

# **Women and Food Consumption in Cyprus**

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## **Abstract**

On the basis of a survey of 625 households in Cyprus, undertaken by Minas, and following a review of the food consumption literature, the authors have examined the significance of the woman of the household, and especially the age of the woman of the household, in determining the ways in which households obtain their food. The key findings are that the age of the woman of the household is indeed a significant factor in determining, among other things, the following:

- the extent to which food is bought for preparation in the home for the consumption of the household. This is shown statistically and explained on the basis of both traditional and transitional factors in Cyprus society;
- the extent to which food is bought from take-aways. In this case the relationship with the age of the woman of the household is inverse, and again the explanation is based on traditional and transitional factors in Cyprus society;
- the extent to which food is consumed in restaurants. Again inversely related to the age of the woman, this is also strongly related to household income.

# Women and Food Consumption in Cyprus

## 1 Introduction

This paper draws heavily on a previously published paper by the authors (Jacobson et al, 2010) on various aspects of household expenditure on food in Cyprus. The article raised some interesting aspects of household expenditure – and implied consumption – behaviour, arising from the position of the woman in the household. In particular what emerged was the importance of the age of the woman of the household for different ways of obtaining food. These will be emphasised here. In the next section we describe our survey, in section 3 we discuss the literature that was background to our work in this area, and then, in section 4 we describe what, out of our work, is of interest in the context of research on women in Cyprus. In section 5 we provide some additional analysis and section 6 is the conclusion.

## 2 Household Budget Survey of Cyprus

In Jacobson et al (2010) we explain why, although there is an official Household Budget Survey in Cyprus, we nevertheless decided to undertake our own survey. We also, in that paper, provide a validation, relative to the official HBS, of our survey data. Here we restrict ourselves to a brief description of our survey. The preparation of the survey instrument, the statistical design of the survey, the training of interviewers and the preparation of the software for data entry took place between January 2004 and April 2004, with most interviews taking place between April 2004 and June 2004. Data refer to 2004, except for incomes that were reported on an annual basis and refer to the income earned in the previous year, in this case 2003.

Data were collected on 625 households, the addresses of which were obtained, as a random sample, from the Cyprus Phone Directory. A household comprises “one or more persons (related or not) who live together and share principal meals, in the sense that the household’s food supply is obtained out of a common budget, and have common arrangements for supplying basic living needs” (DSR, 1999, p.31).

The rate of response was very high at over 80 percent. The high response rates are attributable to the commitment of the interviewers, all drawn from Frederick Institute of Technology undergraduates in the final year of their studies, and to the readiness of Cyprus households to participate in a survey conducted by a respected institution after they were clearly informed about the survey’s purpose and objectives and after being guaranteed confidentiality.

It might be argued that the use of the telephone directory used as a sample frame leads to a non-representative sample because those without telephones are omitted. However, household telephone penetration is very high in Cyprus, exceeding that of France and comparable to that of Germany (Enterprise Ireland, 2007) thus any sample frame error is minimal.

To enrich the quantitative results and delve into the differences between different types of household, interviews were held with a number of households. The nature and selection of these households was drawn in such a way as to cover the whole of

Cyprus, both urban and rural areas. The households were selected specifically because they were of different sizes and incomes. In terms of size, the households selected varied from one person to a couple with five children. The variety of income levels among the households selected was implied in advance in housing and job situations. This variety is verified in the data supplied in the interviews. This could provide the opportunity to elaborate some of the issues and enrich the discussion with “real” examples. The main findings of the qualitative interviews are presented below in section 5.7.

### 3 Literature Review

Engel’s law is an observation in economics stating that, with a given set of tastes and preferences, as income rises the proportion of income spent on food falls, even if actual expenditure on food rises. In other words, the income elasticity of demand for food is less than 1 (where income elasticity of demand for food is the responsiveness of that demand to a change in income). A great deal of both theoretical and empirical research has been generated in the wake of what we might think of now as Engel’s (1895) hypotheses. Given that there continues to be research questioning what he suggested, whether Engel’s ideas should be considered as “laws” remains a live question. An example of a recent debate in this area is that in the *Journal of Political Economy*, set off by Deaton and Paxson (1998).

