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Abstract. We combine survey data on debt attitudes with registry data on household balance sheets to shed light on the determinants of household debt. We introduce a simple and novel survey measure of attitude toward debt, asking respondents if they are uncomfortable with debt. We show that this measure is correlated with observed household debt levels, even after controlling for relevant socioeconomic variables; those who report being uncomfortable with debt have considerably lower debt levels. Being uncomfortable with debt is correlated between parents and their children, indicating intergenerational transmission of behavior and attitudes toward debt.

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1. Introduction

Household debt is becoming an important issue in many countries, as levels of debt have increased over time and across the life cycle. For example, many households now carry debt close to and well into retirement (Lusardi, Mitchell and Oggero, 2017, 2018). Debt and excessive borrowing were one of the main determinants of the financial crisis in the United States and other countries, and attention is being paid to this topic with the goal of avoiding past errors. Moreover, debt is often associated with high interest rates or fees, which can lead to financial distress if not managed properly (Lusardi and Tufano, 2015).

In this paper, we use data from Sweden, a country where household debt as a share of disposable income has nearly doubled in two decades, rising from about 90 percent in 1995 to about 180 percent in 2016 (Sveriges Riksbank, 2017). While economic fundamentals—in particular lower interest rates—can explain part of the increase in debt, the magnitude of the increase could be due to other reasons, such as a cultural shift in attitudes toward debt. Sweden represents a good laboratory in which to study debt because, as one of the Nordic countries, it has a relatively equal distribution of income, wealth, and debt across its large population. Moreover, researchers have access to administrative data with detailed information on household assets and debt.

To shed more light on the determinants of household debt, we designed a survey to obtain information about attitudes toward debt and combined the survey results with registry data on household balance sheets. Previous research has examined links between attitudes toward different forms of debt and debt choices, in particular credit card use (e.g., Godwin, 1997; Chien and Devaney, 2001). Our analysis extends that line of research in two ways. First, we introduce a novel and general measure of debt attitude, asking respondents if they are uncomfortable with debt. Linking the survey responses with registry data enables us to show that this novel survey measure has empirical relevance; i.e., it is correlated with actual debt choice. Second, we widen the scope of the analysis to incorporate intergenerational transmission of attitudes toward debt by asking the respondents in our survey about parents' attitudes toward debt.

The motivation for asking about attitudes toward debt is to better understand whether individual debt choices may be affected by social norms.[6] Previous economic research has linked social norms to decision areas including job searching (see, for example, Lindbeck, 1997; Stutzer and Lalive, 2004), wage setting (Akerlof, 1980), composition of consumption (Elster, 1989), price setting (Kahneman, Knetsch, and Thaler, 1986), work effort (Lindbeck and Nyberg, 2006), and portfolio composition (Hong and Kacperczyk, 2009). We take a step toward extending this analysis to household debt. To the best of our knowledge, the only paper in a similar spirit is Thustrup Kreiner et al. (2017). Their analysis has rich data on economic outcomes. Our analysis contributes to the literature with a novel and more direct measure of financial attitudes and their correlation across

[6] By *norm*, we mean an ideal that governs behavioral expectations in a certain context. For a norm to be social, as opposed to private, it needs to be shared by others and there must be some enforcement of the norm through the approval or disapproval of others (Elster, 1989).

generations. Given the rise of debt in many countries, improving our understanding of debt is an important objective.

The link between debt choices and social norms appears *a priori* plausible. Previous economic research has indicated that cultural differences (e.g., social norms) play a role in shaping debt choices, pointing to how countries with many similarities can differ a lot when it comes to 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 dominance of adjustable or fixed rate mortgages (Campbell, 2013). In addition, research in other disciplines has documented the salience of social norms around borrowing and saving in many societies and how these social norms have frequently been incorporated into practice or law, for example represented and enforced by institutions, such as the church. This history is reflected in language, religion, and culture: In many indo-European languages, the words for "debt" often also mean "sin" or "guilt," and several religions, including Christianity and Islam, have condemned interest on loans (Graeber, 2013). Governments or civil society have propagated social norms that encourage saving through, for example, savings schemes or informational programs targeted at adults as well as children (Garon, 2013).

In our survey, we asked participants about the debt attitudes of their parents because parents may play an important role in the internalization of social norms in children.[7] Lack of correlation in reported debt attitudes of parents and their children would suggest that the attitude is not linked to a social norm, or at least not to a social norm that is transmitted within the family. A growing literature documenting intergenerational transmission of economic preferences also finds support for the intergenerational transmission of social norms.[8] One approach to modelling cultural transmission within families is to consider social norm formation as an active, strategic choice by parents, as in Bisin and Verdier (2001) or Lindbeck and Nyberg (2006), but one can also think of social norm formation as being more passive, reflecting past experiences. Closest in spirit to our study is the work of Knowles and Postlewaite (2005), who show that parental attitudes predict their children's savings beyond what is explained by demographics and income. Other examples of studies finding support for intergenerational (and cultural, as opposed to purely biological)

[7] In a family setting, norms may be enforced through direct sanctions from parents or siblings. The norm is said to be internalized when an individual has acquired the ability to generate some form of internal sanction when the norm is violated. Guilt, shame, or embarrassment may be important mechanisms for the internalization of norms. A related interpretation is that the internalization of norms may give rise to cognitive dissonance (Festinger, 1957) in the case of tension between material incentives and a social norm (Lindbeck, Nyberg, and Weibull, 1999). The transmission of social norms may depend on the sex of parent and child, see for example Maccoby (1992), Farré and Vella (2013), Fernandez et al. (2004), Morrill and Morrill (2013) and Hederos, Eriksson, and Stenberg (2015).

