

Is perceived financial inadequacy persistent?

August 9, 2011

Abstract

In an attempt to understand the determinants of financial inadequacy, this paper employs the ability to make ends meet of households as a measure of their perceived financial inadequacy. Using household-level data from the European Community Household Panel (ECHP) that covers eight countries for the period from 1994 to 2001, a dynamic probit model which incorporates both state dependency and individual fixed effects is applied. Exploiting latterly enhanced bias corrected fixed effects probit model, we address the persistent nature of the subjective financial inadequacy by directly estimating fixed effects whilst correcting for incidental parameters and avoiding initial conditions problem of dynamic models. Our results reveal that employing time invariant individual effects to model a subjective monetary perception is vital. Yet controlling for household heterogeneity, income, indebtedness and health status, we document that in addition to the major differences across European households, institutional factors can have adverse effects on the persistent nature of perceived financial inadequacy.

Keywords: Perceived financial inadequacy, Fixed effects bias corrections

I would like to thank Dimitris Georgarakos, Michael Haliassos, Yigitcan Karabulut and conference participants of 10th Journées Louis-André Gerard-Varet Conference in Public Economics, New Directions in Welfare Congress of OECD as well as the seminar participants at the University of Frankfurt for very helpful comments and suggestions.

1 Introduction

About the time we think we can make ends meet, somebody moves the ends

President Herbert Clark Hoover

Financial inadequacy is an ambiguous concept without a straightforward definition. Some researches define it as a monetary rationale where others consider it as a subjective perception. Besides the absence of globally accepted way of measurement, the conceptualization of financial inadequacy can also be defined in relative terms among different countries.

Defining the main causes of financial inconveniences or financial distress is germane to societies that desire to differentiate financially adequate and inadequate households. European commission EuroBarometer [2010] survey demonstrates that more Europeans are struggling to make ends meet due to financial crisis and fragile economies of the European countries. One in every six Europeans report, their household has had no money to pay ordinary bills, buy food or other daily consumer items, on at least one occasion in the past year and 20% had difficulties in keeping up with household bills and credit commitments at the time of the survey's fieldwork. Moreover periods of these financial difficulties become more relevant when they are persisted over time.

The purpose of this paper, therefore, is to present the findings of an exploratory study that was designed to review the determinants of financial inadequacy while concentrating especially on the persistent nature of this concept, as well as to report a proposed framework to model households subjective feelings about their present financial situations. To do so we exploit recently enhanced nonlinear panel data model by Fernandez-Val [2009] that enables to embed state dependency to a panel probit model while controlling for time invariant unobserved individual heterogeneity (fixed effects). Employing this model we avoid two main problems related to the estimation of a dynamic probit model with time invariant household heterogeneity. First inciden-

tal parameters problem is reduced to a negligible degree by computing bias corrected estimates. Second initial conditions problem is solved by not imposing restrictions on the initial values of the process. Moreover controlling time-invariant unobserved heterogeneity we are now able to distinguish between true state dependency -the impact of the lagged dependent variable on the dependent variable- and spurious state dependency.

Alternative to traditional minimum income levels to define financial inadequacy, is to exploit subjective responses to perceived income surveys which are capable of controlling both the income and spending sides of household financial characteristics through time. To do so household's ability to make ends meet responses which can be answered on an ordinal scale can be employed as a measure of perceived income adequacy. Ability to make ends meet addresses the capability of households to survive financially, and is related to many household finance characteristics such as ability to keep up with financial commitments, attitude to savings, possibility to run out of money before next pay day, and previous financial difficulties. Additionally ability to make ends meet allows us to capture a great deal of time variation of dependent variable which is especially vital for modeling time invariant individual effects. Given these reasonings ordinal scale ability to make ends meet responses asked at the household level are employed in this paper as a proxy of perceived financial inadequacy.

First contribution of this paper is to model perceived financial inadequacy in a dynamic manner while controlling for fixed effects. In our model particular emphasis is placed on to what extend state dependency of making ends meet responses, have an influence to the present period's ability to make ends meet over and above the role of factors that existing literature has already identified.

In studies that uses ability make ends meet to analyze an economic outcome, it is generally assumed that individuals constitute a pooled group. However as shown by Carbonell and Frijters [2004], influence of unobservable's that are individual specific and constant over time should be taken into account analyzing subjective survey ques-

tions. The second contribution of this paper is to disentangle the uncertainty of the influence of unobservable individual specific time constant variables to a subjective rationale that is not directly related to well being studies.

Aggregating data across different countries can be misleading given that household characteristics in different countries may differ in a way which could be difficult to capture using country fixed effects. Moreover different institutions and regulations in different countries may impact distinctively to the distribution of financially inadequate households over time. Final contribution of this paper is to address this issue and analyze a dynamic model of ability to make ends meet across eight different European countries separately.

This paper is structured as follows. Section 2 of the paper examines the existing literature on perceived financial inadequacy measures and its predictors. Section 3 presents the potential problems that can be encountered while estimating a dynamic latent variable model with fixed effects. Also presented in section 3 is the econometric estimation method that will be employed in this paper as well as the definition of the dependent variable. Section 4 presents the general features of the data set and household demographics. The influence of lagged dependent variable and socio-economic factors are presented in section 5. Section 6 concludes the paper.

2 Background

Traditional way of interpreting financial inadequacy is to determine specific income levels (usually called poverty lines) such that if household income falls below the specific poverty line, household is defined as poor or financially inadequate. However financial inadequacy is a sophisticated concept that can not solely be explained in terms of specific income levels. There is a growing recognition among analysts to move beyond standard poverty statistics - instead of just concentrating on low income - to develop alternative measures that reckons also household consumption and overall economic

well-being.

Numerous studies document that (Layte et al. [2001], Whelan et al. [2001]) household needs are as important as economic resources in identifying households who are at risk of financial difficulties. Regular expenses as rent or mortgage payments or medical expenditures have a great deal of influence on household income given that these expenses may consume a big proportion of it. Furthermore financial difficulties are not simply confined to households with low incomes. Households at different levels of income experience financial problems for a variety of reasons which they might or might not control (Berthoud and Kempson [1992], Stamp [2009]). For example households with relatively high income may suffer more from debt related problems in the case of economic tumbles. Using ECHP data Betti et al. [2001] showed that debt problems are not particularly associated with low income contrary regarding loans, problems are related to more those on higher incomes.

Over and above to heterogeneity of household indebtedness, there is also heterogeneity in household spending such that some manage their money more wisely than others. For example low income households may be considered as better money managers, making the best of the limited resources available to them. Moreover there are substantial price level differences between regions within a country or even between city and country side (Praag and Carbonell [2006]) which makes it difficult to set a global poverty measure for the entire country. Besides price differences, there are substantial peer effects among households which has to be taken into account. Carbonell [2005] showed that even though they live below a certain income level, rural inhabitants do not consider themselves as poor given that they compare their present financial status with their neighbors in the region they live.

Given these reasonings, an alternative approach (Goedhart et al. [1977], van Praag et al. [1980] and several others) to define financial inadequacy is to state it as a perceived subjective feeling where numerous additional factors may contribute to, including unemployment, divorce, medical costs, overspending, low financial literacy, the burdens

of home ownership and financial mismanagement.

A straight forward implementation to analyze the households perceptions of financial inadequacy is to ask respondents their ability to make ends meet. Danziger [1984], Goedhart et al. [1977] and de Vos and Garner [1991] address this type of methodology that uses subjective minimum monthly income needed to be able to make ends meet. A more recent alternative methodology used by Litwin and Sapir [2009] is to apply direct responses to ordinal ability to make ends meet questions. In this paper this ordinal variable approach that ask respondents whether they are able to make ends meet with a response scale from very easy to very difficult is utilized.

One major point that is generally left out by the studies that uses subjective questions as their dependent variables is the presence of state dependent variables. The ignorance of incorporating the state dependency has been criticized by Pudney [2006] where Newman et al. [2008] employed a dynamic ordered probit model for financial satisfaction following this criticisms. Taking into account state dependency for perceived financial adequacy is important for many reasons. First of all households with low income may cope with financial difficulties for a short period, however unable to overcome these difficulties over the longer term given their needs. The compound effect of lack of resources and recurring demands, makes it difficult for households to manage financial problems on an ongoing basis(Berthoud and Kempson [1992]). Moreover ability to make ends meet has direct influence on subsequent periods household debt and saving behavior. Mentioned by hyun Joo and John [2004], financial stress or problems is linked with financial solvency and risk tolerance which in turn means decreased willingness to hold risky or illiquid assets.

