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Household debt in midlife and old age: A multinational study

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Abstract

This article examines the prevalence of household debt in middle and old age, in the context of rising consumption, the weakening welfare safety net, and the 'democratization' of credit. We aim to address theoretical propositions concerning household correlates of mortgage and financial debt, as well as the relationship between the two types of debt. We utilize data gathered on populations, aged 50 years and older, in 15 countries that participated in the Survey of Health, Ageing, and Retirement in Europe (SHARE) project. We find considerable levels of mortgage and financial debt in advanced stages of life, as well as significant differences within and between countries. Controlling for country variation as well as individual and household attributes, we find a positive relationship between the size of mortgage debt and financial debt across most countries. We test alternative explanations for this relationship and discuss the implications of our findings in the broader context of the risks faced by older cohorts in consumer societies with shrinking welfare expenditure.

Keywords

Cross-national, household debt, inequality, mortgage debt, SHARE

Introduction

A number of researchers argue that the current generation of older persons is much more likely than earlier generations to be engaged in the consumption of goods and services and to use various forms of credit to maintain the standard of living they are accustomed to (Higgs et al., 2009; Lusardi and Mitchel, 2013). Consequently, today's older population is more likely to be in debt than in the past (Thorne et al., 2009). These trends are at odds with traditional life-course models that typically view midlife as the phase of peak savings and resource accumulation and older age as a period of declining expenditure and reliance on savings (e.g. Modigliani, 1966).

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This divergence from the life-course progression, modeled on the behavior of previous generations, accords with more general trends of rising household debt in economically advanced societies over the last two decades (Backe et al., 2007; Crook and Hochguertel, 2007; Iacoviello, 2008). The growing uptake of unsecured credit and housing loans has become prevalent across a wide range of socioeconomic categories and age groups (Barba and Pivetti, 2009; Penaloza and Barnhart, 2011; Thorne et al., 2008). This reflects substantial changes in consumer culture and the regulation of credit, coupled with the changing needs of a population experiencing increased longevity.

In view of these developments, and the fact that populations approaching retirement age or already retired are growing rapidly in many countries, we argue that scholars of social inequality should pay closer attention to household debt, as this phenomenon reflects important societal changes as well as potential risks faced by individuals and households (e.g. Hodson and Dwyer, 2014; Thorne et al., 2009). In line with this argument, we examine the prevalence of consumption-related and housing-related debt in midlife and old age and investigate the relationship between the size of mortgage debt and the use of short-term credit. The central question we address in our research is whether, and to what extent, mortgage debt impacts household expenditures and leads, in turn, to higher short-term financial debt. In order to answer the research question, we conduct empirical analysis that utilizes data collected in 15 countries as part of the Survey of Health, Ageing, and Retirement in Europe (SHARE) project. While we explore variations in debt across countries, the primary aim of the study is to outline the micro-patterns and contours of indebtedness in the population of persons in midlife and old age in the context of post-industrial societies.

Structural and cultural sources of rising household debt

A steady rise in household debt is documented in most economically advanced societies. This rise is closely linked to changing patterns of consumption and the institutional reforms that made financial credit accessible to growing segments of the population (Krueger and Perri, 2006). Household debt, as is the case with any other debt, 'is an obligation or liability … arising from borrowing money or taking goods or services "on credit," i.e. against an obligation to pay later' (Prinsloo, 2002: 63). Unlike other forms of social obligations, (monetary) debts can be precisely quantified. As such, they become impersonal and transferable commercial exchanges (Graeber, 2011). Indeed, in contemporary advanced economies, most household debts are owed to institutions rather than to individuals (see, for example, Georgarakos et al., 2010).

The use of credit has its advantages, such as when investing in education, purchasing a home, or even meeting unexpected expenses (Hodson and Dwyer, 2014; Mann and Mann, 2010). At the same time however, going into debt creates the risk of not being able to repay the obligation. This derives from the fact that debts are socially embedded and are ultimately based on trust and strong norms that debts must be repaid. These norms are typically backed by institutionalized threats of taking action to recover the debt (Porter, 2012; Zhu, 2011). Over-indebtedness and difficulty in meeting payments, then, may impinge on one's sense of moral integrity (Poster, 2013; Zelizer, 1994), wellbeing (Zurlo et al., 2014), and in extreme cases may even lead to economic ruin (Thorne et al., 2009).

There is widespread agreement among social scientists that the rise in household debt in recent decades is associated with the growing pervasiveness of the consumer society, on one hand (Bauman, 2009; Kus, 2013b; Schor, 1998, 2007), and stagnant income levels in the middle and lower social classes, on the other hand (Atkinson, 2003; Iacoviello, 2008). Seduced by the promise of 'taking the waiting out of the wanting',[1] households in the middle and lower rungs of the stratification system are driven to spend more than their means permit, as they seek to emulate the consumption patterns of the more well-to-do (Lyons, 2003; O'Loughlin, 2006). These patterns are

exacerbated by the growing income inequality and income stagnation experienced in the middle and lower income ranks (Krueger and Perri, 2006; Smeeding, 2002). In this regard, it is noteworthy that household debt is more equally distributed than household wealth and income (Wolff, 2007; Zhu, 2011).

These patterns of growing consumption are not merely a matter of unrestrained desires. Rather, they are deeply embedded in the social and economic structures of capitalist society. The capitalist mode of production constantly seeks consumers for its ever-growing capacity to produce and is engaged in the aggressive marketing of credit to bridge the gap between stagnant income levels and desired scales of consumption (Barba and Pivetti, 2009; Bauman, 2009). Indeed, in many countries, growing access to credit, coupled with the influx of cheap imported goods, weakens the effect of rising income inequality on household consumption (Kus, 2013a).

Rising debt is not only a matter of consumer preferences but also depends on the availability of credit. Hence, a third structural change associated with household debt is the institutional reforms in financial markets that are 'democratizing' credit by making financial loans more accessible to growing numbers of households (Kus, 2013b). This view is shared by many researchers, who note that the deregulation of credit institutions has incorporated the lower middle and lower classes into the 'consumer society' and permits them – at least in the short term – to maintain a standard of living that they can view as 'decent living' (O'Loughlin, 2006; Sullivan et al., 2000; Thorne et al., 2009). Yet, access to credit often requires a minimum level of income and assets. Hence, the very poor are still excluded from institutional loans and credit. Growing debt resulting from the 'democratization' of credit reflects a general shift in social policies. In recent years, the commitment of governments to redistribution took a back seat to its commitment to fiscal responsibility. As households are increasingly obliged to meet the growing costs of healthcare (Kim et al., 2012; Lee et al., 2007; Thorne et al., 2009) and other welfare services, household debt is substituting for public debt (Glick and Lansing, 2010). This view is supported by Kus (2013a), who showed that access to credit across Organisation for Economic Cooperation and Development (OECD) countries is negatively and significantly associated with social transfers as a percentage of a country's gross domestic product (GDP). The quest to maintain an acceptable standard of living, then, is an important factor driving the growing household indebtedness.

