




2022

## Evaluating the Impact of Mass Borrower Bailout in Jordan's Microfinance Landscape

Joud K. Tabaza

University of Pennsylvania, [jtabaza@wharton.upenn.edu](mailto:jtabaza@wharton.upenn.edu)

Follow this and additional works at: [https://repository.upenn.edu/joseph\\_wharton\\_scholars](https://repository.upenn.edu/joseph_wharton_scholars)

 Part of the [Business Commons](#), [Economic Policy Commons](#), [Finance Commons](#), [Growth and Development Commons](#), [Other Economics Commons](#), [Policy Design, Analysis, and Evaluation Commons](#), [Political Economy Commons](#), and the [Public Policy Commons](#)

---

### Recommended Citation

Tabaza, J. K. (2022). "Evaluating the Impact of Mass Borrower Bailout in Jordan's Microfinance Landscape," *Joseph Wharton Scholars*. Available at [https://repository.upenn.edu/joseph\\_wharton\\_scholars/117](https://repository.upenn.edu/joseph_wharton_scholars/117)

This paper is posted at ScholarlyCommons. [https://repository.upenn.edu/joseph\\_wharton\\_scholars/117](https://repository.upenn.edu/joseph_wharton_scholars/117)  
For more information, please contact [repository@pobox.upenn.edu](mailto:repository@pobox.upenn.edu).

---

## Evaluating the Impact of Mass Borrower Bailout in Jordan's Microfinance Landscape

### Abstract

Borrower debt relief stands as a widely utilized, yet deeply contentious economic policy enacted by governments universally. This paper adopts a difference-in-differences design to study the impact of a women-targeted mass borrower relief program enacted by the government of Jordan in 2019 on credit market outcomes of formal microfinance institutions (MFIs). I find that the program led to significant credit rationing and reallocation from women and areas of higher risk to men and areas of lower risk. Post-program levels of MFI portfolio risk remain stable with no evidence supporting the existence of moral hazard among MFIs, suggesting stricter lending practices in response to the relief.

### Keywords

Microfinance, microcredit, borrower relief, debt forgiveness, credit market intervention, credit rationing, moral hazard, adverse selection, Jordan, emerging markets

### Disciplines

Business | Economic Policy | Economics | Finance | Growth and Development | Other Economics | Policy Design, Analysis, and Evaluation | Political Economy | Public Policy

EVALUATING THE IMPACT OF MASS BORROWER BAILOUT IN JORDAN'S  
MICROFINANCE LANDSCAPE

By

Joud Tabaza

An Undergraduate Thesis submitted in partial fulfillment of the requirements for the

JOSEPH WHARTON SCHOLARS

Faculty Advisor:

Shing-Yi Wang

Associate Professor, Business Economics and Public Policy

THE WHARTON SCHOOL, UNIVERSITY OF PENNSYLVANIA

MAY 2022

## **ABSTRACT**

Borrower debt relief stands as a widely utilized, yet deeply contentious economic policy enacted by governments universally. This paper adopts a difference-in-differences design to study the impact of a women-targeted mass borrower relief program enacted by the government of Jordan in 2019 on credit market outcomes of formal microfinance institutions (MFIs). I find that the program led to significant credit rationing and reallocation from women and areas of higher risk to men and areas of lower risk. Post-program levels of MFI portfolio risk remain stable with no evidence supporting the existence of moral hazard among MFIs, suggesting stricter lending practices in response to the relief.

### **Key words**

Microfinance, microcredit, borrower relief, debt forgiveness, credit market intervention, credit rationing, moral hazard, adverse selection, Jordan, emerging markets

### **Disciplines**

Public Policy, Economics, Finance, Development

## INTRODUCTION

Credit market stimulus programs such as borrower debt relief have become known as the “feel-good economic policy of the millennium” (Easterly 2001, 20). Debt relief, however, is not as radical or novel as one might think it is. Historically, governments are known to have instituted programs for loan forgiveness during times of economic hardship (Mukherjee, Subramanian, and Tantri 2018). Some modern policies credit their foundations back to religious texts, all of which note the rewards and virtues associated with forgiving debt and view the practice as a form of economic reboot (Berman 2021). One of the first legal codes, the Code of Hammurabi enacted in 1772 BCE, also advocates such relief (Mian and Sufi 2014).

### **The Economic Effect of Debt Relief: A Persisting Question**

Despite the longstanding prevalence of borrower debt relief, current evidence on its economic impact remains inconsistent and its associated policies continue to be debatable among economists and policymakers. Arguments for and against such interventions derive from their perceived impact on economic activity, market inefficiencies, and behaviors of borrowers and lenders.

Proponents argue that extreme levels of household debt alter optimal investment and production behavior (Giné and Kanz 2018). Consequently, debt relief holds the promise of improving the productivity of beneficiary households. It is further argued that relief in times of economic crises could have the power to strengthen household balance sheets and prevent large deadweight loss (Mian and Sufi 2014).

By contrast, critics question whether *ex post* market intervention can impact investment or productivity and therefore have a real economic effect (De and Tantri 2014; Giné and Kanz 2018;

Kanz 2016). The huge cost of government intervention in credit markets, too, is often cited (Cole 2009; Dinç 2005; Khwaja and Mian 2005; La Porta, Lopez-De-Silanes, and Shleifer 2002). Beyond the direct cost of writing off loans, a parallel indirect cost may materialize in writing off a culture of prudent borrowing and repayment (Kanz 2016). Moral hazard may emerge if borrowers strategically respond to a debt forgiveness program by borrowing and investing heavily under the expectation that they will be bailed out again (Kanz 2016). Adverse consequences from the lenders' side may emerge at one extreme if lending institutions, seemingly insured by the possibility of relief, choose to take on more risk and lend to borrowers who are more likely to default (Giné and Kanz 2018). At another extreme, they may rationally anticipate unfavorable changes in borrower behavior and start rationing credit as a result (De and Tantri 2014). The empirical evidence examining the change in borrower and lender behavior in the wake of large-scale loan forgiveness is sparse.

## **Scope**

This paper evaluates the impact of a women-targeted mass borrower bailout program in Jordan, spearheaded by King Abdullah II and implemented by the government in 2019, on credit market outcomes of formal microfinance institutions (MFIs). This intervention was driven by the emergence of a local phenomenon known as *AlGharimat* amid Jordan's microfinance landscape. *AlGharimat* (which means indebted women in Arabic) refers to the rapid rise in the number of distressed women borrowers who were defaulting on their uncollateralized microloans and consequently being prosecuted by the justice system. As the issue attracted significant media attention, the King initiated a national effort on March 21, 2019, to raise \$8.89 million and repay the debt of 6,481 women whose loans do not exceed \$1,410 each (Jordan Times 2019b).

By adopting a difference-in-differences (DiD) design, this paper examines the differential impact of the intervention on outcomes that include proportion of women borrowers, loan portfolio outstanding for more than 30 days, number of new loans disbursed per capita, and size of new loans disbursed as proxies for MFI activity and risk. It uses two different strategies to identify exposure to treatment and compare outcomes in the pre-intervention and the post-intervention periods. The first strategy uses men as a control group for women. The second strategy compares the regions most exposed to treatment relative to those that were less exposed. Section II presents a brief institutional background on Jordan's microfinance landscape, borrowing dynamics and the intervention of 2019. Section III summarizes the existing literature on this area of study. Section IV explains the theoretical frameworks and hypotheses upon which I posit my predictions. Section V discusses my data and empirical strategy. I present and discuss my results in Section VI, and thereafter conclude in Section VII.

In this paper, I use the terms microfinance and microcredit interchangeably to denote microcredit activity. I also use the term regions to refer to Jordan's 12 administrative divisions known as governorates.

