

Entrepreneur Debt Aversion and Financing Decisions: Evidence from COVID-19 Support Programs*

Mikael Paaso[†], Vesa Pursiainen[‡] and Sami Torstila[§]

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Abstract

An entrepreneur's negative attitude towards debt – debt aversion – affects the financing decisions of the businesses they run. Controlling for a range of observable traits, firms run by highly debt-averse entrepreneurs are about nine percentage points less likely to use debt. The same entrepreneurs are also almost 25% less likely to take up government-guaranteed debt during the COVID-19 crisis. These firms show less interest in COVID-19 support policies if they perceive them to involve debt, based on experiments randomizing the framing and labeling of otherwise nearly identical, hypothetical COVID-19 support policies as debt or grants.

JEL classification: G02, G32, G41, H84

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[†]Erasmus University Rotterdam. E-mail: paaso@rsm.nl

[‡]University of St. Gallen. E-mail: vesa.pursiainen@unisg.ch

[§]Aalto University. E-mail: sami.torstila@aalto.fi

1 Introduction

There is a disconnect between the way debt is discussed in standard finance textbooks and in everyday use. In textbooks, debt is presented as a value-neutral instrument, with an emphasis on the benefits of intertemporal substitution. In everyday use, however, debt is often presented as an evil to be avoided. Many traditional literary sources strongly advise against taking on debt for reasons of self-reliance (“A man in debt is so far a slave”), self-restraint (“Never spend anything before thou have it; for borrowing is the canker and death of every man’s estate”) or threat to social ties (“Neither a borrower nor a lender be; for loan oft loses both itself and friend”).¹ The word *debt* is even etymologically connected to the concepts of guilt and sin in several world languages.²

As a consequence, it appears plausible that people have some level of debt aversion, i.e. a generalized negative attitude toward the idea of borrowing. This has been documented in a number of contexts. For example, Field (2009) studies the impact of psychological responses to debt on career choices and finds that framing tuition support as debt, instead of a financially identical tuition waiver, makes it significantly less appealing. Zinman (2009) shows that individuals with a combined debit/credit card often prefer to use the debit card, even when the credit card amounts to an interest-free loan when paid at the end of the month. Almenberg, Lusardi, Säve-Söderbergh, and Vestman (2021), using a survey of households in Sweden, show that 56% of people find taking on debt unpleasant and that these attitudes are passed on within families. While risk-averse individuals may avoid debt when it increases risk, debt aversion also includes psychological and cultural components that are not captured by classical notions of payoff uncertainty and risk aversion. Haliassos, Jansson, and Karabulut (2017) show evidence that culture is an important determinant of debt use. Despite this growing field of work, entrepreneurs not subject to agency problems are often assumed to operate with a profit-maximizing objective, a fact that is reflected in for example government policies designed to support firms.

In this paper, we study whether an entrepreneur’s personal attitude towards debt has an effect on the financing policy of the firm they manage.³ We find that a large share of entrepreneurs are debt averse, i.e., they report being uncomfortable with taking on debt. Debt averse entrepreneurs are less likely to use debt within their firm or to use debt-based rescue packages offered in response to the COVID-19 pandemic. We also conduct experiments which show that debt averse entrepreneurs are less interested in a hypothetical COVID-19

¹Quotes from Emerson (1871, p. 39), Raleigh (1632, p. 61), and Shakespeare (1623, p. 156), respectively.

²See, e.g., The Economist (2015).

³Our sample consists of owner-managers of Finnish SMEs, which may include second-generation owner-managers. We refer to all owner-managers in our sample as entrepreneurs for conciseness.

rescue package if it is labeled as debt, compared to a financially equivalent alternative not labeled as debt. Finally, in a follow-up survey, we ask entrepreneurs about their actions if they were offered a direct subsidy or a loan worth one month’s revenue, and find that entrepreneurs are twice as likely to invest if offered a direct grant compared to a loan.

We conduct a large-scale survey of approximately a thousand small- and medium-sized enterprises (SMEs) in Finland.⁴ We exclude firms where the survey respondent is a hired manager, leaving us with a sample of 916 owner-managers (whom we shall refer to as entrepreneurs).⁵ The firms are generally small, with about half the sample employing five or fewer people, and the other half employing between six and 250 people. In the survey, we ask respondents about their attitude towards debt, their subjective assessment of several personality traits, including optimism, financial literacy, risk aversion, and trust in people and banks, their expectations for their business, as well as the measures they have taken in response to COVID-19. We link survey responses to financial and other registry information about the firms.

The Finnish government’s COVID-19 rescue packages for SMEs were similar to those implemented in most of Northern Europe (for example, Germany, Switzerland, the UK and Sweden) and focused on government credit guarantees. The credit guarantee scheme was administered through the private banking system, with banks screening loans and applying for the government credit guarantee on behalf of the firms. The guarantees generally covered 50-80% of the loan amount. Government ministers have stated that the take-up of government-guaranteed debt used has been substantially lower than expected (Kukkonen, 2020). The low take-up of loans is not just a Finnish phenomenon—for example, *The Economist* notes that the take-up of partially guaranteed loans has been poor in both the UK and Spain (The Economist, 2020) while Core and De Marco (2020) document low takeup of government-guaranteed loans in Italy and Kren, Lawless, McCann, McQuinn, and O’Toole (2021) in Ireland. Given the pressure on liquidity caused by the COVID-19 pandemic, why are many firms still so reluctant to use government-guaranteed debt? Our hypothesis is that individual-level debt aversion is correlated with the decision not to take up government-

⁴A natural worry is whether Finnish respondents are internationally sufficiently representative. Perhaps they are more debt averse? We show evidence suggesting the levels of debt aversion in our sample are comparable or lower than those of respondents of the US Survey of Consumer Expectations (SCE). The SCE included as a one-time question items related to debt aversion (Hundtofte, 2018). When asked “What were you taught as a child about debt?”, 52% of SCE respondents agreed with the non-exclusive option “Something to be avoided”, 29% with “A necessary evil”, and only 9% with “A useful way to shift money from periods when you have it to periods when you do not”. We ask our respondents the same questions and obtain 25%, 10%, and 8%, respectively. This suggests that our respondents are less debt averse than US SCE respondents, which is possibly because our respondents are entrepreneurs.

⁵We present results including non-owner managers, such as hired CEOs or CFOs, in the Internet Appendix.

guaranteed debt.

The entrepreneurs in our sample are generally uncomfortable with debt. On a scale of 0-10, with 0 being disagree completely and 10 agree completely, 63% of entrepreneurs answered over 5 to the question “Do you agree with the following statement?: I consider taking on debt to be unpleasant”. Approximately 45% gave an answer of 8, 9 or 10, which we group as *High debt aversion* in our main analysis.⁶ We operationalize debt aversion in a second way by asking five questions on “What were you taught about debt as a child?”.⁷ We find significant correlations between the directly self-reported debt aversion and four of the six possible answers to what the entrepreneur has been taught about debt as a child. The strongest positive correlation with debt aversion is for the question “Should be avoided”, and the strongest negative correlation with “Useful to split large purchases”.

We find that high entrepreneur debt aversion is associated with a significantly lower likelihood of the firm using debt, both currently and in the past. High-debt-aversion entrepreneurs are approximately nine percentage points less likely to have used debt in the past five years. In addition, a one-standard-deviation increase in debt aversion is associated with an approximately seven percentage points lower likelihood of currently having debt. We include in the analysis a separate measure of general risk aversion.⁸ The results show that debt aversion and risk aversion both have a significant association with the decision to apply for a new loan: high debt aversion decreases the likelihood of applying for a new loan, while low risk aversion increases the likelihood. The effect size is approximately three times larger for debt aversion than for risk aversion when both are used simultaneously.

The analysis above describes a correlation between high debt aversion and low debt usage while we are interested in whether a causal relationship exists. Our goal is first to compare firms that are as similar as possible, both in terms of their need for external finance as well as other managerial traits that may affect debt use, and control for the effect of these traits. Using our survey, we are able to control for many firm characteristics, including industry and size. We are also able to control for the size of the coronavirus shock (in terms of % of revenue lost) and the subjective expectations of the entrepreneur on the time to recovery for their firm. Most firms in our sample expect the impact of the virus to be temporary – more than half of the firms expect revenue to recover to pre-COVID levels within six months of our survey (conducted at the end of May), in line with Landier and Thesmar (2020) who

⁶We run all our analyses using both the 0-10 score and the dummy

⁷The possible (non-exclusive) answers are “Should be used in moderation”, “A promise to be kept”, “Should be avoided”, “A necessary evil”, “Useful to split large purchases”, and “Useful to transfer money over time”.

⁸The measure is based on subjective self-reported risk aversion. Dohmen, Falk, Huffman, Sunde, Schupp, and Wagner (2011) find that self-reported risk aversion is strongly correlated with choices in experimental lotteries and real-world behavior.

show that analysts expect the impact of the virus to be temporary for US public firms.

A number of other potentially confounding characteristics can also be directly controlled for at both the firm and manager levels. For example, if debt-averse people are more drawn to certain industries, any observed correlation may simply be a function of selection into industries with different financing needs. We control for this with industry fixed effects. Further, in addition to debt aversion and risk aversion, we include three control variables related to individual attitudes, namely optimism, distrust of other people, and distrust of banks. However, there remains a possibility that high debt aversion does not actually cause low debt usage, if the correlation is due to some unobservable factor. To mitigate this possibility, we first use the specificity of the COVID-19 context, and second, include a randomized experiment in our survey.

Our first analysis uses the fact that the COVID-19 pandemic caused a severe unexpected liquidity shock for a large number of firms. The timing of the shock was largely unanticipated and hit most firms at the same time. This provides us with a setting in which firms face unexpected financing needs, alleviating concerns about debt averse managers self-selecting to low-financing-need firms. The magnitude of the liquidity shock in our sample is correlated with industry, but we control for this. In case high debt aversion is associated with low willingness to take on new debt even in this exceptional context, we would expect that our results reflect a lower bound on the effect size. We find not only that high-debt-aversion entrepreneurs were less likely to use debt before the crisis, but also that high-debt-aversion entrepreneurs are five percentage points less likely to have applied for a new bank loan during the crisis, relative to a sample average of 16%.

However, there may still be concerns that, for example, characteristics of firms run by non-debt-averse managers caused a larger liquidity shock.⁹ To mitigate this we conduct a three-part experiment to see whether simply framing or labeling a contract as debt makes entrepreneurs less interested in it. The experimental design partially resembles that of Caetano, Palacios, and Patrinos (2019) for student loans. We have three “pairs” of financing options, and each respondent is randomly shown one from each pair and asked to evaluate how interested they would be in using it, on a scale of one to ten. Both the order of the three questions and the alternative to be evaluated by the respondent are randomized. The pairs consist of identical or nearly identical policies, where one is framed or labeled as more loan-like and the other either as a direct grant, or debt but with some debt-like features made more salient. We find that across all policy pairs, respondents are more willing to take

⁹Another potential concern might be that applying for debt during the crisis lowered debt aversion, causing us to observe an *ex post* relationship between debt aversion and use of debt even if one did not exist at the time of applying.

up support framed as direct support rather than a loan, or where the loan-like features are made less salient.

The experiments were designed to resemble alternative financial support mechanisms drafted by the government. The objective of the experiments is to provide evidence of whether subtle differences in framing affect entrepreneur interest. The conclusions drawn are not reliant on the alternative financial support mechanisms presented being strictly identical: Arguably, full contractual terms would need to be available before it would be possible to conclude that any of the alternatives would or would not be fully equivalent. The question of interest is whether any difference between the framings is more plausibly interpreted in terms of any other differences between the financing alternatives, or in terms of debt aversion. Importantly, any alternative story would also need to explain why the difference in interest between the two options is correlated with debt aversion.

The first experiment asks the respondents about their interest in either a loan out of which 75% is forgiven if the firm does not lay off workers (somewhat similar to the US CARES Act Paycheck Protection Program), or a grant covering 75% of the firm’s personnel expenses.¹⁰ The two options are virtually identical with the only minor difference being that the firm receiving the loan might have to pay interest (which we did not specify). The respondents are significantly more interested in taking up the support framed as direct grant instead of loan forgiveness. The difference in interest grows with debt aversion and appears particularly high for highly debt averse entrepreneurs, though neither difference is statistically significant. When studying the likelihood of zero interest as an outcome, the difference in the treatment effect is statistically significant at the 10% level, with more debt-averse entrepreneurs exhibiting a larger difference in interest. These findings imply that governments primarily motivated by limiting lay-offs might want to formulate their payroll support as a partial grant rather than a loan that can be forgiven.