In addition to state dependency, other causes of financial inadequacy can be grouped into two: the factors that can be controlled by the households and the ones that happen outside the control of households. For example poor budgeting or money mismanagement (Berthoud and Kempson [1992] Elliott [2005]) and unwillingness to pay debts (Dominy and Kempson [2003]) can be nominated as behavioral causes which

are consequences of lack of personal responsibilities. Unfortunately it is difficult to control such behavioral characteristics using standard regressors. However one can instead control for unobserved household heterogeneity which can capture mentioned behavioral differences.

On the other hand financial difficulties are often caused by reasons that are not behavioural, and happen outside of the control of households. Litwin and Sapir [2009] emphasize that being unemployed or retired is associated with perceived financial difficulty. Winkelmann and Winkelmann [1998] showed that unemployment has a large detrimental effect on life satisfaction after individual specific fixed effects are controlled for. Kassenboehmer and Haisken-DeNew [2009] identifies the importance of unemployment entry differences on life satisfaction where Clark [2006] indicate the negative effect of unemployment duration on households well-being. All these studies show that being nonemployed is sharply associated with lower levels of individual well-being and linked to perceived financial inadequacy.

Another external factor which may exhaust an important fraction of household income is heavy use of credit and over-borrowing (Berthoud and Kempson [1992] Elliott [2005]). Draut and Silva [2003] indicate that in order to cope the combined financial pressures of rising costs and stagnant or declining incomes, households are taking on more debt by draining their home equity and taking on record levels of credit card debt. Using data from twelve different European countries, Georgarakos et al. [2010] found that higher mortgage debt to income ratio is a key determinant of financial distress.

Besides employment and debt related indicators, households standard demographics also play role in perceived financial inadequacy. In addition to household income Stoller and Stoller [2003] identified health status and age to be the main predictors of perceived financial inadequacy where the effect of household size is illustrated for developing countries by Lanjouw and Ravallion [1995]

3 Econometric Framework

Incorporating individual specific and time constant effects are vital in studies that model subjective measures. However in many household panel surveys number of periods available are not long enough to model household heterogeneity appropriately. For this reason it is natural to discuss about finite time-series sample properties as bias corrections than of fixed-T inconsistency or underidentification.

3.1 Incidental Parameters Problem and Alternative Solutions

In nonlinear panel data models with fixed effects, where the number of time periods is fixed, there is incidental parameters problem which is first mentioned by Neyman and Scott [1948]. Being independent of sample size, this problem arises because information that comes from fixed effects parameters stop accumulating after a finite number of periods which in turn distorts the consistency of maximum likelihood estimates of the estimated parameters. Given that estimates of fixed effects depend only on the time periods of the sample, this inconsistency exists even at large data sets.

An alternative methodology as addressed by Wooldridge [2002] is treating individual effects as parameters to be estimated in the model. Although this type of methodology results in fixed-T inconsistency, it is possible to ask for approximately unbiased estimators instead of estimators with no bias at all. Approximately unbiased estimator reduces the bias of the estimated coefficients to $1/T^2$ from $1/T$ (Arellano and Hahn [2005]).

The notion behind these methods is to compute the approximately unbiased estimator " θ_0 ", using the estimate of the leading term of the bias " \mathbb{B} " and estimated biased estimator " θ_T " as in equation:1.

$$\theta_T = \theta_0 + \frac{\mathbb{B}}{T} + \mathcal{O}\left(\frac{1}{T^2}\right) \tag{1}$$

In order to implement the method in equation:1, one needs to have an explicit formula for the error term "B". There are different approaches to compute this explicit formula. Some approaches apply moment equations while others employ concentrated likelihoods. There are also methods by Cox and Reid [1987] and Lancaster [2002] which are based on orthogonality conditions.

3.2 Bias-Correction of the Moment Equation

Bias Correction of the Moment Equation computes bias corrected estimates using estimating equation by constructing the estimator as a solution to the bias corrected version of the first-order conditions. There are two main approaches to deal with first order conditions. Observed quantities are used for the first case while likelihood setting expected quantities are employed for the second.

In this paper; method developed by Fernandez-Val [2009] which falls into the group that uses expected quantities is used for two main reasons. First of all this method is much less intense in terms of computation time compared to concentrated likelihood. When one considers using large data sets with thousands of households, computation time and convergence of likelihood turn out be central issues. Moreover these computational issues can be even more severe when it comes to dynamic models. Secondly simulation studies show that method by Fernandez-Val [2009] has better finite sample properties compared to other methods.

3.3 Defining the Dependent Variable

Responses to the subjective questions are usually collected on an ordinal scale. For Making Ends Meets, answers are collected on a scale from 1 to 6 such that 1 corresponds to *making ends meet with great difficulty* where 6 corresponds to *making ends meet very easily*. The interpretation of ordinal variables in economic studies is different from cardinal ones. The reason is that, distances between responses are assumed to be same

for cardinal variables where in contrast these distances does not necessarily to be the same for ordinal variables. More clearly from a cardinality perspective 6 means two times as good as 3 where from an ordinality perspective 6 is just more than 3.

Even though in economic studies ordinal modeling as ordered probit or logit models are common to use, Carbonell and Frijters [2004] provide evidence that using individual specific effects is much more critical than the definition of dependent variable. Unfortunately using standard techniques, it is not possible to estimate fixed effects ordered probit or logit models.¹

One can employ alternative methods to recode ordinal variables as binary outcomes to overcome the mentioned difficulty. Das and van Soest [1999] has developed an estimator which initially estimates fixed effects logit estimators for every particular ordinal interval and combine these estimates using a weighted average matrix. In addition to its incompatibility to dynamic models, this method does not allow the computation of marginal effects while it uses standard fixed effects logit model to maintain the consistency of the estimates. Moreover in many applications there is not enough information for each ordinal category which is crucial for the computation of weighting matrix to combine single binary estimates. For example at some European countries, there are very few individuals who answer one of the lowest or highest categories of the subjective questions. An alternative methodology which is also used in his paper is to recode ordinal variables such that value 1 is assigned above a certain threshold and 0 otherwise as defined by Winkelmann and Winkelmann [1998].

In this paper first binary recoding is defined at the country level. If a household's ability to make ends meet falls below the country threshold(average) 0 is assigned to this household and 1 otherwise. Dependent variable for household i at time point t

¹Although there are studies that try to develop bias corrections for ordered models (Carro and Traferri [2009]), they are not convenient to program and implement for the applications as in this paper.

and at country c is defined as;

$$Y_{itc} = \begin{cases} 0 & \text{if } Y_{itc}^* \leq \bar{Y}_c \\ 1 & \text{if } Y_{itc}^* > \bar{Y}_c \end{cases} \quad \text{where } \bar{Y}_c = \frac{\sum_{i=1}^N \sum_{t=1}^T Y_{itc}}{NT}$$

The problem incorporated to country level dependent variable definition is the loss of big amounts of data while in the application of models with fixed effects, effect of independent variable is only identified if the individuals change status. This implies that at country level we can not capture changes at the very high or low levels making ends meet responses.

The data loss problem can be solved using Kassenboehmer and Haisken-DeNew [2009] estimator, which applies individual thresholds over time. The second binary recoded variable y_{itc} is generated at individual level as;

$$Y_{itc} = \begin{cases} 0 & \text{if } Y_{itc}^* \leq \bar{Y}_{ic} \\ 1 & \text{if } Y_{itc}^* > \bar{Y}_{ic} \end{cases} \quad \text{where } \bar{Y}_{ic} = \frac{\sum_{t=1}^T Y_{itc}}{T}$$

where Y_{itc} takes value of 1 if ability to make ends meet level of the individual is above the individual specific threshold and 0 otherwise.

Give two different definitions of dependent variable econometric model that is employed is a dynamic probit model with fixed effects.

$$Y_{itc} = 1\{\gamma Y_{it-1c} + \beta X'_{itc} + \alpha_{ic} - \epsilon_{itc}\}$$

where Y_{itc} represents the binary outcome of household i at time t at country c , Y_{it-1c} lag of binary outcome, X'_{itc} exogenous regressors, α_{ic} fixed effects and ϵ_{itc} normally distributed independent and identical error term.