### **Contribution and Significance**

Evaluating the effect of credit market interventions such as borrower bailout on credit market outcomes in the context of Jordan's microfinance environment intends to address two main gaps in the existing literature on the political economy of credit and may be of interest to several stakeholders. First, despite similar interventions being relatively common and opposing theories surrounding them persisting, little concrete evidence exists around their implications. Much of the sparse evidence has been examined in the context of developed markets and occasionally in emerging developing markets, but rarely, if ever, in frontier markets like Jordan. These

implications are central to informing not only future decision making and public policy, but also microfinance product development. Second, the outcomes of this intervention and the wider economic impact of Jordan's microfinance landscape are of significant interest, but not thoroughly empirically researched. The activities of MFIs in the country stand at the important nexus of international funding and stakeholder interest. Significant sums of foreign aid and donor funding are dedicated to this sector (Ward 2014). This means that the local community, regulators, and NGOs, as well as the international community all have a stake in the ultimate performance of MFI activities and their interaction with government interventions in the country.

## **INSTITUTIONAL BACKGROUND**

### **Microfinance in Jordan**

Today, the microfinance sector in Jordan serves 476 thousand borrowers, with an average loan balance per borrower of \$788 (Khaled, Brown and Saleh 2021). The current serviceable available market stands at 1 million potential clients: equivalent to 10% of the country's population (Khaled et al. 2021). Clients primarily borrow for business, developmental, and consumption purposes. Largely operating as a non-profit sector, microfinance in the country currently claims to build economic capacity in local communities and further the implementation of the Central Bank of Jordan (CBJ)'s financial inclusion strategy (Hauser, Pavelesku, and Vacarciuc 2017). But the origins of the microfinance landscape in the country can be traced to 1994 when Save the Children launched a successful Group Guaranteed Lending & Savings Program, which was ultimately registered as an independent NGO in 1996 (Isaia 2005). Two years later, the United States Agency for International Development launched the Achievement of Market-Friendly Initiatives and Results program in collaboration with the Ministry of Planning and International Cooperation with the goal of establishing a sustainable microfinance sector (Khaled et al. 2021). The uptick in the



number of MFIs began around 2003, as such lending institutions were established under the Ministry of Industry and Trade but not actively supervised or regulated (Hauser, Pavelesku, and Vacarciuc 2017; Khaled et al. 2021). The period of unregulated MFIs ended in 2014 when the Cabinet approved the Microfinance Companies Bylaw (5/2015) which paved the way for the CBJ to formally supervise the sector (Hauser, Pavelesku, and Vacarciuc 2017). This process was fully implemented in 2018 when nine official MFIs were licensed (Denadi and Nzebil 2018). The Microfinance Association of Jordan was established in 2001 to support the development of the sector but was ultimately replaced by *Tanmeyah* network in 2007, which currently represents Jordan's ten officially licensed MFIs (Denadi and Nzebil 2018).

### **The Rise of *AlGharimat*: Causes and Effects**

The phenomenon of *AlGharimat* only emerged in 2017, after the official licensing and regulation of these institutions went underway in 2015 (Khaled et al. 2021). While some of the women affected were defaulting on loans obtained from the ten regulated MFIs, the vast majority were clients of unregulated MFIs and financial service providers (Bazian 2019). Still, the impact of those unregulated providers brought significant negative attention and scrutiny to the sector as a whole and led to interventions at the highest levels of government (Jordan Times 2019b). These interventions implicated the formal microfinance sector in addition to the unsupervised financing institutions (Khaled et al. 2021).

While the origins of *AlGharimat* are difficult to ascertain, they may be attributed to factors such as lender behavior, external events, characteristics of the aggregate market, and irrational borrower behavior. Some evidence in other contexts points towards the idea that growth, saturation, and increased competition in the aggregate market may cause lenders to relax standards as loan repayments deteriorate (Schicks and Rosenberg 2011). Overly aggressive marketing and

providing borrowers with incomplete or inaccurate information when making decisions may also add to risk (Schicks and Rosenberg 2011). Both ideas are applicable to the informal microlending environment in Jordan, especially when it comes to the exploitation of women borrowers by informal lenders through high interest rates and over-lending (Market Research 2019). This is well-documented in an extensive body of local media reports (Market Research 2019; Sweis 2020a; Welsh 2019). Naturally, unexpected external shocks faced by clients may impair their ability to repay their loans. Yet growing evidence points to the idea that some of the impetus driving this phenomenon stems from irrational borrower biases in weighing the present gratification of borrowing more than future consequences of repayment (Schicks and Rosenberg 2011). While empirical analysis on this issue is lacking, case-study narratives based on interviews with women borrowers in Jordan suggest its existence (Sweis 2020a; Welsh 2019). The exacerbation of the *AlGharimat* issue between 2017 and 2019 is likely precipitated by the simultaneous interaction of these factors.

### **The Intervention of 2019**

The issue of *AlGharimat* became so pronounced that it attracted the attention of media outlets and public figures including journalists, religious personalities, members of parliament, and ministers (Khaled et al. 2021; Sweis 2020b). It became a topic of public discussion as activists and relatives of women in debt held protests (Sweis 2020b). Against this backdrop, the King led the direct intervention effort on March 21, 2019 (which marks Mothers' Day in the country), to initiate a national effort to support 5,672 women whose loans do not exceed \$1410 each (Jordan Times 2019b). At the time, 30 of those women were already incarcerated for unpaid debts and released upon bailout (Khaled et al. 2021). He announced this program by calling in to a popular morning show on national television and urged Jordanians to contribute to this effort (Jordan

Times 2019c). Ultimately, the program raised around \$10 million and repaid the debt of 6,481 women in total (Sweis 2020b). Most of the beneficiaries were borrowers from unregulated microcredit institutions, with only a negligible number of borrowers originating from formally regulated MFIs (Bazian 2019; Khaled et al. 2021). The lenders incurred no losses.

Beyond the direct bailout outcome, the intervention garnered significant support and fundraising towards what is known as the *AlGharimat* fund, which was tasked with covering future outstanding loans issued by MFIs and other financial institutions to women borrowers (Jordan Times 2019c; Khaled et al. 2021). The fund is administered and managed by the Zakat Fund, one of the oldest and most consolidated legal systems in the country that channels Muslims' religious obligation to donate a portion of their wealth to charitable causes (Khaled et al. 2021; Machado, Bilo and Helmy 2018). Consequently, the support directed at this fund and its amplified role suggests the simultaneous emergence of a strong promise of future bailout and intervention for women borrowers.

## LITERATURE REVIEW

### **Impact on Efficiency, Borrower and Lender Behavior**

In one of the earliest studies to examine the impact of political intervention in debt contracts, Alston (1984) examines the case of relief legislation in response to farm foreclosures during the interwar period in the United States. The paper shows that if lenders expect a high chance of intervention, they may adopt credit rationing which would reduce *ex ante* efficiency. Bolton and Rosenthal (2002), motivated by the same debt moratoria laws of the Great Depression period, consider an agrarian economy in which poor farmers borrow from rich farmers and debt contracts are costlessly enforceable. They overcome the problem of credit rationing shown by Alston by studying a political system where intervention is politically feasible only after a bad

economic shock. By comparing equilibria with and without political intervention, they show that in a situation in which adverse economic shocks are probable, state-contingent debt moratoria increase *ex post* efficiency. If lenders perceive that an intervention is state-contingent and an adverse state of nature is sufficiently unlikely, then state-contingent debt moratoria also improve *ex ante* efficiency by completing debt contracts that would be otherwise incomplete. Similarly, borrowers' decisions are not influenced by expectations of possible future interventions since they are perceived to be only state-contingent.

De and Tantri (2014) study borrower and lender behavior in the context of a large-scale \$14.4 billion debt waiver in India in 2008 as an emerging economy where political interventions are possible even in a normal state of nature. They find that unconditional debt forgiveness results in *ex post* inefficiency by providing incentives to borrowers to default strategically in anticipation of further relief. This propels creditors to practice credit rationing, generating *ex ante* inefficiency. They further show that the expectation of future relief contributes towards *ex post* inefficiency by encouraging bank loan officers to deny a bad loan on their records and therefore grant extensions on debt repayments. Mukherjee et al. (2018) study the causal effect of the same program on distressed borrowers relative to non-distressed or strategic borrowers and find that targeting debt relief to distressed borrowers can improve its efficacy.

