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Designing disclosures to improve consumer financial decision making: Lessons learned from consumer testing

Jeanne M. Hogarth[1,2]
Ellen A. Merry

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Abstract

We explore findings from consumer testing of disclosures and what these can tell us about how and how much well-designed disclosures may improve consumer understanding of financial products. Consumer testing conducted as a part of the Federal Reserve Board's regulatory development process has used qualitative and quantitative methods in controlled environments to formulate and test new disclosures. The goal has been to develop disclosures that consumers can comprehend and use in decision making; implicitly, better disclosures should lead to better decisions. This paper provides some background on the Board's testing projects; highlights findings from this research and what they imply about the ways and the extent to which design may improve the function of disclosures; and discusses the challenges of applying the results from testing to the decisions consumers would make in real-world transactions.

[1] Both authors are from the Division of Consumer and Community Affairs, Federal Reserve Board, Stop 805, 20th and C Streets NW, Washington, DC 20551. Email contact: jeanne.m.hogarth@frb.gov, ellen.a.merry@frb.gov
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Designing disclosures to improve consumer financial decision making:
Lessons learned from consumer testing

Disclosure has long been a key component of consumer protection policy in financial services. For example, the Truth in Lending Act, passed by Congress in 1968, provides disclosures of interest rates and terms for credit cards, mortgages, and a range of other loans. By informing consumers about a product or service before a purchase, disclosures can help consumers understand product features and shop among alternative products and providers to find the combination of features and price that best meets their needs.

Information, and information search, not only has the potential to improve the outcomes for those consumers who shop, but also may lead to a more competitive marketplace as financial service providers adjust product features and lower prices to attract customers. In the ideal world, fully informed consumers make decisions that are optimal for their households and enable markets to function efficiently. However, in the real world, and in an era of financial markets and products that are quite complex, being well-informed can be a daunting task, even for those with substantial education. Finding ways to motivate consumers to seek out information and to pay attention to information disclosures remains a challenge.

While the longstanding goals of increased transparency and competition in markets still motivate disclosure policy development, more recent research in psychology, marketing, and behavioral economics has influenced policy discussions by highlighting both limitations of and new uses for disclosure. Research on the limitations on consumer abilities to process complex or voluminous information points to the limits on what disclosure can accomplish. But research also shows the potential for ways in which the presentation of information can influence choice.

This is old news for marketers, but policy makers now confront decisions about whether disclosure should be "neutral" in the way product options are presented, or instead should promote or discourage the choice of certain products or features. In *Nudge*, Thaler and Sunstein argue that once you acknowledge that design matters, there really is no "neutral" presentation of choices (Thaler & Sunstein, 2008). Yet since the desirability of some options depends on the fit with a particular consumer's situation, it is not always clear which options should be promoted.

In this paper we will explore what findings from consumer testing of disclosures can tell us about how and how much well-designed disclosures may improve consumer understanding of

financial products. Consumer testing conducted as a part of the Federal Reserve Board's regulatory development process has used qualitative and quantitative methods in controlled environments to formulate and test new disclosures. These design efforts have focused primarily on improving consumer recognition and comprehension of key information and, to a limited extent, on the usability of disclosure in decision making. This paper will provide some background on the Board's testing projects; highlight findings from this research and what they imply about the ways and the extent to which design may improve the function of disclosures; and discuss the challenges of extrapolating the results from testing to predict changes in the decisions consumers would make in real transactions.

Background

Beginning in 1996, the Board conducted consumer focus groups to help inform the content, language, and layout of disclosures for vehicle leases, mortgages, payroll cards, and electronically-delivered disclosures. In 2005, in collaboration with other federal agencies, the Board began a more rigorous consumer testing program, using focus groups, cognitive interviews, usability testing, and quantitative validation surveys to inform disclosure development for privacy notices, credit cards, mortgages, home equity lines of credit, student loans, and overdraft services. This paper focuses primarily on results from our work on mortgages, credit cards, and privacy notices.

One of our main goals was to develop disclosures that help consumers make choices consistent with their revealed preferences for product features. In part, our work was guided by previous secondary research on information search and shopping. Research on information search yields a range of results. Previous research on shopping for mortgages and credit cards tends to show that consumers do little shopping around. About 18% of purchase-money mortgage borrowers and 15% of refinancers confessed that they did little or no shopping around, despite the evidence that search pays off in terms of finding a lower interest rate (Lee & Hogarth, 1999a). Using a different data set, the same authors found that 42% of purchase money mortgage borrowers and 35% of refinancers did little or no shopping (Lee & Hogarth, 2001). With respect to credit cards, more than half – 51% -- reported doing little or no shopping and the median number of "information sources considered" was one (Lee & Hogarth, 2000; this paper also

includes a substantial literature review of measures of information search from the early 1970's through the early 1990's).

It is not clear that consumers understand how to comparison shop and what to look for when doing so. In one study, about 36% of consumers correctly identified the relationship between the contract interest rate and the annual percentage rate (APR) on a mortgage loan; nearly two-thirds, 64%, got this wrong. (Lee & Hogarth, 1999b). With this level of confusion, it is unclear that shopping actually benefits some consumers.

Even when consumers do shop around, their approach seems to be rather scatter-shot. Studies of information search patterns for both credit cards and mortgage loans found interdependencies among search activities (number and types of information sources used, number and types loan terms compared; Lee & Hogarth, 2000 and Lee & Hogarth, 2001, respectively). Consumers had widely diverse patterns of information search that could not be captured by an aggregate measure or a few single measures of search.

Hogarth and Hazembuller (2006) combine perceived level of effort, number of information sources (a proxy for quantity of search) and types of information sources used (a proxy for quality of information) to look at both shopping for credit and shopping for investments. They find strong correlations between socioeconomic characteristics and their shopping sophistication measure (i.e. shopping behaviors); further they find shopping sophistication is related to outcomes such as net worth and levels of savings and debt. However, there was not a strong correlation in shopping behaviors between credit and investment products; thus, there does not appear to be a strong transfer of learning between these two financial product categories.

While consumers may not actively seek out product information in the shopping and decision making process, some financial products require disclosures that can serve as decision tools. The task for policy makers and regulators is to provide disclosures that have the potential for being timely, comprehensible, and useful in consumer decision making.

Testing methods for disclosure development

Much of the Board's recent work in consumer testing has utilized qualitative research techniques such as focus groups and interviews. Participants are recruited from databases of

market research facilities and typically include people who have already had experience with a product or who are currently shopping for that product. Recruitment is designed to select participants across a range of demographic characteristics, but is not intended to be statistically representative of a population.

Focus groups usually involve groups of six to ten participants, and interviews are conducted with one or two participants (e.g., a couple who made a financial decision together). Both of these qualitative research methods can be useful for collecting background information on participants' experiences with products, shopping behavior, general knowledge and preferences. Interviews are particularly useful in the process of disclosure development, because they enable data collection on participant success or failure in identifying or using information on the form as well as a window into the thought processes and reactions that contribute to their understanding of the information.

Interviewers follow a script, asking participants to complete different exercises. They may present the participant with a scenario to provide a context for the document that is tested. For example the scenario for a TILA mortgage disclosure could be "Imagine you recently applied for a mortgage, and three days later, you receive this form in the mail." In a "think aloud" exercise, participants are given a document and asked to read through it as they would if they had received it in that scenario, voicing the things they notice and questions they have as they read. This exercise allows researchers to observe what participants notice at first; what order they approach the information and whether they turn to subsequent pages or skip content; what content is clear and what is confusing; and whether the content prompts some sort of reaction – positive or negative.