Homeownership and household indebtedness

A major factor contributing to the rise of household debt is the rising level of homeownership in many countries, coupled with the growing prevalence of mortgage debt (Andrews and Sanchez, 2011). For most families, including households comprising individuals in middle age and beyond, mortgage debt constitutes the largest share of total household debt (OECD, 2006: 137). While homeownership confers many advantages, mortgage debt payments may pose a substantial burden, especially when unexpected events reduce household income. Recent studies found that rates of homeownership increase with age and continue to grow even among people in their 50s (e.g. Angelini et al., 2014). In several European countries, the proportion of households between the ages of 55 and 64 years with mortgage loans exceeded 25 percent during the first decade of the 21st century (European Central Bank, 2009). Among 65-year-olds in the United States, the proportion of homeowners with debt increased from 22 to 30 percent during the first decade of this century (Consumer Financial Protection Bureau, 2014). We suggest that meeting mortgage payments with declining income may pose considerable difficulties not only for young people but also for people in later stages of life.

The first question we address, therefore, is descriptive in nature and relates to the prevalence, magnitude, and correlates of mortgage debt in midlife and old age, and whether these differ across

countries. The second, analytical, question we pose concerns the nature of the relationship between mortgage debt and financial debt. The answer to the latter question is not straightforward. Smith and Searle (2008), for instance, describe the phenomenon of 'equity leakage', whereby housing wealth flows to 'other things' and may be used to guarantee the 'preferred life style' or access to 'welfare needs' of the household. With various instruments of home equity withdrawal in place (e.g. refinancing, reverse mortgage), household mortgage loans may substitute for other forms of credit. To the extent that this phenomenon is widespread, we expect to find no relationship or even a negative relationship between household mortgage debt and financial debt.

Yet, some studies that investigated the rise in household debt note that holding one kind of debt is associated with a higher probability of holding another kind of debt (Bridges et al., 2008; Lee et al., 2007). One plausible explanation for the positive relationship between housing debt and financial debt is rooted in what might be termed the 'property illusion' phenomenon. This 'property illusion' is created when ownership of a home leads owners to feel wealthier and is especially likely if the value of the property increases (Iacoviello, 2004). This in turn tends to induce households to increase consumption and credit card borrowing. In this respect, homeownership is likely to foster less restrained spending behavior and may lead to the accumulation of financial debt alongside long-term housing debt.

Turning from household motives to an institutional perspective, homeownership serves as both a signal and as a screening device reflecting credit worthiness. It '… permits home owners access to forms of credit that would not be available if they rented their home rather than owning it' (Bridges et al., 2008: 136). To the extent that this is true, it is the homeownership *per se* that provides access to loans and credit. Put differently, the positive relationship between mortgage debt and financial debt derives from the fact that households who do not own their homes face greater difficulty in securing credit compared to homeowners.

The previous explanations view housing as a real or symbolic asset and the positive correlation between mortgage and financial debts as reflecting the benefits that result from owning one's home. An alternative explanation that we pose and intend to examine is that with the stagnation of household income, the burden of mortgage payments fosters the use of credit in order to meet household expenses and to maintain a desired standard of living. According to this proposition, mortgage debt is a burden, especially when payments constitute a large share of household income. This may frequently be the experience of older age householders with fixed incomes, who are still paying mortgage debts. In this case, the positive correlation between financial debt and mortgage debt should be viewed as an expression of hardship rather than as a simple indication of access to credit.

In our analysis, we propose to disentangle the two possible explanations for the positive relationship between components of debt, by decoupling homeownership and mortgage debt. We distinguish homeowners who carry mortgage debt from those who do not have mortgage debts. Following the logic embodied in the alternative explanation, we hypothesize that households with mortgage payments are more likely than other households (i.e. homeowners with no debt and non-owners) to carry financial debt. By contrast, we do not expect homeowners without mortgage debt (despite having better access to credit) to have more financial debt than non-owner households.

Cross-national variation in composition and size of debt

To the best of our knowledge, only a few studies have examined differences in household debt from a cross-national comparative perspective. Specifically, Betti et al. (2007) analyzed household debt in 13 European Union (EU) member states; Kus (2013b) examined household debt across 20 OECD countries; Georgarakos et al. (2010) focused on household outstanding debt and mortgage

debt in 12 European countries. The body of comparative research reveals considerable differences in debt rates across economically developed countries. For example, in 2002 household debt as a percent of disposable income was as low as 35 percent in Italy and as high as 128 percent in the United Kingdom (OECD, 2006). Likewise, Georgarakos et al. (2010) reported substantial variation across European countries both in mortgage debt burden and household attitudes toward mortgage loans. Mortgage outstanding rates were highest in Denmark and the Netherlands and lowest in Greece and Italy; in between were countries such as France, Germany, Belgium, and Austria.

Researchers within the comparative research tradition contend that national differences in institutional arrangements for credit provision, and differences in normative values toward consumption, spending, and saving, account for national differences in household debt and debt behavior (e.g. Betti et al., 2007; Crook and Hochguertel, 2007; Georgarakos et al., 2010; Trumbull, 2014). In the framework of a macro-societal perspective, Kus (2013b) argues that credit made available to households serves as an alternative redistributive mechanism – a mechanism that enables lower and middle income households to consume goods and obtain a desirable standard of living in an era of declining public welfare support.

The data utilized by Kus (2013b) show that household loans (as a percentage of GDP) increased in all OECD countries between 1995 and 2004. Household indebtedness (either as percent of GDP or as a percentage of consumption expenditures) was highest in Denmark, Switzerland, the Netherlands, and Australia and rather low in Italy, France, Belgium, and Finland. Similarly, Betti et al. (2007) found that over-indebtedness was common in most countries, ranging between 43 percent in Denmark to 8 percent in Italy and Portugal and 9 percent in Greece. Apparently, differences between countries with regard to access to loans and credit largely shape the distribution of over-indebtedness.

National contexts are also important in framing the way in which individuals perceive the risks associated with debt. Studies reveal that the level of financial distress is lowest in countries characterized by high proportions of households in debt and highest in countries with low proportions of households in debt (e.g. Georgarakos et al., 2010). The findings imply that high prevalence of household debt is associated with a sense of 'normalization', and hence reduces the financial distress associated with a fear of the negative consequences associated with debt. In addition, the findings suggest that relaxed and flexible regulations regarding access to loans and mortgages tend to increase indebtedness. Because mortgage represents the largest component of household debt, we expect financial debt to be higher in countries where mortgage debt is prevalent. The reader is reminded, however, that the main purpose of our study is to examine the relationship between financial and mortgage debt at the household level and the extent to which common patterns present themselves across countries.

Methodology

Data

In order to address the issues described at the outset, we used data for 14 European countries and Israel, obtained from Wave 5 of the SHARE conducted in 2013. The 15 countries included in our study are Austria, Belgium, the Czech Republic, Denmark, Estonia, France, Germany, Greece, Israel, Italy, the Netherlands, Poland, Slovenia, Spain, and Sweden. The target population in the fifth wave included the non-institutionalized population born in 1962 or earlier as well as persons who had spouses born during that period. Sampling in all countries was based on probability selection methods with known probabilities of selection for all population elements. A central goal of the SHARE project is to facilitate cross-national research by seeking uniformity of concepts

enhancing the comparability of the measures used in the various countries. For most items in the survey, the prevalence of missing data was quite low (lower than 5%). However, the rate of missing data for monetary variables was non-negligible, ranging from 9 to 36 percent. Multivariate imputation procedures were therefore employed for replacing missing data in the most commonly used monetary variables, such as income, wealth, and debt. Additionally, the top 2 percent of completed cases from country-specific distributions of monetary variables were trimmed to avoid disproportionate influence of extreme values on statistics. Overall, an important benefit of using SHARE is the fact that data for all countries are harmonized, and similar procedures are utilized across all country data sets.[2]

The unit of analysis in our study is the household because debt – and especially mortgage debt – is best viewed as a characteristic of the household rather than of the individual. The household includes the sampled person and all those residing in the same dwelling unit and who usually share consumption. Households may consist of one or more persons. The extensive face-to-face interview schedule covered a broad range of issues including family, health, social relations, and household economic circumstances. The financial information for the household was typically reported by one member of the household designated as the 'financial respondent'. Our analysis is based on responses from 40,590 households for which complete information was available.