### **Impact on Investment and Productivity**

Current literature points to two main mechanisms by which large-scale credit market stimuli may impact household investment and productivity, especially in developing markets where households are more vulnerable to higher levels of poverty and income shocks. First, debt relief can increase productivity, and reduce deadweight losses during harsh economic circumstances via theories of debt overhang and risk-shifting (Bolton and Rosenthal 2002; Jensen

and Meckling 1976; Krugman 1988; Mian, Rao, and Sufi 2013; Myers 1977). Specifically, heavily indebted borrowers may forego sound investments because any returns on those investments would be channeled into debt repayment or may undertake excessively risky investments seeing as much of the downside-risk is borne by lenders. Second, “poverty trap” mechanisms maintain that indebted households remain in a low productivity equilibrium because household income less debt repayment may not be sufficient for investments in human or physical capital (Banerjee 2000; Banerjee and Newman 1993; Mookherjee and Ray 2003).

In response to these arguments, critics question whether *ex post* credit market interventions can meaningfully affect real economic activity (Agarwal, Chomsisengphet, and Hassler 2005; Agarwal et al. 2017) and contend that credit market interventions are a harmful way of enacting a stimulus, since they alter the transaction environment and may induce moral hazard. Kanz (2016) uses the same large-scale 2008 Indian debt relief program to examine investment and productivity outcomes and finds no effect on savings, consumption, and investment as predicted by the previously mentioned theories. Instead, the paper finds that debt relief causes more reliance on informal credit and precipitates moral hazard with beneficiaries being less worried about repercussions of future default.

## **THEORETICAL FRAMEWORK AND HYPOTHESES**

To clearly exposit the framework upon which I base my hypotheses, I present a simple theoretical model below, based on a similar one proposed by De and Tantri (2014), that considers the incentive design elements of the credit market in Jordan. Before and after the intervention, MFI men and women borrowers choose to repay or default on their uncollateralized loans by considering the expected returns from each option. Intervention-related changes may influence expected returns and outcomes. Lenders choose whether to grant potential borrowers loans and the

terms of such loans (e.g., extension periods). If borrowers default, they confront the downside risk of up to 90 days in prison per debt contract in addition to the risk of being denied new loan requests in the formal regulated credit market. On the flip side, if defaulters are offered relief, they face the upside potential of having their debt repaid in full by the government and receiving the opportunity to continue to borrow in the future. These two outcomes act in tension and are influenced by the borrower's type, gender, and credit history.

### **The Setting and Key Assumptions**

In this model I assume two states, determined by the timing of the intervention, where  $t = 0$  and  $t = 1$  denote the timing before and after the relief, respectively. Borrowers can be classified into two groups: men and women. Each group contains two types of borrowers: type 1 (good) and type 2 (bad). The proportions of the two types of borrowers are identical in both populations and can be denoted by  $\pi$  and  $(1 - \pi)$ . Type 1 borrowers invest their loans to obtain  $\theta$  returns with  $p_1$  probability and 0 returns with  $(1 - p_1)$  probability. Type 2 borrowers invest their loans to obtain  $\theta$  returns with  $p_2$  probability and 0 returns with  $(1 - p_2)$  probability.

For simplicity, there exists only one formally regulated microfinance institution that lends to all borrowers at a constant regulated interest rate  $r_f$ . I also assume that all loans carry a face value of 1 such that the amount to be repaid in one period is  $L = 1 + r_f$ .

Alongside this formal regulated MFI, there exists an informal unregulated market for MFIs and moneylenders that provides loans at a higher constant interest rate  $r_m$  where  $r_m > r_f$ .

At  $t = 0$ , the probability of future debt relief for men  $P_m = 0$  and women  $P_w = 0$ . At  $t = 1$ , men borrowers still expect no relief with  $P_m = 0$ , but women borrowers expect relief with probability  $P_w > 0$  given the existence of a dedicated bailout fund for women.

The model assumes that any debt relief decision targeted at women is made after the borrower defaults. I assume that all actors are risk neutral.

## **The Decision of the MFI**

### ***Before the intervention ( $t = 0$ )***

The loan officer at the MFI only observes the applicants' gender and their credit history, specifically whether they defaulted on their loan in the previous period and whether the loan was repaid by the government. Although they do not observe the type of the applicant, they know the proportion of each type in the population. The officer offers the same rate to all borrowers but uses this information to choose whether to offer the loan and the terms of the contract.

Good loans and bad loans impact the officer's performance record positively and negatively, respectively. The officer receives no reward for good performance but is penalized through the penalty rate  $\tau$  for bad performance, proportionally. It follows that before the relief program, the officer is incentivized to choose a borrower who would be less likely to default.

### ***After the intervention ( $t = 1$ )***

Two primary forces influence the MFI officer's decision after the relief program. Their implications on credit market outcomes, however, act in opposite in directions. The extent to which one force takes over the other is likely decided by the size of  $P_w$  and  $\tau$ , which remain unknown.

**Moral hazard.** When defaulting borrowers are relieved, the value of their debt is repaid in full by the government to the MFI. Since  $P_w > 0$  after the intervention, officers will be faced with the possibility of government relief for future defaulting women borrowers. Such a prospect could be viewed, in expectation, as a form of insurance against the risks associated with lending to this group. This higher expectation of insurance may incentivize officers to lend to a greater number of women, increasing exposure to risk, while expecting not to bear its cost.

**Response to adverse selection.** As long as  $P_w > 0$ , women borrowers will consider the option of defaulting. Of those who defaulted at  $t = 0$ , only women borrowers who were bailed out are permitted to reapply for loans at  $t = 1$ . The posterior probability that a defaulter is a type 2 borrower is  $(1 - \pi) \times (1 - p_2) / ((1 - \pi) \times (1 - p_1) + \pi \times (1 - p_1)) > (1 - \pi)$ , i.e. the probability that a defaulter is a type 2 borrower is greater than the proportion of type 2 borrowers in the population. It follows that the officer perceives women loan applicants as being more likely to be type 2 than type 1 since they would include applicants who defaulted and were bailed out in the previous period, whereas men applicants would not. In parallel, MFI officers might predict that adverse selection among women applicants might take place, with more type 2 women borrowers believing they are likely to get away with default and having stronger incentives to apply to loans following the relief.

Assuming the value of bad loans is  $B$ , it follows that if  $(1 - P_w) \times \tau \times B > P_w \times B$ , or the expected value of the penalty of issuing bad loans outweighs the expected value of the bad loans being repaid via a relief program, the loan officer will perceive a bad loan, *ex ante*, as undesirable despite the possibility of relief. If this holds, the officer, while rationally anticipating adverse selection among women, will apply stricter measures when evaluating them for loans and ration the credit they offer them. This would yield an overall smaller number of women borrowers. In parallel, they may opt to reallocate capital from riskier to safer recipients. Since in this setting they would view women as riskier than men, reallocation would ensue from women to men borrowers.

### **The Decision of the Borrower**

The two groups of borrowers (men and women) choose between either repaying the loan by its due date or defaulting. The borrower's decision would depend on the present expected value of future returns of each decision option. I assume that any bailout decision would occur after the



due date of the loan, therefore the borrowers must make their repayment decision prior to the announcement of any future relief.

***Before the intervention ( $t = 0$ )***

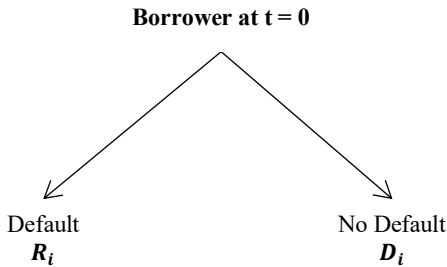
If a borrower decides to repay the loan, they are granted the opportunity of future borrowing in the formal market. Since the probabilities of future bailout before the intervention is  $P_w = P_m = 0$ , the decision of default versus repayment depends only on the borrowers' returns on their loans ( $\theta$  or 0). As a result, in the scenario in which the borrower chooses to repay their loan, the expected value today of future returns for borrower of type  $i$  ( $i = 1, 2$ ) is  $R_i = \theta \times p_i/r_f$ . By contrast, in the scenario in which the borrower chooses to default on their loan, they are denied future borrowing in the formal market and must borrow at the higher rate  $r_m$  in the informal market. Therefore, the present expected value of future returns for would be  $D_i = \theta \times p_i/r_m$ . Since  $R_i > D_i$  the borrower will be inclined to repay their debt and no perverse incentives exist in the credit market for borrowers before the intervention.

