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Islamic Finance and Financial Inclusion

Measuring Use of and Demand for Formal Financial Services among Muslim Adults

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Abstract

In recent years, the Islamic finance industry has attracted the attention of policy makers and international donors as a possible channel through which to expand financial inclusion, particularly among Muslim adults. Yet cross-country, demand-side data on actual usage and preference gaps in financial services between Muslims and non-Muslims have been scarce. This paper uses novel data to explore the use of and demand for formal financial services among self-identified Muslim adults. In a sample of more than 65,000 adults from 64 economies (excluding countries where less than 1 percent or more than 99 percent of the sample self-identified as Muslim), the analysis finds that Muslims are significantly less likely than non-Muslims to own a formal account or save at a formal financial institution after controlling for other individual- and country-level characteristics. But the analysis finds no evidence that Muslims are less likely than non-Muslims to report formal or informal borrowing. Finally, in an extended survey of adults in five North African and Middle Eastern countries with relatively nascent Islamic finance industries, the study finds little use of Sharia-compliant banking products, although it does find evidence of a hypothetical preference for Sharia-compliant products among a plurality of respondents despite higher costs.

Islamic Finance and Financial Inclusion: Measuring Use of and Demand for Formal Financial Services among Muslim Adults

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1.   Introduction

Although Islamic financial assets represent less than 1 percent of total global financial assets, total funds were valued at $1.3 trillion in 2011, a 150 percent increase over five years (Reuters, 2011). Policymakers around the world have noted this trend of rapid and sustained growth. For instance, in a 2012 op-ed, then-World Bank Managing Director Mahmoud Mohieldin wrote that Islamic finance "has the potential to meet more people's banking and investment needs, expand its reach, and contribute to greater financial stability and inclusion in the developing world" (Mohieldin, 2012). In March of 2013, the International Finance Corporation announced its first partnership with an Islamic finance institution in Sub-Saharan Africa, a $5 million equity investment with Gulf African Bank in Kenya with the explicit goal of expanding Sharia-compliant banking products and services to small and medium businesses (IFC, 2013).

Much of this work is based on the premise that Muslims prefer financial services and products that are consistent with their religious beliefs, chief among them the prohibition on interest, or *riba,* stipulated in the Quran. Yet little empirical research has been done to measure the degree to which Muslims are currently not accessing conventional financial systems, or how much they demand and use Sharia-compliant financial products, particularly within the realm of household finance. Even less is known about how these usage gaps and preferences vary between various financial products and across regions and countries. A more complete understanding of these concepts can help Islamic finance industry leaders better expand their

outreach to Muslim clients, and aid policymakers in more clearly defining their role in expanding financial inclusion - Islamic or otherwise - to Muslim adults.[1]

This paper seeks to answer several questions relevant to the Islamic finance industry: (1) Are Muslims less likely than non-Muslims to use formal financial services in their current form? (2) Do unbanked Muslims differ from unbanked non-Muslims in their self-reported barriers to financial inclusion? (3) To what degree do these patterns vary across countries and individual-level characteristics? In a limited sample of countries, we are also able to empirically investigate: (4) How prevalent is awareness and use of Sharia-compliant financial products? (5) To what degree are Muslims willing to pay a premium for Sharia-compliant financial products and services?

We draw our dataset from the Global Financial Inclusion (Global Findex) and Gallup World Poll databases. In order to examine variation between Muslims and non-Muslims *within* countries, we exclude from our sample countries where less than one percent or more than 99 percent of the adult population self-identifies as a Muslim.[2] Thus, our main sample covers 66,484 adults from 64 countries, representing approximately 75 percent of the world's adult Muslim population. The data was collected throughout the calendar year 2011. The database contains information on respondent's use of formal financial services as well as many other individual-level characteristics, including self-reported religion, gender, age, income, education, employment status, and measures of religiosity. Importantly, our within-country analysis allows us to identify the effect of religion on the use of formal financial services separately from the effect of macro- or institutional-level attributes.

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[1] Non-Muslims can also use Islamic financial products and services. According to a 2008 report by PricewaterhouseCoopers Malaysia, the majority of Islamic finance customers in that country are non-Muslim.
[2] This is discussed further in Section 3.

In our sample of countries, we find no evidence that Muslims are less likely than non-Muslims to report formal borrowing or indeed any form of borrowing, when controlling for other individual- and country-level characteristics. We do find, however, that Muslims are significantly less likely than non-Muslims to have an account and save at a formal financial institution, when controlling for other individual- and country-level characteristics. Self-identification as a Muslim is associated with a 6 percent decrease in the probability of having a formal account, which is larger than the gap between men and women and roughly equal to that of an exogenous shift from the third to the first (lowest) within-country income quintile.

However, we find no evidence that patterns of financial inclusion in subpopulations that are typically excluded from formal financial systems (women, the less educated, the poor, and rural residents) are any different among Muslim populations than among non-Muslims.

We find that Muslims are more likely than non-Muslims to report religion as a barrier to account ownership, however this result appears to be mainly driven by respondents in Sub-Saharan Africa. Worldwide, just 7 percent of unbanked Muslims and unbanked non-Muslims cite religion as a barrier to account ownership. Similar to non-Muslims, Muslims are more likely to cite cost, distance, and documentation as barriers to account ownership. Relatedly, we do not find evidence that a respondent's *degree* of religiosity plays a particularly important role in the financial behaviors of Muslims as compared to their non-Muslim counterparts, however our data on religiosity does have important limitations.

Finally, we do not find any evidence that gaps between Muslims and non-Muslims in financial inclusion are related to economy-level variation in the size of the Islamic finance industry or the percentage of Muslims within a given country that self-identify as Muslim.

An important caveat to the above findings is that we cannot distinguish between conventional and Sharia-compliant financial products when examining the use of formal financial services. It is possible that the absence of a gap in borrowing behavior is the result of widespread availability and use of Sharia-compliant products, however given that less than 1 percent of total global financial assets (and less than 1 percent of microfinance products) are from Islamic financial institutions we do not believe this to be the case (El-Zoghbi and Tarazi, 2013). Rather it seems more plausible that the vast majority of financially included Muslims use conventional banking products and services.

