

The Welfare Economics of “Bounce Protection” Programs

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1 Introduction.

A significant recent trend in retail banking has been the rapid spread of “bounce protection” (BP). Most banks have been somewhat forgiving of good customers who write checks in excess of their checking account balance (i.e. customers who overdraw). By “forgiving,” we mean that they do not bounce the check, but instead opt to pay it while charging the check writer (henceforth payer) a non-sufficient funds (NSF) fee. Some banks now pay overdrafts for more than just their best customers, increasingly spreading this service to a broader collection of bank clients.

BP involves charging a flat fee once the non-sufficient funds check is received at the payer’s bank. As the fee does not depend on the time the account remains in deficit, the amount of the deficit, or most crucially, whether the check is paid or bounced, BP is not treated as a loan by regulators, but merely as a service fee.¹ This results in a very high implicit APR when one thinks of the service as a bridging loan. For example, consider a \$300 check drawn on an account with \$200 which initiates a \$26.10 NSF fee (the 2007 bank average²) and which is repaid five days later. This fee represents a 1900% annual percentage interest rate. This situation has led to (largely political) calls for regulating BP as a loan, to reduce use of this “extremely high-cost product to low- and moderate-income consumers, by eliminating these “usurious” rates thereby preventing exploitation of vulnerable (presumably largely poor and uneducated) people.³ According to its detractors, “bounce protection plans represent the banking industry’s foray into payday lending, promoting an extremely high-cost product to low- and moderate-income consumers. Thus the implicit argument is that BP, for the public good, needs to be treated more like overdraft protection — a regulated

¹Federal Reserve Board of Governors, “Joint Guidance on Overdraft Protection Programs, Docket No. OP-1198.

²Fusaro (2008b) discusses these data, and presents detailed source information.

³This perception is not entirely true. It is the impression that many people, include opponents of bounce protection, have. For example, a letter to the Federal Reserve from 54 activist organizations and 32 individuals, in response to the Docket No. R-1136 request, states that fee-based overdraft programs are aimed at the very same customers that payday lenders are seeking: low and moderate income account holders with little or no savings. According to the data we have, however, income is not a predictor of overdrafting behavior. See the discussion in Section 4 below.

loan, subject to truth in lending and other legal restraints.⁴

Before proceeding let us take a moment to define bounce protection in relation to its alternatives: overdraft protection, and a bounced check. When an overdraft check is presented to the payer's bank several things can happen. First, the bank can transfer money from a savings account to cover the overdraft. Second, they can loan money to the payer from a pre-existing line-of-credit. Third, they can pay the check allowing the account to have a negative balance (with no explicit interest charged). Finally, they can return – bounce – the check unpaid.

The first two options are called overdraft protection and, unlike the latter two, do not generate an NSF fee. The account holder must have applied for overdraft protection prior to the incident. When a saving account is used for overdraft protection the bank transfers funds from the pre-designated account at the bank, and charges a small fee, usually between \$2 and \$5. With line-of-credit based overdraft protection, the bank loans funds from a previously authorized line-of-credit, usually with an interest rate comparable to credit cards, and usually without a fee. Henceforth we will refer to each of these two programs as overdraft protection (OP) because they prevent an overdraft from occurring.

For payers not enrolled in overdraft protection or for those whose savings account or line-of-credit is exhausted, the bank faces a decision – bounce the check, or pay it. In either case, the payer's account is charged a fixed NSF fee. For good payers – high net worth or first time overdrafters – banks have traditionally paid the overdraft. In recent years, however, several banks have started paying overdrafts for more than just their best customers. Many use systematic methods to determine which overdrafts to pay and which to bounce. A policy of paying most overdrafts (as opposed to a rare courtesy for valuable customers) is called Bounce Protection (BP).⁵

Since overdraft protection utilizes a traditional line-of-credit, all of the laws and regulations, and in particular disclosures and prior application, which apply to loans in general also apply here. These rules do not apply to a “loan” made under bounce protection. Critics of BP would like regulators to recognize it as a loan, and thus regulate it as a loan. Banks claim that this would effectively end BP, as then only previously arranged (with fully disclosed fixed terms) coverage of overdrawn checks could be available. In effect, only OP could exist, leaving those ineligible, or just failing, to apply for OP facing an NSF fee and all other bounced check consequences, with no chance that the payment would be made by the bank.

Thus a series of policy questions are sharply posed: Does BP raise social or consumers' welfare? How should we evaluate its welfare consequences? How might regulatory changes improve (or harm) social or consumers' welfare? Under what conditions should it be regulated as a loan, and thus effectively eliminated as an option? In the next section we frame these issues as questions in welfare economics, and present the kinds of analysis that will provide (at least tentative) answers. We find quite generally that BP is welfare enhancing under the individualistic criteria of neoclassical economics. In the third section we explore some of the assumptions needed to reverse this result, providing an economic analytic foundation

⁴Comments to the Federal Reserve Board's Solicitation for Comments on Bounce Protection Products, Docket No. R-1136, January 27, 2003, jointly submitted by The National Consumer Law Center and the Consumer Federation of America.

⁵Most banks simply charge the NSF fee, but some charge an additional fee if the 'loan' is outstanding for more than a few days. In addition, some banks charge different fees for bounced checks and paid overdrafts.

for regulating BP out of existence. In the fourth section we present some empirical evidence that BP is indeed welfare enhancing. The concluding section summarizes the argument for allowing BP policies to be pursued at the discretion of banks (frequently in combination with overdraft protection for those in a position to use that as a preferred alternative) and indicates where further research would be useful.

