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RESEARCH ARTICLE

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Financial product sensitivity predicts financial health

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Abstract

Recent research has aimed to understand how people consider financial decisions because they have important consequences for well-being. Yet existing research has largely failed to examine how attitudes and behaviors vary as a function of the specific financial product (e.g., debt type). We ask to what extent people differentiate between similarly categorized financial products (e.g., debt or investment) as a function of their terms (e.g., interest costs and expected returns) and whether such differentiation predicts financial health. Across four studies, we find not only that there are individual differences in attitudes toward similar financial products (e.g., two distinct loans), but also that the extent to which a consumer is averse to high-cost versus low-cost products predicts financial health. This relationship cannot be fully explained by financial literacy, numeracy, or intertemporal discounting. In addition, nudging people toward differentiating between financial products promotes decisions that are aligned with financial health.

KEYWORDS

consumer financial decision making, debt, financial literacy, investment, well-being

1 | INTRODUCTION

Eighty percent of Americans are debt holders, collectively owing more than $13 trillion (Federal Reserve Bank of New York, 2019; Pew Charitable Trusts, 2015). Yet not all debtors are in dire financial straits. Notably, there are many kinds of debt, ranging from mortgages that are actively subsidized by the government to high-cost payday loans that are banned in 18 states. Recently, behavioral research has begun to explore how people think about debt (Amar, Ariely, Ayal, Cryder, & Rick, 2011; Besharat, Carrillat, & Ladik, 2014; Brown & Lahey, 2015; Brown, Taylor, & Price, 2005; Gal & McShane, 2012; Hershfield, Sussman, O'Brien, & Bryan, 2015; Kettle, Trudel, Blanchard, & Häubl, 2016; Stewart, 2009; Sussman & O'Brien, 2016; Sussman & Shafir, 2011). However, this work has focused on general attitudes toward debt, neglecting potential differences in attitudes toward various forms of debt. In a similar vein, although attitudes toward some types of investments—another important determinant of financial health—have been examined in the literature (Barberis, Huang, & Thaler, 2006; Benartzi, Previtero, & Thaler, 2011; Benartzi & Thaler, 2007; Hershfield et al., 2011), there is relatively little work that aims to understand how consumers differentiate between specific investment types.

In the present paper, we ask to what extent these differences exist and whether they matter. In particular, we assess how much individuals differentiate between similarly categorized financial products (e.g., debt or investment) as a function of their terms (e.g., interest costs and expected returns) and whether such differentiation is predictive of financial health. In the case of consumer debt, given that debt can be simultaneously burdensome and helpful, it is imperative to understand the ways consumers differentiate between debts that promote their financial health and those that are detrimental to financial health. Importantly, although high-cost debt may sometimes be helpful (e.g., high-interest credit card debt to make ends meet) and low-cost debt can be unwise (e.g., low-interest mortgages on an unaffordable home), the general ability to distinguish between types of debt that are high- and low-interest may be important for financial health. Analogously, although higher risk-adjusted average-return investments (e.g., mutual funds) can help consumers slowly accumulate wealth over time, investing in lower risk-adjusted average-return investments (e.g., penny stocks) can be potentially devastating to consumers' financial health.

Accordingly, we investigate an unexplored difference between consumers—financial product sensitivity—and how it relates to financial health. We define financial product sensitivity as the extent to which one's attitudes reflect a differentiation between financial products with lower versus higher risk-adjusted average returns. Financial products (even within similar categories) can vary in a number of ways: the amount of money held or owed, the terms of the product, and the uses and limitations of the product. We ask consumers to rate their aversion toward financial products based on their labels (e.g., "mortgage") alone rather than including specific terms. Importantly, the financial products included have either been pretested or are known to be, on average, associated with either higher or lower interest rates or risk-adjusted returns. Moreover, although there may be basic differences in knowledge about and experience with different forms of debt or investment types, we are able to rule out the explanation that these two factors could account for our results. In what follows, we focus primarily on consumer attitudes toward debt rather than investments. However, in one study (Study 2), we demonstrate that our pattern of results is not specific to debt and that it holds in the investment domain as well.

Notably, the relationship between debt attitudes and financial health, in principle, could take several possible forms. Having a general debt-averse attitude—while failing to discriminate among debt types—could indicate financial prudence. This blanket caution could help people avoid financial pitfalls and could signal broader financial health. Alternatively, the relationship could be the opposite: A general debt-seeking attitude (irrespective of type) may indicate a willingness to take on financial risks that bring about increased opportunities. However, attending to differences across debt types allows for a third possibility: Greater sensitivity to debt type could be associated with a tendency to maximize value across opportunities, allowing people to take advantage of risks while avoiding pitfalls in ways that promote broader financial health.

Indeed, results of four studies show that financial product sensitivity strongly predicts financial health. The relationship between financial product sensitivity and financial health cannot be fully explained by other relevant factors (e.g., financial literacy, numeracy, and intertemporal discounting). Moreover, interventions that highlight financial product sensitivity appear to show promise in promoting financially healthy decisions.

These findings contribute to the literature on financial health, consumer debt, and investment and make an important contribution to the financial health literature by introducing a previously unstudied individual difference (i.e., financial product sensitivity) as a determinant. Although prior research has examined the relationships between certain factors—such as financial literacy (Fernandes, Lynch, & Netemeyer, 2014; Lusardi & Mitchell, 2014; Lusardi, Schneider, & Tufano, 2011) and intertemporal discounting (Meier & Sprenger, 2011)—and financial health, none of these past studies have looked at how attitudes toward different financial products could relate to financial health. This research is the first to introduce financial product sensitivity into the literature on financial health.