4 Data and Descriptive Statistics

4.1 General features

The data from European Community Household Panel(ECHP) is used in this paper. ECHP survey was conducted annually across EU member states over the period 1994-2001. In the first wave, approximately 130000 adults over age 16 are represented. In ECHP detailed information is provided on household demographics, financial characteristics and housing at household level where regarding employment, health status and social background there is information at personal level. The standardized part of the questionnaire is designed such that cross-nationality comparison is possible. Detailed information on objectives, design and availability of ECHP can be found on ECHP web site².

In this paper data from 8 European countries are employed. We have included countries in which making ends meet and financial satisfaction questions are asked for 8 years. In our analysis we focus on the head of household who's age is less than 85 and always observable through the survey.

4.2 Subjective measures of financial inadequacy

One of the main strengths of our data is to contain subjective questions at household and individual level which can reflect the household's opinions about their present financial well being. At individual level, satisfaction from financial situation is asked where at household level, households ability to make ends meet is comprised in the survey.

The first question that is used as the dependent variable in this paper is derived from the household level subjective questions regarding financial situation. Respondents are asked regarding ability to makes ends meet as:

²<http://circa.europa.eu/irc/dsis/echpanel/info/data/information.html>

"A household may have different sources of income and more than one household member may contribute to it. Thinking of your household's total monthly income, is your household able to make ends meet?"

Four assumptions are made analyzing this question namely (i) households are able to evaluate their ability to make ends meet (ii) there is a positive monotonic relationship between the answer to make ends meet question and their perception of financial inadequacy (iii) the answer to make ends meet question is comparable across households. Vignettes could have been employed to shed light more to the cross-country differences of subjective measures however neither at ECHP nor at EU-SILC vignettes are not asked. For this reason we make a final assumption as (iv) the answer to ability to make ends meet question is comparable across different countries.

Table:1 presents the portion of household responses by country for different categories of the making ends meet question. The pooled mean of 8 countries for the households who has great difficulty in making ends meet is 9.30% where at the other extreme who achieve very easily is 2.24%. Three different groups of countries can be identified looking to Table:1. Firstly more than 30% of the households at Denmark, Belgium and UK³ are either able to make ends meet easily or very easily. More than 65% of households are able to make ends meet at Denmark, Belgium and UK. Contrary to them at Italy, Greece and Portugal easily and very easily responses are less than 10%. At Italy, Greece and Portugal households are experiencing difficulties in making ends meet. Between these two different groups is the France and Spain where the sum of easily and very easily responses are (around 15%)less than the first group but more than the second one and moderate responses are around 60%.

The second question that is used as the dependent variable is derived from individual level satisfaction questions. Respondents are asked regarding their *satisfaction with financial situation* which can be responded on a scale of 1 to 6(1 represent not satisfied and 6 represent fully satisfied). Table:2 presents the portion of household responses

³At UK question is asked on a scale from 1 to 5 instead of 6

by country for different categories of financial satisfaction. Even though households face difficulties in making ends meet, they seem to be financially more satisfied. For example if we pay attention to Greece or Portugal, 6% - 8% of the households who has great difficulty in making ends meet seem to be satisfied from their financial situation. Moreover at Denmark and Belgium % of fully satisfied households is almost two times compared to households who are able to make ends meet very easily.

4.3 Household Demographics

For the analysis of this paper we identified 14 items which can serve as indicators of making ends meet responses. Following household income, household demographics including age, education, household size, marital status and employment status are determined as major indicators. Additional variables as paying mortgage debt or any other debt as well as home ownership are also employed to represent current household portfolio situation. Finally number of times of being unemployed 5 years before and during the survey is utilized, to more clearly indicate the effect of previous income shocks to today's financial status. Summary statistics of variables for all countries can be found in Table:5.

5 Empirical Results

5.1 Making ends Meet as dependent variable

5.1.1 Transition rates

In order to comprehend the changes in responses between two consecutive periods, transition rates between different levels of ability to make ends meet questions can be illustrative. Table:3 & Table:4 presents the pooled transition matrices of ability to make ends meet responses for the present period and its lag for eight countries. For

illustrative purposes transition rates could be named such that great difficulty, with difficulty and with some difficulty represent bad states where fairly easily, easily and very easily represent good states. As seen from the matrices, represented countries are quite heterogeneous in terms of the flow of transitions between different levels of making ends meet responses.

If we first concentrate on Denmark and Belgium, it is seen that around 4% of the households have great difficulties in making ends meet at given period. 7% of the households in Belgium and 17 % in Denmark are likely to pass one of the good state categories. Although the scale of the question is different for UK, similar pattern of transitions can be seen. The transition rate of households who are in a good state now and have great difficulties in previous period is around 12% where their overall rate is slightly above 2% for a given period.

Households at France, Spain and Italy have higher rates of great or moderate difficulties in making ends meet. In France the rate is around 5%, where in Italy 7% and in Spain 11%. Transition rates to good state for great difficulties is generally low (around 5%) but for moderate difficulty levels these rates are higher. For France and Spain the distribution of responses for a given period is more spread (ie: there are more observations for each making ends meet category) compared to Italy. For Italy responses are concentrated around moderate answers as making ends meet fairly easily or with some difficulty.

Finally Portugal and Greece households report much higher rates of great difficulties in making ends meet (13%-19% respectively). Moreover households who have great difficulties have much lower transition rates to a good state (1.5%-3% respectively) at these two countries. Almost 60% of the households who has great difficulties at the previous period maintain these difficulties also at the current period.

5.1.2 Persistency

An important contribution of this paper is to illustrate subjective ability to make ends meet responses as a dynamic process while controlling for individual fixed effects. Row (1) of Table:6 presents the marginal effects of lagged category of making ends meet responses for the country mean definition where Row (1) of Table:7 presents the same responses at individual mean definition. All estimated marginal effects are found using Fernandez-Val [2009] bias corrected estimates.

For both definitions of the dependent variable, the effect of lagged dependent variable for Denmark , Belgium and UK is insignificant. Contrary to these 3 countries; the effect for Italy, Greece and Portugal is positively significant where for Spain the effect is again significant but negatively. For France there is a discrepancy between country and individual mean definitions. Both of them are negative but first one is insignificant where the second one is. Additional use of 10000 data points change the results from insignificant to significant for France.

At the report of EUROHOME-IMPACT [2002] constituted using ECHP data and objective income thresholds for financial difficulties, Denmark is defined to be a country with very low persistent risk of financial problems with reference to the incidence of poverty in any particular year. Belgium followed Denmark being below the European average in terms of risk of persistency of financial difficulties. For these two countries subjective and objective results seem to coincide and there is no persistency.

Many studies using objective income thresholds(ie: Fouarge and Muffels [2000]) document that at UK financial problems or poverty is persistent. Contrary to objective measures, subjective measures demonstrate, households at UK seem to adjust their income to needs level quickly and still able to make ends meet independent of their previous financial difficulties. This may indicate that households at UK have shorter term income-to-needs adjustment periods ie: with easier access to bank credit etc.

Persistency coefficients are positively significant for Italy, Greece and Portugal. The

lagged dependent variable provides an estimate the extent to which households are able to make ends meet at the previous period and how likely are they able to make ends meet this period. Given this information having positive sign at the lagged dependent variable and having plenty of periods with problems in making ends meet may be a sign of chronic financial inadequacy, meaning households have repeated problems in terms of making ends meet and they are not capable of breaking out of this cycle. Documented at the European commission situation and trends report⁴ in Portugal, more than half of the population were affected by persistent poverty in 1996, while in Greece, the figure was only slightly less if poverty is defined by the proportion of people with income below the poverty line in each of the three years for which comparable data are available. Moreover for these countries magnitudes of lagged dependent variables are very sharp suggesting financially distressed households may even need help to break their chronic financial difficulties. These results are linked to what Ferreira [2008] mentioned that social policies at Portugal, Greece and Italy are much less successful compared to EU average in dealing with current and persistent financial inadequacy. Southern social regimes including Italy are considered to be less generous in covering social risks.

For two countries(Spain and France) estimates for lagged dependent variable is negatively significant which complicates the analysis. The negative coefficient can be interpreted such that if households were unable to make ends meet in the previous period, they are more likely to be able to make ends meet compared to households who does not have these difficulties at the previous period. Having negative persistency could be a sign of cyclical effect which makes the financially inadequate households better off whilst making financially adequate households worse off. For this outcome, there may be different country specific explanations related to different social policy implementations and volatile income dynamics(ie:employment contracts).

