Does Financial Integration Increase Welfare? Evidence From International Household-Level Data

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Abstract

This paper uses international household-level data to assess the impact of financial integration on welfare across countries and across households. The analysis uses two balanced panels of more than 17,000 and 31,000 households from up to 22 European countries over the periods 1994-2000 and 2004-2008. The dependent variable is a household's personal assessment of its *ability to make the ends of its balance sheet meet*. I argue that this measure reflects an evaluation of the relationship between current income and an implicit expenditure benchmark in utility terms. I first document a negative welfare effect arising from labor income uncertainty. I then show that financial integration significantly mitigates this effect for the average household in the sample. Finally, I assess the distribution of these gains by splitting up households according to their exposure to financial markets. Although most differential effects are statistically significant, the degree of heterogeneity in the effect of financial integration on welfare turns out to be relatively low. Altogether, my results suggest that the benefits from financial integration are primarily of an indirect nature and are likely driven by the relaxation of households' credit constraints.

Key Words: financial integration, risk sharing, consumption smoothing, household welfare

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1 Introduction

Despite a vast literature on the impact of financial integration, evidence of substantial welfare gains through consumption smoothing or risk sharing remains elusive. This is at odds with theoretical predictions that welfare should rise when households and firms have greater access to international financial markets. This paper adds to the literature by relaxing, at the same time, three restrictive assumptions that have featured prominently in the past: the first has to do with the way in which income uncertainty affects household welfare; the second concerns the degree to which idiosyncratic income shocks are smoothed; and the third is on the distribution of potential welfare gains across households. The paper specifically examines the effect of financial integration on welfare across countries *and* across households using two international, harmonized household micro-datasets.[1] The analysis covers more than 17,000 and 31,000 households from up to 22 European countries over the periods 1994-2000 and 2004-2008.

The predictions of early theoretical models are clear: welfare gains from financial integration in terms of risk sharing are potentially large (e.g. Van Wincoop, 1999). Especially for the household sector, a positive effect of financial integration on welfare through risk sharing and consumption smoothing is expected (e.g. Kose et al., 2006). Subsequently, a vast empirical literature has emerged and has tested these claims with a variety of approaches and datasets. However, not only have the high potential welfare gains suggested by theory not been verified, but also the few studies finding a positive impact of financial integration have provided evidence of a heterogeneous pattern across countries. A potential reason for the scarcity of positive findings might be the commonly carried out practice in the risk sharing literature of operating in a representative consumer framework. This practice implies three strong assumptions: first, it assumes the welfare evaluation of income shocks to be identical across households, second, it requires that idiosyncratic shocks are smoothed perfectly at lower levels of geographical aggregation, and third, it postulates that gains are equally distributed across households. Starting with the latter two, this introduction points out conditions under which these three assumptions might break down and offers subsequently a motivation for the empirical approach applied in this paper.

First, as already noted by Jappelli and Pistaferri (2011), studies using aggregated data make the two strong assumptions that countries or regions are populated by identical consumers and that idiosyncratic shocks can be smoothed perfectly among their residents. However, neither seems to be the case as the household sector is characterized by a high degree of heterogeneity. Compared to firms that are at least to some extent profit maximizing (if not, they will be driven out of the market), households differ much more in their individual preferences, their demographic characteristics, and their level of initial endowments. Also the extent of optimizing behaviour that a household exhibits may play an important role. Therefore, a large share of a household's consumption risk may be of household-specific nature and thus it will be averaged out when the empirical analysis takes place at a higher level of geographical aggregation. The use of household- instead of region- or country-level data accounts for these differences and increases the potential role of financial integration in mitigating the negative welfare impact of consumption risk on households.

Second, more recently, the theoretical literature has pointed out the importance of heterogeneity and related distributional questions in determining the outcome for the individual household (e.g. Caselli and Ventura, 2000; see also Heathcote et al., 2009, for a comprehensive literature survey on household heterogeneity). Using household-level data will therefore also allow to empirically test implications of distributional questions derived from theoretical heterogeneous agent models. Further, there are also econometric advantages due to the panel nature of the data and the large number of observations that allow controlling for individual heterogeneity and obtaining more precisely estimated coefficients. This paper takes up these insights and therefore uses household-level data to carry out the empirical analysis. As, however, heterogeneity between countries may play an important role as well, this study uses international household data that comes in form of two harmonized micro-datasets: the *European Community Household Panel (ECHP)* and the *European Union Statistics on Income and Living Conditions (EU-SILC)*.

[1] This paper is accompanied by an Online Appendix that documents the data preparation in greater detail. The Online Appendix is available at www.christian-friedrich.weebly.com. The two datasets are the European Community Household Panel (ECHP) and the European Union Statistics on Income and Living Conditions (EU-SILC). Both datasets have been obtained from Eurostat through corresponding research contracts.

Eventually, this paper recognizes that nearly all studies in the literature examine the effect of financial integration on risk sharing by focusing on the comovement of consumption growth rates with those of an income variable, where both underlying variables are measured in monetary terms. Although under standard assumptions, it is easily derived from theory that a lower consumption volatility yields a higher utility for the household, the current setup misses at least three empirical regularities. First, depending on their degree of risk aversion, households may differ in their welfare assessment of consumption volatility. Second, in case of being hit by a negative income shock, households may be able to reallocate consumption expenditures according to their preferences and therefore cut expenditures for the least valued items first: especially for small income shocks, this would imply a much lower welfare reduction than suggested by theory. And third, the empirical literature in behavioural economics has shown that utility is often characterized by reference-dependence and therefore cannot be determined thoroughly by focusing on a household's consumption variance in isolation. This paper tries to improve on these obstacles by introducing a measure of economic well-being that relies on the subjective evaluation of a household's consumption possibilities. It is argued that the evaluation takes place in relation to a latent consumption benchmark and to the household's income dynamics that are represented by the mean and the standard deviation of its labor income process. The measure is obtained from the answer to a question on the household's *ability to make the ends of its balance sheet meet*. Section three will describe the measure, henceforth referred to as the household's *ability to meet ends*, in greater detail and especially provide profound evidence for a possible welfare interpretation.

The results of this paper are as follows. After documenting a negative effect of labor income uncertainty on household welfare, it is shown that financial integration can significantly mitigate this negative effect on average. By splitting up households according to their degree of exposure to financial markets, the distribution of these gains across households turns out as follows. There is moderate evidence of heterogeneity in the effect of financial integration on welfare across households. Although most differential effects are statistically significant, the degree of such heterogeneity turns out to be relatively low. It is further found that in the early part of the sample, households strongly exposed to financial markets have gained slightly less than non-exposed households. In more recent years, however, the negative differential effect for households strongly exposed to financial markets has disappeared and even has turned positive in two cases. These cases comprise upper middle-class households and mortgage holders. This observation, and the insight that the degree of heterogeneity is rather low, suggest that the benefits from financial integration are primarily of an indirect nature. Evidence from examining potential channels indicates further that this result is likely driven by a relaxation of households' credit constraints and a related reduction in their precautionary savings motive.

The remainder of the paper is structured as follows: Section 2 reviews the literature on financial integration and consumption risk sharing and sets the contribution of this paper in relation to previous work. The third section introduces the datasets, presents the ability to meet ends measure in greater detail, and provides support for a welfare interpretation. Section 4 then introduces the estimation framework and briefly summarizes the data work. Section 5 contains the results of the empirical analysis as well as evidence from extensive robustness checks. Finally, Section 6 concludes.

2 Literature on Financial Integration and Risk Sharing

Although to a varying extent, the early theoretical literature on international risk sharing (e.g. Lucas (1982), Cole and Obstfeld (1991), Baxter and Jermann (1997)) pointed out a rationale for a positive effect of foreign investments on consumption risk sharing. Following Backus, Kehoe Kydland (1992), dynamic stochastic general equilibrium models with complete markets imply that under autarky, domestic output and consumption (or their growth rates respectively) should be highly correlated, as agents can smooth consumption only over time via domestic investment. Under full (financial and trade) integration, however, theory implies that the following patterns should emerge.

The correlation between domestic output and domestic consumption should be much lower, since agents are now able to diversify their portfolios by purchasing shares of foreign output and thus can effectively share their risks. At the same time, this implies that consumption across countries, as a proxy for marginal rates of substitution, should be highly correlated (or consumption growth rates respectively) and the correlation between domestic consumption and world output should increase. In terms of relative

correlations, theory predicts that cross-country consumption correlations should be higher than cross-country output correlations and higher than the correlation between domestic consumption and domestic output. Finally, also the correlation between domestic consumption and world output should be higher than the one between domestic consumption and domestic output. Since financial integration allows countries to smooth consumption better over time, the volatility of domestic consumption relative to domestic output (or their growth rates) should also become smaller.

Although a vast amount of studies has emerged, the empirical literature at that time failed to verify the predicted degree of both, international financial integration and risk sharing in the data and thus gave rise to a series of famous puzzles in international economics (French and Poterba (1991), Backus, Kehoe, and Kydland (1992)). Faced with this obstacle, the more recent theoretical literature then shifted focus and started to lower the benchmark for empirical evaluations by introducing various frictions in theoretical models. Areas in which such frictions are introduced include the individual's preferences, the goods markets, and more recently especially financial markets. As pointed out in the very detailed introduction of Heathcote and Perri (2008), latter ones comprise costs for foreign asset holdings, the presence of non-tradable assets, the non-contingency of international bonds, liquidity or short selling constraints, enforcement problems for international assets, and informational frictions, such as asymmetric information or ownership concentration among insiders.

The list of empirical studies that have explicitly examined the link between financial integration and consumption risk sharing at the aggregate level is long and dates back at least to Lewis (1996). Using a test for perfect risk sharing and a measure of capital restrictions from the IMF's AREAER database, the findings indicate that risk sharing in tradable goods is not rejected for countries that have unrestricted capital accounts.

Subsequently, Asdrubali, Sorensen, and Yosha (1996) decompose the cross-sectional variances of the gross state products in US states and thus are able to quantify the amounts of risk sharing through alternative channels. The authors identify three different channels of which two (capital markets, federal government) can be categorized as *ex ante* risk sharing and one channel (credit markets) represents *ex post* risk sharing. Building on the same approach, a number of studies emerged that apply the methodology at the international level and examine risk sharing in the European Union and in various OECD countries (e.g. Sorensen and Yosha (1998), Mélitz and Zumer (1999), Mélitz (2004), Kalemli-Ozcan et al. (2003, 2008)). Also Hoffmann and co-authors rely on this definition of channels and focus in their analysis on risk sharing at different frequencies (e.g. Becker and Hoffmann, 2006; Artis and Hoffmann, 2008) and on the impact of portfolio home bias (Artis and Hoffmann 2006a, 2006b).

The list of studies that applied alternative methods is rich: notable examples comprise Kose, Prasad, and Terrones (2003) and Kose, Otrok, and Whiteman (2008) that use dynamic latent factor models to estimate common, country-specific, and variable-specific components of output and consumption, Giannone and Reichlin (2006) by using a VAR framework, Imbs (2006) who employs a simultaneous equation approach, and Sorensen, Yosha, Wu, and Zhu (2007) who apply panel regressions on a year-by-year basis. More recently, Flood, Marion, and Matsumoto (2009) compute a welfare-based measure that captures how far countries are from the ideal of perfect risk sharing. It corresponds to the variance of the log share of individual-country per capita consumption in world per capita consumption. The findings indicate that international risk sharing for industrial countries has improved during the globalization era. However, in opposite to previous findings, the authors find strong improvements for low frequency risk sharing.

Although the role of financial integration at the household-level has been examined much less frequently, there is a growing literature that examines the effect of portfolio choice on consumption risk sharing with more disaggregated data. In an early study, Mankiw and Zeldes (1991) examine empirically (with simple correlation exercises and tests) the hypothesis that consumption of stockholders differs from consumption of non-stockholders. Using data from the U.S. Panel Study of Income Dynamics over the years 1970-1984, stockholders' consumption is found to be more volatile and more highly correlated with the stock market.[2]

[2] A more elaborate approach is taken by Attanasio, Banks, and Tanner (2002) who estimate ownership probabilities to separate "likely" shareholders from non-shareholders to control for changing composition effects as well as for selection into the group. The authors use data from the UK Family Expenditure Survey from 1978 to 1995 and conclude that consumption

More recent contributions take also regional and industry-specific exposures into account: Becker and Hoffmann (2010) examine the link between portfolio home bias and consumption risk sharing at the regional level in Italy. Using data from the Survey of Household and Wealth (SHIW) from 1987 to 2004, the authors aggregate household data on income, consumption and on mutual fund holdings at the regional level. It is argued that mutual funds are nationally and internationally well diversified and thus households that hold such funds may share idiosyncratic risks better. Their core results indicate that (i) regions with more asymmetric business cycles are more diversified (due to higher participation rates – the extensive margin – and due to higher average holdings of equity funds – the corresponding intensive margin), (ii) fund holdings increase with a higher exposure of non-tradable income components (e.g. labor income) to regional shocks, and (iii) interregional consumption risk sharing increases with fund holdings.

Further, Fugazza, Giofré and Nicodano (2010) investigate at the industry-level whether equity markets help to diversify away industry-related labor income risk. The authors construct a model of optimal portfolio choice and calculate optimal portfolio allocations for workers in various industries in the US, Canada and Italy using employment data. Although this study does not explicitly examine consumption risk sharing, it empirically demonstrates the importance of the industry-dependence of labor income and fleshes out the consequences for the portfolio decision of households.

A recent study that explicitly examines the role of financial integration on consumption risk sharing at the household-level is Jappelli and Pistaferri (2011). To answer this question, the authors decompose the variance of consumption growth into a component that depends on the variance of permanent income and a component that depends on the variance of transitory income. In the next step, household survey data at the cohort-level from Italy (SHIW) and the UK (Family Expenditure Survey, FES and British Households Panel Survey, BHPS) is used to test whether the introduction of the Euro has changed the sensitivity of consumption with respect to income in Italy (the UK severs as a benchmark). The empirical findings indicate, however, that this was not the case.

Although undoubtedly located among the micro-studies, pinpointing this paper's precise position in the risk sharing literature is not straightforward. After introducing a new variable on the left-hand side, the use of standard risk sharing regressions from the literature becomes infeasible. The paper therefore focuses on the negative impact that labor income uncertainty has on welfare and examines the role of financial integration in mitigating it. This approach closely relates to the concept of consumption smoothing over the life-cycle. As the time horizon over which labor income uncertainty is calculated is rather short, the paper's main theme might best be referred to as *ex post* risk sharing in the terminology of Asdrubali et al. (1996). As, in addition, the paper focuses specifically on the uncertainty of labor income, allowing other types of income to mitigate the negative welfare impact of former one, it should be noted, however, that the analysis also incorporates certain elements of *ex ante* risk sharing.

3 Measurement of Household Welfare

3.1 The Datasets and the Ability to Meet Ends

This paper uses the European Community Household Panel (ECHP) and the European Union Statistics on Income and Living Conditions (EU-SILC), two large-scale international household datasets, to systematically assess the impact of financial integration on welfare across countries and across households. The datasets were both obtained from Eurostat and rely on a consistent methodology. After cleaning, the datasets yield balanced panels of more than 17,000 and 31,000 households from up to 22 European countries over the periods 1994-2000 and 2004-2008. The periods covered correspond to times, when cross-border flows in European countries have increased significantly and standard measures of financial measures have picked up rapidly. Both datasets are primarily targeted to determine the living conditions of European households and therefore have very rich information on income, employment, and socio-economic characteristics. However, the datasets do not provide information about actual financial assets holdings of households. Hence, in this paper, financial integration will be measured at the country-level

growth of shareholders is more volatile than the one of non-shareholders.

and affect the left-hand side variable through an interaction with household-specific labor income uncertainty. Although the use of financial integration data at the household-level would be worthwhile, the current approach comes with the advantage that it incorporates both *direct* and *indirect* effects of financial integration on households. Especially as only a small share of households holds foreign assets directly, the opportunity to also capture indirect effects - that emerge through a deeper integration of the domestic banking sector with the rest of the world for example - is highly attractive.