This manuscript also furthers the literature on the psychology of consumer debt. Prior work on consumer debt has focused on individuals' aversion to taking on debt and distaste toward holding existing debt (Amar et al., 2011; Gal & McShane, 2012; Kettle et al., 2016; Prelec & Loewenstein, 1998). However, this literature has largely ignored both individual differences across consumers generally, and the ways consumers may differentiate between various types of debt specifically. We expand the scope of extant debt research by unpacking debt aversion into financial product-specific debt aversion and the consequences of this differentiation (and not just debt aversion, per se) for financial health.

Finally, this work also advances the literature on the psychology of consumer investment. Prior work on investment attitudes has focused on general risk taking (Blais & Weber, 2006; Dohmen et al., 2011; Eckel & Grossman, 2002; Holt & Laury, 2002) and portfolio choice (Charness & Gneezy, 2010; Schooley, 1996; Thaler, Tversky, Kahneman, & Schwartz, 1997), without giving attention to the nuanced perceptions of specific investments. Here, we show that there are individual differences in the extent to which people are averse to low-return and high-return investments, which subsequently predict important outcomes. In what follows, we review the debt and investment literatures to develop our predictions about the relationship between financial product sensitivity and financial health.

2 | GENERAL ATTITUDES TOWARD DEBT

Although prior research has found evidence of debt aversion, it has also documented high levels of debt take-up in some circumstances. In laboratory settings, debt aversion can arise because people mentally account for debt as a loss and prefer to keep their finances in the "black" rather than in the "red" (Meissner, 2015; Prelec & Loewenstein, 1998). This finding is further supported by people's general preference for prepayment over postpayment (Gourville & Soman, 1998; Patrick & Park, 2006; Soman & Gourville, 2001; Xie & Shugan, 2001) and apparent motivation to close debt accounts (Amar et al., 2011; Besharat et al., 2014; Brown & Lahey, 2015; Gal & McShane, 2012; Kettle et al., 2016). Such debt aversion, however, has been shown to have deleterious effects on financial health in field settings. For example, people sometimes prepay their mortgages to avoid holding debt, even when prepayment is suboptimal (Amromin, Huang, & Sialm, 2007). Moreover, students often choose to forgo borrowing and miss out on the potential for further educational attainment (Burdman, 2005; Callender & Jackson, 2005). Indeed, holding debt can significantly reduce perceptions of one's own wealth (Sussman & Shafir, 2011) and lead to emotional distress (Brown et al., 2005; Greenberg & Hershfield, 2016) or reduced life satisfaction (Greenberg & Mogilner, 2019).

Other work has aimed to understand why—despite the prevalence of debt aversion—levels of certain debt types are so high, finding that debt may simply be necessary to finance essential expenses (Lea, Webley, & Walker, 1995), is difficult to repay (Hershfield & Roese, 2015; Stewart, 2009), and is at times less psychologically painful to take on compared with using cash (e.g., Hirschman, 1979; Morewedge, Holtzman, & Epley, 2007; Prelec & Simester, 2001; Soman, 2001).

Despite this work directed toward understanding debt attitudes, there is little literature on how people differentiate between various forms of debt (see also Greenberg & Hershfield, 2019a, 2019b). Although some theoretical work has distinguished between the uses of different types of debt (Prelec & Loewenstein, 1998), there is only one study, to our knowledge, that investigates the extent to which consumers view all types of debt as the same. Using qualitative methods, Peñaloza and Barnhart (2011) find that consumers discriminate between "good" and "bad" debts based on the intended use of the debt: Good debts have the potential to generate future returns, whereas bad debts are generally for ephemeral purchases. The authors conclude that good debts (e.g., mortgages and student loans) are less likely to be stigmatized than other types of debt.

3 | INVESTMENT ATTITUDES

Compared with prior research on debt attitudes, existing work on investment attitudes has been considerably less direct. In fact, the primary focus of prior research related to investment attitudes has been on general risk preferences (Dohmen et al., 2011; Holt & Laury, 2002), financial risk taking (Blais & Weber, 2006; Eckel & Grossman, 2002), and their related determinants and consequences, without specifically assessing consumer attitudes toward investments per se. Although existing research has largely ignored individual differences in investment attitudes, economists have examined the ways preferences under risk or loss map on to portfolio choice (Charness & Gneezy, 2010; Schooley, 1996; Thaler et al., 1997).

In addition to investigating risk attitudes, researchers have documented ways that consumers are averse to certain investment-related activities. In particular, economists have shown that consumers participate in the stock market less (Barberis et al., 2006; Haliassos & Bertaut, 1995; Mankiw & Zeldes, 1991; Van Rooij, Lusardi, & Alessie, 2011; Vissing-Jørgensen & Attanasio, 2003), invest in annuities less (Benartzi et al., 2011; Beshears, Choi, Laibson, Madrian, & Zeldes, 2014; Brown, Kling, Mullainathan, & Wrobel, 2008), and contribute less money to retirement savings (Banks, Blundell, & Tanner, 1998; Benartzi & Thaler, 2007; Hershfield et al., 2011; Munnell, Webb, & Golub-Sass, 2012) than standard models would predict. Taken together, these results suggest that there may be individual differences in aversion to specific investment-related financial products and that such differences could have important implications for financial health. To our knowledge, no research thus far has investigated whether sensitivity to investment products predicts financial health.