If we first concentrate on the financially inadequate households in Spain we observe

⁴http://ec.europa.eu/regional_policy/sources/docoffic/official/reports/p122_en.htm

that negative sign is preserved for both of the definitions. This result is surprising given that Spain together with Portugal, Italy and Greece is considered to be less generous in covering social risks. However with the beginning of 80's institutionalization of social services and assistance has started in Spain which creates social protection. As mentioned by Matsaganis et al. [2003] Spain using a decentralized approach, enforce in some regions minimum income as a legal right, where adapting more cautious, discretionary approaches within limited resources at other regions. Given these protections the persistent poor in poor population is not higher than the EU average for Spain(Ferreira [2008]).

Continuing with the financially inadequate households in France, contrary to country level we observe a negative persistency coefficient at the individual level. Employing additional 10000 observations have changed the results from insignificant to significant. This result implies capturing more variation from data is very important for fixed effects models. With the new 10000 observations for France, we are now able to shed light on the persistency for poor in poor households who were dropped at country level definition. As mentioned by the OECD Economic Survey of France 2007, France's minimum wage (the SMIC) is the highest in the OECD countries which is often thought of as a means to combat household financial inadequacy. Also indicated at the same report, income inequality in France declined sharply during 1970s and 1980s which is accompanied by the fall in the risk of financial inadequacy.

The surprising transition is when it comes to financially adequate households at these two countries. These households are less likely to preserve their economic successes at the proceeding periods. Clearly there are country specific institutional factors that may create upward movement for financially inadequate households. But these factors could also have diverse effects through different channels on financially adequate households and create cyclical income variations. For example institutionally imposed rules might discourage employers to hire employees with permanent employment contracts. This may in return increase the amount of temporary employment contracts

and create a cyclical income effect for temporary workers and their incomes. Mentioned by Polavieja [2006] in addition to institutional factors, macro-level factors combined with individual decisions at the micro level may also increase temporary employment contracts. Especially in the presence of high economic uncertainty and perceived risks of unemployment, employees are tend accept temporary jobs against their preferences for stable future employment.

Figure:1 shows the rate of households who stoped working at their previous jobs because of temporary employment contracts across 8 European countries. Spain being %22 is way above and France having a rate of %15 is also above the average of 8 countries which is %9.8. For a closer look figure:2 shows the rate of unemployed households who had previously temporary employment contracts. It becomes more clearer for Spain with a rate of %60 where the 8 country average which is %34.3 that temporary unemployment may be one of the creators of this cyclical effect. For the unemployed households who had previously temporary employment contracts France having a rate of %37.1 is slightly above the average.

5.1.3 Socio-Economic Factors

Most of the previous studies document household income as the most important indicator of general and financial well being and making ends meet (Clark [2006], Carbonell [2005], Newman et al. [2008], Litwin and Sapir [2009]). Our results are matched with the previous findings. Household income has the highest positive and significant effect for all countries for both of the specifications. Following income, self reported health status significantly increases the likelihood of ability to makes end meet. Health problems are associated with higher income uncertainty as well as increased medical expenses. Consequently having better health status implies less expenses and less difficulties in making ends meet. The effect of self reported health status is strictly significant for

both specifications for the countries where health insurance system is less generous⁵.

Employment status is a major decisive of present financial status. Kassenboehmer and Haisken-DeNew [2009] points out the importance of unemployment on households well being where Litwin and Sapir [2009] assign it as the second strongest predictor of making ends meet ability. For all countries being unemployed strongly decreases ability to make ends meet. Being retired is an important negative indicator as well. This result is associated with reduced incomes when households retire. Negative coefficient of retirement may have an effect on future employment distribution of the society. Given the rising number of senior citizens in Europe, households may seek employment after they have officially retired because of their difficulties in making ends meet. Finally self employment seem to have varying and minor influence for different countries.

The second biggest negative indicator that causes difficulty in making ends meet is household size. Almost half of the positive effect of income is cleared by one unit increase in household size given that more household size is associated with larger expenses. To a lesser degree being couple also has a negative effect which is not present for all countries. Living together with a partner results in less household income if only one spouse is working. Being separated or divorced have negative effect for Italy, Portugal and Belgium at individual level.

It is difficult to comment on age and college variables when fixed effects are employed. College dummy changes for relatively low number of periods where age behaves linearly. Danziger [1984], Stoller and Stoller [2003] addressed the importance of age on making ends meet. They have found that elderly people generally find their incomes to be adequate, even when those incomes are relatively low. In our application we have also found positive effect of age for France and Spain for both specifications. Contrary to these two countries age have a negative effect for UK, for both specifications.

Debt repayment regressors, mortgage debt and debt payment other than mortgage,

⁵In an unreported regression "Days spent at hospital" is used as an alternative measure to self reported health status. For this alternative specifications results are robust for all specifications

give similar results in terms of sign and significance for all countries. Debt payment other than mortgage has a negative effect on making ends meet ability for almost all countries⁶. Mortgage debt should be evaluated together with home ownership. As mentioned by Georgarakos et al. [2010], during unfavorable macroeconomic conditions, where unemployment rates rise and household assets depreciate in value, households may be unable to pay off their loans which in turn affects their ability to make ends meet. However, the negative effect of mortgage debt can be balanced by the financial benefits of home ownership. Although for all countries mortgage debt has a negative effect on ability to make ends meet, at UK, Italy and Portugal home ownership had canceled much of the negative effect of mortgage payment and for Greece the negative effect of mortgage debt is even dominated by the positive effect of home ownership. Finally, the number of times being unemployed previously seems to have no effect on current ability to make ends meet.

5.2 Financial Satisfaction as dependent variable

As an alternative measure, one can also employ financial satisfaction as a dependent variable. Row (1) of Table 8 presents marginal effects (dependent variable is defined at individual level) of the persistency terms for 8 EU countries. As for the ability to make ends meet, at Denmark, Belgium and UK there are no significant persistency effects which confirms our previous findings. Moreover, at Italy, Greece and Portugal, effects are positively significant, indicating that financial satisfaction is state dependent at these countries. For these 3 countries, we observe that the magnitudes of the persistency terms are lower (almost half for Italy and Greece and 2% less for Portugal) implying individuals can still be financially satisfied even though they have difficulties in making ends meet. Finally, for Spain and France, the marginal effects of the state dependency variable for financial satisfaction are negative. For France, the state dependency effect is almost

⁶Other debt variables are excluded from regressions for England because this variable does not appear at all waves

the same where for Spain magnitude is a bit higher.

Turning to socio-economic factors, income effect has approximately the same positive effect across all countries as for the ability to make ends meet. In addition to income, self reported health has also an important positive effect where the magnitude is bigger for 7 countries. Household size is a less crucial indicator when it comes to financial satisfaction. Not only it is insignificant at 3 countries, but also the magnitude is always less compared to ability to make ends meet. For all countries (other than UK) being unemployed makes households more likely to be financially dissatisfied. Having mortgage debt is associated with lower levels of financial satisfaction where having debt other than mortgage is also associated with lower levels but to a lesser degree compared to ability to make ends meet. It can be concluded that individuals are generally aware of the additional difficulty of making ends meet when being indebted but still financially satisfied in spite of their debt. Finally home ownership generally adds no significant positive value to the likelihood of financial satisfaction other than Greece. As for making ends meet the positive effect of home ownership in Greece dominates the negative effect of mortgage debt.

6 Conclusion

This article has addressed the question whether perceived financial inadequacy is persistent in 8 European countries controlling for individual specific time invariant effects. Responses from ability to make ends meet question of ECHP is utilized as a subjective financial inadequacy measure where financial satisfaction is used as a robustness proxy. Using subjective measures, perception of financial difficulties is analyzed, controlling both income and consumption characteristics of households.

Our results point out that European households are far from being identical in terms of state dependency of their perceived financial inadequacy. There is a spectrum of results from negative (France and Spain) to positive (Italy, Greece and Portugal) per-

sistency and insignificancy (Denmark, Belgium and UK). Country specific institutional factors may create upward movement for financially inadequate households where these factors may also create diverse effects through different channels to financially adequate households and create cyclical inadequacy.

Much of the research on perceived financial inadequacy underestimate the importance of individual specific time invariant effects while modeling this subjective concept dynamically. Our paper indicate that using models that account time invariant individual heterogeneity is important and several variables used in economic literature demonstrate different inferences when fixed individual effects are taken into account. Moreover spurious state dependency can be eliminated using fixed effects.