***After the intervention ( $t = 1$ )***

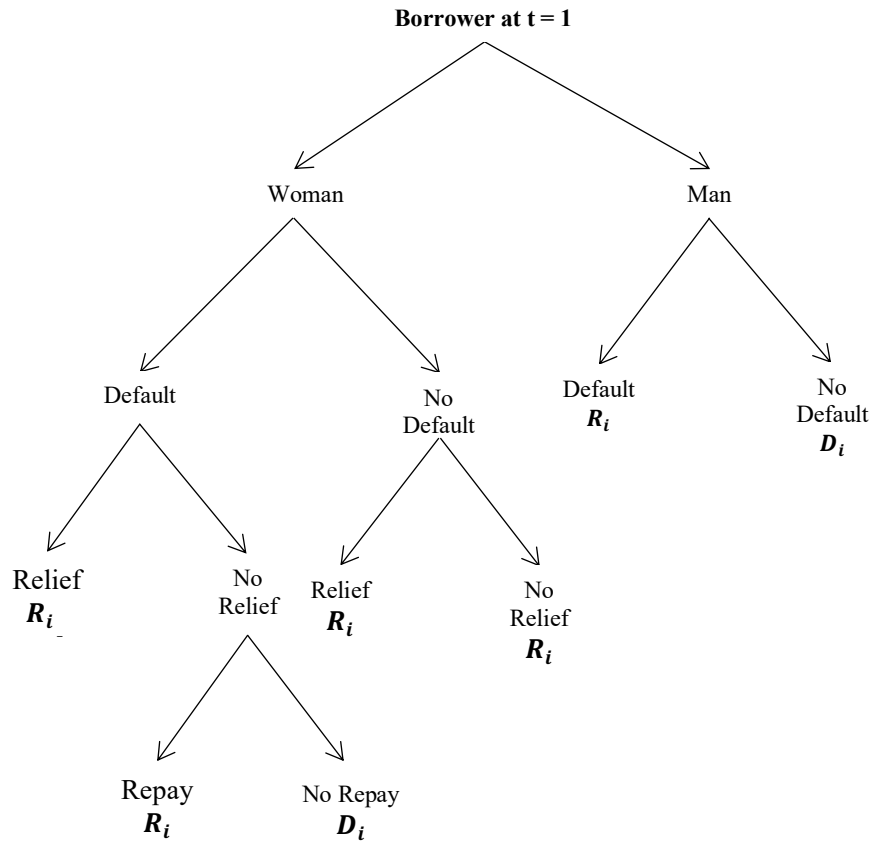
**Moral hazard and adverse selection among women.** From the borrowers' standpoint, the key variables that change after the relief are the probabilities of future debt relief  $P_w$  and  $P_m$ . Since the probability remains unchanged for men with  $P_m = 0$ , it can be expected that men borrowers will have identical incentive structures before and after the relief. But since the probability for women changes to  $P_w > 0$ , the decision of default versus repayment for women borrowers after the intervention depends not only on the returns on their loans ( $\theta$  or 0), but also on  $P_w$ . In the scenario in which the borrower chooses to repay their loan, the present expected value of future returns for borrower of type  $i$  ( $i = 1, 2$ ) is  $R_i = \theta \times p_i/r_f$  regardless of whether a new bailout program is activated or not. Conversely, if the borrower chooses to default, two

different scenarios arise. First, if a new bailout program takes place, the present expected value of future returns for the defaulting borrower would be  $R_i + L$ . Second, if a new bailout program does not take place, the borrower can choose to repay her loan with a present expected value of  $R_i$ , or alternatively not repay her loan, resort to the informal market to borrow, and have a present expected value of  $D_i$ . Using  $P_w$  as the probability of the relief, the overall expected value of future returns upon no default would be  $R_i$ , whereas the overall expected value of future returns upon default would be  $E_i = P_w \times (R_i + L) + (1 - P_w) \times (0.5 \times R_i + 0.5 \times D_i)$ . If the value of  $E_i > R_i$ , or the overall expected returns from defaulting are higher than the overall expected returns from repayment I expect to see higher default rates and moral hazard among women, and by extension, higher default rates overall through the portfolio at risk for more than 30 days (PAR>30) variable. At the same time, the downside risk of obtaining loans may be perceived as less costly to women borrowers, which may prompt a larger pool of potential borrowers to apply for loans, resulting in adverse selection. This would correspond to an increase in numbers of women borrowers variable, all else being equal. If this statement does not hold, no effects would be observed on the PAR>30 and number of women borrowers variables. The decision tree process for both borrower groups is shown in the diagram below.

**Figure 1** Theoretical decision tree for borrowers at  $t = 0$



**Figure 2** Theoretical decision tree for borrowers at  $t = 1$



## DATA AND EMPIRICAL STRATEGY

### **Tanmeyah’s Annual Reports MFI Metrics**

I examine the impact of the Jordanian government’s *AlGharimat* 2019 relief intervention using a quarterly panel dataset on formal MFI market outcomes in each of the 12 regions of Jordan over the 15-quarter period from Q1 of 2017 until Q3 of 2020. The dataset is sourced from the publicly available quarterly reports of *Tanmeyah* (Jordan’s official formal microfinance network). The timeframe of the data is determined by the availability of complete information on all metrics. Included in the data are two types of information for each region per quarter. First: overall aggregate credit activity and performance metrics (active borrowers; active loans; average

outstanding loan size; number of branches, percentage of aggregate women borrowers; portfolio at risk for more than 30 days; loans written off). Second: incremental quarterly credit activity (number of new loans disbursed, amount of new loans disbursed, size of new loans disbursed). The two types of data may be viewed as stock and flow variables, respectively.

I use additional public data from the Jordanian Department of Statistics for population and macroeconomic information such as unemployment and inflation to supplement the analysis.

### ***Country-level summary statistics***

Table 1 below reports summary statistics for the main country-level metrics available over the full period of the dataset.

*Table 1:  
Summary Statistics for the data, Q1 2017 – Q3 2020*

	<b>Mean</b>	<b>Median</b>	<b>SD</b>
Number of active borrowers	449330	459551	22613
Number of active loans	439911	444282	18845
Percentage of women borrowers	71%	72%	3.5%
Portfolio at Risk for more than 30 days (PAR>30)	3%	2%	4%
Percentage of loans written off	0.5%	0.4%	0.14%
Number of branches	195	197	6
Number of new loans disbursed	78173	81852	13242
Amount of new loans disbursed	67339260	69696273	10705247
Size of new loans disbursed	880	879	42

### **Difference-in-Differences Estimation**

I utilize a difference-in-differences (DiD) methodology to estimate the average treatment effect of the intervention on the four main outcomes of interest at the country-level and region-level. This estimation approach relies on the assumption that outcomes for treatment and control follow parallel trends before the intervention, and by extension, would follow parallel trends in the absence of the intervention. In addition, to verify that the estimated effects are not driven by any endogeneity of treatment in preexisting trends in the data, I examine trends in variables that are

not expected to be impacted by the treatment or, in return, influence outcomes. These variables include unemployment rates and inflation (shown in Appendix A). Given limitations posed by the granularity in the available data, I draw on two different approaches to define treatment for the DiD model, which I explore below.

***Defining exposure to the intervention and estimating treatment effects***

I consider exposure to the bailout program to be the main source of treatment in this setting. I exploit two unique features of this intervention and its sources of variation to define treatment for different groups. First, it only targeted women borrowers initially when providing relief. Second, it promised future relief exclusively to women via the *AlGharimat* fund thereafter. I use this “women-only” premise of the program to designate the two approaches to define treatment for the purposes of estimation, depending on the outcomes examined and the level of heterogeneity sought in such outcomes.