4 | OVERVIEW OF STUDIES

Four studies examined the relationship between financial product sensitivity and financial health, focusing primarily on attitudes toward consumer debt. Studies 1a and 1b showed that an individual's level of debt type sensitivity is an important predictor of financial health, even when holding other relevant factors (e.g., financial literacy, numeracy, and intertemporal discounting) constant. A supplementary study replicating the results of Studies 1a and 1b appears in the Supporting Information. Study 2 expanded on Studies 1a and 1b by examining sensitivity to financial products in the investment domain, showing that investment type sensitivity predicts financial health. Finally, Study 3 establishes a causal link between financial product sensitivity and financial health, demonstrating that having people focus on debt type sensitivity leads to choices that are better aligned with overall financial health. A summary of the correlational studies appears in Table 1.

5 | STUDY 1A: DEBT TYPE SENSITIVITY AND FINANCIAL HEALTH

A pilot study (full methods and analyses reported in the Supporting Information) used a nationally representative sample to assess individuals' attitudes toward both high- and low-interest debt types, demonstrating that there is an aggregate aversion to high-interest debt types relative to low-interest debt types (i.e., there is debt type sensitivity on average). Study 1a asked whether individual-level sensitivity matters. Namely, we examined whether sensitivity to debt type is predictive of financial health, even when controlling for other relevant factors.

5.1 | Method

A sample of adults was recruited via Mechanical Turk (N = 1,002; 48.6% female; M_{age} = 36.1, SD = 11.4). Participants were paid $2 for completing the survey. Target sample size (1,000) was determined before data collection began. We dropped 16 responses based on duplicate IP addresses.

TABLE 1 Overview of correlational studies

	Study 1a	Study 1b	Study 2
Dependent variables	Emergency funds	Emergency funds, CFPB scale	Emergency funds, CFPB scale
Independent variable	Debt type sensitivity	Debt type sensitivity	Investment type sensitivity
Intertemporal discounting	Yes	Yes	Yes
Financial literacy	Short version	Long version	Long version
Numeracy	Long version	Short version	Short version
Emotions	Yes	No	No

TABLE 2 Study 1a emergency funds regressions

Variables	Model 1	Model 2	Model 3	Model 4
Debt type sensitivity	0.19*** (0.03)	0.12*** (0.02)	0.09** (0.03)	0.09** (0.03)
Income (in thousands of $)		0.01*** (0.00)	0.01*** (0.00)	0.01*** (0.00)
Age		0.01*** (0.00)	0.01*** (0.00)	0.01*** (0.00)
Female		−0.19** (0.07)	−0.17* (0.07)	−0.16* (0.07)
Negative emotion differences			−0.02 (0.05)	−0.01 (0.05)
Intertemporal discount factor			1.33*** (0.21)	1.30*** (0.21)
Numeracy			0.05 (0.03)	0.05 (0.03)
Financial literacy			0.01 (0.06)	0.01 (0.06)
Number of experienced debts (out of 5)				−0.00 (0.00)
Constant	2.51*** (0.05)	1.64*** (0.13)	0.51* (0.22)	0.54* (0.22)
Observations	922	905	887	887
R^2	.060	.179	.237	.239

Note. The dependent variable is a 4-point scale measuring the ability to come up with funds quickly (reverse-coded, with 4 representing certainty that the participant could come up with funds quickly). Debt type sensitivity represents the difference between aversion to high- and low-interest debt types. Standard errors in parentheses.

*p < .05. **p < .01. ***p < .001.

We assessed attitudes toward two high-interest debts (payday loans and layaway plans) and three low-interest debts (mortgages, student loans, and car loans) using two elements. Participants rated how comfortable they were with ("comfort": 1 = "*not at all comfortable*," 7 = "very comfortable") and how financially wise they thought it would be to have ("financially wise": 1 = "*not at all wise financially*," 7 = "*extremely wise financially*") each type of debt on a 7-point scale. Participants could also indicate that they did not know what the particular debt type was. Additional attitudinal measures and three other debt types were included; refer to the Supporting Information for further details.

After assessing their debt-specific attitudes, participants in this study were asked to indicate their emotional responses toward each type of debt, indicating the extent to which taking out the debt would make them feel distressed, enthusiastic, upset, and proud on 5-point scales (1 = "*very slightly or not at all*," 5 = "*extremely*"). These were selected to represent two positive and two negative emotions. Participants also answered questions about intertemporal discounting (listed in the pilot study), a shortened financial literacy scale (Fernandes et al., 2014), and a numeracy scale (Weller et al., 2013).

Subsequently, to assess financial health, we included a question that measures the ability to come up with funds quickly: "How confident are you that you could come up with $2,000 if an unexpected need arose within the next month?" (Lusardi et al., 2011). Possible responses included "I am certain I could come up with the full $2,000," "I could probably come up with $2,000," "I could probably not come up with $2,000," or "I am certain I could not come up with $2,000," which were coded as 4, 3, 2, and 1, respectively. Participants could also refuse to answer or indicate that they did not know; these were excluded from analyses involving financial health. Finally, all participants reported detailed financial and demographic information.