To conclude, we provide the appropriate modeling scheme for perceived financial inadequacy by addressing individual heterogeneity and time persistency. Our results suggest that further research on this topic is worthwhile. Future research that examines reference income group effects for instance would be a strong extension to this work.

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Table 1: Descriptive Overview of Making Ends Meet Responses

	With Great Difficulty	With Difficulty	With Some Difficulty	Fairly Easily	Easily	Very Easily
Denmark(DK)	4.67	6.71	19.43	35.06	22.66	11.47
Belgium(BE)	4.80	8.78	21.50	34.61	25.06	5.24
United Kingdom(UK)	2.76	6.13	27.56	33.55	30.00	–
France(FR)	4.99	11.24	27.98	40.56	14.59	0.64
Spain (ES)	12.57	16.78	32.63	25.84	11.05	1.13
Italy(IT)	7.96	13.13	36.95	32.00	8.61	1.36
Greece(GR)	20.65	32.70	25.99	14.10	5.74	0.81
Portugal(PT)	14.15	23.14	41.58	17.17	3.57	0.39
Total	9.30	15.24	30.51	29.10	13.97	2.24

Note:For all countries time period is from 1994 to 2001.

Table 2: Descriptive Overview of Financial Satisfaction Responses

	1=Not Satisfy.	2	3	4	5	6=Fully Satisfy.
Denmark(DK)	3.46	5.30	11.38	24.25	32.34	23.27
Belgium(BE)	7.62	7.65	17.17	27.38	26.46	13.71
United Kingdom(UK)	2.75	6.01	27.92	33.58	29.73	–
France(FR)	9.16	9.29	23.74	30.81	24.76	2.24
Spain (ES)	12.69	17.89	24.85	23.99	16.66	3.93
Italy(IT)	10.98	17.41	27.75	27.95	13.21	2.70
Greece(GR)	12.41	22.29	30.75	23.66	9.06	1.82
Portugal(PT)	8.86	20.28	36.36	28.56	4.72	1.21
Total	9.00	14.05	26.15	27.80	18.52	5.38

Note:For all countries time period is from 1994 to 2001.

Table 3: **Transition matrices** for **Time**= T (Row) vs **Time**= $T - 1$ (Column)

DENMARK	With Great Difficulty	With Difficulty	With Some Difficulty	Fairly Easily	Easily	Very Easily	TOTAL
With Great Difficulty	38.13	14.10	4.80	1.53	0.74	0.49	4.46
With Difficulty	22.59	25.09	11.37	3.06	1.05	0.77	6.39
With Some Difficulty	21.05	35.81	40.61	18.06	6.34	3.45	19.59
Fairly Easily	12.97	19.23	33.95	51.28	30.63	15.40	35.33
Easily	4.11	4.03	7.26	21.07	43.73	34.14	22.89
Very Easily	1.16	1.74	2.02	5.00	17.51	45.75	11.34
BELGIUM	With Great Difficulty	With Difficulty	With Some Difficulty	Fairly Easily	Easily	Very Easily	TOTAL
With Great Difficulty	42.28	13.93	4.55	0.70	0.21	0.47	4.26
With Difficulty	26.69	33.01	15.48	2.43	1.49	0.47	8.36
With Some Difficulty	21.91	35.74	45.77	16.24	4.91	2.21	20.53
Fairly Easily	6.18	12.82	27.75	55.66	31.12	10.00	35.47
Easily	1.83	4.27	6.00	23.02	54.23	41.51	26.07
Very Easily	1.12	0.22	0.44	1.95	8.04	45.35	5.31
UNITED KINGDOM	With Great Difficulty	With Difficulty	With Some Difficulty	Fairly Easily	Easily	Very Easily	TOTAL
With Great Difficulty	28.86	10.68	2.20	0.55	0.32		2.26
With Difficulty	26.69	24.07	8.56	2.14	0.75		5.43
With Some Difficulty	31.30	44.54	51.73	19.26	6.81		26.32
Fairly Easily	9.76	16.05	28.64	53.78	24.34		34.56
Easily	3.39	4.66	8.87	24.27	67.77		31.43
FRANCE	With Great Difficulty	With Difficulty	With Some Difficulty	Fairly Easily	Easily	Very Easily	TOTAL
With Great Difficulty	40.66	12.27	3.92	0.34	0.38	0.43	4.92
With Difficulty	29.15	33.74	15.34	2.93	1.64	0.00	11.30
With Some Difficulty	25.22	40.14	51.70	17.05	5.29	2.13	28.36
Fairly Easily	4.00	11.52	26.03	63.61	42.97	14.18	40.32
Easily	0.96	2.32	2.97	15.88	47.70	53.19	14.57
Very Easily	0.00	0.02	0.05	0.19	2.02	30.50	0.53

Table 4: **Transition matrices** for **Time**= T (Row) vs **Time**= $T - 1$ (Column)

SPAIN	With Great Difficulty	With Difficulty	With Some Difficulty	Fairly Easily	Easily	Very Easily	TOTAL
With Great Difficulty	39.39	17.75	7.89	2.37	1.00	0.90	11.28
With Difficulty	27.36	27.17	18.98	7.29	3.14	4.48	16.60
With Some Difficulty	25.75	38.79	43.42	26.65	14.97	8.97	32.68
Fairly Easily	6.29	12.98	23.69	44.10	38.66	22.87	26.44
Easily	1.06	3.08	5.76	18.43	37.83	40.36	11.83
Very Easily	0.16	0.22	0.27	1.16	4.41	22.42	1.17
ITALY	With Great Difficulty	With Difficulty	With Some Difficulty	Fairly Easily	Easily	Very Easily	TOTAL
With Great Difficulty	41.70	13.88	3.99	1.41	1.55	1.24	6.56
With Difficulty	25.43	37.01	12.02	3.56	1.95	1.55	11.99
With Some Difficulty	23.56	39.00	57.57	25.35	12.77	6.21	37.40
Fairly Easily	7.51	8.67	22.86	57.47	39.77	31.99	33.38
Easily	1.67	1.32	3.12	11.18	38.22	35.71	9.25
Very Easily	0.14	0.12	0.44	1.03	5.74	23.29	1.41
GREECE	With Great Difficulty	With Difficulty	With Some Difficulty	Fairly Easily	Easily	Very Easily	TOTAL
With Great Difficulty	54.69	17.04	7.31	3.47	1.92	1.38	19.26
With Difficulty	30.89	54.10	25.81	13.55	7.76	3.45	33.20
With Some Difficulty	11.00	20.81	48.30	26.39	13.61	9.66	26.37
Fairly Easily	2.63	6.36	15.44	44.98	28.13	17.24	14.75
Easily	0.71	1.56	2.85	10.75	43.15	34.48	5.59
Very Easily	0.08	0.14	0.30	0.87	5.44	33.79	0.84
PORTUGAL	With Great Difficulty	With Difficulty	With Some Difficulty	Fairly Easily	Easily	Very Easily	TOTAL
With Great Difficulty	59.19	14.33	4.08	1.31	0.39	9.40	13.59
With Difficulty	27.51	51.50	16.31	4.16	3.63	4.27	23.48
With Some Difficulty	11.63	30.77	67.59	26.89	9.71	6.84	42.00
Fairly Easily	1.24	2.99	11.04	60.02	38.33	19.66	17.14
Easily	0.10	0.34	0.90	7.41	45.88	20.51	3.44
Very Easily	0.32	0.07	0.08	0.22	2.06	39.32	0.37