Variables

In order to investigate the correlates of household debt, we distinguished between *housing (mortgage) debt*, typically the largest component of household liabilities, and *financial debt*. The former refers to the amount still owed on mortgage loans if one owns one or more housing units.[3] The latter includes all other institutional debts. Respondents were asked about various types of debts they had at the time of the survey (e.g. credit cards, bank loans). These were then combined under the heading of financial debts commonly incurred in the process of purchasing household goods and various services. The distributions of housing and financial debt were highly (positively) skewed, with a rather small number of households reporting large sums in debt. Therefore, for the multivariate analysis, we applied a logarithmic transformation to the amounts of both financial and housing debt in order to reduce the skewness. The value of 0 was given in each of the transformed distributions when the household had no debt.

Our explanatory model included several sets of household characteristics. As household debt is likely to be determined in part by the economic wellbeing of the household, we incorporated in the analysis several economic indicators. *Household income* measures annual income from all sources. It was measured in Euros and was adjusted for country differences in purchasing power (PPP).[4] The source of income of the economically active individuals differs from that of retirees. In order to capture this difference, we introduced employment status as a control variable. For each household, we constructed an indicator of *Employment status*; this is a binary variable, which received a value of 1 if at least one household member was employed and a value of 0 otherwise. We expected to find that households whose members are active in the labor market would have large debts because they were more likely to have access to credit and possibly greater certainty in their ability to repay debts.

We also expected to find that the type of labor market attachment – whether salaried or self-employed – would affect financial behavior. Other things equal, self-employment should have a positive effect on debt. This is so because the self-employed typically have more contact with financial institutions and need for greater financial acumen savvy. *Self-employment* is a binary variable, which received a value of 1 if at least one member of the household was self-employed and a value of 0 otherwise. Intergenerational transfers in the form of gifts or inheritances may be a

substitute for incurring debt. To capture this possibility, we included an indicator of *gifts or inheritances*, which received a value of 1 if at least one respondent in the household had ever received €5000 or more as a gift or inheritance and a value of 0 otherwise.[5]

To capture differences in social status, we included years of schooling as a measure of *educational attainment*. Education is expected to be positively related to household debt, especially housing debt. The better educated are often more financially literate and are more likely to be viewed as creditworthy. They are also likely to have expectations for a higher standard of living that require the use of credit. We also included in the analyses a number of demographic attributes likely to be correlated with household debt as well as with the explanatory variables described above. *Age* is defined as the age of oldest person in the household. *Household structure* is captured by a set of dichotomous variables depicting gender, marital status, and size of household. In the analysis, we contrasted *single female households, single male households*, and *other households* with the reference category of *couple household. Other households* are those with three or more persons, as well as two-person households if the members of the household were not spouses.

As noted above, growing needs that cannot be met by household income may require the use of credit and lead to high levels of debt. In our study, we used two indicators of household needs: *Health status*, of the least healthy person in the household measured as the response to a standard 5 category item on subjective health (1 = excellent health, 5 = poor health). Financial needs may also arise from parental obligations. Therefore, we included a measure of *Number of children*, irrespective of whether or not they currently resided in the household. In general, having a large number of offspring was expected to be associated with a heavier financial burden on the household.

Method of analysis

The analysis consists of two parts. The descriptive part details the prevalence of household debt across countries and provides a statistical portrait of household attributes. In producing these statistics, we use calibrated cross-sectional weights at the household level in order to approximate the distribution in the populations represented by the sample.

The analytical part includes multivariate analyses separately predicting housing debt and financial data. Specifically, we employ multivariate statistical methods in order to test the hypotheses outlined earlier on the relationship between the two types of debt. The dependent variables examined in this study – mortgage debt and financial debt – are both censored; that is, only a subsample of cases have a positive value, whereas many are clustered at the value of zero, as they have no debt. With such a distribution, the ordinary least squares (OLS) estimator would be inconsistent and will result in biased estimates. We therefore use the Tobit estimation model which corrects for this distribution and provides consistent estimates (see for example, Long, 1997). The multivariate analyses are based on unweighted data as the variables typically used for weighting, such as gender and age, are included in the estimation models.

Descriptive statistics

We start with a brief description of the prevalence of household debt across the countries. Figure 1 shows the proportion of all households in each country that reported having mortgage debt and financial debt at the time of the survey. Four countries stand out with a high proportion of households that reported mortgage debt; these are Sweden, Switzerland, the Netherlands, and Denmark, where well over 40 percent of households with persons aged 50 years and older reported such debt. In most other countries, the prevalence of mortgage debt was much lower (below 20%) and was

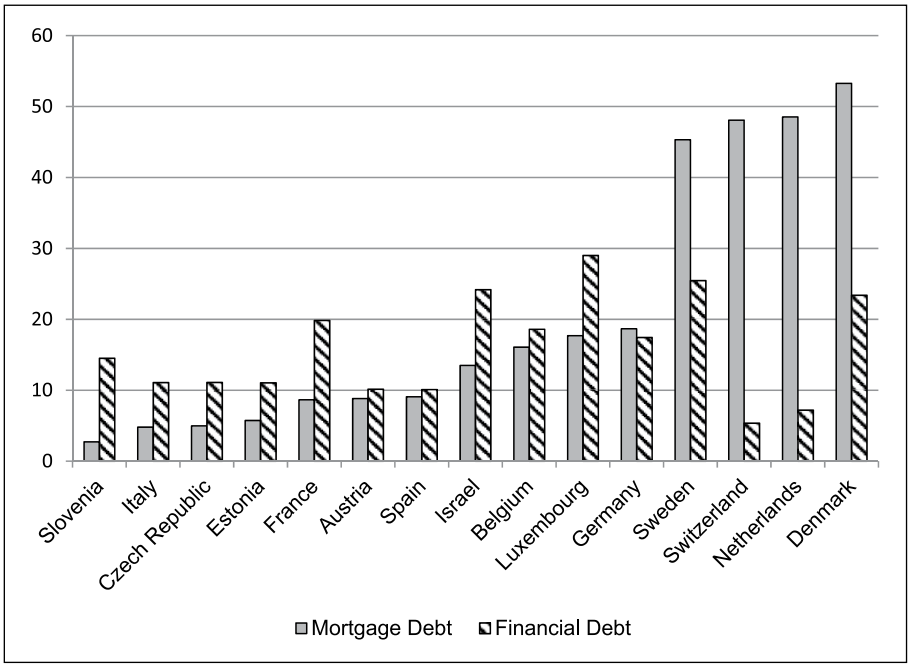

Figure 1. Percent of households with persons aged 50 years and older with mortgage and financial debt, by country.

down to 5 percent or less in the Czech Republic, Italy, and Slovenia. These figures seem to align with other sources of information on mortgage debt (for the total population). For example, an OECD working paper from 2006 reported that among 15 OECD countries (excluding post-socialist countries), Denmark and the Netherlands, followed by Sweden, had, by far, the highest levels of mortgage debt. Italy and France had the lowest rates, while Germany and Spain fell somewhere in between (Girouard et al., 2006). Calza et al. (2013) noted considerable variation in the typical duration of mortgage loans in European countries, ranging from 15 years in Italy to 30 years in Denmark and the Netherlands. The latter countries also provide larger loans relative to the value of the mortgaged assets, which explains the larger housing debts in these countries. Indeed, there may be many reasons for the country differences in debts, including the price of housing, societal differences in homeownership, and institutional arrangements. However, the primary aim of our study is to investigate differences at the household level, controlling for the contextual differences, and a full explanation of the variation across countries is beyond the scope of our research.

