

How do Borrowers Respond to a Debt Moratorium?

Experimental Evidence from Consumer Loans in India

Abstract

We study how debt moratoria affect loan repayment and banking relationships using a nationwide experiment with consumer loans in India. In the experiment, borrowers receive forbearance offers presented as an initiative of their lender or the result of government regulation. Borrowers who are offered forbearance by their lender are 3.7 percentage points (8.6 percent) less likely to default than borrowers who receive an identical offer presented as a result of government regulation. Borrowers who are offered forbearance by their lender also have causally higher trust in banks and demand for future interactions with the lender in a follow-up experiment.

JEL: G2, G5, O12

Keywords: Debt forbearance, moral hazard, relational contracting

1 Introduction

Large economic crises are often met with extensive debt relief programs, instituted by governments or private lenders. One especially common form of debt relief are debt moratoria, which allow borrowers to temporarily suspend loan payments. Since the Great Depression, such forbearance policies have been used in many settings and at considerable scale. More than 80 countries, for example, enacted debt moratoria in response to the Covid-19 crisis.¹ In the United States alone, financial institutions granted more than \$2 trillion in debt forbearance over this period (Cherry et al., 2021).

Despite their enormous practical importance, however, the effects of forbearance policies on borrower behavior remain poorly understood. On the one hand, repayment deferrals may reduce credit risk and improve borrowers' *ability to repay* during periods of financial distress (see Agarwal et al. 2017; Battaglia, Gulesci and Madestam 2024). Greater repayment flexibility may also induce beneficiaries to repay through reciprocity, relational contracting considerations, or an improvement in the *willingness to repay*.² This may help explain why forbearance is common even in markets where it is not mandated. On the other hand—as with other forms of debt relief—a common concern is that repayment deferrals may generate moral hazard and weaken credit discipline through their effect on borrower expectations,³ particularly when forbearance is offered voluntarily by financial institutions and may affect beliefs about credit enforcement and the availability of future relief.

In this paper, we study the borrower response to moratorium offers using a nationwide field experiment in India and provide evidence on the role of relational contracting in the credit market. We collaborate with a leading consumer finance lender to issue randomized debt moratorium offers in accordance with India's national forbearance policy in place at the time of our experiment. In our main experiment, late-paying consumer loan borrowers are randomly assigned to receive debt moratorium offers that are truthfully presented as either being *granted voluntarily* by a private lender or *offered as the result of government regulation*, or to a control condition in which borrowers are not offered repayment deferrals. We observe the impact of forbearance offers on the real stakes decision to repay one's loan as well as on borrower beliefs, elicited as part of the experiment.

¹ See World Bank (2022) and International Monetary Fund (2022).

² See Brown et al. (2004) and Macchiavello and Morjaria (2023) for a review of empirical work on relational contracts.

³ The potential moral hazard costs of forbearance policies are frequently discussed in the news media. See, for example, “Moral hazard! Moratorium extension may trigger more defaults”, The Economic Times, May 22, 2020, on consumer loan forbearance in India, or “Biden's student loan dilemma: America's two-year experiment in debt deferral has had unintended consequences”, The Daily, New York Times, April 18, 2022, on student loans in the United States.

In a complementary follow-up experiment, we explore how moratorium offers shape the establishment of longer-term banking relationships and ask, whether being offered repayment flexibility causally alters demand for future interactions with the lender. To answer this question, borrowers who had received a moratorium offer were re-contacted several months after the main experiment and randomly assigned to receive an offer for a non-credit financial product or a consumer loan. The treatment conditions in the follow-up experiment vary, whether the offer is explicitly marketed as coming from the lender that granted the moratorium or is presented without identifying the lender until the borrower expresses interest in the product.

Our main finding is that allowing a lender to take credit for offering repayment flexibility improves loan repayment and strengthens banking relationships. Borrowers who receive a moratorium offer presented as an initiative of their lender are 3.7 percentage points (8.6 percent) *less* likely to default on their loan than those who receive an identical offer presented as the result of government regulation. Contrary to widespread concerns about moral hazard in response to debt relief, we find no evidence that either type of moratorium offer adversely affects loan repayment relative to treatment conditions where borrowers are not offered repayment flexibility. Using comprehensive credit bureau data for all borrowers in our sample, we also document that improved loan repayment in response to a moratorium offer may come partly at the cost of reduced repayment on other loans for borrowers with multiple outstanding obligations, but does not damage overall credit discipline. That is, receiving a forbearance offer changes the pecking order of loan repayment as borrowers prioritize payments to the lender that granted repayment flexibility.

Turning to the effects of moratorium offers on banking relationships, we find that borrowers who are offered a moratorium have significantly higher demand for future engagement with the lender who granted them repayment flexibility. In a follow-up experiment conducted several months after the main intervention, borrowers who were offered a moratorium framed as an initiative of their lender have 10 percentage points (27 percent) higher demand for a non-credit product offered by the lender than participants who received an offer with identical terms presented as an initiative of the regulator.⁴ At the same time, borrowers who received a moratorium presented as an initiative of the lender had the same demand for personal loans marketed by the lender as borrowers in the regulator condition.

⁴ It is worth noting that, because the follow-up experiment occurs after the main intervention, it captures the overall effect of the initial moratorium offer on subsequent demand, potentially including downstream effects operating through exogenously induced differences in repayment. This mirrors the structure of any real world forbearance policy.

This suggests that the demand for future interactions with the lender is not driven by immediate credit demand or expectations of lenient enforcement, which could give rise to moral hazard.

Overall, the results suggest that allowing lenders to take credit for forbearance policies can alleviate financial distress without damaging the lender’s reputation for stringent credit enforcement. Moreover, we show that moratorium offers extended voluntarily by a private lender can strengthen banking relationships because they causally increase demand for future interactions with the lender.

Building on these results, we explore the mechanisms through which moratorium offers impact behavior and find evidence consistent with models of relational contracting in which signals of high relationship value strengthen banking relationships and deter opportunistic behavior, such as loan default, in the short run. Our analysis is guided by a simple model of loan repayment and relational contracting, described in Online Appendix A, in which a borrower trades off the short-term benefit of loan default against the long-term benefit of a continued relationship with the lender.

In the first part of our analysis, we attempt to understand *why* moratorium offers improve loan repayment. Intuitively, forbearance offers may improve loan repayment through two main channels: a relaxation of liquidity constraints that increases a borrower’s *ability to repay*, or an increase in the borrower’s *willingness to repay*, which could be the result of pure non-strategic reciprocity or strategic considerations and relational contracting. We first explore whether our results could be explained by a mechanical improvement in borrower’s *ability to repay* and present several pieces of evidence that make it extremely unlikely that this mechanism is at play in our setting. We first document that take-up of moratorium offers in our experiment is the same (about 13 percent), regardless of whether the offer is attributed to the bank or the regulator. We also show that there is no differential selection into takeup of the forbearance offer along observable borrower characteristics, yet repayment improves only when the offer is presented as an initiative of the lender. Because all offers issued in our experiment are identical in their terms, and therefore have the same impact on relaxing financial constraints if taken up, differences in repayment between the two groups cannot be explained by a treatment effect on borrowers’ *ability to pay*. Indeed, when we split the sample by take-up of the moratorium, we find that the effect on repayment is concentrated among borrowers who were offered but did not take up the moratorium, with no effect among those who accepted it. This supports the interpretation that the offer affects behavior by changing borrowers’ *willingness to repay* rather than their *ability to repay*.

We next examine several candidate mechanisms through which moratorium offers could increase

borrowers' *willingness to repay*. If improved repayment following a moratorium offer is not driven by mechanical changes in borrowers' ability to repay, it reflects a conscious decision to prioritize payments to the lender that granted repayment flexibility. Such reciprocal behavior could be entirely altruistic or motivated by strategic considerations. On the one hand, borrowers who are offered repayment flexibility during periods of financial distress may wish to return the favor by prioritizing repayment simply because they view it as the "right thing to do," without expecting any material benefits in return.⁵ We refer to this mechanism as 'pure reciprocity'. On the other hand, borrowers may interpret the offer as an investment on the part of the lender that serves as a signal of high relationship value. That is, borrowers who receive a lender-initiated forbearance offer may interpret it as a signal that this lender is a good counterparty to do business with and, in turn, become more deliberate about maintaining a good repayment record to preserve the option of doing business with the lender in the future. We refer to this as 'strategic reciprocity'.⁶

We present several pieces of evidence to differentiate between these two possible interpretations and argue that a model of strategic reciprocity is most consistent with our results. We first document that—in line with a standard relational contracting model—the treatment response is stronger for borrowers for whom the forbearance offer is of greater immediate value. This includes, for instance, borrowers who suffered recent income losses, borrowers who are especially concerned about maintaining a good credit score, and borrowers who have fewer alternative sources of credit and thus more limited outside options. This is consistent with a standard relational contracting model, which predicts that opportunistic behavior is less likely when the perceived value of the relationship to one party increases or when their perceived outside options decrease (see, for example [Kranton 1996](#)). While this points towards strategic motivations, as one would not expect 'pure reciprocity' to vary with outside options or benefits from the offer, it is not sufficient to rule out non-strategic reciprocity entirely.

To further differentiate between strategic and non-strategic motivations in the repayment decision, we present direct evidence on how borrowers interpret the moratorium offer and its implications for their relationship with the lender. We show that borrowers who received a moratorium offer from the lender are *more likely* to believe that the offer was extended only to the *most* creditworthy borrowers. That is, in the terms of a relational contracting model, they interpret the offer as a signal of relationship

⁵ See, for example, [Bursztyn et al. \(2019\)](#) for evidence that debt repayment decisions can be motivated by purely moral considerations.

⁶ The Oxford English Dictionary defines "reciprocity" as "the practice of exchanging things with others for mutual benefit." We therefore distinguish between pure and strategic reciprocity when such a distinction is warranted.

value. Borrowers who receive a moratorium offer from their lender are also more likely to state that their main rationale for timely loan repayment is the prospect of borrowing from the lender again in the future. Overall, these results are most consistent with the interpretation that moratorium offers from the lender improve loan repayment because borrowers wish to preserve the option value of doing business with the lender in the future, not because they trigger a sense pure, non-strategic reciprocity.

In the second part of our analysis, we examine the implications of forbearance offers for the establishment of longer-term banking relationships. Specifically, we ask whether being offered a repayment deferral causally increases the demand for future engagement with the lender. Non-incentivized survey results suggest that this may indeed be the case. In our main experiment, 41 percent of borrowers who had received a moratorium offer from their lender state that when deciding between identical loan offers, they would prefer to apply for a loan from their current lender.

In order to confirm this hypothesis in a setting with real financial stakes, we present evidence from a complementary product adoption experiment, conducted in the same sample of customers who had participated in our main experiment. In this experiment, borrowers who had received one of the two debt forbearance offers in the main experiment received a marketing call in which they were offered a financial product. The marketing calls took place after the moratorium period had ended and between three months and a year after participants had received the forbearance offer treatment. Borrowers were randomly assigned to receive either a marketing call that invited them to apply for a personal loan whose terms can, in principle, be renegotiated *ex post*, or a marketing call that offered the opportunity to purchase an “enhanced credit report”, a non-credit product that involves a one-shot interaction with the lender and whose terms cannot be modified *ex post*. The treatments vary whether the offers are *branded* and prominently mention the name of the lender, or *non-branded* and mention the name of the lender only once a customer has indicated interest in the product.

We find that borrowers who received a moratorium offer from the lender in the main experiment have 10 percentage points (27 percent) higher demand for the branded non-credit product than borrowers who received debt forbearance offers framed as an initiative of the regulator. In contrast, we find no difference in the response to the follow-up offer when customers are offered a personal loan. Comparing the demand for branded credit and non-credit products allows us to further narrow down mechanisms and rule out a number of confounds that could increase the demand for future interactions with the lender due to moral hazard rather than relational contracting motivations. Specifically, given

that there is no scope for ex post renegotiation in the case of the non-credit product, the results indicate that borrowers wish to deepen their relationship with the lender for reasons other than making the inference that contract enforcement will be more lenient or that it will be easier to renegotiate contracts with this lender. These findings indicate that, in our setting, forbearance offers explicitly extended by one's lender not only improve short-run loan repayment but also causally increase demand for future business with the lender, thereby strengthening banking relationships.

This paper contributes to several strands of the literature. First, our paper speaks to a literature on repayment delinquency and debt relief ([Agarwal et al., 2017, 2022](#); [Kluender et al., 2024](#); [Gyongyosi and Verner, 2024](#); [Indarte and Kanz, 2023](#)). One recent strand of this literature examines the sources of repayment delinquency and finds that addressing temporary liquidity constraints through one-time forbearance or flexible repayment contracts is more effective at reducing delinquency and improving borrower outcomes than previously thought ([Ganong and Noel, 2020](#); [Barboni and Agarwal, 2021](#); [Aydin, 2024](#); [Battaglia, Gulesci and Madestam, 2024](#)).

Second, our paper contributes to a broader literature on relational contracts and the evolution of banking relationships ([Petersen and Rajan, 1994, 2002](#); [Brown et al., 2004](#); [Agarwal et al., 2018](#)). We apply insights from this research to the market for consumer credit and provide the first causal evidence on the role of relational contracts in the evolution of banking relationships. Theory suggests that there is much scope for relational contracting in the credit market, which is characterized by repeated interactions, asymmetric information, and imperfect contract enforcement. Indeed, when forbearance is offered by private lenders, they usually have significant discretion over how repayment flexibility is targeted ([Cherry et al., 2021](#)). Banks can, for instance, offer more generous loan terms in a downturn to signal an investment in the relationship, convey relationship value, and strengthen their ties with specific customers ([Bolton and Freixas, 2000](#); [Bolton et al., 2016](#)). Descriptive evidence from past crises suggests that banks strategically offer more flexible contractual terms to their best customers during economic downturns, in an effort to safeguard their most valuable relationships. We advance this line of research by providing causal evidence on how borrowers interpret moratorium offers, and how such offers affect the demand for future engagement with the lender.

Finally, our paper is related to research on the role of non-monetary motivations in economic decisions. A growing body of research shows that moral considerations, peer effects, and social image concerns play an important role in important economic decisions, including debt repayment ([List,](#)

2006; Guiso et al., 2013; Bursztyn et al., 2017, 2019). We add to this literature by tracing the impact of moratorium offers on borrower beliefs and exploring the role of strategic versus non-strategic motivations in the borrower response. We show that moratorium offers issued voluntarily by one's lender improve loan repayment and increase demand for future interactions with the lender, and explore to what extent such reciprocal behavior towards the lender is explained by strategic versus non-strategic motivations on the part of the borrower.

2 Background and Motivating Evidence

2.1 Debt Forbearance for Consumer Loans in India

The experiment we describe in this paper is set in India, one of the world's largest markets for consumer finance, and takes advantage of a unique policy setting created by a series of debt relief measures enacted in response to the Covid-19 pandemic.

To mitigate the economic effects of India's first lockdown, declared in March 2020, the *Reserve Bank of India*, announced an emergency package that included monetary and financial policy measures aimed at averting widespread financial distress. The package included a debt moratorium policy under which bank and non-bank lenders were instructed to offer payment deferrals on individual and small business loans from March 1, 2020 through May 31, 2020. Lenders were also required to suspend credit reporting for all loans. This first phase of the moratorium was eventually extended for another three months until August 31, 2020, and covered 40 percent of all outstanding loans in India.

Similar to other forbearance programs, borrowers were given the *option* to defer loan payments and had to actively opt into the program. Hence, for borrowers who took up the program, forbearance functioned much like a line of credit that they could draw on in the event of financial distress (see Cherry et al., 2021). This design significantly improved the targeting of benefits toward financially distressed borrowers compared with other forms of debt relief, such as government-led debt forgiveness or restructuring programs, which have often been highly distortionary and costly for taxpayers because they imply large net transfers (Giné and Kanz, 2018).

In the second phase of the moratorium, which followed the mandatory six month repayment holiday, lenders were still encouraged to grant forbearance to borrowers, but were now given discretion over how to select borrowers they wished to make eligible for payment deferrals. To ensure that

forbearance was extended to as many financially distressed borrowers as possible, the regulator allowed lenders to delay reclassification of loans as nonperforming if a borrower opted into the moratorium. In contrast to the first phase of the program, granting a moratorium now entailed the non-zero cost of processing a loan modification. As a result, banks became somewhat selective and generally offered forbearance only to customers with a realistic prospect of eventual repayment.⁷

We conducted our main experiment during the second phase of India’s consumer credit moratorium, when debt forbearance was still widely granted but had become *de facto* optional from the perspective of the lender. This provides an ideal setting for our experiment in which we vary whether customers receive a moratorium offer as well as whether this offer is presented as an initiative of the lender or an initiative of the regulator. Because moratorium offers are extended within a program initiated by the regulator, but the bank has discretion over whom to make eligible for the moratorium, both the statement that a borrower receives the offer due to an initiative of the regulator and the statement that they receive the offer due to an initiative of the bank are truthful during this period.

2.2 Beliefs about Debt Forbearance in the Population

The impact of large debt relief programs similar to those instituted in India has become a hotly contested topic, with proponents emphasizing their stabilizing effects and critics worrying about moral hazard. To motivate our study, we conducted a set of online surveys with respondents representative of Indian consumer loan borrowers in terms of age, income, and gender. We first elicited expectations about the effects of debt relief in general and then asked about the expected effects of forbearance offers similar to those tested in our intervention. The results, summarized in Figure 1, and described in greater detail in Online Appendix B, show that a large majority of respondents (66%) expect debt relief to damage lender reputation and weaken credit discipline. However, when asked specifically about a moratorium offered *voluntarily* by a private lender, many respondents state that they would be surprised to receive such an offer, even though lender-initiated forbearance is extremely common (see [Cherry et al., 2021](#)). Moreover, respondents anticipate some reciprocal behavior in response to *lender-initiated* forbearance that may offset potentially damaging effects on credit discipline. Motivated by these results, we design an experiment that examines the extent to which expectations about the

⁷ Note that the regulatory incentive to offer forbearance stems from the ability to delay the downgrading of delinquent loans and therefore only applies only to loans that are held on a lender’s books. This makes it very likely that the policy led to unequal treatment of securitized and non-securitized loans that has been documented in similar debt relief programs (see, for example, [Agarwal et al. 2011](#)). This lender does not securitize any of the loans in question in this setting.

effects of a large debt forbearance program align with actual borrower behavior.