However, in a smaller, separate dataset based on interviews with over 5,000 adults in five Middle Eastern and North African countries (collected in 2012), we are able to make the distinction between Sharia-compliant and conventional financial products. We find very little use of Islamic banking products though we do see evidence of a strong hypothetical preference for Sharia-compliant products despite higher costs. Just 2 percent of adults in these countries (Algeria, Egypt, Morocco, Tunisia, and Yemen) report currently using a Sharia-compliant banking service. In a hypothetical scenario, a plurality (45 percent) of respondents reports a preference for a Sharia-compliant banking product over a less expensive conventional banking product. However, 37 percent of respondents prefer a conventional product or have no preference which suggests that demand for Sharia-compliant products is not immune to cost concerns. We also document significant variations in awareness and usage of Sharia-compliant banking products: income and access to information channels are particularly important predictors of these behaviors. Importantly, these five countries may not be representative of use of and attitudes towards Islamic finance globally. Other economies – Bangladesh, Malaysia, and

Sudan, among them – are at distinctly different stages with respect to the development of the Islamic finance industry.

The rest of the paper proceeds as follows: section 2 reviews the literature on preference and usage gaps in formal financial services among Muslims and also contains a review of the differences between conventional and Islamic finance. Section 3 introduces the data, provides summary statistics, and reviews our empirical strategy. Section 4 contains our results and section 5 concludes.

2. Background and Literature Review

2.1 Preference and Usage Gaps

We first review the demand-side aspect of potential divergent preferences for and usage of financial services between Muslims and non-Muslims. Previous literature has generally classified Muslims into three categories with respect to their preferences vise-a-vise Islamic and conventional finance: (i) those who refuse to use conventional financial products because of their violation of Sharia, (ii) those who do use or would use conventional financing but might switch to Islamic financing if it became more widely available, or was offered at a competitive price, and (iii) those who do use or would use conventional financing and would continue to do so even if a competitively priced Sharia-compliant product was readily available.[3]

There is significantly less agreement, however, when it comes to quantifying these groups. Naser, Jamal, and al-Khatib (1999) find that 70 percent of Muslims accord importance to religious issues when choosing an Islamic bank in Jordan and a 2006 IFC study in the same country showed that 32 percent of those interviewed cite religious reasons for not seeking a

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[3] Classification adapted from Chiu, Newberger, Paulson (2005).

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conventional loan. In the West Bank and Gaza, more than 60 percent of respondents to a PlaNet Finance survey state a preference for Islamic products over conventional products, with 30 percent preferring such products regardless of price. And a recent randomized field experiment in Egypt found that take-up and repayment rates of an Islamic ROSCA were higher than that of a conventional Grameen-style group (El Gamal, El Komi, Karlan, and Osma, 2011).

On the other end of the spectrum, Haron, Ahmed, and Planisek (1994) find that there are no significant differences between Muslims and others in Malaysia in their choice of a bank. They find that Muslim bank customers selected banks based mainly on non-religious criteria such as the quality of services, the speed of transactions, and the reputation of the bank. And in Singapore, Gerrard and Cunningham observes that about two-thirds of Muslims consider economic as well as religious factors in deciding to patronize an Islamic bank.

While much of this previous work – particularly that from Middle Eastern and North African countries - suggests that there is a demand for Sharia-compliant services among Muslims, the robustness of this demand and its relationship to cost and availability of alternative, conventional products is not well understood. What exactly is meant by Islamic finance is also not always clear to respondents of these surveys. Naser et al. (1999) found a high level of ignorance among the Muslim respondents in Jordan with regard to what constitutes acceptable Islamic finance principles. Respondents can hardly be blamed; the widespread and large-scale implementation of Islamic finance is a relatively new trend and the processes by which a product is deemed Sharia-compliant varies widely across institutions. El-Zoghbi and Tarazi (2013) point out that the relationship between a given method of Sharia certification and customer perceptions and uptake of a product is an almost completely unresearched area.

A survey of the available literature also suggests that there is significant variation across countries and individual characteristics in the preferences for financial services, though a thorough accounting of these differences has been hindered by the lack of consistent, systematic data. Further, many of these studies focus simply on preferences alone, rather than actual banking choices. And lastly, few of these studies use nationally representative samples or explore preferences and choices over a wide range of financial products. Indeed, many of the aforementioned studies focus only on microentrepreneurs and issues of borrowing rather than on a fuller range of financial products that may be of interest to individuals and households more broadly. An exception is Beck and Brown (2011) which uses household-level data for 29 economies in Eastern and Central Europe and finds that Muslims are 8 percent less likely than non-Muslims to have a formal account, a result that is driven largely by south-east European countries (Bosnia, Macedonia, Montenegro).

The lack of standardized survey methodologies and questions in the current literature make it difficult to draw broad-based conclusions about the demand and use for financial services among Muslims. However, Seibel (2005), citing the case of Indonesia, points out that the correlation between ex-ante demand for Sharia-compliant products may not be correlated with the success of the Islamic finance industry once it is introduced and developed.

Other demand-side hypotheses on preference and usage gaps between Muslims and non-Muslims have been put forth, but these generally confound religious identification with other individual- and country-level attributes. For example, in countries where Muslim adults have less income or education than their non-Muslim counterparts, it is possible that preference and usage gaps for formal financial services might arise due to issues of banking access, creditworthiness, and demand for certain products and services. It is also frequently cited that adults in Muslim-

majority countries are less financially included than adults in other countries. However, given that the goal of this paper is to isolate the relationship between Muslim identity and preferences for and usage of formal financial services, that is, after accounting for other individual- and country-level characteristics, we will not review these theories or literature here.

There are, however, nontrivial supply-side considerations when examining the role of religion – or any individual characteristic - in the use of formal financial services. Becker (1957) is credited with developing the first theoretical framework of discrimination in wage, employment, and financial markets and a rich theoretical and empirical literature has since followed exploring discrimination in credit markets (see Peterson, 1981; Munnell, 1996; Cavalluzzo, 1998). Just as Muslims may choose not to purchase conventional financial products because of their religion, banks or their employees might also discriminate against Muslim populations. This may be particularly true in countries where Muslims represent a minority population. Beck and Brown (2011) provide one of the few empirical studies on credit market discrimination with respect to Muslim populations. After documenting a gap between Muslims and non-Muslims in the use of bank accounts (discussed above), Beck and Brown empirically test whether this gap is driven by demand-side or supply-side considerations. They find evidence for the latter, suggesting that discrimination may play a role in lowering the use of formal financial services among Muslims. We do not directly investigate discrimination hypothesis in our analysis of differences between Muslims and non-Muslims in the use of formal financial services, although some of our findings do raise relevant questions and hypotheses that would be worth exploring in future work.

2.2 Conventional vs. Islamic Finance

It is worthwhile to briefly review the development and prevalence of Islamic finance globally as well as the basic characteristics of Sharia-compliant financial products. Islamic finance is the act of providing financial products or services that conform to Sharia, Islam's law and moral code. The defining characteristic of Islamic financial products is the avoidance of interest, known as *riba*, derived from the Quran's stipulation that only goods and services, and not money itself, is allowed to carry a price. Instead, Sharia-compliant finance promotes risk-sharing or profit and loss sharing principles in all forms of business transactions.

