

Applying Fairness Theories to Financial Decision Making

Suzanne B. Shu, UCLA
Sylvia Morelli, UCLA

Working draft: March 2012

Abstract

This paper explores the role of fairness in consumer financial decisions. Specifically, we investigate how consumers' perceptions of fairness for financial products can influence their willingness to purchase those products. In doing so, we also consider why perceptions of fairness for financial decisions are different from fairness concerns for other types of consumer products. We also explore the concept of consumer revenge for unfair actions by financial institutions, and measure whether consumers are willing to sacrifice their own outcomes in exchange for the ability to punish an unfair company. In a series of studies we find that perceived fairness mediates purchase intentions, and that consumers will indeed incur costs to punish unfair company offers as measured through a modified Ultimatum Game allocation task. We end by outlining some rich areas for additional research specific to financial contexts.

Market regulators are very interested in the principle of "transparency" - the extent to which buying and selling prices, fees, and other transaction information is available to consumers in that market. One of the key concepts in definitions of transparency is the idea of fairness. Within the marketplace for consumer financial products such as mortgages, credit cards, and annuities, perceived fairness (or perceived lack of fairness) may have substantial influence on which products consumers are willing to choose. While there has been significant attention in the literature to the role of fairness in product pricing, in interpersonal interactions, and in organizational relationships, little research has been done to directly test how perceptions of fairness affect financial decisions by consumers. Unlike previous research on two-person games with limited interactions (such as the ultimatum game) or on organizational contractual relations (such as between an employee and a firm), consumer financial decisions are characterized by intertemporal, long-term relationships between a firm and individual in an environment lacking clear salient reference points.

Previous research on fairness can be grouped into three main areas. In economics, fairness in interpersonal contexts has been studied using methods like the ultimatum game (Camerer 2003). In consumer research, the emphasis has been on perceived fairness for product pricing; findings indicate that consumers will avoid buying a product when the price is seen as unfair due to differences in underlying costs (Kahneman, Knetsch, Thaler 1986; Baron, Maxwell 1996), bundled versus separate prices (Sheng, Bao, Pan 2007), and whether costs are variable or fixed (Nunes, Hsee, Weber 2004). Finally, organizational theory has investigated individuals' fairness perceptions for their employer and identified four dimensions of fairness (Colquitt 2001; Bies, Tripp, Neale 1993). While this previous literature provides many insights about fairness in general, none of it explicitly considers perceived fairness between a consumer and a financial

firm, where products can have multiple important non-price dimensions such as interest rates, payout streams, penalty fees, and probabilistic outcomes.

To address this gap in the fairness literature, this paper reviews existing fairness theory with an eye to which aspects of prior work are most applicable to financial decisions, tests how consumer perceptions of fairness and unfairness can affect intentions to both purchase from and punish particular firms, and ends by identifying some unexplored dimensions for future research to address. We begin by describing fairness itself as a concept, using definitions from the existing streams of research in consumer product pricing, interpersonal trust games, and organizational justice. We next describe what sets fairness in financial contexts apart from these prior efforts. We then explore concepts of consumer revenge as punishment for unfair decisions, and even consider some examples of consumer revenge against financial services providers. In two studies, we test whether consumers are willing to punish themselves by accepting worse outcomes in order to take revenge against an unfair firm, and how such revenge behavior against firms differs from similar revenge behavior against unfair individuals. Finally, we consider ideas for additional fairness research in the area of financial decision making.

Definitions of Fairness

What determines whether an interaction between two individuals will be perceived as fair? How does that compare to interactions between a company and an individual, whether the individual is a consumer or an employee? While a fair division of outcomes is often assumed to be the primary driver of fairness judgments, issues of social influence, intentions, and reciprocity all play important roles in fairness judgments. To better understand how fairness is conceived in the literature, we consider how fairness has been defined in previous research.

Starting with the issue of fairness between consumers and firms from which they

purchase, Kahneman, Knetsch, and Thaler (1986) was one of the first investigations into what determines whether a price is considered fair or unfair. They build their definition of fairness around the idea that fairness is determined by community standards – in other words, that fairness is simply what a community evaluates as fair or unfair. Through a series of carefully constructed questions put to a general population sample, they outline three main rules of fairness. The first is that fairness is judged against reference transactions, such as past prices. The second rule is that consumers code outcomes as either gains or losses based on the reference point comparison, with losses much more disliked than gains are liked. The third rule is that any price changes are expected to be linked to certain market occasions, with some occasions providing a more justifiable (and thus more fair) price change than others. Across all of these rules runs the principle of dual entitlement, under which consumers believe that both the firm and the individual are allowed a reasonable amount of gain (i.e., firm profit and consumer utility).

Ideas about what constitutes fairness in product pricing were then picked up more broadly by the consumer behavior literature, with an increasing stream of papers addressing different aspects of pricing fairness. For example, Campbell (1999) considers how firm reputation may influence perceived fairness, Frey and Pommerehne (1993) explore how changes in allocation affect fairness judgments, Sheng, Bao, and Pan (2007) look at perceived fairness for surcharges and bundled or partitioned prices, and Maxwell (1995, 1999) considers the role of social norms in fairness judgments. However, almost none of these efforts have used financial products as the object of study, with the exception of Urbany, Madden, and Dickson (1989) who focus on ATM fees. Several excellent reviews of this literature have provided explicit definitions of fairness. Bolton, Warlop, and Alba (2003) define fairness as “a judgment of whether an

outcome and/or the process to reach an outcome are reasonable, acceptable, or just.” In their review of the fairness literature, Xia, Monroe and Cox (2004) define it as “a consumer’s assessment and associated emotions of whether the difference (or lack of difference) between a seller’s price and the price of a comparative other party is reasonable, acceptable, or justifiable.”