Even prior to Deaton and Paxson (1998), and contributing to the state of the literature that they saw as requiring clarification, was the work of Lanjouw and Ravallion (1995). Lanjouw and Ravallion (1995) test the widely held view that larger households tend to be poorer. They examine the data for Pakistan in various ways and find that the question of the relationship between family size and poverty is very sensitive to such other factors as the breakdown between public and private good consumption, the household composition (adults and children), and, in some cases, the literacy or otherwise of the parents. More generally, they consider the overall claim of a positive relationship between household size and poverty to be called into question by the existence of economies of scale. It is likely, for example, that in poor households additional children result in a reduction of food wastage. Their conclusion is that strong, broad statements about the relationship between household size and poverty are untenable. As they put it, “the relationship between poverty and household size should be interpreted with considerable caution” (Lanjouw and Ravallion, 1995)<sup>1</sup>.

In a sense rejecting Lanjouw and Ravallion’s (1995) warning, Deaton and Paxson (1998) seem to start off from the position that the larger the household size, the better off they are per capita. Their underlying reason for this is the gain to be derived from public or shared goods. Their argument is that household size has *a priori* implications for income, because, as they point out, it is at least possible that there are economies of scale that result in the larger household with the same per capita income as a smaller household, being better off. The example they give is where two people, previously living separately, come together. They have the same incomes as they did

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<sup>1</sup> As to whether this has relevance for Cyprus is doubtful because the poverty level in Cyprus is very low and there are no reports of undernourished persons; on the contrary there is evidence that children are overweight (Tsakagia-Garaud, 2005).

before, but their costs, for example in relation to rent and fixed monthly expenditure like telephone rental – Deaton and Paxson (1998) call these “public goods” – are all halved.

The question that arises for Deaton and Paxson (1998) is what happens in relation to those expenditures that can not be considered to be halved or otherwise significantly reduced because the two people are living together. Considering income and substitution effects, for the shared goods both are positive. They have more income so can buy more of the shared goods and the shared goods are now relatively cheaper in comparison to the non-shared goods so there is an incentive to substitute towards shared goods. We can suggest cars where, with a reasonable public transport system two people living together might opt to buy a car. Previously they may have relied on the public transport system and considered themselves unable to afford a car. (In the case of Cyprus, where public transport is virtually non-existent, single people frequently borrow their parents’ cars.<sup>2</sup>) Now, living together, they buy a car which they share. The income and substitution effects are both positive – income in the sense that they can now afford a car and substitution in the sense that they shift into expenditure on a shared good. For the non-shared good while the income effect is still positive the substitution effect is negative. In this case the expenditure on public transport might decline; the negative substitution effect more than offsets the positive income effect.

Deaton and Paxson (1998) identify food as a non-shared good that is not easily substitutable. This, they suggest, might be particularly true for relatively poor households because they have insufficient food and can therefore not substitute out of food. Now, to return to the effects of size of household, what seems to follow is that, other things being equal, an increase in household size should have both positive income and substitution effects on food expenditure. In other words, expenditure per person on food in such households should be more than expenditure per person on food in smaller households. There may be scale effects, both in relation to the shared goods in general and in relation to food, but these gains are not sufficient to offset further expenditure per person on food.

Where the household is relatively well-off, then some of its food expenditure may be on, for example, meals in restaurants. This can obviously be substituted, in favour of shared goods in the household.

**Table 1: Income and Substitution Effects of an Increase in Household Size in Shared and Non-Shared Goods**

Type of Goods	Income Effect	Substitution Effect
Shared	positive	positive
Non-shared	positive	negative
Food – Luxury	positive	negative
Normal	positive	negative

Source: Authors’ summary of Deaton and Paxson’s (1998) assumptions

<sup>2</sup> In fact, there is evidence that car ownership is very high in Cyprus, obviously because of limited public transport (Haliassos et al, 2003).

Deaton and Paxson's (1998) theoretical expectation from these arguments is that expenditure per capita on food, in developing countries, should increase as household size increases, where per capita income is held constant.