While prohibitions on the receipt and payment of interest have historically been centrally held tenets of several major religions (Judaism and Christianity, chief among them), Islam is unique in the relative persistence of its adherents' attitude towards interest-bearing credit.[4] The consequences of these views are widely debated, particularly within the large literature on the long-term economic legacies of historical institutions. Some have offered Islam's ban on interest as an explanation for the Middle East's relative financial underdevelopment while others argue that other Islamic institutions, such as laws relating to commercial partnerships, the waqf system, and the Islamic inheritance system, were more significant impediments on financial development (see Kuran (2005) for a detailed discussion). Of particular relevance to the topic of this paper is the impact of interest prohibitions on levels of financial inclusion. In one of the few empirical studies on this topic, Grosjean (2011) finds evidence that former Ottomon countries and provinces still experience lower levels of banking penetration as a result of interest-lending prohibitions that lasted longer than in the rest of Europe.

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[4] Kuran (2005) notes that around 1000 A.D., there existed little difference between Christian Europe and territories under Muslim rule in attitudes towards interest.

Although widespread, strictly-enforced prohibitions on interest-lending were relaxed in the 19th century, the focus on interest-free lending experienced something of a reemergence with the development of "Islamic economics" in the 1940s (Kuran, 1997).[5] Consequently, Islamic financial industries began to develop with the aim of implementing the core positions of Islamic economics. Today there exists wide variation in the availability of Sharia-compliant financial products across countries with significant Muslim populations. In some countries, including India, interest-free commercial banking is prohibited under current federal and mercantile regulations.[6] Islamic banks are the *only* mainstream financial institutions in several countries, Iran and Sudan among them.[7] And dual-banking systems - wherein Islamic banking coexists with conventional banking - exist in many economies, including Egypt, Pakistan, Indonesia, Malaysia, and the Gulf States. Within these dual-banking systems, there is also significant variation in the degree to which Islamic banks are separated from conventional banks. In some countries there is a clear separation, with a bank offering only Sharia-compliant products or only conventional products. In other countries, however, otherwise conventional banks have set up Islamic windows (El Qorchi, 2005). Similarly, in some countries – such as Malaysia and Yemen - Islamic banks are governed by supervisory and regulatory regimes distinct from those of conventional banks. Regulators in other economies prefer to put Islamic banks under the same central bank supervision and regulatory regime as that for conventional banks, while recognizing and accommodating certain unique characteristics of the former.

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[5] Kuran (1997) writes that "Islamic economics emerged toward the end of India's colonial period as part of a broad campaign to preserve the religious identity and traditional culture of the country's sizable Muslim minority."
[6] In 2006, a Reserve Bank of India committee concluded that "Islamic banking did not fit into the country's banking laws." (India Knowledge at Wharton, 2010)
[7] Following the signing of the Comprehensive Peace Agreement in 2005, banks operating in South Sudan began to convert to conventional banking.

According to Beck et al (2013) the percentage of total banking assets in Islamic financial institutions ranges from less than 2 percent in Indonesia, Lebanon, and Tunisia but exceeds 30 percent in Kuwait and Yemen. Furthermore, in many cases, Islamic banks cater largely to business and Sharia-compliant consumer products are less widely available. On the household and SME finance side, it is estimated that approximately 80 percent of Islamic microfinance clients live in only three countries, Indonesia, Bangladesh, and Sudan (El-Zoghbi and Tarazi, 2013).

At the bank-level, Beck et al (2013) find few differences in business orientation, efficiency, asset quality, or stability between conventional and Islamic banks. However, the authors do find evidence that higher capitalization and liquidity reserves contributed to the relatively better performance of Islamic banks during the recent crisis.

Among the most common present day Islamic banking products are partnership asset financing arrangements between a bank and a client. Under a *Murabaha* contract, the financial institution purchases the desired good for the customer and then sells it to the customer in monthly installments at the original price plus an agreed mark-up. As opposed to a traditional interest payment, the monthly installments remain fixed at the initial amount even in the case of delayed payment. It has been estimated that the vast majority (70 to 80 percent) of Islamic finance lending products are *Murabaha*-based (Ray, 1995; Fu et al., 2011; El-Zoghbi and Tarazi, 2013).

Under the *Mudaraba* contract, the bank provides the resources, i.e. the "capital", while the client provides effort and expertise with profits shared at a predetermined ratio. The client is effectively covered by limited liability provisions and the losses are borne exclusively by the bank. There are several nontrivial principal-agent problems inherent in this setup, not least

agreeing upon accounting principles in calculating profit and the possibility of weak incentives

to work for the entrepreneur. A variant of *Mudaraba* is *Musharaka*, wherein the financial

institution is one of several investors and profits and losses are shared by all parties.

Sharia-compliant deposit or savings accounts operate under *Mudaraba* (profit sharing)

wherein the owner of the account does not explicitly receive interest, but rather shares in the

overall profits of the financial institution or a specific investment account on the asset side of the

financial institution's balance sheet.

3. Data and Methodology

3.1 Data

This paper draws primarily on the World Bank's Global Findex database, an individual-

level database comprised of survey data collected over the 2011 calendar year. The database

covers more than 150,000 adults in 148 economies, nationally representative of about 97 percent

of the world's adult population. The survey was carried out by Gallup, Inc. in association with

its annual Gallup World Poll, which since 2005 has surveyed about 1,000 people annually in

each of up to 157 economies, using randomly selected, nationally representative samples.[8,9] The

target population is the entire civilian, noninstitutionalized population age 15 and above. Surveys

are conducted in the major languages of each economy.[10] The Global Findex module covers the

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[8] The Gallup World Poll has been used in previous academic studies. For example, Deaton (2008) uses Gallup World Poll questions on life and health satisfaction and looks at the relationships with national income, age, and life expectancy. Gallup World Poll questions are also used by Stevenson and Wolfers (2008) and Sacks, Stevenson, and Wolfers (2010) as part of their research to analyze relationships between subjective well-being and income; by Clausen, Kraay, and Nyiri (2011) to analyze the relationship between corruption and confidence in public institutions; by Demirguc-Kunt, Klapper, and Zingales (2012) to study changes in trust in banks over the financial crisis; and by Stevenson and Wolfers (2011) to examine trust in institutions over the business cycle.

[9] In some economies oversamples are collected in major cities or areas of special interest. In addition, in some large economies, such as China and the Russian Federation, sample sizes of at least 4,000 are collected.

[10] Questionnaire translations and other survey-related materials are available at www.worldbank.org/globalfindex

banking and personal financial behavior of respondents, but the authors also make use of other questions in the Gallup World Poll such as the religion of the respondent and other individual covariates.

