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Attitudes towards Debt and Debt Behavior*

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Abstract

We introduce a novel survey measure of attitude towards debt. Matching our survey results with panel data on Swedish household balance sheets from registry data, we show that our measure of debt attitude helps to 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 with 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.

Keywords: Attitude survey; household borrowing decisions; intergenerational transmission; personal finance; spending

JEL classification: *D*14; *D*15; *D*91; *E*21; *G*51

I. 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

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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 might play a role in how households use debt. Specifically, debt behavior might also reflect a learned affective response that makes some individuals less inclined to take on debt.[1] By "affective", we mean a response to an object (debt) that reflects how the respondents feel about that object. To dislike or to be uncomfortable with something are examples of negative affective responses. In other words, individuals might have different attitudes towards 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 (see, e.g., Gross and Souleles, 2002). Even practitioners and personal finance books often recommend that people carry no debt or stay clear of debt.[2]

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 uses a simpler and more general question that focuses on the subject's affective response. Compared with the question in the SCF, expressed in terms of whether it is a good idea to buy things on an installment plan (for details, see Chien and Devaney, 2001), our measure avoids contract-specific terms such as "installment plan", which risk confounding attitudes towards debt and attitudes towards repayment. However, our survey includes the SCF questions about using debt for specific purposes, and we show that our general measure also aligns well with these questions. 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

[1] For an in-depth discussion of learned affective responses and other definitions of attitudes, see Fishbein and Ajzen (1975).

[2] Several popular personal finance books promote 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*, and *Zero Down Your Debt*.

in debt attitude helps to 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 *et al*., 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, a debt build-up that might have macroeconomic implications (see, e.g., Mian and Sufi, 2018).[3] In terms of the estimated effect size, our measure of debt attitude 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.[4,5] Specifically, we study the intergenerational transmission of debt attitudes by asking survey respondents about their parents' attitudes towards 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 and Salzmann, 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

[3]A brief background on household debt in Sweden is provided in the Online Appendix.

[4]In many countries, governments or civil society have propagated social norms that encourage thrift (Garon, 2013).

[5]One way to think about such transmission is that debt attitudes might 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 – in order to separate genetic from environmental effects – has found that environmental influences are important for financial saving behavior (Black *et al*., 2020). Our data do not allow us to disentangle these influences at the individual level.

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 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 might 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 with 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*. (2020) study the saving behavior of second-generation immigrants and how those behaviors relate to the attitudes and beliefs in their respective countries of origin. They find that 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 attitude towards debt helps to 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 attitude to debt also helps to explain individual variation in debt build-up and spending in the period 2004–2007. Individuals who report being uncomfortable with debt spend 5 percentage points less of their disposable income than other individuals. As further evidence of the importance of this attitude, we found there is a strong correlation between respondents' and parents' attitudes towards debt, suggesting a cultural component to

debt attitude that is transmitted along family lines. The correlation is stronger for respondents who 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 *et al*., 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, might help to explain why households do not always smooth consumption over the life cycle. Debt attitudes might also help to explain why some households pay a premium for more expensive, but less salient, forms of debt (Almenberg and Karapetyan, 2014).

The paper proceeds as follows. Section II provides a short description of our survey, while the registry-based data that we have used are described in Section III. Descriptive statistics are provided in Section IV, and in Section V, we report the findings from our empirical analysis. In Section VI, we perform a set of robustness checks. In Section VII, we provide concluding remarks.

II. The Survey

We collected our data in the autumn of 2014 using a telephone survey carried out by Statistics Sweden.[6] 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 aged 25–75.[7] It consists of 390 men and 454 women (representing 46 and 54 percent of respondents in the sample, respectively);

[6]The survey was commissioned by the authors and funded by research grants from the Swedish Research 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).

[7]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 12 attempts to establish contact were made during eight weeks between September and November 2014. After this time period, 844 individuals had responded.

Table A1 in the Online Appendix reports mean values of the main variables in the sample.[8]

The survey we designed contains a set of new questions not commonly present in national surveys, including questions about attitudes towards debt. To measure general attitude to debt, 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" might confound attitudes towards 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 towards debt depend in part on what the debt is used for. We asked five questions, closely based on questions asked in the 1998 US SCF, about whether survey participants consider it appropriate to borrow money for different purposes.[9]

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, pp. 10–11), thus carrying mortgage debt for a long period, possibly over their entire life cycle. We included the following question about the importance of paying down the principal, which is related de facto to debt (see Table 2 in Section IV for the full description of the list of possible answers).[10]

> 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 might be passed on within a family). This information might help to explain where attitudes towards debt come from. First, we asked survey participants about the general attitude to debt of their parents.