The highest prevalence of financial debt among households with persons aged 50 years and older was found in Luxembourg and Sweden (29% and 25%, respectively), followed by Israel and Denmark (24% and 23%, respectively). At the lower end of the ranking were Switzerland (5%) and the Netherlands (7%), followed by a mix of countries including Italy, Spain, Austria, Estonia, and the Czech Republic, all with just over 10 percent of households reporting any financial debt.

It is quite clear from Figure 1 that at the country level, there is no systematic relationship between the prevalence of mortgage debt and financial debt. In the Netherlands, for instance, many households reported mortgage debt, but less than 10 percent reported financial debts. In France the opposite was true; 20 percent of households reported financial debts, but only 9 percent had mortgage debt. In Sweden, the prevalence of both types of debt was high, whereas in Spain and Italy as

well as Austria few households reported outstanding debts of any kind. Based on a number of financial reform measures, Abiad et al. (2008) estimated that by the middle of the first decade of the 21st century, the extent of financial liberalization would be quite similar across European countries. Yet, we found that the prevalence of financial debt differs considerably across countries, suggesting that non-regulatory factors are also at play.

One might expect that household debt would be related to the type of welfare regime, as welfare policies shape the present and the future financial needs of families. Our figures show that this might be the case with regard to mortgage debt (high percentages in Sweden, Denmark, and the Netherlands), but the findings are less consistent when it comes to financial debt. It stands to reason that multiple factors are at work; these include consumer culture, cost of living, and differing traditions regarding the use of credit (see, for example, Trumbull, 2014). Hence, in the analysis that follows, we take the total country differences into account when we explore the household correlates of debt.

Up to this point, we have discussed the prevalence of household debt. However, the implications of debt for households differ considerably depending on the size of the debt. Clearly, the situation of two families with similar characteristics, one burdened by large debt and the other not, is quite different. In Appendix 1, we present statistics reporting the mean mortgage debt and mean financial debt along with other household characteristics, by country. We will not go into a detailed description of the variation in debt levels and demographic characteristics. Suffice it to say that there are considerable differences both between and within countries; it is the latter that we seek to address, based on the differences in the economic and demographic characteristics of households.

Estimating the likelihood of mortgage debt

Mortgage debt is associated with homeownership; this is the major asset of most households and their primary source of wealth. Yet, for some, the regular repayment of mortgage debt can become a source of financial strain, particularly when household income declines or is stagnant. We therefore began by estimating a model in which mortgage debt, transformed to the logarithmic scale (ln), was predicted as a function of characteristics of households while controlling for the country variation (i.e. by adding a set of dummy variables representing the countries). Five equations were estimated using Tobit estimation procedure (with robust standard errors). The results of this analysis are presented in Table 1.

The first three equations pertain to the entire population, whether or not they own a home. This is so because we view homeownership as endogenous; that is, for some people not owning a home may be a result of not being able to obtain a mortgage loan; for others it could be a calculated choice or lack of sufficient funds. The Tobit model, therefore, simultaneously estimates the effects of various predictor variables on the likelihood of having a mortgage loan and its size. In effect, the coefficient estimates provide us with an idea what the impact of a predictor variable (say income) would be if a household with a given level of income had a mortgage loan.

Equation 1 is the baseline model. It includes only the set of dummy variables representing countries (coefficients for each country dummy variable are not presented for sake of brevity). Equation 2 includes, in addition to the country indicators, a series of independent variables that capture the characteristics of the household. In Equation 3, we added an interaction term between employment status and household income. We did so in order to examine whether the effect of income on mortgage debt differed for households with economically active individuals and those who were no longer employed. Equations 4 and 5 are identical to Equations 2 and 3, respectively, but pertain only to the sample of homeowners. The results of the analysis are presented in Table 1.

Table 1. Tobit regression predicting (ln) mortgage household debt by household-level attributes, controlling for county dummy variables (not presented). Robust standard errors (SE) are in parentheses.

	Equation 1	Equation 2	Equation 3	Equation 4[a]	Equation 5[a]
	Coef/SE	Coef/SE	Coef/SE	Coef/SE	Coef/SE
Oldest person in household	–	−0.36**	−0.36**	−0.37**	−0.37**
	–	(0.01)	(0.01)	(0.01)	(0.01)
Total household income (ln)	–	1.06**	0.89**	0.41**	0.25*
	–	(0.12)	(0.13)	(0.11)	(0.12)
Years of education	–	0.15**	0.15**	0.08**	0.08**
	–	(0.02)	(0.02)	(0.02)	(0.02)
Employed in household (=1)	–	2.61**	2.50**	2.00**	1.87**
	–	(0.23)	(0.23)	(0.20)	(0.20)
Self-employed in household (=1)	–	1.85**	1.88**	0.65*	0.68**
	–	(0.29)	(0.29)	(0.25)	(0.25)
Illness in the household	–	−0.36**	−0.37**	0.28**	0.28**
	–	(0.09)	(0.09)	(0.08)	(0.08)
Number of children	–	0.39**	0.39**	0.43**	0.43**
	–	(0.06)	(0.06)	(0.06)	(0.06)
Single female household (=1)	–	−3.67**	−3.72**	0.35	0.32
	–	(0.29)	(0.29)	(0.26)	(0.26)
Single male household (=1)	–	−3.56**	−3.59**	0.20	0.18
	–	(0.36)	(0.36)	(0.33)	(0.33)
Other household (=1)	–	0.36	0.32	1.23**	1.20**
	–	(0.21)	(0.21)	(0.18)	(0.18)
Received gift or inheritance (=1)	–	0.47*	0.46*	−0.77**	−0.77**
	–	(0.23)	(0.23)	(0.20)	(0.20)
Employed in household × Total household income centered (ln)	–	–	0.45**	–	0.43**
	–	–	(0.13)	–	(0.12)
Constant	−10.16**	0.71	2.34	12.83**	14.34**
	(0.32)	(1.62)	(1.69)	(1.49)	(1.56)
Sigma	12.81**	11.44**	11.43**	9.01**	9.01**
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
Pseudo R^2	0.088	0.132	0.132	0.169	0.169
Number of observations	40,590	40,590	40,590	29,272	29,272

[a]Calculated for homeowners only; omitted categories: not employed in household = 0; not self-employed in household = 0; couple's household = 0; no one in household received gift or inheritance = 0.
*$p < 0.05$; **$p < 0.01$.