[8] A related line of research looks at how culture is transmitted between generations and shapes labor market outcomes. For instance, Antecol (2000) shows the importance of culture in explaining female labor force participation rates of immigrants in the US, using variation in labor force participation across home country groups.

transmission of economic preferences include Dohmen et al. (2012), Zumbuehl et al. (2013), and Alan et al. (2013).[9]

Our analysis provides four insights that may help our understanding of debt behavior.

1. The majority of respondents in our sample, 56 percent, report that they are uncomfortable with debt. This is a high percentage given how many people carry debt in Sweden. The fact that more than half of respondents report discomfort with debt indicates that this attitude should be taken into account when studying debt behavior.
2. This simple attitude helps explain individual debt levels. Individuals who report being uncomfortable with debt have considerably lower debt-to-income ratios: On average, the difference in debt-to-income is about three-quarters of annual disposable income. In dollar terms the difference in means is about $25,000. Our results suggest that being uncomfortable with debt acts as a self-imposed borrowing constraint.
3. There is a strong correlation between respondents' and parents' attitudes toward debt (correlation: 0.40), suggesting intergenerational transmission of attitudes toward debt.
4. The fraction of respondents who report being uncomfortable with debt appears to be declining over time: the percentage of parents being uncomfortable with debt is considerably larger than the percentage of children being uncomfortable with debt. Attitudes can be an important driver of behavior but are also prone to change over time. Hence, a change in attitudes toward debt is potentially relevant for understanding the recently observed increase in debt.

We wish to emphasize that our analysis is not intended as a rejection of the standard theory of consumption and saving, but as an extension. A plain intertemporal model hinges on consumption smoothing to generate predictions about individual decisions to save or borrow, and adding uncertainty generates a richer model. Allowing for preference heterogeneity (Gomes and Michaelides, 2005; Vestman, 2018), variation in self-control (Schlafmann, 2016), 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. The goal of this study is to shed light on an additional potential determinant of intertemporal choices about consumption, namely that some people may refrain from borrowing for the simple reason that they have been taught to do so. In terms of the standard theory, social norms that shape attitudes toward debt would then, in effect, act as a constraint on individuals' borrowing behavior. While exploratory in nature, our results suggest that social norms may indeed play such a role, and that further research in this area may be fruitful.

The paper proceeds as follows. Section 2 provides a short description of household debt in Sweden. Our survey is described in section 3. Descriptive statistics are provided in section 4 (survey data)

[9] A contrasting finding is provided by Cipriani et al. (2013) who find no transmission of prosocial values from parents to their young children (6–12 years of age) using standard public goods experiments.

and section 5 (survey data matched with registry data). The matched sample is analyzed more closely in section 5. Section 6 concludes.

2. Household debt in Sweden

Many Swedish households use debt to invest in human capital or purchase a home, in particular through publically 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.[10] Interest-only mortgages are common in Sweden and even households that do pay off their loans do it at a slow pace (Winstrand and Ölcer, 2014). Against a backdrop of widespread borrowing and slow repayment, the aggregate debt-to-income ratio rose from about 80 percent of disposable income in 1970 to about 180 percent of disposable income in 2016, 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 (see, for example, Riksbank 2016). 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.[11] 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.

[10] By contrast, unsecured consumer credit constitutes less than one-tenth of Swedish households' loans.
[11] For a more detailed description, see Morell and Hedenborg, 2006.

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 (Riksbank, 2017). The 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.

3. Data and methods

In order to better understand debt, we collected new data in the fall of 2014 through a telephone survey. The survey was carried out by Statistics Sweden using a subcontractor (Mind Research AB).[12] The survey was targeted at individuals, rather than households, and participation was not conditional on being the main household financial decision maker. The sample is representative of the Swedish population age 25–75[13] and it consists of 390 men and 454 women (46 and 54 percent, respectively); the average age is 51. Appendix Table 1 reports mean values for the socioeconomic characteristics of the sample.

One of the advantages of this work is that we are able to match the survey data with registry data on age, gender, education, income, and, most importantly, wealth and debt. This registry data, collected by Statistics Sweden, provides accurate measures of both wealth and debt and is described in more detail in section 5.

Survey questions

The survey we designed contains a set of questions about attitudes toward debt. Most importantly, we asked respondents a general and subjective question about whether or not they feel comfortable with debt, as follows

- *Do you feel uncomfortable with having debt?*

We asked the same question about survey participants' mothers and fathers:

- *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; in other words, they were asked about either their mother or father. The gender was randomized. Asking about only one gender reduces sample size

[12] The survey was commissioned by the authors and paid for through research grants from the Swedish Science Council, the Swedish Financial Supervisory Agency, and the European Investment Bank.

[13] 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. Out of these, the total number of individuals with non-missing values on our debt measures, attitudes and control variables is 727 individuals.

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.

Our survey 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.

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?*

Next, we asked survey participants whether they discuss personal financial matters with their parents and with their children. We asked about mothers and fathers separately and we also asked about daughters and sons separately:

- *Does your mother/father discuss personal financial matters with you, or if she/he is deceased, did she/he use to discuss personal financial matters with you?*
- *If you have one or more daughters/sons, do you discuss personal financial matters with them?*

For both of these questions, respondents were asked about only one gender. The gender was randomized and the randomizations for the two questions were independent. As mentioned above, asking about one gender reduces sample size in each cell but may be important to reduce bias, if the answer about a parent or child of one gender is anchored by the answer about the other parent or child of the other gender.

Our survey asked about being uncomfortable with debt in general. A related but separate issue is whether people consider it appropriate to borrow money. This is more of a moral statement and not so much a measure of a subjective disposition. Previous research indicates that people do hold such moral beliefs about debt and that it is contingent on what the debt is used for (Chien and Devaney, 2001). To shed more light on this issue, we asked five questions closely based on questions asked in the 1998 Survey of Consumer Finances (SCF) in the US, about whether survey participants consider it appropriate to borrow money for different purposes: [14]

[14] See Chien and Devaney, 2001. The only difference is 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.