3 The Debt Forbearance Experiment

3.1 Setting and Sample Population

We partnered with a large consumer finance lender in India to conduct a natural field experiment (Harrison and List, 2004), in which the lender extended randomized debt moratorium offers to its customers. Our partner is one of India’s leading consumer finance lenders, has more than 35 million customers across the country and offers a range of consumer financial products. Within the lender’s customer population, we focus on borrowers that had taken out a consumer loan to purchase a mobile phone. At the time of our experiment over 13 million loans of this type were outstanding, and we focus on loans that had missed at least two monthly payments. The loans in our sample have a mean (median) tenor of 7.8 months (8 months), a median amount of Rs 10,955 (US \$150),⁸, and a constant interest rate of 12 percent APR, which is similar to the characteristics of the typical consumer loan in India.⁹ The loans are collateralized by the mobile phone, and the lender has the ability to remotely restrict the phone’s ability to use data or make outgoing calls in the event that a borrower misses their monthly payments. Importantly, borrowers in this population are likely to be contactable by phone, which allows us to implement a nationwide experiment that is integrated into the lender’s regular interaction with its customers over the phone. The forbearance offers in our experiment are extended through the lender’s standard communication channels, have real stakes, and are fully compliant with the terms of India’s national debt moratorium policy in place at the time of our experiment.

3.2 Experimental Protocol

The main experiment was implemented between November 2020 and March 2021, after India’s first phase of the national debt moratorium had ended and while lenders were encouraged, but not required, by the regulator to offer additional debt forbearance to their customers. This allows us to extend real stakes debt forbearance offers that are truthfully framed as being granted either as an initiative of the lender or as a result of government policy.

⁸ We use the Jan 1, 2021 exchange rate of Rp 73 per US\$ for all currency conversions in this paper.

⁹ The median (average) consumer loan recorded in credit bureau data for this population has an amount of Rs 12,800 (Rs 15,000), a median (average) interest rate of 16.5% (19.5%), and a median (average) tenor of 7 months (8.9 months).

The experiment was conducted in several rounds, corresponding to the lender’s monthly repayment cycle. Each month, the lender shared a list of borrowers that had failed to make their required monthly loan payment. The size of each monthly borrower cohort was thus determined by the size of the lender’s 30-day delinquency portfolio at this point in time. This sample was further restricted to borrowers that had been making regular payments prior to this date and whose loans had not previously been restructured or modified.¹⁰ Through this process, the lender shared a sample of more than 50,000 customers that qualified for debt forbearance according to its internal criteria. We excluded from this sample any borrowers who, if they accepted a forbearance offer, would not complete repayment of their loan by April 1, 2022, even with perfect repayment, and this resulted in a potential experimental sample of 45,605 borrowers.

We worked with the lender to randomly assign customers in the sample frame to one of the debt forbearance offer or control treatments. Professional customer service representatives from the lender’s call center then attempted to reach customers on an assigned list to extend a debt forbearance offer or deliver one of the control scripts. Each customer service representative was given a randomly assigned script and list of customers to contact at the beginning of each work day. The customer service representatives made up to four call attempts for each customer in the sample, and only customers who could be reached using this protocol are included in our balance tests and estimation sample. Out of the 45,605 potential experimental borrowers, the effective estimation sample includes 9,623 borrowers that were successfully contacted over the course of the experiment. The sample includes customers from 26 states of mainland India (see Appendix Figure [IA.1](#)). Call recordings were audited throughout the study to ensure that the lender’s customer service representatives followed the experimental protocol and assigned scripts. In total, 16 customer service representatives made an average of 122 call attempts per day for a total of 88 days over the course of the experiment.

3.3 Treatment Conditions

Borrowers in the sample were randomly and individually assigned to one of four treatment conditions, which included two variations of a debt forbearance offer, one placebo treatment and one control condition.¹¹ The two debt forbearance offers extended in the experiment are identical in all terms and

¹⁰ While our sample excludes borrowers with a previous history of delinquency, moratorium offers in our experiment are randomly assigned within this population and not selected by total credit, number of loans outstanding, or other characteristics that lenders were free to take into account when offering forbearance.

¹¹ The full scripts used in the experiments are available in Online Appendix [F](#).

conditions but vary whether the offer is presented as an initiative of the lender or the regulator. The remaining treatments shed light on alternative mechanisms and allow us to benchmark the impacts of temporary debt forbearance against standard repayment reminders and debt enforcement.

3.3.1 Debt forbearance: relationship offer

The first of our two debt forbearance treatment conditions offered customers a three-month payment deferral on their loan that was framed as an initiative of the lender. In total, 1,901 of the contacted borrowers were assigned to this treatment, which presented the offer as follows:

At [lender name], we care about our customers and truly value your business. We understand that people all over India are facing great hardships due to the current economic situation. Helping our valued customers in these challenging times is our first priority at [lender name]. That is why we are offering you repayment flexibility on your loan.

Borrowers assigned to this treatment were then informed about the terms of the offer and asked if they would like to enrol in the debt forbearance program, which required payment of a one-time processing fee of Rs 350 through the lender's payment portal. Borrowers who accepted the offer were provided with additional information about the terms and conditions of the forbearance program as part of the sign-up process. To understand how sensitive take-up of the offer is to price, we assigned 177 contacted borrowers to receive the relationship offer with a higher processing fee of Rs 500.¹²

3.3.2 Debt forbearance: regulator offer

The second of our debt forbearance treatments, which was assigned to a total of 1,829 contacted borrowers, is identical to the first, with the exception that the offer is framed as being extended as the result of regulatory guidance, rather than the generosity of the lender. In this treatment, the offer was introduced as follows:

We are extending an offer in accordance with guidelines issued by the Reserve Bank of India to all lending institutions to help customers manage their finances in the current economic crisis. As a result of guidance issued by the Reserve Bank of India, we are offering you repayment flexibility on your loan, comparable to programs offered by most other lenders.

¹² For the mean loan, this processing fee is equivalent to an internal rate of return (IRR) of 19 percent, making it a cheaper form of credit than most external sources of credit that customers in our sample can access.

The customer service representative then informed borrowers assigned to this treatment about the terms of the offer, which were identical to those in the relationship offer treatment condition, and asked whether they would like to pay the processing fee of Rs 350 and enroll in the program. As in the relationship offer condition, borrowers who accepted the forbearance offer were provided with additional information about the terms and conditions as part of the sign-up process. Similarly, we assigned 146 of these customers to receive the regulator forbearance offer at the slightly higher price of Rs 500 to estimate how sensitive take-up of the offer is to the processing fee.

3.3.3 Placebo call: friendly call

In addition to the forbearance conditions, 2,452 contacted customers were assigned to the placebo call condition, which allows us to explore whether the response to receiving a forbearance offer could be explained by customers being treated in a more friendly way. In this treatment condition, customers received a friendly call in which a customer service representative highlighted the lender's commitment to its customers using a script similar to the relationship offer condition. However, in the relationship placebo condition no forbearance offer is extended and customers are instead simply invited to access informational resources and offered help with navigating different payment methods.

3.3.4 Control group: repayment reminder

Finally, 3,441 contacted customers were assigned to the control group, which was designed to replicate the lender's standard repayment reminder calls. Customers assigned to this condition received a call from a customer service representative who reminded them that their payment was past due, and asked the customer to commit to a time frame for making the payment as per the lender's standard practice.

3.4 Data and Descriptive Statistics

To measure the impact of debt forbearance on subsequent repayment behavior and borrower outcomes, we combine data from the experiment with administrative data from the lender, as well as the detailed pre- and post-intervention credit history of all borrowers in our sample that are covered by the Indian credit bureau.¹³

¹³ The largest Indian credit bureau, TransUnion CIBIL, was founded in 2000 and currently covers approximately 63 percent of adults in India (World Bank, 2022). Consumer credit scores in India range from 300 to 900, with scores between 700-749

3.4.1 Administrative data

In preparation for the experiment, the lender shared administrative data on customer demographics, loan characteristics, as well as data on prior borrowing and repayment from the lender’s data and credit bureau information at the time of loan application, for all customers in the sample frame.

We first obtained information on borrower and loan characteristics as well as the full repayment records of all borrowers in the sample from the lender. We aggregate these data to monthly frequency, corresponding to the monthly repayment cycles and construct a dummy variable indicating whether a borrower has made their loan payment by the required due date. The lender additionally shared data on the origination and end date of each loan, from which we construct an indicator variable for loans that are repaid in full and on time.

In a second step, we merged the loan and repayment data with the complete credit history of all borrowers that had a record in the Indian credit bureau. The credit bureau data was accessed after the experiment had concluded and includes the borrower’s credit score at the time of loan origination as well as a monthly record of all loans and loan payments for each borrower. Each monthly record includes the amount of the loan, the type of the loan, the date the loan was disbursed, and the days-past-due of payments on each loan for the last 36 months. We use the credit bureau data to construct indicators of monthly loan repayment and delinquency across the credit market.

Table 1 reports summary statistics at baseline and tests of randomization balance for the moratorium offer treatment conditions. Table 1, column (1), shows summary statistics for all contacted borrowers. The average customer in our sample is male, 33 years old, has an income of Rs 40,000 (US\$ 528), and a loan of Rs 11,810 (US\$162) with a monthly payment of Rs 1,450 (US\$ 21) outstanding. However, a substantial fraction of borrowers (67 percent) has no credit record. The credit scores of borrowers for whom a record was available are relatively high at 731 out of 800. Table 1 columns (2) to (4) report summary statistics for the same baseline borrower and loan characteristics for the moratorium offer treatment conditions, and column (5) reports a test of equality of means across the moratorium offer groups, which confirms that the randomization was successful. We note that because explaining the moratorium offers took longer than administering the brief reminder calls, contact rates and covariates are fully balanced across the moratorium offers and across the reminder and placebo treatments, but not across moratorium and reminder conditions. Throughout the paper, our analysis is therefore

labeled ‘good’ and scores above 750 labeled ‘excellent’.

focused on comparisons between the different moratorium offer conditions. We report summary statistics and conditionally balanced results for all treatment conditions in the Online Appendix.

3.5 Main outcomes of interest

We are interested in two main groups of outcomes: (i) loan repayment as measured in administrative data and credit bureau records and (ii) borrower beliefs about credit enforcement, the moratorium offer, and the characteristics of the lender. In this section, we describe the measurement of each of these outcomes in turn.

3.5.1 Loan repayment

We observe loan repayment using administrative data from the lender, as well as credit bureau data, which contains information on all outstanding loans for borrowers in our sample.

Our primary measure of loan repayment is the variable *loan repaid*, which is an indicator equal to one if a loan has been repaid in full. We define this variable for loans at our partner financial institution that are covered by a moratorium offer, as well as for loans with other financial institutions that individuals in our sample have at baseline. Our partner institution measures repayment one day after a borrower is scheduled to make their final loan payment. If the lender receives this payment, the loan is closed and reported as repaid to the credit bureau. It is worth noting that making loan payments in full and on time is indeed a choice variable in our setting. The vast majority of customers make payments using a digital payment link each month (81 percent). Only a small fraction (11 percent) use the lender’s auto-pay option and an even smaller number make payments in cash (3 percent). Because borrowers who accept a moratorium offer in our experiment not only pause payments for three months, but also have the tenor of their loan extended by the same amount of time, we measure repayment for *all* loans three months after the initial due date of the last payment for each loan.¹⁴

We follow the same approach to construct the variable *loan repaid* for loans from other lenders that borrowers in our experimental sample have outstanding at baseline. To do so, we use credit bureau data, which records the term, monthly installment, and tenor of all outstanding loans for borrowers in our sample. Based on this information, we construct the variable *share loans repaid*, which records

¹⁴ This is a conservative approach which might underestimate the true effect of moratorium offers on loan repayment, given that repayment of loans that opt into the moratorium is measured at the end date while repayment of all other loans additionally takes into account payments made in the three months after the original end date of the loan, thus potentially overstating repayment for borrowers in the control.

the share of all outstanding loans repaid, including loans from our partner financial institution and other lenders, for each borrower in our sample. Similarly, we also construct the variable *share other loans repaid*, which is the share of outstanding loans paid excluding the treated loan. Loans from other lenders that are current, i.e. not delinquent as of the measurement date, even if they have not been repaid in full, are considered repaid for the purposes of this definition. We use this outcome to explore whether receiving a moratorium offer has any spillover effects on the repayment of other loans.

3.5.2 Borrower beliefs

The second group of outcomes in our analysis are measures of borrower beliefs. Receiving a moratorium offer may affect borrower beliefs in a number of ways that could affect repayment and demand for future interactions with the bank. Hence, examining the effect of moratorium offers on borrower beliefs helps us shed light on the mechanisms through which offers of repayment flexibility affect borrower behavior. We measure borrower beliefs using three follow-up surveys administered to a subset of borrowers from the main experiment and conducted between one and three years after the intervention.¹⁵ Survey participants were contacted through a third-party call center, and interviewers introduced themselves as calling on behalf of the lender. The first survey targeted all borrowers who participated in the experiment ($N=9,362$), whereas the last two surveys targeted only borrowers who had been offered a moratorium ($N=3,730$). Participation rates in these surveys ranged from 14% ($N=1,316$ and $N=537$ among those who were offered a moratorium) in the first survey to 5% ($N=190$) and 7% ($N=265$) in the second and third follow-up surveys, respectively (see Appendix Table [IA.1](#)). Survey participation is not random and, as one would expect, observable borrower characteristics predict participation (see Appendix Table [IA.2](#)). However, conditional on participation, respondent characteristics are balanced across the relationship and regulator offer conditions in each survey (see Appendix Tables [IA.3](#), [IA.4](#), and [IA.5](#)). In light of these caveats, we interpret the survey results as suggestive evidence that can help us understand which mechanisms are most consistent with our findings.

Beliefs about credit enforcement. The first follow-up survey examines beliefs about credit enforcement and the future availability of debt relief. First, as with other forms of debt relief, being offered a debt moratorium could damage the lender’s reputation and give rise to moral hazard if it generates

¹⁵ More specifically, the first follow-up survey was conducted between January 2022 and April 2022, the second survey between June 2022 and July 2022, and the third survey between September 2023 and October 2023.

expectations of lenient credit enforcement or expectations of future debt relief. This may be especially likely if the moratorium is perceived as being offered voluntarily by the lender, rather than as the result of government regulation that is binding for all lenders. To examine this commonly cited mechanism, respondents were asked whether they expected credit enforcement to be more lenient, less lenient, or about the same going forward. We then additionally conducted an incentivized elicitation exercise in which we asked borrowers whether they expected their bank and the government to issue another moratorium in the case of a crisis of the same magnitude as the one that triggered the first moratorium. Borrowers were incentivized with a lottery in which they could win a prize of Rs 5,000 (US\$ 68) if their prediction was correct. Within the same survey, we also asked borrowers a set of questions used for the heterogeneity analysis. First, borrowers reported their monthly income at the time of the survey and one year prior. We use these responses to determine whether they experienced a large income drop. Second, borrowers were asked whether they considered maintaining a good credit score to be important.

Beliefs about the moratorium offer. Second, we conducted a follow-up survey to better understand how borrowers interpret moratorium offers. Intuitively, a borrower's response to a moratorium offer could be affected by various subjective beliefs, such as inferences about which borrowers received an offer or beliefs about whether the offer conveys information about the borrower's perceived creditworthiness. We asked borrowers who had received one of the moratorium offers whether they thought that the offer was extended to everyone, to the most creditworthy borrowers, or to the least creditworthy borrowers. In the same survey, we also asked respondents what they considered the most important reason to repay their loan: because it is morally the right thing to do; to avoid penalties, fees, and interest; to secure future loans from the same lender; or to maintain a good credit score and access to loans from other lenders.

Beliefs about the bank. Finally, we conducted a survey to understand how receiving a moratorium offer affects borrowers' beliefs about the lender. Intuitively, receiving a moratorium offer could change a borrower's repayment behavior by changing how they perceive the characteristics or "values" of the bank. Borrowers may, for instance, prioritize loan repayments to financial institution that they believe to be more socially minded, more altruistic, or more responsive to the needs of clients like themselves. Hence, receiving a moratorium offer could change repayment behavior and the demand for future interactions with the bank because it causes borrowers to update about the characteristics of the bank.

To examine this possibility, we surveyed borrowers who had received one of the moratorium offers and asked them whether they would rank their lender as better, worse, or about the same compared to other banks along a set of dimensions such as “cares about the well-being of its customers more than profits” and “Is honest and trustworthy”. In the same survey, we also asked respondents about their overall level of trust in banks and non-bank lenders.

3.6 Empirical Specification and Results

We estimate treatment effects of debt forbearance on borrower behavior and expectations using regression equations of the general form:

$$Y_i = \phi_1 T_{1,i} + \dots \phi_N T_{N,i} + \gamma X_i + \varepsilon_i \quad (1)$$

where Y_i is an outcome of interest for individual i , $T_{1,i} \dots T_{N,i}$ are indicators for each of the treatment conditions, X_i is a matrix of randomization controls that always include strata dummies, and ε_i is a stochastic error term. In our main analysis we contrast the treatment effect of the *relationship offer* condition with that of the *regulator offer* condition, which is the main comparison of interest. To do so, we estimate equation (1) in the full sample of contacted borrowers and use the *regulator offer* treatment condition as the omitted group while controlling for all other treatment conditions. In the Online Appendix, we additionally report results from an alternative specification that uses customers who received the lender’s standard repayment reminder as the omitted group. This allows for a comparison of treatment effects across the offer and no offer conditions, which are only conditionally balanced and thus require the inclusion of additional controls other than randomization strata.

Because our regressions are estimated using the sample of all clients who received a moratorium offer, rather than those who accepted the offer, the parameters ϕ_k should be interpreted as the effect of receiving a moratorium offer, rather than the effect of accepting the offer. Throughout our analysis, standard errors are clustered at the caller-day level, the level at which treatment was assigned.