Equation 1 (the baseline model) provides an estimate of the contribution of country differences to the variation in mortgage debt. According to the Pseudo R^2 value, countries account for approximately 9 percent of the variance. Equation 2 indicates that household-level attributes account for an additional 4.5 percent of the variation in mortgage debts. The model is somewhat better when the analysis is limited to homeownership as evident from the pseudo R^2 of Model 4 (17%). Although the overall explanatory power of the model is modest, our primary interest concerns the specific (net) effects of the explanatory (independent) variables on the size of debt. Focusing on Model 2, we found that the size of mortgage debt tended to decline with age of the oldest person in the

household (as mortgage is likely to be paid over the years) and increased with the level of household income ($b=1.06$) and with education ($b=0.15$). Mortgage debt tended to be higher among households engaged in labor market activity ($b=2.61$) and in households with self-employed persons. The number of children in the family (whether or not living in the household) was also positively related to mortgage debt. A negative and significant relationship was found between the size of mortgage debt and reported health. Because mortgage debt is typically a long-term debt that in all probability began some time prior to the survey, and because illness may or may not be a recent condition, it is possible that the relationship is rather spurious, capturing some of the relationship between aging and declining debt.

Compared to couple households, single-person households (both female and male) reported lower mortgage debt. Receiving a gift or inheritance had a positive effect on the size of mortgage debt ($b=0.47$). It should be noted that current mortgage debt typically represented decisions taken in the past, while household resources and needs reflect the present circumstances. Nonetheless, the patterns emerging from the findings clearly indicate that the size of current mortgage debt is positively related to household resources such income, education, and intergenerational transfers and negatively related to needs associated with ill health and number of children.

In view of the fact that we were studying a sample of the middle and older age population, many of whom were no longer employed, we added, in Model 3, an interaction term between income and employment status. This was done in order to examine the extent to which the impact of income on the likelihood of having mortgage differed among those who were still economically active and those who depended on other sources of income. The findings in Model 3 reveal a positive and significant interaction effect (0.45) and a slight reduction in the additive effect of income. These findings indicate a positive and statistically significant relationship between mortgage debt and income among households with and without labor market attachment. Yet, the effect of income was significantly larger among households that are still economically active. We should note that the data did not permit us to determine the causal order between employment status and mortgage debt. It is possible that some households with high mortgage debts remained economically active specifically in order to satisfy their mortgage payment obligations.

In order to refine our analysis, we repeated in Equation 4 and 5 the estimation procedures focusing only on homeowners. Here, not having a mortgage would typically mean that it had already been paid off, although some households could gain ownership with no mortgage loans. It is evident from Equation 4 and Equation 5 that, with few exceptions, the pattern of relationships is quite similar to that in the total population. The effects of income, employment, self-employment, and education are weaker than those observed in the total sample (Equation 2) but still statistically significant. Household composition was generally unrelated to mortgage debt among homeowners, although mortgage debt was larger in the 'other' household category, which included multiple person households, as compared to couple households. Among homeowners, as in the general sample, number of children was associated with larger household debt.

Two household attributes appeared to have a different relationship to mortgage debt in the subsample of homeowners than was found in the entire sample. In Model 4, we found a positive relationship between ill health and size of mortgage debt, whereas a negative relationship was estimated in Equation 2. Since the reported Tobit coefficient estimates are weighted by the effect of health on the likelihood of having a mortgage, we tend to interpret the findings – albeit with some caution – to mean that ill health tends to reduce the likelihood of purchasing or upgrading housing and, consequently, lessens the probability of having mortgage debt. For homeowners, however, ill health may create payment difficulties, thereby resulting in larger outstanding debts. Receiving a gift or inheritance was negatively related to the size of mortgage debt among homeowners (Equation 4), in contrast to the positive effect we observed in Equation 2 (entire sample). These contrasting

effects make sense if we think of this variable both as concrete financial help and as an indication of potential familial support. Households with such support, or those who expect to receive such support, might be willing to take greater risks in the form of home mortgage. Among those owning a home, such support can assist with regard to size of the loan required or its payment, the ultimate result being lower mortgage debt.

Determinants of financial indebtedness

In order to investigate the relationship between household characteristics and the size of financial debt, we estimated a series of Tobit regression equations, presented in Table 2. In these equations, the natural logarithm (ln) of financial debt is taken as a function of household economic and demographic attributes and size of outstanding mortgage. In all equations, we controlled for between-country variations by including a set of country dummy variables (coefficients not presented). This analysis intended to address the central research question we posed concerning the impact of mortgage debt on financial debt.

The baseline Equation 1 includes only country dummy variables (not presented). Model statistics reveal a rather poor fit (Pseudo R^2 is 0.02), suggesting that country differences account for only a small fraction of the overall variance. The focus of our attention, however, was on whether homeownership and mortgage debt, as well as other household characteristics, impact the level of financial debt when controlling for national contexts. Two household-level variables are added in Equation 2: owners with no mortgage and owners with mortgage (as compared to households that are not homeowners). This permitted us to examine whether homeownership *per se* facilitates access to loans, as well as the extent to which mortgage debt may become a liability, leading to deeper financial debt. The coefficients in Equation 2 show that homeowners with no mortgage debt have substantially lower financial debts than households that do not own a home ($b=-4.79$). Concomitantly, financial debt among homeowners who have mortgage debt was considerably higher on average ($b=4.67$). Moreover, the size of the financial debt was positively related to the size of mortgage debt, as evident from Equation 3. These findings are at odds with the explanation that homeownership *per se* provides access to credit or that homeownership provides a sense of economic comfort that leads owners to consume beyond their means. To the contrary, the findings support the thesis that mortgage debt can become a liability that leads to larger financial debt.

When household characteristics are added to the model (Equation 4a), the overall fit of the model is improved (although still rather modest (Pseudo R^2 is 0.07)). Controlling for various household attributes slightly reduced the coefficient for owners with no mortgage ($b=-3.89$) and reduced considerably the coefficient for owners with mortgage ($b=1.75$), but both remain statistically significant. In Equation 4b, we substituted the size of mortgage debt for the binary variable – owners with mortgage. This permitted us to evaluate the extent to which financial debt is related to the size of mortgage debt. The positive and significant coefficient ($b=0.18$) clearly indicates that the size of mortgage debt is consequential. Higher mortgage debt is likely to increase the economic burden, as reflected in higher financial debt.

Inspecting additional coefficients in Equations 4a and 4b, we found that using a binary indicator – homeowners with mortgage – or inserting the size of mortgage debt in the equation did not alter the coefficient estimates for other variables. The results of the analysis show that financial debt is positively associated with two indicators of economic activity – whether anyone in the household was economically active and whether anyone was self-employed. We could not determine, however, whether households whose members are no longer economically active are more cautious or whether they are more likely to be denied credit. The positive relationship may also reflect the fact that people in debt are 'forced' to continue working.

Table 2. Tobit regression predicting (ln) financial household debt by household-level attributes, controlling for county dummy variables (not presented). Robust standard errors (SE) are in parentheses.

