To Borrow or Not to Borrow:
Religious Norms and the Elasticity of Demand for Credit

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Abstract

Low utilization of credit in developing countries may be partially due to societal norms. We consider one such case in Jordan and compare the demand for a new, sharia-compliant product to a non-compliant product. To comply with the Islamic prohibition on paying or receiving interest, the sharia-compliant product uses a bank fee rather than interest payment structure, while keeping the economics of the product the same as a comparable conventional loan. We find that in this largely Muslim country, consumers offered a sharia-compliant loan increase their application rate from 18% to 22%. We also randomly varied the price of the sharia-compliant product, and find that the less religious individuals in our sample are twice as elastic with respect to price as those who are more religious. We find no evidence of differences between those who apply for the conventional loan and those that apply for the sharia-compliant loan on observable demographics, suggesting that this new product successfully increases utilization of formal financial services without necessarily pulling in observably more risky individuals.

Keywords: Islamic finance; microcredit; religion; credit elasticity; marketing

JEL: D12; G21; O12; O16; Z12

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1. Introduction

In economics and finance we typically model credit markets using variables such as interest rates, income, investment opportunities, risk, etc., but not social norms, stigma, or religion. Yet such typically non-economic factors may be strong influences on decisions to borrow, and thus also on equilibrium outcomes in credit markets. Religion, depending on its principles and activities, could impose indirect costs: for example, the religion may prohibit borrowing at certain interest rates or under certain conditions. Indeed, in Muslim-majority countries, which constitute over 1.4 billion people, we observe financial inclusion rates, such as the proportion of the population having borrowed from a bank, 24 percent below that of non-Muslim countries after controlling for GDP per capita[1]. Religion, on the other hand, may generate indirect benefits: for example, a faith-based lending process may include group meetings for borrowers, through which borrowers acquire more social capital, or lead to higher repayment rates due to moral suasion, potentially allowing lenders to pass on those savings back to the borrower (Bursztyn et al. 2015). Such costs and benefits have important consequences for thinking about equilibrium outcomes.

Finding cost-effective ways to improve and expand access to formal financial services is a priority for many policy makers around the world.[2] While policymakers (and researchers) often focus on standard aspects such as pricing, loan terms, and marketing, in some settings religious norms may be critical for making financial services more accessible and attractive. Indeed, about 25 percent of adults reported religious reasons as a barrier to having a bank account (Demirgüç-Kunt et al. 2015)[3]. However, surveys that merely ask individuals why they do not borrow or have a bank account may over or under attribute lack of borrowing to religion for a myriad of reasons. There is little behavioral evidence from actual choices that individuals will engage more with formal financial institutions that adhere to such religious norms. Banks may be skeptical about creating new products meant to reach this market segment, especially when products that adhere to religious law may cost more to offer, depending on the structure of the product, due to

[1] See Appendix Table A1. Data on religious populations around the world is taken from the World Religion Dataset (Maoz and Henderson 2013), while data about financial inclusion comes from the World Bank's global findex database (Demirgüç-Kunt et al. 2015).

[2] Although the impact studies of financial access expansions via traditional microcredit did not find transformative positive effec However, all individuals did need to obtain a guarantor. We discuss below how this may affect interpretation of the experiment. However, all individuals did need to obtain a guarantor. We discuss below how this may affect interpretation of the experiment. ts, they also did not find noticeable deleterious effects (for an overview, see Banerjee, Karlan, and Zinman 2015; and for specific studies, see Angelucci, Karlan, and Zinman 2015; Attanasio et al. 2015; Augsburg et al. 2015; Banerjee et al. 2015; Crépon et al. 2015; Karlan and Zinman 2011; Tarozzi, Desai, and Johnson 2015). Burgess and Pande (2005) examine expansion of banking branches into rural, poor areas of India and find larger positive long term effects on poverty rates, and similarly Breza and Kinnan (2016) finds larger effects, at a general equilibrium level, from a credit crisis that led to a large negative supply-side shock on credit.

[3] Many interpret Islamic law to prohibit receiving interest on savings, as well as paying interest on borrowing.

increased transaction and loan processing costs, and little evidence that borrowers are willing to absorb the prices needed to counteract these higher costs.

More abstractly, these points need not be thought of as only about religion. In a market where borrowing is exogenously stigmatized, the same negative effects may occur. For example, in South Africa, borrowing from high interest rate microlenders is frowned upon, as evidence by a high rate of lying about borrowing from surveys (Karlan and Zinman 2008). On the other hand, more frequent meetings (commonplace in faith-based microlending programs, although not in the context we study) can also be done without a faith component, and have been shown to generate higher levels of social capital and subsequently lower default rates (Feigenberg, Field, and Pande 2013). Such impacts from increasing or decreasing social effects can influence equilibrium outcomes in two ways: first, they change the demand curve for credit, and second, they may change the composition of clients, shifting towards more risky, or less risky, borrowers.

Through a randomized marketing experiment in collaboration with a microfinance institution (MFI) in Jordan, we test how religious certification and pricing impact the decision to borrow. The MFI was introducing a new loan product that adheres to the Islamic prohibition on the use of interest costs in lending through the use of a bank fee structure. All marketing activities were done individually, not in community meetings for example as is often common in other microlending operations.[4] We use this opportunity to conduct a marketing experiment to study how borrowers respond to variations in the new product. Enumerators conducted face-to-face marketing with individuals in markets and residential areas. Specifics of the product were randomized at the individual level. The primary outcomes of interest are whether an individual applies for a loan, the loan amount requested and the composition of borrowers (i.e., riskiness based on observables). However, no further outcomes are viable, such as actual borrowing amount, repayment, future borrowing, or any household impacts, as the loans did not actually get made to the treatment group because of delays in the start of the lending program.

When pricing of the two products is identical, we find that 18.4% of individuals offered a conventional loan apply, whereas 22.0% of individuals offered an Islamically permissible ("sharia-compliant") product apply (p-value on t-test of equality of proportions = 0.002).

We also test whether demand for the sharia-compliant product depends on the entity authorizing its religious permissibility. Like many other types of products, when consumers come across something new they must assess whether or not the claims made of the product are accurate. Here, borrowers must assess whether the loan product satisfies religious law, and different types of authorizations may help in that regard. We do not find that consumers are particularly discerning when it comes to the certifying entity, with no statistically significant differences in application rates between a government approval, a local religious leader's approval, the bank's religious board's approval, and no named approval at all. In fact, additional details about the authorizing entity leads to a lower application rate relative to no authorizing

[4] However, all individuals did need to obtain a guarantor. We discuss below how this may affect interpretation of the experiment.

details at all, although this estimate is not statistically significant. This results implies that while individuals care about whether the product claims to be religiously compliant, the impacts of certifying entities is not straightforward.

We also estimate price sensitivity and how it interacts with variation in religiosity. We do this by offering some borrowers the option of either a conventional product or a sharia-compliant product that is either less expense, equal in price, or more expensive, than the conventional product. We also collect a simple proxy for religiosity (asking directly about religiosity is socially inappropriate)—whether or not the individual watches religious television. We find that as the price of the sharia-compliant loan increases the demand for that product decreases, in line with basic economic theory. On the other hand, we find that religious individuals are half as price sensitive: their demand for the sharia-compliant product goes down more slowly as the price increases.

In addition to impacts on loan application rates, we also examine requested loan size and the composition of borrowers. On average, there is no difference in requested loan size between those who apply for the conventional loan and those that apply for the sharia-compliant loan. However, we find small increases in requested loan size for those clients who are informed of the religious authorization associated with the sharia-compliant loans, which may be evidence of moral licensing, i.e., using the authorization to justify more intensive utilization of the credit opportunity.