2 The Welfare Economics Framework.

Welfare economics takes the informed preferences (tastes, desires, evaluations) of individual decision makers as the ultimate source of social welfare. These provide the foundation for choice which, when not coerced or misinformed, reveals relative desirabilities among options facing the decision maker. The most basic (Pareto) criterion of desirability of a policy change is that it be desirable in the eyes/preferences of some of those affected and that it not do any harm to others. This is clearly met in the canonical case of voluntary exchange of a purely private good. In the case of public policy decisions it is extremely hard to verify fulfillment of such a criterion on an individual basis. However, it is often possible to see how a policy change affects classes of economic decision makers — consumers, producers, buyers, sellers, traders, etc. — overall. Such analysis is typically based on agents’ “revealed” preferences/desires, assuming a modicum of rationality, i.e. that agents don’t systematically make choices that contradict their own welfare/preferences.

This approach lies behind the two criteria proposed for, and used in, the economic analysis of market/industry regulation. One criterion looks to the overall welfare impact of the policy, i.e. the impact on “social surplus,” measured as the sum of producers’ and consumers’ surplus. However, many industry changes (e.g. mergers) are pursued by firms precisely for their profitability, which may be substantial and may swamp any measured impact of the change on consumers’ welfare, leading to changes which may harm consumers even while increasing social surplus.⁶ Thus there is a literature arguing that the most appropriate measure of a change proposed by the suppliers in a single industry should be consumers’ surplus only; producers have already revealed net desirability (profitability) by proposing the change.⁷ This difference, however, revolves around issues of distribution and equity. The basic methodology on each side of the debate is the same — agents, through their voluntary choices, reveal what is desirable. And that is the foundation on which we build our analysis of BP.

We begin our analysis by looking at the costs and benefits to a bank (considering) offering BP, including indirect costs and benefits. Then we look at the situation of a bank account holder (henceforth the “payer”) and how the costs and benefits she faces are affected by the introduction of BP. That analysis is more subtle than the analysis of a bank, as it may depend on the circumstances under which BP is triggered, and on the intentions and behavior of the payer that lead to its triggering. As the underlying event triggering BP is

⁶Social surplus clearly ignores most distributional issues. This situation occurs when ‘surplus’ is effectively transferred from the consumers in this market to others who are ‘owners’ or beneficiaries of the firms getting the increased surplus.

⁷See the discussion in R. Pittman (2007), D. W. Carlton (2007), S. Fridolfsson (2007), and J. Farrell & M. L. Katz (2006).

costly to the payer, it is best avoided altogether and hence there is some randomness in its occurrence — to a large extent it results from mistakes or unexpected shocks/costs to the payer’s financial situation. Without BP, a rational payer would rarely intentionally bounce a check.⁸ In order to sharpen the focus on BP, we only consider the situation where the customer has no overdraft protection, either because of being unqualified (fails to meet bank criteria) or because the bank does not offer that option.⁹ Thus the analysis addresses the situation of the most “vulnerable” population at the center of much of the political and journalistic discussion.

2.1 Bank Welfare (Profitability).

An obvious initial point to make, although one still requiring elaboration, is that a bank would not choose to offer BP if it were not (perceived to be) profitable. The relevant comparison here, against a known policy of never covering ‘rubber’ checks, has two perspectives. The first is *ex-post*, after a check has been presented for a payment that exceeds available funds. The second is *ex-ante*, as the bank considers the change in the likelihood of such bounces once the policy is understood by customers as well as the impact of the policy on the demand for its services. The most relevant perspective for the bank, however, is *ex-post*, as the bank cannot initiate a bounce, but can only act once it has received a bad check.

Ex-post, the bank, as the payer’s financial agent, is in the key position for determining the consequences of a rubber check. If it rejects the check for “nonsufficient funds,” it charges the payer a fixed NSF fee for handling the bad check, and the payee does not receive funds, typically triggering another fee for the payer as well as a check systems entry and possibly a negative credit report implying potential future costs to the payer. The payee also suffers costs from additional processing as well as the lack of the revenue that the payment represented, although it may recoup those costs in the fee that it charges the payer. This puts the full costs and risk of the non-payment on the payer and payee, as the bank more than covers its administrative costs in the fee it charges for the bounced check.¹⁰

If the bank chooses to cover the check, despite insufficient funds, it still charges the fixed fee, but in effect extends a very short term loan to the payer which it recovers from her next deposit. Hence the bank avoids the administrative costs of a returned check and eliminates any costs of non-payment to the payee, while foregoing other potential earnings on the money used to cover the check. Thus BP, in effect, insures the payee against the risk of non-payment, transferring it to the bank as the (much smaller) risk that the payer fails to make a sufficient deposit to pay back the implicit loan.¹¹ The fixed fee that the bank charges, together with administrative savings from not refusing to pay the check, clearly exceeds foregone earnings on the advanced money and the expected cost of the risk that the

⁸However, if the immediate need for the good or service is sufficiently great, a rational agent might still choose to acquire, “kiting” the check and accepting the full consequences of non-payment.

⁹This also captures the situation once the limits of available overdraft protection have been exhausted.

¹⁰The direct costs associated with bouncing a check is around \$6. When the bank pays the overdraft direct costs and losses total around \$12 per check. Source: Personal Correspondence, G. Michael Moebs, Moebs \$ervices, Lake Bluff IL, Aug 15 2008.

¹¹The bank can effectively eliminate this risk by requiring that payers have “direct deposit” and by limiting the amount of the allowed ‘bounce’.

payer will not repay that money. The fact that banks are increasingly implementing such a policy is strong evidence that they, indeed, find it profitable.¹²

Of course, for this to be profitable, the bank must have some confidence that the payer will be “good for” the amount extended as well as for the fee charged for the service. This is insured by implementation of the policy being solely at the discretion of the bank; there is no guarantee that every bounced check will be covered.¹³ Indeed, banks actively exercise this discretion, limiting the amounts that they will cover, and the number and frequency of bounces that they protect.¹⁴ A customer who appears to be abusing the service can, and will, be cut off, forced to pay the NSF fee as well as face the consequences of failure to pay the bill for which the check was written. Finally, banks also typically require that the customer have direct deposit of paychecks, guaranteeing that there will be a future cash flow from which both to extract fees and to recover the amount advanced to cover the bad check.