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[8]The replication package includes the survey responses as a Stata file.

[9]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).

[10]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.

> 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 it might be important to reduce bias if the answer about one parent is anchored by an answer about the other parent.

To get a sense of the extent to which people discuss personal financial matters with their family members compared with 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).

III. 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 the period 2003–2007.[11] 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

[11] See Koijen *et al*. (2015) and Vestman (2019) for basic information about the Swedish wealth data set.

Leth-Petersen, 2003; see also Koijen *et al*., 2015). This enabled us to analyze the impact on spending and savings flows of differential debt behavior. We measure the following:

$$\begin{aligned} c_{it} + r^d_{it} d_{it-1} &= y_{it} + a_{it-1}(1 + r^a_{it}) - a_{it} + h_{it-1}(1 + r^h_{it}) - h_{it} \\ &\quad - d_{it-1} + d_{it} + y^k_{it}. \end{aligned} \tag{1}$$

Here, the left-hand side denotes spending on goods and services and interest expenses in year t, y_{it} denotes disposable income, and $a_{it-1}(1 + r^a_{it}) - a_{it}$ denotes the savings flow in financial assets in year t, henceforth labeled "financial saving". The term $h_{it-1}(1+r^h_t)-h_{it}$ denotes the flow into housing (e.g., home improvements), $-d_{it-1}+d_{it} = -\Delta d_{it}$ denotes the change in debt, and y^k_{it} 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 $h_{it-1}(1 + r^h_{it}) - h_{it} = 0$.[12] In total, we impute spending in at least one year for 704 individuals, which amounts to 2,324 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 ratio). Our baseline sample on debt and other registry-based outcomes has 700 individuals and 2,278 individual–year observations.[13]

IV. Descriptive Statistics

Our findings are striking: more than half of respondents in our sample (56 percent) report being uncomfortable with debt (Table 1). This is a high proportion, and it shows that our debt attitude measure has the potential

[12] In addition, we follow Koijen *et al*. (2015) and exclude, in each year, observations that belong in the top and bottom 1 percent of disposable income and observations that are in the top and bottom 1 percent of changes in net worth. We also exclude negative values of consumption. One difference compared with Koijen *et al*. (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 to, for instance, intra-household transfers.

[13] This is after excluding a few outliers on the debt-to-income ratio (values above 20). A previous working paper version of this paper (Almenberg *et al*., 2019) did not scale outcomes by average disposable income. That analysis included 708 individuals and 2,480 observations. Qualitatively, the results are the same as in the previous version.

Table 1. *Descriptive statistics of survey question on debt attitude*

	All	Male	Female
Q: Do you feel uncomfortable with having debt?			
Yes	0.559	0.516**	0.596
No	0.427	0.474	0.386
Do not know	0.009	0.008	0.011
Do not want to answer	0.005	0.002	0.007
Number of observations	834	388	446

Notes: The sample consists of all individuals who responded to the survey and to the debt attitude question. ***, **, and * indicate statistically significant differences in t-tests of group means at levels $^{***}p < 0.01$, $^{**}p < 0.05$, and $^{*}p < 0.1$, respectively.

to play an important role and call attention to focus even more on debt, when the data are available. We also note a gender difference in comfort with debt: women are more likely than men to be uncomfortable with debt.

Table 2 also shows that respondents' attitudes towards 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 percent) consider it OK to cover household expenses. Thus, some respondents might not follow the dictate of the life-cycle model, if consumption smoothing

Table 2. *Descriptive statistics of survey questions on debt attitudes*

	All	Uncomfortable with debt	Not uncomfortable with debt
Q: Do you consider it OK to take on debt in order to . . . (answered yes)			
. . . buy expensive clothes or jewelry?	0.011	0.009	0.014
. . . pay for a vacation?	0.048	0.041	0.057
. . . cover household expenditures?	0.060	0.078***	0.037
. . . buy a car?	0.857	0.821***	0.904
. . . get an education?	0.969	0.968	0.972
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	0.84	0.87***	0.79
Important but not when young	0.04	0.04	0.04
Not important if saving in some way	0.07	0.05***	0.09
Not important to pay down the principal	0.03	0.02*	0.05
Don't know	0.02	0.02	0.02
Don't want to answer	0.004	0.002	0.006

Notes: The sample consists of all individuals who responded to the survey and to the debt attitude question. ***, **, and * indicate statistically significant differences in t-tests of group means at levels $^{***}p < 0.01$, $^{**}p < 0.05$, and $^{*}p < 0.1$, respectively.