3.6.1 Loan repayment

We begin by examining the effect of debt forbearance offers on loan repayment. As reflected in our survey of beliefs about debt relief in the population, reported in Section 2, there is widespread concern that granting repayment flexibility may damage the reputation of the lender and generate moral

hazard in loan repayment by raising expectations of lenient credit enforcement and availability of additional debt relief in the future. We test this hypothesis by examining the repayment response to moratorium offers presented as an initiative of the lender to the repayment response to moratorium offers presented as an initiative of the regulator. Intuitively, if granting repayment flexibility during a crisis damages the reputation of the lender or generates expectations of lenient credit enforcement, one would expect loan repayment to suffer less if forbearance is presented as an initiative of the regulator rather than the lender.

Table 2, reports the results. We find no negative impact of forbearance offers on loan repayment when the offer is framed as an initiative of the lender. On the contrary, loan repayment improves when the lender is allowed to take credit for offering repayment flexibility. The likelihood of loan default is 3.7 percentage points (8.6 percent) lower in the relationship offer condition than in the regulator offer condition and the difference between the two offers is statistically significant at the 5 percent level ($b=0.037$, $s.e.=0.017$). In the Online Appendix, we additionally compare the effect of the regulator and relationship offer to the placebo and simple reminder conditions. While this comparison should be interpreted with caution, given that the sample for this exercise is only conditionally balanced, the results suggest that neither of the moratorium offers reduces loan repayment relative to the simple reminder or placebo conditions. While the effect of the regulator offer is not statistically different from the simple reminder, loan repayment among borrowers in the relationship offer condition is 3.6 percentage points higher than among customers who received the lender's standard repayment reminder, and this difference is statistically significant at the 1 percent level ($b=0.036$, $s.e.=0.014$).

3.6.2 Beliefs about credit enforcement

We next examine whether the loan repayment results are consistent with treatment effects of the moratorium offers on borrower expectations, which we elicit in several follow-up surveys with participants of our main experiment. We are especially interested in understanding how receiving a moratorium offer affects expectations of lenient credit enforcement and the availability of debt relief in the future —the principal channels through which one would expect offers of repayment flexibility to generate moral hazard in loan repayment.

The results are reported in Online Appendix Table IA.6. In column (1), we first report treatment effects on expectations of lenient credit enforcement. In columns (2) and (3), we report treatment

effects on expectations of future moratoria issued by banks and regulators, respectively. The point estimates indicate that there are only very small differences in credit market expectations between borrowers who received a moratorium offer presented as an initiative of their lender and borrowers who received a moratorium offer presented as an initiative of the regulator are quantitatively very small. Borrowers who received a moratorium offer from their bank are slightly more likely to expect lenient credit enforcement in the future ($b=0.032$, $s.e.=0.095$) than borrowers who received a moratorium presented as an initiative of the regulator. There is practically no difference in expectations about the availability of debt relief in the future across the two groups ($b=0.006$, $s.e.=0.090$). Although the effects are estimated imprecisely due to sample size limitations, the point estimates are consistent with the results on loan repayment, presented in Table 2 and suggest that being offered repayment flexibility did not change borrower expectations in a way that could have generated meaningful moral hazard in loan repayment.

3.6.3 Overall credit discipline

We next examine the impact of moratorium offers on *overall* credit discipline. The results in the previous section show that, in our setting, moratorium offers do not generate moral hazard in loan repayment and that, on the contrary, moratorium offers can improve loan repayment when the lender is allowed to take credit for offering repayment flexibility. One natural question to ask is whether this represents an overall improvement in credit discipline or whether the improved repayment of loans covered by a moratorium offer comes at the cost of higher delinquency and default on other loans.

In principle, four scenarios are possible. First, it could be that offers of repayment flexibility create moral hazard and damage credit discipline across the board. This possibility is inconsistent with our main result, which suggests a positive or zero effect of moratorium offers on loan repayment. Second, it could be that moratorium offers improve repayment of the loan covered by the moratorium but do not affect the repayment of other loans, leading to a net improvement in credit discipline because borrowers mobilize additional resources to repay the loan covered by the moratorium. Third, borrowers might prioritize the repayment of loans covered by a moratorium but still allocate a fixed budget to loan repayment, so that overall loan repayment remains unchanged. Finally, it is possible that prioritizing the repayment of loans covered by the moratorium could reduce repayment performance on other loans by more than the improvement in repayment of loans covered by the moratorium, thus

creating net negative spillovers and worsening overall credit discipline.

Table 3 reports treatment effect estimates on debt repayment for all loans observed in credit bureau data. This includes loans covered by one of the moratorium offers in our experiment, as well as any other loans that borrowers had outstanding at baseline. Because our sample includes a large share of borrower who are new to credit, we present results separately for borrowers who had only one loan at baseline and for borrowers who had multiple loans outstanding at baseline. In Table 3, columns (1) and (2) we first present results for the full sample. The dependent variable in column (1) is a dummy equal to one if the loan covered by the moratorium was repaid in full. This replicates our main result and shows that loan repayment increases by 3.7 percentage points when the moratorium is presented as an initiative of one's lender rather than an initiative of the regulator. The difference in loan repayment under the two treatment conditions is statistically significant at the 5 percent level ($b=0.037$, $s.e.=0.017$). In column (2), we define the dependent variable as the share of total loans, outstanding at the time of treatment, that are current as of the endline date. The result shows that the improved loan repayment among borrowers in the relationship offer treatment condition translates into a 4.3 percentage point increase in the share of all loans paid relative to loan repayment in the regulator offer condition. This difference in overall loan repayment is statistically significant at the 1 percent level ($b=0.043$, $s.e.=0.015$).

In Table 3 column (3), we examine loan repayment for the approximately 80 percent of borrowers in our sample who have only one loan outstanding at baseline. The results indicate that borrowers in this group who received a moratorium offer from their lender are about 3.5 percentage points less likely to default on their loan than borrowers who received a moratorium offer framed as an initiative of the regulator, and this difference is statistically significant at the 10 percent level ($b=0.035$, $s.e.=0.018$). In Table 3, columns (4) to (6), we turn to loan repayment among borrowers who have more than one loan outstanding at baseline, as recorded in credit bureau data. The dependent variable in column (4) is an indicator measuring repayment of loans covered by a moratorium offer; column (5) reports the share of other loans outstanding at the time of treatment, not including the loan covered by the moratorium, that were eventually repaid; and column (6) reports the share of all loans outstanding at baseline that were repaid. While only about 20 percent of borrowers have another loan outstanding at baseline, inflating our standard errors in this small subsample, our main result broadly holds in this group as well: moratorium offers from the lender increase repayment more than moratorium offers from the

regulator. The negative effect of the relationship offer on the share of other loans repaid in column (5) indicates that the positive effect on treated loans may come partly at the cost of reduced repayment on other loans. Column (6) nonetheless shows, if anything, an improvement in the share of all loans repaid, suggesting that the improvement in repayment of the treated loan due to the relationship offer is larger than any potential negative spillovers onto other loans.

In Online Appendix, Table [IA.16](#), we additionally report results for the full sample and all treatment arms. This allows us to compare the effect of receiving any moratorium offer to the effect of receiving no moratorium offer. We again note that this comparison should be interpreted with caution, given that the offer and no offer samples are only conditionally balanced. The results from this exercise, in which we include unbalanced controls in all specifications, are qualitatively similar to those in Table [3](#). There is no indication that receiving either of the moratorium offers has a negative effect on overall credit discipline, even though for borrowers with multiple loans the improvement in repayment of the moratorium-covered loan may come partly at the expense of repayment on other loans.

Taken together, the results indicate that lender-initiated moratorium offers have no negative effect on overall credit discipline. On the contrary, moratorium offers extended by the lender improve the repayment of loans covered by the moratorium. On average, this translates into higher overall loan repayment. This pattern is driven largely by the many borrowers who hold only a single loan and who appear to mobilize additional resources through a reduction in savings or consumption to meet their obligations. Among borrowers with multiple loans, we find some evidence of reduced repayment of other loans, but these do not lead to a decline in overall credit discipline. Instead, the results suggest that borrowers with multiple loans merely reallocate available funds and prioritize the repayment of loans covered by the moratorium.

3.7 Interpreting the Results: *Why* do Forbearance Offers Affect Loan Repayment?

In this section, we attempt to distinguish between alternative mechanisms that can explain why loan repayment improves in response to moratorium offers presented as an initiative of the lender.

The finding that borrowers prioritize payments to a lender that offered them repayment flexibility in times of financial distress is a priori consistent with a number of causal mechanisms. One possibility is that forbearance offers affect repayment because they relax financial constraints and improve the recipient's *ability to repay*. Alternatively, it could be that borrowers exhibit a higher *willingness to repay*

after receiving a moratorium offer from their lender. Such a change in the *willingness to repay* could, in turn be due to strategic or non-strategic motivations. On the one hand, moratorium offers may increase loan repayment through non-strategic behavioral channels. That is, borrowers might be grateful that their lender offered them help in difficult times and wish to return the favor without any expectation of future benefits from the lending relationship, or they might interpret the offer as a positive signal about their creditworthiness and wish to live up to the expectation implicitly conveyed by the lender. On the other hand, it could be that the moratorium offer reminds recipients of the value of the lending relationship with this financial institution and improves loan repayment because borrowers wish to preserve the option of doing business with the lender in the future.

To understand which of these interpretations is most consistent with our results, we present three sets of evidence. First, we examine the take-up of forbearance offers and the impact on financial constraints. Second, we present results from follow-up surveys designed to understand how borrowers in our experiment interpreted the regulator and relationship offers. Third, we examine which borrower characteristics are correlated with a particularly strong repayment response to the relationship offer. Based on this evidence, we argue that our results are most consistent with moratorium offers conveying information about the value of the lending relationship and increasing borrowers' willingness to repay.

To guide our interpretation we present a simple model of debt forbearance and relational contracting in Online Appendix [A](#), in which a borrower weighs the short-term gains of default against the long-term benefits of maintaining a relationship with the lender. We extend a standard standard lending and loan repayment game by allowing the bank to hold private information about the continuation value of the relationship and to reveal this information through loan modification offers to creditworthy borrowers.

The model serves two purposes. First, it shows that when banks can target forbearance, such offers signal investment in the relationship, leading borrowers to update beliefs, improve repayment, and have higher demand for future interactions with the lender, whereas mandated forbearance conveys no information and has no such effect. Second, it clarifies that these outcomes require borrowers to believe that targeted forbearance is reserved for the most creditworthy, while mandated forbearance is offered universally.

3.7.1 Effects on financial constraints: willingness or ability to repay?

We first examine whether the improvement in loan repayment in response to the relationship offer could be explained by a relaxation of financial constraints and differential changes in the *ability to repay*, as a result of the forbearance offers. There are several pieces of evidence that make us confident that this can be ruled out. We first note that the terms of the relationship and regulator offers are identical and that, therefore, the two offers have the same effect on a borrower's financial constraints, if taken up. However, as Table 2 shows, repayment improves only in the relationship offer treatment condition.

Second, in column 1 of Online Appendix Table IA.7, we show that there is no difference in take-up of moratorium offers across the regulator and relationship moratorium offer conditions (13 percent versus 12 percent, p-value 0.47). Moreover, those who take up the moratorium offer in the two treatment conditions are not different along observables as indicated by the balance tests for the sample of borrowers who accept the moratorium offer in Online Appendix Table IA.8. Hence, differences in the repayment result are also not explained by differential take-up of forbearance offers across treatment conditions. Take-up and selection into offers along observables is identical in the relationship and regulator treatment conditions, yet repayment improves only if the moratorium is framed as an initiative of the lender.

Finally, we emphasize that our estimates identify the effect of receiving a moratorium offer, which is exogenously assigned in our experiment, rather than the effect of accepting the offer, which is an endogenous decision. It is nonetheless informative to examine whether the repayment effect differs by moratorium take-up. To test this, Online Appendix Table IA.7 splits the sample into borrowers who did and did not take up the moratorium offer and estimates the treatment effect on loan repayment separately within each group. The improvement in loan repayment is large and significant among borrowers who did not take up the offer ($b=0.043$, $s.e.=0.018$, column 2). Because these borrowers experienced no relaxation of liquidity constraints as a result of forbearance, this result is hard to reconcile with an *ability to repay* mechanism. Instead, it suggests that it is sufficient for the lender to offer repayment flexibility to shift borrowers' *willingness to repay*. By contrast, we find no detectable effect of the lender-initiated offer on repayment among borrowers who accepted the moratorium ($b=-0.003$, $s.e.=0.045$, column 3), possibly because the liquidity relief from forbearance mattered regardless of the perceived source of the offer.¹⁶

¹⁶ In Online Appendix Table IA.9, we also report the results of a prediction exercise that does not rely on realized take-up.

In summary, these results provide evidence that the improvement in repayment among customers framed as an initiative of the lender is highly unlikely to be explained by the relaxation of credit constraints and differential changes in the ability to repay as a result of accepting the moratorium.

3.7.2 How do borrowers interpret the offer?

Having ruled out that forbearance offers impact repayment through a change in the ability to repay, we next explore alternative channels through which the offers could affect the *willingness to repay*.

Intuitively, a moratorium offer from the lender could influence borrowers' willingness to repay through several channels. One set of mechanisms is behavioral. Borrowers may interpret the offer as a positive signal about their creditworthiness and repay in order to live up to the expectation implicitly conveyed by the lender.¹⁷ Similarly, borrowers offered a moratorium may improve repayment out of a purely non-strategic sense of reciprocity toward the lender.

These behavioral channels contrast with more strategic motivations for loan repayment. Borrowers may repay in order to remain eligible for future loans, or they may interpret the moratorium offer as a negative signal about their creditworthiness and respond by repaying in order to signal that they are in better financial shape than the signal implies. Another possibility is that the moratorium offer improves repayment because it highlights the value of a continued relationship with the lender, rather than because of immediate credit demand. In other words, borrowers might interpret receiving an offer as a general signal that the lender has their best interests in mind and is willing to make an investment in the relationship, which improves repayment because borrowers expect that remaining in good standing with the lender will be beneficial at some point in the future. Note that neither group of mechanisms require borrowers to take-up the offer, since the effect on behavior is not contingent on a change in the borrower's actual financial situation.

To differentiate between these possible interpretations, we use evidence from a follow-up survey designed to understand how borrowers interpret the moratorium offer. The survey was conducted with N=190 borrowers who had received either the relationship or regulator moratorium offer as part of our experiment. We are interested in understanding what information recipients believe to be

We split the sample based on the predicted likelihood of moratorium take-up according to baseline characteristics, and then estimate treatment effects for the borrowers that are most and least likely to accept the debt moratorium offer. Consistent with Table IA.7, the treatment effect is statistically significant among borrowers with a low predicted probability of accepting the moratorium, but not among those most likely to accept it.

¹⁷ Such "self-fulfilling expectations" mechanisms have been extensively studied in the education and child psychology literature (see [Jussim and Harber \(2005\)](#) for a review).

conveyed by the offer, what they believe the lender to infer from their response, and what motivates their repayment decisions after having received the offer.

Table 4 reports the results. We first asked respondents how they thought recipients of the moratorium offer had been selected. The results, presented in columns (1) to (3) show that respondents in the relationship offer treatment group were 16 percentage points more likely to state that they thought moratorium offers were issued only to the bank's *most creditworthy* customers. This difference is statistically significant at the 5 percent level ($b=0.16$, $s.e.=0.076$). In contrast, borrowers in the regulator offer condition are slightly more likely to believe that moratorium offers were issued to *all borrowers*, although we cannot statistically distinguish this effect from zero in our preferred specification ($b=-0.093$, $s.e.=0.070$). In other words, recipients of a moratorium offer believe that the offer conveys no information if it comes from the regulator, but interpret it as a positive signal about their perceived creditworthiness and the continuation value of the lending relationship when the offer is extended voluntarily by their lender.

Note that these results make it unlikely that loan repayment improves because customers interpret the forbearance offer as a signal that they have been singled out as a troubled borrower and repay to prove their creditworthiness. Contrary to this mechanism, borrowers in the relationship offer treatment assume that the lender would extend repayment deferrals only to its most creditworthy customers.

We next asked borrowers about their main motivation for timely loan repayment after having received one of the two moratorium offers. The results are reported in Table 4, columns (4) to (7) and support the interpretation that a moratorium granted explicitly by one's lender makes the value of the lending relationship salient to borrowers. Respondents who received a moratorium offer from their lender are 18 percentage points more likely to report the possibility of obtaining future credit from the lender as their primary motivation for repaying their loan as compared to respondents who received a moratorium offer presented as an initiative of the regulator. This difference is statistically significant at the 1 percent level both unconditionally and in our preferred specification that includes the full set of fixed effects and randomization controls ($b=0.184$, $s.e.=0.052$). The results also allow us to differentiate the treatment effect on the salience of the lending relationship from the possibility that the relationship offer simply serves as a reminder of the general benefits of timely debt repayment, which include a good credit history and possible self-image benefits associated with the moral aspects of loan repayment. The treatment effect estimates indicate that borrowers who received a moratorium

offer from their lender are, if anything, less likely to state that their main motivation for timely loan repayment are moral considerations ($b=-0.071$, $s.e.=0.062$), reduced late fees and penalties ($b=-0.027$, $s.e.=0.060$) or maintaining a good credit score ($b=-0.085$, $s.e.=0.084$) compared to borrowers in the regulator condition. The point estimates on each of these differences are negative, and none of them can be distinguished from zero in our preferred specification.

Overall, the evidence is most consistent with the interpretation that—rather than triggering a sense of pure, non-strategic, reciprocity, or being motivated by immediate credit demand—moratorium offers granted voluntarily by the lender improve repayment because they signal that the lender has its clients' best interests in mind and that a continued relationship with the lender may therefore be beneficial in the future.

3.7.3 Whose repayment responds to a moratorium offer?

We next examine which loan and borrower characteristics are associated with the largest repayment increases in response to the relationship offer. To do so, we examine heterogeneous treatment effects along several borrower and loan characteristics observed in administrative data, as well as a follow-up survey that asked borrowers about their general financial situation. In line with a relational contracting interpretation, we find that the borrowers who show the strongest positive repayment response to moratorium offers extended by their lender are those for whom the offer and a continued relationship with the lender are most immediately valuable. This includes borrowers who suffered large income losses over the previous 12 months, borrowers who are concerned with maintaining a good credit score, and borrowers in areas with few bank branches.