Table 5: Summary Statistics of Variables

VARIABLES	DK		BE		UK		FR		ES		IT		GR		PT	
	μ	σ	μ	σ	μ	σ	μ	σ	μ	σ	μ	σ	μ	σ	μ	σ
Age	48.19	17.14	50.45	16.04	48.74	17.36	50.04	16.58	50.04	16.58	52.61	14.87	54.81	15.83	54.51	16.28
Log HH income	9.88	0.64	9.99	0.72	9.86	0.77	9.85	0.75	9.85	0.75	9.77	0.74	9.39	0.83	9.25	0.89
Education																
College	0.29	0.45	0.31	0.46	0.41	0.49	0.20	0.40	0.20	0.40	0.08	0.27	0.15	0.36	0.05	0.22
Household Size	2.27	1.26	2.64	1.37	2.52	1.31	2.56	1.38	2.56	1.38	3.06	1.35	2.96	1.39	3.01	1.53
Marital Status																
Couple	1.39	0.49	1.32	0.47	1.36	0.48	1.33	0.47	1.33	0.47	1.21	0.41	1.24	0.43	1.25	0.43
Separate/Divorced	0.13	0.34	0.13	0.34	0.13	0.34	0.09	0.29	0.09	0.29	0.03	0.18	0.03	0.17	0.04	0.21
Employment Status																
Unemployed	0.05	0.21	0.05	0.22	0.04	0.19	0.05	0.21	0.05	0.21	0.03	0.16	0.03	0.16	0.02	0.16
Retired	0.26	0.44	0.30	0.46	0.24	0.43	0.30	0.46	0.30	0.46	0.32	0.47	0.34	0.47	0.31	0.46
Self Employed	0.06	0.23	0.09	0.29	0.10	0.30	0.07	0.25	0.07	0.25	0.19	0.39	0.26	0.44	0.20	0.40
Health	4.13	0.97	3.85	0.84	3.80	0.93	3.57	0.91	3.57	0.91	3.50	0.91	3.95	1.11	3.11	0.93
Debt Repayment																
Mortgage	0.55	0.50	0.36	0.48	0.46	0.50	0.28	0.45	0.28	0.45	0.13	0.34	0.08	0.28	0.14	0.35
Other Debt	0.46	0.50	0.23	0.42			0.35	0.48	0.35	0.48	0.12	0.32	0.10	0.30	0.13	0.33
Home Owner	0.64	0.48	0.70	0.46	0.72	0.45	0.59	0.49	0.59	0.49	0.76	0.43	0.81	0.39	0.70	0.46
# of previous-																
Unemployment	0.75	1.66	0.52	1.67	0.43	1.00			1.73	1.66	0.43	1.68	0.41	1.28	0.34	2.13

Table 6: Marginal Effects for ability to make ends meet using Country averages

	DK	BE	UK	FR	ES	IT	GR	PT
MeM _{t-1}	0.011 (0.445)	0.007 (0.655)	0.014 (0.129)	-0.011 (0.247)	-0.087** (0.000)	0.016* (0.047)	0.054** (0.000)	0.074** (0.000)
Age	-0.003 (0.741)	0.019* (0.048)	-0.015** (0.003)	0.011 (0.086)	0.016** (0.001)	-0.021** (0.001)	-0.011* (0.040)	0.003 (0.488)
Age ²	0.000 (0.744)	-0.000 (0.058)	0.000** (0.001)	-0.000 (0.310)	-0.000** (0.002)	0.000** (0.004)	0.000* (0.042)	-0.000 (0.579)
Log HH income	0.085** (0.000)	0.085** (0.000)	0.103** (0.000)	0.093** (0.000)	0.113** (0.000)	0.104** (0.000)	0.145** (0.000)	0.110** (0.000)
College	0.035 (0.153)	0.019 (0.588)	0.018 (0.291)	0.014 (0.722)	0.022 (0.366)	0.061 (0.317)	-0.004 (0.872)	0.125 (0.253)
Household Size	-0.067** (0.000)	-0.010 (0.559)	-0.058** (0.000)	-0.025* (0.023)	-0.044** (0.000)	-0.021* (0.042)	0.002 (0.849)	-0.029** (0.002)
Couple	-0.147** (0.000)	-0.081 (0.070)	-0.110** (0.000)	-0.160** (0.000)	-0.009 (0.776)	-0.087** (0.004)	0.012 (0.707)	-0.014 (0.590)
Separ/Divor	-0.031 (0.442)	-0.154** (0.003)	-0.031 (0.289)	-0.100** (0.005)	-0.148** (0.007)	-0.148* (0.019)	0.038 (0.592)	-0.074 (0.118)
Unemployed	-0.228** (0.000)	-0.261** (0.000)	-0.305** (0.000)	-0.198** (0.000)	-0.184** (0.000)	-0.160** (0.000)	-0.155** (0.000)	-0.139** (0.000)
Retired	-0.043 (0.322)	-0.100* (0.030)	-0.087** (0.002)	-0.029 (0.304)	0.006 (0.761)	0.023 (0.263)	0.001 (0.965)	-0.029 (0.170)
Self Employed	-0.043 (0.394)	-0.015 (0.831)	0.061*** (0.010)	0.073* (0.087)	0.062** (0.013)	0.046* (0.066)	0.058** (0.010)	0.045** (0.048)
Health	0.016 (0.129)	0.025 (0.051)	0.026** (0.000)	0.012 (0.094)	0.044** (0.000)	0.037** (0.000)	0.036** (0.000)	0.061** (0.000)
Mortgage	-0.172** (0.001)	-0.102** (0.002)	-0.083** (0.001)	-0.091** (0.000)	-0.085** (0.000)	-0.110** (0.000)	-0.062** (0.008)	-0.133** (0.000)
Other Debt	-0.070** (0.000)	-0.066** (0.001)		-0.034** (0.006)	-0.088** (0.000)	-0.063** (0.000)	-0.056** (0.000)	-0.081** (0.000)
Home Owner	0.180** (0.002)	0.082 (0.069)	0.072* (0.026)	0.012 (0.677)	-0.002 (0.927)	0.049* (0.034)	0.111** (0.000)	0.093** (0.001)
# of previous-Unemployed	-0.020 (0.141)	-0.002 (0.908)	0.006 (0.623)	0.004 (0.654)	0.004 (0.654)	-0.029 (0.101)	-0.001 (0.912)	-0.022 (0.187)
Sample-size	5194	4585	11543	10752	14000	14112	12488	11263

Note:Country level making ends meet responses are used in order to define dependent variable. In parenthesis are p-values. All specifications include time dummies. ** $p < 0.01$; * $p < 0.05$.

Table 7: Marginal Effects for ability to make ends meet using Individual averages

	DK	BE	UK	FR	ES	IT	GR	PT
MeM _{t-1}	0.018 (0.075)	0.006 (0.574)	0.006 (0.446)	-0.026** (0.000)	-0.067** (0.000)	0.036** (0.000)	0.076** (0.000)	0.108** (0.000)
Age	0.005 (0.469)	0.012 (0.132)	-0.008 (0.068)	0.017** (0.001)	0.010* (0.020)	-0.005 (0.287)	-0.007 (0.159)	0.004 (0.355)
Age ²	-0.000 (0.935)	-0.000 (0.072)	0.000** (0.007)	-0.000* (0.010)	-0.000* (0.046)	0.000 (0.501)	0.000 (0.093)	-0.000 (0.258)
Log HH income	0.106** (0.000)	0.083** (0.000)	0.114** (0.000)	0.074** (0.000)	0.084** (0.000)	0.089** (0.000)	0.146** (0.000)	0.109** (0.000)
College	0.005 (0.807)	0.003 (0.910)	0.034* (0.024)	0.055 (0.061)	0.009 (0.679)	0.011 (0.837)	0.002 (0.940)	0.112* (0.040)
Household Size	-0.088** (0.000)	-0.029* (0.038)	-0.065** (0.000)	-0.029** (0.001)	-0.028** (0.000)	-0.029** (0.001)	-0.025** (0.009)	-0.031** (0.000)
Couple	-0.162** (0.000)	-0.071 (0.057)	-0.109** (0.000)	-0.138** (0.000)	-0.030 (0.249)	-0.057* (0.023)	-0.020 (0.484)	-0.025 (0.251)
Separ/Divor	-0.059 (0.108)	-0.213** (0.000)	-0.032 (0.221)	-0.050 (0.076)	-0.056 (0.208)	-0.099* (0.041)	-0.033 (0.546)	-0.079* (0.035)
Unemployed	-0.212** (0.000)	-0.134** (0.001)	-0.280** (0.000)	-0.200** (0.000)	-0.179** (0.000)	-0.151** (0.000)	-0.165** (0.000)	-0.140** (0.000)
Retired	-0.126** (0.000)	-0.093** (0.006)	-0.081** (0.001)	-0.037 (0.102)	0.008 (0.607)	0.005 (0.776)	0.008 (0.690)	-0.011 (0.521)
Self Employed	-0.104* (0.011)	0.006 (0.889)	0.034 (0.099)	0.044 (0.243)	0.015 (0.497)	0.019 (0.374)	0.044* (0.029)	0.028 (0.146)
Health	0.027** (0.001)	0.038** (0.000)	0.030** (0.000)	0.027** (0.000)	0.044** (0.000)	0.044** (0.000)	0.040** (0.000)	0.048** (0.000)
Mortgage	-0.080* (0.017)	-0.104** (0.000)	-0.098** (0.000)	-0.106** (0.000)	-0.090** (0.000)	-0.092** (0.000)	-0.037 (0.078)	-0.078** (0.001)
Other Debt	-0.079** (0.000)	-0.044** (0.007)		-0.020* (0.048)	-0.096** (0.000)	-0.058** (0.000)	-0.065** (0.000)	-0.078** (0.000)
Home Owner	0.009 (0.820)	0.054 (0.133)	0.068* (0.016)	0.027 (0.232)	0.020 (0.310)	0.036 (0.078)	0.123** (0.000)	0.042 (0.062)
# of previous- Unemployed	-0.004 (0.766)	-0.002 (0.899)	0.005 (0.661)		0.020** (0.010)	-0.015 (0.184)	-0.001 (0.891)	-0.001 (0.830)
Sample-size	9219	9366	17465	19145	21462	20748	17787	17542