Using this discretion, the bank can insure that every covered check is expected profitable. Thus, conditional on a fixed clientele, and given behavior of that clientele, BP must be *ex-ante* profitable in expected value. The remaining critical question, *ex-ante*, is how BP affects demand for the banks services in general (number and activity of clients) and the demand for BP arising from clients’ response to its existence. The evidence presented in Section 4 indicates a positive impact of BP on the number of clients and the volume of overdraft activity at the bank, raising the bank’s profitability. Whether it influences (increases) the number of bounces by a given client will depend on its impact on the welfare of those clients. The bank can, however, screen and refuse to cover any specific check, thus reducing, if not eliminating, the likelihood of an unprofitable event, rendering the impact of increased bouncing on profit strongly positive in expected value terms.

2.2 Payer Welfare.

The payer who writes, whether intentionally or not, a bad check is the central agent in this analysis. Again the key tool for the analysis of welfare impact is “revealed preference” — choice reveals what an agent considers best for herself. That does not rule out mistakes, but it does structure how we understand agent responses to mistakes, how we interpret her responses to clearly defined costs and benefits. Thus we will assume in this section that the agent is rational, if fallible, and responds, subject to constraints, in an own-welfare enhancing

¹²Of course, the opposition to BP doesn’t claim that it is unprofitable for banks, just bad for (in particular, poor) payees who are affected by it. There are no claims that banks are performing a charitable service here.

¹³Section 226.4(c)(3) of Regulation Z states that overdraft fees are finance charges only when the payment of such items and the imposition of the charge were previously agreed upon in writing. Therefore, the fine print on nearly every bank checking account disclosure statement includes a provision that paying overdrafts is at the discretion of the bank. For example, Bank of America’s disclosure reads: “When you do not have enough available funds to cover a check or other item, we may either pay it and overdraw your account or return it unpaid. In either case we may charge you this fee.”

¹⁴For instance the maximum amount an account can be overdrawn (minimum, negative, account balance) varies across banks. In a 2007 sample of 953 banks, 96 purport to have no bounce protection program, 536 have no discernable limit on the maximum overdraft amount, and the other 323 have limits for their customers which range from \$100 to \$6000. Of these 323 banks 14 have limits of \$100, 72 have limits of \$300, 121 have limits of \$500, 13 have limits of \$1000, 7 have limits above \$1000. The remainder have limits interspersed among these modal points. Sources: See footnote 2.

manner to any situation in which she finds herself.¹⁵

The fact that the payer is the initiator of any rubber check, means that we need to distinguish whether that initiation was accidental or intentional/strategic. If the act is unintentional, then nothing can be directly inferred about preferences, although we can reasonably assume that lower costs are preferred to higher, and that the agent would rather avoid financial penalties. This is the case when the agent is uninformed or mistaken about the level of her bank balances, and writes checks in the full expectation that they will be paid out of existing account funds. If, however, the bad check is intentional, then the act of writing an uncovered check, with all its attendant costs, should be viewed as reflecting an agent's perceived best alternative in the given circumstances.

Again this welfare analysis is best divided into *ex-post* and *ex-ante* analyses. *Ex-post* all decisions are in the hands of the bank, although they carry substantial consequences for the welfare of the consumer. The bank, not knowing whether the bad check was intentional or not, must choose whether to cover the check with its own funds. The payer suffers the consequences, whatever her prior intentions. *Ex-ante*, however, the critical decision, if indeed a decision is being made at all, is in the hands of the payer. An accidental bounce can only be an *ex-post* event; *ex-ante* the payer is only mistaken in her belief that there are sufficient funds in her account to cover the check. Thus the *ex-post* analysis of the payer's welfare is rather simpler than the *ex-ante* analysis.

2.2.1 After-Bounce Analysis

This relates to the situation where the bank client has already derived some benefit from the purchase of a good or service with a check whose value exceeds available funds in her account. As discussed above, when a bad check arrives at a bank it triggers a fixed fee to the account holder for insufficient funds. Traditionally, the bank returns the check to the payee, noting the lack of funds, and the payee then assesses penalties against the payer for failure to pay while pursuing full payment from the payer. This imposes costs on the bank and the payee, discussed above, and even more substantial costs on the payer — NSF fees, payee penalties (returned check fee), a check systems entry, a negative credit report, and often interest charges on the unpaid amount.

With BP in place, the costs to the payer are evidently substantially lower. While the fixed non-sufficient funds fee must still be paid to the bank, the payer receives a (very) short-term loan on which no direct interest is owed, and has her bill paid in full, thus avoiding paying penalties and interest to the payee and a black mark on her credit record. Thus BP is clearly welfare enhancing for the payer, independent of her expectations or whether the bad check was written intentionally or not.

The argument for the *ex-post* benefit of BP becomes even stronger when the payer believes that the check will be bounced. Indeed, a payer who, knowing the costs, chooses to purchase with a 'rubber' check that is believed likely, or even sure, to bounce has revealed that the value (immediate utility) of the acquired item/service is higher than all costs associated with a returned check. The surprise reduction in cost from unexpected BP only increases the net benefit of the act of "kiting" the check.

¹⁵The next section considers the impact of some typical behavioral deviations from this standard.