We observe no differences across any of the treatment arms in the composition of borrowers along many dimensions: age, gender, education, marital status, whether loan is for home repair, employment status, home ownership, bank account ownership, and prior borrowing status. This suggests that this new product is successful in bringing more people into the financial sector, without necessarily pulling in those individuals who are observably more risky for the lender.

In our discussion of results, we elaborate on several alternatives for the underlying mechanism behind the revealed preference for the sharia-compliant product (aside from desire to adhere to religious norms), including peer signaling via the loan guarantee requirement, differential inference on behavior of and trust in the lending institution, and experimenter demand effects.

We contribute to several different strands of economics literature. First, this paper relates to the literature on the importance of religion to economic decision making (Stulz and Williamson 2003; Bénabou and Tirole 2003; Campante and Yanagizawa-Drott 2015; Iannaccone 1998; McCleary and Barro 2006; Hilary and Hui 2009). Similarly, in a lab experiment Benjamin, et. al (2016) shows that religious salience in the lab can affect contributions to a public good. This paper also relates to the literature on how non-financial characteristics can impact take-up of a financial product (Kumar, Niessen-Ruenzi, and Spalt 2015; Benartzi and Thaler 2004; Bertrand et al. 2010; Madrian and Shea 2001). We add to this literature by showing how religious norms can impact the decision to apply for a loan, and can in certain cases be more effective than changing the monetary parameters of a loan. Finally, we contribute to the literature

on Islamic Finance (Zaher and Kabir Hassan 2001; M. A. El-Gamal 2006; M. El-Gamal et al. 2014; Johnes, Izzeldin, and Pappas 2014; Berg, El-Komi, and Kim 2016). While nearly all prior work took a historical or observational approach to describing differences between Islamic and conventional finance, we contribute to this literature by providing evidence from a marketing experiment on the differences in consumer behavior in response to sharia-compliant features, certification authorities and pricing.

2. Religious Law and Local Context

2.1 Islamic Law, and Operational Forms

Islamic Law prohibits the payment or receipt of usury[5], commonly interpreted as a prohibition on financial products, including both credit and savings products, which use conventional interest rates and operational forms. An "Islamic Finance" sector has developed in an effort to provide access to financial services while still adhering to the religious prohibition of interest. These financial providers have developed products that are in line with scholarly interpretations of Islamic law and these Islamically permissible products are commonly referred to as sharia-compliant.

Sharia-compliant products often have the same goal as conventional products, but change parts of the operational details so as to avoid the direct use of interest. To take an example closest to our setting, a conventional loan will normally be a cash-for-cash transaction, where the lender provides the capital and the borrower will return the capital and additional interest fees over time. In contrast, one common sharia-compliant financing product is *murabaha*, otherwise known as a cost plus markup sale. In a *murabaha* transaction the lender will provide the capital, usually *in-kind* (where the lender buys the item on behalf of the borrower), and the borrower will pay back the cost of the capital along with a *murabaha* fee. Often times these fees come out to cost the borrower about the same as (or more than) the interest in a conventional loan.

From an economic standpoint these two forms of a loan are equivalent. In fact, some lenders provide sharia-compliant products that seem no different from conventional products other than in terminology. In the example above, one clear difference between the conventional loan and the sharia-compliant loan is that the sharia-compliant loan is provided by the lender to the borrower *in-kind*, and then repaid with cash. Other lenders will provide the borrower with the funds in cash as long as the borrower promises to use the cash to buy the items that they claim they will use the loan for. This difference is often sufficient for some Islamic scholars to permit this type of transaction.[6] Another difference is in how late payments and default are treated. There is variation in lender policies, some lenders will levy fees that do not compound over time,

[5] The Arabic transliteration for usury is *"riba"*. For a more complete treatment of the economics of Islamic Finance see (M. A. El-Gamal 2006)

[6] While the differences can be quite small, they can be sufficient under Islamic Law. Consider, for instance, the differences between a civil marriage and a religious marriage. Often the practical differences amount to changes in location and wording, with the concept and end result being exactly the same.

while others will structure the loan in a way in which late payments are financially penalized in the same way as in conventional loans.

2.2 Religion and Access to Finance

Even if the practical difference is sometimes small, the religious difference between the loans is important to many. In Muslim majority countries financial inclusion rates are particularly low, especially among low-income populations. For example, according to Demirgüç-Kunt et al. (2015), a quarter of adults in countries with significant Muslim populations cite religious reasons as a barrier to having a bank account, and there is evidence that despite a growing Islamic Finance sector, access to Islamic financial products is still scarce (El-Zoghbi and Alvarez 2015). In Jordan, where our study takes place 32 percent of respondents gave religious reasons for not seeking conventional loans, and in Syria a survey found that 43 percent of respondents cite religious reasons for not obtaining microcredit (Karim, Tarazi, and Reille 2008, reporting on draft IFC reports). Hence, no matter what the economics are behind the products, there is a large reported preference for sharia-compliant products among Muslims.

It is important to note that the above referenced surveys are not able to explicitly test whether individuals are actually turning down access to conventional financial products for religious reasons, or if they are simply claiming that religion is the reason why they are turning down these products alongside other considerations like price. Since many sharia-compliant products require additional layers in order to be religiously permissible (such as providing a loan in-kind), this can increase the cost, and subsequent price, of the loan. It may be the case that borrowers have access to sharia-compliant products but are unwilling to pay for it, and claim religious reasons as it may feel like a more acceptable answer for them to provide to surveyors.

Further evidence regarding the importance of religion in utilization of financial services comes from a crude cross-country comparison, reported in Appendix Table 1. We consider four different measures of financial inclusion across all countries in the developing world[7], and regress financial inclusion on an indicator variable equal to one if the country is majority Muslim, and we include a control for third order polynomial of GDP per capita. We find that people in Muslim majority countries are 3 percentage points less likely to have borrowed from a bank in the past year (a 24 percent decrease compared to countries that are not Muslim majority) and 11 percentage points less likely to have a savings account (a 29 percent decrease). While these indicators of formal financial inclusion are both economically and statistically significantly lower for Muslim majority countries, they are partially made up for with increases in informal borrowing, as seen in column 3 where Muslim majority countries utilize credit from shops more, leading to no overall effect on total borrowing. While cross-country regressions do not allow us to interpret these differences causally, and much may be omitted from our sparse specification, they provide suggestive evidence that religion contributes to reduced usage of formal borrowing in equilibrium.

[7] We use the International Monetary Fund's definition of developing countries.

Another potential worry for consumers is the authenticity of the sharia-compliant service (El-Zoghbi and Alvarez 2015). There is significant variation across the Muslim world in interpretation of Islamic law and corresponding variation in what types of financial products are accepted as sharia-compliant and which are not. Since there is no central authority in Islam, different places follow different religious interpretations, and may have different thresholds for whether a product is sufficiently "Islamic". Even if individuals have access to sharia-compliant loans, and the price is in line with their expectations, they may worry that the product is not different enough from conventional products and so not actually religiously permissible and continue to turn down sharia-compliant loans for religious reasons.

Returning to the larger literature on financial inclusion, in an analysis of the patterns across several microcredit evaluations, Banerjee, Karlan, and Zinman (2015) notes how low take-up is an important issue facing providers across a variety of contexts. Similarly Field et al. (2013) showcase how traditional microfinance products may lead to less than optimal outcomes for borrowers. One way to interpret these two facts is to say that there is a need to develop new modes of microcredit that address the needs of borrowers, both from the side of personal preferences (e.g. religious beliefs, behavioral biases, etc.) and personal financial needs (e.g. in-kind loans, longer grace periods, etc.). The experiment reported here allows us to investigate how products that address personal preferences of borrowers in a particular context can contribute in improving the outreach of financial products to the poor.