Though the 2011 Global Findex and Gallup World Poll database covers more than 150,000 respondents in 148 economies, the database used in this paper is considerably smaller. First, we do not have data on respondents' religion in nine, mostly Middle Eastern, countries.[11] The missing data is due to restrictions placed on the survey by the governments of these countries. Second, because we are examining within-country variation in financial inclusion between Muslims and non-Muslims, we exclude countries where less than one percent or more than 99 percent of the sample self-identified as a Muslim (56 and 10 countries, respectively).[12] Finally, we exclude countries where more than 20 percent of the population is excluded from sampling and countries where other key demographic covariates are not available (two and seven countries, respectively).[13] We are left with a dataset covering 66,484 respondents in 64 countries. Taken together, these 64 countries account for 75 percent of the world's Muslim population.

We also analyze additional data collected by Gallup and the World Bank in five Middle Eastern and North Africa countries (Algeria, Egypt, Morocco, Tunisia, and Yemen) in 2012. These data – based on roughly 1,000 interviews in each country - focus more specifically on awareness, use, and preferences for Islamic banking services.

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[11] Bahrain, China, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates.

[12] Countries where less than 1 percent of the sample self-identified as Muslim: Argentina, Armenia, Australia, Belarus, Bolivia, Botswana, Brazil, Cambodia, Chile, Colombia, Costa Rica, Croatia, Cyprus, Czech Republic, Dominican Republic, Ecuador, El Salvador, Estonia, Finland, Guatemala, Haiti, Hong Kong SAR, China, Hungary, Ireland, Italy, Jamaica, Japan, Korea, Rep., Lao PDR, Latvia, Lesotho, Lithuania, Malta, Mexico, Moldova, Mongolia, Nicaragua, Panama, Paraguay, Peru, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Taiwan, China, Ukraine, United States, Uruguay, Venezuela, RB, Vietnam. Counties where more than 99 percent of the sample self-identified as Muslim: Afghanistan, Algeria, Comoros, Djibouti, Iran, Islamic Rep., Mauritania, Morocco, Niger, Somalia, Yemen, Rep.

[13] More than 20 percent of the adult population is excluded from sampling in Madagascar and the Central African Republic. Key demographic covariates are missing in Congo, Rep., Gabon, Germany, Kenya, Liberia, United Kingdom, and Zimbabwe.

Importantly, with the exception of five countries in which additional questions were asked, we cannot distinguish between Islamic and conventional financial services. We are also constrained by the inherent subjectivity and biases present in questions about a respondents religious practices and beliefs.

3.2 Summary Statistics

Table 1 defines and Table 2 summarizes the data and variables used. We present means with and without country-level population weights, though we generally cite weighted means to more accurately reflect worldwide distributions. Of our sample, 36 percent of respondents self-identify as a Muslim (17 percent of respondents in the complete worldwide Findex dataset report the same).[14] On the country-level, the median Muslim population is 16 percent and the average is 41 percent. Fifty-two percent of the world's adult Muslims live in just four countries: Indonesia, India, Pakistan, and Bangladesh.

There are some nontrivial differences between Muslims and non-Muslims with respect to several basic individual characteristics. In univariate t-tests in our entire sample (not shown), we find that Muslims are significantly more likely than non-Muslims to have only a primary education or less (53 percent vs. 43 percent) and to be married (60 percent vs. 53 percent). Muslims are significantly less likely than non-Muslims to be employed by an employer (24 percent vs. 32 percent) and have internet access in their home (18 percent vs. 36 percent). Muslims in our sample also live in larger households, on average, than non-Muslims (4.53 vs. 3.38 members). Notably, there are no significant differences in univaritate ttests between

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[14] The survey question on religion is: "Could you tell me what your religion is?" The question is open-ended and coded by interviewers. The 17 percent value does not include countries where religious affiliation is not included in the survey and given that these are mostly Muslim-majority countries, this value is likely lower than the actual worldwide prevalence of Muslim self-identification.

Muslims and non-Muslims for income, urban residence, born in another country, mobile phone ownership, or television ownership.

The main financial inclusion variables used in this analysis are *formal account, formal saving,* and *formal credit.* Table 3 includes univariate ttests testing the equality of within country/region averages between Muslims and non-Muslims for these three variables. Importantly, these results do not control for other individual- and country-level characteristics as do the results presented in the next section. The number of observations and percentage of a given region or country that self-identifies as Muslim should also be taken into consideration when interpreting significant differences.

Thirty-six percent of adults in our sample have an account at a formal financial institution (24 percent of Muslims, 44 percent of non-Muslims).[15] The gap in account penetration between Muslims and non-Muslims is widest in the East Asia and Pacific region (48 percent and 21 percent, respectively). 15 percent of adults in our sample report having saved at a formal financial institution in the past 12 months (19 percent of Muslims, 9 percent of non-Muslims).[16] Nine percent of adults in our sample report having borrowed from a formal financial institution in the past 12 months (9 percent of Muslims, 7 percent of non-Muslims).[17] Of those who report not having an account at a formal financial institution, 6 percent of respondents (both Muslim and non-Muslim) report that religion is an important reason for not having an account.[18]

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[15] The survey question on formal accounts is: "Do you, either by yourself or together with someone else, currently have an account at a bank, credit union, or another financial institution? An account can be used to save money, to make or receive payments, or to receive wages and remittances." We also consider those who report having a debit card or those who report having saved at a microfinance institution to have a formal account.

[16] The survey question on formal saving is: "In the past 12 months, have you saved or set any money?" Those who respond in the affirmative are then asked, "In the past 12 months have you saved or set aside money using an account at a bank, credit union, or microfinance institution?"

[17] The survey question on formal borrowing is: "In the past 12 months, have you borrowed any money from a bank, credit union, or microfinance institution?"

[18] The survey question on account barriers is: "Please tell me whether each of the following is a reason why you, personally, do not have an account at a bank, credit union, or other financial institution?" Respondents could chose from the following list of

In 2012, we included in the Gallup World Poll a short module on awareness, use, and preference for Islamic financial products. This module was included in Algeria, Egypt, Morocco, Tunisia, and Yemen with approximately 1,000 respondents per country. In each of those countries, with the exception of Egypt, 100 percent of respondents self-identified as Muslim.[19] In Egypt, 95 percent of respondents did.