The interviewer also leads the participant through a set of probes, asking questions that require the participant to locate certain information on the form and in some cases explain their answers. For example, to explore whether participants notice and comprehend information on a mortgage prepayment penalty, the script may include a series of probes like "Imagine that you won the lottery and wanted to pay off this loan after only one year. Do you think ABC Bank would charge you a fee if you decided to pay off the loan? How large do you think this fee might be?"

Financial information can be complex and intimidating to many people. The interviewer typically assures participants that this is not a test of their knowledge, but rather it is a test of

how well the document communicates information. Information on things they do not understand is helpful in revealing where the document is not communicating clearly.

A highly scripted interview can be a component of quantitative research approaches (such as computer-assisted interviews) that provide a very ordered and standardized method of data collection. However, for the process of developing disclosures, deviations from the script are one of the advantages of the qualitative interview methodology. The ability to follow up on particular responses and to change the order of questions at times provides more information on a participant's understanding or reasoning process. It also sets a more conversational tone for the interview, which may help some participants feel more comfortable in interacting with the content in the form and answering questions.

The interviews conducted in support of the Board's disclosure development work have generally been conducted in rounds of seven to ten interviews. While this small sample size is not sufficient to determine statistical significance of findings, typically patterns of response do emerge. When a number of participants fail to notice information or find content confusing, these findings can inform design and wording changes for the next round of interviews. Design and testing proceed iteratively with attempts to improve the form each round until a workable disclosure is developed.

For the quantitative studies, the Board has used consumer surveys implemented through a standard mall intercept methodology in a variety of locations across the country. (For example, the credit card surveys took place in Dallas, TX; Detroit, MI; Los Angeles; CA, Seattle; WA, Springfield, MA; St. Louis, MO; and Tallahassee, FL; over a period of four weeks in September 2008, a total of 1,022 consumers were interviewed.) Participants in the mall intercepts studies were recruited from public areas of the mall based on a series of screening questions and directed to a self-contained research office where they completed the interview. Interviews generally last about 15 minutes. A computer-assisted interview program was used to capture participants' responses; data were aggregated by the contractor. As an alternative to using a mall intercept methodology, it is also possible to conduct these quantitative studies with internet panels.

The quantitative studies are guided by a set of key research questions to assess the impact of the form. Both the privacy and credit card notice surveys were designed as factoral experiments (Levy & Hastak, 2009; Macro International, 2008c). In the case of the privacy notice study, we wanted to know not only if the form contributed to consumers understanding the

information in the form (a knowledge component) but also if consumers knew what to do as a result of reading the form (a behavior component). We were also interested in whether the behaviors were consistent with consumers' preferences. The credit card survey focused on the knowledge component.

Sometimes the quantitative study highlights some additional work that needs to be done to optimize the form; in these cases some additional rounds of qualitative testing or a brief qualitative validation study may be needed.

Comprehensive testing, including qualitative form development and quantitative validation testing, can take several years, depending on the complexity of the product and the necessary disclosures. Interagency coordination and statutory changes over the period can lengthen the process. For example, the privacy notice project began with a public workshop in December 2001, shortly after the law mandating the notices went into effect. In December 2003, the 8 agencies involved issued an Advance Notice of Proposed Rulemaking, seeking public comment on whether and how the agencies should develop an alternative privacy notice. In the summer of 2004, six of the agencies entered into a Memorandum of Understanding and initiated a consumer research project, issuing a report on March 2006, together with a prototype financial privacy notice. The agencies then initiated a quantitative validation study, but in October 2006 Congress explicitly directed the Agencies to develop and propose "a model form" for voluntary use by financial companies. In March 2007, the Agencies issued a proposed a rule using the prototype notice as a model form. The quantitative validation study was conducted in March and April 2008. The analysis and final report on this was submitted in December 2008. The Agencies considered further revisions to the form based on that report and these changes were validated through additional qualitative testing. In December 2009, the Agencies published a final model form rule, and in April 2010 they provided an online form builder for financial institutions (see Kleimann Communications Group, 2006; Macro International, 2008b).

Lessons learned from qualitative testing

Plain language is necessary, but not sufficient.

Small changes in wording can make a significant difference in consumer understanding. Testing of mortgage disclosures in different parts of the country showed that in California, the

term “escrow” was the term used for the mortgage closing, while in other locations, people understood this term to mean taxes and insurance included as a part of the monthly mortgage payment. Thus, in the new mortgage forms under development, the phrase “taxes and insurance” has been used or added next to the word escrow to make the meaning of this term more clear (Macro International, 2009a). For credit cards, the “default rate” is a term used in the past by some issuers to refer to the APR charged on an account when the cardholder makes a late payment or exceeds the credit limit. In testing, some participants interpreted the term default rate to mean the normal rate – like the default setting on a computer (Macro International, 2007 and 2008d). The language “penalty APR” better conveyed the intended concept, so the new credit card rules now require the use of this term in disclosures. Results from the credit card testing also showed that the term “finance charge” was not meaningful to consumers with respect to credit card accounts. Participants understood these costs better when they were described as “fees” and “interest,” and therefore this terminology is now required on credit card periodic statements.

Plain language doesn't always mean fewer words. For example, we tried several ways to explain the “grace period” for credit cards. Some participants thought this term referred the time they had after the due date to make a payment before a late fee would be charged. However, this term actually refers to the time period a consumer has to pay the bill in full each month to avoid paying interest on purchases. After testing, the model disclosures were modified to use the language “how to avoid paying interest on purchases.” In testing of current mortgage disclosures, many consumers could correctly answer that the lender would charge them a penalty for paying off the loan before a certain date, but a number thought the penalty would not apply if they refinanced the loan or sold the house. Thus the revised disclosures proposed by the Board in August 2009 included language explicitly stating that the penalty could apply “if you pay off your loan, refinance, or sell your home” within a particular period.

Some terms, such as the “effective APR” for credit cards, have defied any plain language efforts. The effective APR is shown on periodic statements for credit cards with cash advance, balance transfer, or foreign currency transactions. The effective APR differs from the “interest-only” APR on credit card solicitations and account opening statements for credit cards in that the effective APR includes both interest and certain fees (for example, a cash advance fee of $3). Incorporating the fee with the interest paid on the transaction creates a “fee-inclusive APR” that

is generally higher than the "interest-only" APR disclosed in the solicitation and account opening documents. The effective APR was meant to create a "teachable moment" for consumers, since effective APR could be 50 percent or more. Testing revealed that participants often confused the effective APR with the more familiar "interest only" APR for credit cards or simply ignored it because they could not understand it. Because of the confusion generated by the two APRs, the Board's final rules for credit card disclosures removed the effective APR and now only require the disclosure of the usual, "interest only" APR on account statements in combination with separate information on the amount of fees in the billing cycle.

Design matters.

Elements such as titles, tables, charts, and typographic styles can help consumers move through a document and aid comprehension. In the case of the privacy notice, consumers who saw the table that outlines sharing and sharing choices performed substantially better than those who saw the same content laid out in prose. For the credit card project, separating fees and interest charges helped consumers understand these elements of their bills; however, there was no difference in understanding between consumers who saw transactions grouped by type (purchases, cash advances, balance transfers) and those who saw a chronological listing of transactions regardless of type.

