

# Attitudes Toward Debt and Debt Behavior

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### Abstract:

We introduce a novel survey measure of attitude toward debt. Matching our survey results with panel data on Swedish household balance sheets from registry data, we show that our debt attitude measure helps explain individual variation in indebtedness as well as debt build-up and spending behavior in the period 2004–2007. As an explanatory variable, debt attitude compares well to a number of other determinants of debt, including education, risk-taking, and financial literacy. We also provide evidence that suggests that debt attitude is passed down along family lines and has a cultural element.

# Attitudes Toward Debt and Debt Behavior

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## 1. Introduction

The purpose of this study is to shed more light on the microfoundations of household debt behavior, including the fact that the level of indebtedness of households has increased markedly in the past two decades in Sweden and in other countries. Understanding how households use debt is also important for understanding macroeconomic dynamics. A standard starting point for economic analysis of household debt is a life-cycle/permanent income model in which debt is used to smooth consumption over the life cycle. However, this model and its extensions, which include other motives to save, have not been able to explain many of the findings we observe in the data.

Our hypothesis is that, in addition to standard microfoundations, interpersonal differences in debt attitude may play a role in how households use debt. Specifically, debt behavior may also reflect a learned affective response that makes some individuals less inclined to take on debt.<sup>6</sup> By *affective* we mean a response to an object (debt) that reflects how the respondents feels about that object. To dislike or be uncomfortable with something are examples of negative affective responses. In other words, individuals may have different attitudes toward debt, with some having a more negative attitude. Keep in mind that in many languages, the words for “debt” are often synonymous with “sin” or “guilt,” and several religions, including Christianity and Islam, have condemned interest on loans (Graeber, 2011). Moreover, there is a stigma associated with defaulting on debt or declaring bankruptcy.<sup>7</sup> Even practitioners and personal finance books often recommend people to carry no debt or stay clear of debt.<sup>8</sup>

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<sup>6</sup> For an in-depth discussion of learned affective responses and other definitions of attitudes, see Fishbein and Ajzen (1975).

<sup>7</sup> See, for example, Gross and Souleles (2002).

<sup>8</sup> Several popular personal finance books trumpet having no debt or staying out of debt with titles such as: “How to get out of debt, stay out of debt and live prosperously”; “Debt-free for life”; “Zero debt. The ultimate guide to financial freedom”; “Zero down your debt”.

Our study helps our understanding of debt behavior in three ways. First, we provide a novel survey measure of debt attitude. While a link between attitudes and debt has previously been explored using data from the US Survey of Consumer Finances (SCF), our study used a simpler and more general question that focuses on the subject's affective response. Compared to the question on the SCF, expressed in terms of whether it is a good idea to buy things on an installment plan, (see Chien and Devaney, 2001, for details), our measure avoids contract-specific terms such as "installment plan" that risk confounding attitudes toward debt and attitudes toward repayment. However, our survey includes the SCF questions about using debt for specific purposes, and we show that our general measures align well with these questions, too. Another advantage of our work is that we collect data on a representative sample of Swedish individuals, rather than on a small pilot sample or students.

Second, by combining the survey results with information from registry data on household balance sheets, we are able to show that the variation in debt attitude help explain variation in debt behavior. Variation in debt attitude also sheds some light on heterogeneity in the evolution of households' indebtedness over time. We use registry-based panel data on Swedish household balance sheets covering the period 2004–2007, allowing us to accurately measure levels of and changes in debt, and to impute spending using the residual method (e.g., Browning and Leth-Petersen, 2003; Koijen, Van Nieuwerburgh, and Vestman, 2015).

Sweden represents a good laboratory to study debt because, as one of the Nordic countries, it has a relatively equal distribution of income. Notably, Swedish household debt as a share of disposable income nearly doubled in two decades, rising from about 90 percent in 1995 to about 180 percent

in 2018,<sup>9</sup> a debt build-up that may have macroeconomic implications (see, for example, Mian and Sufi, 2018). In terms of the estimated effect size, our debt attitude measure compares well with the effect of a number of important variables such as educational level.

Third, we provide evidence that suggests that the general debt attitude that we measure is, at least in part, a cultural factor that is passed down along family lines.<sup>1011</sup> Specifically, we study the intergenerational transmission of debt attitudes by asking survey respondents about their parents' attitudes toward debt. Parents play an important role in fostering learned responses in their children, such as social norms (Maccoby, 1992). Parental attitudes have been found to predict children's savings beyond what is normally explained by demographics and income (Knowles and Postlewaite, 2005). Other studies that have found support for intergenerational – and cultural, as opposed to purely biological – transmission of economic preferences include Fernández et al. (2004), Dohmen et al. (2012), and Alan et al. (2017).

Recent research has addressed links between culture and debt in a household portfolio context based on cross-country comparisons (Breuer et al., 2012). This research aligns with ours in that it points to substantial cross-country variation in the composition of household portfolios, including the use of debt, when controlling for institutional differences (Bover et al., 2016) and when comparing individuals with similar characteristics (Christelis et al., 2013). A related strand of research examines the financial decision making of first- and second-generation immigrants. Early

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<sup>9</sup> A brief background on household debt in Sweden is provided in the online appendix.

<sup>10</sup> In many countries, governments or civil society have propagated social norms that encourage thrift (Garon, 2013).

<sup>11</sup> One way to think about such transmission is that debt attitudes may be similar to social norms, as opposed to the fast-moving effect of social interactions (the latter have been examined in relation to debt by, for example, Georgarakos et al., 2014). Intra-family correlations could also reflect genetic factors or correlated environmental factors other than culture. Recent research using data on adopted children and their biological and adoptive parents, to separate genetic from environmental effects, has found that environmental influences are important for financial saving behavior (Black et al., 2019). Our data do not allow us to disentangle these influences at the individual level.

studies (e.g., Carroll et al., 1994) found little support for a link between immigrants' cultural origins and financial decision making but recognized that this may have reflected data limitations. Recent, data-rich work finds stronger links. For example, Haliassos et al. (2017) compare the financial behavior of non-immigrant Swedish households to that of immigrant households, grouped by cultural dimensions, and find differences in financial behavior between immigrant groups and Swedish households. Similarly, Fuchs-Schündeln et al. (2017) study the saving behavior of second-generation immigrants and how those behaviors relate to the attitudes and beliefs in the respective countries of origin. They find second-generation immigrants from countries that value thrift and wealth accumulation tend to save more in the host country. By linking parents to their children, they also show that these attitudes are related to the saving behavior of both parents and children. Guin (2017) examines the role of culture on household saving decisions by looking at historical language borders within Switzerland. He shows that households located in the German-speaking region are much more likely to save than similar households in the French-speaking region.

A motivation for relating personal finance to culture is the large observed differences between countries, for example in terms of credit arrangements (Badarinza et al., 2016). Differences in credit market development or tax rules are unlikely to fully explain large cross-country differences in, for example, credit card use, the pervasiveness of mortgages, or the dominance of adjustable or fixed rate mortgages (Campbell, 2013).

Our main results are as follows: A high percentage of respondents in our sample (56 percent) report that they are uncomfortable with debt; thus, this attitude is widespread and can play an important role. General debt attitude helps explain individual variation in debt levels, even after accounting for a rich set of observable characteristics from both survey and registry data. Individuals who report being uncomfortable with debt have lower debt-to-income ratios. On average, the difference

in debt-to-income correlated with being uncomfortable with debt is about one half of annual disposable income. Importantly, general debt attitude also helps explain individual variation in debt build-up and spending in the period 2004–2007. Individuals who report being uncomfortable with debt spend less than other individuals. As further evidence of the importance of this attitude, we found there is a strong correlation between respondents' and parents' attitudes toward debt, suggesting a cultural component to debt attitude that is transmitted along family lines. The correlation is stronger for respondents that report discussing personal finances with their parents.

We also find that foreign-born respondents are considerably more likely to be uncomfortable with debt, controlling for socioeconomic variables. This lends further support to the view that there is a cultural component to debt attitude (see also Haliassos et al., 2017). Our analysis is not intended to be a rejection of the standard theory of consumption and saving but, rather, an extension. Allowing for preference heterogeneity (Gomes and Michaelides, 2005; Vestman, 2019) or varying levels of financial literacy (Lusardi, Michaud and Mitchell, 2017) gives rise to richer patterns of saving and borrowing than can be explained by the standard life-cycle model alone. Our results suggest that debt attitudes, in addition to reasons that include liquidity constraints and impatience, may help to explain why households do not always smooth consumption over the life cycle. Debt attitudes may also help explain why some households pay a premium for more expensive, but less salient, forms of debt (Almenberg and Karapetyan, 2013).

The paper proceeds as follows. Section 2 provides a short description of our survey, while the registry-based data that we used is described in section 3. Descriptive statistics are provided in section 4, and in section 5, we report the findings from our empirical analysis. In section 6, we perform a set of robustness checks. In section 7, we provide concluding remarks.

## 2. The survey

We collected our data in the fall of 2014 using a telephone survey carried out by Statistics Sweden.<sup>12</sup> The survey was targeted at individuals, rather than households, and participation was not conditional on being the household's main financial decision maker. The sample is representative of the Swedish population age 25–75<sup>13</sup> and consists of 390 men and 454 women (representing 46 and 54 percent of respondents in the sample, respectively); Table 1 in the online appendix reports mean values of the main variables in the sample.

### *Survey questions*

The survey we designed contains a set of new questions not commonly present in national surveys, including questions about attitudes toward debt. To measure general debt attitude we first sought to elicit respondents' affective response to debt by using the following question:

- *Do you feel uncomfortable with having debt?*

This is a more general attitude measure than the question that was, for a time, included in the SCF, which asks whether it is a good idea to buy things on an installment plan. Contract-specific terms such as “installment plan” may confound attitudes toward debt with preferences for repayment.

A related issue is if people consider it appropriate to borrow money for specific purposes. This allows us to shed more light on attitudes toward debt. Chien and Devaney (2001) find that attitudes toward debt depend in part on what the debt is used for. We asked five questions, closely based on

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<sup>12</sup> The survey was commissioned by the authors and funded by research grants from the Swedish Science Council, the Swedish Financial Supervisory Agency, and the European Investment Bank. The survey was carried out by Statistics Sweden through a subcontractor (Mind Research AB).

<sup>13</sup> The sample was generated using the registry for the total population, which contains 6.1 million individuals in the chosen age span. A total of 2,004 individuals were drawn from ten strata based on age and gender. Thirty-five of these individuals were excluded (due to incarceration, etc.), resulting in a sample of 1,969 individuals. For each of these individuals, at least twelve attempts to establish contact were made during eight weeks between September and November 2014. After this time period, 844 individuals had responded.

questions asked in the 1998 US Survey of Consumer Finances, about whether survey participants consider it appropriate to borrow money for different purposes (see Table 1a).<sup>14</sup>

At the policy level, there has been widespread concern that many Swedish mortgage holders do not pay down the principal on their mortgages, or do so very slowly (e.g, Finansinspektionen, 2015 pages 10-11), thus carrying mortgage debt for a long period, possibly over their entire life cycle. We included a question about the importance of paying down the principal, which is related de facto to debt (see Table 1a for the full description of the list of possible answers):<sup>15</sup>

- *Which one of the following statements do you think best describes how a person with a mortgage should handle their mortgage loan?*

Our survey also contains a number of questions about intergenerational transmission of financial knowledge and attitudes, i.e., to what extent these may be passed on within a family. This information may help explain where attitudes toward debt may come from. First, we asked about the general debt attitude of survey participants' parents:

- *Would your mother/father say that she/he feels uncomfortable with debt, or if she/he is deceased, would she/he have said that she/he felt uncomfortable with debt?*

Respondents were only asked about one parent; either their mother or father. The gender was randomized. Asking about only one gender reduces sample size in each cell but may be important to reduce bias if the answer about one parent is anchored by the answer about the other parent.

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<sup>14</sup> The only difference is in the first question, which in the 1998 SCF specified buying a fur coat or jewelry. We changed the wording slightly because, while the objects are intended as a proxy for luxury goods in general, responses could simply reflect opposition to fur coats. See Chien and Devaney (2001).