2.3 The Cultural and Financial Landscape in Jordan

Only a quarter of adults in Jordan had any account at a financial institution, with this proportion decreasing to 16% for the poorest forty percent of the country. While 14% had borrowed from a financial institution during 2014, 32% had borrowed money in general, the difference being made up by borrowing from friends and families as well as informal lenders (Demirgüç-Kunt et al. 2015). Part of the reason for these low rates of financial inclusion could be because there are important information asymmetries- only 2.5% of the population is covered by the country's public credit registry, making it difficult for lenders to assess credit risk (World Bank Group 2016). Microfinance institutions are often seen as one avenue through which countries can increase access to financial services.

In Jordan 97 percent of the population of 7.5 million identify as Muslim. The World Bank estimates that 14 percent of the population lives in poverty. Religion plays a large role in the country. Most of the populace, 85 percent, say that religion is very important in their lives, 71 percent, favor making religious law the law of the land, and 93 percent agree that religious judges should have the power to decide family law and property disputes (Pew Research Center's Religion & Public Life Project 2013). Unlike much of the western world, religious leaders in the Muslim World can issue religious rulings and opinions that can be binding in certain cases. Usually, most religious opinions (*fatwa*) are non-binding, but a prominent religious leader's (*imam*) opinion can hold a lot of weight in the decisions made by an observant Muslim.

The importance of religion in everyday life manifests itself in financial decisions according to surveys exploring issues of financial inclusion. As discussed above, survey evidence points to religion having nontrivial impacts on financial decisions in Jordan. While there are several Islamic banks in Jordan there were no official Islamic microfinance institutions in Jordan at the time of the study[8]. A large proportion of the population is too poor to avail themselves of financial services from large banks. Taken together this leads to many of the poor being financially underserved, setting the stage for natural demand for religious products, including Islamic lending.

Even though the law allows the Central Bank of Jordan the right to regulate Islamic banking differently from conventional banks, they do not treat them any differently with respect to the normal levers that central banks regulate like lending limits, liquidity ratios and capital adequacy ratios (Abdel Al, 2004). This is slowly changing, with a new set of regulations expected to be put in place in 2017, but even those regulations are lax. This is partially due to the wide range of religious opinions about what is permissible. No country is known to regulate the Sharia jurisprudence used to determine whether a product is actually sharia compliant (CGAP, 2008).

We chose Jordan as the site of our study for several reasons. First the context is one that is common across many Muslim-majority countries. Jordan has nearly the median GDP per capita for middle income countries as defined by the World Bank. While it contains a sizeable middle-class there are still many individuals who do not have access to formal finance, as is the case with many Muslim majority countries. Second, as shown above, religion continues to play an important role in people's lives with evidence that it directly impacts their financing decisions. Finally, we were fortunate to find a partner who provided conventional loans and was in the process of expanding operations to begin providing sharia-compliant loans which allows us to test both at the same time, as discussed below. There are not many institutions that provide sharia-compliant consumer loans, and so the search for a suitable partner was non-trivial.

3. Experimental Design

3.1 Partner Institution

We partnered with a Jordanian microfinance institution, Tamweelcom, to evaluate market demand for sharia-compliant loans. Tamweelcom was established in 2000 as a non-profit and is one of the country's largest and fastest growing microfinance institutions. As of December 2014, when we began the experiment, it had over 56,000 active borrowers, more than 94 percent of whom were women[9]. The average loan size in 2014 was 315 JDs (approximately 445 USD) and the repayment rate exceeded 95 percent.

[8] The first official Islamic MFI in Jordan was the entity that was begun by the founders of our partner bank after the completion of this study: http://www.islamicfinance.de/?q=node/8055

[9] Tamweelcom Annual Report 2015

At the time of the experiment, Tamweelcom was in the process of establishing a subsidiary entity that would provide sharia-compliant products to the market. This entity eventually became the first sharia-compliant microfinance institution in Jordan. At the time they were interested in knowing how the level of demand for sharia-compliant loan products compares with the demand for the conventional products they had been providing to the marketplace for over a decade. They had designed a *murabaha* product that was to be similar in price and terms as the conventional product, but different in its contractual form. The most similar conventional product provided money to finance household asset purchases at a given interest rate, whereas the sharia-compliant product would offer consumers the ability to finance the same set of assets at the cost of the product plus administrative fees to cover costs incurred by the financial institution during purchase of the goods.

Tamweelcom, and the new sharia-compliant entity, focus on individual lending. Most new accounts were by individuals who had heard of Tamweelcom and went to ask for a loan directly. Tamweelcom would determine loan eligibility by looking at proof of income. Individuals also had to secure a guarantor for the loan. As mentioned above, the public credit agency only covers 2% of the population, and so most people do not have a credit history.

3.2 Experimental Details

In collaboration with Tamweelcom, we hired and trained new marketing specialists to market the two loan products to households and individuals in the six largest cities in Jordan: Amman, Irbid, Zarqa, Aqaba, Madaba, and Al-Salt. The marketers used a tablet programmed with SurveyCTO software which would randomly select and display one of eight different marketing and pricing pitches (exact scripts can be found in the Appendix). The marketers were trained to use the tablet, and were provided with a detailed orientation session about the eight different pitches. They would then go to different markets and residential areas and ask individuals if they were interested in hearing about a loan product. If individuals said “no”, marketers moved on and the individual was not included in our sample. If the individual said “yes”, marketers asked a few basic demographic questions (e.g. age, education, marital status, etc.) and read the randomly assigned marketing pitch. This sampling strategy could lead us to underestimate the true demand for sharia-compliant loans if there is a group of “sharia-compliant only” borrowers who say they are not interested in hearing about the loan because they assume that we will offer them a conventional loan (since sharia-compliant loans are rare in this context).

The eight different marketing and pricing pitches constitute the different treatment arms in our experiment. In the first pitch, which serves as the control group, individuals were offered a conventional loan to finance household asset purchases from “the Jordan Microfinance Company” the legal name of Tamweelcom, and a known brand in the market. This conventional loan is an actual product that was being offered by Tamweelcom at the time and was closest in practice to the sharia-compliant loans that Tamweelcom’s new subsidiary was going to be providing. They were told that the loan carried a monthly interest rate of 1.9 percent, a maximum

loan term of 20 months and could range from 300-1500 Jordanian Dinars (423 – 2,115 USD). It was an individual liability loan with no grace period. They were then asked if they were willing to fill out a preliminary application for the loan with the marketer. If they said "no" they were asked why not; if they said "yes" they were then asked several more questions that are part of Tamweelcom's standard loan application. Their decision as to whether or not to apply for the loan after they heard the marketing pitch serves as our main outcome variable.[10]

The remaining seven treatments offered a sharia-compliant loan in some form. The first treatment pitch is a simple mirror of the conventional loan pitch. The potential borrower was offered a basic sharia-compliant loan, to finance the purchase of a household asset. The loan would have a monthly *murabaha fee* of 1.9 percent with the same loan term and range of credit amount as the conventional loan.[11] The second, third, and fourth treatment groups were offered a similar sharia-compliant loan, but the marketing pitch also included a statement about the religious authority that approved the product. The three religious authorities were commonly used authorizing entities: a government appointed sharia board, a local religious leader, and the bank's sharia board. After they heard the pitch the potential borrowers were asked if they were interested in filling out a preliminary loan application, just like the control group.

The final three treatment groups were offered the choice between a conventional loan or a sharia compliant loan with no mention of an authorizing entity. We randomized the price of the sharia-compliant loan so that it was either cheaper (1.75%), equal in price (1.9%), or more expensive (2.2%) than the conventional loan. Individuals in these treatments were asked which of the two types of loans they preferred, whether or not they actually wanted to apply for the loan. They were then asked whether or not they wanted to apply for the type of loan they preferred.