While icons and color could also help with recognition and navigation in documents, the Board's testing to date has not included these design elements. One challenge with relying on color to convey the content of a mandatory disclosure is the potential loss in clarity if there could be situations where disclosures would be delivered by fax or printed in black and white. The disclosures developed by the Board to date have been implemented by regulation as model forms that serve as a safe harbor for creditors who follow them rather than as required forms. Thus, as a practical matter, creditors have latitude in a number of design choices as long as their disclosures comply with the requirements set out in the regulation.

In addition to helping consumers identify information and navigate through a document, design decisions can affect participants' willingness to read a document. For example, when reviewing the Consumer Handbook for Adjustable Rate Mortgages (CHARM) booklet that consumers who express an interest in ARMs currently receive, a number of participants commented that while the content seemed helpful, they would be unlikely to read through it

because of its length. Also, early in the development of revised mortgage disclosures, participants were shown information on mortgage payments in a both a graph and a table. While some responded positively to the graph, most preferred the table. One participant indicated that because he assumed information presented graphically would be difficult to understand, he would not look at it.

Context matters.

Language and design can aid comprehension and usability, but particular elements within a disclosure may have more meaning when they are given a context. For example, the APR can be a useful tool for comparing similar mortgages, because it incorporates many of the up-front costs for getting a loan along with the payments over the life of the loan into a single measure. However, as testing participants described their past mortgage shopping experience, about half indicated that they only contacted one mortgage broker or lender in the process of getting their loan. Even those who did shop with several lenders or brokers usually applied for a loan from only one provider. Thus, in practice, many people may not have the context provided by multiple loan offers to serve as a comparison for the APR on a mortgage offer they receive.

Consumer behavior research has shown that when consumers make a choice considering only one option, they compare it to the reference information they have available (Hsee & Leclerc, 1998). Testing participants have shown little understanding of the APR, and typically evaluate loan offers using information on the form that is more familiar and that they can interpret more easily, such as monthly payment, interest rate and closing costs. The revised mortgage disclosure forms proposed in August 2009 included a graphic showing the APR in relation to APRs on similar loans that went to the borrowers with the best credit. This context can provide consumers with information they can use to evaluate the offer they receive, even if they do not have multiple offers to compare.

Contextual information can impact comprehension of not only particular items on a disclosure but also the disclosure as a whole. When there are multiple items on each disclosure, consumers seek a part-to-whole way of organizing all the information put in front of them. In the case of privacy notices, we oriented consumers to the purpose of the notice by stating questions the notice would address. Creating a title (“What does ABC Bank do with your personal

information?"), using a set of labels (Why? What? How?), and including a set of Frequently Asked Questions provided a context so consumers would understand how to use the information. Complex products and decisions, therefore, require careful thinking about how the parts relate to the whole and about what additional information consumers might require in order to interpret the information provided by the disclosure.

The knowledge that people bring to a form can both help and hinder their understanding of what they read. A consumer with some knowledge of a specific product or of the general workings of financial markets may be better able to comprehend disclosures. However, prior knowledge that is incorrect or irrelevant may also lead participants to misunderstand or misinterpret information the form. For example, in the testing of overdraft notices, some participants were aware of optional overdraft plans offered by banks (Macro International, 2008e and 2009c). Some of these plans allow customers to sign up to link their checking account to a savings account or a line of credit so that payments would be covered if the checking account were overdrawn. Some participants familiar with these optional plans interpreted the disclosure as being about those plans. However, the overdraft notice was not primarily about optional overdraft plans that involved a link to another account, but rather about the bank's standard practices for covering overdrafts without such a plan. Banks may cover some types of payments for customers who overdraw their accounts, and may charge significant fees for doing so, even when the customer has not signed up for a plan.

The final model disclosure for overdrafts begins by explaining the difference between standard overdraft practices (the primary subject of the disclosure) and optional overdraft plans that were available. This introductory text provided a frame for consumers to understand the message of the form and markedly improved comprehension of the content both for participants who had no understanding of overdrafts and those who were familiar with overdraft plans that involved linking to other accounts. However, even with this improvement in understanding of the standard overdraft practices, some participants continued to apply their personal experiences with the optional plans to their reading of the disclosure.

The examples above illustrate how providing context or a "frame" for information on the form can help readers understand particular content and the overall message of the disclosure. In addition, supplementary information and explanations can help consumers understand possible implications of their choices. Our consumer testing for credit cards included a static disclosure

of how long it would take to pay off a balance of $1,000 at 17 percent APR (about 7 years). The Board did not require that credit card companies disclose how long it would take consumers to pay off their actual credit card balances. However, in the Credit CARD Act passed in May, 2009, Congress required credit card companies disclose not only how long it would take to pay off the consumer's balance but also how much consumers would have to pay in order to pay off the balance in 3 years. While this comparison was not part of our consumer testing scheme, it makes sense that consumers have a benchmark or point of comparison to help them in making decisions about monthly payments.

Information on the effects of monthly payment decisions is also an element of the Board's proposed disclosures for "payment option" mortgages. These products have adjustable interest rates and give consumers a choice of several possible monthly payments. The minimum payment option typically covers none of the principal and only some of the interest. As a result, the loan amount can rise if the consumer makes minimum payments because any unpaid interest is added to the principal balance. Eventually, these loan contracts require repayment of both principal and interest. Consumers who routinely make minimum payments can be subject to considerable payment shock in the future when the required payment increases to begin repayment of the loan,

The Board proposed a disclosure for payment option mortgages to be included with the month statement for these loans. The disclosure gives the amount of the minimum required payment, as well as other payment options that may be available, such as a payment that covers only the interest, and the fully-amortizing payment that covers interest as well as principal. The proposed model form also included information on the effects of making the different payments – e.g. that the minimum payment would increase the loan balance and result in significantly higher payments in the future. This proposed model is similar to an illustration issued by the Federal financial institutions supervisory agencies (Office of the Comptroller of the Currency and others, 2006). All testing participants who viewed the disclosure understood that they had multiple payment choices for the loan, and that there were consequences for selecting the different payments. Most understood the implications of making the minimum payment included increasing their loan balance and having to make larger payments in the future.

As stated earlier, consumers' prior knowledge and experience can be a help or a hindrance to their understanding of disclosures. A key question is whether consumers perceive

that the information applies to them. For example, research on consumer use of and attitudes towards credit cards found that 7% of survey respondents reported that they "hardly ever" made more than the minimum payment on their credit card while about 35% "hardly ever" pay their balances in full (Durkin, 2000). Differences in payment behavior are likely to imply different degrees of interest among consumers in information about estimated repayment times. In fact, for many participants in the credit card testing, seeing how long it would take to pay off a credit card balance was an "ah ha!" moment. However, other consumers would say that they would never just make minimum payments.

It's not easy being neutral.

Disclosures have historically been intended to be "just the facts;" they should not steer the consumer in one direction or the other. However, as "choice architecture" – the idea that the way information is presented influences choice – has entered the policy discussion, almost by definition no presentation of information will be "neutral." Some aspects of choice architecture are set by statute, and others may be left to the discretion of the agency with implementing authority. Within the framework set by statute, the goal for presentation of information may still be a disclosure that does not steer consumers. However, sometimes maintaining a neutral tone can be challenging.

For the privacy notice, the choice architecture is structured so that the default option is that consumers' information is shared unless they opt out of sharing. The goal of the notice is to inform consumers about the information-sharing practices of their financial institutions and their choices for limiting this sharing without steering consumers to make a particular decision. In testing, we focused on using factual language, objective presentation, and non-inflammatory words. In each round of testing, we listened for comments, reactions, and perceptions from consumers that indicated areas of potential bias in the notice. The iterative testing process allowed us to incorporate design elements (for example, the Why? What? and How? frame and the table format) and language that led to a final notice that is intended to be clear and neutral.

