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Credit card behavior, financial styles, and heuristics☆

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ABSTRACT

The paper makes four contributions. First, the paper provides new data and findings about credit card usage segmentation in respect to spending and borrowing behavior. Second, it sets the new findings against the backdrop of the newly emerging literature on financial literacy. A great variability occurs in financial literacy across American consumers. Third, the paper describes fast and frugal heuristics aimed to help consumers make effective, and in some cases better, budgeting decisions when they use credit cards. Fourth, the paper describes the introduction of a new set of online financial tools, offered by a large credit card company, which consumers are now using to make decisions about their spending and borrowing, and links these tools to the heuristics under discussion. Fast and frugal heuristics are likely to be especially valuable to consumers with low confidence in their online skills. Notably, 25% of credit cardholders report that they have low confidence using online technology to manage their finances, with the corresponding figure being 44% for those most at risk.

1. Introduction

By its nature, household decision making is a heuristic enterprise, as most household decision tasks are far too complex to be fully specified, let alone solved through optimization. In this paper, the authors discuss how households can use fast and frugal heuristics when using credit cards to engage in spending and borrowing.

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As Bendor (2010) points out, Herbert Simon's bounded rationality approach has given rise to several research streams involving heuristics. Examples of the different streams include the fast and frugal heuristic approach described in Gigerenzer, Todd, and the ABC Research Group (1999), the heuristics and biases approach described in Kahneman, Slovic, and Tversky (1982), and self-control heuristics described in Shefrin and Thaler (1988).

Heuristics for household consumer decisions are ubiquitous. A large literature in marketing documents how households make use of heuristics that feature, for example, private labels and national brands (Putsis & Dhar, 2001), satisficing in respect to the ordering of cues (Levav, Heitmann, Herrmann, & Iyengar, 2010), and self-control through the choice of which cash denominations to carry (Raghubir & Srivastava, 2009).

In respect to self-control, the role of heuristics has also been a subject of study in the literature in economics (Shefrin & Thaler, 1988), and more generally in retirement saving behavior (Benartzi & Thaler, 2007) and borrowing behavior (Karlan & Zinman, 2012). In this regard, the economics literature documents the degree to which many U.S. households lack financial literacy (Bernheim, 1995, 1998). A study by Hilgert, Hogarth, and Beverly (2003) finds that most Americans do not understand the basic financial concepts of stocks, bonds, and mutual funds. Moore (2003) finds that people often fail to understand terms and conditions of consumer loans and mortgages. Ameriks, Caplin, and Leahy (2003) report that households with superior financial planning and budgeting skills accumulate wealth at higher rates than other households.

The economics literature is also developing tools for measuring the degree to which consumers express preferences consistent with a neoclassical preference ordering. For example, see Choi, Kariv, Müller, and Silverman (2010). These tools are interesting, but focus more on

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consistency of choice than on the quality of the decisions. The main focus of the present paper is on steps consumers can take to improve the quality of their financial decisions. In this regard, see the normative discussion in Agnew (2010).

Lusardi (2010) summarizes findings from the National Financial Capability Study (NFCS), which was commissioned by the FINRA Investor Executive Foundation, and in which she played a lead role. The NFCS comprises three linked studies, one focused on national traits, one focused on comparisons state-by-state, and one focused on military personnel. Lusardi (2010) describes the results from the national survey, which pertains to (1) making ends meet; (2) planning ahead; (3) managing financial products; and (4) financial knowledge and decision making.

In terms of making ends meet, the first study finds that approximately half of the Americans surveyed report difficulty in keeping up with monthly expenses. Roughly a quarter report overdrawing their checking accounts, and of these, about three quarters admit to being challenged in making ends meet.

As for planning ahead, 51% of Americans fail to accumulate precautionary savings. Only 42% have attempted to assess their retirement savings needs. Only 41% of those with financially dependent children have set aside funds for college education.

Credit cards are among the financial products addressed within the NFCS. Interestingly, 68% of those surveyed reported that they possess credit cards. Of these, 51% indicated that in some months they carried a balance and paid interest, 29% indicated that in some months they paid the minimum amount due, and 23% indicated that in some months they incurred a fee for late payment. In contrast, 54% report that they always pay their credit card balances in full. Notably, 28% of those possessing credit cards appear to be challenged in making ends meet, which contrasts with 49% for the full population.

When it comes to financial knowledge, Americans delude themselves. Although 37% rate their overall knowledge of finance at the high end, with the corresponding percentage for mathematics being 46%, the survey found that people overrate their abilities on both dimensions. For those who rated themselves at the highest end in both finance and mathematics, only half could correctly perform two calculations pertaining to interest rates and inflation respectively.