Table 5 presents the results of the heterogeneity analysis. We report heterogeneity results on additional traits in the Online Appendix. The dependent variable in all columns is a dummy equal to one if a customer repaid their loan. The characteristics at the top of each column indicate the trait along which we split the sample to examine heterogeneity in the treatment response. In column (1), we begin by examining treatment effect heterogeneity by borrower credit scores at baseline. We define this variable as a dummy equal to one if a customer is new to credit or has a low credit score, which serves as a proxy of limited outside options. Somewhat surprisingly, we find no differential treatment effect for borrowers with a low or no credit score ($b=-0.017$, $s.e.=0.047$). This result does not change when we consider borrowers with no credit score and borrowers with a poor credit score separately, and is also

robust to different definitions of a poor credit score. In column (2), we use evidence from our follow-up survey to test for heterogeneity in the treatment response for borrowers who had experienced a large income shock in the previous 12 months. We find that the repayment response to the relationship offer is much stronger among this subset of borrowers ($b=0.329$, $s.e.=0.141$). In column (3), we examine the treatment response for borrowers who state that maintaining a good credit score is important to them. We find that the response to a moratorium offer extended by the lender is much stronger in this subset of respondents ($b=0.314$, $s.e.=0.134$). Finally, in column (4), we use administrative data on the location of respondents to examine how the treatment response differs for borrowers who live in districts with a high number of bank branches, indicating greater outside options and sources of credit other than their current lender. We find that the repayment response to a moratorium offer extended by the lender is weaker in areas with a higher presence of bank branches ($b=-0.116$, $s.e.=0.059$). This is again consistent with a relational contracting interpretation of our main result, where the continuation value of the relationship is decreasing in the agent's outside option.

These results highlight that overall, borrowers for whom the repayment offer is immediately valuable, for example borrowers who suffered especially large income losses, or borrowers who are worried that their temporary inability to repay will tarnish their credit score, are more responsive to the relationship offer. This pattern is not consistent with a purely psychological mechanism in which borrowers interpret the relationship offer as a positive signal about their own creditworthiness and respond by repaying in order to live up to the positive expectation implicitly conveyed by the lender, unless the offer also induces a larger repayment response among borrowers who are more dependent on the lender.

3.7.4 Do moratorium offers change beliefs about the bank?

In our final exercise, we ask whether receiving a moratorium offer from one's bank changes borrower beliefs about the characteristics of the bank. We are interested in understanding whether, for instance, borrowers who are offered repayment flexibility by their lender believe the lender to be more altruistic, more invested in helping its customers, or more trustworthy. We explore these questions using data from a follow-up survey with 265 customers who had received a moratorium offer in our main experiment. The survey elicited overall beliefs about financial institutions and asked respondents to compare their lender to other banks along several criteria. We report results for the full list of bank

characteristics in the Online Appendix. In Table 6, we report treatment effects on beliefs about altruism and trustworthiness, the two categories that are most directly linked to the interpretation of our results. In columns (1) and (2) we first consider beliefs about the altruism of the bank. The dependent variable in both columns is an indicator equal to one if a respondent states that they believe the statement “The lender cares about the well-being of its customers more than about profits” to apply to their lender more than to other banks. We find that customers who received a moratorium offer from their lender do not believe that the lender is more benevolent or altruistic. The point estimate is negative and cannot be statistically distinguished from zero. This lends further support to our interpretation that improved loan repayment in response to a moratorium offer is not explained by altruistic reciprocity, which could be the case if the offer generated a sense of moral obligation to repay by changing beliefs about the altruism or benevolence of the lender. We find no support for this channel.

In columns (3) to (4), we examine customers overall trust in banks. The dependent variable is an indicator equal to one if a customer agrees with the statement “I have confidence in banks and non-bank financial institutions”. We find that receiving a moratorium offer presented as an initiative of one’s bank increases overall trust in banks and non-bank lenders. This increase in overall trust in banks likely reflects the fact that at baseline, borrowers have a somewhat negative view of private lenders. They do not believe that private banks would proactively help customers facing financial difficulties in a crisis and are positively surprised to receive a moratorium offer that is extended voluntarily by their lender. However, borrowers still believe that the bank’s actions are profit motivated and therefore the offer does not cause them to fundamentally update their beliefs about the values of the bank.

Overall, these results provide additional support for the conclusion that loan repayment in the relationship offer condition improves for strategic relational contracting reasons, rather than due to pure non-strategic reciprocity. Borrowers in the relationship offer condition believe that the moratorium offer reveals information about the continuation value of the relationship, but they do not view the bank’s action as being altruistic.

4 Banking Relationships: The Product Adoption Experiment

In this section, we examine whether debt forbearance offers extended by the lender can strengthen banking relationships in the longer term. That is, does receiving a forbearance offer from one’s lender increase the demand for doing business with the lender in the future?

If offers of repayment flexibility indeed affect the demand for future engagement with the lender, this could be explained by two sets of motivations with sharply different implications for the selection into longer-term banking relationships. On the one hand, it could be that borrowers interpret forbearance offers as a signal that it is easier to renegotiate contracts with the lender in the event of financial distress, or that the lender's debt collection practices will be lenient going forward. This could lead to the selection of borrowers with higher credit risk into continued interactions with the lender and would therefore have negative implications for the profitability of the surviving lending relationships. On the other hand, it is possible that borrowers who are granted repayment flexibility have higher demand for the lender's products independently of beliefs about the lenders' collection and renegotiation practices. Intuitively, it is possible that customers interpret an offer of repayment flexibility as an investment in the relationship and reciprocate by choosing to do business with the bank that offered them forbearance in difficult times. If this mechanism is at play, offering repayment flexibility could be a profitable strategy, because it allows the bank to obtain soft information, identify the most creditworthy borrowers and tie them into profitable longer-term banking relationships.

To examine the impact of debt forbearance offers on banking relationships, we conduct a complementary product adoption experiment that is designed to distinguish between these alternative mechanisms. In the experiment, we contacted a randomly chosen subset of 1,160 borrowers who had received one of the debt forbearance offer treatments in the main experiment. These borrowers were randomly assigned to receive either a marketing call that invited them to apply for a personal loan whose terms can—at least in principle—be renegotiated *ex post*, or a marketing call that offered the opportunity to purchase an “enhanced credit report”, a non-credit product that involves only a one-shot interaction with the lender and whose terms cannot be modified *ex post*. The treatments of the product adoption experiment also vary whether the offers are *branded* and prominently mentioned the name of the lender, or *non-branded* and do not mention the name of the lender. This real stakes design allows us to test whether borrowers that had been offered debt forbearance by their lender have causally higher demand for future interactions with the lender. If borrowers select into continued banking relationships for moral hazard reasons, one would expect this to lead to an immediate increase in demand for personal loans, but not for the non-credit product which merely signals a continued commitment to the lender that preserves the option of obtaining a loan in the future but has no immediate payoff to the borrower.

4.1 The financial products

To ensure that our experiment is able to separately identify demand for the lender’s products stemming from consumer inferences about the ability to renegotiate financial contracts, as opposed to demand due to a willingness to reciprocate the lender’s investment in the banking relationship, our experiment uses two types of financial products. Borrowers who received a forbearance offer in the main experiment are offered either the opportunity to apply for an uncollateralized personal loan or to purchase a non-credit product that is sold at a fixed price, whose terms cannot be modified *ex post*, and which does not require repeated interaction with the lender. If moral hazard is at play, it would operate through the first channel described above: borrowers who interpret the forbearance offer as a signal that the lender is more likely to grant future relief should have *immediately* higher demand for *ex post* renegotiable loans, but not for the non-credit product which has no scope for renegotiation and may merely improve the odds of obtaining a loan at some point in the future.

Consumer loans. The consumer loan offered in the experiment is a standard Rp 30,000 (US\$ 411) uncollateralized personal loan with an annualized interest rate of 28 percent APR. These loans are paid off in monthly installments, have a tenor of 12 months, and are very similar to the lender’s most common consumer loan product. The lender’s standard procedure for offering these loans is to check a borrower’s credit history and then issue loan offers only to pre-approved customers. Because all borrowers in our sample have been delinquent at least once and would therefore be likely to fail the lender’s credit check, the implementation of our experiment uses a slight modification to the lender’s usual procedure. Instead of pre-qualifying borrowers, we extended an offer to apply for the loan to a random sample of borrowers that had participated in the main experiment. The lender then evaluated the loan applications and extended a loan to the most creditworthy borrowers to ensure that credit offers are truthful and the exercise has real stakes. We design two variations of the loan offer, one “*branded*” version, in which the marketing call for the loan prominently mentions the name of the lender and one “*unbranded*” version, in which the identity of the lender is only revealed once a customer accepts the offer and follows the link to submit their application.¹⁸

Non-credit product. In addition, we worked with the lender to design a non-credit product that is similar to the products routinely offered by consumer lenders in India but—in contrast to a loan—has

¹⁸ The regulator requires the name of the lender to appear on the loan application. We therefore measure demand at the end of the marketing call by asking the customer whether they would like to apply for the loan. That is, *before* the identity of the lender is revealed to all applicants, including those in the “unbranded offer” control group.

no scope for ex post renegotiation. Specifically, we adapted a credit information product that explains the individual components of a borrower’s credit report and provides actionable advice on how a borrower can improve their credit score. These customized “credit intelligence reports” were available in the Indian market prior to our experiment. They are generated by a third party firm that has agreements with numerous banks in India, which customize these reports and offer them to their clients for a fee. We worked with the lender and the third party firm to design two versions of these credit reports: a “*branded*” version of the report, which is clearly identified as a product of the lender both in the marketing call and in the accompanying sign-up link which prominently displays the lender’s name and branding, and an “*unbranded*” version, which contains identical information but is not identified as a product of the lender in the marketing call and for which the name of the lender is only revealed once a customer accepts the offer and follows the link to submit their application. ¹⁹

4.2 Experimental protocol and design

4.2.1 Sample

To implement the product adoption experiment, the lender’s sales representatives attempted to reach a sample of 3,806 customers who had received the *relationship offer* or *regulator offer* in the main experiment. The marketing calls took place between six months and one year after customers had received the initial offer. In total, we reached 1,160 customers and extended 528 personal loan offers and 632 offers for the non-credit product.

4.2.2 Treatment conditions

The customers in our sample were randomly assigned to one of two “cross-sell” treatment conditions, which varied whether the customer was offered a *branded* version of the product offer, which marketed the product using the lender’s name and branding, and an *unbranded* version that was identical to the branded offer but was not identified with the lender.

In the unbranded offer treatments, each product was introduced with a neutral script that did not mention the lender’s name. In the case of the consumer loan, the product was introduced as follows:

¹⁹ The variation in branding allows us to rule out the possibility that increased demand for the informational product is due to increased demand for information, given that the unbranded and branded informational products have the same informational value and differ only in branding.

We are calling because we would like to invite you to apply for our new [name of product] personal loan. This convenient loan in the amount of Rs 30,000 can be used for your personal consumption or cash needs.

Similarly, the unbranded script for the non-credit product introduced the credit intelligence reports without reference to the name of the lender:

We are calling to offer you our new [product name] financial health report. This report will give you a clear overview over your credit profile that is easy to understand.

In the branded offer treatment conditions, the sales representatives used scripts that were identical, with the exception that they emphasized that the sales representative was extending the offer on behalf of the lender. The branded script for the personal loan introduced the product as follows:

We are calling from [name of lender], from whom you have previously taken out a loan. As a valued [name of lender] customer we would like to invite you to apply for our new [name of product] personal loan. This convenient loan in the amount of Rs 30,000 can be used for your personal consumption or cash needs.

The branded offer for the non-credit product correspondingly introduced the credit intelligence reports with a prominent reference to the name of the lender:

We are calling from [lender name] from whom you have previously taken out a loan. As a valued [lender name] customer, we would like to offer you our new [product name] financial health report. This report will give you a clear overview over your credit profile that is easy to understand.

The sales representative then explained the details of each offer using a script that was identical for the two offers and asked the customer whether they were interested in applying for the consumer loan or purchasing the credit intelligence report. If the customer expressed interest, the sales representative sent them a payment link. Because the payment link must, for legal reasons, disclose the identity of the lender, the main outcome of interest in our analysis is whether a customer expresses interest in purchasing the product and requests a payment link.

4.3 Results: demand for the branded financial product

We find that customers who were offered repayment flexibility framed as an initiative of the lender in the main experiment are significantly more likely to purchase the branded version of the non-credit

product, but do not have higher demand for personal loans marketed by the lender.²⁰

Figure 2 displays unconditional means of product take-up for all treatment combinations in the forbearance and product adoption experiments. Figure 2, Panel (a), reports take-up rates for branded and unbranded personal loans, respectively. The figure shows that demand for loans is overall high, but not statistically different across treatment combinations. In particular, there are no statistically or economically significant differences in demand for the branded and unbranded versions of the personal loan, and this result does not differ between borrowers that had received the relationship moratorium offer (p-value=0.240) or the regulator moratorium offer in the main experiment (p-value=0.690).

In Figure 2, Panel (b), we plot unconditional means for the non-credit product. The figure shows that borrowers who had been offered repayment flexibility by their lender were more than 10 percentage points more likely to take up the product when it was branded as a product of the lender than when they received a nondescript offer without reference to the lender (p-value=0.048), with take-up rates of 35.7 percent and 25.2 percent for the branded and unbranded offers, respectively. Moreover, take-up of the branded product among borrowers who were offered the moratorium by the lender was also about 10 percentage points higher (p-value=0.072) than take-up among those who were offered the forbearance by the regulator (26.1 percent). In contrast, there is no similar pattern of demand for the branded product among borrowers who received debt forbearance offers framed as an initiative of the regulator in the main experiment. In fact, at 26.1 percent, take-up of the branded product is slightly lower than take-up of the unbranded product at 30.8 percent in this group (p-value=0.347). Similarly, demand for the unbranded product is not affected by the source of the offer (p-value=0.258).

Table 7 presents the results of the product adoption experiment in regression format, without controls in column (1) and controlling for the full set of caller and offer date fixed effects for the forbearance and product adoption experiments in column (2). The difference between take-up rates of the branded product across forbearance conditions for the non-branded products is statistically significant in both specifications and slightly larger when we control for the full set of experimental conditions ($b=0.152$, $s.e.=0.073$ and $b=0.206$, $s.e.=0.100$). In contrast, there are no meaningful differences between demand for the loan product across the different treatment combinations.

²⁰ We limit our analysis to borrowers for whom no more than one year has elapsed between the debt forbearance and follow-up product offers. The effect is slightly weaker but still present among customers who receive a follow-up product offer from the lender after more than one year.

4.4 Product adoption experiment: discussion

We use the results from the follow-up experiment to assess whether, beyond improving loan repayment in the short term, lender-issued forbearance offers strengthen banking relationships by increasing demand for future interactions with the lender.

We first note that, because the product adoption experiment takes place after the main intervention, customers who received a forbearance offer in the main experiment may differ at the time of the follow-up call due to higher loan repayment in response to the offer. This is a feature of the design rather than a threat to interpretation: lender-attributed forbearance may affect subsequent engagement both directly, for example by changing beliefs about the relationship, and indirectly through its effects on loan repayment. Accordingly, the follow-up experiment is best interpreted as measuring the overall impact of the initial moratorium offer on later demand for the lender's products, potentially including downstream effects operating through induced differences in repayment.

Second, testing the impact of forbearance offers on future engagement with the lender requires focusing on the *non-credit product*, since demand for personal loans is influenced by several confounding factors. These include inferences about the possibility of loan renegotiation, which can lead to adverse selection, as well as the effects of income, credit scores, and existing debt on credit demand. Moreover, credit demand varies over time, and even borrowers who wish to preserve the option of obtaining a loan in the future may not have active demand for credit at the precise moment they are offered a loan in the follow-up experiment, making the credit product a poor measure of demand for engagement with the lender. Therefore, our main test relies on the results of the *non-credit product* experiment, while we use demand for personal loans to test for a potential moral hazard channel that could increase demand for future engagement with the lender.

The results from the *non-credit product* follow-up experiment indicate that borrowers who received a forbearance offer issued by their lender have causally higher demand for future engagement with the lender. We can rule out that this demand is driven by demand for the product itself, as demand for the non-credit product is higher for recipients of the moratorium offer only if it is labeled as a product of the bank that issued forbearance. We do not detect a similar effect of the relationship offer on demand for a personal loan. This is possibly due to the fact that credit demand is time-varying and constrained by borrower characteristics, such as existing debt levels, so that even customers who value the *option* of borrowing from the lender at some point in the future may not wish to borrow at the time

of the follow-up experiment. Hence, our results rule out immediate demand for new credit as the main driver of the treatment effect, but neither confirm nor rule out that the value borrowers place on the relationship partly reflects latent credit demand.

The design of the product adoption experiment allows us to rule out several alternative explanations that could explain the pattern of our results. First, it could be that customers who are granted repayment flexibility at a time when they are facing financial distress are more interested in deepening their relationship with the lender because the offer causes them to infer that the lender will be more willing to renegotiate financial contracts in the future. This mechanism—which could give rise to future moral hazard and adverse selection into banking relationships—is ruled out by the result that borrowers who were offered repayment flexibility by the lender do not have higher demand for personal loans, whose terms can at least in principle be renegotiated *ex post*, from the lender than borrowers who were not offered repayment flexibility. Second, it could be that forbearance offers generate demand for the non-credit product (an enhanced credit report) because they prime customers to think about the importance of maintaining a good credit score. We can also rule out this channel, given that all participants of the product adoption experiment had received a debt forbearance offer in the main experiment, yet only customers in the relationship offer treatment exhibit higher demand for the lender’s products in the product adoption experiment. Moreover, this would not differentially affect the adoption of branded and unbranded credit reports.