The second experiment is a more subtle labeling of a policy relevant to the EU area, where governments have lent back to firms the value-added tax (VAT) that they paid earlier in 2020. We call the two options either “VAT loan” or “VAT return”, with exactly identical financial terms used in the description, i.e. the VAT return is temporary, carries an interest and has the same maturity as the loan. As one might expect, the differences are much smaller than with the first experiment. We do not find a statistically significant difference in the overall average level of interest between the two alternatives. However, there is a statistically significant difference among the high-debt-aversion entrepreneurs in the likelihood of expressing zero

¹⁰In this case, the loan actually objectively dominates the grant option, as we do not specify, unlike the Paycheck Protection Program, that the loan amount is restricted by the amount of personnel expenses. In principle, in our wording, the forgiven loan amount could be larger than the direct grant. Despite this, the respondents are more interested in the grant.

interest in this policy. For the high-debt-aversion group, simply changing the name of the support to “loan” is enough to increase the amount of no-interest responses by about 15 percentage points.

The last experiment is about making the loan-like characteristics more salient. One policy alternative is a government-guaranteed loan requiring private collateral for 20% of loan value, while the other is a government guaranteed loan where 80% is forgiven if the firm becomes insolvent as a result of COVID-19. The explicit mention of forgiving 80% of the loan in bankruptcy significantly increases interest relative to a regular loan and reduces the amount of no-interest responses by 14 percentage points. Among high-debt-aversion entrepreneurs, there is an additional reduction in zero-interest responses of 7 percentage points, although this difference is not statistically significant. Given that in the event of bankruptcy, equityholders are unlikely to receive any payoff, it is not clear how forgiveness of 80% of the loan has any real impact on the entrepreneur.¹¹ If interpreted as an increase in the likelihood of the entrepreneur receiving some non-zero amount at the bankruptcy, it might be perceived as a reduction in the downside risk of the loan.

In an additional analysis conducted as part of a follow-up survey (answered by roughly 10% of our original sample), we ask firms about how they would respond to hypothetical offers of either a direct grant or a loan worth one month of revenue. We find that almost all firms would spend the grant on their business, with almost half of firms replying that they would invest the grant.¹² This suggests that most firms see profitable investment opportunities. However, the share of firms investing if offered a loan is less than half of the share investing a grant. One justification for favoring debt-based support programs has been the fact that firms with profitable investment opportunities can always fund them with debt. Our results suggest that this may not be the case. Instead, firms are significantly more likely to invest out of an equity grant than out of debt.

There are limitations to our analysis. First, the survey was conducted between May 27 and June 8, 2020, when local infections had fallen from their peak and some restrictions were being lifted. Thus, the answers to questions on the viability of the firm and recovery times may be less pessimistic than the attitudes at the peak of the crisis. In addition, there may be some selection bias in the firms that participated in our survey.¹³ However, it is not clear how this would bias our cross-sectional results. While the survey was clearly framed as an academic survey, entrepreneurs might also have viewed it as an opportunity to lobby

¹¹Bankruptcy in the Finnish context means a Chapter 7-style liquidation.

¹²Other common responses included paying off debts to suppliers, landlords etc. during the crisis and paying employees a bonus.

¹³For example, it could be that entrepreneurs of failed firms are not interested in answering surveys, or entrepreneurs with struggling firms might not have the time to do so.

for direct support for firms. However, it is unlikely that entrepreneurs would have used the “personality trait” questions (our variable of interest) as their instrument for lobbying. Finally, the survey was carried out at a time when there was media speculation that direct support (grants) might be provided to firms.¹⁴ It is possible that anticipation of direct support affected our results. Given that our survey mostly asks firms about their use of debt in the past months and explicitly includes a question about “anticipation of better support programs in the future” as a reason for not applying for debt-based relief, we do not think this would influence our results significantly.

Our study builds upon, and contributes to, several strands of literature. First, our study is related to recent work in household finance on individual-level attitudes towards debt. Almenberg et al. (2021) find that more than half of households report being uncomfortable with taking on debt and that these attitudes are correlated with their use of debt. In the context of US student loans, experimental and quasi-experimental studies (e.g., Field, 2009; Caetano et al., 2019) show that student loans with loan forgiveness enjoy lower take-up than financially equivalent grant programs. There is also a broader literature on the psychology of debt (e.g., Almenberg and Karapetyan, 2014; Prelec and Loewenstein, 1998; Meissner, 2016). Prior literature also shows that social and cultural norms are important determinant of borrower behavior (see, e.g., Guiso, Sapienza, and Zingales, 2013).

Second, we contribute to the growing literature showing evidence that managerial attitudes affect corporate policy (e.g. Graham, Harvey, and Puri, 2013; Cronqvist, Makhija, and Yonker, 2012; Cronqvist and Yu, 2017; Korkeamaki, Liljeblom, and Pasternack, 2017). For reviews of how managerial attitudes, biases, and experiences play a role in behavioral corporate finance, see Guenzel and Malmendier (2020) and Malmendier (2018). The managerial attitudes approach has helped explain why there is considerable heterogeneity in observed capital structures beyond what is predicted by traditional models such as trade-off theory and pecking order theory. However, one persistent puzzle that remains is that the observed leverage levels of firms tend to be substantially lower than predicted by traditional models (Graham, 2000) and a large number of firms have no debt at all (Korteweg, 2010; Strebulaev and Yang, 2013; El Ghouli, Guedhami, Kwok, and Zheng, 2018). We take findings from the household finance literature on the psychology of debt and link these to the financial policies of SMEs, showing that many entrepreneurs’ personal views towards debt affect financial policy in the firms they manage.

Third, our results also have implications for the entrepreneurial finance literature. Debt aversion may act as a constraint to entrepreneurship, as new firms often depend on personally guaranteed debt (Robb and Robinson, 2014), and a partial explanation for the link between

¹⁴Such direct support was indeed decided on after the survey had been concluded, later in June.

personal wealth and entrepreneurship (e.g., Hurst and Lusardi, 2004). This is also consistent with evidence that personal attitudes may affect entry into entrepreneurship (e.g., Puri and Robinson, 2013). In an argument that is close to ours, Nguyen, Nguyen, Troege, and Nguyen (2020) find evidence that many Vietnamese SMEs do not apply for loans and show that this is correlated with a survey answer response stating that they “do not want to incur debt”. While plausible, it is not clear to what extent this survey response measures managerial debt aversion, as opposed to just not wanting debt for business-related reasons or because of risk aversion. Our survey directly asks about attitude toward debt, providing a more plausible empirical measure of debt aversion. Our use of COVID-19 as a setting and our experimental analyses mirroring prior experimental work also provide a more plausible causal interpretation.

We also add to the emerging literature on the effectiveness of government policies when response to policies is shaped by imperfect information, lack the capability to process information, or are affected by attitudes and social norms (D’Acunto, Hoang, Paloviita, and Weber, 2020b,a; Coibion, Gorodnichenko, and Kumar, 2018). Much of this literature has focused on individuals rather than firms, while a growing strand of the literature has shown that the expectations and actions of firms often deviate from the full information rational expectations framework (e.g., Bachmann and Elstner, 2015; Coibion et al., 2018; Andrade, Coibion, Gautier, and Gorodnichenko, 2020). Finally, we contribute to the literature on the impact of COVID-19 on SMEs and the design of government rescue packages. The pandemic has significantly impacted firms around the world (Barrero, Bloom, and Davis, 2020; Humphries, Neilson, and Ulyessea, 2020; Bartik, Bertrand, Cullen, Glaeser, Luca, and Stanton, 2020) and underscored the importance of effective government policies. Our paper is not just relevant for COVID-19 support programs but rather any credit guarantee-based support programs aimed at SMEs.

Our paper is related to recent studies using information experiments related to either COVID-19 (e.g., Binder, 2020; Hanspal, Weber, and Wohlfart, 2020) or firms (Coibion, Gorodnichenko, and Ropele, 2020). Finally, our methodology that connects survey, experimental, and administrative data represents a novel approach in the entrepreneurship literature. While there are a some studies using similar approaches with households (e.g., D’Acunto, Hoang, Paloviita, and Weber, 2019; Bräuer, Hackethal, and Hanspal, 2020), there are very few studies applying that to firms. This combination may be a promising new direction for corporate finance studies more generally.

A big picture implication of our results is that governments should incorporate insights from behavioral economics into their dealings with firms. Even with “nudge units” existing around the world to incorporate behavioral economics into policy, government policy often

presumes that firms operate in a profit-maximizing framework. For this reason, rescue policies for firms struggling due to the pandemic may not be as widely adopted as assumed.

The next section provides some background information on the coronavirus in Finland and measures taken by the government to help firms and SMEs. We then describe the data (our survey + key variables construction). The section “Main results” presents summary statistics from our sample and the main results documenting the impact of debt aversion on the use of debt, the use of debt-based government programs during COVID-19 and on the perceived attractiveness of hypothetical rescue policies (our experimental results). The next section, “Additional analysis” presents several descriptive analyses showing the measures taken during the crisis by high-debt-aversion firms as well as a brief look at which demographic traits and childhood “stories” about debt are correlated with debt aversion.

2 Background information

We use Finland as the institutional setting for this research because government policy early on in the COVID-19 crisis aimed to help firms by improving access to credit and because even small Finnish SMEs are required to prepare annual accounts, which are made publicly available. In this section, we provide a brief overview of the impact of the COVID-19 pandemic on Finland as well as measures taken by the government to curb the spread of the disease and to help firms.

Overall, the first wave of COVID-19 did not spread widely in Finland compared to other Western European countries. Because testing was not widespread at the beginning of the outbreak, we use death rates as a proxy for the spread of the disease. As of 3 August 2020, Finland had seen 329 COVID-19-related deaths, from a population of 5.5 million. The virus did not spread evenly across Finland, with the province of Uusimaa (including the capital city, Helsinki) having a death rate double the national average (other hard-hit areas include the border region with Sweden). The first documented case was found relatively early, on 29 January when a Chinese tourist tested positive. In early March the number of documented cases started to rise rapidly. Finland imposed (once again, compared to Western Europe) a relatively light set of social distancing measures.

The first measures were enacted on 16 March when the government announced that schools and non-essential government services would be closed, people aged over 70 were encouraged to limit contacts, borders were closed to non-Finns/non-residents¹⁵ and gatherings of more than 50 people were banned. On 20 March, Finland saw its first death from the virus, on 27 March internal borders between the province of Uusimaa and the rest of country

¹⁵Excluding certain essential traffic.

were closed to non-essential traffic and on 30 March bars and restaurants were ordered to close (takeaway and delivery were still possible). The travel ban on the Uusimaa province was lifted on 15 April and other restrictions were lifted starting from May as the rate of new infections fell (on 4 May libraries and other government services were allowed to reopen, on 14 May schools reopened for 2 weeks before the summer holidays and on 1 June restaurants and certain bars were allowed to reopen, with restrictions). Between June and July the government eased capacity restrictions on restaurants and bars.

The government announced its first support package for firms on 20 March. This support package consisted of two elements, chosen mainly because they could be deployed fast: credit guarantees administered through Finnvera, a government-owned body that normally provides export credit and other credit guarantees, and direct “development support” grants administered through Business Finland, a government entity that normally administers direct grants to firms such as R&D subsidies. The government did not loan out money directly but instead Finnvera guarantees were offered via the private banking system. The guarantees typically covered 80% of the loan amount meaning that banks retained some credit risk and hence screened applicants. The annual cost of the credit guarantee was capped at 1.75% of the loan amount plus a 0.1% one-time administrative fee.

The second element of the support package was direct support in the form of development grants offered by Business Finland (for firms with over 5 employees) or grants from local municipalities or regional economic development authorities (for firms under 5 employees). The Business Finland development grants ranged from 10,000 euros to 100,000 euros and required firms to submit a plan for a new product or service or a development to an existing product or service - they could not be used to for instance retain staff or compensate for lost revenue. In addition, they required the firms themselves to contribute 20% of the costs. The development grants were widely criticized as being poorly targeted and inaccessible for the firms that needed them the most. However, our survey suggests that the various forms of direct support were fairly popular, with 44% of firms having applied for these grants, including over half of surveyed firms in the hospitality (restaurants and hotels) industry.

Finally, following the release of a report recommending direct grants to firms in May, the government announced direct support for hard-hit firms in hard-hit industries, consisting of grants based on past expenses. The details of direct support to firms were not yet available to the public while our survey was conducted, but the firms responding to our survey knew that the government was working on a scheme and some preliminary details (such as the fact that support would be contingent on both a drop in revenues for the firm as well as for the industry the firm operates in), although obviously nothing had been confirmed at that stage.