- *Do you think it is OK to take on debt to buy expensive clothes or jewelry?*
- *Do you think it is OK to take on debt to pay for a vacation?*
- *Do you think it is OK to take on debt to cover household expenses?*
- *Do you think it is OK to take on debt to buy a car?*
- *Do you think it is OK to take on debt to get an education?*

Recent research in Sweden has documented that many mortgage holders do not pay down the principal on their mortgages (Finansinspektionen, 2015), thus carrying mortgage debt for a long period, potentially indefinitely. This again is related to norms about carrying debt that may have existed but are eroding. To shed some light on this specific topic, we included a question about the importance of paying down the principal, which is related de facto to debt and having debt:

- *Which one of the following statements do you think best describes how a person with a mortgage should handle their mortgage loan? "It's important to pay down the principal" / "It's important but not when you are young" / "It's not important as long as you are saving in some way" / "It's not important"*

4. Summary statistics

Our findings are striking: The majority of respondents in our sample (56 percent) reported being uncomfortable with debt (Table 1). This is a high proportion, showing that norms and attitudes have the potential to play an important role. We also note a gender difference in comfort with debt: Women are more likely than men to be uncomfortable with debt.

Table1 about here

When asked about the attitudes of their parents, a large proportion of respondents 62 percent, reported that their parents are/were uncomfortable with debt. This is considerably higher than the fraction who reported themselves to be uncomfortable with debt, showing that attitude toward debt is changing across generations. Figure 1 illustrates this pattern by showing the share reporting themselves or their parent being uncomfortable with debt by birth cohort of the respondent and the respondent's parent (excluding those who reported do not know or do not want to answer). The figure further shows that more recent cohorts are less likely to be uncomfortable with debt compared to older cohorts.

Figure 1 about here

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 1). And like their mothers, female respondents continue to be more uncomfortable with debt than male respondents. Parents' attitudes toward debt are important because the family can play a very important role when it comes to discussing personal financial matters. 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. 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, somewhat less than the respondents talked to with their parents about financial matters. We do not observe any substantial differences in the treatment of sons and daughters in this regard, regardless of the sex of the respondent.

Table 1 also shows that many respondents reported discussing personal financial matters with their parents. Both men and women are more likely to discuss their personal finances with their mothers than with their fathers. This could be an issue because women are found to have lower financial literacy than men (Lusardi and Mitchell, 2014). Moreover, women are much more likely to talk to their mothers (49 percent) than men (40 percent). This may explain some of the gender differences in both financial literacy and behavior. If women are less financially knowledgeable than men, they may transmit that lower knowledge to their daughter(s). Similarly, if mothers are more concerned about having debt, they may transmit that attitude to their daughter(s).

Consistent with the notion of intergenerational transmission of financial attitudes, we observe a strong correlation between the respondent and parents being uncomfortable with 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 intergenerationally from parents to children.[15] Consistent with what was discussed above about gender differences, the correlation with parents is much stronger for women (0.495, p-value <0.0001) than for men (0.293, p-value <0.0001).

So far, we have shown that many respondents are uncomfortable with debt. A related issue is when people consider it appropriate to borrow money. Table 2 shows that many respondents view the appropriateness of taking on debt as dependent on the purpose the debt is used for. For example, debt is considered OK for buying a car or for educational purposes, but very few (6%) consider it OK to cover household expenses. Thus, the norm perceived by respondents seems to be that people should spend within their current resources. Thus, not everyone thinks intertemporal consumption smoothing is a good rationale for borrowing, perhaps consistent with practitioners' recommendation to live below one's means. As far as mortgage loans are concerned, the large majority of respondents (84 percent) consider it appropriate to pay down the principal.

[15] Dividing 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.

Table 2 about here

Table 2 also shows that respondents who are uncomfortable with debt are less likely to consider it OK to take on debt for various purposes. 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. Interestingly, respondents who are uncomfortable with debt are also more likely to consider it appropriate to pay down the principal on a mortgage (88 percent compared to 79 percent of those who are not uncomfortable; Pearson chi-squared $p<0.022$).

5. Matching the survey with registry data

Matching the survey data with registry data allows us to shed more light on who is uncomfortable with debt. It also allows us to verify that our survey measure of debt attitude is empirically relevant, i.e., correlates well with actual debt choice. In this section, we report some descriptive statistics for this matched sample, as well as offer some more detailed analysis.

Table 3 about here

The matched sample offers a very rich set of data and allows researchers to better understand debt and debt behavior. For example, older respondents (people age 65–75) are more likely to report being uncomfortable with debt. Respondents who are uncomfortable with debt have less education and lower disposable income but the differences are small. They report being less willing to take risk, and have slightly lower levels of financial literacy (measured using standard questions, see Appendix Table 2) compared to those who do not feel uncomfortable with debt. They also have slightly higher net wealth and their portfolios contain less housing wealth and more financial assets.

Table 3 provides summary statistics regarding debt and other registry-based information. As in Calvet, Campbell, and Sodini (2007, 2009), for example, and more recently Flodén et al. (2016), we have information about the balance sheet of each individual. Our main measure of indebtedness is the *debt to income ratio*, defined as the ratio between the nominal amount of household debt and the value of disposable income. The debt-to-income ratio is considerably lower for those who report being uncomfortable with debt: 1.5 compared with 2.3 among those who do not feel uncomfortable with having debt.[16] All registry-based variables refer to 2007, which is the last year in which Statistics Sweden collected comprehensive information about household balance sheets.[17]

[16] Debt to income is also a central measure in Flodén et al. (2016), who group Swedish households into five categories according to their debt to income and report detailed statistics on each group.

[17] 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. (2017).