5.2 | Results and discussion

Because 47 participants indicated they did not know one of the five debt types when answering questions related to these two elements, 939 participants remained for subsequent analyses. We created composite measures of attitudes toward high- and low-interest debts. These were created for each type of attitude measured. The comfort and financially wise items were reverse coded (these are henceforth referred to as discomfort and financially unwise) so that they were capturing negative attitudes toward the debts. We then computed two averages for the discomfort and financially unwise items: one measuring the attitudes toward the high-interest debts and another measuring attitudes toward low-interest debts. For example, discomfort with low-interest debts took the average of a participant's discomfort with mortgages, student loans, and car loans.

The two elements discomfort and financially unwise were averaged to create composite measures of aversion to high-interest debts (α = .69) and aversion to low-interest debts (α = .65). Participants were more averse to high-interest debts (*Mdn* = 5.25) than they were to low-interest[1] debts (*Mdn* = 3.83), Z = −21.10, p < .001.

To examine whether sensitivity to debt type predicted financial health, we regressed the financial health measure on the difference between aversion to high- and low-interest debts. As shown in Table 2, greater differences between aversion to high- and low-interest debts predicted higher levels of financial health (B = .19, SE = .03, $t(922)$ = 7.69, p < .001; Model 1, Table 2). One might worry that low financial health could itself lead to smaller differences in attitudes toward high- and low-interest debts, for example, by generating more

[1]In this study and subsequent studies, paired t tests yield similar results.

positive attitudes toward high-interest debt types (i.e., reversing the direction of causality). Although we are not able to definitively rule out this possibility in a correlational study, we controlled for income (and other demographic factors) to capture some of this variation. The relationship between the difference in aversion to high- and low-interest debts and financial health persisted even when controlling for income, age, and gender ($B = .12$, $SE = .02$, $t(900) = 4.84$, $p < .001$; Model 2, Table 2).

It is possible that sensitivity to debt type is picking up on differences in the positive (enthusiastic and proud) or negative (distressed and upset) emotions that these types of debt differentially cause. In addition, other factors, such as financial literacy, numeracy, and intertemporal discounting may underlie the relationship between debt type sensitivity and financial health. To test whether these psychological and emotional factors account for the data pattern we observed, we ran an additional regression including intertemporal discounting, financial literacy, numeracy, and the emotional difference between high- and low-interest debts (composite negative emotion—distressed, upset, proud, and enthusiastic; latter two reverse coded—for high-interest debt minus composite negative emotion for low-interest debt) as well as income, age, and gender. We find the relationship robust to these measures ($B = .09$, $SE = .03$, $t(878) = 3.04$, $p = .002$; Model 3, Table 2). Finally, one might worry that the relationship is merely driven by past experience with debt: Those who use more debt in general may be better able to discriminate between debt types. To account for the possibility that experience with debt is responsible for differences in debt type sensitivity, we ran a final analysis including the number of high- and low-interest debt types experienced. This additional factor does not change the results ($B = .09$, $SE = .03$, $t(877) = 3.00$, $p = .003$; Model 4, Table 2).

Finally, because debt type sensitivity represents a difference score, we assessed whether differences in debt type sensitivity were driven by one or both of its underlying components (i.e., aversion to high-interest debt types or aversion to low-interest debt types; Griffin, Murray, & Gonzalez, 1999; Rick, Small, & Finkel, 2011). In supplemental analyses, we ran regressions in which both underlying components were included. Although both components were predictive, the relationship between debt type sensitivity and financial health appears to be driven more by differences in aversion to low-interest debts than aversion to high-interest debts. In particular, aversion to low-interest debts more consistently predicts worse financial health than aversion to high-interest debts predicts better financial health. This finding suggests that discomfort with all debt (even that which is low-interest) may not be beneficial for financial health. Additional related analyses can be found in the Supporting Information.

Taken together, results from Study 1a suggest that people are not only more averse to high-interest debts than they are to low-interest debts in aggregate but also that the magnitude of the individual difference in aversion to high- and low-interest debt types is an important predictor of financial health. This relationship holds when accounting for other related factors, demographics, and past experiences with debt.

6 | STUDY 1B: DEBT TYPE SENSITIVITY AND FINANCIAL HEALTH

Study 1a found that sensitivity to debt type was an important predictor of financial health, even when controlling for other relevant factors. One potential drawback of Study 1a is that financial health was measured by the self-reported ability to come up with funds quickly, and thus, there is a potential that asking about financial products upfront might have altered responses to this question. To address this issue, Study 1b aimed to replicate the findings of Study 1a with a more objective measure of financial health. The study also aimed to rule out educational attainment as an alternative explanation for the relationship between debt type sensitivity and financial health.

6.1 | Method

A sample of adults was recruited via Mechanical Turk (N = 1,008; 53.5% female; M_{age} = 36.3, SD = 11.7). Participants were paid $1 for completing the survey. Target sample size (1,000) was determined before data collection began. Based on duplicate IP addresses, 24 responses were dropped.

The methods, analyses, and hypotheses for Study 1b were pre-registered (https://aspredicted.org/fe8qq.pdf), and the design was far shorter than that used in Study 1a. In particular, Study 1b only assessed attitudes toward five debt types that were pre-registered as high- (payday loans and layaway plans) and low-interest debt types (mortgages, student loans, and car loans); Study 1a included additional debt types. In addition, we assessed debt-specific aversion to the two high-interest and three low-interest debt types using only the comfort and financially wise measures examined in Study 1a. Unlike those in Study 1a, participants in Study 1b did not indicate their emotional responses toward each type of debt.