In addition, both datasets provide a clear picture of individual income streams and include a set of questions on the financial situation of the household. These three components - high-quality income data, financial integration at the country-level, and a left-hand side variable taken from the financial situation modules in the datasets - will form the basis of the empirical analysis.

The key variable in the analysis, the ability of households to make the ends of their balance sheet meet - and as already mentioned in the introduction, referred to as the *ability to meet ends* - will now be described in greater detail. The original variable is labelled HF002 in the ECHP and HS120 in the EU-SILC dataset.[3] The corresponding question in the ECHP dataset, for example, is consistently posed as follows:[4]

> "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?"

The answer to this question is given on a scale from 1 to 6 and ranges from "1 = with great difficulty" to "6 = very easily".[5] Hence, a higher value in the ability to meet ends variable implies a better evaluation of the financial situation by the household.

Table 6 in the Appendix displays the summary statistics for the ability to meet ends variable in both datasets. The aggregated mean across countries, households, and years amounts to 3.52 for the ECHP and to 3.46 for the EU-SILC dataset. The slight reduction in the mean value in the EU-SILC can be explained by the additional inclusion of several new EU member states, which on average have lower ability to meet ends values than corresponding old EU member states. The overall cross-sectional standard deviation amounts to 1.19 in the ECHP, with a corresponding between variation of 0.97 and a within variation of 0.68, and to 1.28 in the EU-SILC datasets, with a between variation of 1.14 and a within variation of 0.57, receptively. Hence, the between variation for the EU-SILC is somewhat higher and the within variation is somewhat lower than in the ECHP data. This, however, is in line with expectations as the EU-SILC dataset contains more countries and households than the ECHP but at the same time, households remain for a shorter period of time in the former one. Focusing on the disaggregated summary statistics, it turns out that the highest mean in the ECHP is observed for the Netherlands (4.41) and in the EU-SILC for Denmark (4.75). In addition, the lowest mean in the ECHP is reported by Greece (2.66) and in the EU-SILC by Bulgaria (2.18).

Finally, Figure 1 presents histograms of the sample distribution of the ability to meet ends variable across countries, households, and years for both datasets. The histograms show a substantial heterogeneity in both datasets and indicate, at the same time, that differences across the two datasets are relatively small. It also turns out that the majority of the probability mass is centered around values of 3 and 4 and only a small amount of households has answered using the extreme values of 1 and 6. This reinforces the credibility of the measure, as one potential concern with it would be that wealthier households may potentially be able to finance their consumption expenditures very well and hence, may be entirely insensitive to current income fluctuations. In terms of the ability to meet ends measure, this

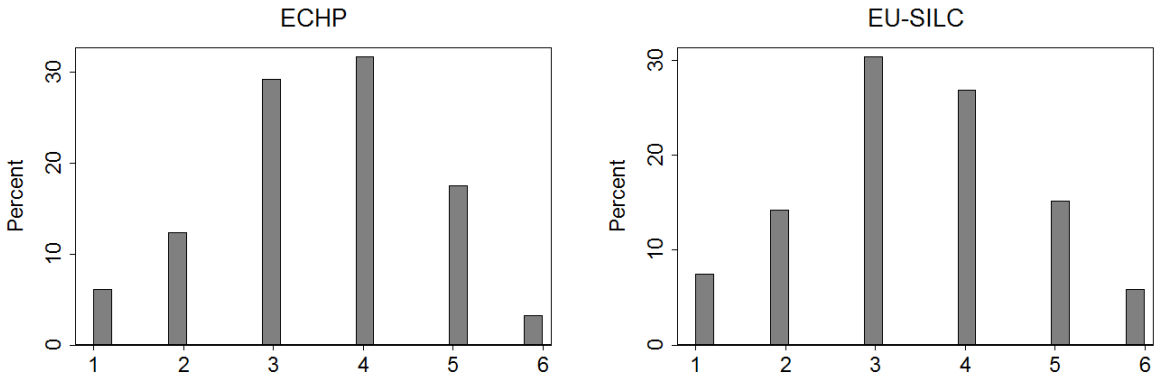
[3] A complete description of this variable can be found in the Online Appendix, Sections 3 and 4. The following subsection will only summarize the main features and focus primarily on its interpretation.

[4] The corresponding question in the EU-SILC dataset is given by: "A household may have different source of income and more than one household member may contribute to it. Thinking of the households total monthly income, the idea is with which level of difficulty the household is able to pay its usual expenses." It should also be noted that there is a slight change in the wording for this question in the 2009 wave of the EU-SILC dataset. This, however, does not constitute a problem for the empirical analysis as from this wave only income information is taken.

[5] The full set of answer options consists of: "1 = with great difficulty", "2 = with difficulty", "3 = with some difficulty", "4 = fairly easily", "5 = easily", "6 = very easily".

would be indicated by a large amount of "wrongly assigned" 6-values, as this number represents the highest possible answer option. However, assuming that some of the 6-values are indeed true, according to Figure 1, the number of ability to meet ends values that have potentially been cut off seems to be very small.

Figure 1: Distribution of the "Ability to Meet Ends" in Both Datasets



3.2 Arguments in Favour of a Welfare Interpretation

This section argues that the survey question about a household's ability to meet ends that was introduced in the previous subsection, obtains a welfare interpretation when certain conditions are met. As pointed out in Ferrer-i-Carbonell (2005), three assumptions have to be fulfilled to use answers to survey questions in an empirical analysis:

1. Individuals are able and willing to answer satisfaction questions
2. There is a relation between what is measured and the concept the researcher is interested in
3. Responses are interpersonally comparable

Starting with the discussion of the first assumption - that individuals are able and willing to answer satisfaction questions - it turns out that the response rate in the survey for the ability to meet ends question is very high and hardly a household has not answered it. Hence, a lack of willingness does not constitute a problem here. Regarding the ability to answer the question correctly and the closely related intention to tell the truth, the situation is most likely similar. The question is phrased in relatively simple terms, explained by the interviewer, and shows up in a module that assesses the general financial situation of the household. As, in addition, the survey contains a very rich and detailed set of income questions, the respondent has to expect the interviewer to immediately verify the truth of her or his response. This condition would not be met if, for example, the question had targeted general life-satisfaction - a concept to which respondents might be much more sensitive and in addition, know that it would be more difficult to verify from the interviewer's perspective. Finally, Figure 1 has indicated that the answers to the ability to meet ends question in both datasets are similarly distributed. This observation eventually gives rise to the presumption that different populations of surveyed individuals have understood the question in a similar way.

The discussion of the second assumption - that there is a relation between what is measured and the concept the researcher is interested in - comes next. The concept we would like to approximate closest is welfare. It should be made clear from the beginning that the following discussion only relates to utility and welfare arising from the financial situation of the household. Therefore, both terms do not incorporate utility arising from broader evaluation concepts, such as general happiness or life-satisfaction.

For simplicity, the remainder of the text will not stress this difference repetitively and only refer to them as *utility* and *welfare*.

The survey question about the ability to meet ends that may serve as a potential welfare measure has the following structure. First, the respondent is reminded to think of total household income as the corresponding source of revenues, and second, she or he is asked to make an assessment of the personal ability to make ends meet. While the precise etymology of the idiom *make ends meet* is unknown, in the context of the two surveys the expression undoubtedly refers to the comparison of a revenue concept (i.e. total household income) and an expenditure-related concept, whose relationship the respondent is asked to subjectively evaluate on a scale from 1 to 6. This setup suggests some familiarity with the standard arguments of an indirect utility function: income and prices. Both these variables are mirrored in the survey question above. Income corresponds to the revenue side and prices are incorporated in the expenditure side. The revenue side argument is even strengthened by the way the question is phrased. Giving an evaluation of the ability to meet ends, *thinking of your household's total monthly income* is essentially a reformulation of the expression *holding income fixed*. Thus, there is an adjacent correspondence between the survey question and the theoretical concept of an indirect utility function that displays utility for a given level of income. While this claim is straightforward to make for the revenue side, finding the appropriate benchmark for the expenditure side is more demanding.

A first explanation could stem from the life-cycle model (see Modigliani, 1966). The life-cycle model suggests that agents want to smooth consumption over the life-cycle and ideally keep it constant over time. If households indeed behave this way, there must be an inherent path of optimal life-time consumption. Such a consumption concept would not have to be constant over the life-cycle but should be relatively stable as long as the information set for the household's future consumption possibilities remains the same. In this case, the household would interpret the ability to meet ends question as a comparison of total household income, hence, the current consumption possibilities, with its preferred life-time consumption path and would give a better evaluation, the smaller their difference becomes.

A second option is to borrow a utility concept from behavioural economics. The empirical literature here has long argued that utility of agents is purely relative or at least depends on a reference state (e.g. Easterlin, 1974, Van Praag, 1971, van de Stadt et al., 1985). These concepts were then formalized by Tversky and Kahneman (1991) who, based on their loss-aversion observation in prospect theory (see Kahneman and Tversky, 1979), took the reference point as given and have examined the mechanism through which a reference state can affect consumption preferences. The key explanation for the existence of reference states that was put forward in prospect theory was the *status-quo*. In theoretical models this concept is implemented by introducing habit formation, subsistence consumption, or initial endowments in the utility function. Other prominent explanations for the existence of reference states describe a comparison of outcomes to goals and aspirations (e.g. Sauermann and Selten, 1962, in the context of the firm) or a comparison to social preferences and norms (e.g. Gali, 1994, Akerlof and Kranton, 2000). More recent contributions include the stochastic modelling of reference points, such as in Sudgen (2003) or in Kőszegi and Rabin (2006). Latter ones, for example, construct a model in which the reference point is determined endogenously by an agent's environment. The corresponding utility function includes an absolute utility component and a so called *gain-loss* utility component that captures the impact of an agent's rational expectation about outcomes in her or his recent past. Kőszegi and Rabin (2009) consider, in addition, the current influence of an agent's own future expectation as a reference point.

The explanations outlined above have shown that there is substantial empirical and theoretical evidence of agents carrying out a conscious or at a least subconscious evaluation of economic outcomes in relation to a benchmark concept when utility is formed. Hence, the question about the ability to meet ends that extracts the evaluation of a household regarding the relation between current consumption possibilities, represented by total household income, and an implicit expenditure benchmark, potentially derived in a way as shown above, fits this pattern very well. Consider for example a middle-class household that has recently moved into a wealthy neighbourhood and whose utility formation is affected by social norms. The household might now adjust its expenditure benchmark to the corresponding level of its wealthy neighbours. This in turn would most likely reduce its ability to meet ends value and therefore correspond to a reduction in utility - even when total household income remains the same. To eventually fit the utility concept presented so far to the needs of the empirical analysis later on, it is necessary to add uncertainty to the picture and thus let the household maximize *expected utility* instead. In such a

framework, the household evaluates its income process, represented by a random variable, against the expenditure benchmark considering the distribution of income.

To finally conclude the discussion of the second assumption, the relationship between utility in the current period and welfare, generally defined as the discounted sum of each period's utility, has to be examined. Given its wording, the question about the ability to meet ends is only a one-time snapshot of the household's utility level and does not contain information about utility levels in future. However, borrowing again from the literature on behavioural economics, it has been prominently shown that the phenomenon of *Hyperbolic Discounting* exists (for a survey see Frederick, Loewenstein, and O'Donoghue, 2002) and thus, the rate of discounting becomes time-dependent. Assuming a positive time preference, the household may then over-emphasize the role of current relative to future utility. Hence, under this assumption and for a given point in time, the question about the ability to meet ends may carry indeed an approximate welfare interpretation.

Eventually, the third assumption - that responses are interpersonally comparable - is examined. Given the hypothetical situation that two respondents have the same inherent evaluation of their financial situation, one would expect the probability of both providing the same answer to decrease in the number of available answer options. Here, the evaluation takes place on an equidistant scale from 1 to 6. This range is of similar magnitude as the one used for evaluating academic performances in most European countries - even though former ones are far from being harmonized across countries. Given the fact that we trust in non-standardized school and university grades to evaluate our human capital across students, across countries, and potentially even over time, one might also want to assign the label of interpersonal comparability to a harmonized set of survey questions. This argument is backed up by the comparison of averages presented in Table 6. Here, it turned out that countries where one would expect households to be in good financial conditions, such as the Netherlands and Denmark, reach consequently higher ability to meet end scores than in Bulgaria, Greece or Portugal. Finally, it should be mentioned that most of the empirical analysis makes use of household fixed effects so that time invariant characteristics, such as risk aversion, will be eliminated from the empirical analysis.

3.3 Related Strands of Literature

There are at least three strands of literature that have worked with variables from similar survey questions. Some of them also try to derive a welfare interpretation from the data. This subsection will introduce their works and highlight similarities and differences to the arguments put forth in this paper.

First, a literature that tries to derive welfare functions from specially constructed survey questions (see Van Praag, 1971, and Kapteyn and Van Praag, 1973, as well as subsequent contributions by these authors). The authors construct a very similar survey question that is used to derive individual welfare functions of households. Their survey question provides a gradual scale of ten verbal evaluations of the household's annual revenue. In the next step, the surveyed individual is asked to provide income brackets in which it agrees with each of the evaluations. In the best possible case, the surveyed individual therefore returns information for ten different evaluation-income bracket pairs. In the next step, the authors compute mean and standard deviation over the bracket information supplied by each individual. Assuming a normal distribution of welfare with respect to income, standardizing the answer options, and assuming an equal distance between the income brackets, the results are then translated into an individual welfare function that ranges from 0 to 1.[6] Although the work of Kapteyn and Van Praag is also targeted to obtain a measure of welfare from a survey question, their approach differs by the following factors. First, answers to their question are based on hypothetical evaluations by respondents. Hence, it might be very difficult for a person to evaluate the degree of well-being from an income bracket that is far away from the personal *status quo*. Second, the evaluation questions in Van Praag (1971) and Kapteyn and Van Praag (1973) are primarily focused on the assessment of income. Although this might be only a slight difference in the wording, it might fall short of the reference dependence association arising from the expenditure

[6] Wierenga (1978) argues, however, that using random data when testing for a log-normal welfare distribution function of income yields very similar test results.

side that the ability to meet ends question contains. Finally, their subsequent treatment of the answer options differs substantially from the one used in this paper.

Second, there is a small but fast growing literature that uses survey questions to evaluate the impact of various economic variables on direct measures of well-being, life-satisfaction, and happiness in general. Corresponding survey questions differ with regard to the ability to meet ends question by being typically phrased much broader and by targeting all potential sources of, for example, happiness. A frequently recurring theme in this literature is the impact of income on happiness, starting with the so called *Easterlin Paradox*, which is documented in Easterlin (1974). Easterlin presents empirical evidence of income and happiness evaluations within countries at one point in time and within the US over time. While he finds a positive association of both variables in the within-country case, the relationship between income and happiness over time is not confirmed. The author explains his findings by arguing that relative status considerations might be important determinants of happiness and thus he points at a concept of reference dependence. For a detailed discussion of the happiness concept and a corresponding survey of the happiness literature, see for example Frey and Stutzer (2002). Finally, with Cracolici et al. (2012), there is a study that uses the ability to meet ends variable from the EU-SILC dataset to examine the determinants of subjective well-being of Italian households.