We also look at the *debt value*, defined as the nominal amount of debt in Swedish kronas (SEK). Those who feel uncomfortable with having debt have considerably less debt: Average debt is approximately 266,000 SEK among those who are uncomfortable and 495,000 SEK among those who are not uncomfortable. The difference is equivalent to about USD 25,000. Part of these results may be driven by mortgage debt. Those who are uncomfortable with debt are less likely to have a mortgage and, as Table 2 reports, those who have a mortgage think that it is important to pay down the principal. In sum, level of indebtedness varies significantly between those who feel uncomfortable with having debt and those who do not.[18]

Next, we merged data from our survey with registry data to better investigate whether being uncomfortable with debt helps explain observed debt levels. We perform a multivariate regression analysis. If being uncomfortable with debt is correlated with socioeconomic variables that have a direct effect on debt choice, a simple difference in means comparison may overstate the impact of being uncomfortable with debt.

Our main analysis is based on OLS regressions with debt as the dependent variable and controlling for many of the socioeconomic variables that are relevant for debt choice in a life cycle model. We can write this as

$$D_i = \beta_0 + \beta_1 U_i + \beta_2 X_i + \varepsilon_i \quad (1)$$

where D_i denotes our outcome variable for debt, U_i is a dummy variable that indicates whether the respondent is uncomfortable with debt, X_i is a set of covariates that determine debt holdings, and ε_i is an error term. Our coefficient of interest is β_1. If norms, such as being uncomfortable with debt, have no effect on debt choice, once we control for the socioeconomic variables normally included in intertemporal models, we should find that $\beta_1 = 0$.

Our main debt measure is debt to income.[19] This variable is left censored at 0. To address this issue, we also use Tobit regressions. Table 4 reports the estimates from our empirical work.

Table 4 about here

The results reported in Table 4 show that being uncomfortable with debt continues to be linked to debt levels. Even after controlling for many socioeconomic variables, including education, income, and wealth measures, those who are uncomfortable with debt still have considerably lower debt to income ratios. On average the difference is about 0.6 times annual disposable income (column 1 of Table 4), similar in magnitude to the 0.75 times annual disposable income difference in means without controlling for covariates (Table 3). Note that reverse causality, i.e., it is debt that causes

[18] As a robustness check, we look at the share within each group that has no debt, defined as having debt below 10,000 SEK, which corresponds to about USD 1,200. About 32 percent of those who report being uncomfortable with debt have debt below this level compared to merely 17 percent among those who report not being uncomfortable with debt, see Table 3.

[19] When taking ratios, outliers were detected which were excluded from the sample.

attitudes toward debt and not the other way around, would likely generate a different association, i.e., it is those with high debt who are likely to be uncomfortable with debt. In the last two columns of Table 4, the estimates are displayed separately based on having a parent who is comfortable or uncomfortable having debt. Results show that being uncomfortable with debt is associated with lower values of indebtedness only among those with a parent who feels uncomfortable having debt. Thus, parents play an important role in shaping debt behavior.

Aside from debt attitude, age appears to be a strong driver of debt to income. Our estimates suggest a hump-shaped pattern, consistent with life-cycle smoothing.

In sum, we find a strong association between debt choice and our measure of debt attitude. Adjusting for controls reduces the magnitude of the association somewhat, but the order of magnitude is still large.[20]

As a robustness check, we also estimate this relationship using a Tobit model specification. This addresses left censoring of the debt-to-income ratio at 0. The results are in line with those reported above (see Appendix Table 3 for more details).

Table 5 about here

We also divide the sample into two groups according to the degree of indebtedness i.e., those with a debt-to-income ratio below the median and those with a debt-to-income ratio above the median. Table 5 shows that among those with a below-median level of indebtedness, 67 percent are uncomfortable with debt, while among those with an above-median level of indebtedness (a t-test yields a p-value of 0.00), the percentage is 46 percent. Among those who have a below-median level of indebtedness, 71 percent have a parent who is uncomfortable with being in debt, compared to 66 percent among those with an above-median level of indebtedness (a t-test yields a p-value of 0.09).[21]

Table 6 reports our estimates of an intergenerational transmission of debt attitudes, a hypothesis that is supported by our empirical results. The coefficient on parent's attitude is positive and highly significant, taking on values in the 0.3–0.4 range with standard errors of about 0.05 or less. Controlling for socioeconomic characteristics has almost no effect on this coefficient, which remains closely similar in size and highly significant. Age, financial assets, and willingness to take risk are also statistically significant. Without controls, parental attitude explains approximately 16 percent of the variance in respondents' attitudes toward debt. [22]

[20] We have also elaborated on estimating the correlation between the parents' level of indebtedness and respondent reports of whether the parent is uncomfortable or not with debt. We find that fathers and mothers who are characterized as being uncomfortable with debt also have statistically significantly lower levels of indebtedness.
[21] The results are robust to imposing an exclusion restriction at 10.
[22] The intergenerational transmission effect is robust to controlling for household size and marital status (neither is significant), and parental education (respondents with a college-educated mother are more likely to be uncomfortable

Table 6 about here

We also report estimates with the addition of an interaction term between being female and the attitude of the parent. The coefficient for the interaction term is positive and highly significant, suggesting a stronger intergenerational transmission of debt attitudes between parents and daughters, as compared to parents and sons, consistent with what we had reported in the summary statistics.

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. Addressing this endogeneity is an interesting area for further research and is something we plan to explore in future work.

6. Conclusions

We introduce a simple and novel measure of debt attitude. We find that many people report being uncomfortable with debt, and this attitude is correlated with having less debt. We find a strong correlation between the debt attitudes of parents and their children, suggesting intergenerational transmission of attitudes toward debt. We also find that more recent cohorts are, broadly speaking, less likely to be uncomfortable with debt.

