8	39.9	1.0	41.6
All	100.0	100.0	0.9	24.5

Similar, but stronger results are reported in the bottom half of the able, where the impact on poverty indices is shown. The poverty rate (FGT0) declines between 18.7% and 27.7%, while the higher the value of the poverty aversion parameter the higher the reported decline in poverty. Once again, the strongest results are observed when the flat shadow wage rate of 8 euro is used.

Table 3.4 Proportional changes in inequality and poverty indices after the inclusion of fringe benefits in the concept of resources (Germany)

Inequality and poverty indices	Value of the Index		Proportional change
	Baseline	plus fringe benefits	
Gini	0.3207	0.3219	0.4
Atkinson 0.5	0.0893	0.0898	0.5
Atkinson 1.5	0.2491	0.2505	0.6
FGT0	17.87	18.11	1.3
FGT1	5.36	5.41	0.9
FGT2	2.47	2.49	0.9

Tables 3.3 and 3.4 report the effects of including the value of fringe benefits rather than home in the concept of resources. The concept of fringe benefits used includes,

apart from company cars, lunches, mobile phones, expenses payments, PC at home, paid by the employer, etc. Nevertheless, even though almost a quarter of the population appears to receive fringe benefits<sup>4</sup> they account for less than 1% of total disposable income. Both the share of beneficiaries and the share of fringe benefits as a proportion of disposable income increase as we move up the income distribution in Table 3.3.

The evidence of Table 3.4 shows that the aggregate impact of fringe benefits on inequality and poverty is quite small and in the opposite direction than the home production of services. The value of the inequality indices rises by 0.4%-0.6% after fringe benefits are taken into account, while the value of the poverty indices increases between 0.9% and 1.3%.

### 3.2 Italy

As the evidence of Table 1 shows, the information available in the case of Italy is very similar to that available for Germany. The main difference between the two countries lies in the fact that the employment rate of Italy is lower than that of Germany. Therefore, the opportunities for home production of services are higher in Italy. Two valuation methods were used for the home production. In the first (HP1), the shadow hourly wage rate for home production of services is assumed to be equal to the hourly wage rate of a housekeeper in the region of Italy where the household lives. In the second (HP2), the shadow wage rate is derived from the estimation of a Mincerian earnings function and, naturally, it is higher for more skilled individuals that are usually located closer to the top end of the income distribution.

Table 4.1 reports the proportional changes in quintile disposable income after the inclusion of fringe benefits and home production of services in the concept of resources. Table 4.2 reports the corresponding proportional changes in inequality and poverty indices, as a result of the change in the concept of resources. Fringe benefits increase proportionally more the resources of households included in the

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<sup>4</sup> Note, however, that even if a single household member receives a fringe benefit, this benefit affects the resources of the entire household and hence, implicitly it is assumed that all household members are beneficiaries.

top quintile of the distribution, but they account for less than 0.6% of total disposable income. Their inclusion in the concept of resources increases inequality by 0.9%-1.8%, while poverty remains almost unchanged (increases 0.1% - 0.2%). On the contrary, home production as a proportion of disposable income is very substantial, accounting for 34.5% using HP1 and 44.9% using HP2. These figures are substantially higher than the corresponding figures for Germany and, as noted above, should be attributed to the lower employment rate of Italy. Recorded inequality and poverty decline substantially after the inclusion of home production of services in the concept of resources – more so when the relatively flat shadow wage rate (HP1) is applied. In this case, depending on the index, inequality indices decline between 19.9% and 41.4% and poverty indices between 32.9% and 61.5%. The corresponding figures when the predicted wage rate is applied (HP2) are between 12.5% and 28.7% for inequality indices and 19.4% and 45.1% for poverty indices. Putting fringe benefits and home production of services together in the last two columns of the table, results in marginally lower proportional declines of the indices.

Table 4.1 Proportional changes in disposable income after the inclusion of fringe benefits and home production of services in the concept of resources (Italy)

Quintile	% INCREASE IN DISPOSABLE INCOME				
	FB	HP1	HP2	FB+HP1	FB+HP2
1(bottom)	0.01	89.51	98.57	89.44	98.59
2	0.03	53.19	64.42	53.25	64.55
3	0.10	40.47	50.70	40.76	50.77
4	0.39	31.65	41.63	31.95	41.88
5(top)	1.19	17.48	28.03	18.72	29.03
ALL	0.59	34.50	44.87	35.16	45.34

### 3.3 Greece

The Greek data come from a very detailed Household Budget Survey. They allow the decomposition of the non-purchased commodities consumed by the households into four categories: consumption of own farm production, consumption of own non-farm production, commodities consumed paid by other households, commodities

consumed paid by the employer (fringe benefits). No time use information is available and, hence, no estimates of home production of services can be derived.