And third, there is a primarily policy-oriented literature that closely connects to the original purpose of the ECHP and the EU-SILC dataset. Studies here often deal with topics such as poverty and social exclusion (e.g. see Eurostat, 2010). As these studies are often targeted to identify the main determinants of the previously mentioned concepts in specific circumstances, their results are primarily relevant for policy purposes. Here, the ability to meet ends variable serves as a frequently used measure to proxy for the material deprivation of a household. However, studies in this field mainly focus on the lower part of the income distribution and are primarily of descriptive nature.

4 Methodology

In this section, I motivate the baseline specification and outlines its extensions, before briefly describing the dataset preparations and providing more information on the construction of variables.

4.1 The Empirical Specification

Studies in the literature have primarily examined consumption risk sharing by relating the variation of consumption growth to the variation of income growth (see Asdrubali and Kim, 2008, for example). Given the specific nature of the ability to meet ends measure, the standard approach cannot be applied here. Instead the following route is taken. The empirical analysis in this paper focuses on the question how households deal with uncertainty about their labor income process. Throughout the paper, labor income uncertainty for each household is measured by taking the logarithm of the standard deviation of its labor income over all available years of data. The result is a household-specific measure of labor income uncertainty that is constant over time. Although in theory, the concept of uncertainty may refer to labor income uncertainty over the life-cycle, the presence of only seven years of data in the ECHP dataset and only four years in the EU-SILC shifts the focus more to a medium-term uncertainty.

Over the life-cycle, households experience changes in their labor income mainly for two distinct reasons. A first source of changes is expected by the household and relates to income increases arising, for example, from better education or the accumulation of experience over the life-cycle. Although the exact timing of such changes may be unknown, their appearance might be largely expected. Households therefore may incorporate such expected income increases in their previously described consumption expenditure benchmark. A second source of income changes - the one this paper primarily focuses on - is completely unexpected and thus cannot be anticipated by the household. To conceptually motivate an empirical specification that accounts for both changes, consider the following relation:

$$abtme = \gamma_1 \ln y^T + \gamma_2 \left[\ln y^T - \ln m(y^L)\right] + \gamma_3 \ln \left[\frac{sd(y^L)}{m(y^L)}\right] \tag{1}$$

where y^T denotes total household income, y^L represents labor income of the household, $m(y^L)$ its time mean, and $sd(y^L)$ its corresponding standard deviation. The ability to meet ends, denoted by *abtme*, can then be explained by three terms. The first term comprises the logarithm of total household income, whose effect on the ability to meet ends is measured by coefficient γ_1. The second term captures deviations from the expected income path by measuring the difference of the logarithm of total household income today and the logarithm of the labor income mean, a potential proxy variable for the expected labor income path in the short-run. The impact of this deviation is measured by coefficient γ_2. Finally, the third term documents the impact of unexpected income changes through coefficient γ_3. The associated variable is represented by the logarithm of a widely used measure of uncertainty: the coefficient of variation. Latter one is defined as the ratio of the labor income standard deviation to the labor income mean.

The next step consists of translating Equation (1) into an estimable framework. After separating the mean from the standard deviation to be able to distinguish their effects later on, rearranging terms, and adding control variables, the following equation is obtained. The purpose of this baseline specification is to quantify the impact of labor income uncertainty on welfare of households:

$$abtme_{i,r,c,t} = a_{i/r/c} + a_t + \beta_1 \ln y^T_{i,r,c,t} + \beta_2 \ln m(y^L_t)_{i,r,c} + \beta_3 \ln sd(y^L_t)_{i,r,c} + \beta_4 X_{i,r,c,t} + \varepsilon_{i,r,c,t} \qquad (2)$$

Corresponding to Equation (1), the left-hand side of Equation (2), is represented by the ability to meet ends variable, $abtme_{i,r,c,t}$, which varies over household i, over all higher geographical aggregations, such as region r and country c, as well as over time t. As argued in Section 3.2., the ability to meet ends variable is assumed to capture the welfare effects arising from the financial situation of a household.

Other variables, which were already introduced above, are: the logarithm of total household income, $\ln y_{i,r,c,t}$, which varies in the same way as the ability to meet ends, the household-specific time-mean of labor income, $\ln m(y^L)_{i,r,c}$, and the household-specific standard deviation of labor income, represented by $\ln sd(y^L)_{i,r,c}$.[7] In Equation (1), *uncertainty* was determined by the coefficient of variation of labor income in logs. Using latter one in a regression framework, however, would have the major disadvantage that the opposing effects of mean and standard deviation cannot be distinguished anymore. Hence, both variables enter the empirical specification separately and for the remainder of the paper, the logarithm of the standard deviation of labor income alone is referred to as *labor income uncertainty*. The impact of labor income uncertainty on household welfare is measured by coefficient β_3.

Eventually, control variables and fixed effects are added to the specification. Coefficient vector β_4 captures the impact of two sets of control variables contained in vector $X_{i,r,c,t}$. The first set of control variables is of household-specific nature and the second one relates to the country-level. All variables contained in these sets are described in greater detail in the next subsection. Further, depending on the specification, fixed effects for time, a_t, and the household or a higher level of geographical aggregation, such as the region or the country, $a_{i/r/c}$, are added to capture all period-specific and time-invariant characteristics that cannot be controlled for otherwise. It should finally be noted that whenever household fixed effects are included in the specification, the mean and the standard deviation of labor income will be eliminated and the corresponding coefficients β_2 and β_3 cannot be identified anymore. In all specifications, standard errors are clustered at the household-level.

Following the baseline specification, the next specification assesses the broad impact of financial integration at the country-level on welfare of the average household in the sample:

$$abtme_{i,r,c,t} = a_i + a_t + \beta_1 \ln y^T_{i,r,c,t} + \beta_4 X_{i,r,c,t} + \beta_5 FI_{c,t} + \beta_6 \ln sd(y^L_t)_{i,r,c} \times FI_{c,t} + \varepsilon_{i,r,c,t} \qquad (3)$$

To determine the impact of financial integration, an interaction term of household-specific labor income uncertainty and financial integration at the country-level is added. The corresponding coefficient β_6 captures the differential effect of the standard deviation of labor income on the ability to meet ends depending on the degree of financial integration in the country of residence. When financial integration is beneficial, this effect should to be positive in order to counterbalance the negative welfare impact of labor income uncertainty. To obtain unbiased coefficient estimates, also the level term of financial integration is added and measured by coefficient β_5. The total marginal effect of labor income uncertainty on the

[7] Note that y^L_t is the short version of $y^L_{i,r,c,t}$.

ability to meet ends can now be calculated by differentiating Equation (3) with respect to labor income uncertainty. The resulting marginal effect is then given by:

$$\frac{\partial abtme_{i,r,c,t}}{\partial \ln sd(y_t^L)_{i,r,c}} = (\beta_3) + \beta_6 FI_{c,t} \tag{4}$$

More financial integration in a country should help to insure its residents better against fluctuations in individual labor income over time. If there is perfect consumption smoothing under financial integration, one would expect the marginal effect of labor income uncertainty even to become insignificant. However, due to the use of household fixed effects from now on, it will not be possible to identify the direct impact of labor income uncertainty, measured by coefficient β_3, anymore. Instead, the baseline specification will document a robust negative impact of labor income uncertainty on welfare.

As the use of household data brings the advantage to examine the strength of these effects across different types of households, the next specification breaks down the effect of financial integration on welfare according to household-specific characteristics. Latter ones are supposed to capture the exposure of households to financial markets in general and therefore also to the country-level financial integration variable. All household characteristics are designed as dummy variables taking on the value of 1 when the household may profit more from financial integration and being 0 in all other cases. To take such heterogeneity of the marginal effect of labor income uncertainty across households into account, Equation (3) is augmented by an interaction with the household-specific dummy variable:

$$\begin{aligned} abtme_{i,r,c,t} \quad = \quad & a_i + a_t + \beta_1 \ln y^T_{i,r,c,t} + \beta_4 X_{i,r,c,t} + \beta_5 FI_{c,t} + \beta_6 sd(y_t^L)_{i,r,c} \times FI_{c,t} \\ & + \beta_7 \ln HH_{i,t} + \beta_8 \ln sd(y_t^L)_{i,r,c} \times HH_{i,t} + \beta_9 FI_{c,t} \times HH_{i,t} \\ & + \beta_{10} \ln sd(y_t^L)_{i,r,c} \times FI_{c,t} \times HH_{i,t} + \varepsilon_{i,r,c,t} \end{aligned} \tag{5}$$

The resulting setup is shown in Equation (5). The core term of this specification is the triple interaction in the third row, measured by β_{10}, that captures the differential effect of the interaction term of labor income uncertainty, financial integration, and the newly introduced exposure of households to financial markets, measured by $HH_{i,t}$. To account for all lower-level interactions, further terms have to be added. Coefficients β_5 and β_7 capture the effects arising from the level terms of the two time-varying variables. In addition, the triple interaction requires the inclusion of three double interactions. The first double interaction resembles the interaction term shown in Equation (3) and is captured by coefficient β_6. However, in opposite to the previous case, β_6 now only measures the interaction effect of labor income uncertainty and financial integration when the dummy for household exposure to financial markets is equal to zero. Similarly, coefficient β_8 measures the interaction effect of labor income uncertainty and the dummy for household exposure to financial markets for financial integration being equal to zero. Eventually, β_9 measures the interaction effect of financial integration and the dummy for household exposure to financial markets, when labor income uncertainty is equal to zero. Especially the latter two terms show intuitively the importance of calculating the marginal effect of labor income uncertainty as both labor income uncertainty and financial integration will not be zero in the present sample and thus the isolated interpretation of the coefficients does not make any sense. The corresponding total marginal effect of labor income uncertainty is obtained again by differentiating Equation (5) with respect to $sd(y_t^L)_{i,r,c}$:

$$\frac{\partial abtme_{i,r,c,t}}{\partial \ln sd(y_t^L)_{i,r,c}} = (\beta_3) + \beta_7 FI_{c,t} + \beta_8 HH_{i,t} + \beta_{10} FI_{c,t} HH_{i,t} \tag{6}$$

Hence, the total marginal effect of labor income uncertainty on the ability to meet ends depends in two ways on the country-level effect of financial integration and in two ways on the effect of household-specific characteristics: through their respective double interaction terms as well as through the common triple interaction term.

4.2 Dataset Preparation and Variable Construction

4.2.1 Preparation of Datasets

This section is dedicated to the preparation of the two datasets and the construction of the variables used in the empirical analysis. However, it only gives a short overview of the required data work. A richer picture, with all steps of the dataset preparations and a more detailed description of the construction of variables, is provided in the corresponding Online Appendix[8] to this paper.

The ECHP dataset is an unbalanced panel that follows individuals and households for up to eight years. As the dataset has been constructed several years ago, data quality is relatively high and the dataset is already very clean. Therefore, only minor adjustments have to be made in the data.

The EU-SILC dataset covers the more recent years and is available in two different formats: in a cross-sectional format, consisting of a set of repeated cross-sections and in a longitudinal format, in form of a rotating panel in which survey units usually remain up to four years. This paper uses the longitudinal format. Latter one is organized in different waves. Each wave usually contains data on households and individuals over a period of four years. This paper uses the waves 2007, 2008, and 2009 that cover a time period from 2004 to 2009. All waves exhibit the same labelling of variables. In the EU-SILC dataset, a more substantial number of adjustments has to be made. Latter ones are outlined in great detail in the Online Appendix.

Although both datasets essentially contain the same variable labels, some remaining differences in the definitions of the income variables, as well as in the panel structure and the time period make it necessary to treat both of them separately in the empirical analysis. The main difference between the two datasets relates to the treatment of the income variables. While the ECHP dataset records all types of income in net terms, the corresponding net income measures in the EU-SILC dataset are only available for very few countries. Hence, a broadly available measure of gross income is taken for all countries in EU-SILC dataset. As, however, the empirical analysis treats both datasets separately, this issue should not constitute a major problem.

In the next step, income variables are made comparable across countries and time. This is achieved by converting income variables to *constant purchasing power parity units per adult equivalent*. While deflating the series makes the income variables independent of time, the subsequent Purchasing Power Parity (PPP) conversion ensures, in addition, their comparability across countries. The conversion process starts by ensuring that all income variables are denominated in national currencies. These series are then deflated using a GDP deflator in national currency from the April 2012 version of the World Economic Outlook (WEO) database. To apply the GDP deflator to the income series, one additional step has to be made. As GDP deflator series differ in their base years, for each of the datasets a common base year is selected and all price indices are rebased accordingly. For the ECHP, the year 2000 and for the EU-SILC, the year 2007 are selected as corresponding base years. Once the income variables have been deflated with the rebased price indices, the real income variables are converted in constant PPP units with the PPP weights of the base year. All PPP weights are delivered by Eurostat. To eventually account for different household sizes, the income values in constant PPP units are then divided by the household size to get *per adult equivalent* values. For the ECHP dataset, the measure of equalized household size is based on the OECD, modified scale. For the EU-SILC dataset, the (not further specified) variable HX050, *equalised household size*, which is provided by Eurostat and contained in the EU-SILC *User Database* is used.

Further, it should be noted that in both datasets, the questions on all income variables relate to the *year prior to the survey*. Hence, in both datasets, the income variables have to be forwarded by one year leading to the unfortunate situation that the last year for each household cannot be used in the empirical analysis. It should also be mentioned that the fact that income in the original data is recorded with a one year lag is taken into account in all previously described deflation and conversion procedures.

Finally, to ensure a reasonable outcome of the income conversion processes, the household income values in constant PPP units per adult equivalent derived from the ECHP and the EU-SILC datasets are, in addition, compared with GDP per capita data from the WEO database. Unfortunately, the WEO database does not contain constant PPP values of GDP per capita, hence instead the series for GDP per capita in current PPP units as well as the series of GDP per capita in US Dollars (converted to Euros

[8] Available at www.christian-friedrich.weebly.com.

with annual average exchange rates) are used for a comparison. Although it turns out that there are slight differences in the two data sources, the differences are generally small and of systematic nature across countries and time. Besides the fact that the household data accounts for inflation dynamics, additional differences are most likely related to the conversion in per adult equivalent units as opposed to per capita terms. Hence, after all income modifications have been carried out, the time variation and the relative country ranking of the income variables in constant PPP units per adult equivalent seems to be highly in line with independently collected external data.

Then, for each household a household head is determined in order to obtain a reference point for individual-specific control variables as well as in the case of the ECHP dataset, to identify the occupational sector in which the main earner of the household is active. There are three reasons why an analysis at the level of the household is preferable to one at the level of the individual. First, the dependent variable is measured at the household-level and thus also the income variables should be taken from here. Second, some control variables are individual-specific and thus they may ideally be represented by a single person in the household (in some cases it is difficult to average them). Third, the members of the household may optimize their income generating process by specializing in certain tasks and thus their personal income shares may not represent their true individual efforts.

An individual can only become household head if it remains within a household over the entire sample length. For all individuals that fulfil this requirement, the following additional criteria have to be met. First, an age limitation is set. For the ECHP, individuals older than 17 and younger than 83 years are considered, as here age is top-coded from 83 onwards. For the EU-SILC dataset, individuals older than 17 and younger than 73 years are considered, as here the top-coding takes place at 73 years. Second, in both datasets, households of these individuals are required to have several key variables non-missing in all *relevant periods* (for the definition, see below). These variables comprise the ability to meet ends, equalized household size, total income, and labor income. In addition, the empirical analysis considers only households with a total annual income of more than 100 constant PPP units per adult equivalent and a labor income greater than zero. Although restricting the sample to only complete records with positive labor income causes a substantial number of observations to drop from the sample, it ensures that results are not driven by the sample selection, as well as that means and standard deviations can be computed over non-zero values and a minimum number of periods. Hence, a balanced sample in the key variables is preferable.