The Deaton and Paxson (1998) paradox is that their empirical work reveals the opposite outcome to the theoretical prediction described above. Deaton and Paxson (1998) demonstrate that the strongest negative correlation between household size and per capita food expenditure is in the poorest countries, where they believe the income elasticity of food should be the greatest. Deaton and Paxson (1998) offer the following explanations:

- i) *Direct economies of scale in food consumption.* – Large households may benefit from buying in bulk and thus paying less per unit. This can cause expenditure to decrease even though quantities are increased.
- ii) *Economies of scale in food preparation.* – As household size increases households may opt for more home preparation of food rather than take away.
- iii) *Wastage.* – Larger households may be better at eliminating waste through better management of storage, refrigeration, and leftovers.
- iv) *Collective models.* – Larger households have different compositions of people, who may have different consumption patterns, according to their age and gender.
- v) *Price elasticity of food.* – Although not revealed by their analytical framework, there is ground to believe that some food can have substantial price elasticities of demand.
- vi) *Measurement error.* – The head of household interviewed may not know everything about the household members, and the more the members the greater is the likelihood of an error in the report; in particular expenditure on private goods is likely to be understated.
- vii) *Calorie overheads.* – Households in poor countries may face fixed costs in terms of calories, and a greater proportion of them is consumed by the manual labourer of the household who undertakes the most difficult tasks and needs more food than the rest.

Gan and Vernon (2003) consider Deaton and Paxson's (1998) assumption that there is nothing more private than food. They argue that this may not hold true. They give two reasons for this argument: (a) there can be non-food consumption that can include goods which are more private than food, such as clothing and transport; and (b) economies of scale can arise from food preparation; if so then this can be seen as having a public component. Using the terminology of "shared" and "private", the argument is that clothing may be less shared than food, and that aspects of food preparation are shared.<sup>3</sup>

As evidence of their argument that food may be more shared than other household consumption, Gan and Vernon (2003) refer to the results of a study by Nelson (1988). What Nelson did was to estimate the household economies in different categories of

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<sup>3</sup> Methodologically what this means is that where Deaton and Paxson start with a hypothesis, find that it does not hold, and use scale effects in food to explain why it does not hold, Gan and Vernon use scale effects in food to justify the *ab initio* adoption of a hypothesis opposite to that of Deaton and Paxson.

goods. She found that, while the household economies were greatest in shelter, they were higher in food than in clothing and transportation. Only shelter, Gan and Vernon (2003) conclude, is more public (in our terms, shared) than food. Gan and Vernon (2003) relate economies of scale to the extent to which a good is public (shared). The greater the economies of scale – for food, in the preparation – the greater the extent to which the good is public. Hence the conclusion that food (with higher economies of scale) is more shared than clothing (with lower economies of scale).

Gan and Vernon (2003) argue that the per capita expenditure on restaurant meals and other types of food eaten away from home, decline with family size. On the other hand, if the time and effort required for the preparation of a meal rises less than proportionately with number of people being served the meal, then the per capita cost of home-cooked meals will be lower in larger households. Therefore, larger households should be willing to substitute toward relatively cheaper home prepared meals. In that case, the share of food expenditure away from home in total expenditure should decrease with household size.

What Gan and Vernon do to test empirically what they argue in theory, is to look, not at food as a proportion of total household expenditure, but at two separate ratios. First, they look at the ratio of food to food and another good that is less private (more shared), namely housing. Here the results are consistent with the Deaton and Paxson (1998) expectations, namely, the share of food increases with household size. Second, they look at food as a proportion of food and another good which they consider to be more private (less shared), namely clothing. Here, the results are the same as Deaton and Paxson's (1998) empirical findings, namely that the share of food declines as household size increases.

What Gan and Vernon seem to have done, to resolve the apparent contradiction in Deaton and Paxson's (1998) work, can be argued as follows. Deaton and Paxson's (1998) theoretical expectations are based on an assumption that food is the most private (least shared) of categories of household expenditure. Where food, in the numerator, is, clearly, more private (less shared) than, for example, food and housing in the denominator, then the share of food (the ratio) increases as household size increases. In other words, the results are consistent with Deaton and Paxson's (1998) expectations. But where food, in the numerator, is less private (more shared) than food and clothing in the denominator, then the share of food (the ratio) declines as household size increases. This is more consistent with Deaton and Paxson's (1998) empirical findings. Thus, the Gan and Vernon (2003) resolution is that food is, in fact, more shared than is assumed to be the case by Deaton and Paxson (1998) and this is the explanation of what they see as the Deaton and Paxson paradox.