Note: Individual level making ends meet responses are used in order to define dependent variable. In parenthesis are p-values. All specifications include time dummies. ** $p < 0.01$; * $p < 0.05$.

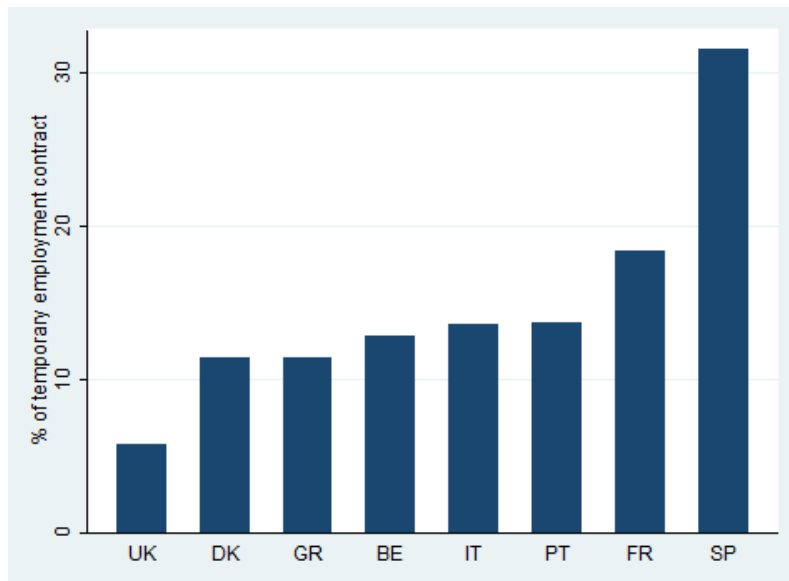


Figure 1: Stopped previous job because of temporary contract

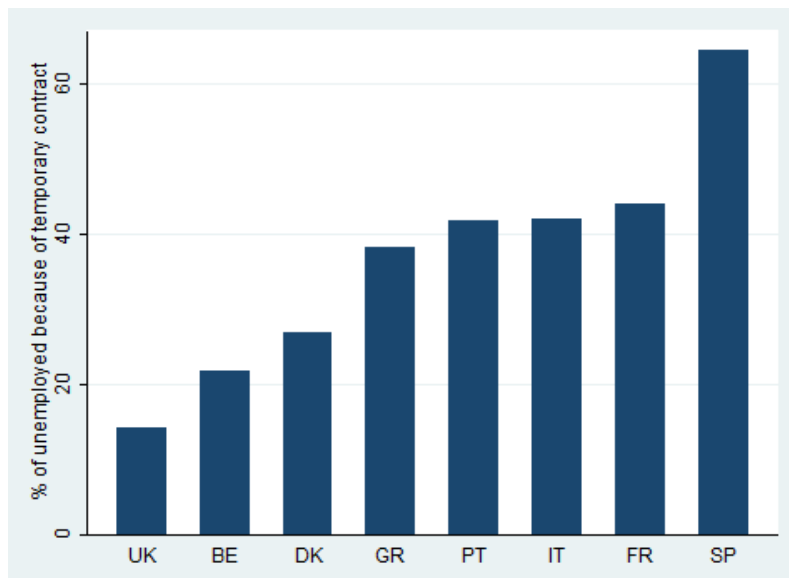


Figure 2: Unemployed because of temporary employment contract

Table 8: Marginal Effects for financial satisfaction using Individual averages

	DK	BE	UK	FR	ES	IT	GR	PT
FS_{t-1}	0.006 (0.570)	-0.012 (0.239)	0.002 (0.782)	-0.020** (0.004)	-0.082** (0.000)	0.016* (0.020)	0.035** (0.000)	0.080** (0.000)
Age	-0.006 (0.399)	-0.000 (0.967)	-0.008 (0.060)	0.019** (0.000)	0.022** (0.000)	0.001 (0.848)	0.003 (0.532)	-0.004 (0.250)
Age²	0.000 (0.128)	-0.000 (0.963)	0.000* (0.028)	-0.000** (0.001)	-0.000** (0.000)	0.000 (0.738)	-0.000 (0.384)	0.000 (0.233)
Log HH income	0.133** (0.000)	0.047** (0.002)	0.113** (0.000)	0.074** (0.000)	0.095** (0.000)	0.106** (0.000)	0.161** (0.000)	0.105** (0.000)
College	0.066** (0.001)	0.049 (0.058)	0.026 (0.085)	-0.009 (0.750)	0.019 (0.393)	0.009 (0.862)	0.032 (0.185)	0.013 (0.803)
Household Size	-0.079** (0.000)	-0.023 (0.108)	-0.061** (0.000)	0.007 (0.439)	-0.033** (0.000)	-0.036** (0.000)	-0.037** (0.000)	-0.000 (0.971)
Couple	-0.108** (0.000)	-0.048 (0.200)	-0.105** (0.000)	-0.018 (0.472)	-0.063* (0.016)	-0.096** (0.000)	-0.003 (0.916)	-0.045* (0.035)
Separ/Divor	-0.033 (0.374)	-0.129** (0.006)	-0.049 (0.064)	-0.047 (0.099)	-0.063 (0.155)	-0.064 (0.207)	-0.055 (0.319)	-0.103** (0.005)
Unemployed	-0.266** (0.000)	-0.220** (0.000)	-0.286** (0.000)	-0.264** (0.000)	-0.232** (0.000)	-0.329** (0.000)	-0.226** (0.000)	-0.339** (0.000)
Retired	-0.023 (0.475)	-0.067* (0.046)	-0.092** (0.000)	0.024 (0.301)	0.057** (0.001)	0.002 (0.907)	0.010 (0.573)	-0.017 (0.315)
Self Employed	-0.084* (0.042)	-0.095* (0.044)	0.028 (0.169)	-0.037 (0.316)	0.015 (0.512)	0.036 (0.097)	0.055** (0.006)	-0.006 (0.746)
Health	0.047** (0.000)	0.063** (0.000)	0.039** (0.000)	0.082** (0.000)	0.065** (0.000)	0.077** (0.000)	0.050** (0.000)	0.080** (0.000)
Mortgage	-0.083* (0.016)	-0.033 (0.202)	-0.070** (0.001)	-0.035* (0.031)	-0.031* (0.029)	-0.036* (0.039)	-0.037 (0.071)	-0.040 (0.082)
Other Debt	-0.046** (0.002)	-0.037* (0.022)		-0.031** (0.002)	-0.034** (0.001)	-0.025* (0.048)	-0.046** (0.002)	-0.047** (0.001)
Home Owner	0.058 (0.149)	0.047 (0.198)	0.044 (0.118)	-0.004 (0.858)	0.040* (0.039)	0.036 (0.084)	0.059** (0.007)	0.044 (0.053)
# of previous-Unemployed	-0.004 (0.745)	0.007 (0.586)	0.000 (0.997)		0.020** (0.008)	0.002 (0.896)	0.007 (0.575)	-0.005 (0.215)
Sample-size	8995	9457	17514	20188	21749	21210	18305	19145

Note: Individual level financial satisfaction responses are used in order to define dependent variable. In parenthesis are p-values. All specifications include time dummies. ** $p < 0.01$; * $p < 0.05$.