All treatments that included a sharia-compliant loan were offered under the lender name Tathmeer instead of the Jordan Microfinance Company. This was done because there is a concern that banks that provide both conventional and sharia-compliant loans are less authentic than banks that specialize in sharia-compliant products. Tathmeer was not a lender known in the market, and was the intended name of the new Sharia-compliant subsidiary to be opened by Tamweelcom. Jordan Microfinance Company, on the other hand, is a known brand in the community.

In a separate, auxiliary marketing experiment, we tested whether the name brand (Jordan Microfinance Company) generated higher demand than the unknown brand (Tathmeer), but

[10] Due to regulatory delays in the availability of the partner's sharia-compliant products they did not follow up with the majority of the sample in a timely manner and so our outcome is preliminary applications, instead of the proportion of the sample who actually took out a loan. Tamweelcom did follow up with a small subset of control group individuals at our request and several individuals did take out a loan, showcasing that our outcome of preliminary applications is indicative of the true intent to borrow.

[11] There was no explicit mention of the fact that the sharia-compliant loans would be in-kind. This is generally understood when the term *murabaha* is used. Individuals were free to ask more details about the product and in those cases the in-kind nature was made more clear. Individuals only asked for more details a handful of times.

strictly for conventional loans. We find that the name brand generates higher demand than the unknown brand. We discuss the ways in which this can affect the interpretation of our results in section 4.3 below.

3.3 Baseline Balance

Table 1 displays the basic demographics of those recruited in our sample. Column 1 shows that individuals average 36 years old, and 57 percent are male. A third of the sample lives in Amman, the capital of Jordan, and a bit more than half the sample have a high school education or less. Sixty-five percent are married, 98 percent are Jordan nationals, and 11 percent plan to use the loan for home repair. We asked individuals whether or not they watch religious television programming, in an effort to find a simple proxy for religiosity: 80 percent of the sample claim to watch religious TV regularly.[12]

Subsequent columns in Table 1 present the differences between the control group and each treatment arm, with the p-value from a joint test of all the variables reported in the third to last row. None of the seven treatment arms is statistically significantly different from the control group in the aggregate test. Likewise, the final column of Table 1 compares all of the treatment arms to the control group and shows that we cannot reject equivalence of means of all treatments with control. Appendix Table 2 repeats this analysis without including marketer fixed effects, and finds that one of the seven group tests (the sharia compliant group with no authority identified) is jointly significantly different from control. In our analysis below we present our results both with and without surveyor fixed effects and find largely the same impacts.

4. Results

4.1 Demand for Sharia-Compliant Loans

The randomization allows us to estimate the impacts of each of the marketing pitches on the behavior of potential borrowers by comparing the means of the treatment groups to the mean of the control group. In the following analysis, we first utilize the following econometric specification:

$$y_i = \alpha + \beta_1 ShariaCompliant_i + \beta_2 ConventionalOrSharia_i + \delta_m . + \varepsilon_i,$$

where y_i is the outcome variable, such as whether or not they applied for the loan, β_1 represents estimate of the average treatment effects for all four groups that offered a sharia compliant loan, and β_2 is the average treatment effect for all three groups that had a choice between a

[12] We considered other types of proxies such as whether women wore the head-scarf or men had a beard, but these are often considered to be more cultural artefacts than religious. Asking about actual religious adherence (e.g. "How many times a day do you pray?") is culturally inappropriate.

conventional loan and a sharia compliant loan. The group that was offered only the conventional loan serves as the omitted category. We estimate each with and without marketer fixed effects, denoted above as δ_m.

We present the impacts of the different treatment arms on the loan application rate in Table 2. The first column shows the impacts when we combine the four treatment arms that offer a sharia compliant loan with the control group. We find a 4.3 percentage point (se=1.4) increase in loan application rates when individuals are offered a sharia-compliant loan relative to when they are offered a conventional product. This represents a 23.4 percent increase in demand relative to the control group. Column 2 removes the marketer fixed effects, and finds a 3.6 percentage point (se=1.5) increase in demand.

We also test the impact of having a choice between the conventional loan and a sharia compliant loan, relative to the control group in Column 1. We find that having the choice increases demand for loans by 3.7 percentage points (se=1.5) with marketer fixed effects, and 2.3 percentage points (se=1.7) without marketer fixed effects.

Next, we test the differential impacts of the separate marketing pitches as well as the price sensitivity of demand for microcredit. We do this with a slightly more involved econometric specification:

$$y_i = \alpha + \beta_1 ShariaCompliant_i + \sum_k \beta_k ShariaCompliant_i * Authoritzation_{k,i} + \beta_2 ConventionalOrSharia_i + \beta_3 ConventionalOrSharia_i * InterestRate_i + \delta_m. + \varepsilon_i.$$

This specification allows us to explore the differential impacts of the authorization messages when compared to the sharia-compliant message without any mention of authorizing entity. It also allows us to estimate the elasticity of demand with respect to the price of the sharia-compliant loan.

We find no evidence that the certifying authority matters when individuals consider whether or not to apply for a loan, as shown in Columns 3 and 4 in Table 2. In the base marketing pitch there is no mention of which entity claims that the product is sharia-compliant. Marketers were instructed to simply say that they were offering the opportunity to apply to a sharia-compliant loan with no further details. The three other treatments added details about which entity provides support to the claim that the product was sharia-compliant. The estimates for all three treatment arms are negative, but not significant statistically. This implies that, at best, additional authoritative support has no impact on take up of sharia-compliant products. Individuals seem to want something that is sharia-compliant but are not worried about the details.

We also explore the impacts of having a choice between a sharia-compliant loan and a conventional loan in columns 3 and 4. We offered the conventional loan at a constant rate of 1.9% per month, while we randomized the price of the sharia-compliant loan between 1.75% and

2.2% per month. Our estimates show that having the option between a sharia-compliant loan and a conventional loan leads to an increase in demand for credit over only having the option of a conventional loan. This shows that increasing the option set leads to greater utilization of credit.

While the point estimate for having a choice between the two types of loans is both statistically and economically significantly greater than only having the conventional option, it is actually lower than only having the sharia-compliant option. While the difference is not statistically significant it does lead to additional questions regarding whether having additional options may complicate the application decision, leading to a type of choice-paralysis seen in the behavioral economics literature (Iyengar and Lepper 2000; Iyengar, Huberman, and Jiang 2004; Bertrand et al. 2010).

The estimates for the price elasticity of demand are also reported in columns 3 and 4. As the price of the sharia-compliant loan increases the likelihood that an individual would apply for any type of loan decreases. Although this relationship is not statistically significant it is likely due to the fact that in the treatments where the price of the sharia-compliant loan varied, the price of the conventional option stayed the same. To overcome this challenge we now turn to considering consumer preferences when choosing between the two types of loans.

In the three treatment arms where we varied the cost of the sharia-compliant loan individuals had the ability to choose between a conventional loan of fixed price or the sharia-compliant loan at the price of the group they were randomized into. In the analysis of this choice we use an outcome variable which takes the value one if the individual preferred the sharia-compliant loan[13] and zero if they preferred the conventional loan. The first row in Table 3 shows how our proxy variable for religiosity relates to their preferred loan type. We find that religious individuals are 10.8 percentage points (se=2.6) more likely to prefer the sharia-compliant loan (compared to a mean of 75.3 percent in the non-religious group). This shows that there are strong preferences for sharia-compliant products in general, but that there is still significant heterogeneity in product preferences based on religiosity.