Finally, the number of *relevant periods* for each country is determined. In the ECHP dataset, most countries are covered over the entire sample period 1994-2001 (or 2000 when the income forwarding is considered). There are two exceptions however: data for Austria is available from 1995 onwards and data for Finland is available from 1996. As the number of countries in the ECHP dataset is already relatively small, these two countries are allowed to enter at their respective starting points and thus the number of relevant periods in these cases is slightly smaller.

In the EU-SILC dataset, households are present for 4 years (or 3 years when the income forwarding is considered) over the period from 2004-2009 (or 2008 when the income forwarding is considered). To allow for the largest possible number of households from each country, in the EU-SILC case, the consecutive presence over 4 year (or 3 years respectively) is sufficient. Finally, due to their functions as money centers in Europe and their resulting incomparably high financial integration measures, Luxembourg and Ireland are excluded from the analysis. For most specifications, this leaves 17,625 unique households from 11 countries in the ECHP and 31,162 from 22 countries in the EU-SILC for the analysis. In the robustness section, also Cyprus, Iceland, and Malta are excluded from some of the specifications in addition.

4.2.2 Construction of Variables

It follows a short description of the variables used in the empirical analysis. An extensive description is given in the corresponding Online Appendix. The summary statistics of all right-hand side variables are depicted in Tables 7 and 8 in the Appendix Section of this paper:

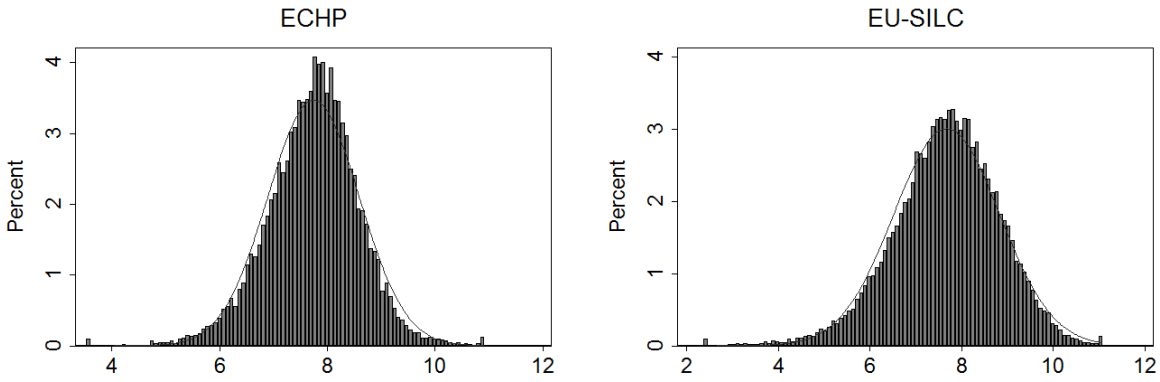
Ability to Meet Ends: For a more detailed description of this variable, see Section 3.

Total Income: Total income, also referred to as *total household income*, is the sum of all income components of a household. The original variable has been modified in the same way as all income variables. The logged values of the variable have been winsorized at the 0.5% level on both sides.

Mean of Labor Income: The mean of labor income corresponds to the time mean of the labor income variable for each household. It has been modified in the same way as all income variables. The logged values of the mean have been winsorized at the 0.5% level on both sides.

Standard Deviation of Labor Income/Labor Income Uncertainty: The standard deviation of labor income is the standard deviation of the labor income variable over time, computed for each household. It has been modified in the same way as all income variables. The logged values of the standard deviation have been winsorized at the 0.1% level on both sides. Plotting these values in the cross-sectional dimension (i.e. each household is represented by one standard deviation) yields a distribution that is approximately normal. The two sub-plots of Figure 2 verify this by plotting the cross-sectional distribution of the standard deviation of labor income in logs for both datasets against the normal distribution as a benchmark (indicated by the black line).

Figure 2: Distribution of "Labor Income Uncertainty" (in Logs) in Both Datasets



Household Controls: The following household controls are included in all regressions: a) the age of the household head, b) the age variables squared, c) a dummy variable for being married, d) a dummy variable indicating a bad health status, e) in addition, for the ECHP dataset, a dummy for being self-employed is used. This variable is not available in the EU-SILC dataset. As however, the share of self-employed workers in the ECHP dataset is relatively large (about 20%) and being self-employed may fall together with a lower risk aversion towards income shocks, the dummy for self-employment is included in the ECHP dataset nevertheless. Further, all specifications that use cross-sectional variation also include: g) a dummy variable for the household head being male and h) a dummy for higher education.

Country Controls: To control for other long-term trends and alternative explanations to financial integration at the country-level that are not captured by the fixed effects, four country-level controls are added to the specification. It has been noted in the theoretical (e.g. Kraay and Ventura, 2002) and the empirical (e.g. Imbs, 2006) literature that trade integration can improve consumption risk sharing. To control for trade integration, the sum of exports and imports in % of GDP are added. The corresponding variable is taken from the Penn World Tables, Version 7.0. A second trend that may affect risk sharing is (local) financial development of a country. The literature frequently uses the ratio of private credit to GDP as a corresponding measure. However, as facilitating the provision of credit is one of the channels through which financial integration may affect households, it should not be kept constant while assessing the effect of financial integration on a household's ability to meet ends. Instead, stock market capitalization in % of GDP from Beck, Demirgüç-Kunt, and Levine (2000) is used. Although, after including this variable,

the effects of financial integration through stock market development cannot be identified anymore, stock market capitalization seems to be preferable to the broader credit measure. Eventually, one would like to control for real and monetary policies that may change over the business cycle in addition. To capture the first effect, the unemployment rate is included, to capture the second effect, the inflation rate is used. Alternatively, one also could have used the interest rate, which would have kept, however, another potential channel of financial integration constant. Both, the unemployment rate and the inflation rate are taken from the WEO Database, September 2011.

Measures of Financial Integration: As the household datasets do not contain information on asset holdings, the measures of financial integration have to be taken from the most closely related level of aggregation for which data is available: i.e. the country-level. This also counterbalances the concern that reverse causality may arise from the fact that households with a higher ability to meet ends are more likely to hold foreign assets and thus a country may be more financially integrated. Using financial integration data at the country-level, it is practically impossible that a single household can directly affect it. As there are no existing *de jure* measures that provide a sufficient differentiation between European countries, this analysis relies entirely on *de facto* measures of financial integration. I use four different types of financial integration measures:

First, a broad set of quantitative de facto measures from Lane and Milesi-Ferretti (2007) is used. The core measure comprises *Gross Financial Integration* and thus the sum of total foreign assets and total foreign liabilities in % of GDP. The top panel of Figure 3 plots this measure since 1980. It can clearly be seen that the *Gross Financial Integration* measure for the average country trends up over time. However, the dynamics of this upward trend are highly heterogeneous across countries. To highlight these cross-country dynamics, the country with the highest average value, Belgium, and the country with the lowest average value, Poland, are depicted with solid lines. All other country-time observations are represented by "+" signs.[9]

In addition, in the empirical analysis, the measure is disaggregated by capital class (FDI, portfolio equity, portfolio debt, other investments) and balance sheet side (assets and liabilities).[10] Note that from now on, the category of *Other Investments* will be referred to as *Bank and Other Assets/Liabilities*. It should also be noted that the Lane and Milesi-Ferretti measures comprise assets and liabilities from all sectors of a country and thus include holdings from the firm and the government sector as well. There are also some data restrictions related to these measures. The last available value is 2007, which reduces the sample length for the EU-SILC dataset by one year. In addition, for several measures, there is no data available for Greece, especially during the ECHP period. Hence, some specifications rely on a slightly smaller number of countries. When the composition of assets and liabilities is examined empirically (not shown here), it turns out that more integrated countries rely on a more balanced mix of capital classes, including significant amounts of portfolio equity assets. The less integrated countries, however, which can especially be seen in the case of Greece, rely largely on portfolio debt liabilities.

Second, as the paper is primarily concerned with asset holdings of private households, I follow Becker and Hoffmann (2010) and use alternatively a measure of investment fund assets held by the household sector. Although no information on the investment pattern of such funds is provided, the authors argue that investment funds are the most diversified asset class and thus such a measure can capture the expected effect from financial integration relatively well. As the variable used in Becker and Hoffmann (2010) refers to Italian regions only, I instead use the variable *investment fund shares of households in % of GDP*, provided by the OECD. As latter one is only available from 1995 onwards, the sample length in the ECHP is reduced by one year when the corresponding measure is used. In the remainder, the measure will be referred to as *Investment Fund Shares* of households and its development over time is displayed in the left bottom-panel of Figure 3. In the first part of the sample, holdings of *Investment Fund Shares* by households increase substantially for the average country. During the 2000's, holdings go

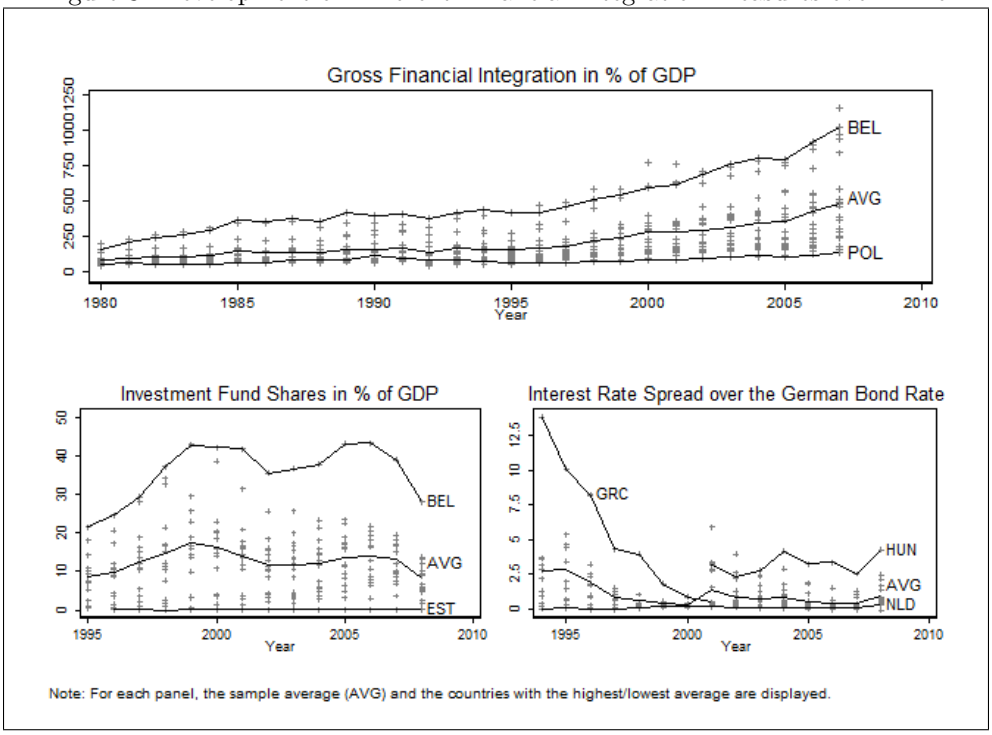
[9] As Luxembourg and Ireland serve both as money centers, their dynamics in terms of the *Gross Financial Integration* measure are so strong that they cannot be considered in the empirical analysis and therefore are not included in Figure 3 as well.

[10] An exception is portfolio equity where only the asset side measure is used in the analysis as the liability side measure is theoretically less appealing and in addition seems to be heavily affected by outliers.

down slightly for a while and eventually plunge during the recent financial crisis. On average, Belgium turns out to be the most integrated country also according to this measure. The correspondingly lowest integrated country is Estonia.

Third, a price-based measure of financial integration is used. Since advanced countries account for a potentially large share of world output, theory suggests that their optimal foreign capital exposure to the rest of the world may be lower than for developing countries. Hence, quantitative measures may underestimate the true degree of financial integration, especially in large advanced countries. Although there is no European country that captures a substantial share of world output and thus the problem seems to be not severe in the present case, for robustness, a price-based measure of financial integration is used in addition. I follow Jappelli and Pistaferri (2011) who use 10-year bond yield spreads of Italian over German government bonds.[11] To expand the measure to the European dataset, I compute for each country in the dataset the spread of the 10-year national government bond yield to the German 10-year government bond yield, taken from Eurostat. Henceforth, this measure is referred to as *Interest Rate Spread*. The measure is displayed in the right bottom-panel of Figure 3. It confirms the dynamics of the previous measures indicating a strong increase of financial integration in the early part of the sample.

Figure 3: Development of Different Financial Integration Measures over Time



Finally, for the EU-SILC dataset, an additional measures can be used. As the above mentioned investment fund shares do not incorporate information on the eventual allocation of assets between countries, for the recent years, a more informative measure can be computed in addition. As the OECD also provides information on asset allocations of investment and pension funds with regard to domestic and foreign assets, latter ones are weighted by the above mentioned investment fund shares. The result is a composite index of foreign equity asset holdings by households via investments funds.

Measures of Household Exposure: To capture the heterogeneity among households with respect to the impact of financial integration in specific and with respect to financial markets in general, the

[11] It should be taken into account that a number of other factors may influence government bond yields as well and therefore, this measure may not reflect financial integration dynamics thoroughly. Especially the creation of the European Monetary Union has caused government bond yields of periphery countries to fall substantially.

following household-specific exposure variables are used in the interaction terms. There are six specifications with variables that are identical in both datasets: a dummy variable taking on the value of 1 when the household owns a house, a similar variable capturing ownership of a car, and a third dummy variable being equal to 1 when the household has a mortgage debt. The three remaining variables are based on income measures. A first one taking on the value of 1 when the household receives capital income, a second one when the household is in the top 50% quantile of total income, and a third one taking on the value of 1 when the household is among the top 10% income receivers in the sample (referred to as *top 90%* quantile in the table). Eight variables are only present in the ECHP dataset: a dummy variable taking on the value of 1 when the household has saved some money, a dummy variable being equal to 1 when the household has a consumer debt, and two dummy variables indicating whether the household head is working in the *Financial intermediation* or the *Real estate, renting and business activities* sector. Further, there is a dummy being equal to 1 when the household head is working in a local firm unit with more than 50 employees and a dummy variable capturing the position of the household head in terms of job hierarchy. Finally, a dummy variable assessing whether the household owns a second house and also the previously mentioned self-employment dummy is considered in the interaction terms. Last but not least, two specifications contain variables that are only present in the EU-SILC dataset: a first dummy variable that takes on the value of 1 when a household owns a computer and a second one that takes on the value of 1 when a household has the capacity to face unexpected expenses.

5 Results

The following section presents the results of the empirical specifications for both of datasets in parallel. First, the negative impact of a labor income uncertainty on household welfare is documented. Then, the role of financial integration in reducing this negative impact is examined with respect to the average household in the sample. Finally, the impact of financial integration is split up across the distribution of households by differentiating households according to their potential exposure to financial integration. The econometric core analysis is then followed by a rich robustness section.

5.1 The Impact of Financial Integration on Labor Income Uncertainty

5.1.1 The Baseline Specification

First, the baseline specification based on Equation (2) is considered to deliver an estimate of the negative impact that labor income uncertainty has on a household's ability to meet ends, and thus on its welfare. The key results for both datasets are summarized in Table 1. Corresponding tables containing the coefficients of all control variables for each of the datasets can be found in the Appendix (see Table 9 for the ECHP and Table 10 for the EU-SILC).

Based on Equation (2), which was flexibly written down in terms of time and household-, regional- or country-fixed effects, a series of six different baseline specifications for each of the datasets is estimated. In all of them, the *Ability to Meet Ends* is regressed on *Total Income*, the household-specific (time-) *Mean of Labor Income*, and the key variable of interest, the household-specific *Standard Deviation of Labor Income*, as well as household and country controls as explained in the previous section.