<sup>15</sup> If many respondents report that it is not important to pay off a mortgage, this provides further motivation for our approach to measuring general debt attitudes, which does not mention the terms of repayment.

To get a sense of the extent to which people discuss personal financial matters with their family members compared to colleagues and friends, respondents were asked the following questions:

- *Do you often discuss personal financial matters with your family?*
- *Do you often discuss personal financial matters with friends and acquaintances?*
- *Do you often discuss personal financial matters with colleagues?*

We also asked a number of questions to gain information related to personal finance behaviors, including measures of risk aversion, long-term savings (which is used to try to proxy for patience), and financial literacy (see the survey questionnaire in the online appendix).

### **3. Registry data**

We match individuals in the survey to registry-based data. Doing so allows us to shed more light on who is uncomfortable with debt. It also allows us to link our survey measure of general debt attitude to actual debt, spending, and saving behavior.

Statistics Sweden provided detailed information on individuals' balance sheets for 2003 to 2007.<sup>16</sup> Debt is observed per lender but contractual terms beyond the current value and the interest expense paid in the year are not available. Statistics Sweden also provides information on sociodemographic variables such as country of birth, gender, education, age, and disposable income (gross labor income and pension income plus transfers minus taxes), which are important control variables.

Based on this information, we constructed an imputed measure of spending from the budget constraint for each individual (Browning and Leth-Petersen, 2003; see also Koijen, Van

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<sup>16</sup> See Koijen, Van Nieuwerburgh, and Vestman (2015) and Vestman (2019) for basic information about the Swedish wealth data set.

Nieuwerburgh, and Vestman, 2015). This enabled us to analyze the impact on spending and savings flows of differential debt behavior. What we measure is as follows:

$$c_{it} + r_{it}^d d_{it-1} = y_{it} + a_{it-1}(1 + r_{it}^a) - a_{it} + h_{it-1}(1 + r_{it}^h) - h_{it} - d_{it-1} + d_{it} + y_{it}^k \quad (1)$$

where the left-hand side denotes spending on goods and services and interest expenses in year  $t$ ,  $y_{it}$  denotes disposable income,  $a_{it-1}(1 + r_{it}^a) - a_{it}$  denotes the savings flow in financial assets in year  $t$ , henceforth labelled “financial saving”. The term  $h_{it-1}(1 + r_{it}^h) - h_{it}$  denotes the flow into housing (e.g., home improvements),  $-d_{it-1} + d_{it} = -\Delta d_{it}$  denotes the change in debt, and  $y_{it}^k$  denotes additional sources of capital income.

Using data from 2003 to 2007, we impute spending from 2004 to 2007. For practical reasons, we impose some sample restrictions. Transaction values of houses and apartments, returns on housing, and home improvements are not measured accurately in our data set so we exclude individuals in  $t$  if they change housing tenure status between  $t-1$  and  $t$  or if a homeowner changes primary address. With these restrictions in place, we choose to set  $h_{it-1}(1 + r_{it}^h) - h_{it} = 0$ .<sup>17</sup> In total, we impute spending in at least one year for 704 individuals, which amounts to 2324 individual-year observations, covering the period 2004–2007. We choose to primarily report outcomes in relation to the individuals’ average disposable income over the 2004–2007 period. To reduce the noise in these variables, we exclude outliers (i.e., the bottom and top 1 percent in the spending to income

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<sup>17</sup> In addition, we follow Koijen, Van Nieuwerburgh, and Vestman (2015) and exclude, in each year, observations that belong in the top and bottom one percent of disposable income and observations that are in the top and bottom one percent of changes in net worth. We also exclude negative values of consumption. One difference to Koijen, Van Nieuwerburgh, and Vestman (2015) is that we impute spending at the level of the individual rather than at the level of the household, which is likely to exacerbate the measurement error due, for instance, to intra-household transfers.

ratio). Our baseline sample on debt and other registry-based outcomes has 700 individuals and 2278 individual-year observations.<sup>18</sup>

#### 4. Descriptive statistics

Our findings are striking: More than half of respondents in our sample (56 percent) report being uncomfortable with debt (Table 1a). This is a high proportion, showing that our debt attitude measure has the potential to play an important role and call attention to focus even more on debt, when the data is available. We also note a gender difference in comfort with debt: Women are more likely than men to be uncomfortable with debt.

Table 1a about here

Table 1a also shows that respondents' attitudes toward debt depend on the purpose of the debt. Most respondents consider debt to be OK for buying a car or for educational purposes, but very few (6%) consider it OK to cover household expenses. Thus, some respondents may not follow the dictate of the life cycle model, if consumption smoothing may involve taking on debt, in particular to buy nondurable goods. Regarding management of mortgage loans, the large majority of respondents (84 percent) consider it appropriate to pay down the principal. Respondents who are uncomfortable with debt are less likely to consider it OK to take on debt for various purposes and are more likely to consider it appropriate to pay down the principal on a mortgage (87 percent compared to 79 percent of those who are not uncomfortable; Pearson chi-squared  $p < 0.022$ ).<sup>19</sup>

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<sup>18</sup> This is after excluding a few outliers on the debt-to-income ratio (values above 20). A previous version, Almenberg et al. (2019), did not scale outcomes by average disposable income. That analysis included 708 individuals and 2480 observations. Qualitatively, the results are the same as in the previous version.

<sup>19</sup> The exception is taking on debt to cover household expenses, where those who report being uncomfortable with debt are slightly more likely to consider it OK.

Table 1b about here

62 percent of respondents reported that their parents are/were uncomfortable with debt, an even larger share than among the respondents themselves. Figure 1 illustrates the cohort pattern by showing the share of respondents reporting that they are uncomfortable with debt or that a parent was uncomfortable with debt (by birth cohort of the respondent and the respondent's parent, excluding those who responded "do not know" or "do not want to answer"; we also report the 95% confidence intervals). Younger cohorts are less likely to be uncomfortable with debt compared to older cohorts. While this suggests that the share of the population that is uncomfortable with debt could be declining over time, our survey data is cross-sectional and so does not allow us to distinguish between time and cohort effects. Similarly, if we were to look across age (of respondents and parents), we could not disentangle age from cohort effect.

Figure 1 about here

There are some additional interesting findings that speak of the information provided by this measure. In the parents' generation as well, mothers were less comfortable with debt than fathers; both male and female respondents recognized that about their mothers (Table 1b). And like their mothers, female respondents continue to be more uncomfortable with debt than male respondents. The large majority (70 percent) of respondents in our sample reported discussing personal financial matters with their family, while only 22 percent of respondents reported discussing personal financial matters with friends and acquaintances, and an even smaller proportion (13 percent) reported discussing personal financial matters with colleagues. This speaks of the importance of the family in personal finance decisions. Interestingly, women are less likely to discuss personal financial matters with colleagues; thus, family and intergenerational transmission of attitudes

toward debt can be quite influential for women. Conditional on having children, the majority (about 58 percent) of respondents reported talking to them about personal financial matters. We do not observe any substantial differences in the treatment of sons and daughters in this regard.<sup>20</sup>

Consistent with the notion of intergenerational transmission of attitudes, we observe a strong correlation between the respondent being uncomfortable with debt and his/her parents' attitude toward debt (correlation = 0.401, p-value <0.0001). The correlation is stronger for those who reported that they discuss, or discussed, personal financial matters with their parents (0.491, compared to 0.344 for those who do not, or did not, discuss with parents). This lends further support to the idea that financial attitudes may be transmitted from parents to children,<sup>21</sup> and the correlation may not reflect innate preferences only. The correlation with parents is much stronger for women (0.495, p-value <0.0001) than for men (0.293, p-value <0.0001).<sup>22</sup>

Table 2 about here

Table 2 reports summary statistics of survey and registry-based variables for individuals who report being comfortable with debt (columns 1 and 2) and uncomfortable with debt (columns 3 and 4). Women and older respondents (people age 65–75) are more likely to report being uncomfortable with debt. Consistent with debt attitudes having a cultural component, we find that respondents that are foreign born or have at least one foreign-born parent are more likely to be uncomfortable

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<sup>20</sup> Females are more likely to discuss financial matters with their daughters (41%) compared to fathers with daughters (35%), the difference is, however, not statistically significant (p-value=0.1076).

<sup>21</sup> Looking at this by gender of the respondent, we find that the correlation between females who report that they discuss, or discussed, personal financial matters with their parents is 0.552, and 0.541 if they report that they do not, or did not, discuss with their parent. The equivalent correlations among males are 0.412 and 0.229.

<sup>22</sup> Some of these findings mirror some of the results in the literature that investigates the intergenerational transmission of risk preferences. For example, Alan et al. (2017) find that the risk preferences of mothers are correlated with the risk preferences of daughters but not of sons. This is why it is important to account for risk preferences in our empirical work.

with debt. Respondents who are uncomfortable with debt have less education and lower disposable income. They are less likely to have long term savings (a potential proxy for patience), have slightly lower levels of financial literacy (see Appendix Table 2, in the online appendix, for our measures of financial literacy), and report being less willing to take risk compared to those who do not feel uncomfortable with debt. They also have slightly lower disposable income, spending, and real estate assets but the same amount of net wealth and financial assets, indicating that less real estate wealth on the asset side of the balance sheet is mirrored by less debt on the liability side.

Table 3 about here

Table 3 shows that those who are uncomfortable with debt are less likely to carry debt of any sort, including mortgages. Specifically, 72 percent of respondents who report that they are uncomfortable with holding debt have debt, whereas 83 percent of respondents who report not being uncomfortable with debt have debt. Similarly, 48 percent of individuals who report being uncomfortable with debt hold a mortgage whereas 72 percent of individuals who report not being uncomfortable hold a mortgage. The difference in total debt between the groups is approximately 104,000 SEK, of which 44,000 is non-mortgage debt.<sup>23</sup> The two groups also differ in terms of the number of creditors' contracts (2.01 versus 2.61), and debt-to-income ratio (1.24 versus 1.71). Interest expenses are higher (13,800 vs 9,100) for those who are not uncomfortable with debt, even among those who do not have mortgages (5,800 vs. 3,400), providing further evidence that debt is higher for those who are not uncomfortable with debt.

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<sup>23</sup> Information about an individual's assets and liabilities were collected by the Swedish tax agency in order to calculate the tax base for the wealth tax. The wealth tax was abolished in 2007, and as a result this information is no longer available. Notice that our registry data is dated prior to the survey, which makes our data format similar to Thustrup, Kreiner et al. (forthcoming).

## 5. Regression results

To further investigate the impact and economic importance of our debt attitude measure, we also perform a regression analysis. The starting point is an OLS regression with debt-to-income as the dependent variable and a set of controls that are relevant to debt choice, as predicted by the life-cycle model. We can write the main regression as follows:

$$\frac{d_{it}}{y_{it}} = \beta_0 + \beta_1 U_i + \beta_2 X_{it} + \pi_t + \varepsilon_{it} \quad (2)$$

where  $\frac{d_{it}}{y_{it}}$  denotes respondent  $i$ 's debt-to-income ratio,  $U_i$  is a dummy variable that indicates whether the respondent is uncomfortable with debt,  $X_{it}$  is a set of covariates that determine debt holdings,  $\pi_t$  are year fixed effects, and  $\varepsilon_{it}$  is an error term. Our coefficient of interest is  $\beta_1$ . If being uncomfortable with debt has no effect on debt choice once we control for the socioeconomic variables normally included in intertemporal models, we should find that  $\beta_1 = 0$ .

Table 4 about here

Table 4 reports our main findings. The estimates reported in the first column show a difference in the debt-to-income ratio of 0.62 between respondents that report being uncomfortable versus being comfortable with debt. Adding control variables only slightly reduces the coefficient on being uncomfortable with debt, to 0.51 (column 2).<sup>24</sup> In other words, even after controlling for socioeconomic variables including age, education, and income, those who are uncomfortable with debt have considerably lower debt-to-income ratios. Thus, our measure has an effect above and beyond, for example, education and risk preferences. The difference is not trivial: on average, it

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<sup>24</sup> The coefficient on being uncomfortable continues to be statistically significant (p-value=0.002) if we estimate a probit regression on the probability of having any debt using the same control variables as in column 2, Table 4. See Appendix Table 3 in the online appendix.

represents a bit more than half a year's disposable income. The coefficient on our attitude measure is of the same magnitude as the difference between respondents with an elementary education and those with a university education (the latter have higher debt to income ratios), or equivalent to going from the lowest value to the highest value on our measure of risk-taking (scale 0–10). Aside from debt attitude, age is a strong driver of debt to income ratios. Our estimates suggest a hump-shaped pattern, consistent with life-cycle smoothing.