Our results are 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) offer a number of motives for saving, drawing on Keynes (1936): (i) precautionary savings, (ii) life-cycle consumption smoothing, (iii) intertemporal substitution, (iv) to enjoy improving standards of living, (v) financial independence, (vi) to self-finance entrepreneurial ventures, (vii) to leave a bequest, (viii) avarice, and (ix) to meet a down-payment requirement. The list blends standard economic arguments related to consumption smoothing with motivations of a more psychological nature, such as greed. Many of these motives seem relevant for debt, too. Clearly, many debt choices can be motivated by consumption smoothing, handling short-term shocks, or making productive investments (for example, in human capital). But here, too, psychology can be expected to play a part. One example is lack of self-control, i.e., some individuals may borrow because they are tempted to.

Our findings suggest an additional determinant: that people may decide to save, or may refrain from borrowing, because they have internalized a social norm that discourages debt. The above analysis does not test the social norm hypothesis directly, but the results are consistent with, and

with debt compared to respondents with a less-educated mother—both elementary and high school educated—no effect on father's education).

hence lend support to, the notion that there are social norms about debt and that these social norms matter for individual debt choices.

Social norms that discourage borrowing are not by definition good or bad. While social norms act as an additional constraint on behavior, driving individual decisions toward conformity (Burke and Young, 2011), the outcome is not necessarily negative. For example, norms against cheating or free-riding may mitigate moral hazard or time inconsistency problems, resulting in more efficient outcomes (see, for example, Lindbeck and Nyberg, 2006). With regard to debt, people may underestimate the future debt burden associated with a loan, due to limited financial literacy or exponential growth bias, or succumb to temptation and incur debts in a time-inconsistent manner. In these cases, a social norm that causes them to take on little 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, 2014). Individual households cannot be expected to take these externalities into account, so a norm against debt may be beneficial.

But social norms can also generate outcomes that are clearly less efficient from an economic point of view. Roth (2007) provides examples of how social norms that characterize transactions of certain goods as repugnant can shut down markets entirely, in which case the constraint is "every bit as real as the constraints imposed by technology or by the requirements of incentives and efficiency" (Roth, 2007). For example, a social norm against debt that deters talented people from investing in human capital reduces economic efficiency. And a social norm against debt may inhibit consumption smoothing in a way that is similar to a liquidity constraint, with comparable welfare losses. Social norms against debt could also explain why many households pay a sizable premium for less salient debt, as documented in Almenberg and Karapetyan, 2013 (see also Agarwal and Karapetyan, 2016, for an extension). In sum, social norms related to debt could both increase and decrease economic efficiency. Our analysis does not attempt to assess which of these views carries more weight.

While the key purpose of our analysis is an improved understanding of debt behavior, our results also have relevance for understanding aggregate outcomes, in particular how household debt ratios may respond to a change in economic fundamentals, such as improved access to credit. Acting in conformity with others may give rise to social multiplier effects through which behavioral response to a change in fundamentals can be either impeded or accelerated at the aggregate level (see, for example, Bernheim, 1994; for a broader discussion of modelling social interactions, see Blume and Durlauf, 2001). As a result, norm dynamics tend to be characterized by sudden shifts, "long periods of inertia punctuated by occasional large changes" (Burke and Young, 2011, p. 311).

Our findings may also have implications for a better understanding of the drivers of economic inequality. 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, e.g., Björklund and Jäntti, 2009; Black and

Deveraux, 2011; Björklund and Salvanes, 2011; Ermisch et al., 2012), finding that family background explains from one-fifth to one-half of the variance in long-run income (Corak, 2013).[23] [24] Norms about debt may also matter for the distributive effects of economic policies. Those who are uncomfortable with debt may be less likely to benefit from favorable tax treatment, for example deductions for interest payments, and less likely to benefit from consumption smoothing over the life cycle. Subsidies aimed at debt or at investments, such as homeownership, that often entail taking on large amounts of debt, can turn debt into an important vehicle for wealth building. Inequality will then also reflect differences in debt norms, and intergenerational transmission of such norms may further contribute to intergenerational persistence in wealth inequality.

Because household debt is so prevalent, it is important that we improve our understanding of its determinants. Our finding that attitudes toward debt may be one such determinant should not be interpreted as a rejection of the standard theory of consumption and saving, but as an indication that further research on debt attitudes and social norms regarding debt could shed light on elements of debt choice that are not well captured by a simple consumption-smoothing model. We encourage further research in this area.

[23] Studies addressing correlations of the permanent component of income between siblings suggest that correlations are typically between 0.35–0.5 in lifetime earnings for the US (Atkinson and Bourguignon, 2015), while for the Nordic countries this correlation is lower, at 0.2–0.3.

[24] Studies addressing the causal mechanisms that underlie sibling correlations show that both nature and nurture are important. Björklund, Jäntti, and Solon (2007), for example, use data on siblings brought up in different types of environments to show that half of the correlation in income can be attributed to nurture or environment and the other half can be attributed to nature. Similar analyses have also been applied to siblings' choice of education (Holmlund et al., 2011) and to siblings being exposed to different neighborhoods (see, e.g., Bingley et al., 2016).