One challenge we encountered was with firms that did not share information and therefore did not offer an opt-out; that is, there was nothing to opt-out of, since the institution did not share. In early rounds of testing, consumers reacted negatively to seeing the question "Can you limit our sharing?" answered by "No." Consumers who preferred not to have their

information shared judged institutions that did not share less-favorably than institutions that did share but offered an opt out. (In some cases, even if consumers exercise all opt-outs, institutions could still share some information). In subsequent rounds, the "No" was replaced with "We don't share" and more consumers understood that they did not need to opt-out of information sharing with these institutions.

In the testing of disclosures for banks standard overdraft practices, participants were asked questions about their preferences about how the bank handles different types of overdrafts as well as about sample overdraft disclosures. Many indicated that they would like their bank to cover overdrafts for checks, ACH and recurring automatic payments, such as mortgage, car loans, and other regular bills. However, the majority did not want the bank to cover overdrafts on ATM transactions and small point-of-sale debit card purchases (referred to in the final disclosure as "everyday debit card transactions"). For these latter transaction types, they often preferred that the bank decline the transaction instead of covering it and charging them a fee. In addition, when asked whether they would prefer to have the right to opt-out of automatic overdraft coverage for ATM and point of sale debit card transactions, or to opt-in to having overdrafts on these transactions covered by the bank, most indicated they preferred to opt in – i.e., that the default option would be *not* to have these transaction covered.

Reflecting consumer preferences in the disclosure design required not only the development of disclosures but also issuance of complementary rules to standardize bank practices regarding overdrafts. Because banks varied in how they treated overdrafts on different types of transactions, the Board wrote rules requiring that overdraft coverage of ATM and everyday debit transactions, when available, be offered as an opt-in choice for consumers.

Standardization can be beneficial, but consumers may need to be alerted when a standard or familiar piece of information has a different meaning.

In the development of credit card disclosures, results from early testing showed that participants looked for the "Schumer Box" – the required disclosure table with certain key information on credit card solicitations. This recognizable and functional tabular structure was helpful for conveying credit card information, and some of the proposed early disclosures for mortgages and HELOCs use a similar design. While these disclosure similarities are subtle, Susan Woodward has suggested a more well-defined "nutrition label" for financial products like

mutual funds (Woodward, 1998). Ideally, if information could be presented using a standard, and relatively limited, set of concepts and design elements, this would support learning over time, and a "transfer of learning" as consumers encounter the same type of information for different products.

One example of standardization across disclosures for several types of financial products is the information on the amount of fees and interest paid over the calendar year to date that has been included on required and proposed disclosures for checking accounts, credit cards, and home equity lines of credit. If consumers have more than one of these products, they will see similar "Year to Date" boxes that display totals for fees and interest charges. While the idea of utilizing common design and information elements across financial disclosures is both appealing and potentially beneficial, the variety and complexity of financial products presents challenges for standardizing disclosures. For example, consider the case of disclosing payments on closed-end mortgage products. The TILA mortgage disclosure currently in use has a standardized payment table that discloses all the required monthly payments due under the terms of the transaction. For ARMs, future payments are disclosed under the assumption that the underlying index on which the rate will be based remains constant over time at its initial value. Under this disclosure regime, a 30-year ARM that adjusts once a year and starts at the fully-indexed rate (i.e., there is no discount or premium associated with the starting rate) could have a disclosure that shows 360 identical payments. A 30-year fixed rate mortgage could also have a disclosure that shows 360 identical payments. However, in reality, the payment on the ARM loan is likely to change over time, while the payment on the fixed rate loan will not. The disclosures in this case would be very standardized, but they do not reveal important differences in the possible evolution of payments.

The revised payment tables for closed-end mortgages proposed in August 2009 have a similar structure, but are differentiated for several different types of products in an effort to highlight the features that should be most relevant towards consumer decision-making for that product. Proposed payment tables for fixed rate mortgages are simpler, since the principal and interest payment remains the same. For ARMs, the proposed payment table includes information on the maximum rate and payment at the first adjustment and the maximum rate and payment over the term of the loan.

Sometimes a transfer of learning is a good thing – and other times it's not. One challenge to standardization arises when financial products are governed by multiple statutes with multiple requirements. For example, both credit and debit cards may carry Visa or MasterCard logos, but they are governed by different laws (Truth in Lending and Electronic Fund Transfer Acts, respectively) that have different disclosures and different consumer protections (e.g. different liability limits). Consumers who "transfer" learning from one card product to another would be making decisions based on wrong assumptions. In some cases, the Board chose to use distinctly "non-standard" language in order to highlight differences in financial products. For example, in consumer leasing disclosures, the Board uses the terms *capitalized cost reduction* and *rent charge* rather than downpayment and finance charge to differentiate the terms of a vehicle lease from those of a vehicle loan.

Thus, while creating and maintaining consistency across disclosures for different products is beneficial, at times consumers may need to be alerted when a standard or familiar piece of information has a different meaning for another product. Furthermore, as products become more innovative and more complex, and as new parties become part of the regulatory scene (for example, the Federal Communications Commission in the case of mobile banking), designing meaningful disclosures will become increasingly difficult.

What works in print may not work on someone's "screen of choice."

Changing the delivery channel for disclosures means revising the format and being willing to modify content (Kleimann Communications Group, 2009b). In the case of web disclosures, we can take advantage of the 3-dimensional nature of the internet to allow consumers to link to more detailed information. But getting consumers to notice and then click on key links can be as challenging as getting them to interact with the paper disclosure. (Note: thus far we have not ventured into disclosure design for smart phones.)

Conventional wisdom has it that consumers read hard-copy print but scan web pages, so web designers have learned to write for scan-ability. However, there is some evidence that consumers are transferring their web page scanning techniques to print media. Thus, print disclosures need to begin to incorporate some of the elements of web page design – for example, grouping information, using graphics (boxes and bullets), and writing in "chunks" rather than prose.

Sometimes less is more.

While additional wording can help comprehension in some cases, sometimes less is more. Too much information can overwhelm consumers or distract their attention away from key content. It may be better to focus on a handful of elements rather than "full disclosure." For example, when redesigning the Schumer Box for credit cards, the disclosures quickly became focused on rates and fees. Other information that had been in the box – for example, balance calculation methods – was removed to an area below the box.

In the first three rounds of testing of home equity line of credit (HELOC) disclosures, many participants misunderstood the historical payment examples in the current application disclosure (Macro International, 2009b). A large group of participants did not realize that the example showed what payments on a $10,000 loan would have been under actual historical rates. Some thought the example showed a hypothetical future scenario of what might happen to rates and payments and did not see the example as useful because they did not think it provided any information about their loan. A larger group erroneously thought that the example showed their loan and that the payments would be their exact monthly payments. Even when the table was explained to them, participants who had originally misunderstood the example still did not think the information it provided was useful. Some participants who understood the example indicated that what they found valuable was seeing how much the index had varied over time because this gave them information that helped them evaluate the likelihood the interest rate could reach its maximum in the future. Based on these findings, the revised HELOC application disclosure proposed by the Board did not include the historical example. Instead, the form included the range of the value of the index over a 15-year period in a section for “Historical Change in Interest Rate” to provide the most important information from the historical example.