Gan and Vernon (2003) suggest that there is inconsistency between the model and the data in Deaton and Paxson (1998), whose empirical evidence contradicts the Barten model of economies in household size. (The Barten model predicts that food share should increase with household size when per capita expenditure is held constant.) Moreover, comparisons among different countries are not appropriate, arguably, because the utility functions are not the same across countries with very different socio-economic structures and living arrangements.

Gan and Vernon's (2003) empirical evidence shows that the food share increases with household size in relation to more public goods – what we call shared goods – and decreases in relation to more private goods. For Gan and Vernon (2003) food is not the best example of a private good; they believe clothing is a better one. Clothing is, in other words, a less shared good than food.

In response to Gan and Vernon (2003), Deaton and Paxson (2003) state that Gan and Vernon do not address the central puzzle of their original paper, which is “that larger households, that are (more than) fully compensated for their size and that should be able to improve their welfare by taking advantage of economies of scale, have lower per capita food expenditure”.

Deaton and Paxson (2003) accept Gan and Vernon’s suggestion, on the basis of their data, that economies of scale in food preparation are possible, and that food has greater economies of scale than clothing or transport. However, the economies of scale in food preparation, although possible, in Deaton and Paxson’s (2003) view, do not seem to solve the puzzle; rather they deepen it.

In their reply to Gan and Vernon (2003), Deaton and Paxson (2003) reject the description of their definition of housing expenditure as total expenditure other than food. They further reject the claim that their empirical evidence depends on the relative economies of scale between food and housing. In attempting to clarify, they argue that, “if food is a normal good (and there are few economies of scale in food and limited possibilities of substitution away from it), the per capita demand for food will rise. Because per capita total expenditure is being held constant, the budget share of food (per capita food expenditure divided by per capita total expenditure) will rise”. The puzzle for them is that expenditure per capita on food does not increase as household size increases.

Horowitz and Walton (2002) attempt to shed light on the Deaton and Paxson (1998) puzzle. Horowitz and Walton (2002) try to generalise Deaton and Parson’s (1998) empirical evidence where, contrary to the theoretical expectation, an increase in household size does not direct the saved resources toward a more private (less shared) good namely food. Their aim is to demonstrate that an *N-good* world “does not in fact predict a positive relationship between food expenditures and household size under the conditions assumed by Deaton and Paxson (1998)”. Horowitz and Walton's empirical findings show an even greater negative relationship between household size and per capita food expenditure – when the per capita income is held constant – in the poorest countries.

Horowitz and Walton (2002) believe that the empirical findings of Deaton and Paxson (1998) are correct and verified, and that the contradiction that exists with the theoretical expectations stems from faulty theory. Furthermore, Horowitz and Walton (2002) argue that there is evidence to suggest that the savings from the increase in the household size may benefit more another private (non-shared) good namely clothing (i.e. a substitution away from food to clothing).

According to Deaton and Paxson (1998) food is a private (non-shared) good. It may be that at least to some extent, their findings are a result of their blurring of important distinctions between different types of food. Gan and Vernon (2003), in their

commentary on Deaton and Paxson (1998), suggest that there may be a difference – for example in the extent to which each of them is private – between food at home and other ways in which food is obtained (“food consumed away from home”). They, in fact, claim to have shown that expenditure on other food “decreases with family size” and further, that this supports the argument that “economies of scale in preparation time for home food increase the chance that food is more public than the composite of all other goods”. In short their argument is that “other” food is more private than food prepared at home. In Deaton and Paxson’s (1998) original paper, they argue that because their data relate to food purchases, the possibility of economies of time does not aid in solving their puzzle. However, it is quite likely that economies of scale have a different impact, directly on cost rather than just on time.

In relation to food at home, when the preparer is not an employee of the household then there is no paid labour cost; there is simply the opportunity cost of the time of the preparer, usually a woman. Where food is prepared commercially there are labour costs and firms’ profits. However, this does not necessarily mean greater cost to the household. Take away food, for example, may not be more expensive than home-prepared food because bulk purchasing of the ingredients and the economies of scale in preparing large quantities, could generate savings greater than the labour cost and the required profit of the business. In such cases, take away will be cheaper than food at home. This may cast doubt on Gan and Vernon’s (2003) conclusion. After all, if take aways are cheaper than food at home, then they cannot be seen as more private than food at home. This is because their explanation for why larger households spend less on food away is because it is more expensive than food at home.