While specification (1) is does not contain any fixed effects, specifications (2)-(6) include different types of fixed effects in addition. For specification (2), the fixed effects are time fixed effects with the intention to capture all unobserved heterogeneity that is related to a specific year. Specification (3) combines time and country fixed effects and thus captures unobserved heterogeneity on the country-level and in the time dimension. Specification (4), then replaces the country aggregate with regional fixed effects, based on a combination of NUTS level 1 and 2 regions in Europe. As some of the countries do not provide geographical information for their households, the number of observations in this specifications is somewhat smaller. Specification (5) then continues to rely on time fixed effects but in addition, assumes household-specific random effects. However, as the assumption of randomness may not be justified, specification (6) assumes the household-specific effects to be deterministic. As this corresponds to a within estimator and only allows the inclusion of variables that vary over time, the *Mean* and the

Table 1: Baseline Specification

Top Panel: ECHP

Dependent Variable: "Ability to Meet Ends"	(1)	(2)	(3)	(4)	(5)	(6)
Total Income	0.437***	0.449***	0.441***	0.432***	0.266***	0.194***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Mean of Labor Income	0.498***	0.471***	0.438***	0.425***	0.636***	
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	
Std. of Labor Income	-0.036***	-0.036***	-0.037***	-0.034***	-0.028***	
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	
Time Fixed Effects	No	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	No	No	Yes	No	No	No
Regional Fixed Effects	No	No	No	Yes	No	No
Random Effects	No	No	No	No	Yes	No
Household Fixed Effects	No	No	No	No	No	Yes
Observations	119,531	119,531	119,531	108,695	119,531	121,659
HH IDs	17,625	17,625	17,625	16,077	17,625	17,929
Countries	11	11	11	10	11	11
R-squared	0.32	0.33	0.35	0.33	0.32	0.02

Bottom Panel: EU-SILC

Dependent Variable: "Ability to Meet Ends"	(1)	(2)	(3)	(4)	(5)	(6)
Total Income	0.422***	0.424***	0.503***	0.493***	0.228***	0.067***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Mean of Labor Income	0.341***	0.328***	0.320***	0.322***	0.462***	
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	
Std. of Labor Income	-0.011**	-0.014***	-0.032***	-0.029***	-0.019***	
	(0.04)	*(0.01)*	*(0.00)*	*(0.00)*	*(0.00)*	
Time Fixed Effects	No	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	No	No	Yes	No	No	No
Regional Fixed Effects	No	No	No	Yes	No	No
Random Effects	No	No	No	No	Yes	No
Household Fixed Effects	No	No	No	No	No	Yes
Observations	93,486	93,486	93,486	81,825	93,486	94,515
HH IDs	31,162	31,162	31,162	27,275	31,162	31,505
Countries	22	22	22	19	22	22
R-squared	0.33	0.34	0.40	0.39	0.33	0.01

Standard Deviation of Labor Income cannot be identified in this framework. Also the gender dummy (*Dummy for Being Male*) and the education dummy (*Dummy for Higher Education*) are excluded from this specification as both are time-invariant.[12]

Most of the six specifications in the ECHP are based on 119,531 observations, 17,625 households, and 11 countries and in the EU-SILC on 93,486 observations, 31,162 households, and 22 countries. Differences

[12] Each of the specifications reports the number of observations, the number of unique household IDs, and the number of countries. Also the corresponding R^2 measure is reported. The stars on the coefficients indicate the level of significance (*** = 1%, ** = 5%, and * = 10%) and the values in brackets under each coefficient indicate the corresponding p-values of a t-test for insignificance.

appear in specification (4) where information on the region in which the household lives is not available for all countries (hence, slightly less observations) and in specification (6) where time-invariant variables are excluded (hence, slightly more observations). The corresponding R^2 measures are very similar across the datasets and vary in identical ways across specifications. The R^2 measures range between 0.32 and 0.40 when between variation is considered and between 0.01 and 0.02 when within variation is considered.

Turning to the interpretation of the coefficients, the two datasets deliver remarkably similar results. Starting with an examination of significance and signs of the household and country controls (see Tables 9 and 10), it turns out that nearly all control variables are highly significant and have the expected sign. In general, being male, married, more educated or self-employed increases the ability to meet ends, while having bad health reduces latter one. The coefficient for the age impact is dependent on the level of age, leading to an increases in the ability to meet ends for high age values. Also the country controls have the expected signs. A higher stock market capitalization and a higher degree of trade integration lead to an improvement of the ability to meet ends and a higher inflation or unemployment rate lead to a reduction. An interesting result is that the gender dummy is insignificant in most of the specifications in the ECHP dataset. This implies that the gender of a household head does not matter for the ability to meet ends and could potentially give rise to the interpretation that within-family risk sharing is working relatively well.

Moving on to the coefficients of the key variables, coefficients β_1 and β_2 are positive in all cases as expected (all coefficients are depicted in Table 1 as well). Hence, *Total Income* and also the household-specific *Mean of Labor Income* have the anticipated positive signs indicating that higher income - in each period but also a higher labor income over the sample - lead to a higher ability to meet ends.[13]

The core interest, however, lies in the significance and the sign of coefficient β_3. This coefficient represents the effect of the *Standard Deviation of Labor Income* on the *Ability to Meet Ends*. According to economic theory, one would expect that a household suffers from a welfare reduction when the uncertainty in its income process, represented by the standard deviation of labor income, increases. And indeed, the results show that coefficient β_3 is highly significant (i.e. at the 1% level) and negative in all specifications in which it can be identified. In the ECHP dataset, β_3 turns out to be very stable across specifications ranging from -0.028 to -0.037. In the EU-SILC dataset, coefficient β_3 is somewhat less stable ranging from -0.011 to -0.029. However, in all cases β_3 is negative and highly significant and the stricter the set of fixed effects becomes, the closer the magnitude gets to the one found in the ECHP dataset. This implies that households experience a reduction in welfare when their labor income is, *ceteris paribus*, more volatile.

In the next step, the economic significance of the mean and the standard deviation effects are examined. Recall that a coefficient β in a level-log specification can be expressed using the following relation:

$$\beta = \frac{\Delta y}{\Delta x} x \tag{7}$$

Solving this relation for Δy yields the change in units of the left-hand side variable:

$$\Delta y = \frac{\beta \Delta x}{x} \tag{8}$$

Now, plugging in the absolute value of the estimated coefficient for β and the cross-sectional standard deviation of the underlying variable (in units!) for Δx. This yields, for a fixed value of x, the resulting unit change in the left-hand side variable, here the ability to meet ends. The value of x is then examined at the 25^{th}, 50^{th} and 75^{th} quantile to capture the effect of the variable in different parts of the distribution.

The top and center panels of Table 2 present the corresponding results of this exercise for the *Mean* and the *Standard Deviation of Labor Income*. For a one standard deviation increase in the *Mean of Labor Income*, the increase in the ability to meet ends ranges, depending on the estimator and the distribution quantile used, between 0.23 and 0.76 in the ECHP dataset and between 0.20 and 0.96 in the EU-SILC dataset. The center panel shows the corresponding outcome for a one standard deviation increase in the *Standard Deviation of Labor Income*. Although a change of the *Standard Deviation of Labor Income* by

[13] It should be kept in mind that the logs of Total Income, the Mean of Labor Income and the Standard Deviation of Labor Income have been taken. For simplicity, this fact is often not mentioned separately in the remainder of the paper. However, the fact is taken into account when the coefficients of these three variables are interpreted.

one cross-sectional standard deviation may not be considered as a "small" change, it gives a rough idea, by how much a more volatile labor income process reduces welfare. The size of this effect on the ability to meet ends in the ECHP dataset ranges from -0.14 at the 25^{th} quantile in specification (1) to -0.04 at the 75^{th} quantile in specification (5) and in the EU-SILC dataset from -0.21 in case of the 25^{th} quantile in specification (3) to -0.02 at the 75^{th} quantile in specification (1) and (2).

Table 2: Interpretation and Size of the Impact of Labor Income on Welfare

	ECHP						EU-SILC				
	Corresponding specification in Table 1:										
	(1)	(2)	(3)	(4)	(5)		(1)	(2)	(3)	(4)	(5)
	Mean of Labor Income *						Mean of Labor Income *				
25%	0.60	0.56	0.52	0.51	0.76	*25%*	0.71	0.68	0.67	0.67	0.96
50%	0.38	0.36	0.34	0.33	0.49	*50%*	0.38	0.37	0.36	0.36	0.52
75%	0.26	0.25	0.23	0.23	0.34	*75%*	0.21	0.20	0.20	0.20	0.29
	Std. Dev. of Labor Income *						Std. Dev. of Labor Income *				
25%	-0.14	-0.14	-0.15	-0.13	-0.11	*25%*	-0.07	-0.09	-0.21	-0.19	-0.12
50%	-0.08	-0.08	-0.08	-0.08	-0.06	*50%*	-0.03	-0.04	-0.10	-0.09	-0.06
75%	-0.05	-0.05	-0.05	-0.05	-0.04	*75%*	-0.02	-0.02	-0.05	-0.04	-0.03
	Implicit Risk Premium **						Implicit Risk Premium **				
25%	24	25	28	26	15	*25%*	10	13	31	28	13
50%	21	23	25	24	13	*50%*	9	12	28	25	11
75%	19	20	22	21	11	*75%*	8	10	24	22	10

Notes:
*: Change in units of the "Ability to Meet Ends" following a cross-sectional one-standard deviation change in the mean or the standard deviation of labor income. The labels 25%, 50%, and 75% represent the evaluation of these effects at the corresponding percentiles in each of the two distributions.
**: The "Implicit Risk Premium" corresponds to the share of welfare, arising from the mean of labor income, that an individual would be willing to give up in order to eliminate labor income uncertainty entirely. The evaluation takes place following an increase in the mean and in the standard deviation of labor income by one cross-sectional standard deviation each.

Finally, the two bottom panels relate the above mentioned effects to each other. By taking the ratio of the change in the ability to meet ends following a change in the standard deviation (in absolute values) and the change in the ability to meet ends following a change in the mean, an *Implicit Risk Premium* can be calculated. It could be thought of as the share of welfare, arising from the mean effect, that an individual would be willing to give up in order to eliminate labor income uncertainty entirely. Depending on the estimators and the distribution quantile used for evaluation, this measure takes on values from 11% to 28% in the ECHP and from 8% to 31% in the EU-SILC dataset.

Hence, from this section, it should be taken away that labor income uncertainty has a significantly negative effect on household welfare that also matters in economic terms.

5.1.2 The Role of Financial Integration

After the baseline specification has been carried out, the role of financial integration in counterbalancing the negative effect of income uncertainty can now be examined. This section therefore deals with the estimation of Equation (3), which was introduced earlier. As the within estimator, i.e. the specification including household (and time) fixed effects, is the most restrictive one, the subsequent analysis relies primarily on this estimator. The corresponding disadvantage is that time-constant variables have to be dropped from the regression and thus also the *Mean* and the *Standard Deviation of Labor Income* cannot be identified.

In the following, for both datasets, the same eight specifications are be estimated, each of them relying on a different measure of financial integration. The results are depicted in Table 3. Here, the top panel corresponds to the results for the ECHP and the bottom panel to the ones from the EU-SILC. In addition, for the EU-SILC dataset, a ninth specification containing the previously introduced composite index of foreign equity asset holdings of households as the financial integration variable is estimated. With the exception of the *Interest Rate Spread* specification, all specifications examine the effect of financial integration on the ability to meet ends via a reduction of the (negative) impact of labor income uncertainty. Thus, coefficient β_6, on the interaction term of labor income uncertainty and financial integration is expected to carry a positive sign. As, on the other hand, an increase in the spread over the German long-term interest rate is considered to be a reduction in financial integration, the interest rate spread specification is expected to carry an opposite sign on the interaction term.[14]

The interpretation of the results is as follows. For simplicity, household and country controls are not reported in the tables and only the key terms of interest are depicted. These include the coefficients of *Total Income*, the one for the level effect of financial integration, *Financial Integration*, and the one on the interaction term of labor income uncertainty and financial integration, *Std. of Labor Income* x *Financial Integration*. As described above, the level term for labor income uncertainty is taken up by the household fixed effects. It should be noted that the financial integration variable changes in each specification and is described by the column header.

Turning to the interpretation of the coefficients, it can be seen that with the exception of some coefficients in the three last columns in the bottom panel of Table 3, all coefficients have the expected sign and are highly significant. *Total Income* enters positively in all specifications and has a size similar to the one seen in the previous household fixed effects specifications in Table 1. It should be noted that the level terms of financial integration lack a clear interpretation, as they indicate the effect of financial integration on the ability to meet ends for a zero-value of labor income uncertainty, a condition that is not fulfilled in the sample.

The core interest lies on the interaction terms between labor income uncertainty and the various financial integration measures. It can be seen that all interaction terms involving the Lane and Milesi-Ferretti measures are positive. They comprise *Gross Financial Integration*, *Portfolio Equity Assets*, *Portfolio Debt Assets*, *Portfolio Debt Liabilities*, *Bank and Other Assets*, *Bank and Other Liabilities* - all in % of GDP. This finding holds across both datasets and implies that more financial integration increases the ability to meet ends by reducing the negative impact of labor income uncertainty. Hence, financial integration has a positive impact on household welfare for the average household in the sample by mitigating the negative welfare impact of uncertainty. The same holds also for the *Investment Fund Shares* specification in the ECHP sample, which contains a highly significant interaction term that also carries a positive sign. This is not the case in the EU-SILC sample where the interaction term on the *Investment Fund Shares* has become insignificant. As there is no information contained in the investment fund shares variable where investment funds have made their investments, the use of the composite index, that also takes the exposure of investment funds into account, is preferable. Although insignificant as well, the p-value of 11% on the positive interaction term indicates that also this measure is in line with the other ones. Due to its different definition, the interaction terms in the price-based *Interest Rate Spread* measure specification is expected to have a negative sign. The reason is that a higher spread indicates a lower level of financial integration. As the coefficient on the interaction term in the *Interest Rate Spread* specification is indeed negative and significant in the ECHP dataset, the interpretation that financial integration is welfare-increasing applies also here.

To obtain a better interpretation of the interaction terms, the total marginal effects of labor income uncertainty according to Equation (4) should be calculated. As the analysis is carried out with the within

[14] It should also be noted that there is no data on some of the Lane and Milesi-Ferretti financial integration measures for Greece during the early years of the ECHP sample. Hence, Greek households are excluded from all *Portfolio Debt* and *Bank and Other* specifications in the top panel of Table 3. Further, financial integration variables in the *Interest Rate Spread* specification and the *Investment Fund Shares* specification are not available before 1995 and thus the corresponding specifications only cover six years for most of the countries (the exception is Finland which is present for five years). As, in addition, the Lane and Milesi-Ferretti measures are only available until 2007, the requirement of a three years presence for each household in the EU-SILC is relaxed and replaced by a two years presence (the standard deviation of labor income has been calculated over three years nevertheless). During this period, however, the Lane and Milesi-Ferretti measures are available for all 22 countries. This is not the case for the *Interest Rate Spread* measure and the *Investment Fund Shares* measures, which are available for most but not for all countries.