Some of the variables included in the regressions, for example financial literacy or disposable income, may be endogenous. We do not have good instruments to account for that endogeneity. However, the purpose of this descriptive analysis is to show that our measure is able to explain debt, even after accounting for an extended version of the life-cycle model and adding many controls to our regression analysis, even beyond what is normally considered in these types of empirical analyses. We are also aware that our dummy variable measuring whether the respondent has long-term saving, our proxy indicator for patience, is very crude. We do not have a good control for time preferences, which could be an important driver of what we observe in these data.

The years 2004–2007 marked a steady rise in housing prices and a build-up of household debt in Sweden. Column (3) of Table 4 indicates that debt-to-income increases less for individuals who are uncomfortable with debt, a difference of about 0.08 per year. Cumulatively, the growth difference in debt-to-income from 2004 to 2007 amounts to 0.21.

Table 5 about here

Table 5 explores how the differences in debt behavior impact spending, using the decomposition in equation (1). For ease of interpretation, each term in that equation is scaled by average disposable income. Panel A reports estimates without any control variables. Individuals who report being

uncomfortable with debt spend less than other individuals. The difference amounts to five percent of disposable income (column (1)). The difference is due to lower interest expenses (three percent of disposable income; column (2)) and to differences in debt growth (five percent of disposable income; column (3)). In contrast, there are no substantial differences in financial savings (column (4)) or capital income (column (5)) which indicates that our survey measure captures an attitude toward debt rather than preferences toward risk.<sup>25</sup> Column (6) considers spending growth, the first difference of spending reported in column (1). Spending growth does not depend on debt attitude. Our interpretation is that individuals that are uncomfortable with debt are on a permanently lower spending level, as indicated in column (1). In contrast, column (6) indicates that we do not detect differences in trends in spending. Panel B adds many control variables. While the estimated effects of being uncomfortable with debt are smaller, the qualitative pattern is the same.

Table 6 about here

Table 6 reports differential changes to individuals' balance sheets from 2004 to 2007. Individuals who report being uncomfortable with debt increase their debt by less, corresponding to five percent of average disposable income in every year, controlling for observable differences (including differences in disposable income).<sup>26</sup> This lower rate of growth in debt is well matched in magnitude by a lower rate of growth in housing wealth, though the difference is not statistically significant (column (3)). In contrast, there is no marked difference in accumulation of financial wealth (column

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<sup>25</sup> Almenberg et al. (2019) reports a decomposition in SEK amounts. In that decomposition, half of the difference in spending is due to differences in disposable income and the remainder is due to interest expenses and debt growth.

<sup>26</sup> Notice that column (3) of Table 4 reports the growth in debt-to-income,  $\Delta \frac{d_{it}}{y_{it}}$ , while column (1) of Table 6 reports the growth in debt scaled by average disposable income,  $\frac{\Delta d_{it}}{y_{it}}$ . Otherwise, the specifications are equal.

(2)). Columns (4) to (6) report growth rates over the entire 2004–2007 period and the estimates are qualitatively similar.

The above analysis rests on the assumption that debt attitude is exogenous to debt. If exposure to debt, for example, through having a mortgage, makes individuals less uncomfortable with debt over time, there could be causality in the reverse direction. This can derive from the fact that the survey data is collected after the registry data, so after people experienced debt. One possible way to address endogeneity is to use the attitude of an individual's parents as an instrument for the individual's own attitude. The attitude of parents is outside of the control of the individual and, as discussed in Section 4, there is a strong correlation between a respondent's attitudes and the attitudes of his/her parents. We use this instrument in the first three columns in Table 7. In addition, we consider other specifications based on which parent is uncomfortable with debt and an interaction term with gender; in the remaining columns we also include a dummy for the respondent being foreign born. The F-values from the first stage regressions indicate that the instrument(s) have predictive power. The IV estimates indicate that the effect of the debt attitude continues to be negative (it is statistically significant at the 10% level in four cases and at the 5% level in two cases) and is even larger in magnitude than indicated in the OLS regressions.

We should however note the limitations of using these estimates or interpreting the IV estimates as causal, as debt attitudes of the respondent and his/her parent could be driven by unobservable differences in preferences or fixed family effects. While we acknowledge these weaknesses, these estimates are at least telling us that we need to pay attention to the many drivers of debt.

## **6. Robustness checks**

We performed a number of robustness checks. Because we had to drop some observations in the empirical regressions, we compared the sample used in the regressions with the original sample and find that the composition is very similar (see Appendix Tables 4 and 5 in the online appendix). Moreover, because the question about parents' debt attitudes is asked of the respondent and not of the parent directly, one may worry that respondents' answers do not accurately reflect the attitude of his or her parents or simply conform to his or her view. Note, however, that a number of respondents who indicate that they themselves are not uncomfortable with debt indicate that their parents were uncomfortable with debt, and vice versa. Moreover and importantly, we are able to look at the debt of parents in addition to the debt of the respondent. In Appendix Table 6 in the online appendix, we show that the attitude of parents does explain some of the variation in the parents' debt behaviour. Thus, this variable has predictive power in the expected way.

To assess whether our measure is not capturing other respondent characteristics, such as preference for risk, we also perform a "placebo test" doing an OLS regression, as in Table 4, but this time using stock market participation as the dependent variable (proxied by whether the respondent reports having directly held stocks). Appendix Table 7 in the online appendix shows that, as expected, being uncomfortable with debt is not related to stock market participation.

Finally, to further explore how debt attitude varies by culture, we look at foreign-born respondents. In Appendix Table 8 in the online appendix, we show that foreign-born respondents are more likely to be uncomfortable with debt compared to non-foreign born respondents, even when we control for many of the demographic characteristics considered in the OLS regressions. Thus, our measure may be related to culture and point to the importance of culture in explaining differences in financial behavior, as in Haliassos et al. (2017).

## 7. Conclusions

We introduce a simple and novel measure of general attitude toward debt. We find that many people report being uncomfortable with debt, and this attitude helps explain debt behavior. While our reduced form framework explains only some of the observed differences in debt behavior, the general debt measure has an impact similar to education or risk taking. In addition, we find a strong correlation between the debt attitudes of respondents and their parents, which suggests that there is a cultural component to debt attitudes that is transmitted from one generation to the next, along family lines. That foreign-born respondents are much more inclined to respond that they are uncomfortable with debt lends further support for there being a cultural element to debt attitudes.

While the sheer size of respondents who report being uncomfortable with debt deserves attention, our findings suffer from a number of limitations. For example, our measure may be a proxy for preferences, such as time discounting. We have accounted for whether people have long term savings to try to control for patience and possibly other unobservables, but it may not be sufficient. Other economic attitudes could be at work here as well, such as being thrifty, an attitude that can be shared across generations. Our variable could also be another measure of debt illiteracy or reflect some crude rules of thumb that people have been using for their financial behavior, such as trying to have no debt or never borrowing for nondurable goods, which again can be passed down across generations. Similarly, it can reflect some form of financial socialization passed down across generations. More work is needed to disentangle these potential effects.

While suggestive, our results can be related to an extensive literature on the determinants of household intertemporal behavior. In a survey of economic research on saving behavior, Browning and Lusardi (1996) identify nine different motives for saving. The list blends economic motivations

related to consumption smoothing with psychological motivations such as greed. Many of these motives seem relevant for debt choices. Clearly, debt choices can be motivated by the desire to smooth consumption, manage short-term shocks, or make productive investments (for example, in human capital). But here, too, psychology can be expected to play a part. For example, some individuals may borrow because they are tempted to; i.e., they lack self-control. Our findings suggest an additional determinant: that people may refrain from borrowing because they have a learned, affective response to debt that makes them less disposed to take it on.

Our line of enquiry is related to the question of whether individual debt choices may be affected by social norms. Previous economic research has linked social norms to decision areas such as consumption patterns (Elster, 1989) or work effort (Lindbeck and Nyberg, 2006). Our analysis takes a small step toward extending this analysis to household debt, but without testing the social norm hypothesis directly. Our line of enquiry is similar in spirit to the analysis by Thustrup Kreiner et al. (forthcoming), which has rich data on economic outcomes.

While certain social norms, such as those against cheating or free-riding, may mitigate moral hazard or time inconsistency problems, resulting in more efficient outcomes, social norms that discourage borrowing are not by definition good or bad. If not managed properly, debt can lead to financial distress, (Lusardi and Tufano 2015), so a social norm that causes individuals to take on less debt could be welfare improving. At the aggregate level, there might be negative externalities from high household debt, for example through increased financial and macroeconomic vulnerabilities (Mian and Sufi, 2018).

Our findings relate to the literature of the effect of culture on financial behavior (Haliassos et al., 2017; Fuchs-Schündeln et al., 2017; and Guin, 2017) by indicating that debt behaviour can be

influenced by culture. Our findings may also have implications for research seeking a better understanding of economic inequality and gender differences as drivers of financial behavior. If families play an important role in passing on social norms that shape debt attitudes, then families also contribute to intergenerational persistence in economic outcomes. A large body of research has documented such persistence (see, for example, Björklund and Jäntti, 2009), finding that family background explains from one-fifth to one-half of the variance in long-run income (Corak, 2013).

Household debt is an important issue in many countries, and it is important that we improve our understanding of its determinants. Our finding that debt attitudes may be one such determinant should not be interpreted as a rejection of the standard theory of consumption and saving, but rather as an indication that further research on debt attitudes might be a fruitful way to shed light on elements of debt choice that are not captured well by a simple consumption-savings model. Because our findings are suggestive, we encourage further research in this area.

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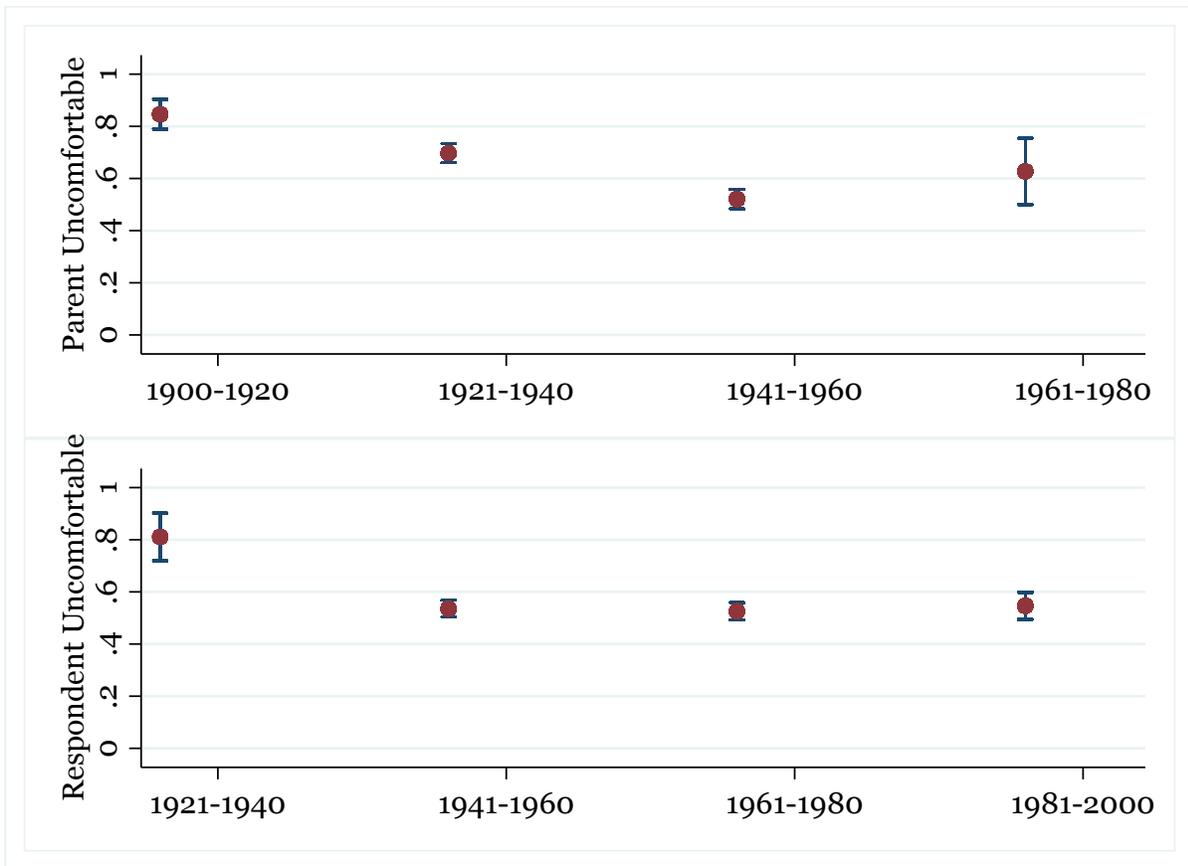