In the testing for overdraft notices, a few participants gave incorrect answers to questions about how the bank would handle overdrafts because they focused on a paragraph that explained limited exceptions when the bank might pay certain types of transactions that overdrew the account even though the bank’s standard practice was to decline such transactions. Because the discussion of the exceptions appeared to distract some participants from the key content of the disclosure, this paragraph was dropped from the final disclosure. Instead, the final disclosure states that “If we do not authorize and pay an overdraft, your transaction will be declined.” In

simplifying the text to state the standard practice and not the exception, the disclosure sacrificed some technical accuracy to focus attention on the more important information in the disclosure.

Sometimes disclosures are not the right tool.

Disclosures can be helpful for simple straight-forward information, such as interest rates and fees. But when products and product features become complex, we may need to seek out tools to provide the type and level of consumer protection deemed desirable. Regulators need to consider when to disclose; when to encourage consumers to seek education, advice, or counsel; and when regulators need to step in and provide substantive regulations.

Given the inherent limitations of disclosure, such as space and design constraints, there is a role for other supplementary strategies for providing information to consumers. One such strategy is consumer information resources produced and distributed by the Board. Information and education can include print materials and web resources to complement disclosure, and can involve strategies such as public awareness campaigns and initiatives to build capacity among educators (Braunstein, 2009). For example, the credit card disclosures refer consumers to the Board's web site to learn more about features of credit cards they may want to consider. Once consumers determine what else may be important to them, they can search a data base of credit card plans to find the card that has the features they seek.

Furthermore, print disclosures inherently are static, while other consumer information has the potential for being dynamic. Online resources can be much more interactive and allow consumers to consider alternatives. Calculators can help consumers get estimates of their costs and payments and "apps" can allow consumers to do real-time comparisons at the point of sale, whether this is in the lender's office or at the kitchen table.

Consumer information can supplement and go beyond what is possible in disclosures. Materials can be layered so that consumers can get the equivalent of a "quick start" (for example, the Board issues a series of 5 Tips on products and has a What You Need to Know series for new rules) or they can use more comprehensive sites that dig deeper into the details of the product features, see examples, and use interactive tools.

Finding from testing provide some insights into consumer responses to these types of materials. In the course of developing revised mortgage disclosures, testing participants were shown several educational disclosures for mortgages. One of these was a "Mortgage Shopping

Checklist" which listed six action steps consumers should take before applying for a mortgage. These included getting a free credit report, deciding how much savings to put towards a home, comparing quotes from at least two lenders or brokers, reviewing two (hypothetical) publications on the Board's website, and seeking out help from a HUD-approved counselor if needed. About half of the participants who reviewed this disclosure felt it would be useful to them. Generally, participants who had more experience with mortgages were more likely to say they would not use the information; however, some of these participants indicated that they thought the disclosure would be useful to first-time borrowers. Several participants voiced surprise when they learned that the Board would provide this type of information to consumers; they did not realize this was one of the Board's roles. Because only half of the participants indicated they would find this document useful, this document was not proposed as a mandatory disclosure. However, the responses from testing participants indicate that educational resources like this can be of value to people who are learning about or shopping for mortgages.

In addition to improving the design of disclosures and educational materials, findings from consumer testing can also inform the decision to implement substantive regulations to protect consumers. Rules may be put into place to complement or facilitate disclosure-based protections as in the case of the opt-in provisions for certain types of overdraft coverage discussed above. In other situations substantive rules may be promulgated instead of disclosures when evidence suggests disclosures are not likely to be effective or provide sufficient protection to consumers. For example, testing for credit cards showed that many participants did not understand the distinction between one-cycle and two-cycle billing practices and the implications of these practices for the interest charged on their account balance. After testing showed ongoing problems with participant understanding of two-cycle billing, the Board issued rules that prohibit credit card issuers from using this billing practice.

In January 2008, the Board proposed to prohibit a lender from paying a mortgage broker more than the amount the consumer had agreed to pay the broker in a written agreement that would have been required early in the application process. The Board tested a potential model broker-consumer agreement that disclosed the fact that the broker may have a conflict of interest in getting the broker the best terms on the loan and limited the compensation the broker could receive on that transaction to a specified amount (Macro International, 2008a). Testing showed

that this agreement was confusing to consumers and could mortgage brokers at a disadvantage relative to loan officers employed directly by lenders.

Based on the findings from testing of the broker agreement, analysis of public comments on the proposal and other information, the Board withdrew the proposal for the agreement, but stated it would continue to explore ways to address concerns associated with mortgage originator compensation. In August 2009, the Board issued a proposal to prohibit payments from lenders to loan originators (including both mortgage brokers and loan officers employed directly by lenders) when the payment is based on the loan's terms and conditions.

Lessons learned from quantitative testing

It's easier to tell what doesn't work than what does work.

We conducted quantitative validation testing for the privacy notice project and for solicitations and billing statements for the credit card project. Results from the privacy notice project show that consumers who saw the "new" forms were better able to make choices consistent with their preferences than those who saw other versions of the privacy notice (Levy & Hastak, 2009). In this case, our survey questions covered not only the consumer's understanding of the terms and sharing practices, but also their personal preferences with respect to information sharing. We asked consumers to compare notices for two institutions with different sharing practices and then asked them which of the two they would choose, based only on the information on the notice. By comparing their choice with their stated preferences for sharing, we could determine if their choice was consistent with their stated preferences. The quantitative testing of the privacy notices also uncovered some additional design elements that required some revisions and further qualitative validation testing (Kleimann Communication Group, 2009a).

"Not significant" may not mean "no difference."

Quantitative testing of the credit card disclosures focused only on the information transfer aspects of the disclosures, not on their usefulness in helping consumers make choices consistent with their preferences (Macro International, 2008c). Because the "Schumer Box" (the disclosures for rates and fees) has been available to consumers for over 20 years, many

consumers could easily identify some of the key elements. For example, nearly four out of five consumers could identify balance transfer fees and rate changes if consumers go over the credit limit (Table 1). However, in a few cases the new format clearly helped consumers identify other key terms. Consumers who saw the "new" version of the credit card solicitation disclosures scored higher overall on a 7-item series of questions than those who saw the "old" version; they were more likely to correctly answer 4 of the 7 individual questions correctly. In a multivariate analysis, holding age, education, race, income, credit card limits, and years of experience with credit cards constant, consumers who saw the "new" form were more likely to know if a fee is charged for going over the credit limit and to know the dollar amount of that fee (see appendix tables).

Table 1. Consumer understanding of credit card terms in solicitation, by format of notice (in percentages)

Item disclosed	**All respondents**	**Saw existing form**	**Saw "new" form**
Overall score			
Mean	4.91	4.65	5.18
Median	5	5	6
Know interest rate of balance transfer	72%	68%	75%*
Know if there is a fee to transfer a balance	82	79	85*
Know amount of fee if a $2,000 transfer were made	63	63	63
Know if a fee is charged when consumer goes over the credit limit†	83	77	89***
Know amount of fee when consumer goes over the credit limit†	56	42	69***
Know if interest rate changes when consumer goes over the credit limit	80	78	81
Know interest rate charged on new purchases when consumer goes over credit limit	56	56	55

* Significant at 0.10 or better
** Significant at 0.05 or better
*** Significant at 0.01 or better
† Difference significant in multivariate analysis

There was more variability in consumers' responses to questions about their billing statement, ranging from about one-fourth recognizing the change in terms notice to nine out of ten recognizing fees during the billing cycle (Table 2). Interestingly, while the Schumer Box is

standardized across credit card issuers, billing statements are not. Thus, some of the variation may be attributable to the non-standard form consumers were reviewing.