Table 3: The Impact of Financial Integration

Top Panel: ECHP

Dependent Variable: "Ability to Meet Ends"	Gross Financial Integration	Portfolio Equity Assets	Portfolio Debt Assets	Portfolio Debt Liabilities	Bank and Other Assets	Bank and Other Liabilities	Interest Rate Spread	Inv. Fund Shares of HH
Total Income	0.192***	0.192***	0.192***	0.193***	0.194***	0.194***	0.193***	0.175***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Financial Integration	-0.002***	-0.016***	-0.015***	-0.016***	-0.012***	-0.012***	0.095***	-0.024***
(see label)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Std. of Labor Income	0.000***	0.002***	0.002***	0.002***	0.002***	0.002***	-0.008***	0.002***
x Financial Integration	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Part. marg. effect, high FI	0.10***	0.05***	0.07***	0.08***	0.09***	0.13***	0.01***	0.03***
Part. marg. effect, low FI	0.04***	0.01***	0.02***	0.04***	0.05***	0.05***	0.00***	0.02***
Observations	121,659	121,659	110,081	110,081	110,081	110,081	121,659	107,062
HH IDs	17,929	17,929	16,275	16,275	16,275	16,275	17,929	18,069
Countries	11	11	10	10	10	10	11	11
R-squared	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02

Bottom Panel: EU-SILC

Dependent Variable: "Ability to Meet Ends"	Gross Financial Integration	Portfolio Equity Assets	Portfolio Debt Assets	Portfolio Debt Liabilities	Bank and Other Assets	Bank and Other Liabilities	Interest Rate Spread	Inv. Fund Shares of HH	Foreign Holdings of HH
Total Income	0.054***	0.052***	0.053***	0.055***	0.055***	0.054***	0.062***	0.063***	0.071***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Financial Integration	-0.002***	-0.011**	-0.020***	-0.008***	-0.004***	-0.006***	0.081	0.001	-0.037
(see label)	*(0.00)*	*(0.04)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.15)*	*(0.94)*	*(0.34)*
Std. of Labor Income	0.000***	0.003***	0.003***	0.001***	0.001***	0.001***	0.000	0.001	0.008
x Financial Integration	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.95)*	*(0.23)*	*(0.11)*
Part. marg. effect, high FI	0.12***	0.14***	0.17***	0.07***	0.05***	0.06***	0.00	0.02	0.03
Part. marg. effect, low FI	0.04***	0.01***	0.02***	0.01***	0.01***	0.02***	0.00	0.01	0.00
Observations	84,031	84,031	84,031	84,031	84,031	84,031	86,952	85,710	55,350
HH IDs	33,466	33,466	33,466	33,466	33,466	33,466	28,984	28,570	18,450
Countries	22	22	22	22	22	22	20	17	11
R-squared	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.02

estimator, it is not possible to recover the value of coefficient β_3. Instead, only the positive part, the differential effect due to the presence of financial integration is examined. The resulting positive effect from the interaction term has to be considered as counterpart to the negative level effect of labor income uncertainty that was shown throughout all specifications in Table 1. In the following, the total marginal effect without the level term will be referred to as the *partial marginal effect*. As the effect of labor income uncertainty differs depending on the level of financial integration, the partial marginal effect is evaluated at two different levels of financial integration. First, a low level of financial integration at the 25^{th} quantile of the financial integration distribution is considered. Then, a high level of financial integration at the 75^{th} quantile is considered. Again, this analysis is carried out separately for both of the datasets. It should also be noted that the two percentiles and the sign of the coefficient for the *Interest Rate Spread* measure have been reversed to make it comparable to the other measures.

Both panels in Tables 3 show the size of the partial marginal effects for each of the specifications in greater detail under the regression results, labelled as *Part. marg. effect, high/low FI*. Their significance is assessed with an F-test. Resulting p-value ranges are indicated as usual through stars behind each of the partial marginal effect values.

Partial marginal effect values range from 0.17 to 0. The upper bound effect emerges, when *Portfolio Debt Assets* in a highly financially integrated country in the EU-SILC dataset are considered. The lower bound effect shows up when in the same dataset a financially low integrated country is considered and the *Interest Rate Spread* measure or the *Foreign Equity Asset Holdings by Households* measure is used. This result is not surprising as firstly, one would expect a stronger effect in financially integrated countries than in less financially integrated ones. And secondly, one would expect the smoothing effect of *Portfolio Debt Assets* to be very effective in reducing the negative impact of labor income uncertainty.

5.1.3 The Impact of Financial Integration Across the Distribution of Households

Finally, the positive effect of financial integration on the average household in the sample is disaggregated across the distribution of households (see Tables 4 and 5). Households are split into a low exposed group and a highly exposed group with respect to financial integration according to 16 measures of household exposure. In more general terms, this exposure to financial integration could be interpreted as an exposure of households to financial markets. To keep the analysis traceable, interpretation takes again mainly place via an evaluation of the marginal effects. The corresponding total marginal effects should be computed according to Equation (6). However, as again a within estimator is used to obtain the coefficient estimates, only the partial marginal effects can be recovered and the negative level term of labor income uncertainty, coefficient β_3, cannot be examined. The partial marginal effects should therefore be weighted against the negative effect of labor income uncertainty again.

In all cases, the financial integration variable is represented by *Gross Financial Integration* in % of GDP.[15] The variable capturing the exposure of households to financial integration varies across specifications and is specified by the column label each time. 16 different variables of household exposure are used. Six appear in the ECHP and the EU-SILC at the same time and comprise dummies for house and car ownership, as simple proxies for household wealth, dummies for capital income receipts, mortgage holdings, and dummies for being among the top 50% and the top 10% of the income distribution (labelled in the tables as *top 50%* and *top 90%* quantile). Eight measures are available only in the ECHP dataset and include work-related dummies for working in the financial sector, the real estate sector, being self-employed, the size of the local firm unit, and the job hierarchy. Additional variables comprise dummies for whether the household is able to save, holds consumer debt, or owns a second house. Finally, there are two variables only available in the EU-SILC dataset. They capture whether the household owns a computer and if the household can deal with unexpected expenditures.

Turning to the interpretation of the results, in the first instance, the triple interaction term of each column is examined with respect to significance, size, and sign. Focusing on Table 4, it turns out that 7 out of 12 triple interaction terms are significant. Hence, the effect of financial integration on households is at least to some extent heterogeneous. Examining the size of the coefficients, however, leads to the

[15] The results using Equity Assets in % of GDP as measure of financial integration are very similar.

Table 4: The Effect of Financial Integration Across Households I

Top Panel: ECHP

Dependent Variable: "Ability to Meet Ends"	House Owner Ship	Car Owner Ship	Capital Income Receiver	Mortgage Debt Holder	Top 50% of HH Income	Top 90% of HH Income
Triple	-0.000**	-0.000**	-0.000**	-0.000	-0.000*	-0.000*
Interaction	*(0.01)*	*(0.03)*	*(0.03)*	*(0.78)*	*(0.08)*	*(0.08)*
Part. marg. effect, high FI, high Exp.	0.20***	0.17***	0.12***	0.06**	0.14***	0.11***
Part. marg. effect, high FI, low Exp.	0.15***	0.16***	0.11***	0.06**	0.11***	0.11***
Part. marg. effect, low FI, high Exp.	0.16***	0.12***	0.08***	0.03	0.09***	0.08***
Part. marg. effect, low FI, low Exp.	0.06***	0.06***	0.05***	0.02**	0.04***	0.04***
Observations	121,532	118,751	121,659	80,663	121,659	121,659
HH IDs	17,910	17,513	17,929	11,890	17,929	17,929
Countries	11	11	11	11	11	11
R-squared	0.02	0.02	0.02	0.02	0.02	0.02

Bottom Panel: EU-SILC

Dependent Variable: "Ability to Meet Ends"	House Owner Ship	Car Owner Ship	Capital Income Receiver	Mortgage Debt Holder	Top 50% of HH Income	Top 90% of HH Income
Triple	0.000**	0.000	-0.000	-0.000	0.000**	0.000
Interaction	*(0.04)*	*(0.52)*	*(0.74)*	*(0.96)*	*(0.04)*	*(0.38)*
Part. marg. effect, high FI, high Exp.	0.12***	0.14***	0.14***	0.08**	0.15***	0.14***
Part. marg. effect, high FI, low Exp.	0.04	0.10**	0.12***	0.05	0.11***	0.12***
Part. marg. effect, low FI, high Exp.	0.03	0.06**	0.06***	0.05**	0.04*	0.04*
Part. marg. effect, low FI, low Exp.	0.01	0.03**	0.04***	0.02	0.03***	0.04***
Observations	84,007	83,965	77,222	60,401	84,031	84,031
HH IDs	33,457	33,459	30,370	24,476	33,466	33,466
Countries	22	22	18	17	22	22
R-squared	0.02	0.02	0.02	0.02	0.02	0.02

observation that heterogeneity in these effects is relatively small in magnitude. Nevertheless, the findings are broadly speaking in line with the theoretical literature. Caselli and Ventura (2000), for example, argue in their conclusion that theoretical heterogeneous agent models can reason out a wide range of possible distributional dynamics and place only very few restrictions on possible outcomes.

Focusing on the interpretation of the signs of the coefficients, it shows that in the ECHP dataset most of the differential effects are negative and then turn insignificant or even positive in the EU-SILC dataset. At the first glance, this result is somewhat surprising as it suggests that in the early sample, the positive impact of financial integration for households more exposed to financial markets is weaker than for unexposed households and, later on, the opposite effect is found. However, Kaminsky and Schmukler (2003), for example, provide a potential explanation in their paper *Short-Run Pain, Long-Run Gain* for similar observations at the country-level. The authors argue that financial liberalization may create booms and busts in the short-run, but driven by a parallel improvement in institutional quality, positive gains may occur in the long-run. Such a development may also apply at the household level, potentially associated with learning effects. Households could require time to insure against external financial shocks by rebalancing their portfolios for example. Another explanation may be associated with additional investment demand from abroad that could have depressed yields compared to the closed economy case.

Table 5: The Effect of Financial Integration Across Households II

Top Panel: ECHP

Dependent Variable: "Ability to Meet Ends"	HH Saves	Consumer Debt Holder	Work in Banking Sector	Work in Real Estate Sector	Work in Large Firm	Work in Supervisory Position
Triple	-0.000**	0.000	0.000	-0.000	0.000	-0.000
Interaction	*(0.02)*	*(0.27)*	*(0.62)*	*(0.98)*	*(0.93)*	*(0.13)*
Part. marg. effect, high FI, high Exp.	0.18***	0.05***	0.17***	0.11***	0.10***	0.18***
Part. marg. effect, high FI, low Exp.	0.11***	0.06***	0.08***	0.08***	0.09***	0.13***
Part. marg. effect, low FI, high Exp.	0.14***	0.02	0.10	0.06	0.05	0.13***
Part. marg. effect, low FI, low Exp.	0.04***	0.03***	0.04***	0.04***	0.04***	0.05***
Observations	119,761	99,480	103,528	103,528	56,423	69,844
HH IDs	17,653	14,759	15,135	15,135	8,463	10,305
Countries	11	10	11	11	11	11
R-squared	0.06	0.02	0.02	0.02	0.02	0.02

Left Bottom
Panel: ECHP, cont.

Right Bottom
Panel: EU-SILC

Dependent Variable: "Ability to Meet Ends"	Work in Self-Employment	Owner of a Second House	HH Owns Computer	Deal With Unexp. Expendit.
Triple	-0.000*	-0.000	-0.000	0.000
Interaction	*(0.10)*	*(0.11)*	*(0.58)*	*(0.14)*
Part. marg. effect, high FI, high Exp.	0.09***	0.14***	0.14***	0.14***
Part. marg. effect, high FI, low Exp.	0.11***	0.10***	0.14***	0.09***
Part. marg. effect, low FI, high Exp.	0.06**	0.11***	0.06***	0.06***
Part. marg. effect, low FI, low Exp.	0.04***	0.04***	0.04***	0.03***
Observations	121,659	118,546	83,970	83,840
HH IDs	17,929	17,483	33,463	33,417
Countries	11	11	22	22
R-squared	0.02	0.02	0.02	0.05

The most positive impact of financial integration on welfare is found in the EU-SILC and here for mortgage holders and households with above-median income (column *top 50%* quantile in the table). The finding that this effect does not occur for households in the top 10% of the income distribution (column *top 90%* quantile in the table) indicates that the majority of gains is achieved by upper middle-class households.[16] Together with the negative differential effects found for these households in the ECHP dataset, this pattern is also consistent with the development of Gini coefficients in Europe. While in the first part of the sample, Gini coefficients were decreasing for Western European countries, potentially mirroring a negative differential effect for above median-income households, an opposing trend for Western (increasing) and Eastern European countries (decreasing) is observed in the second part of the sample, possibly reflecting insignificant or slightly positive differential effects.

The evaluation of partial marginal effects confirms the general picture. Compared to the last section, there are now four types of households and hence, now also four partial marginal effects are present: a first one for households residing in a country with high financial integration that are highly exposed to financial markets. A second one for households in a country with high financial integration that are less exposed to financial markets. A third one for households residing in a country with low financial integration that are highly exposed to financial markets. And a fourth effect for households in a country with low financial integration that are less exposed to financial markets.

It turns out that in the majority of specifications, households of the first type reach the most positive partial marginal effect. Exceptions are both kinds of debt indicators, work in self-employment, owning a computer, and being among the top 10% of the income distribution in the ECHP dataset. The most notable finding is that there does not seem to be a direct effect of access to credit on the ability to meet ends.[17] A reason could be that indebted households have to carry the burden of debt service and repayment and thus do not see an improvement in their overall financial situation. This finding will be taken up again towards the end of this subsection, when potential channels through which financial integration may work are discussed.

Regarding the relative ranking between types two and three, it turns out that the presence of financial integration may lead even for households with little financial market exposure to an improvement in welfare that is equivalent or in some cases even higher than the one for households with high financial market exposure residing in countries with low financial integration.

Finally, households of the fourth type are worse off in nearly all cases and suffer most from labor income uncertainty. The reason that this type still has a positive partial marginal effect stems from the fact that also here, financial integration is measured with values from the 25^{th} quantile of the financial integration distribution and thus also here, a certain level of financial integration is present.

Given the finding of a positive effect of financial integration on welfare for the average household in the sample in the last subsection and the assessment of its heterogeneity in this subsection, one might want to reflect about potential channels in addition. As pointed out in Section 2, most of the channels through which financial integration works in theory are related to a reduction of financial frictions, such as lowering the costs for foreign asset purchases or increasing the supply of international contingent assets, the improvement of the mortgaging of non-tradable assets, and the relaxation of credit, liquidity or short selling constraints. Also the reduction of informational frictions may be a positive side-effect of increasing financial integration.

A number of potential channels has been implicitly tested in the heterogeneity analysis. The fact that capital income receivers did not do better in terms of welfare than the average household in the sample, essentially contradicts the importance of an improved access to international contingent claims, for example. This finding, however, may be driven by the fact that capital income levels are still very low (the average household in the ECHP dataset has a share of capital income in total income of about 2%). Also a reduction of potential informational frictions, as tested with the impact of employment in the banking or the real estate sector, does not seem to be the main channel. Instead, the fact that

[16] Beck, Levine, and Levkov (2010) find that bank deregulation in the US has reduced income inequality. Although their results are driven by positive gains for low-income households, the analysis suggests that households at the top of the income distribution may have faced negative gains (which are, however, marginally not significant at the 5% level).

[17] Regarding the other findings, it should be noted that self-employment might be a very roughly defined concept, and a compute a poor proxy variable for wealth. Finally, the finding that the top 10% income earners in the sample have gained less than the top 50% income earners was already discussed in the previous paragraph.

mortgage holders and households with an income slightly above the median have profited most, points in the direction of a relaxation in credit constraints. Furthermore, the strongly positive effect for the average household in the sample, suggests the presence of additional indirect effects.

These results are very much in line with the work of Kose et al. (2006), who argue that the main effects of financial integration are of *indirect* nature and may comprise a deepening of financial markets, an improvement in institutional quality, and a better governance and macroeconomic discipline. In the context of the household sector, and supported by the findings above, this could relate to a general attenuation of the precautionary savings motive through an easier and cheaper availability of credit in the first place. Further, a more efficient intermediation of private savings, improvements in government-induced banking regulation, and advancements in consumer protection may play an important role as well. It should be noted, in addition, that better and easier access to credit does not necessarily contradict the findings made above that non-loan holders have reaped higher gains from financial integration than actual loan holders did. Both findings can be reconciled, when the presence of permanent insurance through better access to credit yields a steady benefit to all eligible households but whenever an insurance incidence occurs, and a loan has to be taken out, costs occur as well.