This discussion suggests the need to distinguish between different types of expenditure on food. It may well be, for example, that one type of expenditure on food, say, food at home, is more shared than another type of expenditure on food, say, food in restaurants but that, as suggested above, take aways are more shared than food at home. A more nuanced approach to expenditure on food may contribute new aspects to this literature. We have distinguished between food at home, take away food, expenditure in pubs and cafes and expenditure in restaurants. As will be shown, expenditure on each of these increases as incomes increase. However, there are differences in the way these expenditures respond to increases in household size. In this paper we show in particular the importance of other factors like the age of the woman of the household.

## **4 Analysis of the Data**

What mostly interested us was to find important factors that determine the expenditure of the households on food (whether at home, from take-aways, at pubs and cafes or at restaurants.). We also wanted to be able to say something about whether food should be considered a public or private good, and how it compared in this respect to children’s clothing, the most public of clothing.

### **4.1 Age of woman and home-prepared food**

In pursuing these questions, we discovered that the age of the woman of the household is a significant factor in the extent to which food is bought for preparation in the home for the consumption of the household. We prove this as follows.

We assume that four variables might determine the expenditure of the households on food: family earnings, household size, age of woman<sup>4</sup> in the house and the years of education of the woman. We make use of forward selection as a regression method. The reason for choosing forward selection is because it is always computationally tractable. In addition, the computational properties of this method are similar to those of backward selection. The technique adds predictor variables and never deletes them. The starting subset in forward selection is the empty set. Many researchers have reported good results with forward selection (Miller, 1990). All results are based on our full data set of 625 observations.

Using the forward selection method for multiple regression the final model is as follows:

$$Y_i = 0.477 + 0.434X_{1i} + 0.423X_{2i} + 0.069X_{3i} \dots\dots\dots(3.1)$$

Where

$Y_i$ : Expenditure on food at home

$X_{1i}$ : Number of people per household (p-value<0.001, t-statistic=13.199, S.E=0.033)

$X_{2i}$ : Household earnings per month (p-value<0.001, t-statistic=6.343, S.E.=0.067)

$X_{3i}$ : Age of the woman of the house (p-value=0.003, t-statistic=2.944, S.E.=0.024)

In brackets we have shown the p-value of the coefficient of the corresponding variable, the t-statistics and the standard error of the coefficient showing that each one of the variables is significant. In addition all coefficients are positive indicating a positive relation between  $Y_i$  and  $X_{hi}$   $h = 1, 2, 3$ .

Tolerance is greater than 0.2 (a critical value accepted in most cases) while VIF (Variance Inflation Factor) is less than 5 since tolerance is the reciprocal of VIF. (VIF greater or equal to 4 is an arbitrary but common cut-off criterion for deciding when a given independent variable displays "too much" multicollinearity: values above 4 suggest a multicollinearity problem. Some researchers use the more lenient cut-off of 5.0. Some may wish to drop the variable with the highest VIF if multicollinearity is indicated). Using these two diagnostics we can continue with the investigation of outliers.

No outliers or other influential observations are detected. In addition, on the basis of the frequency distribution we can accept normality of the residuals.

The correlation coefficient of the above model (which is the correlation between the predicted value and the actual value of the dependent variable  $y_i$ ) equals 0.587 giving an R-square of 0.345.

Based on the above diagnostics, model 3.1 fits our data and can be used to predict Expenditure on Food at Home.

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<sup>4</sup> Age of the woman is assumed to be important and not age of the man because in Cyprus preparation of meals at home is done almost exclusively by the woman of the household.

## 4.2 Age of woman and consumption of take away food

What is really interesting is that, with a different dependent variable, Expenditure on Take Away Food, and the same independent variables, family earnings, household size, age of woman in the house and the years of education of the woman, we find the same determinants. That is

$$Y_i = 1.546 + 0.268X_{1i} - 0.112X_{2i} + 0.072X_{3i} \dots\dots\dots (3.2)$$

Where

$Y_i$ : Expenditure on take-away food

$X_{1i}$ : Household earnings per month (p-value<0.001, t-statistics=4.369, S.E.=0.061)

$X_{2i}$ : Age of the woman of the house (p-value=0.017, t-statistics=-5.142, S.E.=0.022)

$X_{3i}$ : Number of people per household (p-value=0.000, t-statistics=2.389, S.E.=0.030)

Notice that the coefficient concerning the age of the woman is negative showing that the younger the woman of the household, the more the Expenditure on Take Away Food.