2.2.2 Before-Bounce Analysis

The *ex-ante* analysis of payer's welfare deals with the decision to write a bad check, and should be carried out in expected value terms. As noted above, it does not deal with accidental bounces. When the bounce is intentional, we must consider the alternatives faced (perceived) by the payer at the time the decision was made to write the "rubber" check in order to analyze the welfare impact of BP. We must also consider whether the payer acts in the expectation of receiving BP or is surprised by its appearance *ex-post*.

We begin from the presumption that the check was written to acquire some necessary/desired good or service, the absence of which would have imposed a serious cost on (utility loss to) the consumer. To avoid doing without the good/service, the consumer might have used credit, or taken a loan in advance to be able to cover the check, if those were available options. Yet such actions were not taken, revealing that they were, in fact, not available to the rational consumer or, if BP were known to exist, were more costly to use than invoking BP.¹⁶ Again revealed preference indicates that 'kiting' the check was perceived to be the best available option given the expected consequences of the act.

Clearly, the expected costs of writing a bad check are lower when there is a greater likelihood that the bank will cover the check, only charging the NSF fee. The rational payer can be expected to have weighed these expected costs against the benefit of current acquisition of the purchased good/service, and only have purchased if those expected costs are outweighed by the current benefits of purchase. Unless she is mistaken in her evaluation of the availability of BP, the decision to bounce a check reveals that it is welfare enhancing. And even if she is mistaken, the existence of BP for her transaction will generate greater welfare for her *ex-post* than would be the case in its absence (i.e. if the check were bounced).

This argument is particularly relevant for agents who are poor and credit constrained. Limited income and variability of necessary expenditures can put such payers in the position of suffering serious utility costs in the absence of purchases they cannot afford (at least before the next paycheck). The availability of BP dramatically lowers the costs of making such purchases with insufficient funds, rendering the use of uncovered checks a viable 'survival' strategy. Without BP, such a strategy could become prohibitively costly as fees pile up and payees begin to refuse these potentially bad checks. On the other hand, for agents who have good credit, yet choose to write bad checks rather than borrow at given interest rates, the revealed preference argument says that we must respect their choice as welfare enhancing. Indeed, their (perceived) expected transactions costs (time, effort, and monetary) in anticipating and providing for the contingency may well exceed the NSF charge they face from the occasional bad check written.

There is one final *ex-ante* impact of the availability of BP that deserves discussion — its influence on payer behavior. There is an obvious direct impact on behavior from lowering the cost of writing bad checks; intentional bouncing of existing clients can be expected to (weakly) increase. This evidence of bank "understanding" could also increase the willingness of the bank's payers to expand their use of its retail services. In addition, the prospect of being able to minimize the costs of mistakes resulting in bad checks, should make the use of

¹⁶Of course, the customer may be mistaken, rendering the analysis the same as in the unintentional case (the consequences are an *ex-post* surprise), or she may be behaving 'irrationally', a situation we consider below.

the bank's retail services more desirable to non-clients, increasing demand for those services and hence the size of the bank's clientele. This indirect impact is apt to increase both (expected) earnings and their volatility, as there is the danger that offering BP may attract riskier clientele. Thus the bank may have to more actively manage this risk through greater vigilance in exercising its discretion over granting BP.¹⁷

2.3 Social Welfare.

Thus we see that, accepting that both banks and payers generally pursue their own best interests, BP enhances both the profits of banks and the welfare of payers — both producers' and consumers' surpluses increase with the introduction of BP. Indeed, the policy would seem to comprise that exceedingly rare phenomenon — a Pareto improvement. Thus there is no need to distinguish between total and consumers' surplus, although we might, for equity reasons, be interested in the distribution of the benefits between banks and payers. Further, we have not considered distributional externalities, impacts on third parties other than payees, that might temper that conclusion. We have also maintained the neoclassical rationality hypothesis is that underlies revealed preference analysis. In the next section we begin an exploration of the impact of possible "behavioral" exceptions to the strict rationality model, and how some characteristic deviations might affect our conclusion.

3 Behavioral Anomalies and Welfare Analysis.

We have argued above that, under the standard economic assumptions — all agents are classically rational (fully informed, calculating optimizers) — BP is clearly welfare enhancing; even the externalities that it generates appear to be such. However, the assertion of its opponents appears to be that the existence of BP induces behavior by payers that is ultimately welfare reducing. Thus the argument for shutting it down as an option must derive from a belief that the decisions/behavior of individuals (and banks — although that is rarely argued) are sufficiently far from the standard of economic rationality that payers need to be "protected from themselves." It is essentially a call for replacing individual judgement and decisions with those of a paternalistic regulator/government, despite the absence of a clear market failure.¹⁸

It is, however, worth considering the kinds of deviations from economic rationality that have been alluded to in the writing opposing BP, and the kinds of behavioral anomalies that have been uncovered and explored in experimental and behavioral economics. The purpose of this section is to evaluate the potential impact of those deviations/anomalies on the arguments presented above for allowing BP.¹⁹ They largely revolve around (i) some

¹⁷Indeed, we expect banks to actively use their discretion to maximize expected net benefits, strengthening the argument in Section 2.1 above. Supporting empirical evidence is presented in Section 4 below.

¹⁸Even in the presence of clear market failure and negative externalities, it is not clear that such paternalism is justified. See C. Winston (2006).

¹⁹Another argument against allowing BP is that banks may introduce BP and subsequently eliminate OP as BP is more profitable, thereby 'exploiting' customers who would otherwise 'insure' themselves against bounced checks by arranging OP. However, many bank customers are ineligible for OP, and even those with OP may exceed its limits, leaving those customers to suffer the costs of a bounced check, with or without

misunderstanding of the situation faced and its full economic consequences, or (ii) some systematic inability to evaluate and calculate as the economic argument says they should.