The remaining rows in Table 3 show how preferences for the sharia-compliant product vary with the price. Recall that the final row of Table 2 shows a small amount of price sensitivity of demand for applying for any loan, this table instead shows strong evidence that as the price of the sharia-compliant loan increases, the likelihood that an individual prefers that product over the conventional product decreases significantly. In particular, Column 1 shows that as the price increases by 0.1 percentage points (i.e. from 1.9% a month to 2.0% a month), demand for the sharia compliant product goes down by 4.2 percentage points (se=0.4). This corresponds to a 5.1% increase in price, and a 5.5% decrease in demand.

Next we showcase important heterogeneity in the elasticity of demand by religiosity. When we interact the implied interest rate with dummies for whether or not an individual is

[13] We asked everyone in the three treatment arms that were given a choice between loan types which loan they preferred whether or not they applied for the loan. The regressions in Table 3 include the preferences of individuals even if they did not apply. When we restrict to only those individuals who applied for the loan, the estimates remain statistically significant, but the p-value for "Religious vs Non-Religious" increases to 0.097.

religious we find that the price elasticity of demand for non-religious individuals is nearly twice as large as the elasticity of those who we label as religious. In particular while a 0.1 percentage point increase in price leads to a 7.5 percentage point (se=1.3) decrease in demand for the non-religious, it only leads to a 3.5 percentage point decrease in demand for the religious. This shows that religious individuals are less price sensitive to increases in the costs of microcredit when the product is in line with their religious beliefs.

4.2 Impact of Sharia Compliant Loans on Loan Size and Borrower Type

We explore how sharia-compliant loans impact requested loan size and the observable characteristics of borrowers. Columns 5-8 in Table 2 show how the different treatment arms impact the size of the loan requested by the borrowers. Columns 5 and 6 show that there is no statistically significant difference in requested loan size between the groups offered a sharia-compliant loan compared to the requested loan size of the group offered a conventional loan. Columns 7 and 8 show a small positive effect of the different types of authorization on requested loan size, suggesting that while authorization may not impact the choice to borrow, it may provide cover for increasing utilization of otherwise socially questionable behavior when an authority can be seen providing support.

We further explore compositional effects in Table 4, which follows the same interaction regression specification as Table 2, but changes the outcome variables to the average characteristics of the borrowers in each group who have applied for the loan. In the case of no compositional effects (i.e. the type of people that are applying for the loan in each case is the same on average), we would see no difference in average characteristics between groups due to the random assignment of treatment. If, on the other hand, sharia-compliant loans are more likely to attract the poor, then we should see that the average income in the sharia-compliant group would be lower than the average income in the conventional loan group. We find no evidence of compositional effects of any of the treatment arms individually or jointly across ten different observable characteristics (age, gender, education, marital status, whether loan is for home repair, employment status, home ownership, bank account ownership, and prior borrowing status). This implies that even though sharia compliant loans can impact both take up of financial products, as well as requested loan amount, it does not seem to do by attracting observably different people.

4.3 Impact of Brand Name on Demand for Conventional Loans

In Table 5 we report the results of the independent, auxiliary marketing experiment that tested the impact of the known brand name Jordan Microfinance Company relative to the unknown brand name Tathmeer. Note that in the main experiment, we use the Jordan Microfinance Company name for the conventional loan option, and the Tathmeer name for the sharia-compliant loan option. The primary purpose of this auxiliary experiment is to test whether

the "known" entity of Jordan Microfinance Company was trusted, by comparing it to an unknown entity, and keeping all else (including the lack of sharia-compliance) constant. This is not a dispositive test of trust, however, as we discuss below. The unknown name "Tathmeer" led to 2.2 percentage point (se=1.1) lower takeup than the control group known name "Jordan Microfinance Company."

5. Discussion of Results and Alternative Interpretations

The results above contribute to our understanding of demand for financial products in several ways. First, there is clear evidence that consumer choice is dependent on more than just the economic fundamentals of the product. The actual economics and contract requirements of the two loan products are identical for the consumer. We show that low take-up is due not just to standard explanations of desirable economic product characteristics like prices, terms and borrowing requirements, but also whether or not the product is in line with the social and religious norms of the consumer.

While there is strong evidence that borrowers had greater demand for the sharia-compliant loan, they were not influenced by which entity (if any) was declaring the loan sharia-compliant. We expect that this result may differ in different contexts. For instance, certain societies follow versions of Islamic law that are more concerned with following the letter of the law than others.

We also provide evidence that individuals who are more religious are willing to pay more to adhere to their religious obligations. While there is evidence of demand for microcredit products that adhere to Islamic law, there are not many sharia-compliant products available to individuals, even in Muslim-majority countries. Anecdotal evidence points to many lenders in the financial sector worrying about the added costs associated with sharia-compliant products making those products uncompetitive in the marketplace. Our evidence shows that this may not necessarily be the case, and that even when the price of the sharia-compliant product is 16% higher than the conventional product (2.2% vs 1.9% monthly interest) three quarters of the sample still prefer the sharia-compliant loan. While only half of non-religious loan applicants prefer the sharia-compliant loan when it is more expensive than the conventional option, 82% of the religious prefer the more expensive sharia compliant loan when available.

Our study has several limitations. The label of "sharia-compliant" may do more than merely represent adherence to a religious norm. We identify five potential alternatives.

First, if an individual does not trust financial institutions, the sharia-compliant label may signal trustworthiness and thus increase the take-up rate by consumers. This issue was the motivation for the independent, auxiliary experiment on the branding of the conventional loan. In this auxiliary experiment, we learn that the known brand name (Jordan Microfinance Company) generates 2.2 percentage point (se=1.1) higher take-up rates than the unknown brand name (Tathmeer), for a conventional loan, all else constant. This is important because we learn that branding does matter, and that the control group in the main test (Jordan Microfinance Company conventional loan) did perform better than an unknown brand, suggesting that respondents did, at

least to some extent, trust the financial institution. If trust were a simple binary variable, this would allow us to argue that the sharia-compliant loan (marketed under the unknown name Tathmeer) was not succeeding merely because of trust. But, our auxiliary experiment is an imperfect test, first because trust is obviously not a binary variable, and second because brand names do far more than create trust. Brand names also simplify choice by providing information, and potentially influence the experience of a product through social or self-signaling (Keller and Lehmann 2006). Thus we cannot break apart how much of the increase in the application rate comes from demand for the product itself versus increased trust (if any) in the financial institution because it is providing a religiously permissible product.

Relatedly, it is possible that the borrower may think that banks that provide sharia-compliant products behave differently than banks that provide conventional loans. For example, if clients believe that a sharia-compliant bank is more likely to approve their loan then that may explain a part of the difference in application rates. On the other hand if applicants believe that sharia-compliant lenders are less likely to approve a loan, then our results would be underestimates of the true impact on quantity demanded due to sharia-compliance.

Third, the sharia-compliant loan may provide individuals a means to signal to peers their piousness. Because this is individual lending, not group lending, we believe this is unlikely to be a strong explanation for the increased demand in the sharia-compliant loans. However, the presence of the guarantee requirement does mean that the individual has to tell at least one person about their desire to take-out a loan. Furthermore, if individuals saw value in signaling their piousness to the marketing person, for social reputation reasons individuals may have expressed higher levels of interest (although in surveying, asking individuals about religiosity is difficult as it is deemed culturally sensitive).

Fourth, a standard experimenter demand effect may be present: if individuals believe the experimenters (the bank, in this case, because the marketers presented themselves as bank employees, not researchers) *wanted* a certain outcome, and that pleasing the bank would afford them some future benefit, they may have expressed more interest in what they perceived the bank as preferring. We believe this is unlikely to be a noticeable effect in our context, particularly for the treatments that do not offer multiple products over which to choose and instead provide just one product to either accept or reject.