**Approach I: Treatment by gender.** To measure the homogenous average treatment effect in the country at large and in each of the 12 regions, I define women borrowers as the treatment group and men borrowers as the control group. This approach, however, poses a key limitation since the only outcome in the data that is given by gender is the number of borrowers.

To estimate the average treatment effect of the intervention on the number of borrowers by gender, I compare changes in average outcomes between the women borrowers and men borrowers in the pre and the post treatment periods in each region and in the country at large using the simple formula below, where  $Y_{pre}$  and  $Y_{post}$  are the number of borrowers in a group pre and post treatment respectively (with treatment occurring in Q1 of 2019), and  $D$  denoting treatment (1 if women, 0 if men):

$$LATE = E[Y_{post} | D = 1] - E[Y_{pre} | D = 1] - E[Y_{post} | D = 0] - E[Y_{pre} | D = 0] \quad (1)$$

**Approach II: Treatment by region.** To overcome the challenge posed by the first approach, I use data on the prevalence of women borrowers in each region in the pre-intervention period as a proxy to regional exposure to the bailout. I classify treatment in each region as a binary high or low, depending on whether the pre-intervention percentage of women borrowers in each region was above or below the average percentage of women borrowers in all regions. This approach not only enables the examination of effects on all target outcomes but also the detection of heterogenous treatment effects within and across regions. Using the data available in the pre-intervention period, I further characterize the levels of wealth and risk in different regions as high or low based on whether the *average outstanding loan size* and *portfolio at risk* metrics were above or below average in each region, respectively.

Following this definition of treatment, I use 180 quarter-region observations and the following basic DiD model specification to estimate the average treatment effect on all target outcomes, where  $i$  denotes region and  $t$  denotes quarter:

$$Y_{it} = \alpha + \lambda Post_t * Treat_i + \sum_{i=2}^{12} \beta_i Region_i + \sum_{t=2}^{15} \beta_t Quarter_t + \varepsilon \quad (2)$$

The coefficient  $\lambda$  represents the total DiD estimate over time, with  $Post_t * Treat_i$  being a dummy that equals 1 when the region  $i$  is a treatment region in the post-intervention period. The third and fourth terms capture region-specific and time-specific fixed effects, respectively.  $Y_{it}$  denotes the target outcome(s) in region  $i$  during quarter  $t$ , namely: *number of women borrowers; PAR > 30; size of new loans disbursed; number of new loans disbursed per capita*.

To examine heterogenous treatment effects across regions by wealth and risk, I adapt (2) to (3):

$$Y_{it} = \alpha + \lambda Post_t * Treat_i + \sum_{i=2}^{12} \beta_i Region_i + \sum_{t=2}^{15} \beta_t Quarter_t + \beta_w Post_t * Treat_i * Wealth_i + \beta_r Post_t * Treat_i * Risk_i + \varepsilon \quad (3)$$

Where the fifth and sixth terms are the interaction of  $Post_t \times Treat_i$  with the dummies for wealth and risk in regions, respectively.

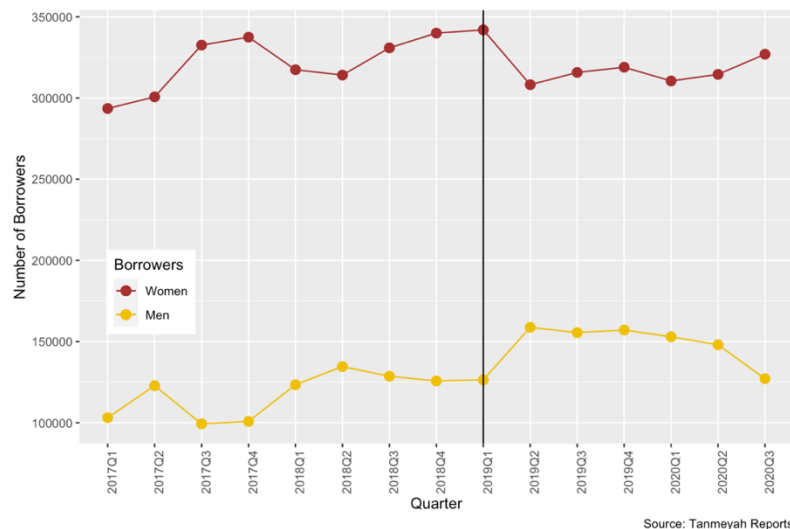
## RESULTS AND DISCUSSION

### Checking the Internal Validity of the DiD Design

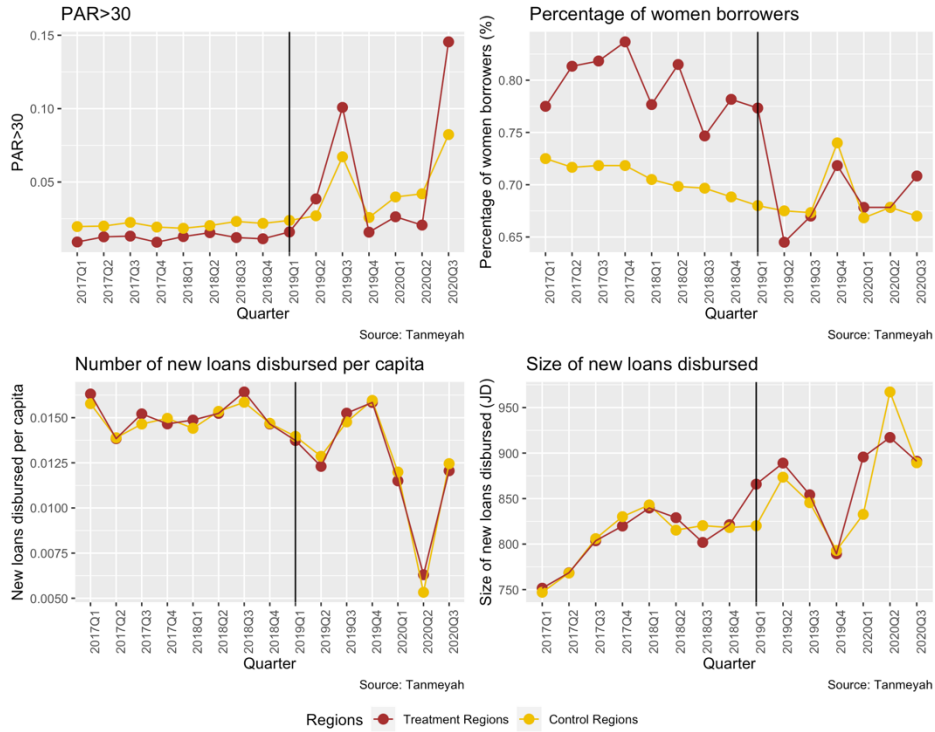
To verify the main assumptions upon which the DiD design rests, I start by demonstrating parallel trends in outcomes of interest under the two treatment approaches and follow it by examining the trends in variables expected to be unaffected by the treatment over time.

Figure 3 shows the parallel trends in the number of borrowers by gender before and after the intervention. A similar trajectory in growth is seen among the two groups in the pre-intervention period, which is necessary for the validity of the gender-based treatment approach. Figure 4 presents the pre-treatment and post-treatment trends in the outcome variables of interest for control and treatment regions in the treatment-based approach. Similar distributions across the four variables are observed.

**Figure 1** Trend in number of active borrowers by gender pre and post treatment



**Figure 2** Trends in outcome variables over time in treatment and control regions



## DiD Model Estimates

### Approach I

Table 2 presents the homogenous difference-in-differences estimates for the effect of the treatment on the number of women borrowers across the 12 regions of the country using men borrowers as a control for women borrowers. The estimates are calculated by finding the pre-post difference in averages across the groups in each region, as shown in equation 1. The regions with the largest and the smallest losses in the number of women borrowers are Karak and Jarash, respectively. The total decrease in number of women borrowers amounts to 30,258. This drop is shown visually in Figure 3, where not only a drop in the number of women borrowers in the post-period, but also a jump in the number of men borrowers is observed. This dual effect implies that there is possibly a spillover effect from the treatment to the control, resulting in an overestimate of the treatment effect. Taking this into consideration and noting the size of the drop in the men's



group, I take half of the estimate (15,129) to be a more accurate reflection of effect on number of women borrowers. Any effect on the number of borrowers here, again, is not directly influenced by the bailout aspect of the intervention but rather the indirect behavioral response, since only a trivial share of the women bailed out were clients of the formal MFI network (Khaled et al. 2021).