3 Data and methodology

3.1 Description of the data

Our data come from a survey of Finnish SMEs that we commissioned, conducted between 27 May and 8 June 2020 by TNS Kantar (a firm specializing in market research) and aimed to survey 1,000 Finnish SMEs.¹⁶ The survey was sent to member firms of the Federation of Finnish Enterprises, a trade body for entrepreneurs, as well as firms whose contact details were available in the Bisnode Finland database. We aimed to oversample firms with over 5 employees in the survey. In total, 1,008 firms answered the survey¹⁷. The respondents were mainly entrepreneurs (91%), with 6.3% being non-entrepreneur CEOs and 2.6% being CFOs or other management (0.1% declined to answer this question). In our results, we focus on the sample of entrepreneurs. All of the firms in our sample are private firms - this makes analysis of non-owner managed firms difficult as it is not clear whether the key decision-maker on financial policy is the hired CEO / CFO or the owner.¹⁸

Of the firms in our sample, 61% have fewer than 5 employees while 0.5% have over 50 employees, meaning that most firms are very small. Median sales (self-reported) in 2019 are 203,000 euros with the 10th and 90th percentile firms having sales of 19,000 and 2,100,000 euros, respectively. About half (48%) of the firms report having debt. Summary statistics on our sample are presented in Table 1. Most firms in our sample report that they either will survive or probably survive the crisis. Fewer than 10% of firms report that they are likely to fail or will fail, though this may be a function of the fact that our survey was conducted relatively late into the first wave of the crisis. However, more than half of the firms in our sample report that they would not survive longer than 6 months without additional financing or assistance.

Filling out the survey took on average eight minutes. The first part of the survey asked for background information, such as the size of the firm, the position of the respondent (entrepreneur, hired CEO, other management etc.), the age, gender and education of the respondent and the firm's 2019 sales and industry. We then asked firms for the impact of COVID on their revenue (increased, decreased, stayed the same etc.) and an estimate of the size of the effect. About 63% of firms responded that revenues had fallen because of COVID, with the average change in revenues being minus 25%. We also asked whether the

¹⁶In related work, Paaso, Pursiainen, and Torstila (2020) use more detailed descriptive data obtained from the same survey, such as data on regional and industry differences in levels of COVID-19-related financial distress, to provide timely support for domestic policy-makers during the crisis. The analysis in this article does not overlap with the analysis in the descriptive article.

¹⁷We had 1,009 responses but one firm responded twice.

¹⁸We present results using the full sample of firms in the appendix.

firm currently has debt / whether the firm has had debt in the past five years as well as whether the owners of the firm had been required to offer guarantees or post collateral for this debt.

We asked firms about the damage caused by COVID to their firm and the measures taken in response. In particular, we asked whether firms had furloughed or laid off employees (and what proportion of workers had been laid off and furloughed) – 29% and 6% had done so, respectively. In addition, we asked whether the firm had cut or postponed investments, missed payments to customers (and whether customers had missed payments) or skipped other payments such as taxes or the entrepreneur’s salary.

We included multiple questions about the respondent’s expectations regarding their firm and the economy in general. First, we asked respondents whether their firm will survive the crisis or not, how many months their firm would survive without any external assistance or financing and their expectation of when revenue will return to 2019 levels. We also included more ”neutral” expectations questions such as estimates of Finnish GDP in 2020 and 2021 and the probability of GDP falling by more than 15% (an extremely pessimistic estimate compared to most forecasts at the time) and the probability of their firm’s revenue falling by more than 30% over the entire year.

The next section included a range of questions on the financing and assistance options used by the firm. In particular, we asked firms what types of financing / assistance they had applied and received for during the crisis. Direct support programs were most popular, with over 44% of firms having applied for at least one. Only about 16% of firms had applied for new bank loans and 19% had applied for payment extensions on current loans (with overlap between the two options). We also asked firms how much they had applied for and for the firms that received loans, what the interest rate on these loans was (on average, 2.8%) and whether personal collateral or guarantees were required. We also ask the firms that did not apply for a loan why they did not do so (over 50% responded that they did not need a loan, with the second most common reason being that taking on new debt would increase the riskiness of the firm)

We then conducted an experiment (described above) where all respondents received three questions, but the content of these questions was randomized. There were three ”pairs” of questions, with each respondent receiving one of the two questions in each pair. The questions described a hypothetical policy option offered by the government and asked the respondent to rate (on a scale of 0-10) how likely they would be to use it if it had been offered at the beginning of the crisis. The first pair of policy options included a loan with a standard guarantee from Finnvera, with the randomization affecting the way the guaranteed portion of the loan is treated in bankruptcy - half of respondents received a policy with no

special treatment while half received a policy where the guaranteed portion is written off in bankruptcy if the firm can show it became insolvent because of COVID-19. The second and third policy options involved various policies being framed either as debt or a grant.

Finally, we asked respondents for their subjective assessments of their risk and financial risk appetite (0-10 scale), whether they consider themselves optimistic, whether they consider themselves good in financial matters (subjective financial literacy), whether they feel people can be trusted, whether they feel banks can be trusted and two questions on debt aversion. The first debt aversion question asked respondents what they had been taught about debt as a child (over 60% had been taught that it is something to be used in moderation, 10% that it was a necessary evil and only 7% that it was a tool for transferring wealth from periods when wealth is high to those when it is low) as well as whether they agree/disagree with the statement “I consider taking debt unpleasant.” We also asked whether the respondent knew anyone who had declared bankruptcy and whether they wanted their kids to take over their business after they retired.

One concern may be that the questions on financing options used “primed” participants to respond in a different way to the questions on attitudes towards debt. Several things help assuage this concern: the first question on use of debt within the firm was at the beginning of the survey whereas the attitude towards debt question was right at the end. While the use of debt during the crisis question was separated from the attitude towards debt question by the hypothetical rescue scenarios and other attitudes questions, the debt element was not highlighted here - the question was a multiple-choice question where many financing options were presented at once. In addition, the questions on debt attitudes were presented along with a number of questions on attitudes towards various things such as risk.

3.2 Follow-up survey

About two months after our survey, in August, we sent a follow-up report to firms. In this report, we provided industry-level information (for the industry the firm was operating in) on the size of the coronavirus shock and measures taken in response. In addition, we linked to a policy report we had created and posted on the Aalto University website detailing the impact of the coronavirus across the entire economy (along with some industry-level figures for all industries). We asked the firms receiving the report to fill out a small survey, and roughly 110 firms did (about 20% of the roughly 500 firms that elected to receive the industry reports). In this survey, we asked them whether they thought the firms they managed had too much, too little or the right amount of debt. In addition to this, we asked firms about their responses to hypothetical government-backed loans (with either a 3% market interest

rate or 1% subsidized interest rate) or grants of one month of revenue.¹⁹ We presented the respondents with nine options for both debt and equity. A graph presenting the percentage of respondents choosing each (non-exclusive) option is presented in Figure 5.

3.3 Key variable definitions

Our main variables of interest are attitudes towards debt (debt aversion) and the use of debt. We look at use of debt in two contexts. First, we look at the firm’s use of debt-based rescue packages during the COVID-19 pandemic. Second, we study the use of debt prior to the pandemic, which we obtain from both the survey as well as from linked financial information. Below, we briefly discuss the key measures we use in our analysis and the survey questions they are based on.

- **Debt aversion:** *How well does the following argument describe your relationship with debt? "I consider taking debt unpleasant" (0-10 scale)*

61% of respondents answered above 5 and 43% answered 8, 9 or 10. We define *high debt aversion* as a dummy that takes the value one if a respondent answers either 8, 9 or 10. The distribution of responses to the question is presented in Figure 1.

- **Debt use during COVID-19:** *Has your company applied for new financing during COVID-19 from some of the following..?*

Firms are then presented with a list of potential financing sources (loans, direct-support, deferred payments on existing loans) and answer options (No, No but will use if the crisis continues, Yes, we have applied but not heard back, Yes, we have applied by been rejected and Yes, we have applied and received this). We create a dummy variable that takes the value one if a firm has applied for a loan (regardless of result), encompassing the answers to several financing options (loan from a bank, loan-back of mandatory pension contributions and loan from other sources). 18.4% of firms have applied for a loan of any sort during the crisis.

- **General debt use:** *How much debt does your company have?*

Given the variation in debt use across firm size and industry, we generally use a dummy specification where firms that have any debt are assigned one and others zero. Just under half of firms report having debt. This may be an underestimation as many firms may have debt-like liabilities (such as deferred payments or trade credit) which they do not consider debt. Firms which report having zero debt are presented with an extra question asking them whether they have had any debt in the past five years. In

¹⁹We randomized the order of the debt and grant questions and did not allow respondents to move back in the survey.

robustness tests, we combine these two measures into a dummy variable that takes the value one if a firm has debt now or has had debt at any point in the past five years. In addition to these survey-based indicators of debt use, we also construct accounting-based variables of debt use for the firms where we have the relevant accounting items available.

4 Main results

4.1 Debt aversion and the use of debt

We begin our analysis by studying the relationship between entrepreneur debt aversion and the general use of debt prior to the pandemic. We construct two outcome dummy variables, *Has debt* and *Had debt 5y*, indicating whether the firm has debt currently and whether it has had debt at some point during the last five years. We then perform a regression analysis of the following form:

$$Has\ debt_i = \alpha_0 + \alpha_1 \times High\ debt\ aversion_i + \beta \times X_i + \epsilon_i \quad (1)$$

where *High debt aversion* is a dummy taking the value one if the entrepreneur has a debt aversion score of 8,9, or 10, i.e., the highest tertile in our sample, and X is a vector of controls, including risk appetite, optimism, trust in people and banks, firm size-category fixed effects, industry fixed effects. We also include subjective survival probability fixed effects and “survival time” category fixed effects (based on the response options we gave entrepreneurs, e.g. less than 1 month, 1-2 months, 3-4 months, etc.), to control for firm cash flow and liquidity characteristics at the outset of the pandemic.

The results are shown in Panel A of Table 2. We find a significant negative relationship that is slightly mitigated by the inclusion of control variables. Highly debt averse entrepreneurs are 10-14 %-points less likely to have debt, compared to a baseline of about 48% of firms having debt. This difference is statistically significant and economically large. We find similar results when including debt aversion as a continuous variable.

Using financial statement data for those firms for which it is available, we then construct a number of ratios indicating the use of debt and the level of cash holdings and study the effect of debt aversion on those measures.²⁰ The results are shown in Panel B of Table 2. Firms run by high-debt-aversion entrepreneurs have significantly lower levels of debt, with nearly 4 %-points lower debt/assets ratio, representing 27% decrease relative to the sample average of 14%. Similarly, high-debt-aversion entrepreneurs have on average 0.58 lower net

²⁰To reduce the impact of outliers, we winsorize these variables at the 5% level at both tails.

debt/EBIT ratio and 0.04 lower net debt/revenue ratio. These effects are equivalent to 15% and 16% of the sample standard deviation, respectively. Directionally, our results also suggest that high-debt-aversion entrepreneurs may have higher average cash/assets ratios, although this difference is not statistically significant.

As discussed above, the COVID-19 pandemic provides a setup where many firms unexpectedly need liquidity and debt is the main option on offer. Hence, we study firms' decisions to take-up new loans during the pandemic, depending on the manager's debt aversion. We define a dummy variable *Applied new bank loan*, taking the value one if the firm has applied for a new bank loan during the pandemic. We then perform a similar regression as above. We include some additional controls to better capture firm-level heterogeneity in exposure to the pandemic. These include sales impact fixed effects (once again, based on response options, e.g. sales decreased, sales stayed the same, sales grew) and time to normality fixed effects (response options, e.g. sales were not impacted, less than 1 month, 1-2 months.).

The results are shown in Table 3. The coefficient of high debt aversion is consistently negative and significant at either 5% or 10% level, depending on the specification. Entrepreneurs that are highly debt averse are approximately 5 percentage points less likely to have applied for a new bank loan during the crisis, compared to a baseline rate of 16% that applied for bank loans. Risk appetite is also significantly negatively correlated with the used of debt during the pandemic, suggesting that more risk-averse entrepreneurs are less likely to take on new debt. Optimism and trust are not significantly correlated with the use of debt. We also note that the relationship between debt aversion and take-up of new loans during the pandemic appears non-linear. The results are statistically more significant for a dummy indicating high levels of debt aversion than when including debt aversion as a continuous variable.

4.2 Experiments on framing

In this section, we conduct a set of experiments to study the impact of debt aversion on the take-up of government support for SMEs. We compare the level of interest in three "pairs" of hypothetical policies, and each respondent is randomly shown one from each pair. The pairs consist of identical or nearly identical policies, where one is framed as more loan-like and the other either as a direct grant or debt but with making some debt-like features more salient. In each pair, the respondent is asked to rate (on a 0-10 scale) how likely they would be to use the presented policy if it was offered and they were at the beginning of the COVID-19 crisis. For each question, we create a *Treated* dummy variable that takes the value one if the respondent was shown the policy option where the policy is framed as being debt-based, or

in the case of experiment 3, where the debt-like features are more salient.