Consumers who saw the "new" version of the credit card monthly billing statement were more likely to answer 3 of the questions correctly than those who saw the "old" version of the bill, specifically those questions dealing with fees related to cash advances, the number of fees over the billing cycle, and changes in terms. In a multivariate analysis, holding age, education, race, income, credit card limits, and years of experience with credit cards constant, consumers who saw the "new" form were more likely to know how many fees were charged and to know if terms and rates will change even if the balance is paid (see appendix tables).

Table 2. Consumer understanding of credit card terms in billing statement, by format of notice (in percentages)

Item disclosed	**All respondents**	**Saw existing form**	**Saw "new" form**
Overall score			
Mean	5.58	5.43	5.74
Median	6	6	6
Know minimum payment required for billing period	79%	79%	80%
Know fees and amounts related to cash advances	51	44	58**
Know interest rate charged if cash advance is used	61	57	64
Know if any fees were charged during billing period	89	89	89
Know how many fees were changed during billing period†	49	33	65***
Know if terms and rates will change, even if balance is paid†	28	25	31
Know if there is information on form related to late payments	82	84	80
Know if rates or fees are charged for late payments	74	77	71
Know the amount of fees and rates if payment is late	54	61	48

* Significant at 0.10 or better
** Significant at 0.05 or better
*** Significant at 0.01 or better
† Difference significant in multivariate analysis

Although the quantitative testing did not reveal strong improvements in performance, the qualitative usability testing showed that the newly designed forms held promise. Keeping in mind the admittedly artificial situation in consumer testing (that is, that consumers are

encouraged to focus on the disclosures in a way they might not in their daily lives), the limited significance in the analysis confirms how difficult it can be to design effective disclosures. Furthermore, it confirms the assertion that disclosures can only do so much to improve consumer decision making.

Challenges, caveats, and the need for additional research

If improved disclosures serve their intended purpose for consumer protection, they will result in improved decision-making by consumers in actual transactions. The implicit assumption underlying the testing approach used in the projects described in this paper is that better performance in recognition, comprehension, and usability in a controlled setting will be correlated with improved decision-making in the real world. This correlation is not a given, however, and below we raise some questions about how the findings from testing would apply in practice.

While the focus of this paper is on the efficacy of disclosure, this discussion cannot be divorced from the consideration of other complementary policies. Failure – or limited success – with disclosures may point to the need for other approaches, not just more or better disclosure. For example, other types of policies that may complement or supplement disclosures are regulations affecting the timing of disclosure delivery, or the pairing of disclosure with other information interventions (e.g. earlier disclosures, counseling); regulations on seller behavior or incentives; prohibitions or restrictions on product offerings; and enforcement mechanisms on sellers to promote compliance with regulations. Disclosure is most usefully viewed as one component of a larger strategy that employs other policy tools and education efforts to improve decisions and outcomes for consumers.

Measurement and methodology

One challenge in determining real world impact of decisions is the problem of observing and evaluating decisions. In a controlled environment, a researcher can control the options presented. But in practice, it is easier to obtain information about the choice a consumer made than it is to know the details of all the options they considered. It also can be difficult to

distinguish a “good” decision from a “bad” one, especially if that evaluation depends on consumer-specific preferences or circumstances. A product may be a good fit for one consumer but a bad fit for another. For example, a payment option mortgage may make sense for someone with irregular income and the discipline to make additional principal payments when possible; but it may be hazardous for households who continually focus on the minimum payment.

Furthermore, information may be available on outcomes, but good decisions do not necessarily imply a good outcome or vice versa. Products that were the right choice at the time may turn out to be suboptimal three to five years later, or when a household’s circumstances change. It would be helpful to know more about how consumers structure their decisions and how they go about thinking about the range of products in the market, as well as the connections between information gathering, disclosures, decision making, choice, and outcomes. While we have gathered some information in testing on shopping and choice in the interviews, we need to make better use of what is already known about shopping and choice from existing research. We also need to continue exploring how surveys, interviews, or perhaps more innovative data collection methods could help us better understand information format preferences, financial product search, choice, and outcomes.

A second challenge is measuring the impact of disclosures on decisions. The context provided by a consumer’s prior knowledge – or perceived knowledge – along with the organization and explanation provided by a document can have a great influence on the effectiveness of disclosure. In addition, the context in which information is delivered also has a major effect on the way a consumer responds. For example, some participants in testing of disclosures for private student loans indicated that time pressure was a factor in deciding to take the first loan offered because getting the best deal was a lower priority than getting the tuition paid on time (Rockbridge, 2009a and 2009b). In addition, a consumer may listen to a sales agent that they trust, and not read the disclosures. Or they may be under pressure to complete a transaction and choose to ignore information just to get through (consider how many scroll through online disclosures and click on “I agree” in order to download content or connect to a website). Consumers may understand the disclosure, but may not know of other options or may lack the understanding of how the information applies their own situation – in other words, they may not be making a fully informed choice. These contextual factors can easily alter or perhaps override the effects of improved disclosures.

Marketplace effects

Another challenge is that disclosures may impact not only the behavior of consumers but also the actions of suppliers. These effects can sometimes be unpredictable or counterintuitive. For example, experimental evidence indicates that providing a conflict of interest disclosure may increase the bias in the recommendations of advisors, possibly because the advisor has less guilt about acting out of self-interest when the client has been forewarned (Cain, Loewenstein, & Moore, 2005).

Disclosure policies can alter not only the incentives of suppliers, but also the products they offer and their pricing behavior. For example, rules for calculating the Annual Percentage Rate (APR) have been fairly explicit about what fees must be included in the calculation and what fees are "outside" the APR. In response, the number and types of fees outside the APR in mortgage loans grew, leading the Federal Reserve to propose a more inclusive APR definition for mortgages in its August 2009 proposed rules.

Optimizing versus constrained maximization

It is rare that disclosures start out as a *tabula rasa.* In most situations, those involved in designing disclosures are guided and at times constrained by language in the laws passed by Congress, the need to consider both consumer benefit and creditor burden under revised rules, or by other institutional limits. For example, some have argued that other metrics of overall loan cost would be better tools than the APR for consumers shopping for mortgages, but the APR is the disclosure required by law. Likewise, simple products may only need simple disclosures, but the complexity in the marketplace requires that disclosures cover a range of options and alternatives. While "one size" may not fit all, it may be the only size available under the conditions.

It is also the case that there can be a disconnect between when consumers need information for making decisions and when the disclosure is provided. For example, consumers may be better served by providing information on mortgage rates and terms through real estate agents and at open houses, when they first begin to think about mortgage choices. Instead, they receive this information only when they contact a lender, and given that consumers may only contact one lender, there is not much of a decision to be made.

To date, almost all of the consumer-tested disclosures have been developed in a printed paper format. Given innovations in technology, it is certainly possible for consumers to have more access to interactive information and decision tools. Real-time quotes or "apps" that allow consumers to compare across a range of lenders or service providers raise the issues of how to design disclosures for these settings and the level of effort required by both lenders and consumers to deal with this real-time information.