*Table 2: Homogenous DiD Estimates of Effect of Treatment on Number of Women Borrowers by Region Using Men as a Control for Women*

<b>Region</b>	<b>DiD Estimate for Effect on Number of Women Borrowers</b>
Karak	-7596
Amman	-6514
Irbid	-5150
Ajlun	-3096
Zarqa	-2967
Aqaba	-2232
Tafileh	-1565
Maan	-1497
Mafraq	-743
Balqa	83
Madaba	365
Jarash	654
<b>Total</b>	<b>-30258</b>

**Notes:** Estimates here are calculated using equation (1) above, where men are considered the control group and women are considered the treatment group. Results here are rounded to the nearest whole number.

## ***Approach II***

Table 3 below presents the basic DiD parameter estimates, without accounting for fixed effects, on each of the four outcomes of interest when assigning treatment by region. Using a 1% significance estimate, the estimate in the first column indicates that the intervention had a statistically significant and negative impact on the percentage of women borrowers in treated regions. Specifically, treated regions witnessed an 8.9% decline in women borrowers relative to control regions. The effect on other outcomes appears negligible in size and not statistically significant. The  $R^2$  values are on the weaker end. When accounting for fixed effects in regions

and quarters, Table 4 shows that the effect of the treatment on the percentage of women borrowers remains similar and significant at 8.2%, but the estimates for PAR>30, average size of new loans, and log of number of new loans per capita all switch signs, with the effect on log of number of new loans per capita being small but statistically significant at the 10% level.

The significant effects on the number and percentage of women borrowers observed in both treatment approaches corroborate the hypothesis for credit rationing among MFIs. The decline in active women borrowers among formal MFI clients is unlikely to be driven by the bailout itself since almost all relief beneficiaries belonged to the informal sector (Khaled et al. 2021). While MFI officers could theoretically be expected to engage in moral hazard by overlending to women, the overall decline implies that the effect of rationing in response to anticipated adverse selection among women borrowers overrides any effect of moral hazard. In other words, the observed outcomes imply that the expected value of the penalty associated with bad loans from the perspective of the MFI officer outweighs any perceived benefit in future insurance for bad loans.

The increase in new loans per capita in treated regions, although small, may be a symptom of the spillover effect in active borrowers from men to women seen in Figure 3. More generally, the pattern observed could be manifesting as not only credit rationing among women borrowers but also credit reallocation from women to men driven by the MFIs' response to anticipated adverse selection. The negligible impacts on the PAR>30 variable could be explained as the outcome of stricter measures by the MFIs in disbursing new loans, such that the pool of new borrowers is chosen to minimize risk, despite the propensity of existing active borrowers to default and engage in riskier behavior post-intervention.

Examining heterogeneity in outcomes, Table 4 indicates that only the differential impacts of wealth on loan size, and risk on number of loans per capita are statistically significant. Borrowers in wealthier treated regions receive larger loans after the intervention. Those in riskier treated regions see a smaller number of loans disbursed per capita, which is consistent with the credit reallocation patterns observed in the other estimates. After accounting for controls, the value of the  $R^2$  predictably rises to stronger levels.

In summary, while the basis of the forgiveness program was largely rooted in easing the financial burdens of the distressed *AlGharimat* women in the credit market (Jordan Times 2019a), I find that the implications of its impacts on the formal MFI outcomes are mixed. In particular, my findings reveal evidence for significant credit rationing by MFIs among women after the program, and credit reallocation from women and risky regions to men and safer regions. Contrary to what is generally predicted by empirical literature, the relief program did not correspond to higher rates of risk-taking and moral hazard among MFIs.

*Table 3: DiD Parameter Estimates of Effects of Treatment on Target Outcomes Using Variation in Regional Treatment Exposure Without Fixed Effects*

	Dependent Variables (Outcomes of interest)			
	Percentage of Women Borrowers (1)	PAR>30 (2)	Avg Size of New Loans (3)	Log of Number of New Loans per capita (4)
Treatment	0.08778*** (0.00803)	-0.00859 (0.00924)	3.65 (26.37)	-0.00191 (0.07288)
Post	-0.02102 (0.01270)	0.02634 (0.01033)	59.27** (29.48)	-0.24257*** (0.08148)
Post * Treat	-0.08889*** (0.01795)	0.01918 (0.01461)	2.21 (41.69)	0.00620 (0.11523)
$R^2$	0.391	0.128	0.0458	0.0894
Observations	180	180	180	180

**Notes:** Results are from ordinary least squares regression of the DiD analysis. Each of the columns represents the result of a regression model on the dependent variable of interest. Each of the first three rows represents a term in the DiD regression. The DiD estimates here are without controlling for fixed effects across regions and quarters.

\* Significant at the 10% level

\*\* Significant at the 5% level

\*\*\* Significant at the 1% level

*Table 4: Heterogeneity in DiD Parameter Estimates of Impact of Treatment by Regional Wealth and Risk with Fixed Effects*

	Percentage of Women Borrowers (5)	PAR>30 (6)	Avg Size of New Loans (7)	Log of Number of New Loans per Capita (8)
Post * Treat	-0.08171*** (0.02319)	0.015046 (0.019933)	-18.20 (16.67)	0.0557* (0.0329)
Post * Treat * Wealth	-0.04227 (0.03369)	0.016500 (0.028962)	56.60** (24.22)	-0.0777 (0.0478)
Post * Treat * Risk	-0.02171 (0.03864)	0.005194 (0.033222)	19.26 (27.78)	-0.0968* (0.0548)
R <sup>2</sup>	0.618	0.389	0.943	0.972
Observations	180	180	180	180

**Notes:** Results are from ordinary least squares regression of the DiD analysis with region and quarter fixed effects. Each of the columns represents the result of a regression model on the dependent variable of interest. Each of the first three rows represents a term in the DiD regression.

\* Significant at the 10% level

\*\* Significant at the 5% level

\*\*\* Significant at the 1% level

## CONCLUSION

Borrower debt relief remains one of the most commonly utilized economic policies by governments in the face of crises. Theories that examine the effects of relief programs often predict negative consequences as adverse selection and moral hazard manifest in changes in credit allocation, risk-taking, and default. Yet, the empirical evidence examining such theories is inconsistent and sparse, especially in developing markets.

In this paper, I use the Jordanian government's March 2019 loan forgiveness program to estimate the impact of debt relief on credit market outcomes. I employ a difference-in-differences analysis, leveraging features of the intervention like its exclusive targeting of women borrowers and its primary beneficiaries being informal MFI clients, to study the effects on four key outcomes of interest in the formal MFI market: percentage of women borrowers; PAR>30; average size of new loans disbursed; and number of new loans disbursed per capita.

The results of the paper reveal that the intervention led to significant credit rationing and reallocation. Specifically, the number of women borrowers sees a significant decline and credit is redirected by MFIs from women and areas of higher risk to men and areas of lower risk, possibly as a response to anticipated adverse selection among women and riskier regions in the post-intervention period. This finding is supported by a lack of evidence supporting the idea of moral hazard among MFIs, with no observable impact on PAR>30 as those institutions adopt stricter lending measures after the intervention. The impact of this pattern on the overall efficiency of credit allocation and portfolio risk levels as new loans are directed towards safer borrowers remains to be seen. Moreover, it gives rise to the question of whether its effects unduly restrict women's access to credit more broadly. This is especially pertinent given the initial premise of the relief program as a form of economic support for women borrowers in response to their preexisting challenges that include but are not limited to the *AlGharimat* phenomenon.

Such findings underscore the challenges in designing and implementing debt relief programs that maximize economic benefit for beneficiaries, while minimizing the encouragement of perverse incentives among other stakeholders. Another policy design consideration suggested by this paper that may warrant future research, is the potential for such programs to have unintended differential consequences on credit accessibility.