The results show that the factors for determining expenditure on food (either take-away or prepared at home) are approximately the same: number of people in the household, family earnings and age of the woman. This matches a behavioral observation to the effect that households tend to have their main meal at home, whether obtained ready-cooked or prepared at home.

## 4.3 Age of woman and consumption of food in pubs, cafes and restaurants

Next we attempt to find the determinants of the expenditure on food consumed in pubs and cafes or restaurants. Using “forward selection” and the same three dependent variables as before, we find, in both cases, only two of them to be significant: Family Earnings and Age of the Woman of the House.

$$Y_i = 2.860 - 0.247X_{1i} + 0.197X_{2i} \dots\dots\dots (3.3)$$

Where

$Y_i$ : Expenditure on Pubs and Cafes

$X_{1i}$ : Age of the woman of the house (p-value=0.021, t-statistics=-8.005, S.E.= 0.031)

$X_{2i}$ : Household earnings per month (p-value=0.000, t-statistics=2.306, S.E.=0.085)

$$Y_i = 0.985 + 0.561X_{1i} - 0.064X_{2i} \dots\dots\dots (3.4)$$

Where

$Y_i$ : Expenditure on Restaurants

$X_{1i}$ : Household earnings per month (p-value<0.001, t-statistics=8.895, S.E.=0.063)

$X_{2i}$ : Age of the woman of the house (p-value=0.005, t-statistics=-2.791, S.E.=0.023)

In both cases age of the woman is inversely related to the expenditure on food, in Pubs and Cafes and in Restaurants. We discuss the implications of this in the analysis section below.

#### 4.4. Expenditure on children's clothing

Using as potential factors that determine expenditure on children's clothing the family earnings and number of people in the household we end up having them both significant in the model which is formulated below:

$$Y_i = -0.273 + 0.590X_{1i} + 0.264X_{2i} \dots\dots\dots (3.5)$$

Where

$Y_i$ : Expenditure on children's clothing

$X_{1i}$ : Number of people per household (p-value<0.001, t-statistics=16.685, S.E.=0.035)

$X_{2i}$ : Household earnings per month (p-value<0.001, t-statistics=3.641, S.E.=0.072)

### 5 Analysis

#### 5.1 Food at Home

The model 3.1 suggests that there is a strong correlation between family earnings, number of people per household and age of woman, regarding expenditure on food at home.

To test this further, we construct a model in which we focus explicitly on the behaviour of the poorest households compared to the rest.

Here we have only two income categories, the lowest income households and the rest.

$$Y = 0.062 + 0.430X_1 + 0.666X_2 + 0.080X_3 \dots\dots\dots (3.1.1)$$

$Y_i$ : Expenditure on food at home

$X_{1i}$ : Number of people per household (p-value=0.000, t-statistics=12.744, S.E.=0.034)

$X_{2i}$ : Household earnings per month (p-value<0.001, t-statistics=7.183, S.E.=0.093)

$X_{3i}$ : Age of the woman of the house (p-value=0.001, t-statistics=3.478, S.E.=0.023)

We find that, relative to 3.1, in 3.1.1 where we compare the least well-off families to all the rest, the difference between the household size and earnings coefficients is much greater; the earnings coefficient, too, is much greater. This suggests that, for the poor, food at home is relatively more shared than it is for the better off families.

The age of the woman of the household is again a significant determinant of expenditure on food at home. It is, moreover, a positive relationship. This is because: 1) younger women are more likely to be in paid employment, while older women are more likely to be housewives<sup>5</sup>; and 2) older women are more likely to conform to the tradition in Cyprus of preparing food at home for more than one household, her own as well as those of her married children.

## 5.2 Take away

The model 3.2 shows the significant variables determining expenditure on take aways, namely family earnings, household size, and age of woman of household. The income of households and the size of households both correlate positively with the amount spent on take away food. The former is, indeed, in line with Gan and Vernon's (2003) expectations, namely that families with higher income are more likely to buy take away food rather than take the less expensive option of preparing food at home. On the other hand it might be expected that smaller households, in particular one person households, would opt for take away, due to the fact that such individuals would not consider it worth the trouble to prepare for, and clean up after, meals at home. There may well be such a tendency, but it is more than counter-balanced by the fact that larger households, though buying take aways less frequently, have to have larger quantities, which cost more. The net result is a positive, though low-coefficient, relationship between size of household and expenditure on take aways.