Figure 1. Debt attitudes over birth cohorts: top panel (parent uncomfortable) and bottom panel (respondent uncomfortable) with 95% confidence intervals

## Tables

Table 1a.  
Descriptive Statistics of Survey Questions on Debt Attitudes

	All	Male	Female
<i>Q: Do you feel uncomfortable with having debt?</i>			
Yes	0.560	0.520**	0.596
No	0.425	0.470	0.386
Do not know	0.010	0.007	0.011
Do not want to answer	0.005	0.003	0.007
Observations	834	388	446
	All	Uncomfortable with debt	Not uncomfortable with debt
<i>Q: Do you consider it OK to take on debt in order to...</i>			
	Answered Yes	Answered Yes	Answered Yes
<i>...buy expensive clothes or jewelry?</i>	1.1 %	0.9%	1.4%
<i>...pay for a vacation?</i>	4.8 %	4.1%	5.6%
<i>...cover household expenditures?</i>	6.0%	7.7% ***	3.7%
<i>...buy a car?</i>	85.1%	81.6% ***	89.9%
<i>...get an education?</i>	96.3%	95.9%	96.9%
	All	Uncomfortable with debt	Not uncomfortable with debt
<i>Q: Which one of the following statements do you think best describes how a person with a mortgage should handle their mortgage loan?</i>			
<i>It's important to pay down the principal</i>	84%	87%***	79%
<i>Important but not when young</i>	4%	4%	4%
<i>Not important if saving in some way</i>	7%	5%***	9%
<i>Not important to pay down the principal</i>	3%	2%*	5%
<i>Don't know</i>	2%	2%	2%
<i>Don't want to answer</i>	0.4%	0.2%	0.5%

\*/\*\*/\*\* indicates statistical significant differences in t-tests of group means at levels \* p<0.10, \*\* p<0.05, \*\*\* p<0.01

Notes: The sample consists of all individuals who responded to the survey and to the debt attitude question.

Table 1b.

## Descriptive Statistics of Survey Questions on Information Transmission on Personal Financial Matters

	All	Male	Female	<i>Q: Do you feel uncomfortable with having debt?</i>	
				No	Yes
<i>Qa: Would your mother say that she feels uncomfortable with debt, or if she is deceased, would she have said that she felt uncomfortable with debt?</i>					
Yes	0.684	0.667	0.700		
No	0.243	0.257	0.230		
Do not know	0.068	0.071	0.065		
Do not want to answer	0.005	0.005	0.005		
Observations	427	210	217		
<i>Qb: Would your father say that he feels uncomfortable with debt, or if he is deceased, would he have said that he felt uncomfortable with debt?</i>					
Yes	0.560	0.506*	0.603		
No	0.332	0.376	0.297		
Do not know	0.093	0.107	0.083		
Do not want to answer	0.015	0.011	0.017		
Observations	407	178	229		
<i>Combined (Qa+Qb)</i>					
Yes	0.623	0.591	0.649		
No	0.287	0.312	0.265		
Do not know	0.080	0.089	0.074		
Do not want to answer	0.010	0.008	0.012		
Observations	834	388	446		
<i>Q: Do you often discuss personal financial matters with your ... ? (n=841 out of 844)</i>					
<i>family (n=841 out of 844) (reply option yes or no)</i>					
Yes <sup>a</sup>	0.70	0.69	0.71	0.69	0.71
<i>friends and acquaintances (n=841 out of 844) (reply option yes or no)</i>					
Yes <sup>a</sup>	0.22	0.22	0.22	0.21	0.22
<i>colleagues (n=840 out of 844) (reply option yes or no)</i>					
Yes <sup>a</sup>	0.13	0.17***	0.09	0.17	0.10
<i>Q: If you have one or more daughters, do you discuss personal finances with them? (n=417 out of 421)</i>					
Yes <sup>a</sup>	0.38	0.35	0.41	0.40	0.37
No	0.29	0.32	0.26	0.29	0.29
Do not have daughters	0.33	0.33	0.33	0.31	0.33
<i>Q: If you have one or more sons, do you discuss personal finances with them? (n=423)</i>					
Yes <sup>a</sup>	0.38	0.40	0.37	0.41	0.38
No	0.27	0.27	0.27	0.23	0.29
Do not have sons	0.35	0.33	0.36	0.36	0.33
<i>Q: Does your mother discuss personal finances with you, or if she is deceased, did she use to discuss personal financial matters with you? (n=412 out of 421)</i>					
Yes <sup>a</sup>	0.45	0.40*	0.49	0.44	0.44
No	0.55	0.60	0.51	0.56	0.56
<i>Q: Does your father discuss personal finances with you, or if he is deceased, did he use to discuss personal financial matters with you? (n=411 out of 422)</i>					
Yes <sup>a</sup>	0.35	0.37	0.34	0.32	0.36
No	0.65	0.63	0.66	0.68	0.64

\*/\*\*/\*\* indicates statistical significant differences in t-tests of group means by gender at levels \* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

Notes: <sup>a</sup> The shares are calculated excluding those who answered "do not want to reply" or "do not know".

Table 2  
Descriptive Statistics of Demographic, Income, Financial literacy, Preferences and Wealth Characteristics

	<i>Q: Do you feel uncomfortable with having debt?</i>			
	No Mean	No Median	Yes Mean	Yes Median
<i>Gender</i>				
Female	0.49**		0.58	
<i>Age groups</i>				
25–34	0.16		0.17	
35–44	0.18		0.19	
45–54	0.25		0.21	
55–64	0.25***		0.17	
65–75	0.16***		0.26	
<i>Foreign born</i>				
Born in Sweden	0.46		0.54	
Foreign born (not born in Sweden)	0.28***		0.72	
No foreign born parent (both born in Sweden)	0.48		0.52	
Any foreign born parent (not born in Sweden)	0.41*		0.59	
<i>Education</i>				
Elementary School	0.15*		0.20	
High School	0.47		0.48	
College	0.38		0.32	
<i>Preferences and Financial Literacy (FL)</i>				
Subjective Risk (0–10)	4.61***		3.74	
Long term Saving	0.80***		0.71	
N. of Basic financial literacy correct	2.16***		1.97	
All correct Basic FL	0.44		0.39	
N. of Advanced financial literacy correct	2.38**		2.24	
All correct Adv FL	0.57**		0.48	
N. of DNK in Basic FL	0.13**		0.22	
N. of DNK in Adv FL	0.13**		0.21	
<i>Income, Wealth and Spending</i>				
Disposable Income (net of capital income)	183 429*** (94 941)	180 019	159 995 (90 576)	157 661
Mean of Spending, 2004–2007	211 451** (146 323)	186 355	184 930 (128 011)	166 619
Mean of Net Wealth (SEK), 2004–2007	411 246 (806 164 )	189 073	419 233 (859 376)	93 176
Mean of Financial Assets (SEK), 2004–2007	130 891 (300 684)	24 879	121 795 (243 988)	31 444
Mean of Real Estate Assets (SEK), 2004–2007	604 111 (744 517)	427 810	516 803 (906 355)	157 933
N. of obs	310		390	

\*/\*\*/\*\* indicates statistical significant differences in t-tests of group means at levels \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Notes: SEK = Swedish Krona, 1 SEK = approx. 0.12 USD. *Any Foreign born Parent* is defined as having at least one foreign-born parent (not born in Sweden) in 1999 out of the parents for whom there is data ( $n=569$ ). *Subjective Risk* (0–10) refers to responses to “Do you see yourself as a person who is fully prepared to take risks?” indicates the response on a scale from 0 to 10 where 0 means “not at all willing to take risks” and 10 means “very willing to take risks.” *Basic* and *advanced financial literacy* are measured as the number of correct answers to each category of financial literacy, respectively; see Appendix Table 2 for further description. *Long term Saving* refers to a yes response to the question “As of today, do you have any personal long-term savings?” *Disposable income* is comprised of the sum of labor income, social benefits, and transfers. Spending is defined according to equation (1). *Financial assets* and *Real estate assets* are the sum of the market value of the financial and real estate assets, respectively All register-based variables are reported at the mean value of the first year the individual has a non-missing value between 2004 and 2007.

Table 3.  
Descriptive Statistics of Debt Measures Characteristics

	<i>Q: Do you feel uncomfortable with having debt?</i>					
	No Mean	No Median	Obs	Yes Mean	Yes Median	Obs
Have Debt (0,1)	0.83***		310	0.72		390
Have a mortgage (0,1)	0.72***		310	0.48		388
Debt (SEK)	-328 672*** (365 155 )	-213 064	310	-224 829 (398 618)	-84 222	390
Debt (SEK) if no mortgage	-127 697** (227 402)	-28 868	86	-83 973 (132 828)	-14 471	202
Number of creditors	2.61*** (1.98)	2	310	2.01 (1.80)	2	390
Number of creditors if no mortgage	1.84 (2.02)	1	86	1.54 (1.69)	1	204
Debt to Income Ratio	1.71*** (1.94)	1.17	310	1.24 (1.72)	0.63	390
Debt to Income Ratio if no mortgage	0.76 (1.33)	0.19	86	0.63 (1.14)	0.10	202
Debt to Income Ratio if no real estate	0.54 (0.92)	0.07	110	0.60 (1.19)	0.07	179
Interest expense	13 813*** (15 778)	9 096	310	9 062 (16 839)	1 486	390
Interest expense if no mortgage	5 814** (9 722)	102	86	3 402 (6 624)	7	202
Interest expense if no real estate	2 886* (7 728)	1	110	1 588 (3 962)	0	179

\*/\*\*/\*\* indicates statistically significant differences t-tests of group means at levels \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. *Notes:* SEK = Swedish Krona, 1 SEK = approx. 0.12 USD. Standard deviation in parentheses. All registry-based variables are reported at the mean value of the first year the individual has a non-missing value between 2004 and 2007. *Debt* refers to registry-based data on tax records of the market value of debt. *Mortgage* refers to having answered “yes” to a survey question on having a mortgage or not. Number of creditors is a registry-based value referring to the number of creditors that has reported that the individual owes debt. The *Debt-to-Income ratio* is the yearly ratio of the market value of debt and the yearly disposable income. *Interest expense* refers to the individual’s expenditure on interest payment for loans to creditors.