Table 4.2 Proportional changes in inequality and poverty indices after the inclusion of fringe benefits and home production of services in the concept of resources (Italy)

Inequality and poverty indices	Proportional change (%)				
	FB	HP1	HP2	HP1+FB	HP2+FB
Gini	0.9	-19.9	-12.5	-19.3	-12.0
Atkinson 0.5	1.8	-36.4	-25.1	-35.3	-24.2
Atkinson 1.5	1.1	-41.4	-28.7	-40.6	-28.1
FGT0	0.1	-32.9	-19.4	-32.8	-19.1
FGT1	0.2	-49.4	-34.0	-49.2	-33.9
FGT2	0.2	-61.5	-45.1	-61.3	-45.0

A few characteristics of the Greek economy may help explain the results reported in Tables 5.1 and 5.2. Despite the fact that the importance of agriculture declined substantially in recent years, agricultural employment in Greece is still considerably higher than in the rest of the EU15. Consumption of own farm production is common in a considerable proportion of the rural population, particularly among the poorest rural households. Further, self-employment outside the agricultural sector in Greece is substantially higher than in any other EU15 country. Consumption of own non-farm production is not un common among the members of this group. In addition, family links are still quite strong and transfers of commodities across households are not uncommon either (equivalent to cash transfers between households that are included in the concept of disposable income of the receiving households). Finally, fringe benefits are not as common in Greece as in other EU member-states.

Table 5.1 Proportional changes in quintile disposable income after the inclusion of home production of commodities in the concept of resources (Greece)

Quintile	% Increase in disposable income as a result of commodities received				
	From own farm production	From own non-farm production	From other households	From employer (fringe benefits)	ALL
1 (Bottom)	5.2	1.0	5.5	0.3	12.3
2	2.5	0.7	2.5	0.4	6.1
3	1.3	0.4	1.4	0.4	3.5
4	0.9	0.5	0.9	0.6	2.9
5 (Top)	0.4	0.2	0.7	0.4	1.7
All	1.3	0.5	1.4	0.4	3.6

Table 5.1 reports the proportional increase in household resources after the inclusion of the aforementioned items in the concept of resources. In proportional terms, consumption of own farm production, consumption of commodities received free of charge from other households and, to a lesser extent, consumption of own non-farm production increase substantially more the resources available to the poor rather than the rich households. On the contrary, fringe benefits increase the incomes of the rich proportionally more than those of the poor, albeit by a narrow margin. Taken together, these items account for 3.6% of the total disposable income of the population. However, the differentiation across quintiles is striking. They account for over 12% of the income of the bottom quintile, but less than 2% of the income of the top quintile.

Changes in inequality and poverty indices as a result of the inclusion of the above items in the concept of resources are reported in Table 5.2. Despite the small aggregate monetary value of these items, the Gini index declines by 3.4% and the two Atkinson indices by 7.1% and 8.5%, respectively. As anticipated, the larger decline is recorded when the value of the inequality aversion parameter is larger (and, therefore, more weight is assigned to changes close to the very bottom of the income distribution). The main drivers of these changes are own farm production and commodities received free of charge from other households. A similar pattern, but with even stranger changes emerges from the estimates reported in the bottom half of the table, where proportional changes in relative poverty are reported. It is

interesting to note that even though these private non-cash incomes account for less than 4% of the disposable income of the households, their inclusion in the concept of resources results in a decline in the value of FGT2 almost by a fifth.

Table 5.2 Proportional changes in inequality and poverty indices after the inclusion of home production of commodities in the concept of resources (Greece)

Inequality and poverty indices	Proportional change in indices %				
	Baseline + From own farm production	Baseline + From own non- farm production	Baseline + From other households	Baseline + From employer (fringe benefits)	Baseline + ALL
Gini	-1.8	-0.3	-1.5	0.1	-3.4
Atkinson0.5	-3.7	-0.6	-3.1	0.1	-7.1
Atkinson1.5	-4.3	-0.9	-3.9	0.2	-8.5
FGT0	-6.1	-1.1	-3.4	-0.5	-7.1
FGT1	-8.2	-1.9	-5.9	0.3	-14.2
FGT2	-11.0	-2.9	-8.6	0.4	-19.9

#### 4. Conclusions

Fringe benefits and, especially, home production are likely to be important determinants of a household's ability to reach a particular welfare level and, therefore, should be included in the concept of resources used in distributional studies. The evidence reported here is in line with the evidence reported in the few studies examining the distributional effects of these types of private non-cash incomes. Fringe benefits are small in size and inequality increasing. Their importance seems to be rising in most industrialized countries. Consumption of own production of commodities is also likely to be relatively small in size in most industrialized countries and of declining importance but, unlike fringe benefits, its inclusion in the concept of resources reduces measured inequality. It should be noted that this income component is likely to be very important in a number of new EU member states with large agricultural sectors. Its omission may render a number of cross-country comparisons obsolete and care should be taken so that it is included

in the concept of resources used for the production of “official” distributional estimates by EUROSTAT.

The largest item examined here is home production of services. The existing evidence shows that including home production of services in the concept of resources used in distributional studies leads to very substantial declines in the values of inequality and (relative) poverty indices. However, unlike the other items examined here, whose monetization is relatively straightforward, the monetization of the home production of services is not problem-free. Several issues related to the proper shadow wage rate to be used for imputations, a clear selection of its sub-components so as to avoid including in it leisure activities, or, even the very treatment of leisure are issues that deserve more scrutiny in future research.

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