Table 4 summarizes these additional data by country. Across the five countries, 48 percent of respondents report having heard of Islamic products in their country that offered services to people like them.[20] This ranged from 35 percent in Algeria to 57 percent in Tunisia. However, just 2 percent of respondents reported currently using an Islamic banking service.[21] In no country did this value exceed 3 percent. Among those who separately reported having an account at a formal financial institution or having borrowed from a formal financial institution in the past year, just 8 percent reported currently using an Islamic banking service. This is consistent with the low concentration of Islamic banking services in these countries as with work by Beck et al. (2012) which shows that in Egypt and Tunisia, Islamic banks' share of total bank assets is 4.2 and 1.5 percent, respectively. Islamic banks' share of total bank assets in Yemen is 51.5 percent, though this is mostly concentrated in non-commercial assets.

The third and final question in the module examined the robustness of demand for Islamic banking services.[22] The question puts forth a hypothetical scenario in which the

reasons (multiple responses were allowed): too far away, they are too expensive, I do not have the necessary documentation, I do not trust them, I do not have enough money to use an account, religious reasons, someone else in the family already has an account.

[19] For this reason, Algeria, Morocco, and Yemen are not included in the main analysis. Tunisia was not surveyed by Gallup in 2011.

[20] The Islamic banking service awareness question is: "Have you heard about Islamic banks in [country] that offer services to people like you?" Iterations of this question were field tested using more specific terminology like Mudaraba and Muharaba, but feedback suggested that this terminology was confusing to respondents.

[21] The Islamic banking service use question is: "Do you currently use an Islamic banking service?"

[22] Due to the omission of the "No preference" option in the Egypt survey, we do not include data from Egypt in the analysis of this question. The omission was the result of a clerical error.

respondent has been approved for a one-year loan from a conventional bank and an Islamic bank. The value of the hypothetical loan is equivalent to 15 percent of the GDP per capita of the respondent's country. However, the loan from the Islamic bank comes with an effective 20 percent interest rate, while the loan from the conventional bank comes with an effective 15 percent interest rate. The price difference is meant to test the price sensitivity of respondent's potential preference for Islamic products. In reality, the price difference between conventional and Islamic loans is often less than 5 percentage points. The interest rate is presented in terms of the value of the monthly payment, since explicit rates are not Sharia-compliant. The respondent is asked to choose which loan he/she preferred.[23]

In our sample, 45 percent of respondents reported a preference for the more expensive Islamic bank loan, while 27 percent of respondents reported a preference for the cheaper, conventional bank loan. Respondents in Morocco were most likely to opt for the Islamic bank loan (54 percent), while respondents in Tunisia were most likely to choose the conventional loan (40 percent). There was relatively little variation in choice by within-country income levels. Men were significantly more likely than women to choose the Islamic option (48 percent vs. 43 percent) with the largest gender differential in Egypt.

In our sample, 10 percent of respondents reported not having a preference and 15 percent of respondents reported "don't know". Field staff report that the high level of "don't know" was attributable to the hypothetical nature of the question and the unfamiliarity of many respondents with any sort of banking products, particularly with the relatively new concept of Islamic

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[23] The hypothetical loan question is: "Let's say you applied for a loan at two different institutions – an Islamic bank and a conventional bank. Both banks approve a one-year, $200 loan. The monthly installment/payment of the loan from the Islamic bank is $20, and the monthly installment/payment on the loan from the conventional bank is $19.15. Which bank would you choose to take a loan from?" (Values are given in USD equivalent for Yemen.)

banking services. Indeed, those who had not heard of Islamic finance products were twice as likely to respond "don't know" to the hypothetic preference question.

Taken together, the results from the Islamic finance module suggest that individual-level use of Islamic banking services is extremely low in these countries. This is consistent with supply-side data. And while a plurality of respondents do report a preference for Islamic banking services despite significantly higher costs, an almost equally large share of adults prefer the cheaper, conventional loan or do not have a preference between the two. This suggests that there is likely to be demand for both conventional and Islamic banking services, and that preferences for Sharia-compliant products are influenced by price. Ideally, we would be able to estimate the elasticity of demand for Islamic products using an array of pricing options but this was not feasible in the current exercise. Finally, it should again be noted that these results are not representative of Islamic banking globally; in many countries, use of and attitudes towards Islamic finance are likely markedly different.

3.3 Empirical Strategy

We investigate the degree to which Muslims and non-Muslims differ in their use of financial services using a simple model examining the relationship between a respondent's ownership or use of a given financial product and whether or not the respondent identifies as a Muslim. We estimate the following model:

$$y_{ij} = \beta_1 \, muslim_i + \gamma\delta_i + \eta_j + \varepsilon_{i,j} \qquad (1)$$

where *y* is defined as one of several dimensions of financial inclusion for individual *i* in country *j*. Our variable-of-interest, *muslim,* is a binary variable with a value equal to one if the respondent self-identifies as a Muslim. We include a vector of individual controls (δ_i) including age, age squared, log household size, and binary variables denoting gender, married, education (separate variables for having completed secondary and tertiary education), within-economy income quintile dummies (poorest quintile as excluded category), urban residence, employment status, household has a television, household has a mobile phone, and a dummy signifying whether or not the respondent was born outside of the country in which he currently resides.

In addition, we estimate the model using country fixed effects (η_j). Therefore we are examining differences *within* countries in the use of formal financial services between Muslims and non-Muslims. Previous analyses of the gap in the use of formal financial services between these two groups Muslims has tended to focus on comparing Muslim majority countries with Muslim minority countries, which runs the risk of confusing country-level differences with individual-level, religion-driven differences. Of course, even after controlling for other individual-level and country-level differences, we are cautious not to interpret the observed correlations as causal effects. Of particular concern is the omitted variable critique in which an omitted variable causes individuals both to identify as a Muslim and to behave in a certain way. As noted in Guiso et al (2003), this omitted, or latent, variable can be transmitted from parents to children (either genetically or through education). Thus we are careful not to ascribe a causal relationship between a respondent's religion and his use of formal financial services; rather we interpret our results as precisely estimated partial correlations. $\varepsilon_{i,c}$ is a normally distributed error term with zero mean and variance equal to 1.

We account for individual-level probability weights in the regressions, but do not weight each country's sample by national population levels although the results are robust to this specification except when explicitly stated otherwise. We cluster standard errors at the country level.

The second step of our analyses is to test whether there are significant interactive affects between identification as Muslim and other individual-level characteristics. Specifically, we focus on the interaction of the following variables with our Muslim variable: religion important, female, low income, primary education only, and rural. We use the following model, where Z_i is one of five individual-level variables.

$$y_{ij} = \beta_1 \, muslim_i + \beta_2 \, (muslim_i * Z_i) + \gamma\delta_i + \eta_j + \varepsilon_{i,j} \qquad (2)$$

Finally, we test whether there are significant interactive affects between identification as Muslim and *country*-level characteristics. We look at the percentage of total banking assets belonging to as Islamic finance institution, proportion of population that self-identifies as Muslim, and a Muslim-minority binary variable. We use the following model, where Π_c is one of three country-level variables.

$$y_{ij} = \beta_1 \, muslim_i + \beta_2(muslim_i * \Pi_j) + \gamma\delta_i + \eta_j + \varepsilon_{i,j} \qquad (3)$$

Because some our results include interaction terms we do not show marginal effects in the tables although they are cited in the text. Marginal effects for regressions without interaction terms are available on request.