The economics literature has also taken up the topic of fairness, but has tended to focus more on fairness in interpersonal contexts, such as between players in the ultimatum game. Camerer (2003) reviews this literature in extensive depth, including reviewing the general empirical findings from ultimatum games and connecting those games to environments like labor markets and monopoly pricing. He describes theoretical approaches to fairness as hinging upon how outcome utility is divided between players, whether that utility comes from the actual payoffs for both self and others, or from feelings such as sympathy, altruism, kindness, and reciprocity. These theoretical approaches match other utility models of fairness. For example, Fehr and Schmidt (1999) model fairness as “self-centered inequity aversion”, and Rabin (1993) considers how emotion enters the utility function through feelings of kindness and beliefs about intentions.

Within the research on organizational behavior, and especially work on relationships between a firm and its employees, fairness has been considered as a component within the larger topic of organizational justice. This research has been careful to distinguish between fairness based on outcome distributions and fairness based on process. Fairness can then be broken even farther down into the component parts of informational, procedural, interpersonal, and distributive justice (Colquitt 2001). Informational justice asks whether procedures are adequately explained (transparency), and procedural justice asks whether outcomes are fairly determined (consistency). Interpersonal justice asks whether the individual feels that he or she has been

treated with respect, and as such, has much in common with the intentions and beliefs included in Rabin's (1993, 2004) utility models. Finally, distributive justice considers whether results (such as wages) reflect the level of contribution provided by each member. In this sense, distributive justice may be considered the most similar to the relative outcomes described by Fehr and Schmidt (1999) or the dual entitlement described by Kahneman, Knetsch, and Thaler (1986).

Finally, while perceived fairness is not the primary issue, current research on trust and market transparency provide some additional insights about what may affect fairness in financial decisions. The strong relationship between fairness and transparency has been recognized by the SEC (2000), as in when they write:

"The Commission has long believed that transparency - the real time, public dissemination of trade and quote information - plays a fundamental role in the fairness and efficiency of the secondary markets... transparency helps to link dispersed markets and improves the price discovery, fairness, competitiveness and attractiveness of U.S. markets."

Transparency and its relationship to market structure has been investigated theoretically by Mulherin (1993) and empirically by Bloomfield and O'Hara (1999) and by Brown and Goolsbee (2002). Specifically, Bloomfield and O'Hara find that increased disclosure (i.e., more transparency) increases market efficiency, while Brown and Goolsbee (2002) show that increased transparency that comes through internet comparison shopping reduces prices in the insurance market. More recent research by Carlin and colleagues explores the role of trust in financial markets, in which trust can be affected both by regulation (Carlin et al 2009, Carlin and Rob 2009) and by intentional obfuscation by firms who hope to charge higher prices (Carlin 2009, Carlin and Manso 2010). Additional work on trust and reputation has been done within the legal literature in regard to both financial markets (Campbell, Jackson, Madrian, and Tufano

2010) and pharmaceutical markets (Carpenter 2010).

What Makes Fairness in Financial Decisions Different

Why do we need to think about fairness in financial transactions, instead of just general theories of fairness? While fairness judgments in financial transactions share some characteristics with these previous definitions of fairness, they also have some unique elements that require a new definition. In this section we review some of the differences between previous work on fairness and fairness for financial products so that we can better understand what is unique about this particular environment.

As described above, research on fairness has primarily come in two flavors: fairness in interactions between individuals, and fairness in interactions between employers and employees. While we can learn from both of these approaches, neither fully captures the relationship between an individual and the firm that provides his or her financial services. Fairness between individuals is based on a relationship between two equals. In other words, when two individuals interact, there may be some power or skill differences but generally they are both human beings and expect to be treated as roughly equal. Neither party should benefit at the expense of the other unless it has somehow been explicitly earned. Clearly, our relationships with our financial providers are not relationships between equals since banks are much larger and more financially endowed. While closer to the employee/employer relationship, even that comparison is incomplete because employees and employers are involved in a contractual exchange - the employee performs work in exchange for a paycheck. Fairness issues in this environment often depend on how the employee feels he or she is being treated relative to other employees, not only in regard to salary but also for benefits, evaluations, and opportunities for future advancement. Even fairness in pricing, another individual-to-firm relationship, is an incomplete model for

financial product fairness since pricing fairness is based on reference prices, gain/loss framing, and justifiability of cost structures in cases where there is usually only a single interaction between buyer and seller.

Building on the literature cited above, fairness in financial decisions shares certain elements with each domain (see Table). Similar to employee-firm relationships, but unlike most interpersonal relationships, consumers buying financial products find themselves in a situation with a significant power disparity. While employees often have a contractual relationship with their firm, the financial consumer may sometimes have a written contract (e.g., mortgages, credit cards) but sometimes may not. Related to this contractual agreement, the financial consumer can often expect to have a long series of interactions with the financial institution, a situation that is rarely so explicit in single-shot product pricing contexts.

One of the most unique aspects of financial transactions is the lack of salient comparison points. A major influencer of perceived fairness is the idea of a reference point - something to compare your outcome against. For employer relationships, this may be the outcomes that your coworkers are experiencing. For individual interactions, it's the outcome that the other player receives. For pricing, it might be the price that you paid last time or that the competitor is charging. But with financial transactions, reference points are often murky. It's very hard to compare your outcomes with your neighbors, or to compare two different products to each other - in fact, financial disclosures often seem to be written in such a complex way precisely to make those comparisons more difficult. Costs are described in the form of interest rates, market returns, and other complex financial concepts, unlike physical product costs which are more tangible and more easily judged by the consumer. Furthermore, individuals are aware that the details of each transaction are affected both by temporal market behavior (are rates up or down

today?) and by individual characteristics (e.g., credit scores); this level of variation per transaction makes comparison even more impossible. Given that our sense of fairness often comes from a rough understanding of profit structures - more specifically, is the firm making significant amounts of money while we're only scraping by – the lack of clarity about underlying costs and the inability to compare to other transactions make it very difficult to judge profit allocations between firm and consumer.