The framing of the questions is as follows:

- **Common introduction:**

In this question, we will present one support option that has been a subject of public conversation. Considering your company's state at the beginning of Covid-19 crisis, would you have applied for support with the following terms?

- **Experiment 1:**

Control: *The government will pay 75% of salaries if employees are not temporarily laid off or permanently dismissed.*

Treatment: *The government offers a loan of which 75% will be forgiven if employees are not temporarily laid off or permanently dismissed.*

- **Experiment 2:**

Control: *A VAT-refund, where VATs paid at the beginning of this year would be temporarily refunded to companies. The refund would have to be paid back in 2 years with a 3% annual interest.*

Treatment: *A VAT-loan, where VATs paid at the beginning of this year would be temporarily lent back to companies. The loan would have to be paid back in 2 years with a 3% annual interest.*

- **Experiment 3:**

Control: *A bank will lend with 6% interest. The loan is 80% guaranteed by Finnvera. The cost of Finnvera's guarantee is 1.75% of the loan amount. You will need the other 20% to be collateralized by something else. 80% of the loan amount is forgiven if your company will face a permanent insolvency due to Covid-19 crisis.*

Treatment: *A bank will lend with 6% interest. The loan is 80% guaranteed by Finnvera. The cost of Finnvera's guarantee is 1.75% of the loan amount. You will need the other 20% to be collateralized by something else*

A graphical presentation of the results is shown in Figures 3 and 4. Table 4 shows the corresponding regression results. In these analyses, there are two aspects of interest. First, general debt aversion would suggest generally higher interest for the support alternatives that are framed as non-debt, or less debt-like. Second, we might expect the difference in interest to be larger for entrepreneurs that are more debt averse. These two aspects are illustrated by Figure 4. The level difference at low levels of debt aversion indicates whether options are perceived differently regardless of debt aversion. A difference in slopes of the fitted lines implies different sensitivity to the debt framing depending on entrepreneur debt aversion.

In table 4, for each experiment, we present three regression specifications for two separate outcomes. The first outcome is the reported interest level on a scale of 0–10 and the second is a dummy that takes the value of 1 if the reported interest is 0. The first specification is a simple analysis of whether being Treated (i.e. receiving the debt-framed choice) lowers interest across all participants. Given that most of our participants are debt averse, this dummy will capture debt aversion and any other differences between the two options. In the second specification, we include the *High Debt Aversion* variable and an interaction between *High Debt Aversion* and the Treated-dummy. In this case, the Treated-dummy captures the difference in interest between the options for all participants with reported debt aversion below 8, i.e. it may still include debt averse entrepreneurs. In the final specification, we include the *Debt Aversion* score (0–10 scale) and an interaction of this variable with the Treated dummy. It is important to emphasize that the interpretation of the Treated-dummy in this specification is different from the prior two. In this specification, the Treated dummy represents the difference in interest between the two options for *people reporting a debt aversion value of 0*. That is, the Treated-dummy no longer includes debt averse individuals. This is important to note because, as will be discussed below, in most of our experiments the Treated-dummy is statistically and economically significant in the first two specifications but not the third. This indicates that people reporting low debt aversion perceive the options in the experiments to be fairly similar with differences being driven by debt averse participants.

The first experiment focuses on framing and asks the respondents about their interest in either a loan, of which 75% is forgiven if the firm does not lay off workers, or a grant covering 75% of the firm’s personnel expenses. In this case, the loan actually objectively dominates the grant option, as we do not specify that the loan amount is restricted to the amount of personnel expenses. So in principle, the forgiven loan amount could be larger than the direct grant.²¹ Figure 3 shows a clearly visible difference in the level of interest between these two options, notably in favor of the grant covering 75% of personnel expenses. Panel A of Table 4 shows that the loan-with-writeoff option is less popular than the grant. The interaction terms *Treated x High Debt Aversion* and *Treated x Debt Aversion* are economically but not statistically significant when the outcome variable is interest level and significant at the 10% level when the outcome variable is the zero Interest dummy. In the full sample, the loan receives -1.33 points lower interest on a 0–10 scale, with people with debt aversion levels from 1–7 having 0.8 points lower levels of interest and people with high debt aversion scores (8–10) reporting about 1.5 points less interest (compared to an average level of interest of

²¹In case the firm does not need or want the 25% of the loan that is not forgiven, it could always keep (or invest) the cash and use it later to pay back the loan. Hence, it should not matter very much whether or not the firm is liquidity-constrained.

about 5.5 points).

The second experiment is a much more subtle labeling of a policy discussed in the Finnish media, whereby the government would lend back to firms the VAT that they have paid earlier in the year. We call this option either “VAT loan” or “VAT return”, with identical financial terms in the description. As one might expect, the differences are much smaller than with the first experiment. In this case, as shown in Figure 4, there is no difference in interest at low levels of debt aversion, but a visible difference in the slope. In other words, more debt averse entrepreneurs are sensitive to the debt framing, while low-debt-aversion entrepreneurs are not. The regression results in Table 4 provide some support for this interpretation. The likelihood of reporting zero interest for the debt option, relative to refund option, is significantly higher for high-debt-aversion entrepreneurs. For this high-debt-aversion group, simply changing the name of the support to “loan” is enough to increase the zero-interest responses by 15 percentage points. Directionally, the results are similar for the average interest level measured as a continuous variable, but the difference is not statistically significant.

The last experiment is about making the loan-like characteristics more salient. One policy is a normal government-guaranteed loan and the other is a government-guaranteed loan where 80% is forgiven if the firm becomes insolvent as a result of COVID-19. Both formulations state the need for 20% collateral. The explicit mention of forgiving 80% of the loan in bankruptcy significantly increases interest relative to a regular loan and reduces zero-interest responses by 14 percentage points. Among high-debt-aversion entrepreneurs, there is additional reduction in zero-interest responses of 7 percentage points. Given equityholders generally receive nothing in a Finnish bankruptcy, it is not clear that this forgiveness of 80% of the loan has any real impact. In both cases, the entrepreneur would highly likely lose the collateral but would have any other liability nullified by bankruptcy. If interpreted as an increase in the likelihood of the entrepreneur to receive some non-zero amount at the bankruptcy, it might be perceived as a reduction in the downside risk of the loan.

Based on Figure 4, the results appear somewhere between the first two experiments. There seems to be a general level difference favoring the alternative with explicit write-off in bankruptcy, as well as a slight difference in the slope of the line. The regression analysis in Table 4 shows a significant difference in the general level of interest, with the average level of interest being significantly higher with the explicit forgiveness alternative. This is also true in the case of zero interest responses. The interaction term between treated and high debt aversion is not significantly different from zero, but high-debt-aversion entrepreneurs are generally more likely to have zero interest in *either* version of the loan. This makes sense, as both options are explicitly framed as loan, so one might expect debt aversion to reduce

interest in both.

5 Additional analysis

5.1 Other consequences of debt aversion

In addition to looking at whether *high debt aversion* affects the probability of taking a loan, we test its correlation with other measures taken during the crisis. If entrepreneur debt attitudes lead to lower take-up of loans, firms may take other costly measures to deal with the liquidity shock of COVID-19. The results are shown in Table 5. We find that debt averse entrepreneurs, while less likely to apply for loans, appear more likely to apply for direct support, in column 3 (though this is not statistically significant) and are more likely to cancel investments (column 7). In other measures, such as raising new equity, laying off or furloughing workers or leaving wages unpaid, high-debt-aversion entrepreneurs' firms do not look significantly different from other firms.

5.2 Subsample analysis

We then focus on subsamples in Table 6. We look at firms where entrepreneurs had not pledged personal assets as collateral in the past, limited liability firms (for these firms, new debt is less likely to increase the risks faced by the entrepreneur), firms that applied for any form of financing (i.e. firms that need financing) and excluding firms that said they did not apply for debt because they did not need it (an alternative way to define a group of firms that need finance).

The effect is negative, economically significant and usually statistically significant in most of these subsamples, with the magnitude being about double the baseline effect in the no collateral pledged subsample and the two subsamples of firms that plausibly need financing.

5.3 Determinants of debt aversion

In this section, we provide a brief descriptive analysis of the determinants of debt aversion. First, we focus on attitudes about debt that the respondents were taught as children. We perform a regression analysis with debt aversion as the dependent variable, using indicators for various statements about debt attitudes that the respondent was passed on as a child. The results are shown in Panel A of Table 7. Those that were taught that debt is “something to be used in moderation” or “should be avoided” are more likely to view taking on debt as unpleasant whereas those who were taught that debt is “useful for splitting large

purchases” or “useful for transferring money over time” are less likely to view taking on debt as unpleasant.

We then study the level of debt aversion across different demographic groups. The results are shown in Panel B of Table 7. We find that higher entrepreneur age is associated with lower levels of debt aversion, while female entrepreneurs exhibit higher levels of debt aversion. There is also a significant negative correlation between risk appetite and debt aversion, while entrepreneurs who distrust banks are also more debt averse. The differences across different levels of education are not large, but those who studied at a polytechnic appear slightly more debt averse than others.

5.4 Use of proceeds from a grant vs. loan

In an additional analysis conducted as part of a follow-up survey (answered by roughly 10% of our original sample), we ask firms how they would respond to hypothetical offers of either a direct grant or a loan worth one month of revenue. The responses are presented in Figure 5. Almost all firms would spend the grant on their business, with almost half of firms replying that they would invest the grant. Other common responses include covering expenses during the crisis, hiring new employees, and paying employees a bonus. This suggests that most firms see profitable investment opportunities. However, the share of firms investing if offered a loan is less than half of the share investing a grant, while most firms would actually choose to decline the loan if offered.

6 Conclusion

Our results support the idea that entrepreneur attitudes towards debt affect the use of debt within the firms they manage. This has implications for government policy, which has aimed to “freeze the economy” during the COVID-19 pandemic by providing liquidity to firms facing revenue shortfalls. While the use of debt-based packages has many advantages (it is less costly for governments, they help screen out bad firms etc.), we document that widely-held entrepreneurial attitudes may hinder the effectiveness of these policies.

The statistical significance of our results varies, but the economic magnitudes are consistent within analyses and our various analyses all support the same conclusion. Cross-sectional analysis, “natural experiment”-style analysis around the COVID-19 pandemic and experimental results all suggest that debt averse entrepreneurs are less likely to use debt within their firm. We show that firms run by debt averse entrepreneurs have less debt in general, are less likely to use debt-based COVID-19 rescue packages, and in an experi-

mental setting prefer policies framed as grants. Our results also suggest that debt averse entrepreneurs are more likely to cancel investments during the pandemic.

Our findings have important policy implications. SME support programmes may struggle to have an impact if they are structured as debt instead of other forms of support. Our experimental analyses suggest that simply framing support policies in non-debt terms may to some extent help increase their effectiveness.

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Figure 1: Debt aversion

Distribution of entrepreneur responses to the question: “Do you agree with the statement: I consider taking on debt to be unpleasant?”. The scale is from zero (“disagree completely”) to ten (“agree completely”).

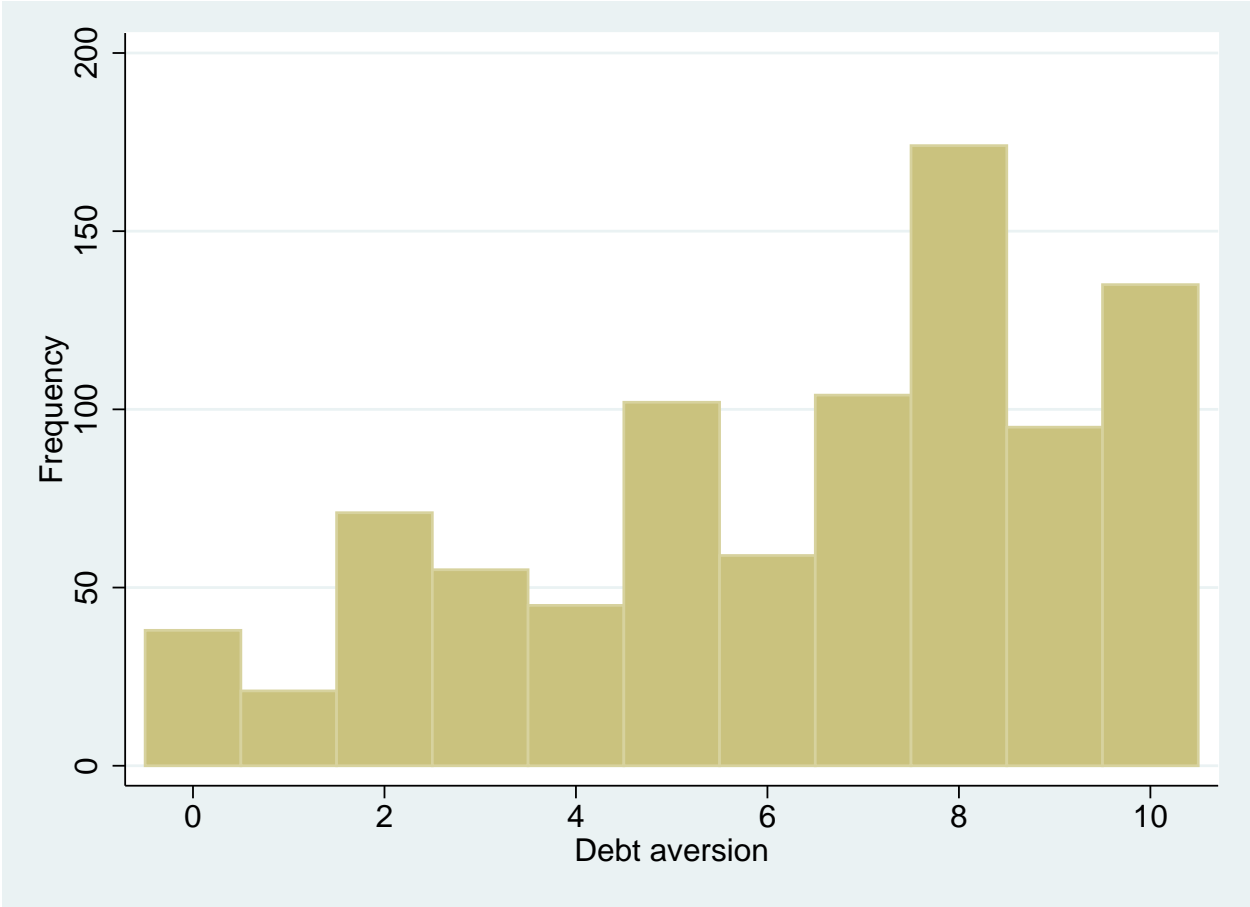


Figure 2: Perceptions about debt

Which of the following statements describe what you were taught about debt when you were a child? Respondents could choose multiple options.