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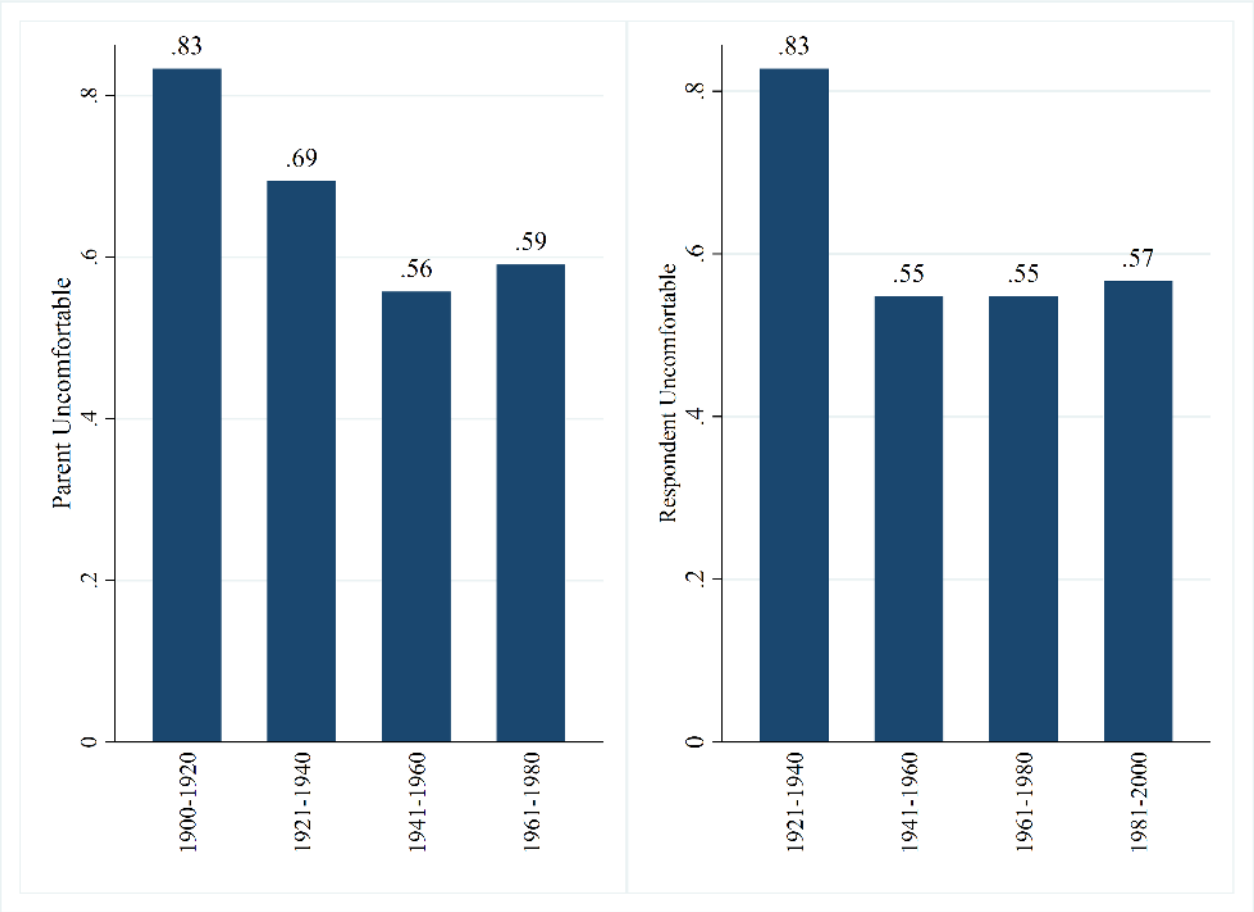

Figure 1. Debt attitudes over birth cohorts: left panel (parent uncomfortable) and right panel (respondent uncomfortable)

Table 1.
Descriptive Statistics of Survey Questions on Information Transmission on Personal Financial Matters

				Uncomfortable?	
	All	Male	Female	No	Yes
Q: Do you feel uncomfortable with having debt?					
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		
Q: 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?					
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		
Q: 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?					
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		
Q: Do you often discuss personal financial matters with your … ?: (n=841 out of 844)					
family (n=841 out of 844) *(reply option yes or no)*					
Yes*	0.70	0.69	0.71	0.69	0.71
friends and acquaintances (n=841 out of 844) *(reply option yes or no)*					
Yes*	0.22	0.22	0.22	0.21	0.22
colleagues (n=840 out of 844) *(reply option yes or no)*					
Yes*	0.13	0.17	0.09	0.17	0.10
Q: If you have one or more daughters, do you discuss personal finances with them?(n=417out of 421)					
Yes*	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
Q: If you have one or more sons, do you discuss personal finances with them?(n=423)					
Yes*	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
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)					
Yes*	0.45	0.40	0.49	0.44	0.44
No	0.55	0.60	0.51	0.56	0.56
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)					
Yes*	0.35	0.37	0.34	0.32	0.36
No	0.65	0.63	0.66	0.68	0.64

Note: * The shares are calculated excluding those who answered “do not want to reply” or ”do not know”.

Table 2.
Descriptive Statistics of Survey Questions on Debt Purpose

	Yes All	Yes, (uncomfortable with debt)	Yes, (not uncomfortable with debt)
Q: Do you consider it OK to take on debt in order to…			
…buy expensive clothes or jewelry?	1.1 %	0.9%	1.4%
…pay for a vacation?	4.8 %	4.1%	5.6%
…cover household expenditures?	6.0%	7.7%	3.7%
…buy a car?	85.1%	81.6%	89.9%
…get an education?	96.3%	95.9%	96.9%
Q: Which one of the following statements do you think best describes how a person with a mortgage should handle their mortgage loan?			
It's important to pay down the principal	84%	87%	79%
Important but not when young	4%	4%	4%
Not important if saving in some way	7%	5%	9%
Not important to pay down the principal	3%	2%	5%
Don't know	2%	2%	2%
Don't want to answer	0.4%	0.2%	0.5%

Table 3.
Descriptive Statistics of Demographic, Income, Debt, and Wealth Characteristics