5.2 Discussion and Robustness

The following subsection deals with the robustness of the previously obtained results. First, the question of endogeneity with respect to the income measures is examined more closely. Second, a different empirical approach that reaches similar results as the main approach is presented in addition.

5.2.1 Potential Sources of Endogeneity

The econometric approach so far has dealt with a regression of the ability to meet ends on *Total Income*. Economic theory considers income as exogenous and consumption as a way of allocating it among different uses. Nevertheless, in this specific setup, it could happen that having a good ability to meet ends derives from a high level of household wealth that in turn generates capital income. As capital income enters the specifications via *Total Income*, the coefficients of all variables in the regression may be affected. However, as indicated above, the share of capital income in total income amounts to about 2% for the average household in the sample and therefore limits potential endogeneity concerns in this directions substantially.

A second potential problem may arise from including the dummy variable indicating whether a household saves as a measure of financial market exposure. Households may decide on their savings based on the ability to meet ends. Even though in theory, one would expect the savings decision to follow the realization of income, depending on the one-year time horizon between two interviews, this may not be the case for all households. The interpretation of this specification should therefore be treated with some caution.

A third problem may arise, when households with a good ability to meet ends demand more financial products from abroad and therefore cause the level of financial integration in the region to rise. However, as financial integration is measured on the country-level and a single household cannot affect the aggregated measures significantly, this channel is not considered to be a serious issue here.

Finally, a fourth problem may arise from the inclusion of the mean and the standard deviation of labor income in the regression. This step may violate the strict exogeneity assumption of the Ordinary Least Square model. Therefore, the next subsection pursues an alternative estimation strategy to assess the robustness of the results found with the main approach. The robustness approach will re-assess the results of the baseline specification and the findings regarding the impact of financial integration on welfare, each time for both datasets.

5.2.2 Robustness Approach

The idea of the robustness approach is to leave mean and standard deviation of labor income out of the analysis and thus reduce potential endogeneity concerns further. This is achieved by splitting the samples

according to the standard deviation of labor income into households with low and with high labor income uncertainty. One would then expect that an increase in financial integration leads to a stronger welfare improvement in the latter group. As taking the logarithm of the standard deviation of labor income may not be a standard procedure in the literature, this approach takes the logarithm first. Log-labor income is then regressed on a dummy for higher education, the age of the household head, and the square of the age variable. By introducing these control variables, one can proxy for a household's expected changes in labor income over the life-cycle. Hence, the residuals of this regression can be interpreted as unexpected shocks to the labor income of a household. Therefore, the separation between expected and unexpected income changes takes place analogously to the main approach. In the next step, the standard deviation of these residuals is taken. Due to the nature of the robustness approach, it is not necessary anymore to control for the mean of labor income as its effect got purged out by controlling for the expectable income profile. Hence, all variables included in the analysis will be time varying (with the exception of gender and education dummies in the cross-sectional approaches) - this substantially reduces endogeneity concerns. As suggested above, to split the sample into households with a low and a high labor income uncertainty, a dummy variable is created that takes on the value of 1 when a household has a higher standard deviation of labor income compared to the median household in its country. The definition of the dummy variables is carried out in relation to the country as this ensures that in all specifications a complete sample of countries will be included. However, the results do not change much when the median household of the entire sample is used to determine the sample split. The control variables are identical to those of the main approach. As the robustness approach is more sensitive to country inclusions, I exclude Cyprus, Iceland, and Malta in addition to Luxembourg and Ireland. The reason is that all countries serve, at least to some extent, as money centers and exhibited very strong financial integration dynamics.

The results are very much in line with the ones of the main approach. All tables are depicted in the Appendix. Starting with the replication of the baseline specification, Table 11 shows the results for specifications 1 (without fixed effects), 3 (including time and country fixed effects), and 6 (including time and household fixed effects) from Table 1 with the robustness approach for both datasets. The column labels a) and b) indicate for each specification the previously mentioned subsample with a low and a high degree of labor income uncertainty respectively. To document the negative impact of labor income uncertainty on the ability to meet ends, coefficients have been standardized by subtracting the mean. Hence, the relative size of the two constants capture the impact of labor income uncertainty. And indeed, it can be seen that the subsample with the higher labor income uncertainty, i.e. b), has a lower constant than the one with the lower labor income uncertainty, i.e. a), across all specifications. This confirms that labor income uncertainty has a negative impact on household welfare.[18]

In the next step, the impact of financial integration on the ability to meet ends is examined. For this exercise, the financial integration variables are included in the specifications once at a time without further interactions. One would now expect the positive effect of financial integration on the ability to meet ends to be stronger for households with a higher labor income uncertainty.[19]

Table 13 confirms that this is indeed the case for the EU-SILC dataset. In six out of nine cases, the coefficient of the financial integration measures in the lower panel, the one containing households with higher labor income uncertainty, is higher. Notable exceptions are the *Interest Rate Spread* specification that gives unintuitive results throughout the entire robustness approach, the *Portfolio Equity Asset* specification where both coefficients are relatively close and positive, as well as the *Portfolio Debt Liabilities* specification that carries a negative sign in this approach.

For the ECHP dataset, results are less clear-cut. Table 12 shows that the coefficient of financial integration in the high labor income uncertainty sample is only higher in three out of eight cases and once even lower. Investigating potential reasons for this finding eventually leads to the observation that the size of the financial integration effect differs across countries. To follow this route further, the 11 countries in the ECHP dataset are split in two groups: Northern[20] and Mediterranean[21] countries. The results are depicted in Table 14 for the Northern countries and in Table 15 for the Mediterranean

[18] The same negative impact of labor income uncertainty on the ability to meet ends is obtained when the dummy variable is included directly in the regression.

[19] In this exercise, the constant is not standardized anymore and therefore loses its interpretation.

[20] Austria, Belgium, Denmark, Finland, France, Netherlands, and UK.

[21] Greece, Italy, Portugal, and Spain.

countries, respectively. Comparing the coefficients of financial integration for households with a low and a high standard deviation for Northern countries leads to the observation that now in five out of eight cases, the coefficient in the high labor income uncertainty sample is positive and strictly greater than in the low labor income uncertainty cases. This confirms the previously developed line of arguments. For the Mediterranean countries, the opposite is the case. Nearly all financial integration measures have a negative impact on the ability to meet ends, often independently of the degree of labor income uncertainty but sometimes even increasing in it. Potential reasons for this finding may be related to a less developed financial system or a different concentration of wealth in the Mediterranean countries and will have to be investigated further. Nevertheless, the robustness approach confirms - independently and with much weaker assumptions on the exogeneity of variables - the findings of the main approach. It comes, however, with the drawback that it has proven to be more sensitive to the country selection and also cannot establish an unanimous effect for all countries in the ECHP sample.

Additional robustness checks were carried out for the ECHP dataset. They included a Hausman-Talyor estimation in which *Total Income* and the *Mean of Labor Income* were treated as endogenous variables, the incorporation of work sector-specific fixed effects in the regressions as additional controls, and an assessment of the consequences of a preference shock to the household. The preference shock is measured by including the logarithm of variable HF014 that is based on a question to the household about the lowest net monthly income necessary to make ends meet. This variable could therefore serve as an empirical analogy to the implicit consumption benchmark underlying the welfare assessment and should therefore capture a shift in a household's consumption habits. All additional robustness checks confirm the results of the previous analysis.

6 Conclusion

The paper has examined the impact of financial integration on household welfare. It therefore builds on an empirical literature of risk sharing and consumption smoothing that has struggled ever since to confirm substantial welfare gains from financial integration predicted by theoretical models. This paper adds to the literature by relaxing, at the same time, three restrictive assumptions that have featured prominently in the past: a first one on the way in which income uncertainty affects household welfare, a second one on the ability of households to smooth idiosyncratic income shocks, and a third one on the distribution of potential welfare gains across households. While the latter two assumptions were addressed by relying on international household data for the empirical analysis, the first assumption was relaxed by using a measure of financial well-being as dependent variable.

The analysis has delivered three key insights. First, using a household's personal assessment of its ability to meet ends and thus a welfare-based measure that is closely related to the theoretical concept of an indirect utility function, allows documenting the expected negative impact of labor income uncertainty on welfare. Second, financial integration can counterbalance this negative effect of labor income uncertainty for the average household in the sample. These findings are robust to the selection of various financial integration measures taken from the literature and to the use of two different empirical approaches. And third, there is moderate evidence of heterogeneity regarding the effect of financial integration on household-welfare. Although differential effects are statistically significant in most of the cases, the degree of heterogeneity turns out to be relatively low. It is further shown that in the early part of the sample, households strongly exposed to financial markets have gained slightly less than non-exposed households. In more recent years, however, the negative differential effect for households strongly exposed to financial markets has disappeared and even has turned positive in two cases. These cases are represented by mortgage holders and by households that receive income slightly above the median. Finally, the finding that the degree of heterogeneity in the effect of financial integration on welfare is rather low, suggests that financial integration yields most likely substantial indirect benefits. In the context of the household sector, this could especially relate to an attenuation of the precautionary savings motive through better access to credit as well as to a more efficient intermediation of private savings, improvements in banking regulation, and advancements in consumer protection.

Three major routes of future research can be taken from here. First, some countries have experienced relatively high levels of financial integration but have received lower marginal gains than other ones. Hence, assuming a different functional form regarding the relationship between financial integration and the welfare measure would be an interesting extension. This would potentially allow including countries such as Ireland in the empirical analysis, which then could provide an answer to the question if there can be too much financial integration. Second, the current approach focuses primarily on income uncertainty of the individual household. It would be interesting to examine the relationship between personal income and income of other households in different levels of geographical aggregation and thus test more explicitly for various forms of risk-sharing. Third, eventually, it would be important to recognize that also the distribution of labor income may be affected by financial integration and hence to endogeneize labor income. Potential tests could differentiate between an indirect labor income channel that incorporates the exposure of a household's employer or industry sector to financial integration and a financial income channel that captures the direct exposure of households to financial integration via personal financial income.

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8 Appendix

Table 6: Summary Statistics for the "Ability to Meet Ends"

Description	ECHP			EU-SILC		
Aggregated:	Mean	Std.	Obs.	Mean	Std.	Obs.
Overall	3.52	1.19	121,659	3.46	1.28	94,515
Between		0.97			1.14	
Within		0.68			0.57	
By Country:	Mean	Std.	Obs.	Mean	Std.	Obs.
Austria	3.55	1.17	6,840	3.94	1.08	6,294
Belgium	3.99	1.07	6,685	4.03	1.16	5,274
Bulgaria				2.18	0.94	1,257
Cyprus				2.71	1.19	1,671
Czech Rep.				3.15	1.08	9,396
Denmark	4.07	1.15	6,818	4.75	1.08	3,729
Estonia				3.56	0.82	5,394
Finland	3.77	1.14	6,760	4.13	1.17	5,265
France	3.57	1.00	14,987	3.08	1.00	1,389
Greece	2.66	1.16	11,578	2.55	1.13	2,250
Hungary				2.75	0.98	5,607
Iceland				4.01	1.24	2,169
Italy	3.35	1.06	16,590			
Latvia				2.72	1.04	1,797
Lithuania				3.06	0.86	1,911
Netherlands	4.41	1.06	10,906	4.42	1.23	4,701
Poland				2.74	1.16	10,998
Portugal	2.84	0.99	13,678	2.72	1.13	1,314
Slovak Rep.				2.97	0.98	4,062
Slovenia				3.28	1.08	2,841
Spain	3.24	1.17	11,879	3.30	1.20	7,755
Sweden				4.24	1.22	5,238
UK	3.92	0.95	14,938	3.97	1.15	4,203

Table 7: Summary Statistics ECHP

Variable	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*
Key Variables (all in Logs)					
Total Income	119531	9.4	0.6	7.1	10.9
Mean of Labor Income	119531	9.3	0.6	6.9	10.7
Std. of Labor Income	119531	7.7	0.8	3.5	10.9
Control Variables					
Age	119531	43.5	10.7	17	83
Age Squared	119531	2003.8	973.1	289	6889
Dummy for Being Married	119531	0.7	0.4	0	1
Dummy for Bad Health	119531	0.0	0.2	0	1
Dummy for Being Male	119531	0.7	0.4	0	1
Dummy for Higher Education	119531	0.6	0.5	0	1
Dummy for Self-Employment	119531	0.2	0.4	0	1
Stock Market Capitalization	119531	0.7	0.5	0.1	2.7
Trade Openness	119531	66.0	25.1	41.6	153.6
Inflation Rate	119531	2.6	1.8	0.5	10.9
Unemployment Rate	119531	9.6	4.4	3.1	24.1
Measures of Financial Integration					
Gross Financial Integration	119531	253.3	143.3	89.9	601.3
Portfolio Equity Assets	119531	15.0	15.4	0.5	65.7
Portfolio Debt Assets	112915	22.5	16.4	2.0	74.2
Portfolio Debt Liabilities	112915	30.5	12.1	10.6	73.8
Bank and Other Assets	112915	52.6	33.5	20.6	139.1
Bank and Other Liabilities	112915	61.4	41.5	24.7	166.5
Investment Fund Shares	119531	1.5	2.4	-0.1	13.8
Interest Rate Spread	104398	16.5	9.8	0.7	42.9
Measures of Household Exposure					
Dummy for Owning a House	119505	0.8	0.4	0	1
Dummy for Owning a Car	119114	0.9	0.3	0	1
Dummy for Capital Income	119531	0.5	0.5	0	1
Dummy for Mortgage Debt	91171	0.5	0.5	0	1
Dummy for 50th+ Percentile of Tot. Inc.	119531	0.5	0.5	0	1
Dummy for 90th+ Percentile of Tot. Inc.	119531	0.2	0.4	0	1
Dummy for Savings	119145	0.4	0.5	0	1
Dummy for Consumer Debt	116299	0.3	0.5	0	1
Dummy for Working in the Financial Sector	113955	0.0	0.2	0	1
Dummy for Working in the Real Estate Sector	113955	0.1	0.2	0	1
Dummy for Working in a Large Firm	86065	0.4	0.5	0	1
Dummy for Working in a Supervisory Position	88216	0.3	0.5	0	1
Dummy for Owning a Second House	119067	0.1	0.3	0	1

Table 8: Summary Statistics EU-SILC

Variable	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*
Key Variables (all in Logs)					
Total Income	93486	9.4	0.7	7.4	11.1
Mean of Labor Income	93486	9.4	0.9	6.2	11.3
Std. of Labor Income	93486	7.7	1.2	2.4	11.1
Control Variables					
Age	93486	43.2	11.2	17	74
Age Squared	93486	1990.3	975.5	289	5476
Dummy for Being Married	93486	0.6	0.5	0	1
Dummy for Bad Health	93486	0.0	0.2	0	1
Dummy for Being Male	93486	0.6	0.5	0	1
Dummy for Higher Education	93486	0.8	0.4	0	1
Stock Market Capitalization	93486	0.7	0.4	0.1	2.0
Trade Openness	93486	109.7	36.3	54.8	170.5
Inflation Rate	93486	3.2	2.3	0.1	15.3
Unemployment Rate	93486	7.3	3.0	1.0	17.7
Measures of Financial Integration					
Gross Financial Integration	79257	402.1	263.2	102.0	1160.3
Portfolio Equity Assets	79257	25.3	25.3	0.4	85.2
Portfolio Debt Assets	79257	37.6	33.9	1.0	119.4
Portfolio Debt Liabilities	79257	53.6	46.3	4.8	297.1
Bank and Other Assets	79257	64.2	65.1	10.9	268.0
Bank and Other Liabilities	79257	80.1	67.7	18.8	294.4
Investment Fund Shares	85941	0.6	0.9	-0.1	4.3
Interest Rate Spread	84696	11.9	9.1	0.0	43.3
Measures of Household Exposure					
Dummy for Owning a House	93469	0.8	0.4	0	1
Dummy for Owning a Car	93423	0.8	0.4	0	1
Dummy for Capital Income	88967	0.4	0.5	0	1
Dummy for Mortgage Debt	77338	0.3	0.5	0	1
Dummy for 50th+ Percentile of Tot. Inc.	93486	0.5	0.5	0	1
Dummy for 90th+ Percentile of Tot. Inc.	93486	0.2	0.4	0	1
Dummy for Owning a Computer	93424	0.7	0.4	0	1
Dummy for Ability to Face Unex. Exp.	93340	0.7	0.5	0	1