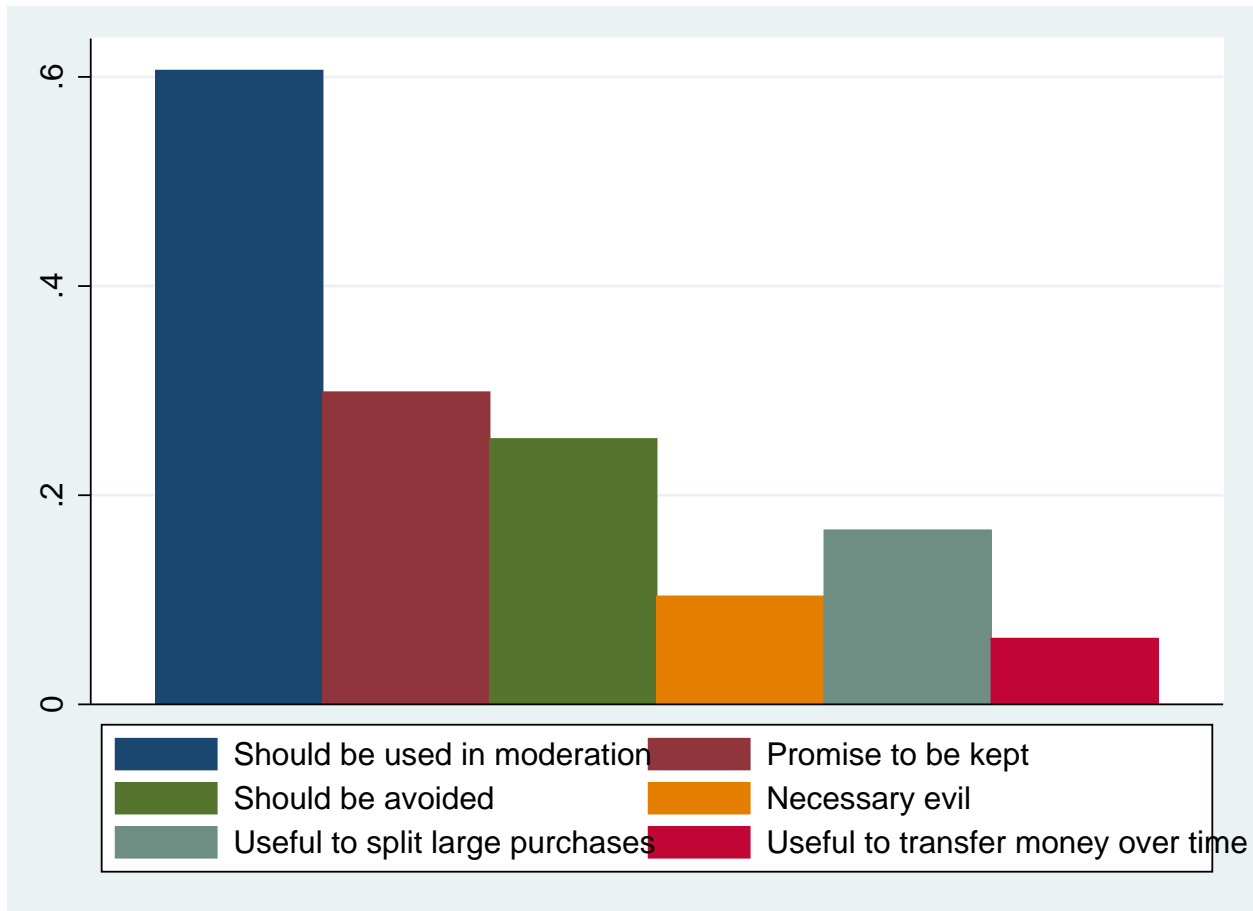


Figure 3: Framing of support as debt vs. other – response distribution

Distribution of expressed level of interest in each alternative on a scale of 0 (no interest at all) to 10 (highest level of interest).

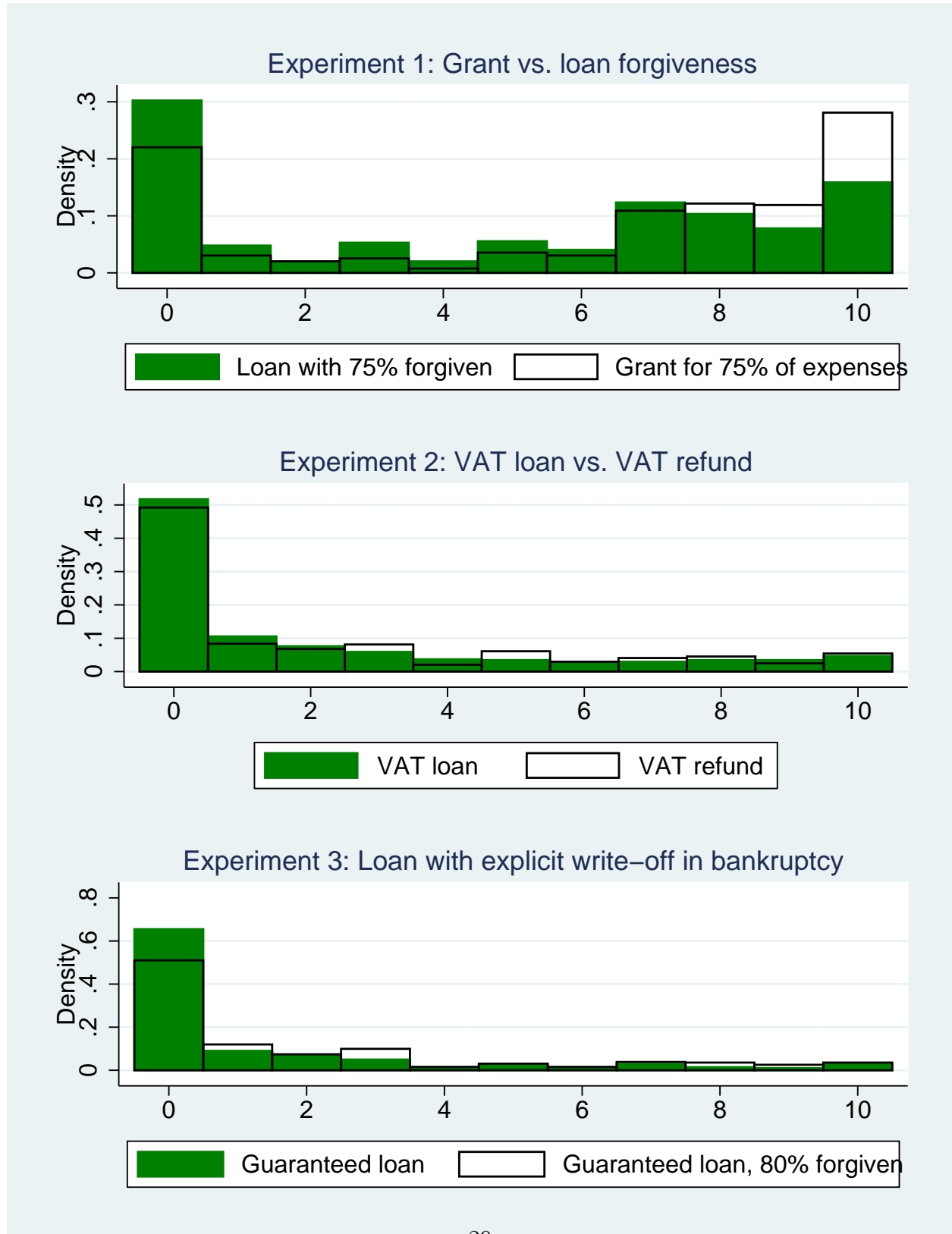


Figure 4: Framing of support as debt vs. other – interest vs. debt aversion

Average level of interest in each alternative on a scale of 0 (no interest at all) to 10 (highest level of interest), plotted against the respondent debt aversion.

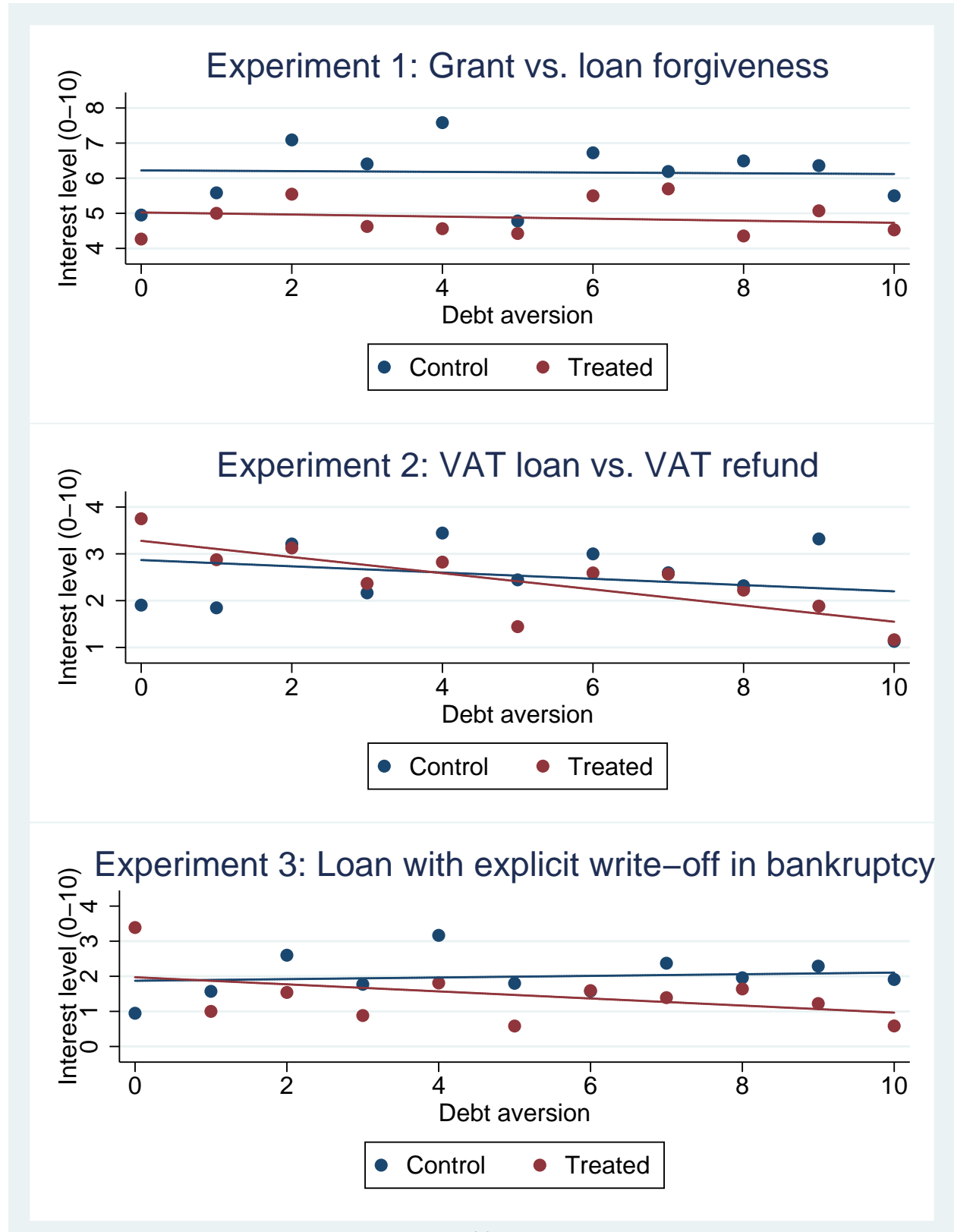


Figure 5: Use of proceeds from a grant vs. loan

The share of respondents selecting each option for the use of proceeds from a hypothetical grant or a loan amounting to one month's revenue. Respondents could choose multiple options.