APPENDIX

Model Comparisons

Carbonell and Frijters [2004] mentioned the importance of taking individual fixed-effects into account for subjective responses such as well being. For an illustration to show the impact of unobserved household heterogeneity in our model we compare the results of five different estimation methods and their marginal effects. Table:9 summarizes these models⁷ as (Model 1) Pooled probit, (Model 2) Random effects probit, (Model 3) Random effects probit with Mundlak corrections, (Model 4) Uncorrected Probit with individual dummies, (Model 5) Corrected Probit with individual dummies

For all specifications binary defined (using individual means) Making Ends Meet responses are regressed on its lag and the previously mentioned household characteristics. There are remarkable differences across models from changes in sign or significance of regressors to the changes in magnitudes.

$$Y_{it} = 1\{X'_{it}\theta_0 - \epsilon_{it}\} \quad (\text{Model 1})$$

$$Y_{it} = 1\{X'_{it}\theta_0 + \alpha_i - \epsilon_{it}\} \quad \alpha_i \sim N(0, \sigma^2) \quad (\text{Model 2})$$

$$Y_{it} = 1\{X'_{it}\theta_0 + \bar{X}'_i\theta_1 + \alpha_i - \epsilon_{it}\} \quad \alpha_i \sim N(0, \sigma^2) \quad (\text{Model 3})$$

$$Y_{it} = 1\{X'_{it}\theta_0 + \alpha_i - \epsilon_{it}\} \quad \alpha_i \sim \text{fixed effects} \quad (\text{Model 4})$$

$$Y_{it} = 1\{X'_{it}\hat{\theta}_0 + \hat{\alpha}_i - \epsilon_{it}\} \quad \alpha_i \sim \text{fixed effects} \quad (\text{Model 5})$$

To start with; there seems to be little difference between running a pooled probit and probit with random effects in terms of the signs of regressors. The biggest difference between these two models appears, over 5%, when it comes to the marginal effect of lagged dependent variable. This result suggests that using individual specific effects

⁷Results presented in Table:9 are for Portugal.

makes a difference especially on the dynamic nature of the model. Including averages of means of variables (household income, size, health) to control for the correlation between the time invariant unobservables and regressors as in random effects probit model with mundlak corrections makes little difference for the variables other than the ones with suspected correlation. When it comes to models with fixed effects, outcomes should be analyzed carefully. The results of fixed effects models are quite different from the previous models which suggest that the treatment of unobserved time invariant effects as fixed effects change the results remarkably.

Fixed effects model parameters that change rarely through time or behave linear are tend to be captured by fixed effects. This also holds for the estimates of uncorrected and corrected fixed effects models. For example age and quadratic function of age or marital status dummies are tend to be effected from this fact in a nontrivial way.

The index coefficients of the uncorrected model are biased from 1% to 7%. For some cases this bias is upwards as for the lag of the making ends meet answers where for others it is downward as for household size. There are minor differences across marginal effects between uncorrected and bias corrected models such that marginal effects are very close to each other which is an expected result, pointed out by the studies of Wooldridge [2002] and Hahn and Newey [2004]. The contribution of the bias corrected parameters is that they are effective in determining p-values more accurately and they eliminate the downward bias of state dependent variable. In order to compute the standard errors of marginal effects, bias corrected index coefficients and fixed effects are employed. This feature makes bias corrections acute when it comes to regressors with relatively high p-values.

Table 9: Model Comparison for Portugal

MEM _t	Model 1		Model 2		Model 3		Model 4		Model 5	
	Est.	ME	Est.	ME	Est.	ME	Est.	ME	Est.	ME
MEM_{t-1}	0.898*** (0.000)	0.314*** (0.000)	0.747*** (0.000)	0.267*** (0.000)	0.744*** (0.000)	0.266*** (0.000)	0.349*** (0.000)	0.110*** (0.000)	0.303*** (0.000)	0.108*** (0.000)
Age	0.011*** (0.008)	0.004*** (0.008)	0.012** (0.014)	0.004** (0.014)	0.014*** (0.004)	0.005*** (0.004)	0.004 (0.812)	0.001 (0.812)	0.003 (0.838)	0.001 (0.818)
Age²	-0.000** (0.043)	-0.000** (0.043)	-0.000* (0.071)	-0.000* (0.071)	-0.000** (0.014)	-0.000** (0.014)	-0.000 (0.769)	-0.000 (0.769)	-0.000 (0.802)	-0.000 (0.778)
Log HH income	0.105*** (0.000)	0.037*** (0.000)	0.133*** (0.000)	0.048*** (0.000)	0.267*** (0.000)	0.095*** (0.000)	0.354*** (0.000)	0.111*** (0.000)	0.304*** (0.000)	0.109*** (0.000)
Education										
College	-0.116*** (0.003)	-0.041*** (0.003)	-0.146*** (0.002)	-0.052*** (0.002)	-0.060 (0.211)	-0.022 (0.211)	0.436** (0.020)	0.137** (0.020)	0.371** (0.046)	0.133** (0.024)
Household Size	-0.041*** (0.000)	-0.014*** (0.000)	-0.049*** (0.000)	-0.017*** (0.000)	-0.076*** (0.000)	-0.027*** (0.000)	-0.113*** (0.000)	-0.035*** (0.000)	-0.097*** (0.000)	-0.035*** (0.000)
Marital Status										
Couple	0.050* (0.093)	0.018* (0.093)	0.053 (0.138)	0.019 (0.138)	0.018 (0.619)	0.006 (0.619)	-0.108 (0.307)	-0.034 (0.307)	-0.093 (0.377)	-0.033 (0.319)
Separate/Divorced	-0.115*** (0.008)	-0.040*** (0.008)	-0.125** (0.015)	-0.045** (0.015)	-0.112** (0.030)	-0.040** (0.030)	-0.278** (0.040)	-0.087** (0.040)	-0.241* (0.073)	-0.086** (0.043)
Employment Status										
Unemployed	-0.266*** (0.000)	-0.093*** (0.000)	-0.305*** (0.000)	-0.109*** (0.000)	-0.314*** (0.000)	-0.112*** (0.000)	-0.467*** (0.000)	-0.147*** (0.000)	-0.402*** (0.000)	-0.144*** (0.000)

Retired	-0.027 (0.287)	-0.010 (0.287)	-0.033 (0.268)	-0.012 (0.268)	-0.042 (0.159)	-0.015 (0.159)	-0.023 (0.692)	-0.007 (0.692)	-0.020 (0.738)	-0.007 (0.706)
Self Employed	0.040* (0.066)	0.014* (0.066)	0.048* (0.065)	0.017* (0.065)	0.038 (0.141)	0.014 (0.141)	0.101 (0.104)	0.032 (0.104)	0.087 (0.160)	0.031 (0.113)
Health	0.069*** (0.000)	0.024*** (0.000)	0.086*** (0.000)	0.031*** (0.000)	0.142*** (0.000)	0.051*** (0.000)	0.160*** (0.000)	0.050*** (0.000)	0.138*** (0.000)	0.050*** (0.000)
Debt Repayment										
Mortgage	-0.042* (0.094)	-0.015* (0.094)	-0.080*** (0.008)	-0.028*** (0.008)	-0.055* (0.066)	-0.020* (0.066)	-0.234*** (0.002)	-0.074*** (0.002)	-0.202*** (0.006)	-0.072*** (0.002)
Other Debt	-0.117*** (0.000)	-0.041*** (0.000)	-0.143*** (0.000)	-0.051*** (0.000)	-0.140*** (0.000)	-0.050*** (0.000)	-0.253*** (0.000)	-0.079*** (0.000)	-0.218*** (0.000)	-0.078*** (0.000)
Home Owner	0.006 (0.764)	0.002 (0.764)	0.011 (0.636)	0.004 (0.636)	0.007 (0.765)	0.002 (0.765)	0.153** (0.038)	0.048** (0.038)	0.133* (0.071)	0.047** (0.042)
# of previous- Unemployment	0.008** (0.015)	0.003** (0.015)	0.009** (0.042)	0.003** (0.042)	0.007* (0.095)	0.003* (0.095)	-0.003 (0.804)	-0.001 (0.804)	-0.002 (0.824)	-0.001 (0.802)
Time Dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Means of Variables	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO
Sample-size	28817	28817	28817	28817	28817	28817	17542	17542	17542	17542

Note: *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$.