Next, the coarseness of our "religious" variable both leads to statistical precision issues (particularly for those identified as non-religious) and is also insufficient for picking up variation in true underlying religiosity. As discussed above our proxy for religiosity is a simple question asking whether an individual watches any religious TV, which 82% of our sample claim to do. Given the strong difference in price sensitivity even with this coarse variable, we may expect that as better proxies for religiosity are developed one could find individuals who are even more willing to pay the additional costs related to products that suit their needs. This could mean that even if a product has a small base of potential users, if it is targeted correctly it may still be economically feasible to provide it to those who demand it most. This in turn can impact

equilibria in the credit markets, bringing more people into the financial markets who otherwise would have refused to use formal financial services due to non-financial reasons.

Last, our lack of repayment data limits our ability to make strong statements about selection on unobservables and profitability for the bank. Although we show that there is no evidence of compositional observable differences between those that apply for the sharia-compliant product and those that apply for the conventional loan, there may be unobservable differences. Unobservable characteristics could lead to adverse or advantageous selection. For example, those who take up sharia-compliant loans may be more pious and thus creditworthy, less likely to engage in moral hazard behavior particularly at the repayment decision; on other hand, those who take up sharia-compliant loans may default more, as they could be used to more forgiving faith-based services. In the latter case, the increases in application rates would actually be detrimental to the financial institution.

6. Conclusion

We show that demand for sharia-compliant loans from borrowers in a Muslim-majority country is stronger than demand for conventional loans. We also provide evidence that individuals are willing to pay more for this type of product, even though it is nearly identical to its conventional counterpart. While there seems to be no impact from different types of authorizing entities on demand for this product, we do see that price elasticity differs by religiosity, as proxied by whether or not the respondent watches religious TV.

Together these findings imply several lessons for improving financial inclusion across the world, and lead to several avenues for future research. First, improving our understand of how non-financial preferences impact financial decisions can be an effective way at improving access to financial services for those that turn them down for social reasons. Second, even if the preferences are for products that are more costly than the conventional alternative, there can be heterogeneity in willingness to pay that can cover these added expenses. In other words, even if the new product costs more, if targeted correctly the product can still be sustainable in a competitive market.

Future research could delve deeper into understanding the underlying reasons for the power of these religious norms. For instance, we cannot explain how much of the effect that we find is due to the borrower's desire to showcase their religiosity to others opposed to their personal desire to follow religious law. It could be the case that borrowers prefer sharia-compliant loans only as a signaling mechanism and not for their actual utility.

Further research could also help expand on how to best identify the non-financial preferences that are most important in improving access to worthwhile services. Additional work should explore how non-financial aspects of loan offers influence selection on unobservables, as well as key questions for market development, such as improved targeting and optimal long-term pricing for a market that depends on religious certification. Lastly, further work on the product itself is ripe for exploration. As some sharia-compliant products attempt to be more like equity

than debt contracts, much can be learned about how to overcome obvious information asymmetries when offering financing to households and informal enterprises.

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Table 1: Comparison of Means of Observables Across Groups

Control Group Mean {standard deviations} and Differences (standard errors) between Treatment Groups and Control Groups

	(1) Control Group	(2) Sharia: Unidentified Authority	(3) Sharia: Gov't Authority	(4) Sharia: Imam Authority	(5) Sharia: Bank Authority	(6) Conventional 1.9 % or Sharia 1.75%	(7) Conventional 1.9% or Sharia 1.9%	(8) Conventional 1.9% or Sharia 2.2%	(9) Any Sharia Compliant
Age	36.4	-0.023	-0.280	-0.703	-0.758	-0.868	0.401	-0.509	-0.394
	{12.6}	(0.589)	(0.592)	(0.598)	(0.616)	(0.663)	(0.665)	(0.643)	(0.465)
Male	0.57	0.007	-0.024	-0.025	0.004	0.011	0.006	0.025	-0.003
	{0.49}	(0.023)	(0.024)	(0.024)	(0.024)	(0.026)	(0.026)	(0.026)	(0.018)
Lives in Amman	0.33	-0.008	-0.004	0.004	0.006	-0.006	-0.012	-0.003	-0.003
	{0.47}	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)	(0.007)	(0.008)	(0.005)
High School or Less	0.52	0.013	-0.008	-0.003	-0.011	0.034	0.005	0.028	0.006
	{0.50}	(0.022)	(0.022)	(0.022)	(0.022)	(0.024)	(0.024)	(0.025)	(0.017)
Married	0.65	-0.001	0.001	-0.022	-0.012	-0.002	-0.007	-0.023	-0.009
	{0.48}	(0.023)	(0.023)	(0.023)	(0.024)	(0.026)	(0.025)	(0.026)	(0.018)
Jordanian	0.98	-0.012*	0.002	-0.005	-0.004	-0.011	-0.006	-0.009	-0.007
	{0.13}	(0.007)	(0.006)	(0.007)	(0.007)	(0.008)	(0.008)	(0.008)	(0.005)
Loan for Home Repair	0.11	-0.020	0.005	-0.015	-0.021	-0.004	0.000	0.003	-0.009
	{0.32}	(0.014)	(0.015)	(0.014)	(0.014)	(0.016)	(0.016)	(0.016)	(0.011)
Religious	0.80	0.036*	0.017	0.031*	0.019	0.025	0.028	0.013	0.024
	{0.40}	(0.018)	(0.019)	(0.019)	(0.019)	(0.021)	(0.020)	(0.021)	(0.015)
P-Value for Joint Test		0.130	0.974	0.336	0.589	0.290	0.613	0.621	0.434
Marketer Fixed Effects		Y	Y	Y	Y	Y	Y	Y	Y
Observations	827	898	880	840	807	571	616	598	5210

Notes: Control group means are listed in column 1, with standard deviations in brackets. Differences between the control group and each individual group are found in subsequent columns. The table reports all 8 variables that are collected before the randomization. "Religious" is coded as "1" if the individuals claims to watch religious TV, and "0" otherwise. "Loan for Home Repair" is a binary variable denoting the intended use of the loan proceeds. Column 9 compares all of the treatment arms to the control arm. The P-Value is from a regression of the treatment arm on all of the variables used to check balance, restricitng the sample to just that treatment arm and the control group. The number of observations reflect the size of the sample in that particular treatment arm. Robust standard errors in parentheses. Significance * .10; ** .05; *** .01.

Table 2: Impact of Sharia Compliant Status on Loan Application and Requested Loan Size

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
OLS, Dependent Variable:	Applied For Loan = 1				Requested Loan Size			
Any Sharia Compliant Loan	0.043***	0.036**	0.057***	0.048**	6.7	22.7	-33.8	-22.7
	(0.014)	(0.015)	(0.017)	(0.019)	(27.7)	(29.7)	(33.1)	(38.2)
Any Sharia Compliant * Gov't Authority			-0.025	-0.024			51.9*	67.3*
			(0.017)	(0.020)			(31.5)	(35.3)
Any Sharia Compliant * Imam Authority			-0.018	-0.011			51.7*	50.3
			(0.017)	(0.020)			(31.4)	(35.7)
Any Sharia Compliant * Bank Authority			-0.013	-0.011			65.3**	70.5**
			(0.017)	(0.020)			(31.7)	(34.2)
Choice between Conventional Loan & Sharia Compliant Loan:	0.037**	0.023	0.038**	0.025	13.5	23.9	12.9	20.9
Unidentified Authority	(0.015)	(0.017)	(0.015)	(0.017)	(30.0)	(32.1)	(30.2)	(32.5)
Choice * Sharia Equivalent Interest Rate			-0.013	-0.030			16.8	63.7
			(0.046)	(0.052)			(85.5)	(89.1)
Control Group Mean (Offered Conventional Only)	0.184	0.184	0.184	0.184	1299.3	1299.3	1299.3	1299.3
R-Squared	0.227	0.001	0.227	0.001	0.128	0.001	0.132	0.005
Marketer Fixed Effects	Y	N	Y	N	Y	N	Y	N
Observations	6037	6037	6037	6037	1276	1276	1276	1276

Notes: Table reports results from a linear regression of application rate on the different treatment arms. The first two columns show the impact of being offered any type of sharia-compliant loan versus a conventional loan. They also show the impact of being offered both a conventional and sharia-compliant loan versus only a conventional loan. The third and fourth columns show the impact of the different marketing pitches, interacted with receiving a sharia-compliant loan offer, as well the impact of having the choice between loans interacted with the difference in the implied interest rate between the conventional and sharia-compliant loan. Robust standard errors in parentheses. Significance * .10; ** .05; *** .01.