Table 4  
OLS Regression Results of Indebtedness and Debt Attitude

	Debt to income	Debt to income	Change in debt to income	Cumulative change in debt to income
	$\frac{d_{it}}{y_{it}}$	$\frac{d_{it}}{y_{it}}$	$\Delta \frac{d_{it}}{y_{it}}$	$\frac{d_{i2007} - d_{i2004}}{y_{i2004}}$
Yes, Uncomfortable	-0.623 (0.123)***	-0.507 (0.123)***	-0.083 (0.048)*	-0.208 (0.104)**
Female		0.235 (0.121)*	-0.008 (0.041)	0.192 (0.093)**
Elementary School		-0.487 (0.174)***	0.082 (0.075)	-0.028 (0.158)
High School		-0.428 (0.134)***	0.065 (0.067)	-0.144 (0.119)
Age 35–44		1.580 (0.196)***	-0.276 (0.178)	-0.085 (0.195)
Age 45–54		1.316 (0.177)***	-0.086 (0.094)	-0.235 (0.165)
Age 55–64		1.258 (0.177)***	-0.093 (0.101)	-0.339 (0.144)**
Age 65–75		0.930 (0.160)***	-0.085 (0.100)	-0.476 (0.186)**
Disposable Income		-0.011 (0.008)	-0.001 (0.008)	0.008 (0.009)
Subject. Risk (0–10)		0.046 (0.023)*	-0.005 (0.008)	0.000 (0.018)
Long term Savings		0.179 (0.122)	-0.048 (0.047)	0.127 (0.108)
Basic Fin Literacy		0.054 (0.056)	-0.011 (0.020)	-0.016 (0.050)
Adv. Fin Literacy		0.210 (0.067)***	-0.017 (0.029)	0.066 (0.058)
Constant	1.669 (0.105)***	0.016 (0.332)	0.278 (0.119)**	0.266 (0.263)
N. of Observations	2278	2278	1556	589
Individuals	700	700	652	589
R <sup>2</sup>	0.034	0.171	0.021	0.045

Notes: Standard errors are clustered at the individual level and are given in parentheses. The regressions also include year fixed effects.  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The *Debt-to-income ratio* is the yearly ratio of the market value of debt value and the yearly disposable income. Observations with a debt to income ratio above 20 are excluded. *Yes, Uncomfortable* is a 0/1 variable for the respondent being uncomfortable with debt where yes=1 and no=0. *Female* is a dummy variable for being female (1=female, 0=male). *Education* is measured by three dummy variables (elementary schooling, high school, university schooling [omitted category]). *Age* is divided into five dummy age categories (25–34 is the omitted category). *Disposable Income* is the yearly disposable income divided by 10 000 SEK and is comprised of the sum of labor income, social benefits, and transfers. *Subjective Risk* (0–10) refers to responses to “Do you see yourself as a person who is fully prepared to take risks? Indicate your response on a scale from 0 to 10 where 0 means “not at all willing to take risks” and 10 means “very willing to take risks.” *Long term Savings* refers to a yes response to the question “As of today, do you have any personal long-term savings?.” *Basic* and *advanced financial literacy* are measured as the number of correct answers to each category of financial literacy, respectively; see Appendix Table 2 for further description.

Table 5. OLS Regression Results of Spending (excluding interest expenses) and Debt attitude

	Spending	Interest expense	Annual change in debt	Financial saving	Capital income	Spending growth
	$\frac{c_{it}}{\bar{y}_i}$	$\frac{r_{it}^d d_{it-1}}{\bar{y}_i}$	$\frac{\Delta d_{it}}{\bar{y}_i}$	$\frac{a_{it} - a_{it-1} r_{it}^a}{\bar{y}_i}$	$\frac{y_{it}^k}{\bar{y}_i}$	$\frac{\Delta c_{it}}{\bar{y}_i}$
<b>Panel A</b>						
Yes, Uncomfortable	-0.049 (0.022)**	-0.026 (0.005)***	-0.049 (0.016)***	0.004 (0.016)	0.001 (0.002)	0.002 (0.031)
Constant	1.118 (0.017)***	0.065 (0.004)***	0.105 (0.013)***	-0.005 (0.012)	0.010 (0.001)***	0.063 (0.025)**
Observations	2278	2278	2278	2278	2278	1507
Individuals	700	700	700	700	700	628
R-squared	0.002	0.037	0.005	0.000	0.000	0.000
	Spending	Interest expense	Annual change in debt	Financial saving	Capital income	Spending growth
	$\frac{c_{it}}{\bar{y}_i}$	$\frac{r_{it}^d d_{it-1}}{\bar{y}_i}$	$\frac{\Delta d_{it}}{\bar{y}_i}$	$\frac{a_{it} - a_{it-1} r_{it}^a}{\bar{y}_i}$	$\frac{y_{it}^k}{\bar{y}_i}$	$\frac{\Delta c_{it}}{\bar{y}_i}$
<b>Panel B</b>						
Yes, Uncomfortable	-0.043 (0.023)*	-0.022 (0.005)***	-0.044 (0.015)***	0.004 (0.017)	0.001 (0.002)	0.011 (0.031)
Female	0.010 (0.022)	0.004 (0.005)	0.026 (0.017)	0.002 (0.016)	-0.002 (0.002)	-0.025 (0.031)
Elementary School	-0.102 (0.041)**	0.005 (0.007)	-0.043 (0.023)*	-0.022 (0.031)	0.002 (0.004)	-0.008 (0.052)
High School	-0.023 (0.027)	0.003 (0.005)	-0.025 (0.019)	0.008 (0.018)	-0.004 (0.002)*	0.046 (0.034)
Age 35–44	-0.047 (0.039)	0.058 (0.006)***	-0.031 (0.030)	-0.018 (0.025)	-0.008 (0.002)***	-0.275 (0.049)***
Age 45–54	-0.075 (0.036)**	0.067 (0.005)***	-0.075 (0.028)***	-0.033 (0.024)	-0.002 (0.004)	-0.317 (0.046)***
Age 55–64	-0.073 (0.037)**	0.061 (0.006)***	-0.076 (0.028)***	-0.016 (0.026)	0.000 (0.003)	-0.323 (0.053)***
Age 65–76	-0.053 (0.040)	0.050 (0.005)***	-0.090 (0.025)***	-0.048 (0.032)	0.005 (0.003)	-0.336 (0.047)***
Subj. Risk (0–10)	0.001 (0.005)	0.002 (0.001)**	0.004 (0.003)	0.002 (0.005)	-0.000 (0.001)	0.003 (0.006)
Long term Savings	0.003 (0.026)	0.004 (0.005)	-0.014 (0.018)	-0.025 (0.019)	0.002 (0.002)	-0.002 (0.031)
Basic FinLit	0.002 (0.013)	0.001 (0.002)	-0.003 (0.009)	-0.005 (0.009)	0.002 (0.001)***	0.008 (0.016)
Adv. FinLit	0.017 (0.013)	0.007 (0.003)**	0.015 (0.008)*	-0.001 (0.009)	0.002 (0.001)*	-0.028 (0.020)
Constant	1.063 (0.072)***	-0.019 (0.012)	0.127 (0.049)**	-0.011 (0.055)	-0.001 (0.005)	0.307 (0.088)***
N. of Observations	2278	2278	2278	2278	2278	1507
Individuals	700	700	700	700	700	628
R <sup>2</sup>	0.036	0.171	0.022	0.022	0.035	0.041

Standard errors are clustered at the individual level and are given in parentheses. The regressions also include year fixed effects. p<0.10, \*\* p<0.05, \*\*\* p<0.01. *Notes:* Spending is defined by equation (1) and includes interest expenses. Interest expenses is defined as the sum of expenditures on loans to creditors. Financial Assets are defined as the market value of financial assets given by individual tax records. Real Estate Assets are defined as the market value of real estate assets given by individual tax records. Disposable Income is the yearly disposable income and is comprised of the sum of labor income, social benefits, and transfers. Observations with a debt to income ratio above 20 are excluded. *Yes, Uncomfortable* is a 0/1 variable for the respondent being uncomfortable with debt where yes=1 and no=0. *Female* is a dummy variable for being female (1=female, 0=male). *Education* is measured by three dummy variables (elementary schooling, high school, university schooling [omitted category]). *Age* is divided into five dummy age categories (25–34 is the omitted category). *Subjective Risk* (0–10) refers to responses to “Do you see yourself as a person who is fully prepared to take risks? Indicate your response on a scale from 0 to 10 where 0 means “not at all willing to take risks” and 10 means “very willing to take risks.” *Long term Savings* refers to a yes response to the question “As of today, do you have any personal long-term savings?” *Basic and advanced financial literacy* are measured as the number of correct answers to each category of financial literacy, respectively; see Appendix Table 2 for further description.

Table 6  
OLS Regression Results of Balance Sheets and Debt Attitude

	Annual change in debt	Annual change in financial assets	Annual change in real estate	Cumulative change in debt	Cumulative change in financial assets	Cumulative change in real estate
	$\frac{\Delta d_{it}}{\bar{y}_i}$	$\frac{\Delta a_{it}}{\bar{y}_i}$	$\frac{\Delta h_{it}}{\bar{y}_i}$	$\frac{d_{i2007} - d_{i2004}}{\bar{y}_i}$	$\frac{a_{i2007} - a_{i2004}}{\bar{y}_i}$	$\frac{h_{i2007} - h_{i2004}}{\bar{y}_i}$
Yes, Uncomfortable	-0.045 (0.015)***	0.008 (0.016)	-0.080 (0.050)	-0.208 (0.104)**	-0.012 (0.127)	-0.231 (0.291)
Female	0.021 (0.018)	0.035 (0.017)**	-0.010 (0.052)	0.192 (0.093)**	0.098 (0.086)	0.140 (0.248)
Elementary School	-0.049 (0.025)*	0.038 (0.033)	-0.172 (0.068)**	-0.028 (0.158)	-0.078 (0.236)	0.201 (0.442)
High School	-0.029 (0.020)	-0.026 (0.017)	-0.151 (0.053)***	-0.144 (0.119)	-0.213 (0.127)*	0.334 (0.363)
Age 35–44	-0.021 (0.030)	-0.075 (0.028)***	0.183 (0.058)***	-0.085 (0.195)	-0.259 (0.164)	0.813 (0.343)**
Age 45–54	-0.059 (0.027)**	-0.103 (0.030)***	0.307 (0.069)***	-0.235 (0.165)	-0.133 (0.186)	0.245 (0.558)
Age 55–64	-0.060 (0.029)**	-0.071 (0.032)**	0.410 (0.078)***	-0.339 (0.144)**	-0.051 (0.191)	0.722 (0.409)*
Age 65–75	-0.074 (0.025)***	-0.075 (0.032)**	0.472 (0.070)***	-0.476 (0.186)**	0.321 (0.331)	1.211 (0.522)**
Disposable Income	-0.001 (0.001)	0.002 (0.001)*	-0.001 (0.003)	0.008 (0.009)	-0.009 (0.012)	0.038 (0.028)
Subject. Risk (0-10)	0.004 (0.003)	0.001 (0.003)	-0.013 (0.010)	0.000 (0.018)	0.004 (0.023)	-0.064 (0.047)
Long term Savings	-0.012 (0.018)	0.018 (0.019)	-0.009 (0.052)	0.127 (0.108)	-0.001 (0.142)	0.624 (0.330)*
Basic Fin Literacy	-0.002 (0.009)	0.011 (0.009)	0.026 (0.020)	-0.016 (0.050)	0.011 (0.065)	0.157 (0.142)
Adv. Fin Literacy	0.016 (0.009)*	0.005 (0.010)	0.032 (0.026)	0.066 (0.058)	0.020 (0.066)	0.239 (0.134)*
Constant	0.136 (0.053)***	-0.055 (0.045)	0.027 (0.121)	0.266 (0.263)	0.595 (0.327)*	-1.492 (0.858)*
N. of Observations	2278	2278	2278	589	589	589
Individuals	700	700	700	589	589	589
R <sup>2</sup>	0.022	0.051	0.048	0.045	0.036	0.058

Standard errors are clustered at the individual level and are given in parentheses. The regressions in columns 1-3 also include year fixed effects  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Debt, financial assets, and real estate assets are defined as the yearly market values as given by the individual tax records. Observations with a debt to income ratio above 20 are excluded. Yes, Uncomfortable is a 0/1 variable for the respondent being uncomfortable with debt where yes=1 and no=0. Female is a dummy variable for being female (1=female, 0=male). Education is measured by three dummy variables (elementary schooling, high school, university schooling [omitted category]). Age is divided into five dummy age categories (25–34 is the omitted category). Disposable Income is the yearly disposable income divided by 10 000 SEK and is comprised of the sum of labor income, social benefits, and transfers. Subjective Risk (0–10) refers to responses to “Do you see yourself as a person who is fully prepared to take risks? Indicate your response on a scale from 0 to 10 where 0 means “not at all willing to take risks” and 10 means “very willing to take risks.” Long term Savings refers to a yes response to the question “As of today, do you have any personal long-term savings?” Basic and advanced financial literacy are measured as the number of correct answers to each category of financial literacy, respectively; see Appendix Table 2 for further description.