The first includes a typical lack of knowledge of, or misinformation on, the existing alternatives (e.g. overdraft protection, payday loans, credit arrangements, etc.) and/or overestimation of the costs (explicit or ‘transactions’) of those alternatives. This, it has been argued, can lead agents to “overuse” the option, to be trapped in a “spiral of debt” in which they must resort each month to an ever larger bounce until the bank cuts them off, imposing much greater hardship than if they had not been able to bounce the first time. The second source of welfare failure is built on the kinds of anomalies (from the perspective of classical economic rationality) that have been discovered and explored by psychologists and behavioral economists in both laboratory and actual market settings.²⁰ There are at least four robust behavioral deviations from strict calculating rationality that may play a role here:

1. social motivations and preferences outweighing standard cost-benefit considerations, such as envy, empathy, fairness, rewarding cooperation, revenge;
2. myopia in decision making, often modelled as (quasi-)hyperbolic discounting, and time inconsistency of decisions;
3. lack of self-control, reflected in inconsistency of decisions, often modelled as types/personalities within an agent with differing interests;
4. “coherent arbitrariness” so that consistent preferences/decisions are situation/frame dependent, often reflected in “anchoring effects.”

Finally, there is the hypothesis all but demanding paternalistic controls: that economic rationality is a mirage, and hence economic agents, and in particular individuals, typically do not understand their own best interests. We do not take this argument seriously, but believe that some exploration of the other arguments is necessary. We look to each in turn.

3.1 Informational Issues.

Payers may be typically misinformed about the various costs and benefits they face, and in particular about the transactions costs they face in self-insuring against bounced checks. Arranging for OP may be misperceived as too troublesome (“a hassle”) or costly, and a “payday loan” from a third party to cover checks (or make a cash payment) may also appear too costly, even if the actual BP fee reflects a *de facto* higher interest rate.²¹ The fear appears to be that payers will be “sucked into” enduring higher costs with BP because it is so easy

BP. BP reduces the costs of that occurrence, so the question remains as above: Does the existence of BP induce behavior by payees that is ultimately welfare reducing?

²⁰See, for example, Tversky and Kahneman (1974, 1981), Kahneman and Tversky (1979, 2000), Thaler (1994), Conlisk (1996), Laibson (1997), Rabin (1998), Fehr and Schmidt (1999), O’Donoghue and Rabin (1999), Laibson (2001), Ariely, Lowenstein, and Prelec (2003).

²¹This in part reflects a disagreement over such intangible costs between payers and those who presume to protect their welfare, even against their wishes!

to use; BP is automatic, at the discretion of the bank. Does this, however, reflect a serious welfare problem, in particular one justifying abolishing BP?

We would argue that it does not justify abolition, particularly with rational payers who will learn true costs and benefits through experience; those cases where the misperceptions arise from a systematic behavioral anomaly will be discussed in Section 3.2. In neither case, however, can abolishing BP be *ex-post* welfare improving; doing so, as argued above, substantially raises cost to both payers and payees following a bounce, without noticeable reduction in the costs of the bank, unless the payer has an open OP line-of-credit.²² The only ways the known absence of BP might improve welfare are, *ex-ante*, through (i) reducing the incidence of bounces by making rational agents more careful, or (ii) by stimulating them to adopt more cost effective measures against a bounce such as arranging for OP or taking out a payday loan.

The first fails to address the inevitable mistakes every payer will occasionally make, increasing the welfare loss due to those mistakes. It also begs the question of agent rationality and informedness: an agent rational enough to reduce the incidence of bounces in the absence of BP should be rational enough to have correctly considered the costs and benefits of the alternatives. Thus she should not need this additional constraint, which is *ex-post* welfare damaging, in order to optimally manage her cash flow. The second requires that the payer be quite well informed about relative costs of, and constraints on, the alternatives, raising the question of why she should be better informed in the absence of BP than in its presence. Indeed, where BP has not existed and, where it does not exist, checks still bounce and not everyone has OP. Many without OP are unqualified to receive it from their bank (e.g. no savings account, poor credit), and it is unclear that banks would, or should, alter their criteria to expand that form of protection.²³ Thus many payers, in particular those in whose welfare protection we are most interested (the “poor”), do not have the option of OP, and so can only be hurt by eliminating BP, unless they have the foresight to anticipate bounces and take out (arguably as, or more, costly) payday loans (where those exist).²⁴ Thus, with regard to misinformation, there is little reason to suppose that regulating BP out of existence could be welfare enhancing for payers, while it would clearly reduce the profits of both banks and payees, as noted above.

It is of course true that, if rational agents are better informed of relative costs and benefits, they will make better, welfare-enhancing decisions. Thus there is a general argument for requiring full disclosure of the terms and costs of BP, OP, etc. They are, however, quite distinct products whose terms and conditions need not be similar or regulated in the same

²²A payday loan would only be effective *ex-ante* as a way to avoid the bounced check. Relative costs are discussed in Section 2 above, and some empirical evidence is presented in Section 4 below.

²³Indeed, there is a parallel here with the lowering of criteria for mortgages, which facilitated the subprime housing crisis of 2007-8.

²⁴The cost of a payday loan is regulated at the state level, and thus varies across states. A typical case is a payday loan that costs \$15 per \$100 borrowed for two weeks. Thus payday loans are cheaper than BP when the overdraft amount is small and/or the time outstanding is short. For a \$30 NSF fee, if the overdrawn amount of a check is greater than \$200 and the overdraft is outstanding longer than two weeks then BP is cheaper. See Lehman (2005) for more on the cost comparisons. Payday loans are not available in 16 states (AK, CT, GA, HI, IA, ID, MA, MD, ME, MN, NJ, NY, NC, RI, VT, WY). Payday loans are at least as controversial as BP; similar cases can be made both for and against them (see Stegman, 2007). We will not deal with that issue here, only pointing to them as a possible practical alternative to BP.

way. If there is an argument for eliminating the distinction, we believe that it must rely on agent deviations from rationality, on behavioral anomalies that lead economic agents to systematically make choices undercutting their own well being. We next turn to the question of whether such an argument can be made.