	Equation 1	Equation 2	Equation 3	Equation 4a	Equation 4b	Equation 5a	Equation 5b
	Coef/SE	Coef/SE	Coef/SE	Coef/SE	Coef/SE	Coef/SE	Coef/SE
Owner no mortgage (=1)	–	−4.79**	−4.70**	−3.89**	−3.84**	−3.90**	−3.85**
	–	(0.24)	(0.24)	(0.24)	(0.24)	(0.24)	(0.24)
Owner with mortgage (=1)	–	4.67**	0.79	1.75**	–	1.76**	–
	–	(0.27)	(0.75)	(0.27)	–	(0.27)	–
Household mortgage debt (ln)	–	–	0.39**	–	0.18**	–	0.18**
	–	–	(0.07)	–	(0.03)	–	(0.03)
Oldest person in household	–	–	–	−0.49**	−0.49**	−0.49**	−0.49**
	–	–	–	(0.01)	(0.01)	(0.01)	(0.01)
Total household income (ln)	–	–	–	0.02	0.01	0.29	0.28
	–	–	–	(0.13)	(0.13)	(0.15)	(0.15)
Years of education	–	–	–	0.02	0.02	0.02	0.02
	–	–	–	(0.02)	(0.02)	(0.02)	(0.02)
Employed in household (=1)	–	–	–	0.79**	0.78**	0.94**	0.93**
	–	–	–	(0.24)	(0.24)	(0.25)	(0.25)
Self-employed in household (=1)	–	–	–	1.40**	1.39**	1.35**	1.34**
	–	–	–	(0.33)	(0.33)	(0.33)	(0.33)
Illness in the household	–	–	–	1.18**	1.19**	1.18**	1.19**
	–	–	–	(0.10)	(0.10)	(0.10)	(0.10)
Number of children	–	–	–	0.79**	0.78**	0.79**	0.79**

(Continued)

Table 2. (Continued)

	Equation 1	Equation 2	Equation 3	Equation 4a	Equation 4b	Equation 5a	Equation 5b
	Coef/SE	Coef/SE	Coef/SE	Coef/SE	Coef/SE	Coef/SE	Coef/SE
	–	–	–	(0.07)	(0.07)	(0.07)	(0.07)
Single female household (=1)	–	–	–	−0.81**	−0.79**	−0.75*	−0.73*
	–	–	–	(0.29)	(0.29)	(0.29)	(0.29)
Single male household (=1)	–	–	–	−0.02	−0.00	0.02	0.04
	–	–	–	(0.36)	(0.36)	(0.36)	(0.36)
Other household (=1)	–	–	–	0.29	0.29	0.33	0.33
	–	–	–	(0.23)	(0.23)	(0.23)	(0.23)
Received gift or inheritance (=1)	–	–	–	−0.56*	−0.57*	−0.56*	−0.56*
	–	–	–	(0.28)	(0.28)	(0.28)	(0.28)
Employed in household × Total household income (ln)	–	–	–	–	–	−0.77**	−0.78**
	–	–	–	–	–	(0.23)	(0.23)
Constant	−11.75**	−10.59**	−10.64**	15.73**	15.76**	13.00**	12.99**
	(0.33)	(0.35)	(0.35)	(1.71)	(1.71)	(1.91)	(1.91)
Sigma	13.33**	12.87**	12.85**	11.94**	11.94**	11.94**	11.93**
	(0.06)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
Pseudo R^2	0.020	0.036	0.037	0.073	0.073	0.073	0.073
Number of observations	40,590	40,590	40,590	40,590	40,590	40,590	40,590

Note: **$p < 0.01$, *$p < 0.05$.
Omitted categories: Not employed in household = 0; Not self-employed in household = 0; couple's household = 0; no one in household received gift or inheritance = 0.

Equations 4a and 4b provide additional and important insights into the association between household characteristics and debt. Consistent with expectations, households with older persons are less likely to be in financial debt ($b=-0.49$). This confirms abundant research which shows a reduction in consumption and lower access to credit in older age. Controlling for age and socioeconomic factors, households that reported poor health have significantly higher financial debt than other households ($b=1.19$, in Equation 4b). Apparently, even in countries that provide substantial public healthcare coverage, there are gaps in health coverage; hence, households may face out-of-pocket costs that increase their expenditures beyond their means.

With regard to number of children, we found a positive and statistically significant coefficient ($b=0.78$, in Equation 4b). The positive coefficient seems to reflect an ongoing financial commitment to offspring, many of whom are no longer living in the household, even at the price of incurring debt. Figures in Equations 4a and 4b also reveal that single female households have lower financial debts than couple households, possibly a result of greater difficulty in accessing credit. Receiving financial gifts or inheritance is negatively and significantly associated with the size of financial debt. For those who are fortunate enough to receive familial financial support, this appears to substitute for institutional credit. Finally, it is noteworthy that neither education nor income exerts a significant effect on debt.

In view of the fact that we did not find any statistically significant effect of household income on financial debt, we added an interaction term between income and employment, in order to test whether the relationship between income and debt differed for those with labor market attachment. The results are reported in Equations 5a and 5b. Adding the interaction term did not alter the coefficients for other variables in any significant way. Yet, the coefficient estimated for the added interaction term is significant and negative ($b=-0.78$, in Equation 5b), while the additive effect of income remains statistically insignificant. This means that for the employed, the size of financial debt tends to decrease with the level of household income. Low income level, then, seems to be one reason for using credit and accumulating larger financial debt. Among households with no labor market attachment, financial debt is unrelated to household income (and may possibly reflect barriers to accessing credit). One possible reason for the difference between the employed and those no longer in the labor market may be that debts were incurred in the past when respondents were still employed and that current income does not reflect their income prior to labor market withdrawal.

Cross-country variation

Up to this point, the multivariate analysis focused on household correlates of mortgage and financial debt, controlling for country differences. Of special interest in this study was the relationship between mortgage debt and financial debt. While we did not find any systematic relationship, at the country level, between the proportion of households with mortgages and financial debt (Figure 1), we did find systematic relationships at the household level. In order to further examine this issue and determine whether these relationships are invariant across countries or whether these results are driven by the relationship in a select number of countries, we estimated the models predicting financial debt separately for each of the 15 countries.[6]

In Figure 2, we provide a visual representation of the coefficients for two dummy variables relating homeownership and mortgage debt to financial debt. These coefficients were derived from the full models estimated for each of the 15 countries. The first coefficient represents financial debt of homeowners with no mortgage (as compared to non-owners), and the second coefficient represents the financial debt among owners with mortgage (as compared to non-owners), net of all household characteristics. Figure 2 reveals that with only two exceptions (Switzerland and the

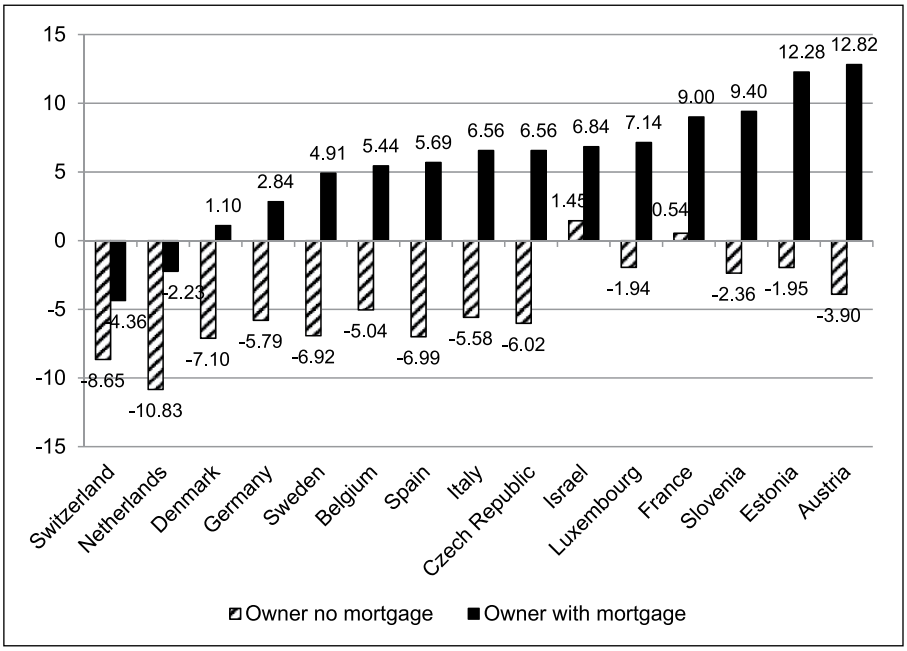

Figure 2. Regression coefficients of two dummy variables 'owner no mortgage' and 'owner with mortgage' obtained from Tobit regression predicting (ln) financial household debt, 15 separate equations by country.