Table 9: Baseline Specification - Full Table: ECHP

Dependent Variable: "Ability to Meet Ends"	(1)	(2)	(3)	(4)	(5)	(6)
Total Income	0.437***	0.449***	0.441***	0.432***	0.266***	0.194***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Mean of Labor Income	0.498***	0.471***	0.438***	0.425***	0.636***	
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	
Std. of Labor Income	-0.036***	-0.036***	-0.037***	-0.034***	-0.028***	
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	
Dummy for Being Male	0.019	0.027**	0.020	0.021	0.013	
	(0.16)	*(0.04)*	*(0.13)*	*(0.11)*	*(0.32)*	
Dummy for Higher Education	0.112***	0.099***	0.125***	0.147***	0.067***	
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	
Age of Household Head	-0.039***	-0.034***	-0.036***	-0.033***	-0.030***	-0.033***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Age Squared	0.001***	0.000***	0.000***	0.000***	0.000***	0.000**
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.02)*
Dummy for Being Married	0.092***	0.091***	0.095***	0.083***	0.065***	0.059***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Dummy for Bad Health	-0.269***	-0.277***	-0.276***	-0.283***	-0.151***	-0.110***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Dummy for Self-Employment	0.186***	0.203***	0.248***	0.251***	0.107***	0.044**
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.02)*
Stockmarket Capitalization	0.257***	0.363***	0.118***	0.111***	0.257***	0.099***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Trade Openness	0.006***	0.006***	0.006***	0.006***	0.006***	0.004***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Inflation Rate	-0.037***	-0.052***	-0.006*	-0.011***	-0.021***	-0.016***
	(0.00)	*(0.00)*	*(0.05)*	*(0.00)*	*(0.00)*	*(0.00)*
Unemployment Rate	0.000	-0.003**	-0.027***	-0.027***	-0.013***	-0.031***
	(0.79)	*(0.03)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Time Fixed Effects	No	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	No	No	Yes	No	No	No
Regional Fixed Effects	No	No	No	Yes	No	No
Random Effects	No	No	No	No	Yes	No
Household Fixed Effects	No	No	No	No	No	Yes
Observations	119,531	119,531	119,531	108,695	119,531	121,659
HH IDs	17,625	17,625	17,625	16,077	17,625	17,929
Countries	11	11	11	10	11	11
R-squared	0.32	0.33	0.35	0.33	0.32	0.02

Table 10: Baseline Specification - Full Table: EU-SILC

Dependent Variable: "Ability to Meet Ends"	(1)	(2)	(3)	(4)	(5)	(6)
Total Income	0.422***	0.424***	0.503***	0.493***	0.228***	0.067***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Mean of Labor Income	0.341***	0.328***	0.320***	0.322***	0.462***	
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	
Std. of Labor Income	-0.011**	-0.014***	-0.032***	-0.029***	-0.019***	
	(0.04)	*(0.01)*	*(0.00)*	*(0.00)*	*(0.00)*	
Dummy for Being Male	0.042***	0.043***	0.067***	0.063***	0.042***	
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	
Dummy for Higher Education	0.299***	0.315***	0.203***	0.200***	0.278***	
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	
Age of Household Head	-0.067***	-0.064***	-0.053***	-0.049***	-0.069***	-0.052***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.01)*
Age Squared	0.001***	0.001***	0.001***	0.001***	0.001***	0.000
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.40)*
Dummy for Being Married	0.094***	0.097***	0.132***	0.128***	0.082***	0.042*
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.08)*
Dummy for Bad Health	-0.436***	-0.438***	-0.425***	-0.410***	-0.281***	-0.188***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Stockmarket Capitalization	0.390***	0.438***	0.340***	0.313***	0.462***	0.311***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Trade Openness	0.005***	0.005***	0.004***	0.004***	0.005***	-0.000
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.69)*
Inflation Rate	-0.044***	-0.030***	0.005*	0.005	-0.017***	0.005*
	(0.00)	*(0.00)*	*(0.08)*	*(0.12)*	*(0.00)*	*(0.06)*
Unemployment Rate	-0.021***	-0.024***	-0.020***	-0.022***	-0.028***	-0.028***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Time Fixed Effects	No	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	No	No	Yes	No	No	No
Regional Fixed Effects	No	No	No	Yes	No	No
Random Effects	No	No	No	No	Yes	No
Household Fixed Effects	No	No	No	No	No	Yes
Observations	93,486	93,486	93,486	81,825	93,486	94,515
HH IDs	31,162	31,162	31,162	27,275	31,162	31,505
Countries	22	22	22	19	22	22
R-squared	0.33	0.34	0.40	0.39	0.33	0.01

Table 11: Robustness Approach - Baseline Specification

Top Panel: ECHP

Dependent Variable: "Ability to Meet Ends"	(1a) Low Std.	(1b) High Std.	(2a) Low Std.	(2b) High Std.	(3a) Low Std.	(3b) High Std.
Total Income	1.015***	0.669***	0.947***	0.623***	0.281***	0.176***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Constant	3.529***	3.482***	3.540***	3.465***	3.590***	3.447***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Time Fixed Effects	No	No	Yes	Yes	Yes	Yes
Country Fixed Effects	No	No	Yes	Yes	No	No
Regional Fixed Effects	No	No	No	No	No	No
Random Effects	No	No	No	No	No	No
Household Fixed Effects	No	No	No	No	Yes	Yes
Observations	60,011	59,520	60,011	59,520	60,011	59,520
HH IDs	8,845	8,780	8,845	8,780	8,845	8,780
Countries	11	11	11	11	11	11
R-squared	0.32	0.28	0.35	0.31	0.01	0.02

Bottom Panel: EU-SILC

Dependent Variable: "Ability to Meet Ends"	(1a) Low Std.	(1b) High Std.	(2a) Low Std.	(2b) High Std.	(3a) Low Std.	(3b) High Std.
Total Income	0.921***	0.638***	1.020***	0.654***	0.043	0.069***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.13)*	*(0.00)*
Constant	3.581***	3.503***	3.584***	3.517***	3.574***	3.391***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Time Fixed Effects	No	No	Yes	Yes	Yes	Yes
Country Fixed Effects	No	No	Yes	Yes	No	No
Regional Fixed Effects	No	No	No	No	No	No
Random Effects	No	No	No	No	No	No
Household Fixed Effects	No	No	No	No	Yes	Yes
Observations	45,948	47,538	45,948	47,538	45,948	47,538
HH IDs	15,316	15,846	15,316	15,846	15,316	15,846
Countries	22	22	22	22	22	22
R-squared	0.34	0.30	0.41	0.37	0.01	0.02

Table 12: Robustness Approach - Financial Integration: EU-SILC

Top Panel: Low Labor Income Uncertainty

Dependent Variable: "Ability to Meet Ends"	Gross Financial Integration	Portfolio Equity Assets	Portfolio Debt Assets	Portfolio Debt Liabilities	Bank and Other Assets	Bank and Other Liabilities	Interest Rate Spread	Inv. Fund Shares of HH	Foreign Holdings of HH
Total Income	0.016	0.007	0.012	0.010	0.016	0.014	0.027	0.037	0.038
	(0.64)	*(0.83)*	*(0.73)*	*(0.76)*	*(0.62)*	*(0.68)*	*(0.38)*	*(0.24)*	*(0.33)*
Financial Integration	0.000**	0.013***	0.006***	-0.001	0.002***	0.002***	0.044***	0.007**	0.007
(see label)	*(0.03)*	*(0.00)*	*(0.00)*	*(0.53)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.03)*	*(0.45)*
Observations	38,676	38,676	38,676	38,676	38,676	38,676	41,451	41,697	26,967
HH IDs	15,479	15,479	15,479	15,479	15,479	15,479	13,817	13,899	8,989
Countries	20	20	20	20	20	20	19	17	11
R-squared	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

Bottom Panel: High Labor Income Uncertainty

Dependent Variable: "Ability to Meet Ends"	Gross Financial Integration	Portfolio Equity Assets	Portfolio Debt Assets	Portfolio Debt Liabilities	Bank and Other Assets	Bank and Other Liabilities	Interest Rate Spread	Inv. Fund Shares of HH	Foreign Holdings of HH
Total Income	0.060***	0.058***	0.058***	0.057***	0.061***	0.061***	0.065***	0.065***	0.071***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Financial Integration	0.001**	0.010***	0.007***	-0.003***	0.003***	0.003***	0.048***	0.018***	0.047***
(see label)	*(0.02)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Observations	40,052	40,052	40,052	40,052	40,052	40,052	42,822	42,999	27,693
HH IDs	15,942	15,942	15,942	15,942	15,942	15,942	14,274	14,333	9,231
Countries	20	20	20	20	20	20	19	17	11
R-squared	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02

Table 13: Robustness Approach - Financial Integration: ECHP

Top Panel: Low Labor Income Uncertainty

Dependent Variable: "Ability to Meet Ends"	Gross Financial Integration	Portfolio Equity Assets	Portfolio Debt Assets	Portfolio Debt Liabilities	Bank and Other Assets	Bank and Other Liabilities	Interest Rate Spread	Inv. Fund Shares of HH
Total Income	0.282***	0.277***	0.261***	0.260***	0.261***	0.261***	0.282***	0.247***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Financial Integration	0.000	-0.002***	0.000	-0.000	0.001*	-0.000	0.026***	-0.011***
(see label)	*(0.36)*	*(0.01)*	*(0.69)*	*(0.56)*	*(0.08)*	*(0.57)*	*(0.00)*	*(0.00)*
Observations	60,011	60,011	54,173	54,173	54,173	54,173	60,011	52,721
HH IDs	8,845	8,845	8,011	8,011	8,011	8,011	8,845	8,898
Countries	11	11	10	10	10	10	11	11
R-squared	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02

Bottom Panel: High Labor Income Uncertainty

Dependent Variable: "Ability to Meet Ends"	Gross Financial Integration	Portfolio Equity Assets	Portfolio Debt Assets	Portfolio Debt Liabilities	Bank and Other Assets	Bank and Other Liabilities	Interest Rate Spread	Inv. Fund Shares of HH
Total Income	0.176***	0.177***	0.180***	0.180***	0.180***	0.181***	0.177***	0.162***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Financial Integration	0.000**	-0.001	0.002*	-0.000	0.001	-0.001	0.042***	-0.011***
(see label)	*(0.01)*	*(0.18)*	*(0.07)*	*(0.96)*	*(0.16)*	*(0.18)*	*(0.00)*	*(0.00)*
Observations	59,520	59,520	53,780	53,780	53,780	53,780	59,520	52,469
HH IDs	8,780	8,780	7,960	7,960	7,960	7,960	8,780	8,859
Countries	11	11	10	10	10	10	11	11
R-squared	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.02

Table 14: Robustness Approach - Financial Integration: ECHP, Northern Countries

Top Panel: Low Labor Income Uncertainty

Dependent Variable: "Ability to Meet Ends"	Gross Financial Integration	Portfolio Equity Assets	Portfolio Debt Assets	Portfolio Debt Liabilities	Bank and Other Assets	Bank and Other Liabilities	Interest Rate Spread	Inv. Fund Shares of HH
Total Income	0.355***	0.352***	0.358***	0.357***	0.356***	0.356***	0.357***	0.339***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Financial Integration	-0.000	-0.002*	0.002	0.002*	0.000	0.000	0.097***	-0.002
(see label)	*(0.68)*	*(0.06)*	*(0.14)*	*(0.06)*	*(0.52)*	*(0.68)*	*(0.00)*	*(0.28)*
Observations	33,355	33,355	33,355	33,355	33,355	33,355	33,355	29,813
HH IDs	5,037	5,037	5,037	5,037	5,037	5,037	5,037	5,080
Countries	7	7	7	7	7	7	7	7
R-squared	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01

Bottom Panel: High Labor Income Uncertainty

Dependent Variable: "Ability to Meet Ends"	Gross Financial Integration	Portfolio Equity Assets	Portfolio Debt Assets	Portfolio Debt Liabilities	Bank and Other Assets	Bank and Other Liabilities	Interest Rate Spread	Inv. Fund Shares of HH
Total Income	0.218***	0.219***	0.218***	0.216***	0.218***	0.218***	0.217***	0.199***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Financial Integration	0.000*	0.000	0.004***	0.004***	0.002**	0.001	0.096***	-0.006***
(see label)	*(0.07)*	*(0.91)*	*(0.00)*	*(0.00)*	*(0.04)*	*(0.46)*	*(0.00)*	*(0.01)*
Observations	33,032	33,032	33,032	33,032	33,032	33,032	33,032	29,699
HH IDs	4,996	4,996	4,996	4,996	4,996	4,996	4,996	5,064
Countries	7	7	7	7	7	7	7	7
R-squared	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02

Table 15: Robustness Approach - Financial Integration: ECHP, Mediterranean Countries

Top Panel: Low Labor Income Uncertainty

Dependent Variable: "Ability to Meet Ends"	Gross Financial Integration	Portfolio Equity Assets	Portfolio Debt Assets	Portfolio Debt Liabilities	Bank and Other Assets	Bank and Other Liabilities	Interest Rate Spread	Inv. Fund Shares of HH
Total Income	0.229***	0.217***	0.183***	0.155***	0.169***	0.169***	0.230***	0.177***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Financial Integration	-0.000	-0.012***	-0.036***	-0.021***	-0.002	-0.001	0.023**	-0.018***
(see label)	*(0.95)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.35)*	*(0.39)*	*(0.02)*	*(0.00)*
Observations	26,656	26,656	20,818	20,818	20,818	20,818	26,656	22,908
HH IDs	3,808	3,808	2,974	2,974	2,974	2,974	3,808	3,818
Countries	4	4	3	3	3	3	4	4
R-squared	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.03

Bottom Panel: High Labor Income Uncertainty

Dependent Variable: "Ability to Meet Ends"	Gross Financial Integration	Portfolio Equity Assets	Portfolio Debt Assets	Portfolio Debt Liabilities	Bank and Other Assets	Bank and Other Liabilities	Interest Rate Spread	Inv. Fund Shares of HH
Total Income	0.152***	0.151***	0.155***	0.153***	0.154***	0.154***	0.151***	0.137***
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Financial Integration	-0.001*	-0.008***	-0.035***	-0.012***	-0.009***	-0.003***	0.031***	-0.017***
(see label)	*(0.09)*	*(0.00)*	*(0.00)*	*(0.01)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
Observations	26,488	26,488	20,748	20,748	20,748	20,748	26,488	22,770
HH IDs	3,784	3,784	2,964	2,964	2,964	2,964	3,784	3,795
Countries	4	4	3	3	3	3	4	4
R-squared	0.03	0.03	0.04	0.04	0.04	0.04	0.03	0.04