	Q: Do you feel uncomfortable with having debt?			
	No	No	Yes	Yes
	Mean	Median	Mean	Median
Age				
25–34	0.16		0.16	
35–44	0.18		0.19	
45–54	0.24		0.21	
55–64	0.25		0.17	
65–75	0.17		0.27	
Elementary School	0.09		0.12	
High School	0.44		0.48	
College	0.47		0.40	
Disposable Income in 2011 (SEK)	275,983	245,458	231,182	219,923
	(192,687)		(134,253)	
Subjective Risk (0–10)	4.65		3.77	
Nr of Basic financial literacy correct	2.15		1.97	
All correct Basic FL	0.43		0.39	
Nr of Advanced financial literacy correct	2.37		2.24	
All correct Adv FL	0.57		0.48	
Nr of DNK in Basic FL	0.13		0.22	
Nr of DNK in Adv FL	0.13		0.21	
Net Wealth (SEK), 2007	707,359	356,203	753,111	259,049
	(1,248,750)		(1,403,515)	
Financial Assets (SEK), 2007	218,236	70,002	275,981	71,021
	(429,685)		(726,414)	
Real Estate (SEK), 2007	984 384	618 163	743 497	350 840
	(1 499 688)		(1 205 294)	
Debt to Income Ratio, 2007	2.28	1.33	1.53	0.58
	(4.65)		(6.02)	
Debt (SEK), 2007	-495,261	-299,571	-266,366	-94,830
	(759,839)		(499,658)	
No Debt, 2007	0.17		0.32	
Have a mortgage	0.72		0.47	
Observations	318		413	

Notes: All mean differences are significant at p<0.010. SEK = Swedish Krona, 1 SEK = approx. 0.12 USD. *Disposable income* is comprised of the sum of labor income, social benefits, and transfers. *Financial assets and real estate assets* are the sum of the market value of the financial and real estate assets measured in 2007, respectively. S*ubjective 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." *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. *Have a mortgage* refers to having answered "yes" to a survey question on having a mortgage or not.

Table 4.
OLS Regression Results of Indebtedness Using the Debt to Income Ratio as the Dependent Variable

	Debt to Income	*Debt to Income*	*Debt to Income*	*Debt to Income*	*Debt to Income*
	All	All	All	Parent not Uncomf	Parent Uncomf
Yes, Uncomfortable	-0.664		-0.457	-0.149	-0.586
	(0.139)***		(0.122)***	(0.263)	(0.157)***
Female		0.375	0.390	0.621	0.282
		(0.128)***	(0.127)***	(0.238)***	(0.153)*
Elementary School		-0.097	-0.084	-0.441	0.177
		(0.218)	(0.216)	(0.428)	(0.252)
High School		-0.204	-0.186	0.000	-0.219
		(0.134)	(0.133)	(0.265)	(0.154)
Age 35–44		1.235	1.246	1.028	1.466
		(0.205)***	(0.203)***	(0.335)***	(0.263)***
Age 45–54		0.689	0.679	0.374	0.820
		(0.206)***	(0.205)***	(0.357)	(0.260)***
Age 55–64		0.363	0.314	0.135	0.416
		(0.210)*	(0.208)	(0.403)	(0.258)
Age 65–75		-0.129	-0.096	-0.367	-0.008
		(0.215)	(0.213)	(0.431)	(0.259)
Mean Disp. Income (2007-2011)		-0.004	-0.005	-0.007	-0.003
		(0.005)	(0.005)	(0.008)	(0.007)
Financial Assets		-0.058	-0.056	-0.080	-0.050
		(0.010)***	(0.010)***	(0.027)***	(0.011)***
Real Estate Assets		0.073	0.073	0.088	0.067
		(0.006)***	(0.006)***	(0.011)***	(0.007)***
Subject. Risk (0-10)		0.064	0.050	0.036	0.064
		(0.026)**	(0.026)*	(0.048)	(0.031)**
Basic Financial Literacy		0.005	-0.002	0.065	-0.034
		(0.072)	(0.071)	(0.139)	(0.083)
Adv. Financial Literacy		0.042	0.040	0.191	-0.017
		(0.078)	(0.077)	(0.151)	(0.090)
Constant	1.906	0.275	0.622	0.049	0.800
	(0.105)***	(0.312)	(0.323)*	(0.581)	(0.412)*
N	727	727	727	229	498
R^2	0.030	0.305	0.318	0.363	0.316
Adjusted R^2	0.029	0.292	0.305	0.321	0.297

Standard errors in parentheses. *Note:* The *debt-to-income ratio* is the ratio of the debt value and the yearly disposable income in 2007. 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). *Mean disposable income* is the mean disposable income in 10 000 SEK between 2007 and 2011 comprised of the sum of labor income, social benefits, and transfers. *Financial assets and real estate assets* are the sum of the market value of the financial and real estate assets, respectively, measured in 2007. S*ubjective 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." *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. * p<0.10, ** p<0.05, *** p<0.01.

Table 5.
Mean Differences by Debt Attitudes and Indebtedness

Degree of indebtedness	Uncomfortable with Debt =yes	Parent Uncomfortable with Debt =yes	Debt to Income
Below median indebtedness	0.668***	0.710*	0.217***
Above median indebtedness	0.460	0.664	2.835

Standard errors in parentheses. Note that the median is a debt-to-income ratio at 0.914 and that respondents with a debt-to-income ratio above 20 are excluded.
* p<0.10, ** p<0.05, *** p<0.01 in within group t-test of mean difference.

Table 6.
OLS Regression Results for the Intergenerational Transmission of Debt Attitudes