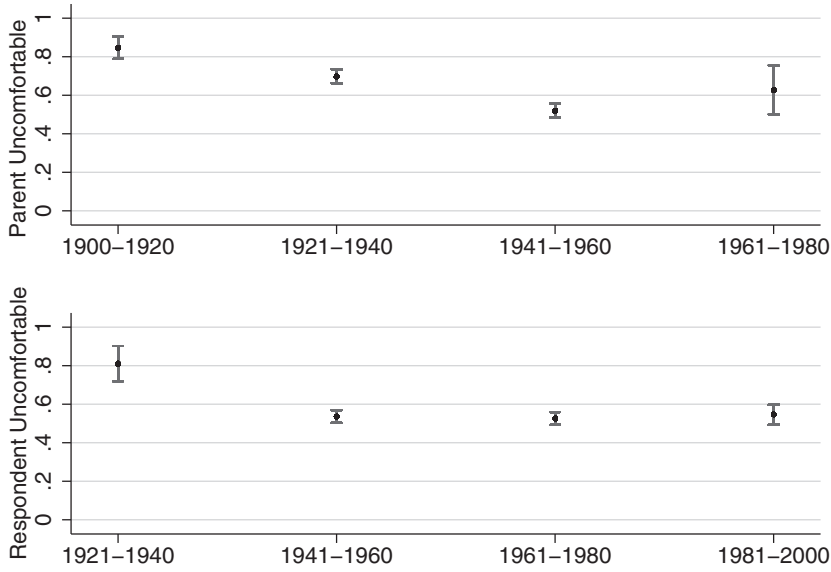

Fig. 1. Debt attitudes over birth cohorts
Notes: The top panel shows the share of parents reported to be uncomfortable with debt, and the bottom panel shows the equivalent share for respondents. The whiskers indicate the 95 percent confidence intervals.

involves taking on debt, in particular to buy non-durable 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 $p < 0.022$).[14]

Note that 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 percent confidence intervals). Younger cohorts are less likely to be uncomfortable with debt compared

[14]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.

with older cohorts. While this suggests that the share of the population that is uncomfortable with debt could be declining over time, our survey data are cross-sectional and so do 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 the cohort effect.

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 this about their mothers (Table 3). Also, 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 towards 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.[15]

Consistent with the notion of intergenerational transmission of attitudes, we observe a strong correlation between respondents being uncomfortable with debt and their parents' attitude towards 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 might be transmitted from parents to children,[16] and the correlation might 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).[17]

[15]Females are more likely to discuss financial matters with their daughters (41 percent) compared with fathers with daughters (35 percent); the difference is, however, not statistically significant (p-value = 0.1076).

[16]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 parents. The equivalent correlations among males are 0.412 and 0.229.

[17]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.

Table 3. *Descriptive statistics of survey questions on information transmission on personal financial matters*

	All	Male	Female	No	Yes
	(1)	(2)	(3)	(4)	(5)
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?					
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		
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?					
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		
Combined (Qa + Qb)					
Yes	0.623	0.591	0.650		
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	0.011		
Observations	834	388	446		
Q: Do you often discuss personal financial matters with your . . . ? (reply option yes or no)					
. . . family (n = 841 out of 844)					
Yes[a]	0.70	0.69	0.71	0.69	0.71
. . . friends and acquaintances (n = 841 out of 844)					
Yes[a]	0.22	0.22	0.22	0.21	0.22
. . . colleagues (n = 840 out of 844)					
Yes[a]	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 = 417 out of 421)					
Yes[a]	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[a]	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

Table 3. *Continued*

	All	Male	Female	No	Yes
	(1)	(2)	(3)	(4)	(5)
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[a]	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[a]	0.35	0.37	0.34	0.32	0.36
No	0.65	0.63	0.66	0.68	0.64

Notes: [a] The shares are calculated excluding those who answered "do not want to reply" or "do not know". Columns 4 and 5 are the answers to the survey question: "Do you feel uncomfortable with having debt?". ***, **, and * indicate statistically significant differences in t-tests of group means by gender at levels $^{***}p < 0.01$, $^{**}p < 0.05$, and $^{*}p < 0.1$, respectively.