There is a negative correlation between the age of the wife and the expenditure on take aways; the older the woman, the less is spent on take aways. This is consistent with an expectation, based on an older tradition, of the woman of the house preparing meals at home. It could also be argued that older women – coming from the less prosperous Cyprus of earlier decades – are more likely to believe that they are saving money by avoiding take aways. Furthermore, older women are not accustomed to thinking about take away as an option; it hardly existed when they were growing up. They therefore consider it a less healthy, more expensive, food choice.

Another characteristic of Cyprus society is the strong family ties. Often, the children of households are in the same town or village as their parents. These children, and sometimes their children, in many cases travel the short distance to the home of their mother (or grandmother), who prepares meals for a number of households (depending

<sup>5</sup> Zaidi (2007) shows that Cyprus is a striking case in Europe, having a high employment rate for men (in the age group 50-64) and among the lowest employment rates for women in that age group. See also table below:

### Age, Gender and Employment

2005		
Age Groups	Men (%)	Women (%)
15-24	41	33
25-54	92	72
55-64	71	31
65+	20	5

Source: Department of Labour, Labour Market Situation, Republic of Cyprus ([http://www.mlsi.gov.cy/mlsi/dl/dl.nsf/dmlsituation\\_en/dmlsituation\\_en?OpenDocument](http://www.mlsi.gov.cy/mlsi/dl/dl.nsf/dmlsituation_en/dmlsituation_en?OpenDocument))

on the number of children she has). This reduces the likelihood of take aways<sup>6</sup> and increases the scale (and therefore economies of scale) of food prepared at home. Such traditions may affect our results in three ways:

1. Younger households may spend less on take aways than might otherwise be expected because they – and their families – eat at least some of their meals with their parents.
2. Smaller households with retired people or people close to retirement might spend more than expected on food at home, due to the fact that they provide cooked meals for their children. In effect, the definition of household may not match the way food is bought and consumed at “home”; consumption of food at home may be a more multiple household activity in Cyprus.
3. Most importantly, this means that expenditure on food at home is in fact more shared than the data suggest. Economies of scale may be a factor driving households to prepare food and eat together, but because it is inter-household it does not show up in the data.

To test further the extent to which expenditure on take aways are sensitive to income, as with model 3.1.1, we compare the poorest income category to all the rest in 3.2.1.

Here we have only two income categories, the lowest income one and the rest.

$$Y_i = 1.335 + 0.396X_{1i} - 0.112X_{2i} + 0.061X_{3i} \dots \dots \dots (3.2.1)$$

where

$Y_i$ : Expenditure on take-away food

$X_{1i}$ : Household earnings per month (p-value<0.001, t-statistics=4.777, S.E.=0.083)

$X_{2i}$ : Age of the woman of the house (p-value<0.001, t-statistics=-5.399, S.E.=0.021)

$X_{3i}$ : Number of people per household (p-value=0.045, t-statistics=2.011, S.E.=0.030)

As was the case in relation to the difference between model 3.1 and model 3.1.1, so with the difference between model 3.2 and model 3.2.1, the earnings coefficient is greater and the household size coefficient is smaller. This suggests that in relation to the less well-off households in Cyprus, take aways are more shared than they are for better off households.

### 5.3 Pubs and Cafes

Pubs and cafes were put together, as they are similar in Cyprus as places where people can obtain both food and any kinds of beverages including alcohol.

The expected outcome was obtained in that, as shown in model 3.4, the higher the income, the more is spent at pubs and cafes.

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<sup>6</sup> This is the same argument to support the positive relationship between age of women and expenditure on food at home

In addition, there is a negative effect of the age of the woman, that is to say, as with other non-home-based consumption of food, the older the woman, the less is spent at pubs and cafes. We can build a profile of the people attending cafes and pubs: they are young, with small households and substitute food at home with food – or drinks – at pubs and cafes.