Taken together, the results from our two complementary experiments suggest that, rather than damaging credit discipline, repayment flexibility offered by one’s lender can improve loan repayment in the short term and foster the establishment of longer-term banking relationships through higher demand for future engagement with the lender that offered forbearance. Importantly, we show that demand for future interactions with the lender is not explained by motives that could create moral hazard in future interactions with the lender. Hence, repayment flexibility offered by a bank can be interpreted as an *investment* in the banking relationship that can be profitable because it helps the bank identify customers with the highest willingness and ability to repay and ties them into longer term banking relationships. This is analogous to studies that have shown that investments into relationships by one contracting party promote trust, trustworthy behavior and sustained interaction.

5 Conclusion

This paper uses a nationwide experiment in India to estimate the effects of debt moratorium offers on borrower beliefs, loan repayment, and banking relationships. Contrary to widely held assumptions, we find that moratorium offers do not alter borrower beliefs in a way that could give rise to moral hazard or weaken credit discipline. On the contrary, when lenders are allowed to take credit for granting repayment flexibility, loan repayment improves substantially after the end of the moratorium. Moreover, our results suggest that offering repayment flexibility can strengthen banking relationships in the longer term. We show that borrowers who are offered a repayment deferrals by their bank have causally higher demand for future engagement with the lender as a result of receiving the offer.

We explore the mechanism behind these results and argue that a relational contracting explanation is most consistent with our findings. We show that when a moratorium offer is issued explicitly by the lender, recipients interpret the offer as a signal of high relationship value. This is in contrast to offers issued by the regulator, which recipient assume to not be targeted and therefore convey no information about relationship value. Through this channel, moratorium offers issued by the lender make the continuation value of the lending relationship salient and reduce loan default because borrowers wish to preserve the option value of doing business with the lender in the future. We examine a number of competing mechanisms, such as reminder effects, the relaxation of liquidity constraints, or non-strategic reciprocity, and show that they are inconsistent with the pattern of our results.

One important consideration for the external validity of our results is the nature of the economic shock that motivates forbearance. In our experiment, forbearance is offered in response to an aggregate shock, a scenario in which one might expect less strategic default and more default due to genuine liquidity constraints than in normal times. We would not expect this to compromise the external validity of our results, given that the overwhelming majority of forbearance programs are enacted in response to large aggregate crisis events. Second, concerns about the impact of debt relief on credit discipline often arise in relation to state-owned banks, which may face incentives to offer forbearance for political reasons (see [Indarte and Kanz, 2023](#)). While our experiment is conducted entirely with a private bank, some of our results can shed light on the likely differences in the borrower response to forbearance by lender identity. We show that the positive response to forbearance offers is most pronounced among borrowers who are most surprised to receive the offer. We would expect borrowers of state-owned banks to be less surprised to receive a moratorium offer, so that our estimates should

be interpreted as an upper bound. On the other hand, we show that even the borrowers who are *most surprised* to receive a forbearance offer from a private bank do not update negatively about the credibility of the bank and leniency of future debt enforcement. One would expect *even less* updating in response to a forbearance offer from state-owned banks that are widely understood to face political incentives for the lenient treatment of borrowers (see, for example, [Cole, 2009](#)).

Overall, our experiment adds new causal evidence to an active debate on the optimal design of debt relief policies. Our results underscore that debt forbearance, especially forbearance offered by private lenders, is typically more effective than other forms of debt relief. First, compared to other forms of debt relief, debt forbearance involves very small net transfers to agents, since most of the forbearance amount is eventually repaid ([Cherry et al., 2021](#)). This substantially reduces incentive distortions and potential moral hazard relative to policies, such as debt restructuring or forgiveness. Second, opt-in policies like the one we study achieve much better targeting than blanket government-led forbearance, because the repayment flexibility they offer essentially operates like a line of credit that borrowers can opt into in the event of financial distress. Borrowers who do not face financial distress have little incentive to use forbearance, since they will still have to repay at a later date. Our findings show that *in addition* to these targeting and incentive benefits, allowing private lenders to take credit for offering forbearance has additional benefits through a further improvement in loan repayment as a result of relational contracting considerations on the part of distressed borrowers who are offered forbearance by their lender. One important policy implication of this finding is that some of the repayment benefits of forbearance can be realized without requiring the lender to bear the costs of actual loan modification, since some these benefits arise even when borrowers do not take up the offer. The regulator can further enhance the effectiveness of private forbearance through asset classification rules and other that make it attractive to lenders to offer forbearance as widely as possible. Finally, given that much of the efficiency benefits of debt forbearance come from the fact that it is limited in time, an important policy consideration is how to optimally phase out forbearance policies. Here, again, private forbearance has an advantage, because announcements of the duration of forbearance by private lenders are more credible than those made by governments or regulators.

There are a number of areas for future research that could help to more fully explore the implications of our findings for the design of forbearance policies. First, it would be useful to assess to what extent the response to forbearance offers we document for consumer credit carries over to other loan types,

such as larger collateralized loans. Second, it would be interesting to explore how the identity of the lender affects the response to forbearance offers. This may have important implications for emerging economies where state-owned banks are dominant. Finally, it would be useful to examine the nature and evolution of banking relationships that are maintained as a result of relational contracting between a bank and its borrowers during an economic downturn. While beyond the scope of our paper, these questions represent promising directions for future work.

References

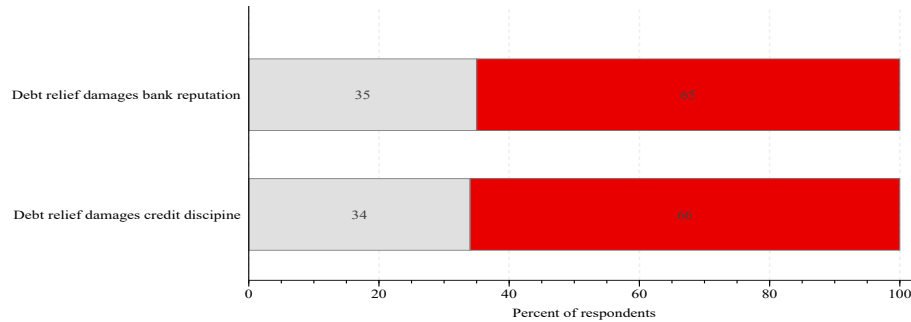
- Agarwal, Sumit, Gene Amromin, Itzhak Ben-David, Souphala Chomsisengphet, and Douglas D. Evanoff**, "The role of securitization in mortgage renegotiation," *Journal of Financial Economics*, December 2011, 102 (3), 559–578.
- , —, —, —, —, **Tomasz Piskorski, and Amit Seru**, "Policy Intervention in Debt Renegotiation: Evidence from the Home Affordable Modification Program," *Journal of Political Economy*, June 2017, 125 (3), 654–712.
- , —, —, **Souphala Chomsisengphet, Tomasz Piskorski, Amit Seru, and Vincent Yao**, "Mortgage Refinancing, Consumer Spending, and Competition: Evidence from the Home Affordable Refinance Program," *Review of Economic Studies*, 2022.
- , —, **Souphala Chomsisengphet, Chunlin Liu, Changcheng Song, and Nicholas S. Souleles**, "Benefits of Relationship Banking: Evidence from Consumer Credit Markets," *Journal of Monetary Economics*, 2018, 96, 16–32.
- Aydin, Deniz**, "Forbearance versus Interest Rates: Experimental Tests of Liquidity and Strategic Default Triggers," *Working Paper*, 2024.
- Barboni, Giorgia and Parul Agarwal**, "How do Flexible Microfinance Contracts Improve Repayment Rates and Business Outcomes? Experimental Evidence from India," *Working Paper*, 2021.
- Battaglia, Marianna, Selim Gulesci, and Andreas Madestam**, "Repayment Flexibility and Risk Taking: Experimental Evidence from Credit Contracts," *Review of Economic Studies*, 2024.
- Bolton, Patrick and Xavier Freixas**, "Equity, Bonds, and Bank Debt: Capital Structure and Financial Market Equilibrium under Asymmetric Information," *Journal of Political Economy*, 2000, 108 (2), 324–351.
- , —, —, **Leonardo Gambacorta, and Paolo Emilio Mistrulli**, "Relationship and Transaction Lending in a Crisis," *Review of Financial Studies*, 06 2016, 29 (10), 2643–2676.
- Brown, Martin, Armin Falk, and Ernst Fehr**, "Relational Contracts and the Nature of Market Interactions," *Econometrica*, 2004, 72 (3), 747–780.
- Brunnermeier, Markus K., Rohit Lamba, and Carlos Segura-Rodriguez**, "Inverse Selection," December 2021.
- Bursztyn, Leonardo, Bruno Ferman, Stefano Fiorin, Martin Kanz, and Gautam Rao**, "Status Goods: Experimental Evidence from Platinum Credit Cards," *Quarterly Journal of Economics*, 12 2017, 133 (3), 1561–1595.
- , —, **Stefano Fiorin, Daniel Gottlieb, and Martin Kanz**, "Moral Incentives in Credit Card Debt Repayment: Evidence from a Field Experiment," *Journal of Political Economy*, August 2019, 127 (4), 1641–1683. Publisher: The University of Chicago Press.
- Cherry, Susan F., Erica Xuwei Jiang, Gregor Matvos, Tomasz Piskorski, and Amit Seru**, "Government and Private Household Debt Relief during COVID-19," *Brookings Papers on Economic Activity*, 2021, pp. 141–199.
- Cole, Shawn**, "Fixing Market Failures or Fixing Elections? Agricultural Credit in India," *American Economic Journal: Applied Economics*, January 2009, 1 (1), 219–50.

- Ganong, Peter and Pascal Noel**, “Liquidity versus Wealth in Household Debt Obligations: Evidence from Housing Policy in the Great Recession,” *American Economic Review*, October 2020, 110 (10), 3100–3138.
- Giné, Xavier and Martin Kancz**, “The Economic Effects of a Borrower Bailout: Evidence from an Emerging Market,” *Review of Financial Studies*, May 2018, 31 (5), 1752–1783.
- Guiso, Luigi, Paola Sapienza, and Luigi Zingales**, “The Determinants of Attitudes toward Strategic Default on Mortgages,” *Journal of Finance*, 2013, 68 (4), 1473–1515.
- Gyongyosi, Gyozo and Emil Verner**, “Household Debt Relief and the Debt Laffer Curve,” *Working Paper*, 2024.
- Harrison, Glenn W. and John A. List**, “Field Experiments,” *Journal of Economic Literature*, December 2004, 42 (4), 1009–1055.
- Indarte, Sasha and Martin Kancz**, “Debt Relief for Households in Developing Economies,” *Oxford Review of Economic Policy*, 2023, 40 (1), 139–159.
- Jussim, Lee and Kent D. Harber**, “Teacher Expectations and Self-Fulfilling Prophecies: Knowns and Unknowns, Resolved and Unresolved Controversies,” *Personality and Social Psychology Review*, 2005, 9 (2), 131–155.
- Kluender, Raymond, Neale Mahoney, Francis Wong, and Wesley Yin**, “The Effects of Medical Debt Relief: Evidence from Two Randomized Experiments,” *NBER Working Paper 32315*, September 2024.
- Kranton, Rachel E.**, “Reciprocal Exchange: A Self-Sustaining System,” *American Economic Review*, 1996, 86 (4), 830–851.
- List, John A.**, “The Behavioralist Meets the Market: Measuring Social Preferences and Reputation Effects in Actual Transactions,” *Journal of Political Economy*, 2006, 114 (1), 1–37.
- Macchiavello, Rocco and Ameet Morjaria**, “Relational Contracts: Recent Empirical Advancements and Open Questions,” Working Paper 30978, National Bureau of Economic Research February 2023.
- Petersen, Mitchell A. and Raghuram G. Rajan**, “The Benefits of Lending Relationships: Evidence from Small Business Data,” *Journal of Finance*, 1994, 49 (1), 3–37.
- and —, “Does Distance Still Matter? The Information Revolution in Small Business Lending,” *The Journal of Finance*, 2002, 57 (6), 2533–2570.
- Stantcheva, Stefanie**, “Understanding Economic Policies: What do People Know and Learn?,” *Working paper.*, 2020.
- World Bank**, “World Development Report: Finance for an Equitable Recovery,” 2022. .

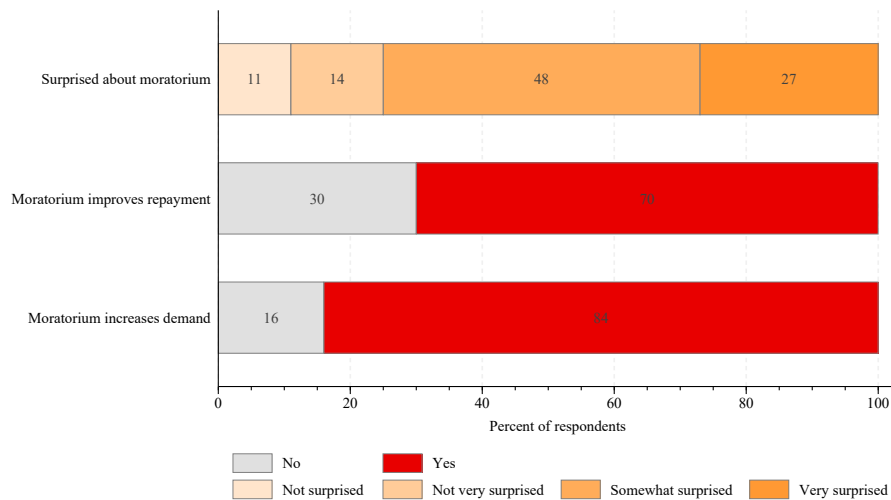
Figures

Figure 1: Beliefs about Debt Relief in the Population

a. Beliefs about debt relief



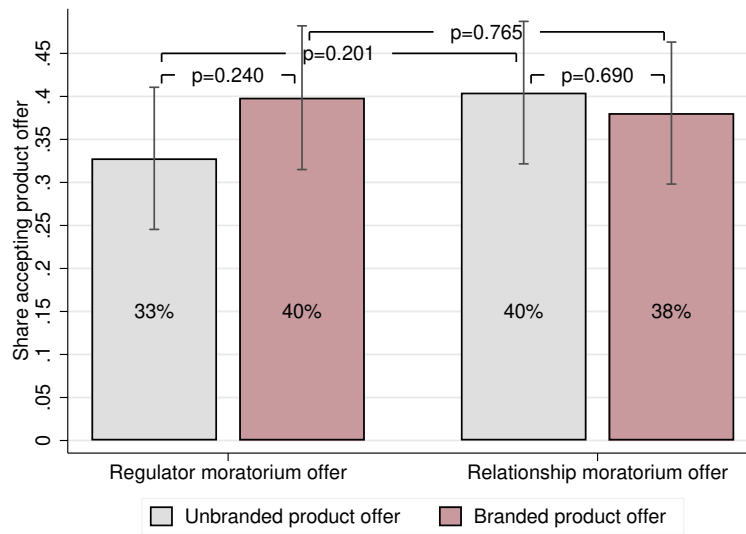
b. Beliefs about moratorium offer



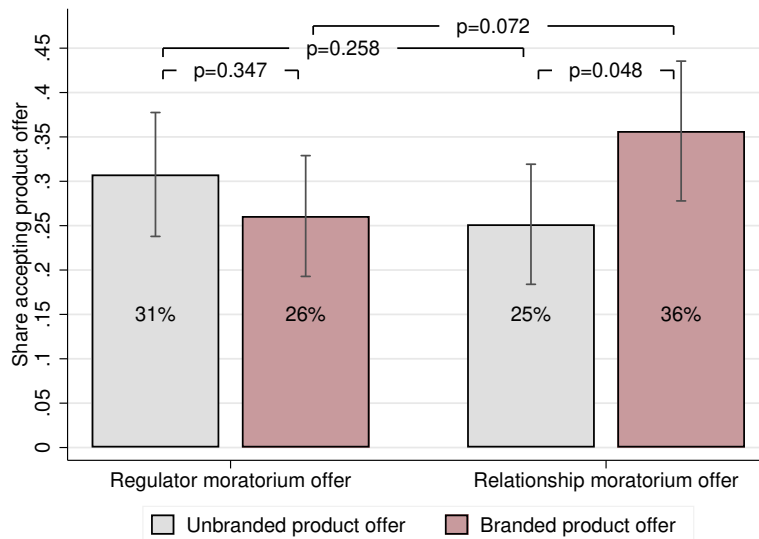
Notes: The figure summarizes responses from two nationwide online surveys. The surveys were conducted with a sample of respondents representative of the population of consumer loan borrowers in terms of age, income, and gender, and restricted to borrowers who had taken out at least one loan in the year prior to the survey. Panel a. reports respondent beliefs about debt relief in general. Panel b. reports respondent beliefs about the effect of a three-month moratorium offer, similar to the one tested in our experiment. In Panel a. respondents are asked whether they agree with the statements “widespread debt relief discourages borrowers who are able to pay their debts from repaying them in the future” and “if a lender offers more debt relief than other lenders their borrowers may take them less seriously and de-prioritize making payments to that lender”. In Panel b. respondents were asked whether they would be surprised to receive a three-month debt moratorium from a private lender, whether they would expect a three-month moratorium offer to damage or improve loan repayment for the average borrower, and whether they thought recipients of a moratorium offer issued by a private lender would be more likely to do business with that lender in the future.

Figure 2: Treatment Effects – Product Adoption Experiment

a. Personal loan



b. Non-credit product



Notes: Panel A displays the results of the product adoption experiment for the credit product. Panel B displays the results for the non-credit product. The two bars on the left display product adoption rates in the branded and unbranded product offer conditions for borrowers who received the regulator moratorium offer in the main experiment. The two bars on the right display product adoption rates in the branded and unbranded product offer conditions for borrowers who received the relationship moratorium offer in the main experiment. Error bars indicate 95% confidence intervals. Horizontal bars show p -values for t -tests of equality of means across treatment conditions, estimated using robust standard errors.