Table 4 reports the 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 aged 65–75) are more likely to report being uncomfortable with debt. Consistent with debt attitudes having a cultural component, we find that respondents who are foreign-born or have at least one foreign-born parent are more likely to be uncomfortable 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 Table A2, in the Online Appendix, for our measures of financial literacy), and report being less willing to take risk compared with 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 5 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.[18] 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 versus 9,100) for those who are not uncomfortable with debt, even among

Table 4. *Descriptive statistics of demographic, income, financial literacy, preferences, and wealth characteristics*

	Q: Do you feel uncomfortable with having debt?	
	No	Yes
	Mean	Mean
Gender		
Female	0.49**	0.58
Age groups		
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
Foreign-born		
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
Education		
Elementary school	0.15*	0.20
High school	0.47	0.48
College	0.38	0.32
Preferences and financial literacy (FL)		
Subjective risk (0–10)	4.61***	3.74
Long-term saving	0.80***	0.71
Number of basic FL correct	2.16***	1.97
All correct basic FL	0.44	0.39
Number of advanced FL correct	2.38**	2.24
All correct advanced FL	0.57**	0.48
Number of "do not know" in basic FL	0.13**	0.22
Number of "do not know" in advanced FL	0.13**	0.21

[18]Information about an individual's assets and liabilities was 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 are dated prior to the survey, which makes our data format similar to Kreiner *et al*. (2020).

Table 4. *Continued*

	Q: Do you feel uncomfortable with having debt?			
	No	No	Yes	Yes
	Mean	Median	Mean	Median
Income, wealth, and spending				
Disposable income	183,429***	180,019	159,995	157,661
(net of capital income)	(94,941)		(90,576)	
Mean of spending,	211,451**	186,355	184,930	166,619
2004–2007	(146,323)		(128,011)	
Mean of net wealth (SEK),	411,246	189,073	419,233	93,176
2004–2007	(806,164)		(859,376)	
Mean of financial assets (SEK),	130,891	24,879	121,795	31,444
2004–2007	(300,684)		(243,988)	
Mean of real estate assets (SEK),	604,111	427,810	516,803	157,933
2004–2007	(744,517)		(906,355)	
Number of observations	310		390	

Notes: SEK = Swedish krona, and 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 are 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?", and 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 Table A2 in the Online Appendix for further descriptions). "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. ***, **, and * indicate statistically significant differences in t-tests of group means at levels $^{***}p < 0.01$, $^{**}p < 0.05$, and $^{*}p < 0.1$, respectively.

those who do not have mortgages (5,800 versus 3,400), providing further evidence that debt is higher for those who are not uncomfortable with debt.

V. 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

$$\frac{d_{it}}{y_{it}} = \beta_0 + \beta_1 U_i + \beta_2 X_{it} + \pi_t + \varepsilon_{it}, \tag{2}$$

where 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,

Table 5. *Descriptive statistics of debt measures*

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

Notes: SEK = Swedish krona, and 1 SEK = approx. 0.12 USD. Standard deviations are given 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. The number of creditors is a registry-based value referring to the number of creditors who have 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. ***, **, and * indicate statistically significant differences in t-tests of group means at levels $^{***}p < 0.01$, $^{**}p < 0.05$, and $^{*}p < 0.1$, respectively.

X_{it} is a set of covariates that determine debt holdings, π_t are year fixed effects, and ε_{it} is an error term. Our coefficient of interest is β_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 6 reports our main findings. The estimates reported in the first column show a difference in the debt-to-income ratio of 0.62 between