#### 5.4 Restaurants

The frequency with which households have dinners in restaurant is strongly related to the household earnings in a positive manner, that is to say, the more the income the more the household spends at restaurants. This is, of course, exactly in line with expectations. In contrast, the age of the woman is inversely related to expenditure in restaurants. The explanation is probably the same or similar to that in relation to take aways; older women are used to home prepared meals and younger women are not as used to home cooking and are more used to socializing with friends in restaurants rather than at home.

#### 5.5 Children’s Clothing

Expenditure on children’s clothing is more sensitive to household size than it is to income. This suggests that it is less shared than if the opposite was the case. Moreover, the coefficients suggest that children’s clothing – probably the most shared of all clothing – is more private than expenditure on food at home.

Concentrating on the less well-off households by examining on two income categories, the least well-off and the rest, we get the following model:

$$Y_i = -0.309 + 0.570X_{1i} + 0.315X_{2i} \dots\dots\dots (3.4.1)$$

$Y_i$ : Expenditure on children’s clothing

$X_{1i}$ : Number of people per household (p-value<0.001, t-statistics=16.271, S.E.=0.035)

$X_{2i}$ : Household earnings per month (p-value=0.002, t-statistics=3.189, S.E.=0.099)

The sensitivity to number of people (children) in the household decreases and sensitivity to income increases. This means that, although it is still relatively private, children’s clothing is more shared for the relatively less well-off households in Cyprus than it is for the rest.

#### 5.6 General Analysis

Because the response of expenditure on take aways to size of household is much less than the response of expenditure on food at home to size of household<sup>7</sup>, then take aways are more shared.

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<sup>7</sup> and the difference between the household size and earnings coefficients is larger (see Table 2)

The models 3.1.1 and 3.4.1 are summarised in Table 2:

**Table 2: Shared or Private: Food at Home and Children’s Clothing**

<b>Model</b>	<b>Coefficient</b>	
	<b>Household Size</b>	<b>Earnings</b>
3.1.1 Food at Home	0.43	0.67
3.2.1 Take Aways	0.06	0.40
3.4.1 Children’s Clothing	0.57	0.32

Whereas food at home is more sensitive to household earnings than to household size, children’s clothing is more sensitive to household size than to earnings. This suggests that food at home is indeed more shared than children’s clothing. Moreover, given that children’s clothing is the most shared of clothing, it is likely that this can be generalized to all clothing; food at home is more shared than clothing, confirming the argument of Gan and Vernon (2003).

Is “other” food more private than food at home? While we cannot address this argument either in relation to expenditure in pubs and cafes or restaurants, we can address it in relation to expenditure on take aways. Take aways are more shared so not all “other” food is more private than food at home. The behavioural expression of this is that take away portions are, literally, shared in households. Our data do not facilitate it, but it is highly likely that if we could add together expenditure on take aways, pubs and cafes and restaurants, then all “other” food would indeed be found to be more private than food at home and our data in that sense would agree with Gan and Vernon (2003).

### **5.7 Qualitative findings**

Older women are more likely to conform to the tradition in Cyprus of preparing food at home for more than one household, their own as well as those of their married children. These smaller, older households are, in effect, preparing food at home for more than one household. For some of the interviewed households, food from parents or in-laws is the single most important way of obtaining food. Younger more educated women will spend much more on restaurants or take-away food mainly due to time poverty, higher income and prestige that enables them to consume food in restaurants alongside with the reach and famous.

### **6. Conclusion**

In this paper we addressed a number of issues arising from the literature on the relationships between income and number of people in the household on one hand and various types of household expenditure on the other. Using data from a household budget survey in Cyprus, we have shown, first, that food is not a particularly private (non-shared) good and that for analyses focusing on expenditure on non-shared goods,

clothing, even children's clothing, would be better. This result tends to support Gan and Vernon (2003) rather than Deaton and Paxson (1998; 2003).

In relation to any discussion about the changing position of women in households in Cyprus, the paper shows that the Household Budget Surveys are an important source of data for analysis. The analysis of the particular data addressed in this paper shows that the age of the woman of the household is positively related to the expenditure on food bought for preparation in the home for the consumption of the household. It also shows that the age of the woman of the household is inversely related to the expenditure on take away food and on restaurants. We suggest that one explanation for these findings is that Cyprus is a society in transition, with changing patterns of household food consumption.

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