3.2 Rationality Anomalies.

Can the kinds of deviations from strict economic rationality that are discussed in the behavioral economics literature justify eliminating BP as an option for banks and their clients? The answer will clearly depend on the sources of the deviation; not all behavioral anomalies are relevant to the types of decisions considered here. In all cases, however, Bernheim and Rangel (2008) show how we can consistently apply non-paternalistic welfare analysis, i.e. make coherent normative evaluations based on choices made, despite a wide range of behavioral anomalies. We briefly discuss the four types of anomalies listed above.

The issues raised by social motivations and preferences (1) would appear largely unrelated to the *ex-ante* decision to bounce a check, although spending out of envy, to reward cooperation, or to implement revenge might be facilitated by the existence of BP.²⁵ But if satisfying these emotions truly contribute to the agent's well-being, albeit at a financial cost, why should regulators stand in the way? Only if the agent is more fundamentally irrational, and doesn't understand these costs and benefits, might a case be made for eliminating BP. As long as the choices made by the agent are weakly consistent, however, a non-paternalistic welfare analysis, based on an acyclic binary relation derived from those choices, can be coherently undertaken, as is done in Bernheim and Rangel. Such analysis clearly indicates that BP is welfare enhancing, indeed Pareto improving among the 3 types of agents (payers, banks, and payees) considered here.

The second type of deviation (2: myopia; time inconsistency) arises from the agent's urge to spend without thinking through the full consequences of current decisions. When the behavior displays sufficient consistency for analysis, it is typically modeled with (quasi-)hyperbolic discounting or by assuming different "personalities" in different time periods.²⁶ Again, this is a welfare issue relevant only to *ex-ante* decisions, i.e. to non-accidental bounces; *ex-post* all agents are clearly better off with BP. When hyperbolic discounting captures payer behavior, Bernheim and Rangel (2008: Sections 3.6.2 and 7.3) provide criteria, based on this source of the deviation, for deciding whether the choices are welfare improving. While the issue deserves deeper analysis, there is little *a-priori* reason to reduce the opportunity sets of payers and banks by regulating BP out of existence.

Behavioral anomalies that can be consistently analyzed as resulting from a struggle between multiple types ("personalities") within a decision maker (3), whether intertemporally or situationally defined, also admit a coherent welfare analysis as in Bernheim and Rangel (2008: Sections 3.5 and 7.3). This should raise a caution for those who would pick sides in this struggle of "personalities," raising the costs to pursuing the objectives of some of these types, but not of the others. Eliminating BP as an option will do nothing for accidental

²⁵In the absence of BP such spending would not be realized, as the bank would refuse to pay.

²⁶See Laibson (1997), Laibson, et. al., (1998), O'Donoghue and Rabin (1999), and Bhattacharya and Lakdawalla (2004).

bounces,²⁷ and little to foster use of alternative insurance against them (OP or anticipatory payday loans), unless it alters the fundamental configuration of types preferences. Indeed, there seems a bit of a contradiction in assuming that these types of payers are rational enough to learn from the extra costs eliminating BP will impose, i.e. that the regulator can effectively choose sides in the type struggle. If not, accidental bounces will only increase, and the “dysfunctional” self will continue to dominate. Further, the agents in whose welfare we are most concerned do not have an OP option, and are as, if not more, apt to be caught in a cycle of ever deepening debt with payday loans as they would with BP.

Finally, we believe that “anchoring effects” (4: coherent arbitrariness) are not very relevant for this issue.²⁸ They would seem to impart additional arbitrariness to “bounces,” deriving from unobserved ‘anchors’ influencing the decision, which is independent of the cost of bouncing. Thus they are like mistakes, and do not provide a reason for raising those costs to payers and payees that arise when the bank fails to provide BP.

Even if we assume that payers misunderstand their own interests, and must be paternalistically led to correct, own-welfare enhancing behavior, it is not clear that eliminating BP would help. Doing so just increases the costs to the payer of her mistakes (accidental, unintended bounces), which are all the more likely if this assumption is accurate. Eliminating Bounce Protection doesn’t protect payers from these mistakes, it just punishes them. Since most bounced checks appear accidental (Fusaro, 2007), even when BP is known to be in place, removing the BP option would appear to clearly reduce welfare, even in the presence of systematic behavioral deviation from economic rationality.

Thus we see very little in the way of sound economic argument that would justify shutting down the BP option. From a welfare economic perspective, it would require assuming that payers systematically deviate in their behavior from their own interests, whether irrationally or in recognition that it is happening (loss of self control). If they are truly irrational, a paternalistic imposition, “for their own good,” might be justified. Or if raising the costs to loss of self control effectively gives more power to the responsible self, and the welfare gains from avoiding intentional bounces outweigh the additional costs to accidental bounces, then again regulating BP out of existence might be justified on economic grounds. In any case, this does not eliminate accidental (unintended) bounces, but by raising their cost may block a moral “slippery slope” whereby avoiding the worst consequences of those mistakes stimulates further, planned/intended bounces. But this seems to us a very thin reed on which to rest the elimination of an *ex-post* welfare enhancing measure to avoid *ex-ante* moral hazard.

4 Empirical Evidence.

In this section we quantify some of the relationships relevant to the preceding analysis. The issues raised there range from the prevalence of bounce protection to the consumer’s response to BP. The data presented below derive largely from research by Fusaro (2004, 2007, 2008a,b). Our purpose here is to draw together the information contained in these studies as evidence regarding the welfare impact of bounce protection.