Table 6. *OLS regression results of indebtedness and debt attitude*

	Debt-to-income d_{it}/y_{it}		Change in debt-to-income $\Delta(d_{it}/y_{it})$	Cumulative change in debt-to-income $(d_{i2007} - d_{i2004})/y_{i2004}$
Yes, uncomfortable	−0.623	−0.507	−0.083	−0.208
	(0.123)***	(0.123)***	(0.048)*	(0.104)**
Female		0.235	−0.008	0.192
		(0.121)*	(0.041)	(0.093)**
Elementary school		−0.487	0.082	−0.028
		(0.174)***	(0.075)	(0.158)
High school		−0.428	0.065	−0.144
		(0.134)***	(0.067)	(0.119)
Age 35–44		1.580	−0.276	−0.085
		(0.196)***	(0.178)	(0.195)
Age 45–54		1.316	−0.086	−0.235
		(0.177)***	(0.094)	(0.165)
Age 55–64		1.258	−0.093	−0.339
		(0.177)***	(0.101)	(0.144)**
Age 65–75		0.930	−0.085	−0.476
		(0.160)***	(0.100)	(0.186)**
Disposable income		−0.011	−0.001	0.008
		(0.008)	(0.008)	(0.009)
Subjective risk (0–10)		0.046	−0.005	0.000
		(0.023)*	(0.008)	(0.018)
Long-term savings		0.179	−0.048	0.127
		(0.122)	(0.047)	(0.108)
Basic financial literacy		0.054	−0.011	−0.016
		(0.056)	(0.020)	(0.050)
Advanced financial literacy		0.210	−0.017	0.066
		(0.067)***	(0.029)	(0.058)
Constant	1.669	0.016	0.278	0.266
	(0.105)***	(0.332)	(0.119)**	(0.263)
No. observations	2,278	2,278	1,556	589
Individuals	700	700	652	589
R^2	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. $^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. 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, and 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 Table A2 for further description).

respondents who 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).[19] 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 represents slightly 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 (e.g., financial literacy or disposable income) might 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 6 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 (Column 4).

Table 7 explores how the differences in debt behavior affect spending, using the decomposition in equation (1). For ease of interpretation, each term in that equation is scaled by average disposable income $\bar{y}_i$. Panel A reports estimates without any control variables. Individuals who report being uncomfortable with debt spend less than other individuals. The difference amounts to 5 percent of disposable income (Column 1). The difference is due to lower interest expenses (3 percent of disposable income; Column 2), and to differences in debt growth (5 percent of disposable

[19]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 of Table 6. See Table A3 in the Online Appendix.

Table 7. *OLS regression results of spending (excluding interest expenses) and debt attitude*

	Spending $c_{it}/\bar{y}_i$ (1)	Interest expense $(r^d_{it}d_{it-1})/\bar{y}_i$ (2)	Annual change in debt $\Delta d_{it}/\bar{y}_i$ (3)	Financial saving $(a_{it}-a_{it-1}r^a_{it})/\bar{y}_i$ (4)	Capital income $y^k_{it}/\bar{y}_i$ (5)	Spending growth $\Delta c_{it}/\bar{y}_i$ (6)
Panel A						
Yes, uncomfortable	−0.049	−0.026	−0.049	0.004	0.001	0.002
	(0.022)**	(0.005)***	(0.016)***	(0.016)	(0.002)	(0.031)
Constant	1.118	0.065	0.105	−0.005	0.010	0.063
	(0.017)***	(0.004)***	(0.013)***	(0.012)	(0.001)***	(0.025)**
Observations	2,278	2,278	2,278	2,278	2,278	1,507
Individuals	700	700	700	700	700	628
R^2	0.002	0.037	0.005	0.000	0.000	0.000
Panel B						
Yes, uncomfortable	−0.043	−0.022	−0.044	0.004	0.001	0.011
	(0.023)*	(0.005)***	(0.015)***	(0.017)	(0.002)	(0.031)
Female	0.010	0.004	0.026	0.002	−0.002	−0.025
	(0.022)	(0.005)	(0.017)	(0.016)	(0.002)	(0.031)
Elementary school	−0.102	0.005	−0.043	−0.022	0.002	−0.008
	(0.041)**	(0.007)	(0.023)*	(0.031)	(0.004)	(0.052)
High school	−0.023	0.003	−0.025	0.008	−0.004	0.046
	(0.027)	(0.005)	(0.019)	(0.018)	(0.002)*	(0.034)
Age 35–44	−0.047	0.058	−0.031	−0.018	−0.008	−0.275
	(0.039)	(0.006)***	(0.030)	(0.025)	(0.002)***	(0.049)***
Age 45–54	−0.075	0.067	−0.075	−0.033	−0.002	−0.317
	(0.036)**	(0.005)***	(0.028)***	(0.024)	(0.004)	(0.046)***