Table 7

## IV Regression Estimates of Debt to Income using the Intergenerational and Cultural Transmission of Debt Attitude as IVs for the Respondent's Debt Attitude

	Yes, uncomf	Yes, uncomf	Yes, uncomf	Yes, uncomf	Yes, uncomf	Yes, uncomf
First stage estimates						
Yes, Parent Uncomfort	0.429 (0.037)***	0.337 (0.057)***	0.328 (0.057)***	0.426 (0.037)***	0.336 (0.056)***	0.326 (0.057)***
Female x Uncomf Parent		0.175 (0.075)**	0.183 (0.075)**		0.173 (0.074)**	0.181 (0.075)**
Mother			0.069 (0.055)			0.071 (0.055)
Mother x Female			-0.061 (0.071)			-0.061 (0.071)
Respondent Foreign born				0.128 (0.061)**	0.126 (0.061)**	0.128 (0.061)**
First stage F-stat	19.39	19.85	17.51	18.61	19.00	16.98
R <sup>2</sup> in first stage	0.223	0.230	0.232	0.229	0.235	0.237
	Debt to income					
	$\frac{d_{it}}{y_{it}}$	$\frac{d_{it}}{y_{it}}$	$\frac{d_{it}}{y_{it}}$	$\frac{d_{it}}{y_{it}}$	$\frac{d_{it}}{y_{it}}$	$\frac{d_{it}}{y_{it}}$
Second stage estimates						
IV: Yes, Uncomfortable	-0.557 (0.311)*	-0.602 (0.309)*	-0.586 (0.309)*	-0.578 (0.308)*	-0.619 (0.306)**	-0.603 (0.306)**
Female	0.240 (0.123)*	0.241 (0.123)**	0.240 (0.123)*	0.240 (0.122)**	0.241 (0.123)**	0.241 (0.123)**
Elementary School	-0.487 (0.174)***	-0.486 (0.174)***	-0.486 (0.174)***	-0.486 (0.174)***	-0.485 (0.174)***	-0.486 (0.174)***
High School	-0.426 (0.133)***	-0.426 (0.133)***	-0.426 (0.133)***	-0.426 (0.133)***	-0.426 (0.133)***	-0.426 (0.133)***
Age 35–44	1.578 (0.194)***	1.581 (0.195)***	1.580 (0.195)***	1.579 (0.194)***	1.582 (0.195)***	1.581 (0.195)***
Age 45–54	1.310 (0.175)***	1.312 (0.175)***	1.311 (0.175)***	1.311 (0.175)***	1.313 (0.176)***	1.312 (0.175)***
Age 55–64	1.244 (0.176)***	1.243 (0.176)***	1.243 (0.176)***	1.243 (0.176)***	1.242 (0.176)***	1.243 (0.176)***
Age 65–75	0.927 (0.165)***	0.933 (0.164)***	0.931 (0.165)***	0.930 (0.165)***	0.935 (0.165)***	0.933 (0.165)***
Disposable Income	-0.011 (0.008)	-0.011 (0.008)	-0.011 (0.008)	-0.011 (0.008)	-0.011 (0.008)	-0.011 (0.008)
Subject. Risk (0–10)	0.044 (0.024)*	0.043 (0.024)*	0.043 (0.024)*	0.043 (0.024)*	0.042 (0.024)*	0.043 (0.024)*
Long term Savings	0.172 (0.126)	0.169 (0.125)	0.170 (0.125)	0.171 (0.126)	0.168 (0.125)	0.169 (0.125)
Basic Fin Literacy	0.053 (0.056)	0.052 (0.056)	0.052 (0.056)	0.052 (0.056)	0.051 (0.056)	0.052 (0.056)
Adv. Fin Literacy	0.209 (0.067)***	0.209 (0.067)***	0.209 (0.067)***	0.209 (0.067)***	0.209 (0.067)***	0.209 (0.067)***
Constant	0.106 (0.380)	0.143 (0.376)	0.129 (0.375)	0.123 (0.381)	0.157 (0.378)	0.144 (0.377)
Observations	2278	2278	2278	2278	2278	2278
Individuals	700	700	700	700	700	700

Notes: Standard errors are clustered at the individual level and are given in parentheses. The first stage regressions include the same variables as those in the second stage (apart from the instruments) and both include year fixed effects.  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . *Debt to income* is the yearly ratio of the market value of debt value and the yearly disposable income. Observations with a debt to income ratio above 20 are excluded. *Yes, Uncomfortable* is a 0/1 variable for the respondent being uncomfortable with debt where yes=1 and no=0. *Yes, Parent Uncomfortable* is a 0/1 variable for the respondent answering that the parent is/was uncomfortable with debt where yes=1 and no=0. *Mother* refers to the question referring to the mother. *Mother x Female* refers to the interaction effect between a female respondent and the question referring to the mother. For an explanation of the other variables, see Table 4.

## Online Appendix

Appendix Table 1.  
Summary Statistics of the full Sample

	Mean
<i>Gender</i>	
Female	0.54
<i>Age</i>	
25–34	0.17
35–44	0.18
45–54	0.21
55–64	0.20
65–75	0.24
<i>Education</i>	
Elementary School	0.11
High School	0.46
College	0.43
<i>Nationality</i>	
Sweden	0.88
<i>Mean Monthly Disposable Income</i>	
<=15 000 SEK	0.32
>15 000 SEK and <=20 000 SEK	0.24
>20 000 SEK and <=25 000 SEK	0.20
>25 000 SEK and <=30 000 SEK	0.11
>30 000 SEK and <=35 000 SEK	0.05
>35 000 SEK and <=40 000 SEK	0.03
>40 000 SEK	0.05
<i>Financial Literacy*</i>	
Total number of three Advanced FL Question Correct	2.26
Share with all three Advanced FL Questions Correct	0.50
Share with any DNK in three Advanced FL Questions	0.15
Correct Answer to Question on Interest rate Compounding (Q1)*	0.81
Correct Answer to Question on Inflation (Q2)	0.70
Correct Answer to Question on Diversification (Q3)	0.75
Observations	844

*Note:* \* The financial literacy questions are described in detail in Appendix Table 2.

Appendix Table 2.  
 Questions Measuring Basic and Advanced Financial Literacy

Basic Financial Literacy					
Q1. If the chance of getting a disease is 10%, how many people of 1,000 would be expected to get the disease?	Correct answer	Wrong answer		Don't know	Don't want to answer
	83 %	9 %		7 %	1 %
Q2. A second hand car dealer is selling a car for 60,000 SEK. That is two thirds of what it cost new. How much did the car cost new?	Correct answer	Wrong answer		Don't know	Don't want to answer
	50 %	41%		7%	2%
Q3. If five people all have the winning numbers in the lottery and the price is 2 million SEK, how much will each of them get? (They divide the money equally)	Correct answer	Wrong answer		Don't know	Don't want to answer
	67%	22%		9%	2%
Advanced Financial Literacy			Reply Options		
Q1. Suppose you have 100 SEK in a savings account and the interest was 2 percent per year. After 5 years, how much do you think you would have in the account if you left the money to grow?	More than 102 SEK*	Exactly 102 SEK	Less than 102 SEK	Don't know	Don't want to answer
	81%	9%	5%	3%	2%
Q2. Imagine that the interest rate on your savings account was 1 percent per year and inflation was 2 percent per year. After 1 year, would you be able to buy more than, exactly the same as, or less than today with the money in this account?	More than today	Exactly the same as today	Less than today*	Don't know	Don't want to answer
	11%	10%	70%	7%	2%
Q3. Do you think the following statement is true or false? "Buying a single company stock usually provides a safer return than a stock mutual fund."	True	False*		Don't know	Don't want to answer
	12%	75%		11%	2%

Notes: The financial literacy measures used in the survey. \* indicates the correct answer.

Appendix Table 3. A Probit Regression of Holding any Debt

	<i>Debt</i> >0
	2004-2007
Yes, Uncomfortable	-0.387 (0.113)***
Female	-0.071 (0.114)
Elementary School	-0.492 (0.174)***
High School	-0.237 (0.135)*
Age 35–44	1.282 (0.177)***
Age 45–54	1.116 (0.198)***
Age 55–64	1.093 (0.194)***
Age 65–75	0.750 (0.168)***
Disposable Income	0.023 (0.008)***
Subject. Risk (0–10)	0.053 (0.024)**
Long term Saving	0.063 (0.112)
Basic Fin Literacy	-0.072 (0.063)
Adv. Fin Literacy	0.086 (0.067)
Constant	-0.184 (0.328)
Observations	2278
Individuals	700
Pseudo R <sup>2</sup>	0.213

*Notes:* Standard errors are clustered at the individual level and are given in parentheses. The regressions also include year fixed effects.  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . *Debt*>0 Note that observations with a debt to income ratio above 20 are excluded. *Yes, Uncomfortable* is a 0/1 variable for the respondent being uncomfortable with debt where yes=1 and no=0. *Female* is a dummy variable for being female (1=female, 0=male). *Education* is measured by three dummy variables (elementary schooling, high school, university schooling [omitted category]). *Age* is divided into five dummy age categories (25–34 is the omitted category). *Disposable Income* is the yearly disposable income divided by 10 000 SEK and is comprised of the sum of labor income, social benefits, and transfers. *Subjective Risk* (0–10) refers to responses to “Do you see yourself as a person who is fully prepared to take risks? Indicate your response on a scale from 0 to 10 where 0 means “not at all willing to take risks” and 10 means “very willing to take risks.” Long term Saving refers to a yes response to the question “As of today, do you have any personal long-term savings?” *Basic* and *advanced financial literacy* are measured as the number of correct answers to each category of financial literacy, respectively; see Appendix Table 2 for further description.

Appendix Table 4  
 Descriptive Statistics of Survey Questions on Debt Attitudes of Sample with Non-missing Variables  
 (Robustness Analysis of Table 1)

	All	Male	Female
<i>Q: Do you feel uncomfortable with having debt?</i>			
Yes	0.56	0.51	0.60
No	0.44	0.49	0.40
Do not know	x	x	x
Do not want to answer	x	x	x
Observations	700	319	381
		Uncomfortable with debt	Not uncomfortable with debt
<i>Q: Do you consider it OK to take on debt in order to...</i>			
	Answered yes	Answered yes	Answered yes
<i>...buy expensive clothes or jewelry?</i>	1.0 %	0.8%	1.3%
<i>...pay for a vacation?</i>	4.6 %	4.1%	5.2%
<i>...cover household expenditures?</i>	5.3 %	7.2%	2.9%
<i>...buy a car?</i>	86.2%	82.2%	91.3%
<i>...get an education?</i>	97.1%	96.9%	97.4%
	All	Uncomfortable with debt	Not uncomfortable with debt
<i>Q: Which one of the following statements do you think best describes how a person with a mortgage should handle their mortgage loan?</i>			
<i>It's important to pay down the principal</i>	84.3%	88.2%	79.4%
<i>Important but not when young</i>	4.1%	3.9%	4.5%
<i>Not important if saving in some way</i>	6.6%	4.1%	9.7%
<i>Not important to pay down the principal</i>	3.3%	2.3%	4.5%
<i>Don't know</i>	1.4%	1.3%	1.6%
<i>Don't want to answer</i>	0.3%	0.3%	0.3%

Notes: The sample consists of 700 individuals with non-missing values for the covariates associated with the regression specification reported in Table 4.