A second detail of consumer financial transactions that makes them a unique area for exploring issues of perceived fairness is the perceived impact of each transaction. Unfair actions by financial providers are often perceived to have an impact far beyond the individual consumer engaged in a single transaction, due to both the size of the transactions and the size of the overall customer base. As an example, a lending institution who offers “unfair” mortgages to everyone buying a house is having a large impact both due to the size of each mortgage transaction (usually the largest purchase any consumer makes) and the large number of mortgages offered by that firm. Thus, individuals are usually aware that any less than fair behaviors are likely to have a substantial impact on not only their own life but also the lives of a large group of similar other members of their society.

The third important difference between financial transactions and other product purchases that has an important impact on perceived fairness comes from the stronger perceived role of regulation in controlling financial markets. Specifically, the existence of regulatory oversight means that financial products have more opportunity for regulatory “revenge” by consumers who are dissatisfied with unfair behaviors. Camerer (2003) argues that fairness is hard to implement in real markets due to the limited ability of consumers to punish unfair firms (p 115). As a result, perceived unfairness is typically remedied through stricter laws and regulations that serve to

“codify fairness” in the market. A recent example of this is the creation of the Consumer Financial Protection Bureau to monitor banks after the 2008-2009 financial crisis. Campbell, Jackson, Madrian, and Tufano (2010) also consider why regulation is important in consumer financial markets, and argue that full information contracting between firms and consumers is “nearly impossible”, leading to the need for regulatory tools that prohibit unfair actions.

Table: Characteristics of fairness in different interactions

	Product Pricing	Interpersonal Games	Employees and Firms	Financial Products
Open product marketplace	x			x
Power disparity	x		x	x
Contractual exchange			x	x
Future interactions			x	x
Cost structure awareness	x	x		
Profit structure awareness	x	x	x	
Salient comparisons available	x	x	x	
Size of impact on self			x	x
Size of impact on society				x
Role of regulation			x	x
Emotional reactions	x	x	x	x

Measures of Fairness

Generally, measures of fairness can be broken into four main categories. The first is to directly ask about perceived fairness, typically done through a scale of four or more levels. For example, KKT uses a four item scale of completely unfair, somewhat unfair, somewhat fair, or completely fair. Another option is to measure dimensions hypothesized to be highly correlated to judgments of fairness, such as affective reactions. Examples may include asking about specific emotions (happy, upset, contempt), affective attitude toward the individual or organization (likable, reputable), or strength of desire for revenging unfair behavior or rewarding fair

behavior. Recent advances in neuroscience have also contributed to this category of measures by documenting which areas of the brain are activated by fair or unfair behaviors. Finally, the third and perhaps most rigorous measure of fairness is to test actual behavior, whether it be willingness to accept or reject an unfair monetary offer or willingness to incur a cost to reward or punish others.

Emotional Measures Associated with Fairness. Violations of fairness are associated with anger and a desire to retaliate (Singer & Steinbeis 2009, Folkes, Koletsky, and Graham 1987, Storm and Storm 1987). Along with anger, individuals report feeling indignation at seeing unfair treatment of a third party (Camerer chapter pg 49). Unfair prices can also lead to dissatisfaction, which is distinct from anger (Oliver and Swan 1989, Bagozzi, Gopinath, and Nyer 1999).

Fairness in the Brain. Interpersonal fairness tasks, and especially the ultimatum game, are excellent candidates for neuroscience research both because they are easy to run in neuroscience settings and because several areas of the brain are suspected to be involved in fairness judgments. Specifically, both cognitive centers (for calculating outcomes) and reward centers (for evaluating outcomes and fairness) are expected to be active in such tasks. Recent findings in this domain suggest that it is the reward aspects of fairness that predominate. Fair offers lead to a positive hedonic response measured through more happiness and reward activation (Tabibnia et al 2008). Unfair offers that are accepted lead to increased DLPFC, increased right VLPFC (emotion regulation) and negative affect as measured by decreased activity in anterior insula (Tabibnia et al 2008, Sanfey et al 2003). Other researchers have found that disruption of the right DLPFC can increase acceptance of unfair offers (Knoch et al 2006); they suggest that disrupting DLPFC activity makes individuals more self-interested and thus more willing to accept any positive offer. Taken together, these results suggest that individuals

enforce fairness in offers because fairness is rewarding, and the rewards from fairness override individuals' cognitive goals for attaining as much money as possible. The reward center is again involved when it comes to opportunities to punish unfair behavior (De Quervain 2004, Singer et al 2006), supporting the theory that altruistic punishment occurs because individuals receive a neural reward for punishing norm violations. Rilling and Sanfey (2011) provide a review of neuroscience findings related to social decision making, including fairness, which includes findings from pharmacological studies (hormones), lesion studies, TMS studies, and clinical studies (e.g., autism).