4. Results

4.1 Use of Financial Services among Muslims and non-Muslims

In the previous section we documented gaps in the usage of formal financial services between Muslims and non-Muslims. Here, we use multivariate regression analysis to empirically investigate whether these gaps are statistically significant after controlling for individual- and country-level characteristics.

Table 5 contains the first set of regression results. All results are probit estimations. We find a statistically significant and economically meaningful gap between Muslims and non-Muslims in the use of some formal financial services but not others. In column 1, we find no difference between Muslims and non-Muslims in the use of formal credit, that is, whether the respondent reports having borrowed money from a formal financial institution in the past year. In columns 2 and 3, we find that Muslims are no less likely than non-Muslims to report any type of borrowing activity in the past year from family or friends or from a range of sources, including formal financial institutions, family or friends, retail outlets using store or installment credit, an employer, or an informal private lender. We also test the latter three of these borrowing sources individually and find no significant differences between Muslims and non-Muslims (not shown).

The results in column 4 show that Muslims are significantly less likely than non-Muslims to report owning, either by themselves or jointly with another person, an account at a formal financial institution. The result is significant at the 1% level and economically significant: self-identification as a Muslims is associated with a 6 percent decrease in the probability of having a formal account (marginal effects are not shown). This magnitude of the difference is larger than the gender gap and is roughly equal to that of an exogenous shift from the third to the first (lowest) income quintile.

We find that unbanked Muslims are more likely than unbanked non-Muslims to report not having an account at a formal financial institution because of religious reasons (column 5), however this result is not robust to the use of country-level population weights and appears to be driven largely by a handful of countries, as discussed in the next section. The lack of robustness of this demand-side religious constraint paired with the robustness of a gap in account penetration may suggest that supply-side biases (i.e. discrimination or lack of access to financial institutions) may explain the gap in formal account ownership between Muslims and non-Muslims.

Finally, we find that Muslims are less likely than non-Muslims to report having saved in the past year at a formal financial institution (column 6). To rule out the possibly that this difference is a product of differences in general savings behavior, we separately test whether Muslims are less likely than non-Muslims to save by any means and find no significant difference (results not shown).

The significant differences in account ownership and formal savings activity compared to the absence of differences in formal borrowing behavior is somewhat surprising given the asset finance focus of Islamic finance, which seems to suggest that this area has the largest demand for Sharia-compliant products. One explanation is that Sharia-compliant loans are sufficiently available that religion is no longer a constraint in access to or use of credit, which could be in contrast to the relative lack of availability of Sharia-compliant savings products. Indeed, most Islamic microfinance institutions (MFIs) (like conventional MFIs) are not permitted to take deposits. Another possibility is that because credit pressures are often greater than savings pressures, Muslims are more likely to use conventional credit products than they are for savings products. A Muslim adult may be willing to procure a conventional credit product in the case of

an emergency or to make an important investment. In contrast, there is generally less urgency when it comes to acquiring conventional savings product thus it may be easier to adhere to religious standards prohibiting their use. Unfortunately, we are not able directly to test these hypotheses with the currently available data.

Next, we investigate the robustness of these results across different regions. Table 6 contains the main results. In general, the results from Table 5 are robust across the six regions (high income economies are considered as a separate region), however there are important exceptions.

Among the 12 high-income economies in our sample, we find that Muslims are significantly *more* likely than non-Muslims to have borrowed money from formal financial institutions while Muslims are significantly less likely to do so in the four East Asian and Pacific countries in our sample. As compared to non-Muslims, Muslims are more likely to borrow from friends or family in high-income economies, East Asian and Pacific economies and Middle Eastern and North African economies. Muslims in our sample of 16 Eastern European and Central Asian economies are *less* likely than non-Muslims to report borrowing from friends and family. The absence of a significant difference in general borrowing behavior between Muslims and non-Muslims holds in all regions with the exception of high-income economies and Middle Eastern and North African economies where Muslims are significantly more likely than their non-Muslims counterparts to report borrowing from a variety of sources.

The gap in account penetration between Muslims and non-Muslims also holds across most regions, with the exception of East Asia and Pacific economies where there is no significant difference in account penetration.

The higher prevalence of citation of religious reasons for not having an account among Muslims in our complete sample appears to be mostly driven by respondents in Sub-Saharan Africa, though it is also marginally significant in East Asia and Pacific economies. When tested separately on a regional level, the result that Muslims are less likely than non-Muslims to save formally is not robust in East Asian and Pacific, South Asian, and Sub-Saharan African economies.

In general, the results from the four East Asian and Pacific economies (Indonesia, Malaysia, Philippines, Thailand) diverge most dramatically from those of the complete sample. While the complete sample results suggest that Muslims and non-Muslims differ in formal account ownership and formal savings but not with regard to borrowing, in East Asia and Pacific economies the result is reversed. In these East Asian and Pacific economies, Muslims are significantly less likely than their non-Muslim counterparts to borrow formally, significantly more likely to borrow from family and friends and there are no differences between the two groups in account ownership or formal savings.

4.2 Individual- and Country-level H

First, we empirically investigate whether different subsets of Muslims are particularly likely or unlikely to use formal financial services compared to other Muslims as well as other adults in a given subpopulation (low income, high education, etc.). We focus on three main financial inclusion variables: formal credit, formal account, and formal savings (credit results not shown), and on subpopulations that are historically excluded from formal financial systems: the poor, the less educated, females, and rural residents. Our results (not shown) find no evidence that female Muslims, Muslims with only a primary education, Muslims in the bottom 20% of

their country's income distribution or Muslims living in rural areas are particularly unlikely to have an account at a formal financial institution, save at a formal financial institution or borrow from a formal financial institution. This does not mean that financial inclusion gaps do not exist among these populations, but rather that the gaps are no different among Muslims and non-Muslims.

Next, we examine whether certain country-level characteristics affect gaps in the use of formal financial products between Muslims and non-Muslims. First, we test the hypothesis that the gap in usage of formal financial services between Muslims and non-Muslims is related to the size of the Islamic finance industry in a given country, using country-level data from Beck et al. (2012) on Islamic banks' share of total bank assets as well as the proportion of banks that are Islamic. However, this data is only available for 10 countries (all of which host both Islamic and conventional banks). We interact these variables with our individual-level Muslim binary variable and find no significant differences in the use of formal financial services across countries with heterogeneous levels of Islamic financial development (not shown).