Table 7. *Continued*

	Spending $c_{it}/\bar{y}_i$ (1)	Interest expense $(r^d_{it}d_{it-1})/\bar{y}_i$ (2)	Annual change in debt $\Delta d_{it}/\bar{y}_i$ (3)	Financial saving $(a_{it} - a_{it-1}r^a_{it})/\bar{y}_i$ (4)	Capital income $y^k_{it}/\bar{y}_i$ (5)	Spending growth $\Delta c_{it}/\bar{y}_i$ (6)
Panel B (continued)						
Age 55–64	−0.073	0.061	−0.076	−0.016	0.000	−0.323
	(0.037)**	(0.006)***	(0.028)***	(0.026)	(0.003)	(0.053)***
Age 65–76	−0.053	0.050	−0.090	−0.048	0.005	−0.336
	(0.040)	(0.005)***	(0.025)***	(0.032)	(0.003)	(0.047)***
Subjective risk (0–10)	0.001	0.002	0.004	0.002	−0.000	0.003
	(0.005)	(0.001)**	(0.003)	(0.005)	(0.001)	(0.006)
Long-term savings	0.003	0.004	−0.014	−0.025	0.002	−0.002
	(0.026)	(0.005)	(0.018)	(0.019)	(0.002)	(0.031)
Basic financial literacy	0.002	0.001	−0.003	−0.005	0.002	0.008
	(0.013)	(0.002)	(0.009)	(0.009)	(0.001)***	(0.016)
Advanced financial literacy	0.017	0.007	0.015	−0.001	0.002	−0.028
	(0.013)	(0.003)**	(0.008)*	(0.009)	(0.001)*	(0.020)
Constant	1.063	−0.019	0.127	−0.011	−0.001	0.307
	(0.072)***	(0.012)	(0.049)**	(0.055)	(0.005)	(0.088)***
No. observations	2,278	2,278	2,278	2,278	2,278	1,507
Individuals	700	700	700	700	700	628
R^2	0.036	0.171	0.022	0.022	0.035	0.041

Notes: Standard errors are clustered at the individual level and are given in parentheses. The regressions also include year fixed effects. $^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. 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, and 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 Table A2 for further description).

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 towards debt rather than preferences towards risk.[20] 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 who are uncomfortable with debt are on a permanently lower spending level, as indicated in Column 1. Consequently, 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 8 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 5 percent of average disposable income in every year, controlling for observable differences (including differences in disposable income).[21] 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 2). Columns 4–6 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 are 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 the control of the individual and, as discussed in Section IV, there is a strong correlation between respondents' attitudes and the attitudes of their parents. We use this instrument in the first three columns in Table 9. 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

[20]Almenberg *et al*. (2019) report 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.

[21]Notice that Column 3 of Table 6 reports the growth in debt-to-income, $\Delta(d_{it}/y_{it})$, while Column 1 of Table 8 reports the growth in debt scaled by average disposable income, $(\Delta d_{it})/\bar{y}_i)$. Otherwise, the specifications are equal.

Table 8. *OLS regression results of balance sheets and debt attitude*

	Annual change in:			Cumulative change in:		
	debt	financial assets	real estate	debt	financial assets	real estate
	$(\Delta d_{it})/\bar{y}_i$	$\Delta a_{it}/\bar{y}_i$	$\Delta h_{it}/\bar{y}_i$	$(d_{i2007} - d_{i2004})/y_{i2004}$	$(a_{i2007} - a_{i2004})/y_{i2004}$	$(h_{i2007} - h_{i2004})/y_{i2004}$
	(1)	(2)	(3)	(4)	(5)	(6)
Yes, uncomfortable	−0.045	0.008	−0.080	−0.208	−0.012	−0.231
	(0.015)***	(0.016)	(0.050)	(0.104)**	(0.127)	(0.291)
Female	0.021	0.035	−0.010	0.192	0.098	0.140
	(0.018)	(0.017)**	(0.052)	(0.093)**	(0.086)	(0.248)
Elementary school	−0.049	0.038	−0.172	−0.028	−0.078	0.201
	(0.025)*	(0.033)	(0.068)**	(0.158)	(0.236)	(0.442)
High school	−0.029	−0.026	−0.151	−0.144	−0.213	0.334
	(0.020)	(0.017)	(0.053)***	(0.119)	(0.127)*	(0.363)
Age 35–44	−0.021	−0.075	0.183	−0.085	−0.259	0.813
	(0.030)	(0.028)***	(0.058)***	(0.195)	(0.164)	(0.343)**
Age 45–54	−0.059	−0.103	0.307	−0.235	−0.133	0.245
	(0.027)**	(0.030)***	(0.069)***	(0.165)	(0.186)	(0.558)
Age 55–64	−0.060	−0.071	0.410	−0.339	−0.051	0.722
	(0.029)**	(0.032)**	(0.078)***	(0.144)**	(0.191)	(0.409)*
Age 65–75	−0.074	−0.075	0.472	−0.476	0.321	1.211
	(0.025)***	(0.032)**	(0.070)***	(0.186)**	(0.331)	(0.522)**
Disposable income	−0.001	0.002	−0.001	0.008	−0.009	0.038
	(0.001)	(0.001)*	(0.003)	(0.009)	(0.012)	(0.028)
Subjective risk (0–10)	0.004	0.001	−0.013	0.000	0.004	−0.064
	(0.003)	(0.003)	(0.010)	(0.018)	(0.023)	(0.047)