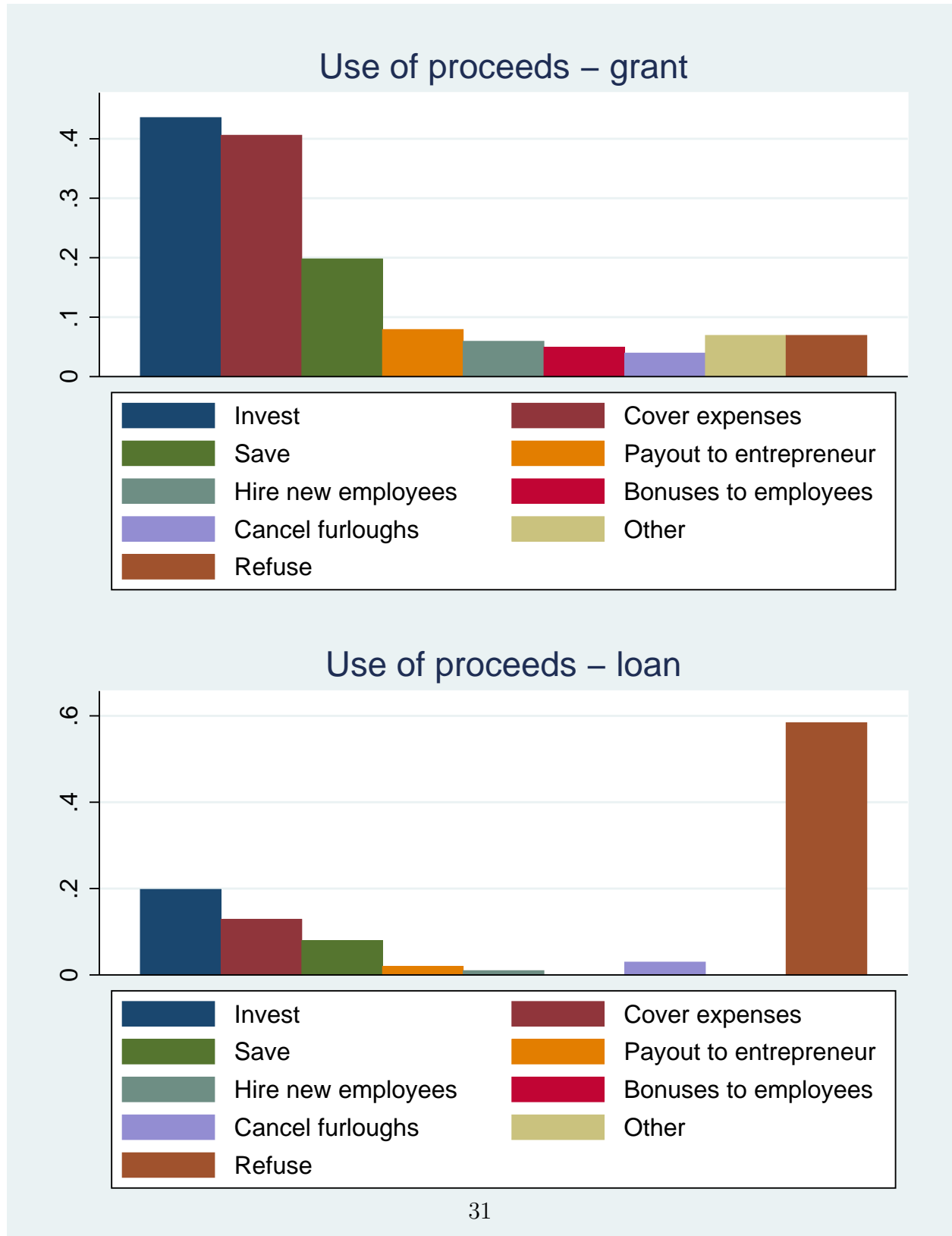


Table 1
Summary statistics

Summary statistics for the sample.

	Mean	Std	p10	p50	p90	N
Firm						
1 employee	0.386	0.487	0.000	0.000	1.000	917
2-4 employees	0.238	0.426	0.000	0.000	1.000	917
5-9 employees	0.209	0.407	0.000	0.000	1.000	917
10-50 employees	0.141	0.348	0.000	0.000	1.000	917
51-250 employees	0.023	0.150	0.000	0.000	0.000	917
250+ employees	0.003	0.057	0.000	0.000	0.000	917
Sales ('000) (self-r.)(w.)	1117.488	3711.959	19.000	203.500	2100.000	804
Firm debt ('000) (self-r.)(w.)	251.922	865.931	0.000	40.000	425.000	515
Has debt	0.480	0.500	0.000	0.000	1.000	917
Had debt last 5y	0.606	0.489	0.000	1.000	1.000	917
Accounting ratios						
Debt/assets	0.143	0.211	0.000	0.000	0.514	564
Net debt/EBIT	-0.797	3.883	-5.000	-0.924	5.044	450
Net debt/turnover	-0.063	0.237	-0.346	-0.051	0.246	537
Cash/assets	0.305	0.263	0.016	0.242	0.742	542
Attitudes						
High debt aversion	0.449	0.498	0.000	0.000	1.000	899
Debt aversion	6.337	2.894	2.000	7.000	10.000	899
Risk appetite	5.976	2.169	3.000	6.000	9.000	904
Optimism	7.255	1.923	5.000	8.000	9.000	901
Distrust people	5.406	2.653	2.000	6.000	9.000	903
Distrust banks	5.132	2.769	1.000	5.000	9.000	907
Firm actions						
Applied new bank loan	0.156	0.363	0.000	0.000	1.000	917
Applied any loan	0.184	0.388	0.000	0.000	1.000	917
Applied direct support	0.534	0.499	0.000	1.000	1.000	917
Applied equity	0.098	0.298	0.000	0.000	0.000	917
Has laid off	0.060	0.238	0.000	0.000	0.000	917
Has furloughed	0.273	0.446	0.000	0.000	1.000	917
Canceled inv.	0.171	0.377	0.000	0.000	1.000	917
Unpaid ent. comp.	0.209	0.407	0.000	0.000	1.000	917
Unpaid taxes	0.128	0.334	0.000	0.000	1.000	917
Unpaid wages	0.009	0.093	0.000	0.000	0.000	917
N	917					

Table 2
Debt use and cash holdings vs. debt aversion

The dependent variable is shown above each column. *Has debt* is a dummy taking the value one if the firm reported having existing debt. *Had debt 5y* is a dummy taking the value one if the firm reported having had debt at some point during the last five years. In Panel B, the dependent variables are calculated based on financial statement data matched to our survey. The samples consist of all firms where the dependent variable is available. Heteroscedasticity-consistent standard errors, clustered by municipality, are shown in parentheses.

Panel A: Current and historical debt use

	Has debt				Had debt 5y			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
High debt aversion	-0.1350*** (0.0332)	-0.0983*** (0.0305)			-0.1275*** (0.0306)	-0.0915*** (0.0248)		
Debt aversion			-0.0253*** (0.0054)	-0.0203*** (0.0053)			-0.0245*** (0.0045)	-0.0198*** (0.0039)
Risk appetite		0.0164* (0.0088)		0.0142 (0.0089)		0.0134 (0.0087)		0.0110 (0.0083)
Optimism		0.0072 (0.0094)		0.0066 (0.0092)		-0.0011 (0.0078)		-0.0016 (0.0078)
Distrust people		0.0115* (0.0063)		0.0114* (0.0063)		0.0079 (0.0062)		0.0080 (0.0062)
Distrust banks		-0.0058 (0.0059)		-0.0052 (0.0060)		-0.0073 (0.0065)		-0.0067 (0.0065)
Constant	0.5434*** (0.0225)	0.3482*** (0.0757)	0.6431*** (0.0342)	0.4470*** (0.0811)	0.6646*** (0.0233)	0.5727*** (0.0726)	0.7624*** (0.0348)	0.6712*** (0.0742)
Firm size FE	No	Yes	No	Yes	No	Yes	No	Yes
Industry FE	No	Yes	No	Yes	No	Yes	No	Yes
Survival FE	No	Yes	No	Yes	No	Yes	No	Yes
Survival time FE	No	Yes	No	Yes	No	Yes	No	Yes
N	899	883	899	883	899	883	899	883
R ²	0.018	0.192	0.021	0.195	0.017	0.219	0.021	0.223

Significance levels: * 0.1, ** 0.05, *** 0.01.

Table 2
Debt use and cash holdings vs. debt aversion (cont'd)

Panel B: Debt and cash holdings

	Debt/assets		Net debt/EBIT		Net debt/turnover		Cash/assets	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
High debt aversion	-0.0389** (0.0191)		-0.5828 (0.3799)		-0.0373* (0.0218)		0.0389* (0.0233)	
Debt aversion		-0.0079** (0.0038)		-0.1086** (0.0539)		-0.0060 (0.0056)		0.0063 (0.0053)
Risk appetite	0.0062 (0.0045)	0.0058 (0.0047)	0.1168 (0.0924)	0.1127 (0.0907)	0.0027 (0.0050)	0.0028 (0.0050)	-0.0041 (0.0049)	-0.0043 (0.0050)
Optimism	0.0032 (0.0044)	0.0024 (0.0042)	0.0402 (0.0815)	0.0302 (0.0801)	0.0079 (0.0057)	0.0072 (0.0056)	-0.0062 (0.0060)	-0.0055 (0.0060)
Distrust people	0.0027 (0.0043)	0.0029 (0.0043)	-0.0064 (0.0815)	-0.0047 (0.0833)	-0.0000 (0.0050)	0.0000 (0.0051)	-0.0009 (0.0043)	-0.0010 (0.0044)
Distrust banks	-0.0037 (0.0039)	-0.0033 (0.0038)	-0.0703 (0.0681)	-0.0668 (0.0666)	-0.0004 (0.0041)	-0.0003 (0.0041)	-0.0040 (0.0039)	-0.0041 (0.0039)
Firm size FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Survival FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Survival time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	543	543	436	436	516	516	521	521
R ²	0.147	0.150	0.153	0.153	0.161	0.160	0.281	0.280

Significance levels: * 0.1, ** 0.05, *** 0.01.

Table 3
New bank loans during COVID-19 pandemic vs. debt aversion

The dependent variable is *Applied new bank loan*, a dummy taking the value one if the firm reported having applied for a new bank loan during the COVID-19 crisis. Heteroscedasticity-consistent standard errors, clustered by municipality, are shown in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)
High debt aversion	-0.0581** (0.0262)	-0.0526** (0.0249)	-0.0500** (0.0247)			
Debt aversion				-0.0067 (0.0048)	-0.0067 (0.0044)	-0.0066 (0.0045)
Risk appetite		0.0114* (0.0060)	0.0119** (0.0060)		0.0117** (0.0058)	0.0121** (0.0059)
Optimism		-0.0083 (0.0074)	-0.0090 (0.0079)		-0.0090 (0.0074)	-0.0097 (0.0079)
Distrust people		0.0047 (0.0055)	0.0045 (0.0057)		0.0044 (0.0054)	0.0043 (0.0057)
Distrust banks		0.0046 (0.0036)	0.0044 (0.0036)		0.0045 (0.0037)	0.0044 (0.0038)
Constant	0.1818*** (0.0188)	0.1234* (0.0644)	0.1263* (0.0664)	0.1980*** (0.0335)	0.1477** (0.0707)	0.1514** (0.0732)
Firm size FE	No	Yes	Yes	No	Yes	Yes
Industry FE	No	Yes	Yes	No	Yes	Yes
Survival FE	No	Yes	Yes	No	Yes	Yes
Survival time FE	No	Yes	Yes	No	Yes	Yes
Sales impact FE	No	No	Yes	No	No	Yes
Time to normal FE	No	No	Yes	No	No	Yes
N	899	883	883	899	883	883
R ²	0.006	0.173	0.181	0.003	0.171	0.180

Significance levels: * 0.1, ** 0.05, * 0.01.**

Table 4
Experiments – framing as debt

The dependent variable is shown above each column. *Interest level* is the reported level of interest on a scale of zero (lowest interest) to ten (highest interest). *Zero interest* is a dummy taking the value one if the respondent has no interest at all in this form of supprt. Heteroscedasticity-consistent standard errors, clustered by municipality, are shown in parentheses.