Although there are no objective measures that fully capture all complexities of consumer financial health, the 10-item Consumer Financial Protection Bureau Financial Well-Being scale ("CFBP scale") comes close. Despite the fact that the scale relies on self-reported behavior, it has been shown to be externally valid, with outcomes being significantly correlated with having three months of expenses in savings, credit ratings, and the experience of negative economic events (e.g., foreclosure and debt in collections) or material hardships (Consumer Financial Protection Bureau, 2015). The scale was developed to have high reliability, suggesting that responses capture true difference in financial health and are not likely to be susceptible to incidental factors. Thus, in addition to measuring financial health via a measure of the ability to come up with funds quickly (Lusardi et al., 2011) as we did in Study 1a, participants responded to the CFPB scale.

To determine the robustness of any potential relationship between differences in attitudes toward high- and low-interest debts and financial health, participants completed an intertemporal discounting task, the full financial literacy questionnaire (Fernandes et al., 2014), and a shortened numeracy scale (Weller et al., 2013). The full financial literacy scale was used to reduce measurement error that could potentially

be picked up by debt type sensitivity. Participants also reported educational attainment, which was not included in Study 1a.

6.2 | Results and discussion

The two elements discomfort and financially unwise were averaged to create composite measures of aversion to high-interest debts (α = .78) and aversion to low-interest debts (α = .74). Because 37 participants indicated they did not know one of the five debt types when answering questions related to these two elements, 947 participants remained for subsequent analyses. Like those in Study 1a, participants in Study 1b were more averse to high-interest debts (*Mdn* = 5.25) than they were to low-interest debts (*Mdn* = 3.50), $Z = -21.02$, $p < .001$.

As we found in Study 1a, debt type sensitivity predicted higher levels of financial health as measured by the ability to come up with funds quickly ($B = .24$, $SE = .02$, $t(933) = 11.51$, $p < .001$; Model 1, Table 3). Full regression results appear in Table 3. This relationship held when adding in controls for income, age, and sex, as well as college education ($B = .14$, $SE = .02$, $t(909) = 6.69$, $p < .001$; Model 2, Table 3); financial literacy, numeracy, and intertemporal discounting ($B = .10$, $SE = .02$, $t(880) = 4.58$, $p < .001$; Model 3, Table 3); and the number of high- and low-interest debt types experienced ($B = .10$, $SE = .02$, $t(879) = 4.72$, $p < .001$; Model 4, Table 3).

Similar results held when running a regression using the CFPB scale (ranging from 14 to 95) as a dependent variable instead. Full regression results appear in Table 4. Here, we again found that greater differences between aversion to high- and low-interest debt types predict greater financial health ($B = 2.29$, $SE = .24$, $t(945) = 9.48$, $p < .001$; Model 1, Table 4). Table 4 reports full regression results. This relationship held when adding in controls for income, age, sex, and college education ($B = 1.10$, $SE = .24$, $t(920) = 4.57$, $p < .001$; Model 2, Table 4); intertemporal discounting, financial literacy, and numeracy ($B = 1.02$, $SE = .25$, $t(891) = 4.03$, $p < .001$; Model 3, Table 4); and the number of high- and low-interest debt types experienced ($B = 1.04$, $SE = .25$, $t(890) = 4.10$, $p < .001$; Model 4, Table 4).

Finally, as in Study 1a, we similarly found that the relationship between debt type sensitivity and financial health appears to be driven more by aversion to low-interest debts than aversion to high-interest debts. Additional related analyses can be found in the Supporting Information.

7 | STUDY 2: INVESTMENT TYPE SENSITIVITY

Studies 1a and 1b provided converging evidence that debt type sensitivity is a strong predictor of financial health and that the relationship between debt type sensitivity and financial health is not fully explained by previously explored factors (e.g., financial literacy, numeracy, and intertemporal discounting). Study 2 aimed to show that the extent to which consumers differentiate between other types of nondebt financial products (i.e., investment products, such as mutual funds vs. penny stocks) also has a relationship with financial health.

7.1 | Method

A sample of adults was recruited via Mechanical Turk. Upon entering the survey, potential participants responded to eight questions used for screening purposes. To ensure that investment sensitivity measures would not merely pick up on familiarity, only those who correctly identified definitions of the two investment products (i.e., penny stocks and mutual funds) were allowed to proceed with the survey. In particular, potential participants (total of 1,102) were screened out if they did not correctly identify a penny stock as a stock valued below $1 and a mutual fund as managed collection of stocks, bonds, or other

TABLE 3 Study 1b emergency funds regressions

Variables	Model 1	Model 2	Model 3	Model 4
Debt type sensitivity	0.24*** (0.02)	0.14*** (0.02)	0.10*** (0.02)	0.10*** (0.02)
Income (in thousands of $)		0.01*** (0.00)	0.01*** (0.00)	0.01*** (0.00)
Age		0.01** (0.00)	0.00 (0.00)	0.01* (0.00)
Female		−0.35*** (0.07)	−0.25*** (0.07)	−0.23*** (0.07)
College education		0.27*** (0.08)	0.18* (0.08)	0.19* (0.08)
Intertemporal discount factor			1.36*** (0.20)	1.29*** (0.20)
Numeracy			0.07* (0.03)	0.06* (0.03)
Financial literacy			0.05* (0.02)	0.05* (0.02)
Number of experienced debts (out of 5)				−0.01*** (0.00)
Constant	2.42*** (0.05)	1.69*** (0.13)	0.24 (0.21)	0.36 (0.21)
Observations	935	915	889	889
R^2	.124	.266	.329	.338

Note. The dependent variable is a 4-point scale measuring the ability to come up with funds quickly (reverse-coded, with 4 representing certainty that the participant could come up with funds quickly). Debt type sensitivity represents the difference between aversion to high- and low-interest debt types. Standard errors in parentheses.