Table 8. *Continued*

	Annual change in:			Cumulative change in:		
	debt	financial assets	real estate	debt	financial assets	real estate
	$(\Delta d_{it})/\bar{y}_i$	$\Delta a_{it}/\bar{y}_i$	$\Delta h_{it}/\bar{y}_i$	$(d_{i2007} - d_{i2004})/y_{i2004}$	$(a_{i2007} - a_{i2004})/y_{i2004}$	$(h_{i2007} - h_{i2004})/y_{i2004}$
	(1)	(2)	(3)	(4)	(5)	(6)
Long-term savings	−0.012	0.018	−0.009	0.127	−0.001	0.624
	(0.018)	(0.019)	(0.052)	(0.108)	(0.142)	(0.330)*
Basic financial literacy	−0.002	0.011	0.026	−0.016	0.011	0.157
	(0.009)	(0.009)	(0.020)	(0.050)	(0.065)	(0.142)
Advanced financial literacy	0.016	0.005	0.032	0.066	0.020	0.239
	(0.009)*	(0.010)	(0.026)	(0.058)	(0.066)	(0.134)*
Constant	0.136	−0.055	0.027	0.266	0.595	−1.492
	(0.053)***	(0.045)	(0.121)	(0.263)	(0.327)*	(0.858)*
No. of observations	2,278	2,278	2,278	589	589	589
Individuals	700	700	700	589	589	589
R^2	0.022	0.051	0.048	0.045	0.036	0.058

Notes: Standard errors are clustered at the individual level and are given in parentheses. The regressions in Columns 1–3 also include year fixed effects. $^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. 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, and 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 Table A2 for further description).

Table 9. *IV regression estimates of debt-to-income using the intergenerational and cultural transmission of debt attitude as IVs for the respondent's debt attitude*

	(1)	(2)	(3)	(4)	(5)	(6)
First-stage estimates			Yes, uncomfortable			
Yes, parent	0.429	0.337	0.328	0.426	0.336	0.326
uncomfortable	(0.037)***	(0.057)***	(0.057)***	(0.037)***	(0.056)***	(0.057)***
Female ×		0.175	0.183		0.173	0.181
uncomfortable parent		(0.075)**	(0.075)**		(0.074)**	(0.075)**
Mother			0.069			0.071
			(0.055)			(0.055)
Mother × female			−0.061			−0.061
			(0.071)			(0.071)
Respondent foreign-born				0.128	0.126	0.128
				(0.061)**	(0.061)**	(0.061)**
First-stage F-statistic	19.39	19.85	17.51	18.61	19.00	16.98
R^2 in first stage	0.223	0.230	0.232	0.229	0.235	0.237
Second-stage estimates			Debt-to-income, d_{it}/y_{it}			
IV: Yes, uncomfortable	−0.557	−0.602	−0.586	−0.578	−0.619	−0.603
	(0.311)*	(0.309)*	(0.309)*	(0.308)*	(0.306)**	(0.306)**
Female	0.240	0.241	0.240	0.240	0.241	0.241
	(0.123)*	(0.123)**	(0.123)*	(0.122)**	(0.123)**	(0.123)**
Elementary school	−0.487	−0.486	−0.486	−0.486	−0.485	−0.486
	(0.174)***	(0.174)***	(0.174)***	(0.174)***	(0.174)***	(0.174)***
High school	−0.426	−0.426	−0.426	−0.426	−0.426	−0.426
	(0.133)***	(0.133)***	(0.133)***	(0.133)***	(0.133)***	(0.133)***
Age 35–44	1.578	1.581	1.580	1.579	1.582	1.581
	(0.194)***	(0.195)***	(0.195)***	(0.194)***	(0.195)***	(0.195)***
Age 45–54	1.310	1.312	1.311	1.311	1.313	1.312
	(0.175)***	(0.175)***	(0.175)***	(0.175)***	(0.176)***	(0.175)***
Age 55–64	1.244	1.243	1.243	1.243	1.242	1.243
	(0.176)***	(0.176)***	(0.176)***	(0.176)***	(0.176)***	(0.176)***
Age 65–75	0.927	0.933	0.931	0.930	0.935	0.933
	(0.165)***	(0.164)***	(0.165)***	(0.165)***	(0.165)***	(0.165)***
Disposable income	−0.011	−0.011	−0.011	−0.011	−0.011	−0.011
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Subjective risk (0–10)	0.044	0.043	0.043	0.043	0.042	0.043
	(0.024)*	(0.024)*	(0.024)*	(0.024)*	(0.024)*	(0.024)*
Long-term savings	0.172	0.169	0.170	0.171	0.168	0.169
	(0.126)	(0.125)	(0.125)	(0.126)	(0.125)	(0.125)
Basic financial literacy	0.053	0.052	0.052	0.052	0.051	0.052
	(0.056)	(0.056)	(0.056)	(0.056)	(0.056)	(0.056)
Advanced financial literacy	0.209	0.209	0.209	0.209	0.209	0.209
	(0.067)***	(0.067)***	(0.067)***	(0.067)***	(0.067)***	(0.067)***