Conclusion

Disclosure is a longstanding and important component of consumer protection in financial services markets. Findings from both quantitative and qualitative consumer testing conducted to inform the development of disclosures show the potential for improvements in consumer comprehension and usability of disclosures. These findings also reveal some of the limitations of disclosures, including the difficulty of making complex concepts or products understandable to consumers. In addition to the limitations revealed by testing in a controlled environment, the impact of disclosures on consumer decision-making in actual financial transactions is likely to be affected by other factors such as the context in which the disclosure is delivered and the behavior of suppliers. It is in confronting these sorts of limitations of disclosure and other real world complications where it is particularly useful to expand the range of policy tools under discussion to include not only disclosure, but also education and substantive regulation.

It is our hope that the discussion of both the findings and unanswered questions from the Board's consumer testing will inform future testing by the Board and work by other researchers with a view to better understanding the real world outcomes from disclosure changes and related policy interventions. The growing complexity of financial products; the number of choices, providers, products, features; and the complexity of the regulation of these products imply not only that we need more research to inform and evaluate policies, though we do need that. But it also raises important questions about what research and what policies are not just informative, but truly strategic for focusing consumers and policymakers on the dimensions of choice that can meaningfully improve consumer welfare and the function of markets.

References

Braunstein, S.F. (2009). Financial literacy: Testimony before the Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia, Committee on Homeland Security and Governmental Affairs, U.S. Senate, Washington, D.C., April 20. Available at http://www.federalreserve.gov/newsevents/testimony/braunstein20090429a.htm

Cain, D. M., Loewenstein, G., & Moore, D. A.(2005). The dirt on coming clean: Perverse effects of disclosing conflicts of interest. *Journal of Legal Studies* (January). Available at http://www.cbdr.cmu.edu/mpapers/CainLoewensteinMoore2005.pdf

Durkin, T.A. (2000). Credit cards: Use and consumer attitudes, 1970-2000. *Federal Reserve Bulletin* (September), 623-634. Available at http://www.federalreserve.gov/pubs/bulletin/2000/0900lead.pdf

Hsee, C. K. & Leclerc F. (1998). Will products look more attractive when presented separately or together? *Journal of Consumer Research*, 25 (2), 175-186.

Hogarth, J.M. & Hazembuller, A. (2006) Is more always better? Information search for financial products. Paper presented at the Academy of Financial Services, 2006 Annual Conference.

Kleimann Communication Group, Inc. (2006). Evolution of a prototype financial privacy notice: A report on the form development project. Available at http://www.ftc.gov/privacy/privacyinitiatives/ftcfinalreport060228.pdf

Kleimann Communication Group, Inc. (2009a). Financial privacy notice: A report on validation testing results. Available at http://www.ftc.gov/privacy/privacyinitiatives/validation.pdf

Kleimann Communications Group, Inc. (2009b). Web-based financial privacy notice final summary findings report. Available at http://www.ftc.gov/privacy/privacyinitiatives/WebbasedNoticeFinalSummaryReport.pdf

Lee, J. & Hogarth, J. M. (1999a). Returns to information search: Consumer mortgage shopping decisions. *Financial Counseling and Planning Journal*, 10 (1), 49-66.

Lee, J. & Hogarth, J.M. (1999b). The price of money: Consumers' understanding of APRs and contract interest rates. *Journal of Public Policy and Marketing*, 66-76.

Lee, J. & Hogarth, J.M. (2000). Relationships among information search activities when shopping for a credit card. *Journal of Consumer Affairs*, 34 (2), 330-360.

Lee, J. & Hogarth, J.M. (2001) Consumer information search for home mortgages: Who, what, how much and what else? *Financial Services Review*, 277-293.

Levy, A. & Hastak, M. (2009) Consumer comprehension of financial privacy notices: A report on the results of the quantitative testing. Available at http://www.ftc.gov/privacy/privacyinitiatives/Levy-Hastak-Report.pdf

Macro International (2007). Design and testing of effective Truth in Lending disclosures. Available at http://www.federalreserve.gov/dcca/regulationz/20070523/Execsummary.pdf

Macro International (2008a). Consumer testing of mortgage broker disclosures. Available at http://www.federalreserve.gov/newsevents/press/bcreg/20080714regzconstest.pdfMacro International (2008b). Mall intercept study of consumer understanding of financial privacy notices: Methodological report. Available at http://www.ftc.gov/privacy/privacyinitiatives/Macro-Report-on-Privacy-Notice-Study.pdf

Macro International (2008c). Design and testing of effective Truth-in-Lending disclosures: Findings from experimental study. Available at http://www.federalreserve.gov/newsevents/press/bcreg/bcreg20081218a8.pdf

Macro International (2008d). Design and testing of effective Truth-in-Lending disclosures: Findings from qualitative consumer research. Available at http://www.federalreserve.gov/newsevents/press/bcreg/bcreg20081218a7.pdf

Macro International (2008e). Review and testing of overdraft notices. Available at http://www.federalreserve.gov/newsevents/press/bcreg/bcreg20081218a6.pdf

Macro International (2009a). Design and testing of Truth in Lending disclosures for closed-end mortgages. Available at http://www.federalreserve.gov/boarddocs/meetings/2009/20090723/Full%20Macro%20CE%20Report.pdf

Macro International (2009b). Design and testing of Truth in Lending disclosures for home equity lines of credit. Available at http://www.federalreserve.gov/boarddocs/meetings/2009/20090723/Full%20HELOC_Macro%20Report.pdf

Macro International (2009c). Design and testing of overdraft disclosures: Phase two. Available at http://www.federalreserve.gov/newsevents/press/bcreg/bcreg20091112a4.pdf

Office of the Comptroller of the Currency, Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, Office of Thrift Supervision, and National Credit Union Administration (2006). Proposed illustrations of consumer information for nontraditional mortgage products. *Federal Register*, vol. 71, No. 192 (October 4), pp. 58672-58678. Available at http://edocket.access.gpo.gov/2006/pdf/06-8479.pdf

Rockbridge Associates, Inc. (2009a). Consumer research and testing for private student loans: Report of findings. Available at http://www.federalreserve.gov/newsevents/press/bcreg/bcreg20090311a8.pdf

Rockbridge Associates, Inc. (2009b). Consumer research and testing for private student loans: Final report of findings. Available at http://www.federalreserve.gov/newsevents/press/bcreg/bcreg20090730a2.pdfThaler, R. H. & Sunstein, C.R. (2008) *Nudge: Improving decisions about health, wealth, and happiness.* New Haven: Yale University Press.

Woodward, S. E. (1998). Regulatory capture at the U.S. Securities and Exchange Commission. Prepared for the Milken Institute Conference on Capital Markets, March 16, 1998. Available at http://www.sandhillecon.com/pdf/RegulatoryCapture.pdf

Appendix
Regression Results from Quantitative Testing
(p values in parens)