## REFERENCES

- Agarwal S., S. Chomsisengphet, and O. Hassler. "The impact of the 2001 financial crisis and the economic policy responses on the Argentine mortgage market." *Journal of Housing Economics* 14 no. 3 (2005): 242-270.  
[http://www.sciencedirect.com/science/article/pii/S1051-1377\(05\)00021-5](http://www.sciencedirect.com/science/article/pii/S1051-1377(05)00021-5).

- Agarwal, S., G. Amromin, I. Ben-David, S. Chomsisengphet, T. Piskorski, and A. Seru. "Policy Intervention in Debt Renegotiation: Evidence from the Home Affordable Modification Program." *Journal of Political Economy* 125 no. 3 (2017): 654–712.  
<http://dx.doi.org/10.1086/691701>.
- Alston, L. "Farm Foreclosure Moratorium Legislation: A Lesson from the Past." *American Economic Review* 74, no. 3 (1984): 445-57. <https://www.jstor.org/stable/1804019>.
- Banerjee, A. "The Two Poverties." *Nordic Journal of Political Economy* 26 (2000): 129-141.  
<http://dx.doi.org/10.2139/ssrn.271731>.
- Banerjee, A., and A. F. Newman. "Occupational Choice and the Process of Development." *Journal of Political Economy* 101, no. 2 (April 1993): 274-298.  
<https://www.jstor.org/stable/2138820>.
- Bazian, A. "The microfinance paradox: 'lax' regulations boost sector growth but predatory practices go unchecked." *The Jordan Times*. February 11, 2019.  
<http://www.jordantimes.com/news/local/microfinance-paradox-%E2%80%9Elax%E2%80%99-regulations-boost-sector-growth-predatory-practices-go>.
- Berman, J. "A Yom Kippur reminder: The idea of debt forgiveness dates at least as far back as the Bible." *Market Watch*. September 16, 2021. <https://www.marketwatch.com/story/a-yom-kippur-reminder-the-idea-of-debt-forgiveness-dates-at-least-as-far-back-as-the-bible-11631729059>.
- Bolton, Patrick, and Howard Rosenthal. "Political Intervention in Debt Contracts." *Journal of Political Economy* 110, no. 5 (2002): 1103–34. <https://doi.org/10.1086/341867>.

- Cole, S. “Fixing Market Failures or Fixing Elections? Agricultural Credit in India.” *American Economic Journal: Applied Economics* 1, no.1 (January 2009): 219-250.  
<https://doi.org/10.1257/app.1.1.219>.
- De, S. and P. L. Tantri, “Borrowing Culture and Debt Relief: Evidence from a Policy Experiment.” *Asian Finance Association (AsianFA) 2014 Conference Paper*, (February 15, 2014). <http://dx.doi.org/10.2139/ssrn.2396368>.
- Denadi, D. and P. Nzebil. *Tanmeyah Strategy & Roadmap for the Microfinance Sector in Jordan*. Amman: USAID, 2018. [https://pdf.usaid.gov/pdf\\_docs/PA00W9T7.pdf](https://pdf.usaid.gov/pdf_docs/PA00W9T7.pdf).
- Dinç, S. “Politicians and Banks: Political Influences on Government-Owned Banks in Emerging Markets.” *Journal of Financial Economics* 77, no. 2 (August 2005): 453-479.  
<https://doi.org/10.1016/j.jfineco.2004.06.011>.
- Easterly, W. “Debt Relief.” *Foreign Policy*, no 127 (Nov. - Dec., 2001): 20-26.  
<https://doi.org/10.2307/3183290>.
- Giné, X., and M. Kanz. “The Economic Effects of a Borrower Bailout: Evidence from an Emerging Market.” *The Review of Financial Studies* 31, no. 5 (May 2018): 1752–1783.  
<https://doi.org/10.1093/rfs/hhx073>.
- Hauser, P., D. Pavelesku,, and A. Vacarciuc. *Financial Inclusion Diagnostic Study in Jordan 2017*. Amman: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, 2017.  
<https://www.cbj.gov.jo/EchoBusv3.0/SystemAssets/PDFs/2018/Financial%20Inclusion%20Diagnostic%20Study%20in%20Jordan%202017.pdf>.
- Isaia, E. “Microfund for Women: A Case History of Microcredit in Jordan.” *Savings and Development* 29, no. 4. (2005): 441-468. : <https://www.jstor.org/stable/25830910>.

- Jensen, M. and W. Meckling. "Theory of the firm: Managerial behavior, agency costs and ownership structure." *Journal of Financial Economics* 3, no. 4 (October 1976): 305-360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X).
- Kanz, M. "What Does Debt Relief Do for Development? Evidence from India's Bailout for Rural Households." *American Economic Journal: Applied Economics* 8, no. 4 (2016): 66-99. <https://doi.org/10.1596/31093>.
- Khaled, M., M. Brown, and K. Saleh. *Microfinance in Jordan: Developments, Challenges and Future Prospects*. Amman: International Finance Corporation, 2021. <https://www.ifc.org/wps/wcm/connect/b309b8b7-de0e-4c39-9b43-90b9ed1f8b8f/MF+in+Jordan+Report+FINAL.pdf?MOD=AJPERES&CVID=nD86wIt>.
- Khawaja, A. I., and A. Mian. "Do Lenders Favor Politically Connected Firms? Rent Provision in an Emerging Financial Market." *Quarterly Journal of Economics* 120, no. 4. (November 2005): 1371-1411. <https://doi.org/10.1162/003355305775097524>.
- Krugman, P. "Financing vs. Forgiving a Debt Overhang." *Journal of Development Economics* 29 no. 3 (1988) 253-268. [https://doi.org/10.1016/0304-3878\(88\)90044-2](https://doi.org/10.1016/0304-3878(88)90044-2).
- La Porta, R., F. Lopez De-Silanes, and A. Shleifer. "Government Ownership of Banks." *The Journal of Finance* 57, no. 1 (February 2002): 265-301. <https://doi.org/10.1111/1540-6261.00422>.
- Machado, A. C., C. Bilo and I. Helmy. "The role of zakat in the provision of social protection: a comparison between Jordan, Palestine and Sudan." *International Policy Centre for Inclusive Growth Working Paper* 168 (May 2018): 1-22. [https://ipcig.org/publication/28570?language\\_content\\_entity=en](https://ipcig.org/publication/28570?language_content_entity=en).



Market Research on Informal Lending Practices and their effect on the Microfinance Sector –  
FINAL. Amman: Tanmeyah, August 2019.

<http://tanmeyahjo.com/Portals/0/Informal%20Lending%20Practices%20and%20their%20effect%20on%20the%20Microfinance%20Sector.pdf?ver=jqvJhuAdSECfYOyBZNKO1w%3d%3d>.

Mian, A., and A. Sufi. “What Explains the 2007-2009 Drop in Employment?” *Econometrica* 82, no. 6 (2014): 2197–2223. <https://doi.org/10.3982/ecta10451>.

Mian, A., K. Rao, and A. Sufi. “Household Balance Sheets, Consumption, and the Economic Slump.” *The Quarterly Journal of Economics* 128, no. 4 (2013): 1687–1726. <https://doi.org/10.1093/qje/qjt020>.

Mookherjee, D. and D. Ray. “Persistent Inequality.” *Review of Economic Studies* 70, no. 2 (April 2003): 369-393. <https://doi.org/10.1111/1467-937X.00248>.

Mukherjee, S., K. Subramanian, and P. Tantri. “Borrowers’ Distress and Debt Relief: Evidence from a Natural Experiment.” *The Journal of Law and Economics* 61, no. 4 (November 2018): 607-635. <https://doi.org/10.1086/701902>.

Myers, S. “Determinants of Corporate Borrowing.” *Journal of Financial Economics* 5, no. 2 (November 1977): 147-175. [https://doi.org/10.1016/0304-405X\(77\)90015-0](https://doi.org/10.1016/0304-405X(77)90015-0).