Table 9. *Continued*

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.106	0.143	0.129	0.123	0.157	0.144
	(0.380)	(0.376)	(0.375)	(0.381)	(0.378)	(0.377)
Observations	2,278	2,278	2,278	2,278	2,278	2,278
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. $^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. 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 × 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.

indicate that the effect of the debt attitude continues to be negative (it is statistically significant at the 10 percent level in four cases and at the 5 percent level in two cases), and it is even larger in magnitude than indicated in the OLS regressions.

However, we should note the limitations of using these estimates or interpreting the IV estimates as causal, as debt attitudes of the respondents and their 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.

VI. Robustness Checks

We performed a number of robustness checks. Because we had to drop some observations in the empirical regressions, we have compared the sample used in the regressions with the original sample and we find that the composition is very similar (see Tables A4 and A5 in the Online Appendix). Moreover, because the question about parents' debt attitudes is asked of the respondent and not of the parents directly, there might be a worry that respondents' answers do not accurately reflect the attitude of their parents or simply conform to their own 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 respondents. In Table A6 in the Online Appendix, we show that the attitude of parents does explain some of the variation in the parents' debt behavior. 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, by carrying out an OLS regression, as in Table 6, but this time using stock market participation as the dependent variable (proxied by whether the respondent reports having directly held stocks). Table A7 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 Table A8 in the Online Appendix, we show that foreign-born respondents are more likely to be uncomfortable with debt compared with non-foreign-born respondents, even when we control for many of the demographic characteristics considered in the OLS regressions. Thus, our measure might be related to culture, and this points to the importance of culture in explaining differences in financial behavior, as in Haliassos *et al*. (2017).

VII. Conclusions

We introduce a simple and novel measure of general attitude towards debt. We find that many people report being uncomfortable with debt, and this attitude helps to explain debt behavior. While our reduced-form framework explains only some of the observed differences in debt behavior, the general debt measure has an effect comparable 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. The fact 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 number of respondents who report being uncomfortable with debt deserves attention, our findings suffer from a number of limitations. For example, our measure might be a proxy for preferences such as time discounting. We have taken into account whether people have long-term savings in order to try to control for patience and possibly other unobservables, but this might 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 non-durable 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 body of 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 (e.g., in human capital). But here, too, psychology can be expected to play a part. For example, some individuals might borrow because they are tempted to (i.e., they lack self-control). Our findings suggest an additional determinant: that people might refrain from borrowing because they have a learned, affective response to debt that makes them less disposed to take on debt.

Our line of enquiry is related to the question of whether individual choices about debt can 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 towards 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 Kreiner *et al*. (2020), which has rich data on economic outcomes.

While certain social norms, such as those against cheating or free-riding, might mitigate problems with respect to moral hazard or time inconsistency, 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 on the effect of culture on financial behavior (Guin, 2017; Haliassos *et al*., 2017; Fuchs-Schündeln *et al*., 2020) by indicating that debt behavior can be influenced by culture. Our findings might 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, e.g., 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 might 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.

Supporting Information

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Online Appendix

Replication Files

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