²⁷Fusaro (2007) finds that 79% of bounced checks appear to have been unintentional, accidental. See discussion in Section 4.

²⁸See Tversky and Kahneman (1974) and Ariely, et. al., (2003).

First consider the prevalence of the practice of BP. A common banking practice for years has been to examine all overdrafts and pay those written by good customers (first time overdrafters or those maintaining high value relationships with the bank). Bankers did not want to risk offending valuable small business customers, for example, by bouncing an important check on their personal accounts. In the 1990s, some banks began to be more expansive with the definition of a good customer. Eventually, the NSF fee transformed from a penalty for bad behavior, to a desired revenue source for the bank.²⁹

In the 2000s, consulting firms began producing and marketing to banks their systems for administering BP. With this development BP went from being a discretionary, ad-hoc courtesy extended by bank managers to a routine program with well established criteria, rules, and fees. Table 3 of Fusaro (2008b) documents the penetration of these routinized BP programs from 1999 to 2004. In 2000, 2.5% of banks offered BP, and the number rose to 25.6% by the end of 2004. Subsequent to the data collected for that study, later editions of the same data source show that the penetration of BP had risen to 37.5% in 2005 and 40.6% in 2007. The above figures represent formalized programs only. If we include banks which are conducting discretionary programs, then it appears that 90% of banks in 2007 offered some form of BP.

What is the impact of bounce protection on overdraft frequency? The evidence supports a consumer response to BP in the direction of more overdrafting. While statistics of BP quantity are rare, Fusaro (2004) used publicly available bank balance sheet data, combined with semi-proprietary bank fee level data (the same data referenced in Fusaro, 2008b), to determine the degree to which overdrafting activity increases with BP. Table 10 of Fusaro (2004) indicates the result that overdrafting is 50% more frequent at banks that offer BP than at banks that do not offer the service. It is not clear, however, whether this effect comes from the average customer overdrafting more, or from high overdrafters being drawn to such banks.

Fusaro (2004) also attempts to measure the effect of overdrafting, while controlling for payers' knowledge that overdrafts will be paid. Table 5 reports the results of regressing precautionary checking account balances (designed to prevent overdrafts) on an indicator for an individual who has never overdrafted in the past (*ODnever*), among other explanatory variables. It shows that, when past overdrafts have been paid, *ODnever* individuals hold higher levels of precautionary balances.³⁰ This regression, however, inevitably suffers from some circularity. Those who manage money poorly are less likely to have never overdrafted in the past (right hand side variable) and are less likely to maintain sufficient precautionary balances (left hand side variable). This fact complicates the desired interpretation that those who have overdrafted in the past are more likely to understand the nature of the BP program — that overdrafted checks are paid rather than returned (bounced) — and hence to bounce checks more frequently.

To further explore this interpretation, a term for the individuals who have overdrafted only once in the past (*ODonce*) is also included in the regression. It is suggested that these are people who are not naturally prone to overdraft, but rather had a checking account clerical mistake sometime in their past. These people should be no more prone to overdrafts than

²⁹See the discussion in Fusaro (2004, 2007, 2008b).

³⁰It shows that the log of precautionary balances is 0.112 higher for those who have never overdrafted.

ODnever individuals. In fact, the only difference between *ODonce* and *ODnever* individuals should be that the former now certainly know about the BP program. The results confirm that *ODonce* individuals do hold lower precautionary balances than those who have never overdrafted. Even when a control, *ODonce*, is included, *ODnever* individuals still have a significantly higher precautionary balance. If one believes that the primary difference between *ODonce* and *ODnever* is random clerical error (the overdraft is accidental), then this result indicates that people with knowledge of a BP program do less to protect themselves against an overdraft.

We now turn to a more long term view of the customer's reaction to BP. It could be argued – indeed BP critics do argue – that overdrafting is not in the interest of those who do it; rather, BP locks consumers into a cycle of debt which is beyond their control due to incredibly high interest rates implicit in BP (see Fusaro, 2008a). If this were true, then the decision to use BP would not by itself be proof of its optimality (at least in the circumstances in which it is used). If consumers are victimized by BP, then we would expect to see customers choosing banks which do not offer BP. In contrast, if BP is a form of positive customer service, appreciated by customers, then we would expect banks offering BP to attract customers. Fusaro (2004) explores this issue. Table 9 in that paper reports that banks which offer BP have a statistically significant increment in customer draw (twelve million dollars higher annual growth) compared to those not offering the program.

In the welfare analysis above, we make the distinction between *ex-post* analysis (section 2.2.1) and *ex-ante* analysis (section 2.2.2) of overdrafting's benefits. The more useful unit of analysis is somewhat dependant on the way that customers use the service. If overdrafts typically derive from checkbook errors, forgetfulness, inattention, or other exogenous factors, then the *ex-post* analysis is more representative of welfare concerning BP. However, if overdrafting is more closely linked to consumer decision making (i.e. it is intentional borrowing or the result of intentionally low precautionary checking account balances), then the *ex-ante* analysis is more salient. To this end, Fusaro (2007) attempts to quantify the degree to which overdrafts are intentional, and finds that 79% of overdrafts can be explained by the random movement of checking account balances. The other 21% look like intentional attempts to borrow. Thus, the *ex-ante* analysis of intentional overdrafting is most relevant for one-fifth of overdrafts, while the *ex-post* analysis is more relevant for four-fifths of overdrafts.