Schicks, J. and Rosenberg R. *Too Much Microcredit? A Survey of the Evidence of Over-Indebtedness*. Washington D.C.: Consultative Group to Assist the Poor, September 2011. <https://www.cgap.org/sites/default/files/CGAP-Occasional-Paper-Too-Much-Microcredit-A-Survey-of-the-Evidence-on-Overindebtedness-Sep-2011.pdf>.

Sweis, R. “Microloans, Seen as Salvation for Poor Women, Trap Many in Debt.” *The New York Times*. April 8, 2020.

<https://www.nytimes.com/2020/04/08/world/middleeast/microloans-jordan-debt-poverty.html>.

Sweis, R. *Microloans' Failure of Jordanian Women*. Amman: Konrad-Adenauer-Stiftung e. V., 2020.

<https://www.kas.de/documents/279984/280033/Publication+Microloans%27+Failure+of+Jordanian+Women.pdf/61bda9d3-1a3e-52f9-13c8-f808b6b962e2?version=1.2&t=1582704551440>.

The Jordan Times. "Debts of 1,542 gharimat covered, totalling JD1.1m." The Jordan Times. March 28, 2019. <http://www.jordantimes.com/news/local/debts-1542-gharimat-covered-totalling-jd11m>.

The Jordan Times. "Gov't announces issuance of last batch of payments for 510 indebted Jordanian women." The Jordan Times. May 6, 2019. <http://www.jordantimes.com/news/local/govt-announces-issuance-last-batch-payments-510-indebted-jordanian-women>.

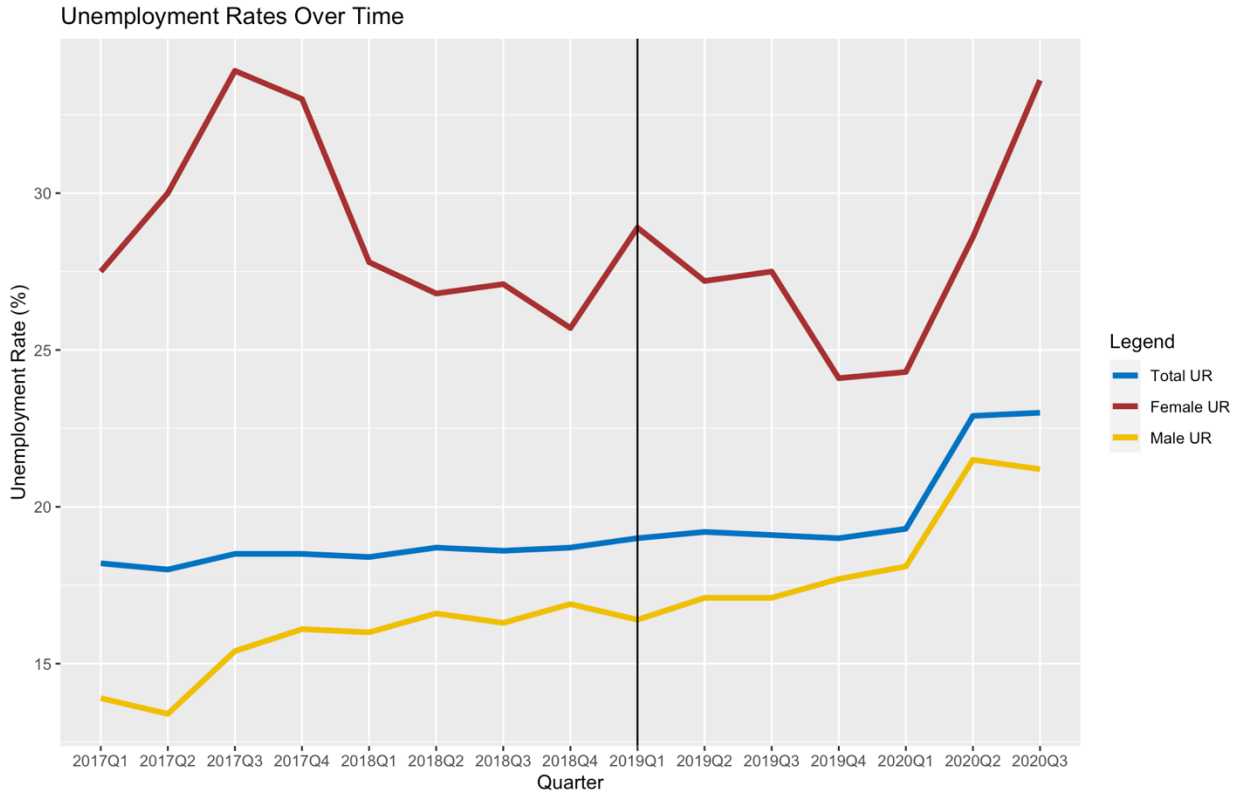
The Jordan Times. "Zakat Fund approves 11th batch of aid for indebted women." The Jordan Times. October 23, 2019. <https://www.jordantimes.com/news/local/zakat-fund-approves-11th-batch-aid-indebted-women>.

Ward, E. "Microfinance in Jordan isn't helping to empower women." The Guardian. August 20, 2014. <https://www.theguardian.com/global-development/poverty-matters/2014/aug/20/microfinance-jordan-empower-women-donors>.

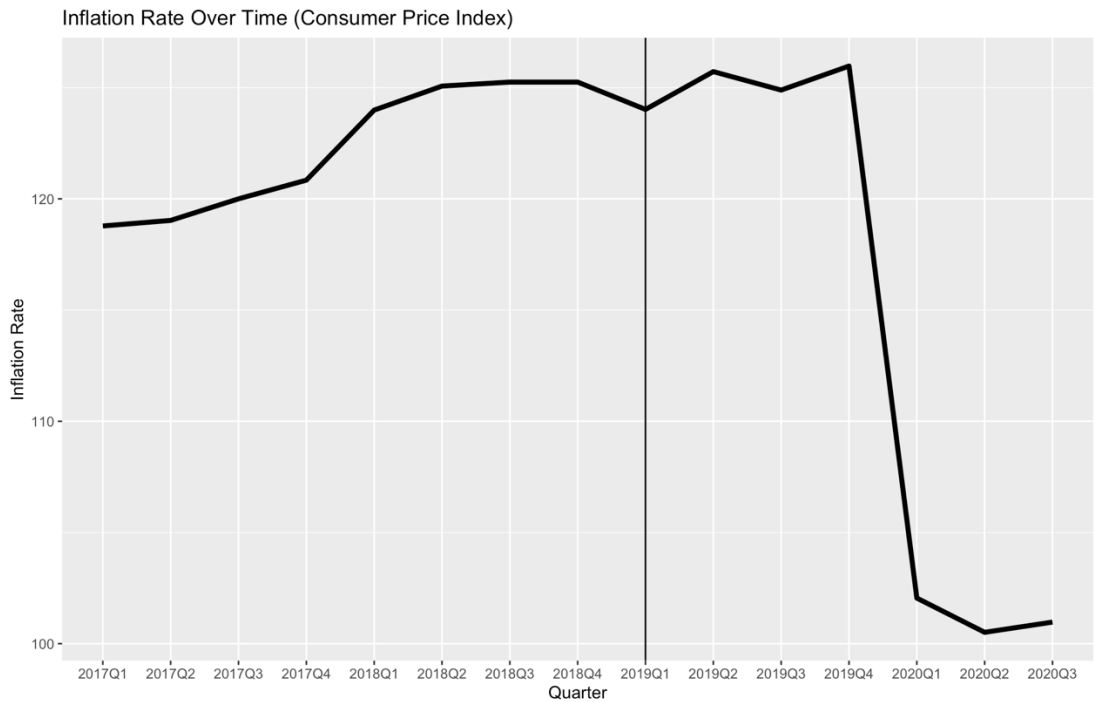
Welsh, E. "Assessing Microfinance as a Means of Socioeconomic Empowerment for Vulnerable Women in Jordan." *Policy & Practice: A Development Education Review* 29. (Autumn

2019): 54-77. <https://www.developmenteducationreview.com/issue/issue-29/assessing-microfinance-means-socioeconomic-empowerment-vulnerable-women-jordan>.

# Appendix A



Source: Department of Statistics



Source: Department of Statistics