Second, we test the hypothesis that gaps between non-Muslims and Muslims may be smaller in countries with larger Muslim populations as financial industries may cater more to Muslim populations and discrimination may be less of an issue. To test this hypothesis we interact a variable indicating the percentage of a country's population that is Muslim with the Muslim binary variable. We also construct three country-level dummy variables indicating whether or not Muslims are a minority population (less than 50 percent of the population, less than 25 percent of the population, and less than 10 percent of the population) and interact these with the Muslim binary variable. In each of these tests, we find no evidence that the gap in usage

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of formal financial products is related to the percentage of a country's population that is Muslim (not shown).

4.3 Use of and Attitude toward Sharia-Compliant Finance Products

In a limited sample of countries - Algeria, Egypt, Morocco, Tunisia, and Yemen - we are able to empirically investigate awareness and usage of Sharia-compliant financial products as well as attitudes towards Sharia-compliant vs. conventional financial products. We follow a methodology similar to that used in section 4.1. Our dependent variables denote whether the respondent is aware of Islamic banks, uses a Sharia-compliant banking service, and his or her choice when presented with a hypothetical loan between a (more expensive) Sharia-compliant product and a conventional product. As noted in section 3.2, 48 percent of adults in the sample report being aware of Islamic banks and 2 percent of adults report using a Sharia-compliant financial service. Given a hypothetical choice between a Sharia-compliant loan and a cheaper conventional loan, 45 percent of respondents prefer the Sharia-compliant loan, 27 percent prefer the conventional loan, 10 percent do not have a preference, and 17 percent do not know, or refuse to answer. 99 percent of respondents in the sample self-identify as a Muslim.

Table 7 shows our empirical results. Unlike previous tables, we now report coefficients of the country fixed effects. We find that married, wealthier, more educated, and adults in the labor force are more likely to report being aware of Islamic banks in their country (column 1). Living in an urban area and in a home with a television and access to the internet is also positively related to awareness of Islamic banks, possibly indicating that these adults are more informed to the development of Islamic finance industries in their countries. The relationship between age and awareness of Islamic banks is positive although the coefficient on the age-

squared coefficient is negative, indicating highest awareness among middle-aged adults. Adults living in Yemen were particularly likely to be aware of Sharia-compliant financial products, which is not surprising given that the Islamic finance industry in that country comprises a much larger percentage of the financial sector than in other countries (Beck et al, 2013). Respondents in Algeria (the excluded category) are the least likely to report having heard of Sharia-compliant banking products, after controlling for individual characteristics.

Next, we examine the relationship between several individual characteristics and whether or not the respondent reports currently *using* a Sharia-compliant banking service. Overall, this is reported by just two percent of respondents. Unlike awareness of Islamic banks, females are significantly less likely to report using a Sharia-compliant banking service. Unfortunately we are not able to test whether this is a demand- or supply-side bias. Income is significantly and positively related to use of a Sharia-compliant banking service, though the relationship is not as strong. Living in a home with a television and access to the internet is also again strongly associated with using a Sharia-compliant banking service. Paradoxically, despite the lowest awareness of Sharia-compliant banking products, adults living in Algeria were the most likely to report using a Sharia-compliant banking product, though the country fixed effect coefficient is not statistically distinguishable from that of Egypt.

Finally, we look at what individual characteristics are associated with preferences for Sharia-compliant financial products (despite higher costs). We include a second column for each response option which also controls for the respondents current level of financial inclusion as well as their awareness and use of Sharia-compliant banking products. Few non-financial individual characteristics stand out as strongly associated with a preference for Sharia-compliant products. However, adults with a formal loan, adults who are aware of Islamic banks, and adults

who currently use a Sharia-compliant banking product are significantly more likely to choose the more expensive Sharia-compliant loan over the cheaper conventional loan. Somewhat paradoxically, account ownership is negatively related to preference for Sharia-compliant banking products. Adults living in Algeria and Morocco were the most likely to state a preference for the Sharia-compliant loan.

Adults who chose the conventional loan were more likely to have just a primary education or less and more likely to live in rural area. Tunisian adults were particularly likely to report a preference for the conventional loan. Males and those living in urban areas were less likely to report not having a preference.

Taking these results together, it is clear that income and access to information appear to be strongly associated with awareness and usage related to Islamic finance. Adults in the higher income quintiles and those living in a home with a television and access to the internet are more likely than others to be aware of Islamic banks and use a Sharia-compliant financial product. Further, adults who are familiar with or use Sharia-compliant products are significantly more likely to prefer these products though of course it is difficult to separate out the cause and effect. It is possible that those more inclined to use these products have already sought them out, or that those with access to Sharia-compliant finance products have made use of them and are satisfied with their experience. With regard to other individual-level characteristics, the regression results do not present any clear patterns about adults' preference for Sharia-compliant banking products beyond what is evident from the summary statistics. This is perhaps attributable to the lack of clarity surrounding what is meant by Sharia-compliant finance (as discussed in section 2) and may also relate to financial illiteracy more generally.

5.   Conclusion

This paper set out to answer five questions: First, are Muslims less likely than non-Muslims to use formal financial services in their current form? In a sample of over 65,000 adults from 64 economies, representing 75 percent of the world's adult Muslim population (excluding countries with less than 1 percent or more than 99 percent Muslim populations), we find that Muslims are significantly less likely than non-Muslims to own a formal account or save at a formal financial institution when controlling for other individual- and country-level characteristics. However, we find no evidence that Muslims in our sample are less likely than non-Muslims to report formal borrowing or indeed any form of borrowing.

Second, do unbanked Muslims differ from unbanked non-Muslims in their self-reported barriers to financial inclusion? We find that Muslims are more likely than non-Muslims to report religion as a barrier to account ownership; however, this result appears to be mainly driven by respondents in Sub-Saharan Africa. Worldwide, just 7 percent of unbanked Muslims and unbanked non-Muslims cite religion as a barrier to account ownership. Similar to non-Muslims, Muslims are more likely to cite cost, distance, and documentation as barriers to account ownership.

Third, to what degree do these patterns vary across different countries and individual-level characteristics? Although our main results are generally robust across regions, there are important variations, particularly in East Asian and Pacific economies where Muslims are less likely than non-Muslims to borrow formally but no less likely to have a formal account. We do not find any evidence that gaps between Muslims and non-Muslims in financial inclusion are larger among women, the poor, or rural residents, nor do we find that the size of these gaps are

related to economy-level variation in the size of the Islamic finance industry or the percentage of Muslims within a given country that self-identify as Muslim.