Tables

Table 1: Summary Statistics and Balance of Covariates

	Contacted (1)	Relationship or regulator offer (2)	Relationship offer (3)	Regulator offer (4)	<i>p</i> -value (5)
<i>Panel A: Borrower characteristics</i>					
Reported income, Rs '000	39.73 [58.03]	39.29 [56.22]	39.27 (1.59)	39.31 (2.06)	0.68
Female	0.10 [0.30]	0.10 [0.30]	0.10 (0.01)	0.10 (0.01)	0.83
Age	33.17 [8.70]	33.43 [8.88]	33.52 (0.28)	33.34 (0.26)	0.50
No credit history	0.67 [0.47]	0.67 [0.47]	0.67 (0.01)	0.66 (0.01)	0.55
Credit score	730.98 [51.38]	730.74 [51.99]	733.10 (2.16)	728.39 (2.08)	0.23
<i>Panel B: Loan characteristics</i>					
Principal, Rs '000	11.81 [6.58]	11.86 [6.72]	11.90 (0.18)	11.82 (0.17)	0.97
Balance, Rs '000	7.05 [5.63]	6.79 [5.74]	6.81 (0.16)	6.76 (0.16)	0.68
Monthly payment, Rs '000	1.45 [0.75]	1.45 [0.76]	1.46 (0.02)	1.43 (0.02)	0.62
Loan duration (months)	7.80 [0.91]	7.81 [0.90]	7.81 (0.02)	7.81 (0.02)	0.27
Months remaining	5.08 [2.37]	4.87 [2.40]	4.86 (0.07)	4.89 (0.07)	0.79
Day called	8.12 [4.40]	7.75 [4.37]	7.51 (0.36)	8.00 (0.36)	0.32
<i>F</i> -test					0.95
<i>N</i>	9,623	3,730	1,901	1,829	

Notes: The table reports summary statistics for contacted borrowers and tests of covariate balance. Panel A reports summary statistics on borrower characteristics from the lender's administrative data and credit reports, and panel B reports summary statistics on loan characteristics observed in the lender's administrative data. Column (1) shows summary statistics for the contacted sample with standard deviations in brackets, column (2) summarises those assigned to receive one of the two forbearance offers, columns (3) and (4) shows means for each variable across the two offer treatment conditions, with standard errors in parentheses. column (5) reports the *p*-value of equality of means across the offer treatment conditions. The final *p*-value is that of a joint *F*-test that all coefficients are zero in a regression predicting treatment as a function of covariates, run among those receiving an offer. We report from the *F*-test the probability that an imbalance as large as the one observed would occur under the null hypothesis of random treatment. Because the sampling proportions were changed after the fourth month of the experiment, all balance tests control for an indicator equal to one for all months after this date. All standard errors are clustered at the caller-day level.

Table 2: Loan Repayment

Dependent variable	Loan repaid	
	(1)	(2)
Relationship offer	0.036** (0.017)	0.037** (0.017)
Month FE	Yes	Yes
Caller FEs	No	Yes
Regulator offer mean	0.43	0.43
R-squared	0.03	0.03
Observations	9,623	9,623

Notes: This table shows treatment effects on loan repayment. Each column reports results from a separate regression. The dependent variable is an indicator equal to one if a borrower completed loan repayment within 90 days of the final payment due date, the cutoff after which the lender is required to classify the loan as nonperforming. All regressions are estimated using the full sample and include dummies for all treatment conditions. The omitted group is the regulator offer. Robust standard errors, clustered at the caller-day level, are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: Loan Repayment, All Loans

Sample	All		No other loans	Has multiple loans		
Dependent variable	Paid lender (1)	Share loans paid (2)	Paid lender (3)	Paid lender (4)	Share other loans paid (5)	Share loans paid (6)
Relationship offer	0.037** (0.017)	0.043*** (0.015)	0.035* (0.018)	0.051 (0.038)	-0.036 (0.032)	0.033 (0.031)
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Caller FEs	Yes	Yes	Yes	Yes	Yes	Yes
Regulator offer mean	0.43	0.51	0.43	0.45	0.94	0.62
R-squared	0.03	0.03	0.03	0.04	0.02	0.03
Observations	9,623	9,623	7,692	1,931	1,931	1,931

Notes: The table reports treatment effects on loan repayment for all loans that borrowers in the sample had outstanding at baseline. Each column shows results from a separate regression. Columns (1) and (2) report results for all borrowers, column (3) reports results for borrowers who have only the loan covered by the moratorium outstanding at baseline, and columns (4) - (6) report results for borrowers who have more than one loan outstanding at the time of treatment. The dependent variable in columns (1), (3), and (4) is a dummy equal to one if a borrower repaid the loan from the lender who issued forbearance offers. The dependent variable in columns (2) and (6) is the share of all loans outstanding at the time of treatment, including those issued by the treatment lender, that the customer eventually repaid. The dependent variable in column (5) is the share of other loans, not including the loan covered by the moratorium, that the customer eventually repaid. We include, but do not separately report, dummies for all treatment conditions. The omitted group in all regressions is the regulator offer. Robust standard errors, clustered at the caller-day level, are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: How do Borrowers Interpret the Offer?

Dependent variable	Who received moratorium offer			Main reason to repay loans			
	Everyone	Least creditworthy	Most creditworthy	Morality	Penalties	Future loans	Credit score
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Relationship offer	-0.093 (0.070)	-0.067 (0.066)	0.160** (0.076)	-0.071 (0.062)	-0.027 (0.060)	0.184*** (0.052)	-0.085 (0.084)
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Caller FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regulator offer mean	0.49	0.22	0.29	0.15	0.17	0.03	0.65
R-squared	0.13	0.14	0.14	0.10	0.13	0.12	0.08
Observations	190	190	190	147	147	147	147

Notes: The table shows treatment effects on beliefs about the offer, estimated using data from a follow-up survey with borrowers who had received either the relationship or regulator moratorium offer. Each respondent was asked whether they believed that the offer they had received was issued to all customers, only to the least creditworthy customers, or only to the most creditworthy customers. The dependent variable in columns (1) to (3) is a dummy equal to one if a respondent selected the option listed at the top of the column. Each respondent was additionally asked about their main motivation for timely loan repayment. The dependent variable in columns (4) to (7) is a dummy equal to one if the participant selected the option listed at the top of the column and zero otherwise. The omitted group is the regulator offer condition. Robust standard errors, clustered at the caller-day level, are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Who Responds to Debt Moratoria?

Dependent variable Trait	Loan repaid			
	Low or no credit score (1)	Large income drop (2)	Credit score is important (3)	High # of banks (4)
Relationship offer	0.052 (0.045)	-0.052 (0.064)	-0.241** (0.117)	0.142** (0.057)
Trait	0.075* (0.038)	0.180 (0.133)	-0.014 (0.115)	0.018 (0.048)
Relationship offer x Trait	-0.017 (0.047)	0.334** (0.141)	0.256* (0.136)	-0.116** (0.059)
Month FE	Yes	Yes	Yes	Yes
Caller FEs	Yes	Yes	Yes	Yes
Regulator offer mean	0.43	0.43	0.43	0.43
R-squared	0.03	0.04	0.06	0.03
Observations	9,623	833	655	9,623

Notes: The table shows estimates of heterogeneous treatment effects. Each column reports results from a separate regression. The dependent variable in all regressions is an indicator equal to one if a customer repaid their loan within 90 days of the final payment due date. The omitted group in each regression is the regulator offer condition. Treatment indicators for other treatments, alone and interacted with each trait, are included but not separately reported in all regressions. In column (1), the trait is a dummy equal to one if the borrower had no credit score or a credit score below 750. In column (2), the trait is a dummy equal to one if, based on survey responses, the borrower's percentage change in monthly income between the pre-COVID period and 2022 falls in the bottom quartile of the distribution (i.e., experienced the largest income drop). In column (3), the trait is equal to one if, based on survey responses, the borrower considers important to maintain a good credit score. In column (4), the trait is equal to one if the number of banks in the borrowers' postal code exceeds 170, which is the 90th percentile in the sample. Robust standard errors, clustered at the caller-day level, are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Beliefs about the Bank

Dependent variable	Bank is altruistic		Trust in bank and non-bank lenders	
	(1)	(2)	(3)	(4)
Relationship offer	-0.044 (0.060)	-0.017 (0.063)	0.147*** (0.056)	0.166*** (0.059)
Month FE	Yes	Yes	Yes	Yes
Caller FEs	No	Yes	No	Yes
Regulator offer mean	0.71	0.71	0.21	0.21
R-squared	0.04	0.09	0.04	0.10
Observations	265	265	265	265

Notes: The table shows treatment effects on borrower beliefs about the bank. The dependent variable in columns (1) and (2) is a dummy equal to one for all borrowers who responded that the statement “[the lender] cares more about the well-being of its customers than about profits” applied to their lender more than to other financial institutions. The dependent variable in columns (3) and (4) is a dummy equal to one for all borrowers who responded “a great deal of confidence” or “quite a lot of confidence” to the question “Could you tell me how much confidence you have in banks and non-bank institutions?”. The omitted group in all regressions is the Regulator Offer. Robust standard errors, clustered at the caller-day level are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: Banking Relationships – Product Adoption Experiment

Dependent variable	Accepted offer			
	Personal loan (1)	(2)	Non-credit product (3)	(4)
Relationship moratorium offer	0.091 (0.061)	0.096 (0.064)	-0.069 (0.050)	-0.084* (0.050)
Branded product offer	0.068 (0.061)	0.076 (0.065)	-0.044 (0.050)	-0.065 (0.054)
Branded product x Relationship offer	-0.098 (0.085)	-0.095 (0.088)	0.164** (0.072)	0.176** (0.073)
Month FE	Yes	Yes	Yes	Yes
Caller FE	No	Yes	No	Yes
Outcome mean				
R-squared	0.032	0.066	0.059	0.111
Observations	528	528	632	632

Notes: This table shows treatment effect estimates from the product adoption follow-up experiment. Columns (1) and (2) display results for borrowers were offered a personal loan. Columns (3) and (4) display the results for borrowers who were offered a non-credit product. Each column reports results from a separate regression. The sample in all regressions is restricted to borrowers who received a debt moratorium offer in the main experiment and were approached with a product offer no more than one year after receiving the moratorium offer. The dependent variable in all regressions is a dummy equal to one if a participant accepted the product offer. Robust standard errors, clustered at the caller-day level are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Internet Appendix

“How do Borrowers Respond to a Debt Moratorium? Experimental Evidence from Consumer Loans in India”

A Theoretical Framework

To guide the interpretation of our empirical findings, we present a simple model of debt forbearance and relational contracting that describes the borrower’s repayment decision in response to receiving a forbearance offer. The model is a standard lending and loan repayment game in which the borrower trades off the opportunistic short-term gain of loan default against the long-term benefits of a continued relationship with the lender. We extend this framework to allow for the possibility that the bank has private information about the continuation value of the relationship and can reveal this information to borrowers by extending loan modification offers to its most creditworthy customers.[†] Crucially, the model provides a micro-foundation for why borrowers may repay loan with higher probability purely due to changes in information.

The model serves two purposes. First, it establishes conditions under which loan modifications affect repayment and the continuation of banking relationships. When banks are free to target loan modifications, forbearance offers signal an investment in the relationship that makes recipients update positively about the continuation value of the relationship. This improves loan repayment and the survival of banking relationships and is a mechanism similar to models of relational contracting where the value of future interactions discourages opportunistic behavior (see [Macchiavello and Morjaria, 2023](#)). Mandated forbearance, on the other hand, precludes information transmission and prevents borrowers from updating about the continuation value of the relationship, so that receiving a forbearance offer has no effect on loan repayment and banking relationships. Second, the model clarifies which beliefs are necessary to sustain an equilibrium in this game. For forbearance offers to affect loan repayment and banking relationships, customers must believe that targeted forbearance is offered to the most creditworthy customers while mandated forbearance is offered to everyone, irrespective of the net present value of the relationship.

The experimental design presented in Section 3 is a direct test of the model’s main prediction: that borrowers will repay at a higher rate when the offer of forbearance is viewed as an active choice by the lender. The model provides an explicit mechanism for why this could be true: an active choice reveals the lender’s information. In addition, we elicit borrower beliefs and test whether these are consistent with the equilibrium beliefs required for the model predictions to hold.

A.1 Setup

Players and preferences. We consider a setting in which a risk-neutral bank must decide whether to offer forbearance to a borrower who is delinquent on her payments for a loan with outstanding balance X at time $t = 0$. Based on the bank’s decision, the borrower decides whether to repay her loan at time $t = 1$.

The population of borrowers consists of two types, H and L . The net present value of renegotiating the loan and continuing to do business with a type H borrower is positive for the bank. The net present value of renegotiating the loan and continuing to do business with a type L borrower is negative for the bank. Borrowers do not know their own type ex ante, but may infer it during the game.[‡] If borrowers do learn their type, their net present value of repaying the loan is higher if they know that they are of type H .

The *uncertain* benefit of repaying the loan, which captures the value of continuing the banking relationship,

[†] Most models of lending and loan repayment assume that borrowers have private information about their willingness or ability to repay. While we abstract from this feature to make the model more tractable, it is straightforward to add private information on the borrower side to our model without loss of generality.

[‡] This is equivalent to assuming that the borrower does know their type but does not know the full distribution of types in the population of those doing business with the bank. It is also equivalent to the borrower not knowing the bank’s belief about their own type. What matters for the model is only that the borrower learns about the likelihood of the existence of future relationship value with the bank.

is worth R each to the borrower and the bank.[§] The uncertain value of repaying the loan is realized with probability P , which is itself a random variable whose value depends on the type of the borrower. The bank incurs administrative cost c when it extends a forbearance offer.[§]

Actions and payoffs. The bank moves first and decides whether or not to offer forbearance. If the bank does not offer forbearance, the borrower still has the choice to repay the loan if their expected payoff is higher.

If forbearance is offered, the bank incurs cost c whether or not the loan is repaid. The borrower then chooses whether to repay the loan or not. If the loan is repaid, the borrower loses the loan balance X . The lending relationship continues and both parties collect continuation value PR . If the loan is not repaid, both players receive their outside option, normalized to zero.

Information. There is a proportion θ of borrowers who are type H , with $1 - \theta$ of borrowers having type L .[¶] The bank sees whether the borrower is type H or type L . $P = P_H$ if the type is H , and $P = P_L$ if the type is L , $P_H > P_L$. The borrower starts with the unconditional expectation $P_0 = \theta P_H + (1 - \theta)P_L$, and may update this expectation based on the bank's action.

A.2 Analysis

We are interested in Perfect Bayesian equilibria of this game.^{||} Throughout the paper we assume that in the absence of a relationship value the loan would not be repaid, which is true if $X > 0$. We additionally impose the following two assumptions, which guarantee that the choices are not perfectly deterministic.

Assumption 1: Borrower beliefs affect borrower actions. This requires: $P_H R > X > P_0 R^{**}$

Assumption 2: The bank's information affects its actions. This requires: $P_H R + X - c > 0 > P_L R - c$

Proposition 1 *It is a Perfect Bayesian Equilibrium for the bank to extend forbearance only if $P = P_H$, for the borrower to believe that $P = P_H$ when forbearance is offered but $P = P_L$ if not, and to choose to repay if forbearance is offered.*

Proof: Assumption (1) implies the borrower's optimal strategy is to repay if and only if they believe their type is high, $P = P_H$. Assumption (2) implies that the bank's optimal strategy is to offer forbearance if and only if $P = P_H$. Therefore the borrowers' beliefs are correct and the equilibrium is Perfect Bayesian.

When the bank is able to exercise discretion over who is offered forbearance, receiving a forbearance offer conveys information about the continuation value of the lending relationship. It is rational for borrowers who are offered forbearance to interpret the offer as an investment in the relationship that the bank extends only in cases where the net present value of a continued relationship is positive. This inference is correct, given the assumption that only type H borrowers repay and that the information available to the bank affect its actions so that it offers forbearance only when it observes a signal indicating that a borrower is type H .

Proposition 2 *If the bank is forced to extend forbearance to all customers, the borrower will not repay.*

Proof: If the bank has no action to take, the borrower does not update their prior that $E[P] = P_0$. Assumption (1) then implies that the borrower's optimal choice is to never repay.

[§] It is straightforward to extend to the case where the borrower and the bank obtain different rewards R_1 and R_2 each > 0 from the relationship.

[§] In a richer model, this cost could also include forgoing the benefit of committing not to renegotiate loans, which would reduce defaults in the long term.

[¶] It is straightforward to extend to the case where the bank's information is imperfectly informative.

^{||} This essentially requires players' beliefs about other players' actions to be correct in equilibrium.

^{**} This would imply that the bank should not make the loan ex-ante even if the type is not observed ex-ante. We view this model as being applicable to situations where borrower creditworthiness is reduced ex-post due to an unexpected event, as is the case in our experimental setting.

Intuitively, when forbearance is mandated and banks cannot target loan modifications, receiving a forbearance offer conveys no information about the continuation value of the lending relationship. Because borrowers receive no information, they do not update their beliefs about the value of a continued relationship with the bank. As a result borrowers' repayment decisions and the likelihood of a continued banking relationship are unaffected by the extension of forbearance offers.

The assumptions required to generate the results of our model are informative about when we would expect the results of our analysis to generalize beyond our experimental setting. First, lending relationships must be valuable for lenders and borrowers. This has been shown to be true in many settings from microfinance to corporate lending. Second, lenders must have relationship-specific information unknown to the borrower. This is the case for many consumer credit markets where borrowers lack extensive credit histories and lending is increasingly based on non-traditional data, such as proprietary transaction records. Finally, we assume that the costs of loan renegotiation are high relative to loan balances. The conclusions from our model will therefore be more applicable in settings with small loan sizes and a large number of loans, such as digital lending or consumer credit.

To summarize, the model elucidates the minimum assumptions necessary to produce two results consistent with the empirical findings, that (i) the signal-carrying message increases the repayment rate and (ii) the borrower updates their belief of their type in a positive way in response to the signal. Despite its simplicity, the model's utility lies in the fact that it states clearly the main assumptions under which the main effect documented in this paper is likely to extrapolate to other settings and retain external validity: settings where the lender has private information unknown to the borrower (such as [Brunnermeier et al. \(2021\)](#)), which could include their absolute likelihood of repaying, their *relative* position in the overall population of borrowers, or components of relationship value unrelated to creditworthiness (such as interest in non-credit products as documented in Section 4). Overall, the model suggests that if this is the mechanism at play, the results should extrapolate to, e.g., retail banking markets where the lender is a large company and the borrowers are households, but not to, e.g., syndicated loan markets where the borrower is a well-known public company with standardized disclosures and the lenders are a syndicate of lenders without insider information.