*$p < .05$. **$p < .01$. ***$p < .001$.

TABLE 4 Study 1b CFPB scale regressions

Variables	Model 1	Model 2	Model 3	Model 4
Debt type sensitivity	2.29*** (0.24)	1.10*** (0.24)	1.02*** (0.25)	1.04*** (0.25)
Income (in thousands of $)		0.15*** (0.01)	0.14*** (0.01)	0.15*** (0.01)
Age		0.03 (0.03)	0.03 (0.04)	0.05 (0.04)
Female		−3.63*** (0.76)	−3.22*** (0.80)	−3.10*** (0.80)
College education		2.15* (0.90)	1.90* (0.92)	2.03* (0.92)
Intertemporal discount factor			6.94** (2.37)	6.40** (2.39)
Numeracy			0.18 (0.36)	0.12 (0.36)
Financial literacy			0.04 (0.23)	0.05 (0.23)
Number of experienced debts (out of 5)				−0.09* (0.04)
Constant	47.01*** (0.54)	39.70*** (1.50)	33.81*** (2.52)	34.68*** (2.55)
Observations	947	926	900	900
R^2	.087	.260	.272	.276

Note. The dependent variable is the CFPB scale. Debt type sensitivity represents the difference between aversion to high- and low-interest debt types. Standard errors in parentheses.

*p < .05. **p < .01. ***p < .001.

securities. Participants who passed this initial screening (N = 1,006; 52.4% female; M_{age} = 39.3, SD = 12.1) and proceeded were paid $1 for completing the survey. Target sample size (1,000) was determined before data collection began.

The methods, analyses, and hypotheses for Study 2 were pre-registered (https://aspredicted.org/yk327.pdf), and the design was similar to that used in Study 1b and nearly identical to the supplementary study reported in the Supporting Information, with two exceptions in addition to the initial screening questions. First, in contrast to Studies 1a and 1b in which participants were asked to indicate their attitudes toward five debt types, Study 2 asked participants to indicate their attitudes toward two investment types. In particular, participants rated how comfortable they were (1 = "*not at all comfortable*," 7 = "*very comfortable*") and how financially wise they thought it was (1 = "*not at all wise financially*," 7 = "*extremely wise financially*") to take money out of savings to invest in a mutual fund (i.e., investment with higher risk-adjusted returns, on average) and in a penny stock (i.e., investment with lower risk-adjusted returns, on average). A pretest (N = 189) showed significant differences in aversion levels (assessed by the average of the discomfort and financially unwise measures) between these two investment types (M_{penny} = 5.07, SD = 1.67; M_{mutual} = 3.38, SD = 1.64; $t(188)$ = 11.14, p < .001). Second, instead of reporting which debts they had experienced in the past, participants reported whether they had past experience with mutual funds and/or penny stocks. Additional analyses can be found in the Supporting Information.

7.2 | Results and discussion

The two elements discomfort and financially unwise were averaged to create composite measures of aversion to mutual funds and aversion to penny stocks. There were 16 participants who, despite passing through initial screening, indicated they did not know one of the two investments, leaving 990 remaining participants for subsequent analyses. Like in the pretest, participants in Study 2 were more averse to penny stocks (Mdn = 5.50) than they were to mutual funds (Mdn = 2.50), Z = −23.50, p < .001.

Analogous to Studies 1a and 1b in which debt type sensitivity was measured by the individual difference between aversion to high- and low-interest debt types, investment type sensitivity in this study was assessed using differences in aversion between penny stocks and mutual funds. Investment type sensitivity predicted higher levels of financial health as measured by the CFPB scale (B = 1.56, SE = .20, $t(988)$ = 7.64, p < .001; Model 1, Table 5). Controlling for income, age, sex, and college education (B = 1.01, SE = .20, $t(967)$ = 4.99, p < .001; Model 2, Table 5); intertemporal discounting, financial literacy, and numeracy (B = .85, SE = .22, $t(942)$ = 3.90, p < .001; Model 3, Table 5); and the number of investments experienced (B = .79, SE = .22, $t(941)$ = 3.63, p < .001; Model 4, Table 5) did not substantively change the results. Similar results are obtained when using the ability to come up with funds quickly as a dependent variable. These results and all analyses related to this dependent variable can be found in the Supporting Information. In addition, analogous to our investigation into whether one or both components in the difference score were driving the findings of Studies 1a and 1b, we similarly found that the relationship between investment type sensitivity and financial health appears to be driven more by aversion to mutual funds than aversion to penny stocks. Additional related analyses can be found in the Supporting Information.