Table 3: Impact of Price and Religiosity on Loan Preference

OLS, Dependent Variable: Preferred Sharia Compliant Loan=1 Sample Frame: "Choice" treatment group only	(1)	(2)	(3)	(4)
Religious	0.108***	0.147***	0.077***	0.118***
	(0.026)	(0.026)	(0.026)	(0.024)
Sharia Equivalent Interest Rate	-0.423***	-0.397***		
	(0.044)	(0.047)		
Sharia Equivalent Interest Rate * Religious			-0.350***	-0.328***
			(0.045)	(0.048)
Sharia Equivalent Interest Rate * Non-Religious			-0.752***	-0.711***
			(0.130)	(0.136)
P-Value for Religious vs Non-Religious			0.015	0.046
Mean of dependent variable for Non-Religious	0.753	0.753	0.753	0.753
Mean of "Religious" covariate	0.820	0.820	0.820	0.820
R-Squared	0.183	0.077	0.190	0.084
Surveyor Fixed Effects	Y	N	Y	N
Observations	1698	1698	1698	1698

Notes: These respondents were given a choice between a conventional loan at 1.9% interest and a sharia-compliant loan at a randomized interest rate. This table report which loan product the respondent preferred of the two, and how that preference changes based on the level of religiosity of the respondent and the relative price of the sharia-compliant loan versus the conventional loan. Religiosity is determined based on whether or not the respondent claims to watch religious TV programs. Robust standard errors in parentheses. Significance * .10; ** .05; *** .01.

Table 4: Impact of Sharia Compliant Status on Loan Application and Requested Loan Size

OLS, Dependent Variable:	(1) Age	(2) Male	(3) High School or Less	(4) Married	(5) Loan for Home Repair	(6) Employed	(7) Owns Home	(8) Has Bank Account	(9) Any Prior Loan	(10) Any MFI Loan
Any Sharia Compliant Loan	1.28	0.00	0.00	0.04	0.02	-0.15	0.00	0.01	0.00	0.00
	(1.15)	(0.05)	(0.05)	(0.05)	(0.03)	(0.14)	(0.05)	(0.05)	(0.04)	(0.04)
Any Sharia Compliant * Gov't Authority	-0.30	0.01	0.00	-0.04	0.01	0.05	0.00	0.03	-0.02	0.01
	(1.13)	(0.05)	(0.05)	(0.05)	(0.03)	(0.14)	(0.05)	(0.05)	(0.04)	(0.04)
Any Sharia Compliant * Imam Authority	-1.30	-0.05	-0.01	-0.05	-0.01	0.15	0.03	-0.06	0.00	-0.04
	(1.16)	(0.05)	(0.05)	(0.05)	(0.03)	(0.14)	(0.05)	(0.04)	(0.04)	(0.04)
Any Sharia Compliant * Bank Authority	-0.42	-0.11 *	-0.05	0.01	0.02	0.07	-0.06	0.02	-0.02	0.05
	(1.13)	(0.05)	(0.05)	(0.05)	(0.03)	(0.14)	(0.05)	(0.05)	(0.04)	(0.04)
Choice between Conventional Loan & Sharia Compliant Loan:	1.44	-0.01	-0.01	0.01	0.03	-0.01	-0.02	0.03	0.02	0.01
Unidentified Authority	(1.07)	(0.04)	(0.04)	(0.04)	(0.03)	(0.13)	(0.05)	(0.04)	(0.04)	(0.04)
Choice * Sharia Equivalent Interest Rate	0.88	0.07	0.13	0.16	0.00	-0.22	0.16	0.07	0.05	-0.11
	(3.25)	(0.12)	(0.13)	(0.13)	(0.09)	(0.38)	(0.12)	(0.13)	(0.12)	(0.10)
Control Group Mean (Offered Conventional Only)	33.73	0.58	0.66	0.60	0.09	2.30	0.34	0.30	0.21	0.22
P-Value for Joint Test	0.755	0.143	0.783	0.738	0.873	0.876	0.507	0.416	0.860	0.448
R-Squared	0.074	0.172	0.077	0.083	0.031	0.166	0.055	0.100	0.036	0.110
Marketer Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	1271	1276	1276	1276	1276	1276	1275	1276	1275	1275

Notes: Table reports results from a linear regression of the outcomes listed at the top of each column on the different treatment arms, conditional on the individual applying for a loan. Due to the random assignment, if a treatment leads to compsoitional effects, we should see that the coefficient on that treatment arm leads to a significant difference in the average value of the baseline characteritics for those that applies within that group. Any significant impact is not causal in the sense that the treatment did not change people's gender, but could have changed what proportion of applicants are female. The regressions include marketer fixed effects, the impacts are largely the same without them. Robust standard errors in parentheses. Significance * .10; ** .05; *** .01.

Table 5: Impact of Lender Name on Loan Application Rate

OLS, Dependent Variable: Applied For Loan = 1		
	(1)	(2)
Conventional Loan Using "Tathmeer" Name	-0.022**	-0.022**
	(0.011)	(0.011)
Control Group Mean (Conventional Using "Jordan Microfinance Company")	0.030	0.030
R-Squared	0.006	0.007
Marketer Fixed Effects	N	Y
Observations	692	692

Notes: Table reports results from a linear regression of application rate on a variable that takes the value "1" if the conventional loan offer uses the name "Ithamr" and "0" if it uses the name "Tamweelcom". This treatment was implemented in the capital city of Amman one month after the completion of the initial marketing intervention. Robust standard errors in parentheses. Significance * .10; ** .05; *** .01.

Appendix

Text of marketing messages used for each group:

Generic Opening:

Good morning/afternoon, my name is _____. Are you interested in hearing about home improvement financing options that you can use to buy items such as furniture and electronic appliances?

If yes, then the individual is included in sample and randomized into one of the following groups with corresponding message:

Control Group:

We at the Jordan Microfinance Company offer loans to finance home improvement items such as furniture and electronic appliances. We can provide you with an amount between 300-1500JD. We offer several payment options and some free services/perks as well. The interest on the loan will be 1.9% monthly with a maximum repayment term of 20 months. Would you be interested in filling out an application for a loan?

Simple Sharia Compliant- Unidentified Authority:

We at Tathmeer offer Islamic sharia-compliant loans to finance home improvement items such as furniture and electronic appliances. We can provide you with an amount between 300-1500JD. We offer several payment options and some free services/perks as well. The service fee on the loan will be 1.9% monthly with a maximum repayment term of 20 months. Would you be interested in filling out an application for a loan?

Sharia Compliant with Government Authority:

We at Tathmeer offer Islamic sharia-compliant loans, which have been approved by the government's chief Islamic judge to finance home improvement items such as furniture and electronic appliances. We can provide you with an amount between 300-1500JD. We offer several payment options and some free services/perks as well. The service fee on the loan will be 1.9% monthly with a maximum repayment term of 20 months. Would you be interested in filling out an application for a loan?