Behavioral Measures. One of the best known tests for interpersonal fairness in the economics literature is the ultimatum game. In the ultimatum game, an individual given the role of proposer is allowed to choose how to split a \$10 pie with a second recipient individual. However, the recipient has the ability to refuse the proposed split, in which case neither individual receives any money. While a purely economically motivated recipient should accept any proposed split greater than \$0, concerns about fairness result in many recipients rejecting offers that are significantly below an even split. As an experimental technique, the ultimatum game provides a useful measure of social preferences; the amounts offered and accepted put a price on willingness to pay and punish unfair behavior (Camerer 1993).

Many variations of the ultimatum game have been tested and their findings provide useful insights on drivers of interpersonal fairness. For example, concerns about fairness are increased by framing the money as a "shared resource pool" and by knowing the identity of the other player. On the other hand, recipients are less likely to punish unfair offers when they have no information about the size of the pie, when they receive reference information about even more unfair offers, when they are aware of competition, or when a random generator is making

the offer. Overall, recipients appear willing to reward others who they perceive as being helpful but willing to punish those who they perceive as being hurtful (Rabin 1993). These experimental findings, in a task with real money at stake, support the argument that theories of social influence, intentions, and reciprocity for repeated interactions are all important inputs to fairness judgments.

Consumer Responses to Perceived Unfairness

How do consumers respond when they perceive that they have been treated unfairly? The simplest reaction for consumers is simply to switch to another provider or not purchase at all (Urbany, Madden, and Dickson 1989, Huppertz, Arenson, and Evans 1978). A stronger reaction can cause consumers to look for opportunities to punish the firm in a sense of seeking revenge, although work on consumer revenge is rare within the consumer behavior literature. In economic models, there is a realization that markets can be constrained when the actions within them are perceived as unfair (Roth 2007; Statman 2005), as participants appear to attempt to punish the unfair players. Perceived fairness also affects payouts in settings like the ultimatum game, where individuals will sacrifice their own payouts to punish unfair other players (Camerer 2003); this work is potentially the strongest evidence we have of individual willingness to pay a cost to take revenge on unfair counterparts.

The desire to take revenge may be driven by many factors in financial decisions that are different from revenge feelings in other examples of consumer unfairness (such as product pricing). First, the intertemporal nature of the relationship could increase desire for revenge relative to a one-shot interaction. Second, since regulation and media play a large role in how financial institutions are perceived, consumers may feel that those outlets provide more opportunities for revenge. Third, there are major societal impacts from unfair behavior since the

outcomes often involve large financial transactions across a large base of consumers. As an example, unfair mortgage practices by a bank can easily affect millions of dollars of investment since each mortgage is large and they are sold to a large set of customers. On the other hand, desire to take revenge may be lessened due to the difficulties in distinguishing between outcomes that are driven by the overall marketplace (e.g., the setting of interest rates) versus those that are explicitly controlled by the firm.

Given that a customer wants to take revenge for perceived unfair behavior, what options do they have? In most product purchase domains, the simplest reaction for consumers is simply to switch to another provider or not purchase at all (Urbany, Madden, and Dickson 1989, Huppertz, Arenson, and Evans 1978). However, a stronger emotional reaction can cause consumers to look for opportunities to punish the firm in a sense of seeking revenge. Work on consumer revenge is rare, with Bougie, Pieters, and Zeelenberg (2003) as one of the few publications on the topic in the consumer literature. This may be because taking revenge is so difficult to accomplish in most markets (other than through negative word of mouth), or because consumers believe that their own bad outcome might be an anomaly in what is otherwise a fair process. As noted above, since financial decisions differ from other purchases through the increased role of regulation and the emphasis on process rather than outcomes, the likelihood of seeking revenge may be higher in financial domains. Along these lines, it may be that strong feelings for revenge are enough to motivate legislative change and increased regulation of an industry, such as when the Consumer Financial Protection Bureau was established after a perceived series of unfair lending practices by large financial institutions.

Examples of Consumer Revenge

Examples of consumers reacting to unfair practices typically take the form of negative

word of mouth. For example, when a large airline broke the guitar of a Canadian musician during a flight in 2008, the musician responded to his frustration with the airline's poor response to the incident by releasing a music video called "United Breaks Guitars." Utilizing social media, the video spread quickly and was ultimately watched over ten million times. Some media reports suggested that the video caused a 10% drop in the price of the firm's stock, resulting in an approximately \$180 million dollar loss in value (Ayres 2009). Clearly, in the age of social media, revenge through word of mouth can still have significant impact.

Within the domain of consumer financial products, however, revenge may take other forms besides negative word of mouth or refusal to purchase. Since financial interactions are often repeated, long-run transactions between a firm and an individual, the individual may have additional payment opportunities in which to punish an unfair firm. Perhaps the most extreme example of this has been in the mortgage market after large firm's questionable lending practices came to light in 2008 and 2009. The outrage felt by consumers was only amplified by their perception that the same financial institutions who had operated these unfair processes were being bailed out of their difficulties, while the individual consumers were expected to continue making their payments (Thaler NYT 1/23/10). While these different expectations of appropriate, or fair, behavior represent a "norm asymmetry" (White 2009) between firms and individuals, the consumers themselves became more likely to seek ways to punish the firms they blamed for their poor outcomes.

Calls for revenge against mortgage lenders and financial institutions in the housing crisis went beyond word of mouth response by encouraging borrowers to walk away from their financial obligations, leaving the banks with the negative outcome of a large number of defaulted mortgages. Financial advisor Dylan Ratigan was one of the commentators encouraging this

punishment of the banks; in an article titled “They Keep Stealing -- Why Keep Paying?” he tells homeowners, “I suggest that you call your lender and tell them if they don't lower you mortgage by at least 20%, you are walking away.” His argument for abandoning these financial obligations is that the banks deserve to be punished for establishing the unfair processes that led to these poor outcomes (Ratigan 2010). Many homeowners did indeed walk away, with over 1.3 million foreclosed homes in the US by early 2012. The explanation for walking away from a wealthy homeowner in California represents the feeling of consumer revenge well. When Nathaniel Friedman was told by his bank that they were freezing access to his \$150,000 line of credit that was linked to his mortgages of \$3 million, his response was to stop paying his mortgage even though he could otherwise afford the payment. As described by Alcorn (2012), “Friedman says he decided to stop paying out of a sense of vengeance from the moment he received that letter.”