8 | STUDY 3: MANIPULATING DEBT TYPE SENSITIVITY TO ALTER DECISIONS

Studies 1a, 1b, and 2 provided converging evidence that financial product sensitivity is a strong predictor of financial health, as measured in correlational contexts. Study 3 aimed to establish causal evidence by

TABLE 5 Study 2 CFPB scale regressions

Variables	Model 1	Model 2	Model 3	Model 4
Investment type sensitivity	1.56*** (0.20)	1.01*** (0.20)	0.85*** (0.22)	0.79*** (0.22)
Income (in thousands of $)		0.12*** (0.01)	0.12*** (0.01)	0.11*** (0.01)
Age		0.11*** (0.03)	0.09* (0.03)	0.09** (0.03)
Female		−1.09 (0.80)	−1.22 (0.82)	−0.62 (0.83)
College education		0.45 (0.84)	0.22 (0.85)	0.02 (0.85)
Intertemporal discount factor			11.72*** (2.48)	11.64*** (2.46)
Numeracy			−0.53 (0.38)	−0.44 (0.38)
Financial literacy			0.40 (0.27)	0.15 (0.27)
Number of experienced investments (out of 2)				0.31*** (0.07)
Constant	49.32*** (0.60)	38.43*** (1.54)	30.27*** (2.81)	30.43*** (2.78)
Observations	990	973	951	951
R^2	.056	.184	.206	.221

Note. The dependent variable is the CFPB scale. Investment type sensitivity represents the difference between aversion to penny stocks and mutual funds, which represent low- and high-return investment types. Standard errors in parentheses.

*p < .05. **p < .01. ***p < .001.

examining what impact, if any, an intervention that manipulates debt type sensitivity has on financial decision making regarding debt.

8.1 | Method

A sample of adults was recruited via Mechanical Turk (N = 401; 48.6% female; M_{age} = 36.9, SD = 10.9) through TurkPrime (Litman, Robinson, & Abberbock, 2017). Participants were paid $.45 for completing the survey. Target sample size (400) was determined before data collection began.

The methods, analyses, and hypotheses for Study 3 were pre-registered (https://aspredicted.org/sr23x.pdf). All participants were asked to read an article about debt. There were two conditions. The full text of each article can be found in the Supporting Information. In the differentiated debts condition, participants read an article about the differences between good and bad types of debt. In the undifferentiated debts condition, participants read an article about the importance of avoiding all types of debt. To reduce the possibility for demand effects, the articles did not include any specific information about interest rates or references to credit card spending, and both articles made references to the same five debt types.

After reading the article, they were given two comprehension questions. If they answered either question incorrectly, they had to repeat the questions and answer them correctly in order to proceed. Participants were next asked to write a couple of sentences about the main takeaways of the article that they were assigned to read. A pretest (N = 199) showed that this manipulation resulted in large differences in debt type sensitivity, as assessed using the method from Studies 1a and 1b ($M_{differentiated}$ = 2.74, SD = 1.93; $M_{undifferentiated}$ = 1.59, SD = 1.56; $t(190)$ = 4.56, p < .001).

To examine a context in which we could assess decisions that are consistent with promoting financial health, participants were given two questions on separate pages. They were asked to imagine that they were looking to buy a new laptop to use for work and that they were considering using a credit card and expected to carry a balance over time. They were then asked to indicate (a) their willingness to purchase the laptop on a credit card with a fixed 2% interest rate (1 = "*not at all willing*," 7 = "*very willing*"), which represents a potentially advantageous opportunity, and (b) their willingness to purchase the laptop on a credit card with a fixed 20% interest rate (1 = "*not at all willing*," 7 = "*very willing*"), which represents a relatively costly financing option.

8.2 | Results and discussion

A measure of the differential likelihood of taking advantage of a low- versus high-interest rate offer was computed using within-participant differences between the willingness to use the 2% interest credit card and the 20% interest credit card to finance the laptop. We refer to this difference as "financial opportunism." Participants in the differentiated debts condition showed greater financial opportunism (M = 3.10, SD = 2.12) than those in the undifferentiated debts condition (M = 2.13. SD = 1.91, $t(399)$ = 4.86, p < .001). Seventeen participants exhibited negative financial opportunism (i.e., greater willingness to use the 20% interest credit card than the 2% interest credit card). Although not pre-registered, an analysis excluding these participants yielded similar results ($M_{differentiated}$ = 3.32, SD = 1.94; $M_{undifferentiated}$ = 2.24, SD = 1.84; $t(382)$ = 5.59, p < .001).

This study provides evidence of a causal link between debt type sensitivity and financial health. Even though steps were taken to reduce demand effects in the design, it was relatively heavy-handed: Participants were asked to read an article, correctly answer comprehension questions about the article, and describe its main points. Nevertheless, in this somewhat stylized context, when nudged to consider the differences between debt types, consumers are more

likely to discern financially advantageous and deleterious options regarding debt—even within the same debt type.

9 | DISCUSSION

Given the extent of financial fragility in the United States, understanding the antecedents of financial health is an important theoretical and practical endeavor. To date, attitudes toward financial products have been treated in a general manner. Because there are important differences in the ways higher cost (lower benefit) products versus lower cost (higher benefit) financial products map on to financial health, we examined whether differences in attitudes toward these products predicted financial health.

Findings from four studies demonstrated that people have different attitudes toward higher cost (lower benefit) and lower cost (higher benefit) financial products and that greater differences between these attitudes are predictive of financial health (Studies 1a, 1b, and 2). In particular, both debt type sensitivity (Studies 1a and 1b) and investment type sensitivity (Study 2) are predictive of financial health, even when controlling for other relevant factors (e.g., financial literacy, numeracy, and intertemporal discounting). In addition, in a hypothetical context, there is evidence that debt type sensitivity, in fact, leads to more financially healthy choices (Study 3).