The financial service landscape is changing in notable ways. To begin with, studies such as the NFCS are documenting the spectrum of financial literacy across households. In addition, the credit card act passed in 2009, with the acronym CARD (the Credit Card Accountability, Responsibility, and Disclosure Act), introduced a series of major changes, most of which became effective in February 2010.

Even before the passage of CARD, financial institutions, such as banks, credit card companies, and mutual funds had begun plans to offer financial tools online. This is especially important in the case of banks and credit card companies, as these tools can access household transaction data. In this regard, Mui (2010) discusses innovations at credit card firms Chase, Citi, Discover, and American Express. These innovations involve options for lowering interest payments. Mui notes that innovations at Chase have attracted the most attention because they feature important budgeting tools to help credit cardholders manage their balances over time.

As part of a consulting team, the authors worked with Chase to develop a system to help credit card users engage in some self-diagnosis, in order to ascertain how best to use the budgeting tools offered by Chase. In this paper, the authors describe some of the key findings of the research underlying this effort, and use the data to analyze important heuristic features. In light of the NFCS findings, the central questions addressed in the paper ask whether households can make use of fast and frugal heuristics (Gigerenzer and Gaissmaier, 2011; Gigerenzer et al., 1999; Todd and Gigerenzer, 2000), to achieve greater self-awareness about their credit card financial styles, and in consequence to employ financial tools to make better decisions about their spending and borrowing.

The remainder of the paper is organized as follows: The first section describes a fast and frugal heuristic for identifying credit card financial styles. The second section provides an overview of different types of financial styles in practice. The third section describes the data and associated key characteristics. The fourth section explains how the authors applied cluster analysis to identify financial styles. The fifth section contrasts the results from cluster analysis with those from the application of fast and frugal heuristics. The sixth section describes the Chase Blueprint program, for which the authors developed their style analysis. Notably, this section discusses research findings about consumer reaction to the relationship between style analysis and the program. A final section provides conclusions.

2. Developing fast and frugal heuristics

Consider the objective of helping credit cardholders make better financial decisions. As a first step, suppose one seeks to categorize credit cardholders based upon repayment characteristics, general attitude to budgeting, and reliance on budgeting heuristics. How might one develop a fast and frugal style heuristic for the categorization task? What might be a reasonable set of cues, alternatives, stopping rules, and decision rules in respect to credit card behavior? To fix ideas, consider a specific example, involving cues for repayment characteristics, general attitude to budgeting, and reliance on budgeting heuristics.

2.1. Cues

According to the NFCS findings, the most important characteristic of repayment behavior is the frequency with which a holder pays only the minimum due, pays the balance in full, pays something in between, or is occasionally in default, thereby incurring late fees. One cue for repayment behavior is the answer to the following question: When it comes to paying your credit card(s), do you tend to pay the entire balance on the card each month, or just the minimum due? Possible answers might be restricted to 1) minimum due; 2) entire balance; or 3) something in between.

An indicator of attitude toward household budgeting is the degree to which a holder believes that it is important to be in control of his or her finances. One cue for importance of control is the answer to the following question: When it comes to managing finances, how important is it to you that managing your finances is completely within your control, even if it involves considerable effort on your part? Possible answers might be 1) unimportant; 2) important; 3) something in between.

As for budgeting heuristics, Shefrin and Thaler (1988) propose that households base their spending on how they mentally categorize their wealth into particular mental accounts. Examples of categories are current income, liquid assets, home equity, and future income. In the Shefrin–Thaler framework, households establish a pecking order for funding, with current income at the top of the pecking order and future income at the bottom. Specifically, households spend first from current income, and only after this account is fully depleted, reluctantly “break into” the liquid asset account. The idea of reluctance is measured as a mental setup cost, so that the household only breaks into the account if the benefit from doing so is large enough to compensate for the setup cost of doing so.

In a similar vein, Raghubir and Srivastava (2009) provide evidence that people can control impulse purchases by only carrying large denominations of cash, effectively placing large denominations into mental accounts that they are reluctant to invade. Raghubir and Srivastava call this tendency the “denomination effect”.

Notably, credit cards rather than cash, checks, or debit cards are the most preferred mode of payment by households. When it comes to self-control heuristics, credit card usage declined from 87% in 2007 to 56% in 2009, with a corresponding rise in the use of debit cards. This is consistent with the use of a heuristic to increase self-control in respect to taking on debt. At the same time, some households achieve self-control by