Appendix Table 5  
Mean Statistics Comparisons of Age, Gender and Education Across Samples

	<i>Total sample</i>	<i>Missing (not replying)</i>	<i>Survey sample</i>	<i>Analysis sample</i>
Female	0.50	0.53	0.54	0.54
Elementary School	0.16	0.19	0.12	0.18
High School	0.47	0.47	0.46	0.47
College	0.37	0.34	0.42	0.35
Age 25-34	0.25	0.27	0.16	0.17
Age 35-44	0.22	0.23	0.19	0.18
Age 45-54	0.20	0.22	0.21	0.22
Age 55-64	0.19	0.16	0.20	0.21
Age 65-75	0.14	0.12	0.24	0.22
Individuals	1 969	1 125	844	700

*Notes:* *Total sample* refers to the random representative sample that was the target of our survey. *Missing* refers to the individuals who did not respond to the survey. *Survey sample* refers to the individuals that responded to our survey. *Analysis sample* refers to the sample we use in the main analysis.

Appendix Table 6

## OLS Regression Results for the Parental Debt to Income and the Debt Attitude reported by the Child (Respondent)

	Parent's debt to Income	Parent's debt to Income	Parent's debt to Income	Parent's debt to Income	Debt of parent	Debt of parent	Debt of parent	Debt of parent
Yes, Parent Uncomfortable	-0.248 (0.13)*	-0.232 (0.14)*	-0.092 (0.13)	-0.075 (0.15)	-84 831.58 (26 347.08)***	-73830.30 (26523.59)***	-46 049.07 (24 501.93)*	-42 430.04 (29 493.11)
Parent Female		-0.160 (0.09)*	-0.139 (0.09)	-0.216 (0.11)*		-72271.82 (16150.76)***	-68 751.08 (16 004.13)***	-88 215.73 (21 509.26)***
Parent Foreign born		-0.253 (0.21)	-0.178 (0.21)	-0.240 (0.31)		-81864.28 (32888.88)**	-66 985.87 (32 236.40)**	-72 223.99 (47 827.25)
Parents's Disp Income		-0.001 (0.00)**	-0.003 (0.00)**	-0.005 (0.00)*		1184.43 (612.11)*	884.71 (439.14)**	1 489.06 (957.46)
Parents's cohort 1900-1920			-1.380 (0.11)***	-0.411 (0.28)			-256 781.6 (21 757.03)***	-77 076.60 (53 219.21)
Parents's cohort 1921-1940			-0.870 (0.13)***	-1.098 (0.30)***			-181 980.0 (22 744.30)***	-198 400.0 (56 456.57)***
Parents's cohort 1961-1980			0.420 (0.28)				78 566.71 (54 248.44)	
Parent Elementary School				-0.117 (0.17)				-119 750 (34 273.34)***
Parent High School				-0.003 (0.16)				-59 994.30 (38 568.45)
Constant	1.262 (0.11)***	1.347 (0.12)***	1.701 (0.14)***	2.174 (0.31)***	255 990.70 (22 079.83)***	175 195.22 (44 816.97)***	719 802.85 (66 008.87)***	454 164.89 (62 575.02)***
Observations	3501	3501	3501	2656	3501	3501	3501	2656
Individuals	540	540	540	402	540	540	540	402
R <sup>2</sup>	0.004	0.009	0.081	0.042	0.016	0.053	0.144	0.106

Clustered standard errors in parentheses. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. The regressions also include year fixed effects. *Notes:* *Yes, Uncomfortable* is a 0/1 variable if the parent's child (the respondent) answered that the parent is/was uncomfortable with debt where yes=1 and no=0. *Parent female* is a dummy variable for the parent being female (1=female, 0=male). *Parent foreign born* is dummy variable for the parent being foreign-born (not born in Sweden). *Parent education* is measured by three dummy variables for the parent (elementary schooling, high school, university schooling [omitted category]). *Disposable income* is the disposable income of the parent in 10 000 SEK the first year the parent has a non-missing value between 2004 and 2007 and is comprised of the sum of labor income, social benefits, and transfers.

Appendix Table 7  
A Placebo test using Stock Market Participation and Debt Attitude

<i>Stock Market Participation</i> >0	
	2004-2007
Yes, Uncomfortable	0.037 (0.033)
Female	-0.077 (0.035)**
Elementary School	0.022 (0.054)
High School	-0.051 (0.038)
Age 35–44	-0.023 (0.052)
Age 45–54	0.021 (0.053)
Age 55–64	0.083 (0.055)
Age 65–75	0.199 (0.057)***
Disposable Income	0.008 (0.002)***
Subject. Risk (0–10)	0.016 (0.007)**
Long term Saving	0.081 (0.035)**
Basic Fin Literacy	0.067 (0.018)***
Adv. Fin Literacy	0.019 (0.021)
Constant	-0.148 (0.096)
Observations	2278
Individuals	700
R <sup>2</sup>	0.141

*Notes:* Standard errors are clustered at the individual level and are given in parentheses. The regressions also include year fixed effects. p<0.10, \*\* p<0.05, \*\*\* p<0.01. *Stock market participation* is dummy variable for owning any direct stocks. Note that observations with a debt to income ratio above 20 are excluded. *Yes, Uncomfortable* is a 0/1 variable for the respondent being uncomfortable with debt where yes=1 and no=0. *Female* is a dummy variable for being female (1=female, 0=male). *Education* is measured by three dummy variables (elementary schooling, high school, university schooling [omitted category]). *Age* is divided into five dummy age categories (25–34 is the omitted category). *Disposable Income* is the yearly disposable income divided by 10 000 SEK and is comprised of the sum of labor income, social benefits, and transfers. *Subjective Risk* (0–10) refers to responses to “Do you see yourself as a person who is fully prepared to take risks? Indicate your response on a scale from 0 to 10 where 0 means “not at all willing to take risks” and 10 means “very willing to take risks.” *Long term Saving* refers to a yes response to the question “As of today, do you have any personal long-term savings?”. *Basic* and *advanced financial literacy* are measured as the number of correct answers to each category of financial literacy, respectively; see Appendix Table 2 for further description.

Appendix Table 8.

OLS Regression Results for the Intergenerational Transmission of Debt Attitudes, Foreign born and Foreign-born Parents

	Yes, uncomf						
The dependent variable is equal to 1 if the respondent replies yes to the question "Do you feel uncomfortable with having debt?", and 0 if the respondent replies no							
Respondent Foreign born		0.168 (0.063)***		0.143 (0.058)**	0.322 (0.107)***		
Parent foreign born			0.073 (0.057)			0.057 (0.051)	0.154 (0.093)*
Yes, Parent uncomf				0.427 (0.037)***	0.451 (0.039)***	0.452 (0.040)***	0.473 (0.044)***
Respondent foreign born x Yes, Parent Uncomf					-0.248 (0.125)**		
Parent foreign born x Yes, Parent uncomf							-0.141 (0.11)
Female	0.036 (0.040)	0.043 (0.040)	0.082 (0.044)*	0.023 (0.036)	0.024 (0.036)	0.058 (0.040)	0.057 (0.040)
Elementary School	0.029 (0.061)	0.036 (0.061)	0.046 (0.069)	0.024 (0.056)	0.029 (0.056)	0.050 (0.063)	0.052 (0.063)
High School	0.003 (0.043)	0.012 (0.043)	0.001 (0.048)	0.008 (0.039)	0.008 (0.039)	-0.007 (0.043)	-0.007 (0.043)
Age 35–44	0.068 (0.070)	0.047 (0.070)	0.047 (0.075)	0.028 (0.064)	0.027 (0.064)	0.015 (0.068)	0.014 (0.068)
Age 45–54	0.041 (0.073)	0.024 (0.073)	0.014 (0.080)	-0.017 (0.067)	-0.019 (0.066)	-0.032 (0.072)	-0.036 (0.072)
Age 55–64	-0.039 (0.073)	-0.053 (0.073)	-0.101 (0.081)	-0.147 (0.067)**	-0.152 (0.067)**	-0.202 (0.074)**	-0.213 (0.074)***
Age 65–75	0.136 (0.072)*	0.134 (0.072)*	0.120 (0.086)	0.035 (0.066)	0.028 (0.066)	-0.017 (0.078)	-0.024 (0.078)
Disposable Income	-0.006 (0.003)**	-0.005 (0.003)**	-0.004 (0.003)	-0.006 (0.002)**	-0.006 (0.002)**	-0.004 (0.003)	-0.004 (0.003)
Subjective Risk (0–10)	-0.029 (0.008)***	-0.028 (0.008)***	-0.033 (0.009)***	-0.024 (0.007)***	-0.024 (0.007)***	-0.029 (0.008)***	-0.029 (0.008)***
Long term Saving	-0.074 (0.043)*	-0.060 (0.044)	-0.047 (0.050)	-0.036 (0.040)	-0.035 (0.040)	-0.018 (0.046)	-0.021 (0.046)
Basic Financial Literacy	-0.019 (0.022)	-0.016 (0.022)	-0.028 (0.025)	-0.018 (0.020)	-0.018 (0.020)	-0.023 (0.022)	-0.024 (0.022)
Adv. Financial Literacy	-0.003 (0.024)	0.003 (0.024)	0.011 (0.028)	-0.010 (0.022)	-0.009 (0.022)	0.001 (0.025)	-0.001 (0.025)
Constant	0.804 (0.110)***	0.750 (0.111)***	0.733 (0.126)***	0.538 (0.103)***	0.521 (0.103)***	0.494 (0.115)***	0.486 (0.115)***
Observations	700	700	569	700	700	569	569
R <sup>2</sup>	0.070	0.080	0.082	0.231	0.236	0.253	0.255

Standard errors in parentheses. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. Notes: *Yes, Parent Uncomfortable* is a 0/1 variable for the respondent answering that the parent is/was uncomfortable with debt where yes=1 and no=0. *Female* is a dummy variable for being female (1=female, 0=male). *Mother* refers to the question referring to the mother. *Mother\*Female* refers to the interaction effect between a female respondent and the question referring to the mother. *Education* is measured by three dummy variables (elementary schooling, high school, university schooling [omitted category]). *Age* is divided into five dummy age categories (25–34 is the omitted category). *Disposable income* is the disposable income in 10 000 SEK the first year the individual has a non-missing value between 2004 and 2007 and is comprised of the sum of labor income, social benefits, and transfers. *Subjective Risk* (0–10) refers to responses to "Do you see yourself as a person who is fully prepared to take risks? Indicate your response on a scale from 0 to 10 where 0 means "not at all willing to take risks" and 10 means "very willing to take risks". *Long term Saving* refers to a yes response to the question "As of today, do you have any personal long-term savings?". *Basic and advanced financial literacy* is measured as the number of correct answers to each category of financial literacy, respectively; see Appendix Table 2 for further description.

## Household debt in Sweden

Many Swedish households use debt to invest in human capital or purchase a home, in particular through publicly provided student loans and privately provided mortgages. About half of the working age population has a mortgage, and the likelihood of having a mortgage increases with education and income.<sup>27</sup> The aggregate debt-to-income ratio has risen from about 80 percent of disposable income in 1970 to about 180 percent of disposable income in 2018, which is higher than in most European countries. High and rising household indebtedness has been identified as a symptom of vulnerability of the Swedish economy by the IMF and the OECD as well as the Riksbank and the Swedish Financial Supervisory Agency. The increase in debt has prompted macroprudential measures, including a loan-to-value cap of 85 percent for mortgages, which was introduced in 2010, and an amortization requirement for households, introduced in 2016.

The high indebtedness of Swedish households is a modern phenomenon—well into the 20th century, households mainly used banks to make deposits, not to get loans.<sup>28</sup> Government intervention in credit markets sought to ensure that households' deposits were channeled into financing the agriculture and industry sectors and to encourage household thrift. Indeed, Sweden has a long history of public moralizing about consumption and saving decisions. In the 17th and 18th centuries, the state issued a number of edicts prohibiting excessive consumption, in part with a mercantilist motive to reduce imports. In the 19th century, an ideal of frugality was depicted as part of Swedish cultural identity. Such reasoning continued into the 20th century with the growth of savings banks and the cooperative movement. The postwar period saw an expansion of lending to households, in particular to purchase homes. The government also took on an increasingly active role in providing credit to households. Between 1930 and 1960, lending to Swedish households for the construction, improvement, or acquisition of homes increased tenfold. Moreover, the government took a more active role to provide households with loans for investment in human capital. Government-sponsored student loans, first introduced in 1919, expanded rapidly beginning in the 1960s. Following rapid deregulation of credit markets in the second half of the 1980s, rapid credit growth ensued, and household debt increased from 100 to 130 percent of disposable income in just four years. This came to a stop during the great banking crisis of the early 1990s, when several banks became insolvent.