Panel A: Grant vs. loan forgiveness of 75% employee costs

	Interest level (0-10)			Zero interest (dummy)		
	(1)	(2)	(3)	(4)	(5)	(6)
Treated	-1.3307*** (0.2489)	-0.8178*** (0.3110)	-0.3774 (0.6763)	0.0820*** (0.0276)	0.0004 (0.0376)	-0.0749 (0.0835)
Treated x High debt a.		-0.6552 (0.5183)			0.1113* (0.0607)	
High debt aversion		0.4850 (0.3726)			-0.0264 (0.0384)	
Treated x Debt aversion			-0.1183 (0.1024)			0.0204* (0.0122)
Debt aversion			0.1073 (0.0755)			-0.0134 (0.0082)
Controls	No	Yes	Yes	No	Yes	Yes
Firm size FE	No	Yes	Yes	No	Yes	Yes
Industry FE	No	Yes	Yes	No	Yes	Yes
Survival FE	No	Yes	Yes	No	Yes	Yes
Survival time FE	No	Yes	Yes	No	Yes	Yes
N	792	779	779	792	779	779
R ²	0.028	0.260	0.261	0.009	0.225	0.225

Significance levels: * 0.1, ** 0.05, *** 0.01.

Table 4
Experiments (cont'd)

Panel B: VAT loan vs. VAT refund

	Interest level (0-10)			Zero interest (dummy)		
	(1)	(2)	(3)	(4)	(5)	(6)
Treated	-0.2665 (0.1918)	-0.0509 (0.3005)	0.5404 (0.5750)	0.0251 (0.0332)	-0.0510 (0.0440)	-0.1591** (0.0741)
Treated x High debt a.		-0.2809 (0.4354)			0.1545** (0.0605)	
High debt aversion		-0.4588 (0.3557)			0.0392 (0.0452)	
Treated x Debt aversion			-0.1102 (0.0789)			0.0275** (0.0107)
Debt aversion			-0.0658 (0.0674)			0.0008 (0.0095)
Controls	No	Yes	Yes	No	Yes	Yes
Firm size FE	No	Yes	Yes	No	Yes	Yes
Industry FE	No	Yes	Yes	No	Yes	Yes
Survival FE	No	Yes	Yes	No	Yes	Yes
Survival time FE	No	Yes	Yes	No	Yes	Yes
N	851	835	835	851	835	835
R ²	0.002	0.117	0.122	0.001	0.144	0.139

Panel C: Loan with explicit write-off in bankruptcy

	Interest level (0-10)			Zero interest (dummy)		
	(1)	(2)	(3)	(4)	(5)	(6)
Treated	-0.6865*** (0.1575)	-0.5260** (0.2111)	0.0630 (0.4250)	0.1446*** (0.0287)	0.1634*** (0.0415)	0.0799 (0.0817)
Treated x High debt a.		-0.2067 (0.3800)			-0.0715 (0.0633)	
High debt aversion		-0.1274 (0.2906)			0.1090** (0.0503)	
Treated x Debt aversion			-0.1078* (0.0643)			0.0085 (0.0121)
Debt aversion			-0.0108 (0.0504)			0.0061 (0.0094)
Controls	No	Yes	Yes	No	Yes	Yes
Firm size FE	No	Yes	Yes	No	Yes	Yes
Industry FE	No	Yes	Yes	No	Yes	Yes
Survival FE	No	Yes	Yes	No	Yes	Yes
Survival time FE	No	Yes	Yes	No	Yes	Yes
N	815	797	797	815	797	797
R ²	0.016	0.128	0.133	0.022	0.117	0.115

Significance levels: * 0.1, ** 0.05, *** 0.01.

Table 5
Outcomes vs. high debt aversion

The dependent variable is shown above each column. *Bank loan* indicates having applied for a new bank loan, similar to our main results in Table 3. *Any loan* indicates having applied for any new loan. *Direct support* indicates having applied for direct support. *Equity* indicates having sought new equity. *Layoffs* and *Furloughs* indicate having laid off or furloughed employees, respectively, during the crisis. *Canceled investments* indicates having canceled investments. *Entrepreneur compensation* indicates having reduced entrepreneur compensation. *Taxes* and *Wages* indicate having left taxes or wages unpaid, respectively. Heteroscedasticity-consistent standard errors, clustered by municipality, are shown in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Bank l.	Any l.	Dir. s.	Eq.	Layoffs	Furloughs	Canc. inv.	Ent. comp.	Taxes	Wages
High debt aversion	−0.0526** (0.0249)	−0.0582** (0.0251)	0.0453 (0.0292)	−0.0136 (0.0243)	−0.0251 (0.0162)	0.0095 (0.0221)	0.0665*** (0.0245)	0.0031 (0.0317)	−0.0099 (0.0197)	0.0017 (0.0067)
Risk appetite	0.0114* (0.0060)	0.0190*** (0.0056)	0.0023 (0.0070)	0.0042 (0.0052)	0.0004 (0.0031)	−0.0032 (0.0067)	0.0123** (0.0057)	0.0127* (0.0074)	0.0059 (0.0039)	0.0029 (0.0021)
Optimism	−0.0083 (0.0074)	−0.0059 (0.0074)	0.0304*** (0.0079)	0.0144** (0.0066)	0.0069* (0.0039)	0.0081 (0.0075)	0.0016 (0.0060)	−0.0118* (0.0062)	0.0060 (0.0065)	−0.0024 (0.0017)
Distrust people	0.0047 (0.0055)	0.0069 (0.0052)	0.0052 (0.0055)	0.0039 (0.0052)	−0.0018 (0.0033)	0.0051 (0.0047)	0.0031 (0.0043)	0.0018 (0.0063)	−0.0019 (0.0053)	0.0018 (0.0017)
Distrust banks	0.0046 (0.0036)	0.0047 (0.0040)	−0.0027 (0.0058)	0.0033 (0.0049)	0.0028 (0.0030)	0.0002 (0.0062)	0.0103** (0.0047)	0.0037 (0.0045)	0.0041 (0.0053)	0.0012 (0.0013)
Constant	0.1234* (0.0644)	0.0799 (0.0635)	0.2725*** (0.0694)	−0.0626 (0.0477)	0.0153 (0.0436)	0.2057*** (0.0645)	−0.0115 (0.0629)	0.1928*** (0.0643)	0.0445 (0.0569)	−0.0070 (0.0090)
Firm size FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Survival FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Survival time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	883	883	883	883	883	883	883	883	883	883
R ²	0.173	0.181	0.257	0.080	0.133	0.351	0.190	0.179	0.174	0.052

Significance levels: * 0.1, ** 0.05, *** 0.01.

Table 6
Applied for new bank loan vs. debt aversion – subsamples

The dependent variable is *Applied new bank loan*, a dummy taking the value one if the firm reported having applied for a new bank loan during the COVID-19 crisis. Each column represents a separate subsample. *No pledges* includes only the firms where the management has not provided any personal guarantees for firm liabilities. *Limited* includes only limited companies. *App. fin.* includes only the firms that applied for some type of financing during the pandemic. *Ex. no need* excludes the firms that report not needing new financing. Heteroscedasticity-consistent standard errors, clustered by municipality, are shown in parentheses.

	(1) No pledges	(2) Limited	(3) App. fin.	(4) Ex. no need
High debt aversion	−0.0712*** (0.0233)	−0.0555 (0.0336)	−0.0786** (0.0379)	−0.0710* (0.0397)
Risk appetite	0.0060 (0.0062)	0.0118 (0.0076)	0.0191* (0.0098)	0.0283*** (0.0092)
Optimism	0.0031 (0.0044)	−0.0095 (0.0091)	−0.0267** (0.0121)	−0.0179* (0.0100)
Distrust people	0.0063 (0.0051)	0.0097 (0.0072)	0.0080 (0.0090)	0.0023 (0.0083)
Distrust banks	−0.0001 (0.0047)	0.0001 (0.0052)	0.0041 (0.0057)	0.0049 (0.0063)
Firm size FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Survival FE	Yes	Yes	Yes	Yes
Survival time FE	Yes	Yes	Yes	Yes
N	557	600	547	531
R ²	0.194	0.171	0.185	0.192

Significance levels: * 0.1, ** 0.05, * 0.01.**

Table 7
Determinants of debt aversion

The dependent variable is *Debt aversion*, ranging from 0 (lowest) to 10 (highest). In Panel A, the independent variables are dummies indicating chosen answers to the question “Which of the following statements best describe what you were taught about debt when you were a child?” Heteroscedasticity-consistent robust standard errors are shown in parentheses.

Panel A: Debt aversion and childhood debt attitudes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Should be used in moderation	0.3753* (0.2048)						0.6408*** (0.1991)
Promise to be kept		-0.2777 (0.2137)					-0.1003 (0.2053)
Should be avoided			1.8199*** (0.2002)				1.7897*** (0.2094)
Necessary evil				0.5085* (0.3003)			0.5625* (0.2944)
Useful to split large purchases					-1.7754*** (0.2560)		-1.2666*** (0.2582)
Useful to transfer money over time						-1.5782*** (0.4136)	-0.8896** (0.4076)
N	899	899	899	899	899	899	899
R^2	0.004	0.002	0.075	0.003	0.053	0.017	0.132

Significance levels: * 0.1, ** 0.05, *** 0.01.

Table 7
Determinants of debt aversion (cont'd)

Panel B: Debt aversion and entrepreneur characteristics

	(1)	(2)	(3)	(4)	(5)
ln(Age)	-0.8248* (0.4829)				-0.7876* (0.4742)
Female		0.8345*** (0.1914)			0.6359*** (0.2005)
Risk appetite			-0.3601*** (0.0453)		-0.3468*** (0.0467)
Optimism			0.0693 (0.0541)		0.0571 (0.0559)
Distrust people			0.0547 (0.0421)		0.0435 (0.0427)
Distrust banks			0.1119*** (0.0404)		0.1249*** (0.0410)
Vocational				0.1770 (0.3190)	0.0321 (0.3187)
Polytechnic				0.5273* (0.3078)	0.4568 (0.3094)
University				-0.2487 (0.3105)	-0.1986 (0.3086)
N	880	899	884	899	865
R ²	0.003	0.019	0.083	0.011	0.110

Significance levels: * 0.1, ** 0.05, *** 0.01.

A Internet appendix

A.1 Additional descriptive charts

Figure A.1: Expectations on firm survival

Distribution of firms by entrepreneur expectations of firm survival.



Figure A.2: Corona impact on firm sales

Distribution of firms by the reported impact of COVID-19 on firm sales.

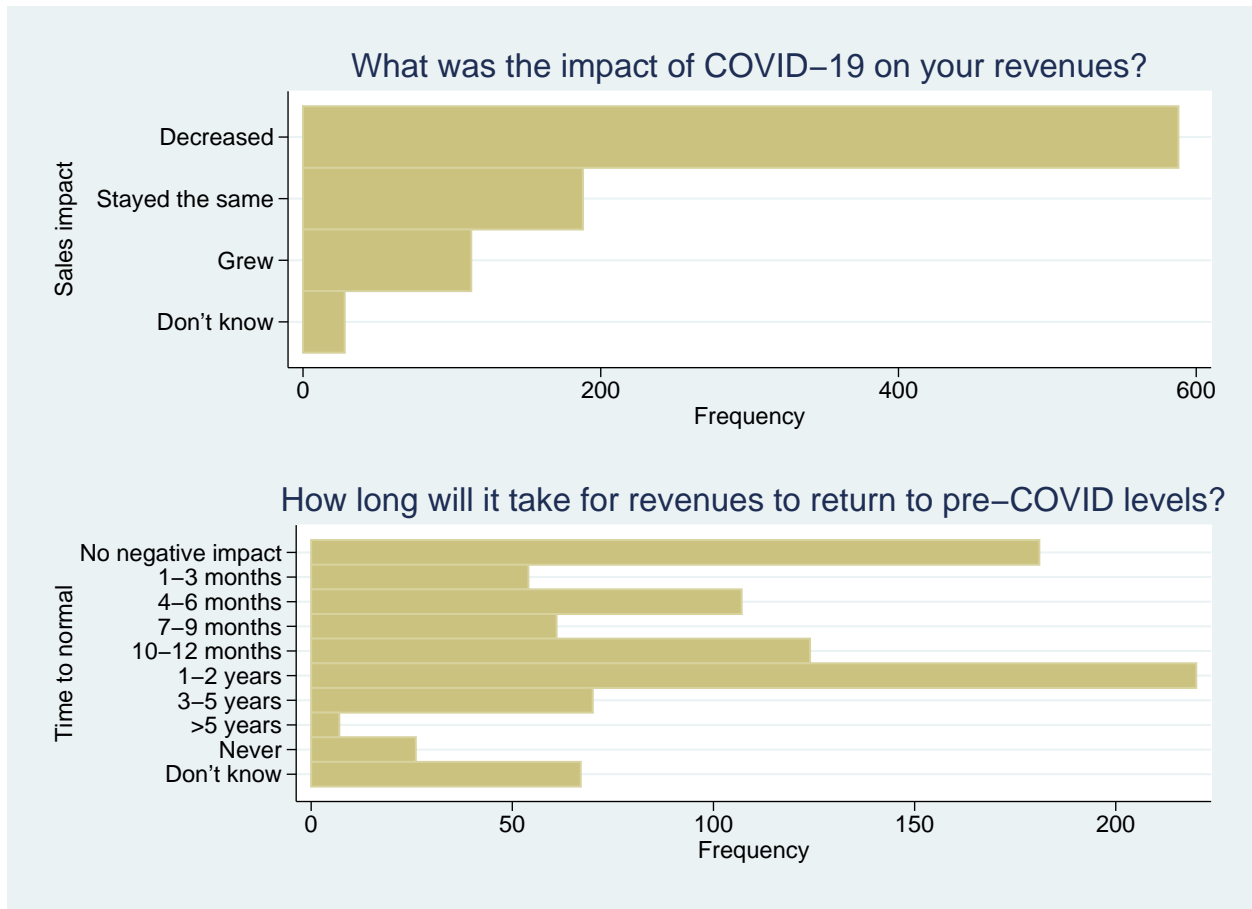


Figure A.3: Financing options applied for

Proportion of people answering yes to the question: “Has your firm applied for the following?”.