B Beliefs about Debt Relief in the Population

To motivate our study, we conducted an online survey about the expected effects of debt relief with a sample of respondents representative of the population of consumer loan borrowers in India in terms of age, income, and gender. In the survey, we first elicited borrower expectations about the likely effect of debt relief policies in general and then asked them about debt moratoria similar to those tested in our intervention more specifically.^{††} The results show that even in the case of an aggregate shock where forbearance can be assumed to benefit primarily borrowers in genuine financial distress, respondents overwhelmingly expect debt relief to generate moral hazard and damage overall credit discipline. However, when asked more specifically about moratoria extended voluntarily by a private lender, the results suggest that borrowers anticipate some of the reciprocal behavior we document in our main results.

Figure 1 summarizes expectations about debt relief in the population. We first asked respondents whether they thought that debt relief extended through India's first debt relief package had benefited households that were in actual financial distress and needed support. Overall, respondents believe that this is the case: 73 percent of respondents think that the majority of beneficiaries needed and deserved relief. Next, we asked respondents, whether they agreed with the statement "*widespread debt relief can discourage borrowers who are able to pay their*

^{††} Our approach for this descriptive exercise is similar to recent work that has used online surveys with representative populations to examine how people form opinions about social issues and public policies (see, for example, [Stantcheva, 2020](#)).

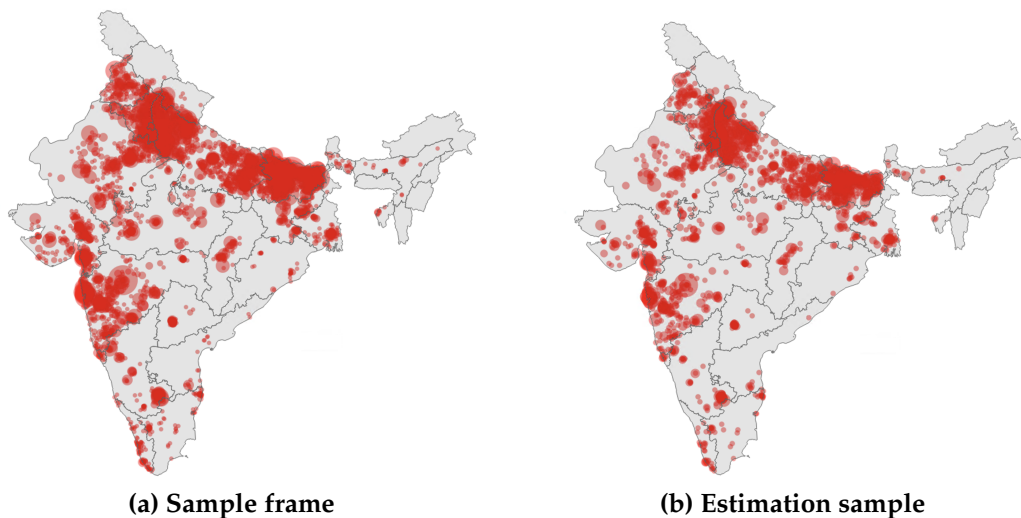
debts from paying them in the future". The vast majority of respondents (66 percent) agreed with this statement. Second, we asked respondents how they thought a repayment moratorium would affect beliefs about the lender—the primary channel through which one would expect debt forbearance to generate moral hazard. Specifically, respondents were asked whether they agreed with the statement *"if a private lender gives more debt relief than others, their borrowers might take them less seriously and de-prioritize making payments to that lender"*, which captures the idea that forbearance granted by private lenders may reduce loan repayment because it damages the lender's reputation and creates expectations of lenient credit enforcement. We find that 65 percent of respondents agree with this statement, indicating that borrowers expect debt relief that is offered voluntarily by a private lender to generate moral hazard by damaging the reputation of the lender.

We then asked respondents more specifically about the likely effects of a three-month debt moratorium, similar to the one tested in our intervention. We first asked borrowers whether they would be surprised if their lender voluntarily offered them a moratorium. The results indicate that, despite the fact that forbearance issued by private lenders is common in our setting and other credit markets, most borrowers (75%) would be "somewhat surprised" or "very surprised" to receive a moratorium offer from a private lender. We then asked borrowers how they thought this three-month moratorium offer would affect credit discipline and demand for future interactions with the lender. In contrast to beliefs about debt relief in general, borrowers anticipate that *voluntary* forbearance offers issued by the lender could generate reciprocal behavior: 70% of respondents think that receiving a moratorium offer from a private lender would improve loan repayments to that lender, and 84% believe that recipients would be more likely to want to do business with a lender who offered them a moratorium in the future.

In summary, the results of a survey representative of the borrower population illustrate that respondents overwhelmingly expect repayment deferrals to have negative implications for credit discipline. However, when borrowers are asked more specifically about the effects of a moratorium offered voluntarily by a private lender, respondents anticipate some reciprocal behavior that may counteract the damaging effects of moratorium offers on credit discipline. Motivated by these results, our experimental design attempts to understand to what extent expectations about the impact of debt relief in the population match the actual response to exogenously assigned moratorium offers.

C Appendix Figures

Figure IA.1: Sample Frame and Treated Loans



Notes: The figure shows the geographical distribution of loans in the sample frame ($N=51,660$) in panel (a) and loans in the estimation sample, comprising loans of borrowers who were successfully contacted and assigned to treatment ($N=9,623$) in panel (b). Each circle represents a postal code, typically corresponding to a neighborhood or town, and is scaled by the number of observations in that location.

D Appendix Tables

Table IA.1: List of Follow-Up Surveys

Survey (1)	Date (2)	Tables (3)	Sample (4)	Sample frame (5)	Responses (6)	Response rate (7)
Survey on beliefs about credit enforcement	January-April 2022	5, IA.2 , IA.3 , IA.6	All participants of main experiment	9,632	1,316	14%
Survey on beliefs about the moratorium offer	June-July 2022	4, IA.2 , IA.4 ,	Previously contacted with relationship or regulator offer	3,730	190	5%
Survey on beliefs about the bank	September-October 2023	6, IA.2 , IA.5 ,	Previously contacted with relationship or regulator offer	3,730	265	7%

Notes: The table reports summary information for the three follow-up surveys conducted after the main experiment, including the date of the survey, tables in which survey data is used, sample frame, sample sizes, and response rates.

Table IA.2: Factors Predicting Survey Response

Dependent variable	Survey Responded		
	Survey on beliefs about credit enforcement (1)	Survey on beliefs about the moratorium offer (2)	Survey on beliefs about the bank (3)
Reported income, Rs '000	-0.019*** (0.005)	-0.012 (0.009)	-0.003 (0.008)
Age	-0.091*** (0.021)	-0.113*** (0.024)	0.010 (0.026)
Female	-6.105*** (1.153)	-2.386** (1.032)	-3.322** (1.366)
No credit history	1.911** (0.750)	1.655** (0.706)	-1.022 (0.968)
Credit score	-0.003** (0.001)	-0.002** (0.001)	0.001 (0.001)
Principal, Rs '000	-0.060 (0.050)	0.004 (0.047)	-0.016 (0.055)
Balance, Rs '000	-0.093 (0.062)	-0.258*** (0.054)	-0.031 (0.066)
Monthly payment, Rs '000	0.425 (0.443)	0.570 (0.448)	0.000 (0.524)
Loan duration (months)	-1.175*** (0.407)	-1.634*** (0.535)	-0.212 (0.432)
Months remaining	-0.496*** (0.161)	-1.123*** (0.178)	0.001 (0.176)
Day called	0.215** (0.084)	0.023 (0.089)	-0.178** (0.091)
Observations	9,623	3,730	3,730

Notes: The table shows which observable borrower characteristics predict participation in each of the three follow-up surveys. Each entry is from a separate regression of an indicator for survey response on the variable listed in that row, controlling for offer-month (randomization strata), day-of-week, and month fixed effects. Estimates are scaled by 100 for readability. Standard errors, clustered at the caller-offer date level, are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table IA.3: Balance Tests, Survey on beliefs about credit enforcement

	In survey frame (1)	Responded to survey (2)	Responded - regulator offer (3)	Responded - relationship offer (4)	p-value (5)
<i>Panel A: Borrower characteristics</i>					
Reported income, Rs '000	39.73 [58.03]	37.11 [40.60]	35.70 (3.02)	39.28 (4.13)	0.40
Female	0.10 [0.30]	0.06 [0.25]	0.06 (0.02)	0.02 (0.01)	0.06
Age	33.17 [8.70]	32.26 [7.83]	32.69 (0.70)	32.70 (0.56)	0.55
No credit history	0.67 [0.47]	0.70 [0.46]	0.67 (0.03)	0.71 (0.03)	0.36
Credit score	730.98 [51.38]	731.44 [51.28]	729.14 (5.68)	732.99 (4.64)	0.55
<i>Panel B: Loan characteristics</i>					
Principal, Rs '000	11.81 [6.58]	11.61 [6.44]	11.23 (0.36)	11.95 (0.39)	0.11
Balance, Rs '000	7.05 [5.63]	6.80 [5.66]	6.43 (0.35)	6.87 (0.34)	0.42
Monthly payment, Rs '000	1.45 [0.75]	1.47 [0.74]	1.41 (0.04)	1.49 (0.04)	0.13
Loan duration (months)	7.80 [0.91]	7.73 [1.00]	7.75 (0.05)	7.81 (0.06)	0.15
Months remaining	5.08 [2.37]	4.87 [2.39]	4.71 (0.15)	4.88 (0.17)	0.53
Day called	8.12 [4.40]	8.38 [4.52]	7.74 (0.44)	8.45 (0.46)	0.27
F-test					0.95
N	9,623	1,316	262	275	

Notes: This Table mirrors Table 1 of the main text but with altered subsample definitions as per the appropriate column headers. The survey frame is the subsample of borrowers who were eligible to be sampled to receive survey call attempts. Standard deviations in square brackets. Standard errors, clustered at the caller-offer date level, in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Column (5) tests for the equivalence of columns (3) and (4), and the F-test reports the p-value of an F-test where the null hypothesis is that all variables tested do not jointly predict random assignment to the relationship offer among survey respondents assigned to either the regulator or relationship offer.

Table IA.4: Balance Tests, Survey on beliefs about the moratorium offer

	In survey frame (1)	Responded to survey (2)	Responded - regulator offer (3)	Responded - relationship offer (4)	p-value (5)
<i>Panel A: Borrower characteristics</i>					
Reported income, Rs '000	39.29 [56.22]	44.03 [79.36]	33.63 (3.10)	54.12 (17.23)	0.23
Female	0.10 [0.30]	0.08 [0.27]	0.09 (0.05)	0.06 (0.04)	0.65
Age	33.43 [8.88]	33.94 [8.24]	34.84 (1.52)	33.06 (1.38)	0.43
No credit history	0.67 [0.47]	0.76 [0.43]	0.76 (0.05)	0.75 (0.04)	0.83
Credit score	730.74 [51.99]	725.65 [60.26]	729.14 (11.35)	722.46 (13.60)	0.71
<i>Panel B: Loan characteristics</i>					
Principal, Rs '000	11.86 [6.72]	12.26 [5.75]	12.26 (0.63)	12.26 (0.52)	0.97
Balance, Rs '000	6.79 [5.74]	5.82 [4.28]	5.77 (0.48)	5.88 (0.38)	0.79
Monthly payment, Rs '000	1.45 [0.76]	1.55 [0.69]	1.55 (0.07)	1.55 (0.07)	0.97
Loan duration (months)	7.81 [0.90]	7.49 [1.13]	7.48 (0.12)	7.51 (0.12)	0.93
Months remaining	4.87 [2.40]	3.98 [2.14]	3.89 (0.25)	4.06 (0.21)	0.54
Day called	7.75 [4.37]	8.32 [4.49]	8.34 (0.58)	8.29 (0.62)	0.96
F-test					0.86
N	3,730	190	93	97	

Notes: This Table mirrors Table 1 of the main text but with altered subsample definitions as per the appropriate column headers. The survey frame is the subsample of borrowers who were eligible to be sampled to receive survey call attempts. Standard deviations in square brackets. Standard errors, clustered at the caller-offer date level, in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Column (5) tests for the equivalence of columns (3) and (4), and the F-test reports the p-value of an F-test where the null hypothesis is that all variables tested do not jointly predict random assignment to the relationship offer among survey respondents assigned to either the regulator or relationship offer.

Table IA.5: Balance Tests, Survey on beliefs about the bank

	In survey frame (1)	Responded to survey (2)	Responded - regulator offer (3)	Responded - relationship offer (4)	p-value (5)
<i>Panel A: Borrower characteristics</i>					
Reported income, Rs '000	39.29 [56.22]	36.75 [44.07]	41.15 (6.50)	32.56 (2.19)	0.21
Female	0.10 [0.30]	0.05 [0.22]	0.07 (0.03)	0.03 (0.02)	0.27
Age	33.43 [8.88]	32.72 [8.38]	33.04 (0.98)	32.42 (0.87)	0.63
No credit history	0.67 [0.47]	0.63 [0.48]	0.63 (0.05)	0.63 (0.04)	0.93
Credit score	730.74 [51.99]	730.51 [51.29]	736.98 (5.52)	724.41 (8.25)	0.21
<i>Panel B: Loan characteristics</i>					
Principal, Rs '000	11.86 [6.72]	11.76 [5.75]	12.00 (0.57)	11.53 (0.48)	0.52
Balance, Rs '000	6.79 [5.74]	6.52 [4.79]	6.97 (0.50)	6.10 (0.37)	0.12
Monthly payment, Rs '000	1.45 [0.76]	1.44 [0.66]	1.46 (0.06)	1.43 (0.06)	0.75
Loan duration (months)	7.81 [0.90]	7.79 [0.82]	7.84 (0.07)	7.75 (0.08)	0.40
Months remaining	4.87 [2.40]	4.79 [2.41]	4.96 (0.21)	4.63 (0.21)	0.17
Day called	7.75 [4.37]	7.28 [4.25]	6.98 (0.45)	7.56 (0.50)	0.42
F-test					0.86
N	3,730	265	129	136	

Notes: This Table mirrors Table 1 of the main text but with altered subsample definitions as per the appropriate column headers. The survey frame is the subsample of borrowers who were eligible to be sampled to receive survey call attempts. Standard deviations in square brackets. Standard errors, clustered at the caller-offer date level, in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Column (5) tests for the equivalence of columns (3) and (4), and the F-test reports the p-value of an F-test where the null hypothesis is that all variables tested do not jointly predict random assignment to the relationship offer among survey respondents assigned to either the regulator or relationship offer.

Table IA.6: Treatment Effects – Borrower Expectations

	Expects future forbearance					
	Expects lax enforcement		Expects forbearance			
	(1)	(2)	from banks (3)	from government (4)	(5)	(6)
Relationship offer	-0.064 (0.093)	0.032 (0.095)	0.011 (0.091)	0.006 (0.090)	0.008 (0.080)	0.008 (0.082)
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Caller FE	No	Yes	No	Yes	No	Yes
Regulator offer mean	0.47	0.47	0.66	0.66	0.75	0.75
R-squared	0.05	0.22	0.03	0.08	0.03	0.06
Observations	259	259	320	320	325	325

Notes: The table shows the treatment effects on credit market expectations, based on data from a follow-up survey. The dependent variable in columns (1) and (2) is an indicator equal to one if a borrower responded that they expect more lenient credit enforcement in the future. The dependent variables in columns (3) to (6) are indicators equal to one if a borrower indicated that they expect future moratoria from banks and governments, respectively. Robust standard errors are clustered at the caller-day level, are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table IA.7: Effect on Repayment by Offer Acceptance

Dependent variable Sample	Accepted offer	Loan repaid	
	Received offer (1)	Rejected Offer (2)	Accepted Offer (3)
Relationship offer	0.011 (0.012)	0.043** (0.018)	-0.003 (0.045)
Month FE	Yes	Yes	Yes
Regulator offer mean	0.12	0.44	0.36
R-squared	0.09	0.02	0.01
Observations	9,623	3,245	485

Notes: The table examines the effect of the relationship offer on offer acceptance, and loan repayment conditional on offer acceptance and rejection. Column (1) shows the effect on offer acceptance. Columns (2) and (3) show the effect of the relationship offer on repayment, split by whether the respondent accepted and paid the offer fee. Standard errors, clustered at the caller-offer date level, in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table IA.8: Balance of Covariates: Forbearance Takers

	Offer accepted (1)	Relationship Offer (2)	Regulator Offer (3)	p-value (4)
<i>Panel A: Borrower characteristics</i>				
Reported income ('000 INR)	39.977 [59.798]	41.697 (4.926)	37.965 (4.897)	0.592
No credit history	0.641 [0.480]	0.634 (0.028)	0.649 (0.032)	0.726
Credit score	736.891 [47.479]	737.340 (5.403)	736.363 (5.746)	0.902
<i>Panel B: Loan characteristics</i>				
Principal ('000 INR))	13.929 [8.223]	14.153 (0.541)	13.676 (0.567)	0.543
Balance ('000 INR)	8.974 [7.000]	9.097 (0.442)	8.835 (0.474)	0.685
Monthly Payment ('000 INR)	1.735 [0.894]	1.760 (0.059)	1.706 (0.059)	0.520
Loan duration (months)	7.944 [0.935]	7.946 (0.059)	7.943 (0.067)	0.977
Loan age (months)	5.686 [2.546]	5.647 (0.169)	5.730 (0.154)	0.716
Day Called	9.466 [5.047]	9.105 (0.471)	9.873 (0.469)	0.249
Observations	485	257	228	

Notes: The table shows summary statistics and tests of covariate balance for contacted borrowers who accepted one of the forbearance offers. Panel A reports summary statistics on borrower characteristics from the lender's administrative data and credit reports, panel B reports summary statistics on loan characteristics observed in administrative data from the lender, and panel C reports summary statistics on borrowers' credit history based on credit bureau data. Column (1) shows summary statistics for the entire sample, columns (2) shows summary statistics for customers who accepted the relationship offer and column (3) shows summary statistics for customers who accepted the regulator offer. Column (4) reports the *p*-value of equality of means across the two forbearance offer treatment conditions. At the foot of the table, we report a joint *F*-Test of all variables.