This research also offers some insight into the perceived cost associated with bounced checks and BP. Section 2.4 of Fusaro (2004) uses the demand function for overdrafts which comes from Fusaro 2007 (and Fusaro 2004 section 1.3) and the results estimated in Fusaro (2004 section 2.3) to calculate the consumer surplus implication of BP. These results are reported in Table 11 of Fusaro (2004). They indicate that the consumer surplus gained by the availability of BP is about \$50 per individual, or \$2 billion nationwide. In addition, Fusaro (2007) calculates the cost of an overdraft that is implied by a consumer's willingness to hold precautionary checking account balances. Table 4 of the paper reports that the median consumer's willingness to hold precautionary balances implies that she perceives an overdraft to cost \$14.21. It should be noted however, that a credit card interest rate of 15% is used in this calculation. If consumers have a higher opportunity cost (e.g. have a higher discount rate, or face a higher interest rate as a borrower), then this \$14 is an underestimate.

Finally, we reiterate one of the most surprising results in the empirical literature concerning overdrafts, one reported in Fusaro (2004) Table 2, Fusaro (2007) Table 2, and Fusaro

(2008a) Table 4. The common perception is that overdrafting, like payday lending, is the province of low income individuals. However, the data show a different picture. These tables show that, in fact, overdrafting occurs equally often in all income groups.

5 Conclusions.

Here we have explored the social desirability of the increasingly common bank practice of bounce protection, drawing on a new empirical literature to support our theoretical analysis. That literature on BP has provided previously lacking information, quantifying bank adoption of BP, uncovering increases in consumer overdrafting and documenting bank growth due to BP, separating “bounce protection loans” from checking account mistakes, imputing consumers’ perceived value of BP, and calculating the implicit interest rates on those “bounce protection loans.” Its findings are fully consistent with the conclusion that BP is a socially desirable, i.e. welfare enhancing, policy innovation by banks.

Few would question the assertion that banks benefit from BP. Further, third parties — check payees — benefit as their risk of receiving a ‘rubber’ check is reduced. Indeed, BP transfers the risk of a bad check to banks, which are more able both to assess and control that risk and to recover losses. But the cost of BP to payers is evidently high. This fact alone, however, does not prove that BP is consumer welfare reducing. Our analysis indeed indicates that BP, as currently structured and regulated, is an economic welfare enhancing policy for payers, as well as for both banks and payees.

Our argument is built on classical revealed preference analysis: in the absence of strong evidence to the contrary, we must assume that individuals make choices in their own best interest and avoid decisions that reduce their welfare. Of course, all (boundedly rational) individuals make occasional mistakes, placing them, and their bank and payee, in an *ex-post* (-bounce) situation. There, where the only decision is the bank’s (to honor the uncovered check or not), it is clear that all benefit, sometimes substantially, from the existence of BP. *Ex-ante* (bouncing), the theoretical argument for BP is less clear cut, but the empirical evidence to date strongly supports its social welfare benefit. Indeed, assuming rational choice by all relevant decision makers (banks and payers), the preferences revealed by systematic behavior indicate the general desirability of BP. Bank customers gain through their ability to better manage and balance cash flows and needs; payees face lower risks and costs of non-payment; and banks enhance both their deposit growth and cash flow, and handle any adverse selection issues in their pool of customers through their exercise of self-interested discretion in applying BP. This remains the case, we have argued, even in the face of many behavioral anomalies — deviations from strict neo-classical economic rationality — as long as we are willing to accept consistent individual behavior as reflecting own true interests. Only a thoroughly paternalistic faith in the fundamental irrationality of bank customers, and in particular of those poor and less educated, can provide a theoretical foundation for eliminating BP as an option for both banks and their customers.

Hence, our results suggest that banning BP could have negative consequences for bank customers, as well as banks and payees. Indeed, eliminating it through excess regulation would hurt the most vulnerable population most, as they have the fewest alternatives to maintain necessary liquidity. When sources of emergency liquidity are restricted, rational

consumers utilize the next best option (i.e. the next most expensive option). For example, when payday lending was restricted in Georgia and North Carolina, consumers shifted to sometimes more expensive BP loans, which in turn led to more Chapter 7 bankruptcies (Morgan and Strain, 2008). If BP were banned or regulated out of existence, the most vulnerable consumers would lose access to what, in many cases, is their last source of emergency liquidity, leading to potentially severe, negative welfare consequences. Further, the claim that banks should compensate, by making less costly overdraft protection (OP) available to more consumers, is a suggestion that banks should lower their lending standards, much as happened in mortgage lending over the past decade. The sub-prime mortgage crisis is indeed a consequence of banks extending loans to (according to traditional criteria) poor credit risks.

This is not to say that some further regulations could not improve the market. The free flow of information being important, any policies which seek to enhance information flow to bank customers is a positive step. Likewise, practices such as eliminating OP in order to steer more customers into NSF situations, manipulating the order in which checks are cleared to maximize the number of NSF checks, or providing potentially deceptive balance or fee information, are troubling. Indeed, clear, transparent rules against identifiable predatory behavior are necessary and important. But none of this, however, undermines the fundamental point that BP is quite generally welfare enhancing as well as profitable for the bank offering the service. We can thus find no serious argument for banning or regulating it out of existence.

We conclude with a final note of caution. While it seems clear that bank customers find the existence of BP desirable, we still do not fully understand why they find it in their interest. BP is being used, despite the nominal cost of a BP loan being higher than the nominal interest on a payday loan, implying that the implicit costs of BP are perceived to be lower than those of payday loans, other borrowing opportunities, or any other alternatives. Future work should investigate the nature of the implicit costs associated with payday lending, and other alternatives, relative to BP. It is also possible that, for some consumers, BP may be the only option. Future empirical research could also quantify and describe that sector of the market which has no other options. This work, however, requires data which do not yet exist; their generation is a necessary first step in further understanding the impact of BP.

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