One final example of consumer revenge for unfair financial practices represents a more unusual form of punishment, with damage done to reputation and historical legacy rather than a monetary bottom line. In February 2012, a UK government panel demanded that former Royal Bank of Scotland executive Fred Goodwin rescind his knighthood. In stripping him of the honor, the Forfeiture Committee wrote that, "The retention of a Knighthood for 'services to banking' could not be sustained," citing the “scale and severity of the impact” of the unfair financial practices that he had overseen (Munoz and Thompson 2012).

Tests of Consumer Revenge

In this paper, we address the question of consumer revenge for unfair financial products through two experimental studies. Setting aside the larger issues of whether revenge is more or less likely in financial domains, our primary goal is to understand when and why consumers feel

the need to punish firms that they believe have acted unfairly. In doing so, we consider two other relevant research questions: are consumers willing to punish themselves (through worse outcomes) in order to take revenge against an unfair firm, and how does revenge behavior against firms differ from similar revenge behavior against unfair individuals?

The ideal methodology for studying questions of individual revenge against unfair behavior is the Ultimatum Game. In the Ultimatum Game, an individual given the role of proposer is allowed to choose how to split a \$10 pie with a second recipient individual. However, the recipient has the ability to refuse the proposed split, in which case neither individual receives any money. While a purely economically motivated recipient should accept any proposed split greater than \$0, concerns about fairness result in many recipients rejecting offers that are significantly below an even split. As an experimental technique, the Ultimatum Game provides a useful measure of social preferences; the amounts offered and accepted put a price on willingness to pay and punish unfair behavior (Camerer 1993).

We take advantage of the overall structure of the Ultimatum Game but modify it to apply to interactions between firms and consumers rather than interactions between individuals. Our resultant Modified Ultimatum Game (MUG) thus gives us a measure for determining how far an individual is willing to go in order to punish an unfair firm. We are also able to directly compare MUG outcomes for firms to UG outcomes for individuals at the level of the individual participant in one of our studies, so that we can estimate whether revenge against a firm is more or less extreme than revenge against an individual. Before proceeding to the results of our Ultimatum Game experiments, we provide a snapshot of different forms of consumer revenge taken in the consumer financial product marketplace.

Our primary study in this paper tests whether consumers are willing to incur a cost to

themselves to punish firms that make unfair offers. We use a modified Ultimatum Game to allow 400 participants to accept or reject allocations from a firm that has previously made either a fair or unfair offer. As with traditional Ultimatum Games, participants who perceive the firm as behaving unfairly should demand a higher allocation for themselves; however, insisting on a higher allocation also implies that the individual is willing to give up a positive outcome just to be able to punish the firm. As expected, participants require significantly higher allocations from unfair firms (e.g., 52 points versus 22 points); these allocations are consistent with their perceived fairness ratings. Such allocation tasks provide us a quantifiable way to estimate how much consumers are willing to sacrifice to punish such firms. In our second study, a subset of individuals who participated in the first study are tested using a traditional Ultimatum Game task in which they make decisions about punishing another individual rather than a firm. Comparing these results to the results of the first study allows us to see whether individuals punish firms more or less than another individual.

Study 1: Modified Ultimatum Game

Methods

Participants in this study were 316 undergraduate students at a Western university. Students completed the study as part of a packet of unrelated studies on consumer behavior and were compensated for their time. First, participants were introduced to the rules for a Modified Ultimatum Game (MUG) in which they interacted with a company (see Appendix). In previous research, the Ultimatum Game (UG) is described as a game in which one player proposes how to split a given sum of money and another player responds to this offer (Güth, Schmittberger, & Schwarze, 1982). If the responder accepts, each player keeps the amount allocated by the

proposer. If the responder rejects the offer, neither player receives any money. In a typical UG, the participants are told that they are the responder and are asked to accept or reject various offers from the proposer, another participant. The offers usually range from very unfair (other participant keeps \$10, you receive \$0), to fair (other participant keeps \$5, you receive \$5), up to “hyperfair” (other participant keeps \$0, you receive \$10).

For our study, participants read an initial description about MUG in which the participant (the responder) chooses whether to “friend” or “unfriend” a company based on how many points the company (the proposer) offers the participant. By “friending” the company, the participant accepts the allocation; however, “unfriending” the company is equivalent to rejecting the offer. Participants then answered two quick questions (i.e. manipulation check) to make sure they understood the concept of MUG (see Appendix).

Participants then read a description about Capital Card (CC), a credit card company, followed by playing a MUG with Capital Card. In the various descriptions of CC, CC varied in how fairly they treated the customer before the MUG. Across conditions, fairness was manipulated in several ways to determine what would cause participants to reward or punish the companies in the subsequent MUG (see Appendix B for example descriptions and response options). For Capital Card, the customer underpaid their credit card bill (either by \$0.05 or \$100), and the company responds by charging a fee and APR (\$0 fee and 0% APR, or \$25 fee and 20% APR). In addition, some descriptions provide a “reference point,” stating the median fee (\$15) and the average APR (12%) that credit card companies charge.