Sharia Compliant with Imam Authority:

We at Tathmeer offer Islamic sharia-compliant loans, which have been approved by the religious leader Dr. Ahmed Haleel, to finance home improvement items such as furniture and electronic appliances. We can provide you with an amount between 300-1500JD. We offer several payment options and some free services/perks as well. The service fee on the loan will be 1.9% monthly with a maximum repayment term of 20 months. Would you be interested in filling out an application for a loan?

Sharia Compliant with Bank Authority:

We at Tathmeer offer Islamic sharia-compliant loans, which have been approved by our bank's Sharia board, to finance home improvement items such as furniture and electronic appliances. We can provide you with an amount between 300-1500JD. We offer several payment options and some free services/perks as well. The service fee on the loan will be 1.9% monthly with a maximum repayment term of 20 months. Would you be interested in filling out an application for a loan?

Conventional Loan (1.9%) Vs. Sharia-Compliant Loan (1.75%):

We have offers from two different institutions. The first is loan from the Jordan Microfinance Company to finance home improvement items such as furniture and electronic appliances. We can provide you with an amount between 300-1500JD. We offer several payment options and some free services/perks as well. The interest on the loan will be 1.9% monthly with a maximum repayment term of 20 months. The second product is a sharia-compliant loan from Ithamr, and similarly focused on home improvement items, but with a service fee of 1.75% monthly with a maximum repayment term of 20 months. Would you be interested in filling out an application for a loan? Which type of loan do you prefer?

Conventional Loan (1.9%) Vs. Sharia-Compliant Loan (1.9%):

We have offers from two different institutions. The first is loan from the Jordan Microfinance Company to finance home improvement items such as furniture and electronic appliances. We can provide you with an amount between 300-1500JD. We offer several payment options and some free services/perks as well. The interest on the loan will be 1.9% monthly with a maximum repayment term of 20 months. The second product is a sharia-compliant loan from Ithamr, and similarly focused on home improvement items, but with a service fee of 1.9% monthly with a maximum repayment term of 20 months. Would you be interested in filling out an application for a loan? Which type of loan do you prefer?

Conventional Loan (1.9%) Vs. Sharia-Compliant Loan (2.2%):

We have offers from two different institutions. The first is loan from the Jordan Microfinance Company to finance home improvement items such as furniture and electronic appliances. We can provide you with an amount between 300-1500JD. We offer several payment options and some free services/perks as well. The interest on the loan will be 1.9% monthly with a maximum repayment term of 20 months. The second product is a sharia-compliant loan from Ithamr, and similarly focused on home improvement items, but with a service fee of 2.2% monthly with a maximum repayment term of 20 months. Would you be interested in filling out an application for a loan? Which type of loan do you prefer?

Name Test (Comparing Conventional Loan from “the Jordan Microfinance Company” with Conventional Loan from “Tathmeer”):

We at Tathmeer offer loans to finance home improvement items such as furniture and electronic appliances. We can provide you with an amount between 300-1500JD. We offer several payment options and some free services/perks as well. The interest on the loan will be 1.9% monthly with a maximum repayment term of 20 months. Would you be interested in filling out an application for a loan?

Table A1: Comparing Financial Inclusion Across Developing Countries

Dependent Variable	(1) % that borrowed from bank in past year	(2) % with account at bank	(3) % bought on credit from a store in past year	(4) % that borrowed money in past year
Muslim Majority Country=1	-2.56*	-11.64***	3.18*	0.021
	(1.31)	(3.58)	(1.72)	(2.97)
Mean (non-Muslim majority country)	10.5	40.2	10.2	45.0
R-Squared	0.227	0.551	0.046	0.049
Observations	104	104	103	104

Notes: Table reports results from a linear regression of the dependent variable in each column on an indicator variable that takes value one if the country is majority Muslim, controlling for a third degree polynomial of GDP per capita. Data on outcome variables comes from the World Bank Global Financial Inclusion Database (2014), Religion data comes from the World Religion Dataset (2012), and the sample frame includes all countries labeled as developing countries by the IMF. Robust standard errors in parentheses. Significance *.10, **.05, ***.01.

Appendix Table 2: Comparison of Means of Observables Across Groups

Control Group Mean {standard deviations} and Differences (standard errors) between Treatment Groups and Control Groups

	(1) Control Group	(2) Sharia: Unidentified Authority	(3) Sharia: Gov't Authority	(4) Sharia: Imam Authority	(5) Sharia: Bank Authority	(6) Conventional 1.9 % or Sharia 1.75%	(7) Conventional 1.9% or Sharia 1.9%	(8) Conventional 1.9% or Sharia 2.2%	(9) Any Sharia Compliant
Age	36.4	-0.147	-0.350	-0.785	-0.878	-0.929	0.606	-0.522	-0.436
	{12.6}	(0.595)	(0.604)	(0.608)	(0.621)	(0.675)	(0.673)	(0.649)	(0.473)
Male	0.57	0.010	-0.016	-0.026	0.014	0.005	-0.006	0.026	0.000
	{0.49}	(0.024)	(0.024)	(0.024)	(0.024)	(0.027)	(0.026)	(0.026)	(0.019)
Lives in Amman	0.33	0.054**	0.036	0.031	0.049**	0.019	0.024	0.041	0.038**
	{0.47}	(0.023)	(0.023)	(0.023)	(0.024)	(0.026)	(0.025)	(0.026)	(0.018)
High School or Less	0.52	-0.018	-0.033	-0.013	-0.040	0.025	-0.007	0.007	-0.014
	{0.50}	(0.024)	(0.024)	(0.024)	(0.025)	(0.027)	(0.027)	(0.027)	(0.019)
Married	0.65	-0.003	-0.003	-0.022	-0.019	-0.001	0.000	-0.022	-0.010
	{0.48}	(0.023)	(0.023)	(0.024)	(0.024)	(0.026)	(0.025)	(0.026)	(0.018)
Jordanian	0.98	-0.012*	0.002	-0.005	-0.004	-0.011	-0.007	-0.008	-0.006
	{0.13}	(0.007)	(0.006)	(0.007)	(0.007)	(0.008)	(0.008)	(0.008)	(0.005)
Loan for Home Repair	0.11	-0.031**	-0.003	-0.020	-0.033**	-0.006	-0.004	-0.005	-0.016
	{0.32}	(0.014)	(0.015)	(0.015)	(0.015)	(0.017)	(0.017)	(0.017)	(0.012)
Religious	0.80	0.032*	0.019	0.022	0.012	0.022	0.025	0.005	0.020
	{0.40}	(0.019)	(0.019)	(0.019)	(0.020)	(0.021)	(0.021)	(0.021)	(0.015)
P-Value for Joint Test		0.030	0.821	0.335	0.107	0.355	0.799	0.507	0.179
Marketer Fixed Effects		N	N	N	N	N	N	N	N
Observations	827	898	880	840	807	571	616	598	5210

Notes: Control group means are listed in column 1, with standard deviations in brackets. Differences between the control group and each individual group are found in subsequent columns. The table reports all 8 variables that are collected before the randomization. "Religious" is coded as "1" if the individuals claims to watch religious TV, and "0" otherwise. "Loan for Home Repair" is a binary variable denoting the intended use of the loan proceeds. Column 9 compares all of the treatment arms to the control arm. The P-Value is from a regression of the treatment arm on all of the variables used to check balance, restricitng the sample to just that treatment arm and the control group. The number of observations reflect the size of the sample in that particular treatment arm. Robust standard errors in parentheses. Significance * .10; ** .05; *** .01.