The current research makes important contributions to three different literature streams. First, we introduce a novel financial difference—financial product sensitivity—into the financial well-being literature. Although previous studies have examined how psychological factors relate to financial health (e.g., Fernandes et al., 2014; Lusardi & Mitchell, 2014; Lusardi et al., 2011; Meier & Sprenger, 2011), none have looked at financial product sensitivity as a determinant. Second, we advance the literature on consumer debt by demonstrating that debt aversion depends on financial product type. While prior work has shown that people are generally debt averse (e.g., Prelec & Loewenstein, 1998), past research has ignored the ways people differentiate between debt types in their attitudes and behaviors. Lastly, we show that consumers' nuanced attitudes toward investments are important for financial health. In contrast to the literature documenting individual differences in risk attitudes (Blais & Weber, 2006; Dohmen et al., 2011; Eckel & Grossman, 2002; Holt & Laury, 2002) and portfolio choice (Charness & Gneezy, 2010; Schooley, 1996; Thaler et al., 1997), we demonstrate that the differences in taste toward low- and high-return investments strongly predict financial health, even when controlling for other relevant factors (e.g., financial literacy, numeracy, and intertemporal discounting).

Even though we found converging evidence that financial product sensitivity predicts financial health, three caveats are worthy of mention. First, because our analyses in Studies 1a, 1b, and 2 rely on relationships between measured variables, we cannot rule out the possibility that the relationship between financial product sensitivity and financial health is capturing measurement error in other variables in those studies. Second, our measures of financial product sensitivity comprise individuals' aversion to debt-type or investment-type labels. It is possible that people expect financial product types to which they are more averse to have higher balances. However, low-interest debts (e.g., mortgages) do tend to be associated with higher balances than high-interest debts (e.g., payday loans), which should assuage these concerns. Third, it is worth noting that the causal link between financial product sensitivity and financial health is demonstrated in a hypothetical choice context and that our study design (Study 3) was fairly direct. Thus, even though the effect in the study was strong, we cannot be certain that demand effects did not partially account for the pattern of results absent an incentive-compatible study. It would be beneficial to test the intervention proposed in Study 3 in a setting in which a consequential decision is presented.

Future work should explore additional causes and consequences of financial product sensitivity. While sensitivity to financial products, per se, may be learned, some people may be more inclined to make such differentiations compared with others. That is, although debts and investments may represent complex categories, individuals may differ in the extent to which they unpack these categories versus ignore distinctions between different types of debt or investment. For example, one individual difference that might be predictive of both financial product sensitivity and financial health is cognitive flexibility, because those with greater cognitive flexibility may have an enhanced ability to use different approaches to solving problems—financial or otherwise (Drever et al., 2015; Martin & Anderson, 1998; Martin & Rubin, 1995; Spiro, Coulson, Feltovich, & Anderson, 2013). In addition to potentially having nuanced attitudes toward certain debts and investments that could bring about financial planning, cognitively flexible individuals may be more likely to think about the costs and benefits associated with taking on different debts and investments. Through additional examination of the mechanisms underlying financial product sensitivity and financial health (reported in the Supporting Information), we found evidence that cognitive flexibility was indeed correlated with both of these measures. However, we leave it to future research to further disentangle the causality underlying these relationships.

Future research should unpack the interplay between financial product sensitivity and financial literacy. Although our correlational studies demonstrated that financial product sensitivity predicts financial health above and beyond existing measures of financial literacy, it is possible that financial product sensitivity comprises some elements of financial literacy that are not captured by existing financial literacy measures. In addition to the fact that individual differences might explain financial product sensitivity, it is plausible that like financial literacy, financial product sensitivity can be learned.

It is worth noting that financial products differ in a number of important ways and that sensitivity along other dimensions could affect financial health. In the current paper, we examined how being sensitive to how expensive financial products are could be beneficial to financial health. Although consumers may not have a precise sense of the risk-adjusted returns of different financial products, we argue that those who have some intuitive sense of these differences may end up better financially. As this is the first investigation into financial

product sensitivity, we hope that other dimensions on which financial products differ can be examined in future work.

The current research has clear implications for how consumers' attitudes toward financial products can shape their financial health. Because greater differentiation between financial products is related to stronger financial health, having consumers focus on the differences rather than the similarities between financial products could bring about decisions that better serve their long-term financial health. Consistent with the findings of Study 3, blanket rules (e.g., "avoid debt at all costs") could have unintended consequences, causing consumers to place all debts into the same broad category rather than consider the complex differences between different types of debt. Policymakers and consumer advocacy groups could highlight these differences when communicating with consumers, helping them to see the value of low-cost (high-return) financial products and avoid the pitfalls of high-cost (low-return) financial products rather than rely on such blanket rules. Future research should thus explore larger scale, field-based interventions that shift consumers' attitudes about debts and investments away from broad categorizations and toward more narrow categorizations.

In sum, we examined whether and how financial product sensitivity is related to financial health. Results of four studies reveal that financial product sensitivity matters: Not all debts and investments are perceived the same way, and consumers who distinguish between beneficial and deleterious financial products tend to enjoy greater financial health.

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SUPPORTING INFORMATION

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

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