After reading each description, participants could then reward or punish each company in the MUG. Participants were asked to indicate which offers they would accept and reject when the company offered them various point allocations (100 points for company/0 points for

customers up through 0 points for company/100 points for the customer). After completing all 5 MUGs, participants also rated how fair they thought the company's initial behavior was on scale from very unfair (1) to very fair (7).

Results

MUG point allocations. To examine the effect of each independent variable on MUG point allocations, we conducted a two-way between-subjects ANOVA. The two independent variables were (1) amount underpaid by credit card customer (\$0.05 or \$100) and (2) fee and APR charged by credit card company (\$0 fee and 0% APR, or \$25 fee and 20% APR). The main effect of company charges yielded an F ratio of $F(1,312) = 86.22, p < .001$, indicating that the mean number of points participants kept for themselves was significantly higher when companies charged higher fees ($M = 58.39, SD = 31.20$) than when they charged no fees ($M = 29.80, SD = 22.33$). The main effect of customer underpayment was marginally significant ($F(1,312) = 3.80, p = .05$), indicating that the mean number of points participants kept for themselves was significantly higher when customers underpaid by five cents ($M = 47.13, SD = 31.40$) compared to when customers underpaid by \$100 ($M = 40.84, SD = 29.53$). The interaction of customer underpayment and company charges was not significant.

Next, we wanted to examine if manipulating customer underpayment and company charges affected the number of participants who rejected all offers in the MUG. A two-way ANOVA revealed a main effect of company charges ($F(3,312) = 6.07, p < .005$), indicating that a higher proportion of participants rejected all offers when companies charged higher fees ($M = 0.12, SD = 0.33$) than when they charged no fees ($M = 0.01, SD = 0.08$). The main effect of customer underpayment and the interaction of customer underpayment and company charges were not significant.

In addition, two independent samples t-tests were done to compare scenarios that were exactly the same, except for one of the two scenarios had a “reference point” that explicitly stated the average fee charged by credit card companies. However, neither of these t-tests were significant, suggesting that an explicit reference point does not shift MUG point allocations.

MUG perceptions of company fairness. To examine the effects of consumer underpayment and company charges on consumer perceptions of company fairness, we conducted another two-way between-subjects ANOVA. The main effect of company charges was significant ($F(1,312) = 1159.94, p < .001$), indicating that participants perceived companies as less fair when companies charged higher fees ($M = 1.97, SD = 1.19$) than when they charged no fees ($M = 6.41, SD = 1.17$). The main effect of customer underpayment was also significant ($F(1,312) = 10.46, p < .005$), indicating that participants perceived companies as less fair when customers underpaid by five cents ($M = 3.90, SD = 2.58$) compared to when customers underpaid by \$100 ($M = 4.34, SD = 2.34$). The interaction of customer underpayment and company charges was also significant, $F(1,312) = 6.10, p < .05$.

To further understand the interaction effect, we explored the simple effects. When customers underpaid by five cents, participants perceived companies as less fair when companies charged higher fees ($M = 1.71, SD = 0.94$) than when they charged no fees ($M = 6.38, SD = 1.26$), $t(207)=30.52, p < .001$. When customers underpaid by 100 dollars, participants perceived companies as less fair when companies charged higher fees ($M = 2.47, SD = 1.45$) than when they charged no fees ($M = 6.46, SD = 0.97$), $t(105)=16.43, p < .001$. When companies charged higher fees, participants perceived companies as less fair when customers underpaid by five cents ($M = 1.71, SD = 0.94$) compared to when customers underpaid by \$100 ($M = 2.47, SD = 1.45$), $t(166)=4.10, p < .001$. However, when companies charged no fees, there were no

significant differences in participants' perceptions of company fairness.

Finally, two independent samples t-tests were done to compare scenarios that were exactly the same, except for one of the two scenarios had a "reference point" that explicitly stated the average fee charged by credit card companies. However, neither of these t-tests were significant, suggesting that an explicit reference point does not shift perceptions of company fairness.

Study 2: Firm versus Individual Ultimatum Outcomes

In our final study, we analyze traditional ultimatum game outcomes for a subset of the individuals who participated in Study 1. This allows us to directly compare fairness reactions in an interpersonal context against fairness reactions in a firm. *{Data collection and analysis complete; results need to be written up.}*

Next Steps for Research on Fairness in Financial Decisions

Our review of the literature on fairness began by providing some standard definitions of fairness that came from research on pricing for consumer products, interpersonal bargaining relationships, and organizational justice (i.e., employer - employee relationships). We then proceeded to consider how perceived fairness for financial products may have characteristics that are unique relative to this previous fairness research. Building on those characteristics, we described literature that provides insights into how to capture issues of fairness in financial decisions, including work on how to measure fairness, what defines fairness in interpersonal relationships, and how organizational concepts might apply to this domain. However, given some of the unique aspects of financial decisions, the existing research can only take us so far in

understanding how consumers perceive fairness in this domain. Building on the earlier table, there are two major open issues that should motivate additional research on fairness for financial products: distinctions between outcomes and processes, and opportunities for consumer revenge. The studies presented in this paper attempt to begin a discussion of the second topic on consumer revenge by using a modified Ultimatum Game task to test how consumers respond to perceived unfair behavior by firms. However, additional work also needs to be done on the first topic of distinguishing outcomes and processes.

As noted in our review of literature on fairness in product pricing, perceptions of pricing fairness are heavily influenced by outcome measures, such as dual entitlement (KKT).

Consumers appear to be sensitive to how the final price of a product relates to its underlying costs. The (perceived) marketplace cost structure of the product is therefore very important - the consumer subtracts perceived costs (such as materials and labor) from price to estimate a seller profit margin, and then compares that margin against their own consumer surplus at the listed price. In the end, comparison of seller margin to buyer benefits is used to estimate how fair the deal is.