Today, lending to households constitutes a large share of the assets of the large Swedish banks, while deposits from households make up only a minor share of these banks' funding. The

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<sup>27</sup> By contrast, unsecured consumer credit constitutes less than one-tenth of Swedish households' loans.

<sup>28</sup> For a more detailed description, see Morell and Hedenborg, 2006.

question of whether changing social norms regarding debt might reflect and, in part, also explain this dramatic shift is the main motivation for this work.

## Survey questionnaire

"A1" "Do you often discuss personal financial matters with your family?"

"1" "Yes"  
"2" "No"  
"8" "Do not know"  
"9" "Do not want to answer {"

"A2" "Do you often discuss personal financial matters with friends and acquaintances?"

"1" "Yes"  
"2" "No"  
"8" "Do not know"  
"9" "Do not want to answer

"A3" "Do you often discuss personal financial matters with colleagues?"

"1" "Yes"  
"2" "No"  
"8" "Do not know"

"W1a" "If you have any daughters, do you discuss personal financial matters with them (or her)?"

"1" "Yes"  
"2" "No"  
"3" "Do not have a daughter"  
"8" "Do not know"  
"9" "Do not want to answer

"W1b" "If you have any sons, do you discuss personal financial matters with them (or him)?"

"1" "Yes"  
"2" "No"  
"3" "Do not have a son"  
"8" "Do not know"  
"9" "Do not want to answer

"W2a" "Is it common for your mother to discuss personal financial matters with you, or if she is deceased, was it common for her to discuss personal financial matters with you?"

"1" "Yes"  
"2" "No"  
"8" "Do not know"

"9" "Do not want to answer

"W2b" "Is it common for your father to discuss personal financial matters with you, or if he is deceased, was it common for him to discuss personal financial matters with you?

"1" "Yes"

"2" "No"

"8" "Do not know

"9" "Do not want to answer

"F1" "Have you ever tried to estimate how much your household needs to save into your pension?

"1" "Yes"

"2" "No"

"8" "Do not know

"9" "Do not want to answer

"F2" "Do you regularly make some type of budget for your incomes and expenditures?

"1" "Yes"

"2" "No"

"8" "Do not know

"9" "Do not want to answer

"F3" "Do you often worry about your personal financial development?

"1" "Yes"

"2" "No"

"8" "Do not know

"9" "Do not want to answer

"F4" "As of today, do you have any personal long-term savings?

"1" "Yes"

"2" "No"

"8" "Do not know

"9" "Do not want to answer

"F5" "Do you have any fund savings apart from what you might have from your occupational pension or premium pension?

"1" "Yes"

"2" "No"

"8" "Do not now

"9" "Do not want to answer

"F6" "The last time you invested money in funds, did you compare funds with different fees?

"1" "Yes"

"2" "No"

"3" "Have never personally invested money in funds"

"8" "Do not know

"9" "Do not want to answer

"AX1" "The last time you received your annual statement regarding the national pension, the so called "orange letter"<sup>29</sup>, did you open it?

- "1" "Yes"
- "2" "No"
- "8" "Do not know"
- "9" "Do not want to answer"

"AX2" "During the last year, did you receive any payment reminders?"

- "1" "Yes"
- "2" "No"
- "8" "Do not know"
- "9" "Do not want to answer"

This knowledge-based question is worded as an open-ended question, nevertheless, the answer should be coded as either correct or incorrect.

"C1" "If the probability of contracting a disease is 10%, how many out of 1000 people would be expected to contract said disease?"

- "1" "Correct -: If the person answers 100 people."
- "2" "Incorrect -: If the person answers anything but 100 people."
- "8" "Do not know {span class=expl}NOTE DO NOT READ

ALoud!{/span}"

- "9" "Do not want to answer"

"C2" "A car dealership is offering to sell a used car for SEK 60 000, which is two thirds of what the car cost when it was new. How much did the car cost as new?"

- "1" "Correct -: If the person answers SEK 90 000."
- "2" "Incorrect -: If the person answers anything but SEK 90 000."
- "8" "Do not know {span class=expl}NOTE DO NOT READ

ALoud!{/span}"

- "9" "Do not want to answer"

"C3" "Five people win the lottery and are to share the prize equally. If the prize money they are to share is 2 million, how much money does each person get?"

- "1" "Correct -: If the person answers SEK 400 000."
- "2" "Incorrect -: If the person answers anything but SEK 400 000."
- "8" "Do not know"
- "9" "Do not want to answer"

NOTE READ

SEK 400 000.

"C4a" "Suppose that you make an investment for which the value increases by 20% each year. How many years need to pass for the value to double?"

- "1" "2 years or less"
- "2" "More than 2 years but less than 5 years"
- "3" "5 years or more?"
- "8" "Do not know"

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<sup>29</sup> Sent out by the Swedish Pension Agency containing a detailed value statement regarding the recipient's pension.

"9" "Do not want to answer

"C4b" "Suppose that the size of a potted plant increases by 20% each year.

How many years need to pass for the size to double?

"1" "2 years or less"  
"2" "More than 2 years but less than 5 years"  
"3" "5 years or more?"  
"8" "Do not know {  
"9" "Do not want to answer

"C5" "How certain did you feel about your answer to the previous question?"

Give your answer on a scale from 0 to 10 where 0 means 'not at all certain' and 10 means 'completely certain'.">

"0" "0 Not at all certain"  
"1" "1"  
"2" "2"  
"3" "3"  
"4" "4"  
"5" "5"  
"6" "6"  
"7" "7"  
"8" "8"  
"9" "9"  
"10" "10 Completely certain"  
"88" "Do not know  
"99" "DO not want to answer

"D1" "Suppose that you have SEK 100 in a savings account with an interest rate of 2 percent.

How much money do you believe would be in your account after 5 years if you let the money in your account grow?{

"1" "More than SEK 102"  
"2" "Exactly SEK 102"  
"3" "Less than SEK 102"  
"8" "Do not know  
"9" "Do not want to answer

"D2" "Suppose that the interest rate on your savings account is 1 percent and that the inflation rate is 2 percent.

If you leave your money in your account for one year, will you be able to buy more, just as much, or less with your money at the end of the year?

"1" "More"  
"2" "Just as much"  
"3" "Less"  
"8" "Do not know  
"9" "Do not want to answer

"D3" "Is the following statement true or false?"

To buy stocks in a single company is for the most part a more secure option than to buy shares in an equity mutual fund?

You are not allowed to disclose the correct answer, even if requested, until the last interview question has been read.

"1" "True"  
"2" "False"  
"8" "Do not know"  
"9" "Do not want to answer"

"D4a" "Historically, which one has yielded the highest long-term returns, stocks or bonds?"

NOTE: Read aloud 'Do not know' as a possible answer.

However, do not read aloud 'Do not want to answer' as a possible answer.

"Chance3=1"

"1" "Stocks"  
"2" "Bonds"  
"8" "Do not know - JUST THIS TIME, THIS POSSIBLE ANSWER SHOULD ALSO BE READ ALOUD!"  
"9" "Do not want to answer"

"D4b" "Historically, which one has yielded the highest long-term returns, stocks or bonds?"

Do NOT read aloud "Do not know" or "Do not want to answer" as possible answers.

Nevertheless, the respondent can answer "Do not know" or "Do not want to answer" and the answer should in that case be coded as such.

"Chance3=2"

"1" "Stocks"  
"2" "Bonds"  
"8" "Do not know -"  
"9" "Do not want to answer"

"E1" "Which of the following statements do you think best describe how a person with a mortgage should handle their mortgage loan?"

"1" "It's important to pay down the principal"  
"2" "It's important but not when you are young"  
"3" "It's not important as long as you are saving in some way"  
"4" "It's not important "  
"8" "Do not know"  
"9" "Do not want to answer"

"E2" "Do you have a mortgage loan?">

"1" "Yes"  
"2" "No"  
"8" "Do not know"  
"9" "Do not want to answer"

"E3" "The last time you took out a mortgage loan, did you compare offers between different banks?"

"1" "Have never had a mortgage"

"2" "Yes"  
"3" "No"  
"8" "Do not know"  
"9" "Do not want to answer"

"E3=2"

"E4" "When you were comparing offers from different banks, what were the most important reasons for your choice of bank or lending institution?"

The respondent can give more than one answer. {/i}">

"1" "The interest rate"  
"2" "The size of the down payment"  
"3" "Previous relationships with the bank or the financial institution"  
"4" "Good bank or lending institution"  
"5" "Recommendations"  
"6" "Other reasons"  
"8" "Do not know"  
"9" "Do not want to answer"

"E5" "Have you ever tried to assess how your personal financial situation would be affected by an increase of the interest rate on mortgage loans to different levels?"

"1" "Yes"  
"2" "No"  
"8" "Do not know"  
"9" "Do not want to answer"

"G1" "Do you feel uncomfortable with having debt?"

"1" "Yes"  
"2" "No"  
"8" "Do not know"  
"9" "Do not want to answer"

"G2a" "Would your mother say that she feels uncomfortable with debt, or if she is deceased, would she have said that she felt uncomfortable with debt?"

"Chance4=1"

"1" "Yes"  
"2" "No"  
"8" "Do not know"  
"9" "Do not want to answer"

"G2b" "Would your father say that he feels uncomfortable with debt, or if he is deceased, would he have said that she felt uncomfortable with debt?"

"Chance4=2"

"1" "Yes"  
"2" "No"  
"8" "Do not know"  
"9" "Do not want to answer"

"L1" "Do you think it is OK to take on debt to pay for a vacation?"

"1" "Yes"  
"2" "No"  
"8" "Do not know"

"9" "Do not want to answer"

"L2" "Do you think it is OK to rake on debt to cover household expenses?"  
 "1" "Yes"  
 "2" "No"  
 "8" "Do not know"  
 "9" "Do not want to answer"

"L3" "Do you think it is OK to take on debt to buy expensive clothes or jewelry?"  
 "1" "Yes"  
 "2" "No"  
 "8" "Do not know"  
 "9" "Do not want to answer"

"L4" "Do you think it is OK to take on debt to buy a car?"  
 "1" "Yes"  
 "2" "No"  
 "8" "Do not know"  
 "9" "Do not want to answer"

"L5" "Do you think it is OK to take on debt to get an education?"  
 If the respondent asks, you can clarify that the question refers to all types of study loans including study loans from the Swedish Board of Student Finance (CSN).  
 "1" "Yes"  
 "2" "No"  
 "8" "Do not know"  
 "9" "DO not want to answer"

"L5" =" Do you think it is OK to take on debt to get an education?{br}{br}  
 "1" "YES" />  
 "2" "No" />  
 "8" Do not know  
 "9"="Do not want to answer"

"AX3" "Do you consider yourself to be a person that is completely prepared to take risks, or do you consider yourself as a person who takes as few risks as possible?"  
 Give your answer on a scale from 0 to 10 were 0 means 'Not at all prepared to take risks' and 10 means 'completely prepared to take risks'  
 "0" "0 - Not at all prepared to take risks"  
 "1" "1"  
 "2" "2"  
 "3" "3"  
 "4" "4"  
 "5" "5"  
 "6" "6"  
 "7" "7"  
 "8" "8"  
 "9" "9"  
 "10" "10 - Completely prepared to take risks"  
 "88" "Do not know"  
 "99" "Do not want to answer"

"Z1"            "How well does the following statement describe you?  
I find questions regarding personal financial matters boring  
Give your answer on a scale from 0 to 10 were 0 means 'Does not describe me  
at all' and 10 means 'Describes me completely'

"0"	"0 - Does not describe me at all"
"1"	"1"
"2"	"2"
"3"	"3"
"4"	"4"
"5"	"5"
"6"	"6"
"7"	"7"
"8"	"8"
"9"	"9"
"10"	"10 - Describes me completely"
"88"	"Do not know"

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