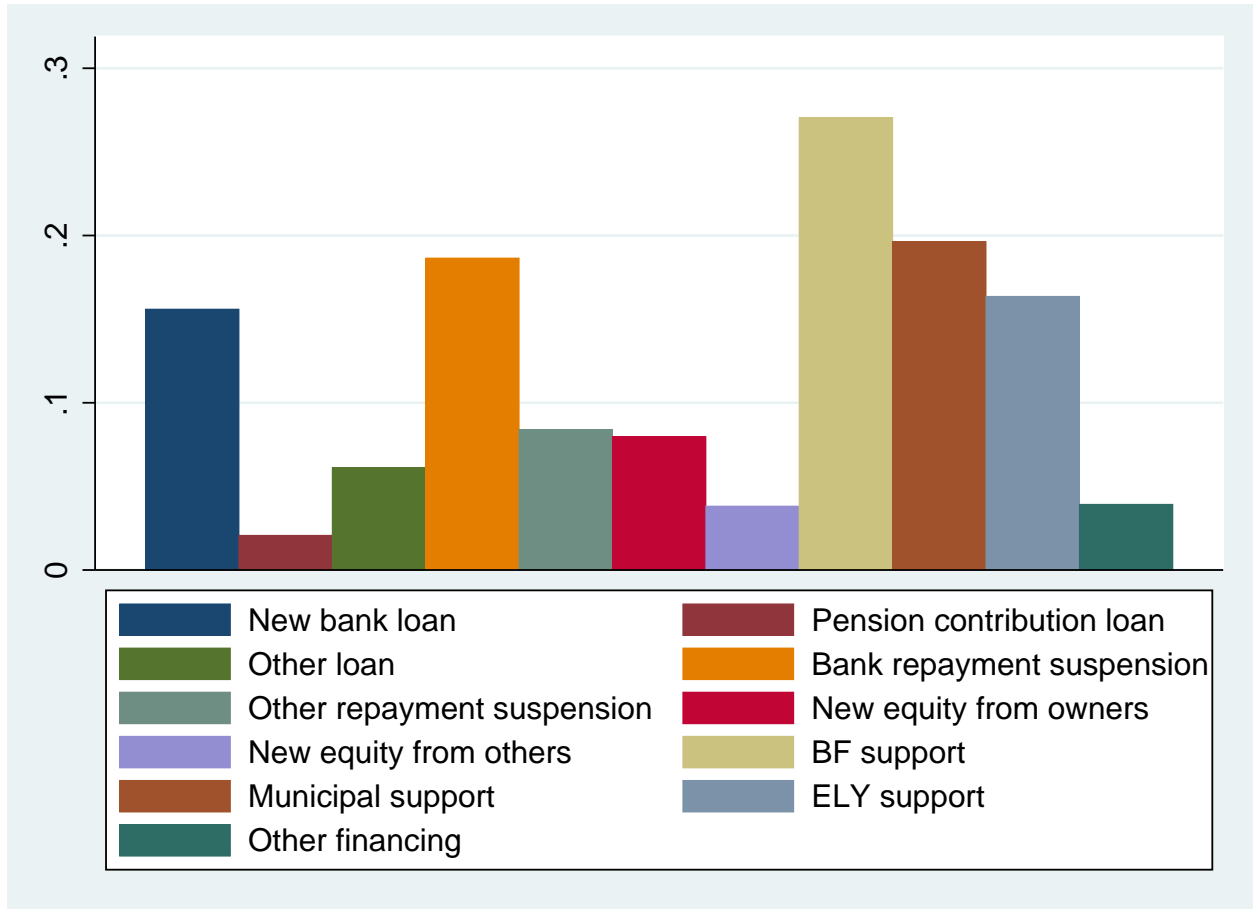
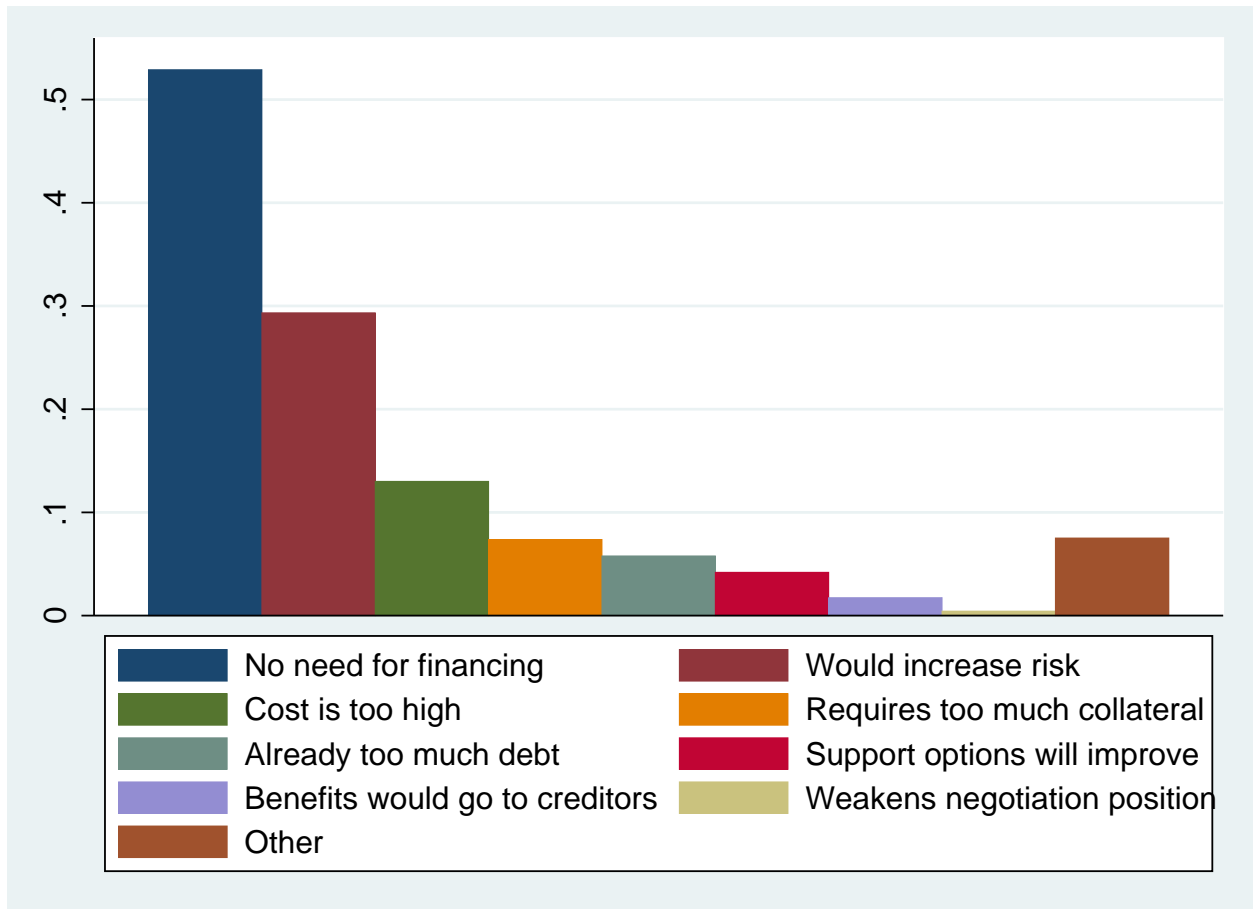


Figure A.4: Reasons for not applying for new debt

Reasons stated for not having applied for new debt financing. (Choose all that apply)



A.2 Results including non-entrepreneurs

In this section, we replicate our main analysis, but include all respondents, including hired managers (CEOs, CFOs, and other) that are not owners of the firm.

Table A.1
Current and historical debt use vs. debt aversion – incl. non-entrepreneurs

The dependent variable is shown above each column. *Has debt* is a dummy taking the value one if the firm reported having existing debt. *Had debt 5y* is a dummy taking the value one if the firm reported having had debt at some point during the last five years. Heteroscedasticity-consistent standard errors, clustered by municipality, are shown in parentheses.

	Has debt				Had debt 5y			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
High debt aversion	-0.1272*** (0.0326)	-0.0887*** (0.0304)			-0.1271*** (0.0291)	-0.0887*** (0.0247)		
Debt aversion			-0.0262*** (0.0050)	-0.0213*** (0.0055)			-0.0260*** (0.0043)	-0.0216*** (0.0044)
Risk appetite		0.0156* (0.0084)		0.0128 (0.0087)		0.0117 (0.0089)		0.0087 (0.0089)
Optimism		0.0063 (0.0085)		0.0061 (0.0083)		0.0001 (0.0079)		-0.0000 (0.0077)
Distrust people		0.0139** (0.0062)		0.0141** (0.0062)		0.0082 (0.0059)		0.0084 (0.0058)
Distrust banks		-0.0084 (0.0059)		-0.0077 (0.0060)		-0.0071 (0.0066)		-0.0064 (0.0066)
Firm size FE	No	Yes	No	Yes	No	Yes	No	Yes
Industry FE	No	Yes	No	Yes	No	Yes	No	Yes
Survival FE	No	Yes	No	Yes	No	Yes	No	Yes
Survival time FE	No	Yes	No	Yes	No	Yes	No	Yes
N	989	974	989	974	989	974	989	974
R ²	0.016	0.178	0.023	0.184	0.017	0.206	0.023	0.213

Significance levels: * 0.1, ** 0.05, *** 0.01.

Table A.2**New bank loans during COVID-19 pandemic – incl. non-entrepreneurs**

The dependent variable is *Applied new bank loan*, a dummy taking the value one if the firm reported having applied for a new bank loan during the COVID-19 crisis. Heteroscedasticity-consistent standard errors, clustered by municipality, are shown in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)
High debt aversion	−0.0511** (0.0246)	−0.0401* (0.0233)	−0.0380* (0.0230)			
Debt aversion				−0.0044 (0.0043)	−0.0036 (0.0039)	−0.0034 (0.0040)
Risk appetite		0.0117** (0.0052)	0.0122** (0.0053)		0.0123** (0.0051)	0.0128** (0.0053)
Optimism		−0.0057 (0.0069)	−0.0062 (0.0074)		−0.0065 (0.0069)	−0.0069 (0.0074)
Distrust people		0.0031 (0.0052)	0.0030 (0.0054)		0.0026 (0.0052)	0.0027 (0.0054)
Distrust banks		0.0024 (0.0034)	0.0025 (0.0034)		0.0023 (0.0035)	0.0023 (0.0035)
Firm size FE	No	Yes	Yes	No	Yes	Yes
Industry FE	No	Yes	Yes	No	Yes	Yes
Survival FE	No	Yes	Yes	No	Yes	Yes
Survival time FE	No	Yes	Yes	No	Yes	Yes
Sales impact FE	No	No	Yes	No	No	Yes
Time to normal FE	No	No	Yes	No	No	Yes
N	989	974	974	989	974	974
R ²	0.005	0.162	0.166	0.001	0.160	0.165

Significance levels: * 0.1, ** 0.05, * 0.01.**