This comparison of seller profits to buyer benefits is less clear for many financial products, for several reasons. The first and most important reason is that the cost structure is very unclear to most individuals. For many financial products, the drivers of seller cost come from market uncertainties (e.g., market interest rates) and risks (e.g., risk of default). Compared to physical material costs, such costs are not easily quantified in the mind of the consumer. The second reason is that the costs vary according to both time and individual. Risk of default is based on the borrower's credit score, and market interest rates are highly time sensitive, so consumers have become trained that the offer they receive today could be very different from an

offer made to another individual tomorrow. As a result, comparisons of one's own outcomes to another consumer's outcomes are nearly impossible. Sensitivity to market changes also means that the consumer cannot easily attribute an "unfair" offer to the firm rather than to the marketplace as a whole. Finally, many financial products involve a long term relationship with many outcomes (for example, a mortgage repayment scheme), which is very different than a one-time purchase of a product. So any perceived costs and benefits have to be integrated over the entire life of the product rather than being fully considered at the time of purchase.

Given that outcome distributions are thus less important for these products, process issues become much more important as a driver for perceived fairness. Process attitudes are driven not just by the description of the process but also by social norms and metaknowledge about such products. Issues of transparency (clear description of the process) and trust are also important. And while the organizational justice literature provides us with some insights on how process matters for fairness judgments, more work needs to be done to understand the which aspects of process information are relevant for financial contexts.

The desire to take revenge may be driven by many factors in financial decisions that are different from revenge feelings in other examples of consumer unfairness (such as product pricing). First, the intertemporal nature of the relationship could increase desire for revenge relative to a one-shot interaction. Second, since regulation and media play a large role in how financial institutions are perceived, consumers may feel that those outlets provide more opportunities for revenge. Third, there are major societal impacts from unfair behavior since the outcomes often involve large financial transactions completed for a large base of consumers. As an example, unfair mortgage practices by a bank can easily affect millions of dollars of investment since each mortgage is large and they are sold to a large set of customers. On the

other hand, desire to take revenge may be lessened due to the difficulties in distinguishing between outcomes that are driven by the overall marketplace (e.g., the setting of interest rates) versus those that are explicitly controlled by the firm. Given that options for consumer revenge can be an important concept for financial products, we were interested in understanding (1) whether consumers feel the need to take revenge for unfair financial products, (2) how revenge against companies compares to revenge in interpersonal contexts, and (3) whether are consumers willing to punish themselves in order to take revenge. The empirical results we have found so far offer early insights on these issues.

Conclusions

Issues of revenge for unfair behavior have traditionally only been studied in interpersonal contexts through use of the Ultimatum Game. However, the question of revenge for consumer financial decisions is an important one, especially since a longer term relationship with the firm, a stronger role of regulation, and larger impacts from unfair practices make consumers more likely to seek revenge. In this paper, we attempt to test for factors that make consumers more or less likely to seek revenge by varying the details of both process and outcomes (including reference points) in an interaction with a financial services firm. We then test for perceived fairness and willingness to punish the firm (at a cost to oneself) using a Modified Ultimatum Game (MUG). We find that the details of the unfair action of the firm do affect perceptions of fairness for the consumers, although the availability of salient reference points do not seem to have an effect. We also find that perceived fairness judgments and punishment behavior in the MUG are significantly related, suggesting that consumers who judge a firm to be unfair are also willing to punish that firm in later interactions.

While many financial firms may believe that consumers are willing to overlook minor fee

changes and other process details in their ongoing relationships, our results suggest that consumers are actually paying close attention to perceived fairness and are willing to take action against it. These findings have important implications for both financial services firms and the public policy experts who regulate them.

References

- Aggarwal, Pankaj and Larrick, Richard P. (2012). When consumers care about being treated fairly: The interaction of relationship norms and fairness norms *Journal of Consumer Psychology*, forthcoming
- Ayres, Chris (2009). "Revenge is best served cold – on YouTube: How a broken guitar became a smash hit". *The Sunday Times*. July 22, 2009.
- Bagozzi, Richard P., Mahesh Gopinath, and Prashanth U. Nyer (1999), The Role of Emotions in Marketing, *Journal of the Academy of Marketing Science*, 27 (2), 184–206.
- Baron, J. & Maxwell, N.P. (1996). Cost of public goods affects willingness to pay for them. *Journal of Behavioral Decision Making*, 9, 173–183.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.
- Bies, R. J., Tripp, T. M., and Neale, M. A. (1993). Procedural fairness and profit seeking: The perceived legitimacy of market exploitation. *Journal of Behavioral Decision Making*, 6, 243–256
- Bloomfield and O'Hara (1999) Market transparency: who wins and who loses? *Review of Financial Studies*. 12 (1): 5-35.
- Bolton, Lisa E., Luk Warlop, and Joseph W. Alba (2003), Consumer Perceptions of Price (Un)Fairness, *Journal of Consumer Research*, 29 (March), 474–91.
- Bougie, Roger, Rik Pieters, and Marcel Zeelenberg (2003), Angry Customers Don't Come Back, They Get Back: The Experience and Implications of Anger and Dissatisfaction in Services, *Journal of the Academy of Marketing Science*, 31 (Fall), 377–93.
- Brown, Jeffrey R and Austan Goolsbee (2002) Does the Internet Make Markets More Competitive? Evidence from the Life Insurance Industry. *Journal of Political Economy*, 110(3), 481.