	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.							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Yes, Parent Uncomfortable	0.426	0.355	0.314	0.298	0.434	0.389	0.336	0.321
	(0.036)***	(0.043)***	(0.052)***	(0.053)***	(0.036)***	(0.043)***	(0.052)***	(0.052)***
Daughter* UncomParent		0.126	0.207	0.225		0.080	0.188	0.205
		(0.041)***	(0.072)***	(0.073)***		(0.042)*	(0.071)***	(0.071)***
Female			-0.081	-0.029			-0.112	-0.062
			(0.060)	(0.067)			(0.059)*	(0.066)
Mother				0.101				0.086
				(0.050)**				(0.050)*
Mother*Daughter				-0.118				-0.116
				(0.068)*				(0.067)*
Elementary School					0.031	0.046	0.032	0.025
					(0.060)	(0.060)	(0.060)	(0.060)
High School					0.029	0.037	0.034	0.032
					(0.037)	(0.037)	(0.037)	(0.037)
Age 35–44					-0.006	-0.013	-0.015	-0.017
					(0.057)	(0.057)	(0.057)	(0.057)
Age 45–54					-0.074	-0.078	-0.074	-0.071
					(0.057)	(0.057)	(0.057)	(0.057)
Age 55–64					-0.212	-0.219	-0.218	-0.219
					(0.059)***	(0.059)***	(0.059)***	(0.059)***
Age 65–75					-0.054	-0.057	-0.058	-0.054
					(0.061)	(0.061)	(0.060)	(0.060)
Mean Disp. Income(2007–2011)					-0.002	-0.002	-0.002	-0.002
					(0.001)*	(0.001)	(0.001)	(0.001)
Financial Assets					0.006	0.005	0.006	0.005
					(0.003)**	(0.003)*	(0.003)*	(0.003)*
Real Estate Assets					-0.001	-0.001	-0.001	-0.001
					(0.002)	(0.002)	(0.002)	(0.002)
Subjective Risk (0–10)					-0.027	-0.025	-0.026	-0.026
					(0.007)***	(0.007)***	(0.007)***	(0.007)***
Basic Financial Literacy					-0.020	-0.015	-0.018	-0.018
					(0.020)	(0.020)	(0.020)	(0.020)
Adv. Financial Literacy					-0.016	-0.012	-0.014	-0.015
					(0.022)	(0.022)	(0.022)	(0.022)
Constant	0.275	0.275	0.316	0.271	0.569	0.531	0.610	0.572
	(0.030)***	(0.030)***	(0.042)***	(0.048)***	(0.078)***	(0.081)***	(0.091)***	(0.093)***
N	727	727	727	727	727	727	727	727
R^2	0.159	0.170	0.172	0.177	0.222	0.226	0.229	0.233

Standard errors in parentheses. *Note*: *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*Daughter* 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). *Mean disposable income* is the mean disposable income in 10 000 SEK between 2007 and 2011 comprised of the sum of labor income, social benefits, and transfers. *Financial assets and real estate assets* are the sum of the market value of the financial and real estate assets respectively,, measured in 2007. S*ubjective 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." *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. * p<0.10, ** p<0.05, *** p<0.01.

Appendix

Appendix Table 1.
Summary statistics of full sample

	Mean
Gender	
Female	0.54
Age	
25-34	0.17
35-44	0.18
45-54	0.21
55-64	0.20
65-75	0.24
Education	
Elementary School	0.11
High School	0.46
College	0.43
Nationality	
Sweden	0.88
Mean Monthly Disposable Income	
<=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
*Financial Literacy**	
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: Financial literacy measures in survey 2014. * indicates the correct answer.

Appendix Table 3.
Tobit Regression Results for the Choice of Indebtedness Measured by the Debt-to-Income Ratio in 2007

	Debt to Income ratio	*Debt to Income ratio*	*Debt to Income ratio*	*Debt to Income ratio*	*Debt to Income ratio*
	All	All	All	Parent not Uncomf	Parent Uncomf
Yes, uncomfortable	-0.883		-0.601	-0.251	-0.734
	(0.167)***		(0.140)***	(0.305)	(0.176)***
Female		0.405	0.422	0.762	0.245
		(0.149)***	(0.148)***	(0.275)***	(0.176)
Elementary School		-0.073	-0.058	-0.602	0.259
		(0.257)	(0.254)	(0.500)	(0.293)
High School		-0.202	-0.179	-0.007	-0.243
		(0.156)	(0.154)	(0.304)	(0.177)
Age 35-44		1.719	1.735	1.497	1.995
		(0.243)***	(0.240)***	(0.391)***	(0.308)***
Age 45-54		1.136	1.125	0.809	1.313
		(0.245)***	(0.242)***	(0.414)*	(0.306)***
Age 55-64		0.907	0.846	0.610	0.979
		(0.249)***	(0.246)***	(0.466)	(0.304)***
Age 65-75		0.162	0.199	-0.110	0.331
		(0.259)	(0.256)	(0.509)	(0.311)
Mean Disp. Income(2007-2011)		0.002	0.000	-0.001	-0.001
		(0.006)	(0.006)	(0.009)	(0.008)
Financial Assets		-0.136	-0.134	-0.110	-0.145
		(0.018)***	(0.018)***	(0.031)***	(0.022)***
Real Estate Assets		0.082	0.081	0.092	0.078
		(0.006)***	(0.006)***	(0.012)***	(0.008)***
Subjective Risk (0-10)		0.079	0.061	0.047	0.073
		(0.030)***	(0.030)**	(0.056)	(0.035)**
Basic Financial Literacy		0.005	0.042	0.030	0.100
		(0.084)	(0.083)	(0.160)	(0.096)
Adv. Financial Literacy		0.042	0.127	0.125	0.187
		(0.092)	(0.091)	(0.175)	(0.106)
Constant	1.762	-0.746	-0.289	-0.765	-0.028
	(0.124)***	(0.375)**	(0.384)	(0.686)	(0.482)
Sigma	4.741	3.195	3.116	3.490	2.838
	(0.286)***	(0.191)***	(0.186)***	(0.371)***	(0.205)***
Left-censored	140	140	140	43	97
N	727	727	727	229	498

Standard errors in parentheses. *Note*: *Yes, Uncomfortable* is a 0/1 variable for the respondent answering that he or she is 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). *Mean disposable income* is the mean disposable income in 10 000 SEK between 2007 and 2011 comprised of the sum of labor income, social benefits, and transfers. *Financial assets and real estate assets* are the sum of the market value of the financial and real estate assets, respectively, measured in 2007. S*ubjective 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." *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. * p<0.10, ** p<0.05, *** p<0.01.

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