Netherlands), homeowners with mortgage debt have greater financial debts than non-owners. By contrast, with only two exceptions (Israel and France), homeowners with no mortgage have lesser financial debt than all other households. The findings presented in Figure 2 thus support the hypothesis that the burden of mortgage debt is likely to lead to greater financial debt, and that this is true across a range of countries with different welfare regimes and housing markets.

One might expect that in countries with more inclusive housing regimes (i.e. high rates of homeownership), we would find a stronger effect of mortgage debt on financial debt. This is so because in countries with inclusive regimes, more economically weak households are able to own their homes. Another possible source of variation across countries might be the cost of housing. High cost of housing in a country might place a strain on household resources. This in turn may result in a stronger effect of mortgage debt on financial debt. To the extent that the positive relationship between mortgage debt and financial debt is an indication of economic hardship, we might also hypothesize, from a welfare state policy perspective, that generous state welfare policies may ease household expenditures and weaken this relationship.

The small number of countries in our study limited our ability to conduct a robust country level analysis of the relationship between mortgage and financial debt. We did, however, compute zero-order correlations between the rate of homeownership,[7] the price of housing relative to income (OECD, 2013a), and public social expenditure as a percent of GDP (OECD, 2013b) and the estimated coefficients relating mortgage debt to financial debt. Although none of the correlations are significant (given that there are only 15 cases), two correlations are sizeable, exceeding 0.4. There is a strong positive correlation ($r = 0.42$) between the rate of homeownership in a country and the coefficient representing the effect of ownership with mortgage (compared to not owning a home) on financial debt. That is, the higher the rate of homeownership in a country, the stronger the

relationship between mortgage debt and financial debt. This is in line with the view that more inclusive housing regimes incorporate populations that may experience greater hardship in meeting debt payments.

We also found a strong negative correlation ($r=-0.41$) between the price of housing in a country (standardized for income) and the coefficient representing the difference in financial debt between homeowners with no mortgage and non-owners; the higher the cost of housing, the larger the (negative) difference. One interpretation of this relationship is that in countries with high housing costs, there is a greater economic gap between owners and non-owners, and the latter must rely more so than others on financial credit. Public social expenditure as a measure of a country's generosity in mitigating risks faced by households was only weakly related to both coefficients. Hence, the data led us to conclude that the type of welfare regime does not explain the micro-level relationships we found between homeownership, mortgage debt, and financial debt.

Summary and conclusion

This study was motivated by recent research findings that described the growing use of credit and increasing household debt in many societies, in general (Barba and Pivetti, 2009; Penaloza and Barnhart, 2011), and among older segments of the population, in particular (Lee et al., 2007). We pointed out that loans and the use of credit have become normalized in all economically advanced societies and among all social strata except, possibly, the very poor. This 'democratization' of credit carries certain positive effects, as in the case of creating wealth through housing loans or student loans, or smoothing consumption across periods of lower and higher income. Yet, growing indebtedness associated with easy access to credit has negative consequences as well, ranging from increased stress (Hodson et al., 2014) to economic hardship and even bankruptcy (Thorne et al., 2009; Zhu, 2011). Importantly, mortgage debt and the use of credit are on the rise in older populations, even among those with fixed or declining incomes. Hence, our aim was to describe the prevalence of household debt in middle and old age across 15 countries and to investigate if and to what extent financial debt is related to the size of household mortgage debt.

Our study joins an emerging body of literature concerned with the phenomenon of rising household debt. It is quite distinctive, however, in its focus on persons in advanced ages: those who are expected to have accumulated some wealth over their lifetime. We examined two key components of household debt: mortgage debt associated with homeownership and financial debt. Our findings reveal considerable variations in mortgage debt and financial debt across countries and among households within countries. It is also noteworthy that there is much more cross-country variation in mortgage debt than in household financial debt. This reflects the difference in magnitude of the components of household debt, as well as large variation in housing policies across countries.

A primary proposition put forward in our research was concerned with the relationship between mortgage debt and financial debt. Our findings corroborate previous arguments, suggesting that households with one type of debt tend to hold other forms of debt (Bridges et al., 2008). By interrogating this relationship more extensively, we were able to juxtapose alternative explanations and were in a position to provide a clearer and more robust interpretation of this association. Specifically, we considered whether the relationship between mortgage debt and financial debt at the household level derives from greater access to credit available to homeowners. This proposition is based on the notion that ownership of property signals the worthiness of the potential borrower. Against this interpretation, we posited an alternative explanation for the positive association between mortgage debt and financial debt. We argued that controlling for income, which is comparatively fixed in middle and old age, mortgage payments may strain household finances, leading to the use of credit in order to make ends meet.

The findings emerging from the analysis indicate that homeownership *per se* is not statistically associated with financial debt. Yet, households with mortgage loans have higher financial debts than households with no mortgage debt (whether home owner households or not). Other things being equal, the larger the mortgage debt, the larger the household's financial debt. These findings appear to be robust and were replicated in 13 of the 15 countries that comprised our sample. We should note that the data did not permit us to distinguish between first mortgage loans and refinancing, nor do we know whether households used mortgage loans in order to finance consumption as suggested by the 'equity leakage' proposition (Smith and Searle, 2008). However, if this were the case for many households we would expect a negative relationship between mortgage debt and financial debt, which is contrary to our findings. We therefore tend to conclude that mortgage debt is a major driver of financial debt.

Although we will not reiterate the relationship between all sociodemographic attributes and debt, it worth noting that attachment to the labor market and employment relations (whether self-employed or salaried) were positively related to mortgage debt and financial debt. We tend to view this relationship as an indication of better access to credit among those in employment and possibly a greater willingness on their part to take on financial obligations. Yet, given the cross-sectional structure of our data, we cannot rule out that persons remain in the labor market in order to meet their debt obligations. By way of contrast, intergenerational transfers in the form of gifts and inheritances seem to partially substitute for institutional debt. Homeowners receiving such transfers were associated with lower mortgage debt; more generally, households who received gifts or inheritances reported lower financial debt. These findings speak to the issue of debts in the context of social inequality. Other things being equal, households that are in no position to receive financial gifts or sizeable inheritances are deeper in debt and hence at greater risk of facing hardship in trying to meet their financial obligations.

The findings also reveal the ways in which debts are related to household needs and risks. We found a positive relationship between illness in the household and mortgage debt among homeowners (although severe illness is probably associated with lower levels of homeownership), as well as a positive relationship between illness and financial debt. A similar relationship was consistently found between number of children and both mortgage and financial debt. It is noteworthy that even in the European countries that still maintain fairly generous welfare policies, large families and households facing illness are more likely than others to rely on credit and loans to meet their needs.