- Buhrmester, M., Kwang, T., & Gosling, S.D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science*, 6, 3-5.
- Camerer, Colin (2003) *Behavioral Game Theory: Experiments in Strategic Interaction*
- Campbell, Margaret C. (1999), Perceptions of Price Unfairness: Antecedents and Consequences *Journal of Marketing Research*, 36 (May), 187–99.
- Campbell, John Y., Howell E. Jackson, Brigitte C. Madrian, and Peter Tufano. (2011). Consumer Financial Protection. *Journal of Economic Perspectives*, 25(1): 91–114
- Carlin, Bruce I., Florin Dorobantu, and S. Viswanathan. (2009). Public Trust, the Law, and Financial Investment. *Journal of Financial Economics*, 92: 321-341.
- Carlin, Bruce I. and Rafael Rob. (2009). A Welfare Analysis of Regulation in Relationship Banking Markets. *Review of Finance*, 64: 785-821
- Carlin, Bruce I. (2009). Strategic Price Complexity in Retail Financial Markets. *Journal of Financial Economics*, 91: 278-287.
- Bruce I. Carlin, Bruce I. and Gustavo Manso. (2011). Obfuscation, Learning, and the Evolution of Investor Sophistication. *Review of Financial Studies*, 24: 754-785
- Carpenter, Daniel (2010) *Reputation and Power: Organizational Image and Pharmaceutical Regulation at the FDA*
- Charash, Yochi Cohen, and Paul E. Spector (2001) The role of justice in organizations: A meta-analysis. *Organizational Behavior and Human Decision Processes* 86 (2) 278–321.
- Colquitt, Jason A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology*, 86, 386-400
- de Quervain, D. J., U. Fischbacher, et al. (2004). The neural basis of altruistic punishment. *Science* 305(5688): 1254-8.

- Drolet, A., Larrick, R., & Morris, M. W. (1998). Thinking of others: How perspective taking changes negotiators' aspirations and fairness perceptions as a function of negotiator relationships. *Basic and Applied Social Psychology*, 20, 22-31
- Falk, Armin, Urs Fischbacher, and Ernst Fehr, (2008) Testing Theories of Fairness—Intentions matter, *Games and Economic Behavior*, 62(1), 287-303
- Fehr, E.; Schmidt, K.M. (1999). A theory of fairness, competition, and cooperation. *The Quarterly Journal of Economics* 114 (3): 817–868
- Folkes, Valerie, Susan Koletsky, and John L. Graham (1987), A Field Study of Causal Inferences and Consumer Reaction: The View from the Airport, *Journal of Consumer Research*, 13 (March), 534–39.
- Frey, Bruno S. and Werner W. Pommerehne (1993), On the Fairness of Pricing—An Empirical Survey Among the General Population, *Journal of Economic Behavior and Organization*, 20 (3), 295–307.
- Huppertz, John W., Sidney J. Arenson, and Richard H. Evans (1978), An Application of Equity Theory to Buyer–Seller Exchange Situations, *Journal of Marketing Research*, 15 (May), 250–60.
- Kahneman, Daniel, Jack L. Knetsch, and Richard Thaler (1986), Fairness and the Assumptions of Economics, *Journal of Business*, 59 (4), s285–s300.
- Kahneman, Daniel, Jack L. Knetsch, and Richard Thaler (1986), Fairness as a Constraint on Profit Seeking Entitlements in the Market, *The American Economic Review*, 76 (September), 728–41.
- Maxwell, Sarah (1995), What Makes a Price Increase Seem ‘Fair’? *Pricing Strategy & Practice*, 3 (4), 21–27.
- Maxwell, Sarah (1999), The Social Norms of Discrete Consumer Exchange: Classification and Quantification, *American Journal of Economics and Sociology*, 58 (4), 999–1018.

- Nunes, J., Hsee, C. K. & Weber, E. U. (2004). Why are people so prone to steal software? The effect of products' cost structure on payment and purchase intentions. *Journal of Public Policy and Marketing*, 23, 43-53
- Oliver, Richard L. and John E. Swan (1989a), Consumer Perceptions of Interpersonal Equity and Satisfaction in Transactions: A Field Survey Approach, *Journal of Marketing*, 53 (April), 21–35.
- Ratigan, Dylan (2010) They Keep Stealing -- Why Keep Paying? *Huffington Post*, June 24, 2010.
- Roth, A.E. (2007). Repugnance as a constraint on markets. *The Journal of Economic Perspectives*, 21(3), 37-58.
- SEC (2000) SEC Market 2000 Study
- Seligman, D.A. & Schwartz, B. (1997). Domain specificity of fairness judgments in economic transactions” *Journal of Economic Psychology*, 18 (6), 579-604.
- Sheng, S., Bao, Y., & Pan Y. (2007). Partitioning or bundling? Perceived fairness of the surcharge makes a difference. *Psychology and Marketing*, 24 (12), 1025-1041.
- Storm, Christine and Tom Storm (1987), A Taxonomic Study of the Vocabulary of Emotions, *Journal of Personality and Social Psychology*, 53 (October), 805–816.
- Thaler NYT 1/23/10
- Urbany, Joel E., Thomas J. Madden, and Peter R. Dickson (1989), All’s Not Fair in Pricing: An Initial Look at the Dual Entitlement Principle, *Marketing Letters*, 1 (1), 17–25.
- White, B. (2009). Arizona Legal Studies. *papers.ssrn.com*.
- Xia, Lan, Kent B. Monroe and Jennifer L. Cox (2004) The Price Is Unfair! A Conceptual Framework of Price Fairness Perceptions. *Journal of Marketing*, Vol. 68 (October), 1–15.