Schumer Box Regression				
		Logit regressions		
	(OLS) Quiz-score	Know transfer balance interest rate to this card	Know if transfer balance to this card has a fee	Know fee amount if a transfer of $2000 were made
New form	.52 (.03)	.24 (.17)	.23 (.24)	.05 (.77)
age 25-34	-.16 (.68)	.26 (.34)	-.13 (.71)	-.23 (.41)
age 35-54	.01 (.99)	.21 (.47)	-.14 (.69)	.07 (.81)
age 55+	.04 (.93)	.55 (.12)	-.50 (.20)	-.22 (.50)
Some college	-.37 (.23)	-.08 (.71)	-.42 (.09)	-.33 (.13)
College graduate	.06 (.82)	.18 (.40)	-.05 (.83)	.06 (.76)
Income under $25,0000	-.23 (.46)	-.18 (.45)	.32 (.23)	-.02 (.92)
Income $25,000-$50,000	.30 (.38)	.10 (.70)	.16 (.58)	.07 (.80)
Income $50,000 and over	.18 (.68)	.01 (.98)	.08 (.81)	-.16 (.59)
Credit card limit $500-$3000	.47 (.18)	.27 (.29)	-.07 (.80)	.48 (.05)
Credit card limit over $3000	.57 (.17)	.07 (.83)	-.02 (.94)	.44 (.14)
5-10 years of credit card experience	.00 (.99)	.08 (.74)	.20 (.48)	.09 (.68)
More than 10 years of credit card experience	-.26 (.46)	-.05 (.86)	.10 (.73)	.10 (.68)
White	-.19 (.45)	.09 (.61)	-.48 (.03)	-.19 (.30)
Constant	4.50 (.00)	-.04 (.91)	1.28 (.00)	.15 (.64)
Prob F/Chi2	.29	.48	.50	.62
Adj R-Squared/Psuedo R2	.01	.04	.06	.04

Schumer Box Logit Regression				
	Know fee charged when the credit limit is exceeded	Know rate charged when the credit limit is exceeded	Know dollar amount charged when the credit limit is exceeded	Know rate charged on new purchases when credit limit is exceeded
New form	.49 (.02)	.12 (.54)	.69 (.00)	-.06 (.71)
age 25-34	-.49 (.19)	-.12 (.71)	-.02 (.96)	-.10 (.71)
age 35-54	-.50 (.20)	-.09 (.78)	-.12 (.67)	.22 (.45)
age 55+	-.07 (.88)	.03 (.93)	.03 (.93)	.05 (.88)
Some college	.06 (.83)	-.23 (.32)	.05 (.83)	-.21 (.33)
College graduate	-.16 (.52)	.04 (.87)	.00 (.99)	.02 (.92)
Income under $25,0000	-.22 (.40)	-.20 (.40)	-.12 (.58)	-.19 (.39)
Income $25,000-$50,000	.03 (.93)	.16 (.58)	.20 (.42)	.20 (.42)
Income $50,000 and over	.47 (.30)	.36 (.34)	.47 (.14)	-.24 (.42)
Credit card limit $500-$3000	-.07 (.83)	.31 (.25)	.27 (.28)	.13 (.59)
Credit card limit over $3000	.36 (.34)	.45 (.18)	.21 (.49)	.28 (.35)
5-10 years of credit card experience	.01 (.98)	-.20 (.45)	.10 (.67)	-.18 (.42)
More than 10 years of credit card experience	-.29 (.32)	-.50 (.08)	-.02 (.93)	-.19 (.44)
White	-.29 (.19)	-.05 (.81)	-.11 (.55)	.21 (.22)
Constant	1.41 (.00)	.83 (.02)	-.39 (.22)	.05 (.88)
Prob F/Chi2	.06	.56	.01	.70
Adj R-Squared/Pseudo R2	.10	.05	.08	.03

Periodic Statement Regression					
		Logit regressions			
	(OLS) Quiz-score	Know minimum payment required for billing period	Know fees and amounts related to cash advances	Know interest rate charged if cash advance is used	Know if any fees were charged during billing statement
New form	.40 (.27)	.03 (.74)	.39 (.06)	.16 (.44)	-.09 (.73)
age 25-34	.34 (.57)	.90 (.02)	.05 (.90)	-.42 (.24)	-.10 (.84)
age 35-54	-.57 (.37)	.91 (.03)	-.27 (.44)	-.48 (.18)	.07 (.89)
age 55+	.62 (.37)	1.49 (.00)	.18 (.65)	-.03 (.95)	.42 (.45)
Some college	.88 (.08)	-.07 (.84)	.31 (.27)	.38 (.19)	1.06 (.04)
College graduate	.44 (.29)	-.19 (.50)	.46 (.05)	.42 (.08)	.40 (.18)
Income under $25,0000	.08 (.88)	-.03 (.92)	-.14 (.63)	.63 (.03)	.06 (.89)
Income $25,000-$50,000	-.33 (.87)	-.58 (.17)	-.26 (.43)	-.05 (.87)	-.22 (.63)
Income $50,000 and over	-.73 (.25)	-.87 (.05)	-.21 (.56)	-.35 (.33)	-.29 (.54)
Credit card limit $500-$3000	51 (.37)	.39 (.27)	.51 (.12)	-.10 (.76)	.37 (.39)
Credit card limit over $3000	.39 (.54)	.89 (.04)	.52 (.15)	.33 (.36)	.20 (.68)
5-10 years of credit card experience	.26 (.62)	-.02 (.97)	.27 (.37)	.26 (.39)	-.16 (.68)
More than 10 years of credit card experience	1.09 (.07)	-.22(.59)	.48 (.15)	.43 (.21)	-.20 (.67)
White	-.66 (.09)	-.20 (.50)	-.12 (.60)	-.11 (.61)	-.52 (.12)
Constant	4.80 (.00)	.14 (.74)	-.82 (.04)	-0.12 (.75)	1.2 (.02)
Prob F/Chi2	.13	0.02	0.18	.04	.63
Adj R-Squared/Pseudo R2	.11	0.15	0.08	.11	.10

Periodic Statement Logit Regression					
	Know how many fees were charged during billing statement	Know if terms and rates will change, even if balance is paid	Know if information exists on form related to late payments	Know if rates or fees are charged for late payments	Know the amount of fees and rates if payment is late
New form	.88 (.00)	.38 (.10)	-.16 (.46)	-.16 (.46)	-.32 (.13)
age 25-34	-.40 (.27)	.41 (.27)	.13 (.73)	.13 (.73)	.34 (.34)
age 35-54	-.40 (.31)	.10 (.80)	-.39 (.30)	-.39 (.30)	-.77 (.04)
age 55+	-.11 (.80)	.22 (.61)	.21 (.61)	.21 (.61)	-.17 (.66)
Some college	.33 (.26)	.05 (.86)	.37 (.24)	.37 (.24)	.33 (.27)
College graduate	.33 (.18)	-.44 (.09)	.02 (.93)	.21 (.93)	.21 (.40)
Income under $25,0000	.27 (.37)	.16 (.62)	-.26 (.42)	-.26 (.42)	-.15 (.61)
Income $25,000-$50,000	.05 (.89)	.60 (.11)	-.13 (.73)	-.13 (.72)	-.41 (.24)
Income $50,000 and over	.48 (.19)	.38 (.35)	-.47 (.22)	-.47 (.22)	-.68 (.06)
Credit card limit $500-$3000	-.44 (.17)	-.36 (.30)	.46 (.18)	.46 (.18)	.48 (.14)
Credit card limit over $3000	-.76 (.04)	-.98 (.01)	.31 (.41)	.31 (.41)	.63 (.09)
5-10 years of credit card experience	-.01 (.97)	.24 (.45)	-.08 (.81)	-.08 (.81)	.33 (.29)
More than 10 years of credit card experience	.58 (.09)	-.05 (.90)	.47 (.20)	.47 (.19)	.97 (.01)
White	-.26 (.27)	.60 (.01)	-.29 (.23)	-.29 (.23)	-.07 (.77)
Constant	-.13 (.75)	-.29 (.48)	.67 (.09)	.67 (.09)	-.19 (.62)
Prob F/Chi2	.00	0.02	.60	.60	.01
Adj R-Squared/Pseudo R2	.15	.13	.06	.06	.12