Turning now from pattern of relationships at the household level to the macro level, it is important to remind the reader that the likelihood of household debt was non-negligible in most countries. The limited number of countries included in the analysis did not permit a rigorous study of the variation across countries. Nevertheless, several conclusions emerge from our analyses. First, there is greater country variation in the proportion of households with mortgage debt than financial debt. Concomitantly, there is no systematic relationship between the likelihood of incurring the two types of debt across countries. This finding seems to reflect the conclusion of Abiad et al. (2008), that financial reforms in Europe have reduced institutional variations across countries. At the same time, housing markets and mortgage regimes, especially in Scandinavian countries, seem to differ from those in other European countries. Second, and not surprisingly, we found that in countries where homeownership rates are high, mortgage debt has a stronger effect on financial debt. This underscores one of the risks of more inclusive housing markets. Third, the interrelationships between homeownership, mortgage debt, financial debt, and macro-country attributes were also found when we analyzed SHARE data for 2006 (with 11 countries participating in both waves). This suggests that the findings of our analysis are not unique to the period following the 2008 economic crisis. This also increases our confidence in the robustness of the findings.

Taken as a whole the research summarized in this article underscores the risks associated with two interlinked processes. The rise in housing costs in many countries pushes many households

into greater mortgage debt for longer durations. At the same time greater liberalization of financial markets across countries renders credit more accessible to many households. Our findings indicate that these two process indeed lead to larger short-term financial debt which is typically unsecured. Under such circumstances, job loss, decline in income associated with retirement, or turn for the worse in one's health can easily lead to over-indebtedness and possibly financial ruin. Although, financial markets differ across countries as do social safety nets, the trajectory is one of greater institutional standardization (Abiad et al., 2008). Indeed, the findings of the present study revealed similar effects of housing debt on household financial debt in most countries, albeit with varying magnitudes. Therefore, we believe that the study furthers our understanding of economic risk faced by the population in midlife and old age, especially in times when homeownership rates are growing and household debts are carried into late life.

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Notes

1. This is the promotional slogan used when the Access credit card was launched in the United Kingdom, in the early 1970s.
2. For a detailed description of the fieldwork and the survey methodology, see Malter and Börsch-Supan (2015).
3. Unfortunately, we do not have information on the duration of the loan and the repayment schedule. Hence, these sums provide a rough estimate of the current burden faced by the household.
4. Some studies scale debt by household income rather than using income as a predictor. This is often the case with respect to short-term financial debt. Since we differentiate between short-term financial debt and long-term housing debt and examine the relationship between the two, we preferred to use income as an explanatory variable in the analyses.
5. We have no information on the timing of the gift or inheritance, so this serves as a general indicator of potential non-market economic support that might substitute for institutional debt.
6. The small number of countries precluded hierarchical modeling that would simultaneously estimate coefficients for household attributes and specific country characteristics (such as differences in financial institutions). We therefore opt for within country analyses that take into account global country differences.
7. Data on rates of homeownership were taken from Eurostat (2013). The figure for Israel was taken from Israel Central Bureau of Statistics (2012).

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Appendix 1. Socioeconomic and sociodemographic characteristics of households by country, mean (standard deviation) or percent.

	Austria	Germany	Sweden	The Netherlands	Spain	Italy	France	Denmark	Switzerland	Belgium	Israel	The Czech Republic	Luxembourg	Slovenia	Estonia
Total household income, mean (SD), in thsd Euro	44.28	47.17	35.99	36.09	28.24	32.29	39.67	33.63	85.49	41.71	32.84	21.48	115.98	23.73	15.33
	(64.49)	(74.38)	(35.14)	(49.02)	(37.16)	(49.76)	(63.95)	(37.42)	(131.53)	(63.45)	(22.48)	(24.32)	(164.38)	(26.54)	(16.83)
Employed in household (%)	17	38	32	30	23	23	23	41	38	29	37	20	27	17	33
Self-employed in household (%)	7	9	9	9	9	9	5	8	13	6	11	7	5	4	4
Received gift or inheritance (%)	2	28	18	16	8	6	8	27	9	16	6	5	26	7	2
Illness in the household, mean (SD)	3.23	3.46	2.91	3.17	3.60	3.55	3.44	2.77	2.86	3.16	3.46	3.62	3.19	3.44	4.05
	(1.02)	(0.97)	(1.12)	(0.98)	(0.97)	(1.03)	(0.99)	(1.16)	(0.92)	(0.96)	(1.12)	(0.97)	(1.07)	(0.98)	(0.79)
Number of children, mean (SD)	1.97	1.93	2.27	2.28	2.19	1.88	2.21	2.22	2.01	2.10	3.08	2.09	1.97	1.95	1.97
	(1.42)	(1.30)	(1.31)	(1.41)	(1.48)	(1.31)	(1.48)	(1.26)	(1.38)	(1.46)	(2.09)	(1.07)	(1.32)	(1.03)	(1.28)
Years of education, mean (SD)	9.35	12.58	11.65	11.82	9.39	8.83	11.48	11.52	8.81	12.50	12.75	12.06	11.69	10.40	11.43
	(4.50)	(3.68)	(3.94)	(3.78)	(4.83)	(4.53)	(3.69)	(4.86)	(5.35)	(3.80)	(4.00)	(3.08)	(4.29)	(3.50)	(3.57)
Age of oldest person in household, mean (SD)	69.01	65.76	69.17	66.94	69.83	68.63	69.59	66.17	67.61	66.52	69.59	68.62	65.08	68.10	69.90
	(9.55)	(10.25)	(9.56)	(9.82)	(11.08)	(10.16)	(10.30)	(10.22)	(9.64)	(10.65)	(10.33)	(9.10)	(9.60)	(10.22)	(9.74)
Household structure															
Single female household (%)	31	15	20	18	12	15	28	18	19	20	17	28	14	18	27
Single male household (%)	12	10	10	10	6	7	12	10	9	11	5	8	9	6	7
Couple household (%)	39	48	55	53	42	35	42	50	45	40	43	41	43	39	36
Other household (%)	18	27	15	20	41	44	19	21	27	30	35	24	34	37	30
Homeownership															
No homeownership (%)	49	39	45	32	12	18	22	29	41	25	24	36	20	12	15
Home owner no mortgage (%)	42	42	18	18	79	77	69	19	11	59	63	60	62	85	79
Home owner with mortgage (%)	9	19	37	50	9	5	9	52	48	16	13	4	18	3	6
Financial debt, mean (SD), in thsd euro	25.3	19.7	27.3	11.2	9.8	8.8	10.2	19.9	41.0	14.1	16.3	7.9	24.5	6.4	7.2
	(47.5)	(32.3)	(35.6)	(21.6)	(17.6)	(15.2)	(18.7)	(24.3)	(81.2)	(21.4)	(21.8)	(9.2)	(40.8)	(7.1)	(14.5)
Mortgage debt, mean (SD), in thsd euro	29.2	48.0	59.9	91.6	51.7	44.6	40	78.8	148.1	35.2	63.0	24.5	59.7	37.6	27.5
	(30.7)	(40.1)	(54.9)	(75.1)	(46.6)	(43.5)	(46)	(55.2)	(99.2)	(41.9)	(58.9)	(26.3)	(58.9)	(135.5)	(34.4)
N	2533	3612	2992	2546	3754	2802	2651	2643	1981	3661	1243	3250	1145	2075	3702

SD: standard deviation.