Table IA.9: Treatment Effects by Predicted Likelihood of Moratorium Take-up

Predicted take-up probability:	Loan repaid					
	Low (1)	High (2)	Low (3)	High (4)	Low (5)	High (6)
[1] Relationship offer	0.037** (0.016)	0.050 (0.043)	0.039** (0.016)	0.063 (0.040)	0.043*** (0.016)	0.007 (0.045)
[2] Regulator offer	-0.001 (0.015)	0.020 (0.044)	0.004 (0.015)	-0.009 (0.040)	0.001 (0.015)	-0.006 (0.046)
[3] Placebo call	-0.005 (0.014)	-0.009 (0.039)	0.002 (0.013)	-0.053 (0.036)	0.000 (0.013)	-0.036 (0.035)
Test: [1]–[2]	0.039** (0.016)	0.030 (0.044)	0.035* (0.016)	0.072 (0.040)	0.042** (0.016)	0.014 (0.045)
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Day and caller FE	No	No	No	No	No	No
All Controls	No	No	No	No	No	No
Split	P(take any offer)		P(take relationship offer)		P(take regulator offer)	
Offer paid (of offered)	0.11	0.31	0.11	0.29	0.11	0.29
Control group mean	0.43	0.32	0.43	0.32	0.42	0.37
R-squared	0.11	0.31	0.11	0.29	0.11	0.29
Observations	8,660	963	8,660	963	8,659	964

Notes: The table shows treatment effects of debt forbearance offers on total loan repayment, splitting the sample by predicted likelihood of forbearance take-up. Columns (1)-(6) split by whether the customer was in the 90th+ percentile of likelihood to accept the offer. The dependent variable in all regressions is an indicator equal to 1 if a customer completed repayment of their loan. Standard errors, clustered at the caller-offer date level, in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table IA.10: Summary Statistics: Debt Relief Survey

	N (1)	Mean (2)	Median (3)	StDev (4)
<i>Panel A: All Respondents</i>				
Loan outstanding	1,404	0.47	0	0.50
Ever had loan	1,404	0.65	1	0.48
Male	1,404	0.53	1	0.50
Age	1,404	35.52	35	12.32
Employed	1,404	0.79	1	0.41
Income	1,283	84,704	42,000	298,417
<i>Panel B: Respondents with loan outstanding</i>				
Male	653	0.55	1	0.50
Age	653	36.67	35	10.61
Employed	653	0.92	1	0.28
Income	642	114,010	50,000	408,938

Notes: The table shows summary statistics for the respondent population of a nationally representative online survey on debt forbearance. Panel (a) shows descriptives for all respondents, panel (b) shows descriptives for respondents that had at least one loan outstanding at the time of the survey. The survey was conducted between December 1, 2021 and January 31, 2022 using an online survey platform. We restrict the sample to the 1,404 respondents who passed a standard attention check question administered as part of the survey.

Table IA.11: Online Survey: Beliefs about Debt Relief

	Percent			
	(1)	(2)	(3)	(4)
Panel A: Beliefs about debt relief				
			Yes, agree	No, disagree
Widespread debt relief can discourage borrowers who are able to pay their debts from paying them in the future.			66.10	33.90
If a private lender gives more debt relief than others, their borrowers might take them less seriously and de-prioritize making payments to that lender.			64.96	35.04
If there is another spike in Covid-19 cases with more 200,000 cases per day within the next 12 months, how likely do you think it is that the Government of India will grant another debt moratorium to borrowers, similar to those offered in the past.			72.93	27.07
	Very unlikely	Unlikely	Likely	Very likely
Suppose that a borrower who <i>is not in need</i> and has no problems making their loan payments is offered a debt moratorium (repayment holiday). How likely do you think it is that they would take up the repayment holiday, even if they do not need it?	6.77	21.58	43.80	27.85
Now suppose that a borrower who <i>is in need</i> and has problems making their loan payments is offered a debt moratorium (repayment holiday). How likely do you think it is that this would have a negative effect on their repayment behavior in the future?	9.12	27.71	40.46	22.72
Suppose there is an economic crisis and borrowers everywhere in India are having difficulties making their loan payments on time. How likely do you think that the government will offer a debt moratorium to borrowers in this situation?	3.42	12.35	49.00	35.33
Suppose there is an economic crisis and borrowers everywhere in India are having difficulties making their loan payments on time. How likely do you think that private banks will offer debt moratoria to borrowers in this situation?	8.05	28.70	40.88	22.36
Suppose there is an economic crisis and borrowers everywhere in India are having difficulties making their loan payments on time. How likely do you think that microfinance institutions will offer debt moratoria to borrowers in this situation?	13.11	33.62	35.97	17.31
Panel B: Beliefs about lender-initiated forbearance				
			Yes	No
Suppose a customer is offered a three-month debt moratorium by their bank. Would you expect this to make the customer more or less likely to want to do business with the bank in the future?			84	16
Suppose a customer is offered a three-month debt moratorium by their bank. Would you expect this to improve or worsen loan repayment in the longer run?			70	30
	Not surprised	Not very surprised	Somewhat surprised	Very surprised
Suppose you faced difficulties making your loan repayments during an economic crisis and your bank offered you a three-month repayment holiday. Which of the following would best describe your reaction?	11	14	48	27

Notes: The table shows response frequencies for the main questions of a nationally representative online survey on debt forbearance. The sample is restricted to the 1,404 respondents who passed a standard attention check question administered as part of the survey.

E Comparisons of All Treatment Conditions

Table IA.12: Main Experiment: Treatment Cells and Takeup Rates

Treatment (1)	Assigned (2)	Contacted (3)	Accepted offer (4)	Acceptance rate (5)
[1] Relationship offer	11,730	1,901	257	0.135
[2] Regulator offer	10,962	1,829	228	0.125
[3] Placebo call	9,326	2,452	0	0.000
[4] Control group	13,587	3,441	0	0.000
Total	45,605	9,623	485	

Notes: The table shows treatment cell sizes and takeup rates of forbearance offers in the debt forbearance experiment.

Table IA.13: Summary Statistics and Balance of Covariates

	Relationship offer (1)	Regulator or offer (2)	Collection call (3)	Friendly call (4)	<i>p</i> -value (5)
<i>Panel A: Borrower characteristics</i>					
Reported income, Rs '000	39.27 (1.59)	39.31 (2.06)	39.70 (1.31)	40.47 (1.42)	0.86
Female	0.10 (0.01)	0.10 (0.01)	0.11 (0.01)	0.10 (0.01)	0.96
Age	33.52 (0.28)	33.34 (0.26)	33.07 (0.20)	32.89 (0.23)	0.07
No credit history	0.67 (0.01)	0.66 (0.01)	0.67 (0.01)	0.67 (0.01)	0.45
Credit score	733.10 (2.16)	728.39 (2.08)	731.49 (1.66)	730.62 (2.07)	0.42
<i>Panel B: Loan characteristics</i>					
Principal, Rs '000	11.90 (0.18)	11.82 (0.17)	11.81 (0.12)	11.75 (0.14)	0.35
Balance, Rs '000	6.81 (0.16)	6.76 (0.16)	7.28 (0.11)	7.14 (0.14)	0.72
Monthly payment, Rs '000	1.46 (0.02)	1.43 (0.02)	1.46 (0.01)	1.44 (0.02)	0.48
Loan duration (months)	7.81 (0.02)	7.81 (0.02)	7.80 (0.02)	7.79 (0.02)	0.81
Months remaining	4.86 (0.07)	4.89 (0.07)	5.23 (0.05)	5.19 (0.07)	0.08
Day called	7.51 (0.36)	8.00 (0.36)	8.42 (0.34)	8.26 (0.38)	0.70
<i>F</i> -test					0.86
<i>N</i>	1,901	1,829	3,441	2,452	

Notes: The table reports summary statistics for contacted borrowers and tests of covariate balance. Panel A reports summary statistics on borrower characteristics from the lender's administrative data and credit reports, and panel B reports summary statistics on loan characteristics observed in the lender's administrative data. Columns (1)-(4) report means and standard deviations of each variable among those contacted in each treatment group. Column (5) reports the *p*-value of equality of means across all treatment conditions. The final *p*-value is that of a joint *F*-test that all coefficients are zero in a regression predicting treatment as a function of covariates, run among those receiving an offer. Because the sampling proportions were changed after the fourth month of the experiment, all balance tests control for an indicator equal to one for all months after this date.

Table IA.14: Summary Statistics and Balance of Covariates with Controls

	Relationship offer (1)	Regulator or offer (2)	Collection call (3)	Friendly call (4)	<i>p</i> -value (5)
<i>Panel A: Borrower characteristics</i>					
Reported income, Rs '000	38.49 (1.57)	38.69 (2.17)	39.51 (1.30)	40.17 (1.47)	0.85
Female	0.11 (0.01)	0.10 (0.01)	0.11 (0.01)	0.11 (0.01)	0.87
No credit history	0.69 (0.01)	0.67 (0.01)	0.67 (0.01)	0.68 (0.01)	0.53
Credit score	731.25 (2.31)	727.08 (2.09)	731.11 (1.67)	729.93 (2.08)	0.45
<i>Panel B: Loan characteristics</i>					
Principal, Rs '000	12.23 (0.19)	12.08 (0.17)	11.89 (0.11)	11.88 (0.14)	0.65
Balance, Rs '000	7.44 (0.14)	7.26 (0.14)	7.43 (0.10)	7.39 (0.12)	0.89
Monthly payment, Rs '000	1.50 (0.02)	1.46 (0.02)	1.47 (0.01)	1.46 (0.02)	0.75
Loan duration (months)	7.76 (0.02)	7.77 (0.02)	7.79 (0.02)	7.77 (0.02)	0.18
Day called	7.99 (0.37)	8.39 (0.36)	8.54 (0.34)	8.45 (0.38)	0.64
F-test					0.97
N	1,901	1,829	3,441	2,451	

Notes: The table reports summary statistics for contacted borrowers and tests of covariate balance after controlling for imbalanced covariates. A "-" indicates that the variable was used as a control variable after being found to be imbalanced. Panel A reports summary statistics on borrower characteristics from the lender's administrative data and credit reports, panel B reports summary statistics on loan characteristics observed in the lender's administrative data, and panel C reports summary statistics on borrowers' credit history based on credit bureau data. Columns (1)-(4) report means and standard deviations of each variable among those contacted in each treatment group. Column (5) reports the *p*-value of equality of means across all treatment conditions. The final *p*-value is that of a joint *F*-test that all coefficients are zero in a regression predicting treatment as a function of covariates, run among those receiving an offer. Because the sampling proportions were changed after the fourth month of the experiment, all balance tests control for an indicator equal to one for all months after this date.

Table IA.15: Loan Repayment

Dependent variable	Loan repaid	
	(1)	(2)
Relationship offer	0.033** (0.014)	0.036*** (0.014)
Regulator offer	-0.003 (0.013)	-0.001 (0.013)
Placebo call	-0.002 (0.012)	0.000 (0.012)
Month FE	Yes	Yes
Caller FEs	No	Yes
Controls	Yes	Yes
Control mean	0.42	0.42
R-squared	0.12	0.13
Observations	9,623	9,623

Notes: This table shows treatment effects on loan repayment, estimated for all treatment arms. Each column shows results from a separate regression. The dependent variable is an indicator equal to one if a borrower completed loan repayment within 90 days of the final repayment due date, which is the cutoff after which the loan is classified as nonperforming. The omitted group is the repayment reminder condition. Controls include all borrower and loan characteristics identified as imbalanced in balance tests. Robust standard errors are clustered at the caller-day level, are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table IA.16: Loan Repayment, All Loans

Sample Dependent variable	All		No other loans	Has multiple loans		
	Paid lender (1)	Share loans paid (2)	Paid lender (3)	Paid lender (4)	Share other loans paid (5)	Share loans paid (6)
Relationship offer	0.036*** (0.014)	0.032** (0.012)	0.037** (0.016)	0.042 (0.031)	-0.052* (0.027)	0.007 (0.027)
Regulator offer	-0.001 (0.013)	-0.011 (0.013)	-0.001 (0.015)	0.003 (0.030)	-0.017 (0.020)	-0.017 (0.025)
Placebo call	0.000 (0.012)	-0.007 (0.011)	-0.009 (0.013)	0.038 (0.026)	-0.016 (0.016)	0.014 (0.022)
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Caller FEs	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Control mean	0.42	0.51	0.42	0.43	0.95	0.62
R-squared	0.13	0.10	0.12	0.15	0.02	0.09
Observations	9,623	9,623	7,692	1,931	1,931	1,931

Notes: The table reports treatment effects on loan repayment for all loans that borrowers had outstanding at baseline, estimated for all treatment arms. Each column shows results from a separate regression. Columns (1) and (2) report results for all borrowers, column (3) reports results for borrowers who have only the loan covered by the moratorium outstanding at baseline, and columns (4) - (6) report results for borrowers who have more than one loan outstanding at the time of treatment. The dependent variable in columns (1), (3), and (4) is a dummy equal to one if a borrower repaid the loan from the lender who issued forbearance offers. The dependent variable in columns (2) and (6) is the share of all loans outstanding at the time of treatment, including those issued by the treatment lender, that the customer eventually repaid. The dependent variable in column (5) is the share of other loans, not including the loan covered by the moratorium, that the customer eventually repaid. Controls include all borrower and loan characteristics identified as potentially imbalanced in balance tests. Robust standard errors, clustered at the caller-day level, are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

F Experiment Scripts

D.1 Main experiment

I. Relationship offer

Hello, am I speaking with [customer name]? I am calling from [lender name] about your [loan name] loan. I would like to talk about an offer from [lender name] to unlock your phone. We would like to extend a special offer that we at [lender name] have personally designed to help our customers manage their finances in the current economic crisis.

At [lender name], we care about our customers and truly value your business. We understand that people all over India are facing great hardships due to the current economic situation. Helping our valued customers in these challenging times is our first priority at [lender name]. That is why we are offering you repayment flexibility on your loan.

We can make you the following offer: You will not have to make any payments for the next 3 months and your mobile phone will be unlocked and stay active during this time. If you accept the offer, it will be recorded as a restructured loan on your credit report. A one-time processing fee of Rs 350 will apply.

Would you like to avail this offer?

-No [continue]

-Yes [send customer payment link and confirm]

Thank you for being a valued [lender name] customer! If you have any questions, please know that we are always there to help you in any way we can for you, and you can reach our customer care number [phone number].

II. Regulator offer

Hello, am I speaking with [customer name]? I am calling from [lender name] about your [loan name] loan. We are extending an offer in accordance with guidelines issued by RBI to all lending institutions to help customers manage their finances in the current economic crisis.

As a result of guidance issued by RBI to all banks and non-bank financial institutions, we are offering you repayment flexibility on your [loan name] loan, comparable to programs offered by most other lenders.

We can make you the following offer: You will not have to make any payments for the next 3 months and your mobile phone will be unlocked and stay active during this time. If you accept this offer, it will be recorded as a restructured loan on your credit report. A one-time processing fee of Rs 350 will apply.

Would you like to avail this offer?

-No [continue]

-Yes [send customer payment link and confirm]

Thank you! If you have any questions, please refer to our customer care number [phone number].

III. Placebo call

Hello, am I speaking with [customer name]? I am calling from [lender name] about your [loan name] loan with some information.

We would like to let you know that we are here to help our valued customers manage their finances in the current economic crisis. That is why we updated our website with useful answers to the questions our customers might have. We have also updated our online chat bot. Do you have any questions or problems that we might be able to help you with today?

Thank you for being a valued [lender name] customer! If you have any further questions, please know that we are always there to help you in any way we can for you, and you can reach our customer care number [phone number].

IV. Control group: repayment reminder call

Hello, am I speaking with [customer name]? I am calling from [lender name] about your [loan name] loan. I am calling because your [loan name] loan is past due. We sent you an SMS message concerning this matter earlier. I wanted to ensure that there wasn't any technical problem if you already tried to make a payment, and otherwise find out how and when you intend to make a payment [pause to listen].

We will send you a payment link and ask you to please make a payment at your earliest convenience. Can you please confirm that you are planning to submit your loan payment this month? [Confirm when, and by what means, customer is planning to make payment]

Thank you! If you have any questions, please refer to our customer care number [phone number].

D.2 Product adoption experiment

I. Personal loan, branded

Dear [name],

We are calling from [lender name], from whom you have previously taken out a [loan name] loan. As a valued [lender name] customer we would like to invite you to apply for our new EasyCash personal loan. This convenient product is distributed through our [lender name] online platform in an amount of Rs 30,000 to be used for your personal consumption or cash needs.

If you are interested in this loan, I can send you an online link and help you complete the loan application in a few easy steps. Would you like me to send you the link?

II. Personal loan, unbranded

Dear [name],

We are calling because we would like to invite you to apply for our new EasyCash personal loan. This convenient product is distributed through an online platform in an amount of Rs 30,000 to be used for your personal consumption or cash needs.

If you are interested in this loan, I can send you an online link and help you complete the loan application in a few easy steps. Would you like me to send you the link?

III. Non-credit product, branded

Dear [Name],

We are calling from [Redacted], from whom you have previously taken out a [Redacted] mobile phone loan. As you know, [Redacted] has been deeply committed to helping its customers during these difficult times. As a valued [Redacted] customer, we would like to offer you our new [Redacted] financial health report. This report will give you a clear, easy to understand overview over your credit profile and contains all of the information that banks and other lenders use to assess your fitness for credit.

If you are interested in this product, I can send you an online link and help you complete the application in a few easy steps. Would you like me to send you the link?

IV. Non-credit product, unbranded

Dear [name],

We are calling because we would like to offer you our new [Redacted (name of partner, not lender)] financial health report. This report will give you a clear, easy to understand overview over your credit profile and contains all of the information that banks and other lenders use to assess your fitness for credit.

If you are interested in this product, I can send you an online link and help you complete the loan application in a few easy steps. Would you like me to send you the link?