Fourth, how prevalent are awareness and use of Sharia-compliant financial products? In a limited sample of countries (Algeria, Egypt, Morocco, Tunisia, and Yemen) we find that only two percent of adults report using an Sharia-compliant banking service although 48 percent of adults say that they have heard of Islamic banks in their country that offer services to people like them. We find that income and access to information are strongly and positively associated with awareness and use of Sharia-compliant banking products.

Fifth, to what degree are Muslims willing to pay a premium for Sharia-compliant financial products and services? In the same smaller sample, we find evidence of a hypothetical preference for Sharia-compliant products among a plurality of respondents despite higher costs. However, 37 percent of respondents report that they would prefer a cheaper conventional loan or that they have no preference.

There is wide scope for future research on this topic. To begin, additional research is needed to investigate whether the differences that exist between Muslims and non-Muslims in the usage of financial products are demand- or supply-driven. The significant and economically meaningful gap in account penetration between Muslims and non-Muslims paired with the generally insignificant gap in reporting religion to be a barrier to account ownership suggests that constraints may be supply-driven, yet we are unable to formally test this hypothesis with our data.

Our results also raise the question of whether a gap exists between Muslims and non-Muslims in the ownership of formal accounts but not in formal credit products due to divergent "urgencies of need" with respect to savings and payments vs. borrowing. We hypothesize – but

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are unable to formally test – that this difference in usage gaps between borrowing and account ownership/formal saving is attributable to the unique demand-side pressures inherent in borrowing that might supersede religious considerations to the extent they exist, i.e. that a Muslim adult might be willing to procure a conventional credit product in the case of an emergency or to make an important investment.[24] In contrast, there is generally less urgency when it comes to acquiring conventional savings product thus it may be easier to adhere to religious standards prohibiting their use.

Additional cross-country, demand-side data (particularly in countries where the Islamic finance industry is more developed) on the use of and preferences for Sharia-compliant finance products would also be valuable in better understanding the variation in the demand for Sharia-compliant finance products among Muslim adults. Survey instruments that can vary price and other hypothetical product features would allow researchers to determine elasticities of demand for certain financial products, Sharia-compliant and otherwise. Finally, time-series data that can track the development of Islamic finance industries across countries and the accompanying shifts in demand-side usage of and attitudes towards Sharia-compliant financial products would provide insight into the relationship between Islamic finance and the broader financial inclusion agenda.

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[24] Indeed, in Islamic jurisprudence, there is a concept referred to as *Iztirar* which holds that if a person is going to face an unreasonable amount of hardship in following certain religious rules, he or she is not allowed to comply with that particular rule. So, for example, if a person is going to face extreme financial difficulties, he or she is allowed to borrow with interest if there is no other option available (but only to the level that would alleviate the extreme problem he or she is facing).

References

Becker, Gary. 1957. *Economics of Discrimination*. Chicago: University of Chicago Press.

Beck, T., and M. Brown. 2011. "Which Households Use Banks? Evidence From Transition Economies." European Central Bank Working Paper 1295, European Central Bank, Frankfurt, Germany.

Beck, T., and A. Demirguc-Kunt, and O. Merrouche. 2012. "Islamic vs. conventional banking: Business model, efficiency and stability." *Journal of Banking & Finance* 37(2): 433-447.

Blanchflower, David, Phillip B. Levine, and David Zimmerman. "Discrimination in the Small Business Credit Market." *Review of Economics and Statistics.* Vol. 85: 4 (Nov. 2003)

Cavalluzzo, K., and L. Cavalluzzo. 1998. "Market Structure and Discrimination: the Case of Small Businesses." *Journal of Money, Credit, and Banking* 30(4).

Chiu, S., R. Newberger, and A. Paulson. 2005. "Islamic Finance in the United States: A small but growing industry." Chicago Fed Letter no. 214, Chicago Federal Reserve, Chicago, IL.

Dar, H. A. 2004. "Demand for Islamic Financial Services in the UK: chasing a mirage*"* In *Economics Research Papers* no. 04 - 11, Loughborough University.

El Gamal, M., M. El Komi, D. Karlan, and A. Osman. 2011. "Bank Insured RoSCA for Microfinance: Experimental Evidence in Poor Egyptian Villages." Houston: Rice University.

El Qorchi, M. 2005. "Islamic Finance Gears Up." *Finance and Development* 42(4).

Gait, A. and A.C. Worthington. 2007. "An Empirical Survey of Individual Consumer, Business Firm and Financial Institution Attitudes towards Islamic Methods of Finance." School of Accounting and Finance Working Paper Series No. 07/08, University of Wollongong, Australia.

Grosjean, P. 2011. "The Institutional Legacy of the Ottoman Empire: Islamic Rule and Financial Development in South Eastern Europe." *Journal of Comparative Economics* 39(1): 1-16. "Growing Interest: Islamic Banking expands from the Gulf to India." India Knowledge at Wharton. 25 March 2010.

Guiso, L., P. Sapienza, and L. Zingales. 2003. "People's opium? Religion and economic attitudes." *Journal of Monetary Economics* 50 (2003): 225-282.

Haron, S., N. Ahmad, and S. Planisek. 1994. "Bank patronage factors of Muslim and non-Muslim customers." *International Journal of Bank Marketing* 12(1): 32-40.

International Finance Corporation. 2013. "IFC Makes First Islamic Finance Investment in Sub-Saharan Africa." Washington D.C: IFC, 28 Mar. 2013.

Khan, M. S. N., M.K. Hassan, and A.I. Shahid, A. I. 2007. "Banking behavior of Islamic bank customers in Bangladesh." *Journal of Islamic Economics, Banking and Finance* 3(2): 157-168.

Kuran, T. 1997. "The Genesis of Islamic Economics: A Chapter in the Politics of Muslim Identity." *Social Research* 64(2): 301-338.

Kuran, T. 2005. "The Logic of Financial Westernization in the Middle East." *Journal of Economic Behavior & Organization* 56: 593-615.

Naser, K., J. Amad, and K. Al-Khatib. 1999. "Islamic banking: A study of customer satisfaction and preferences in Jordan." *International Journal of Bank Marketing* 17(3): 135-150.

Fu, X., M. Mohieldin, I. Zamir, and A. Rostom.nd X. Fu. 2011. "The role of Islamic Finance in Enhancing Financial Inclusion in Organization of Islamic Cooperation (OIC) countries." Policy Research Working Paper 5920, World Bank, Washington, DC.

Mohieldin, M. 2012. "Op-Ed; Islamic Finance Unbound." *Project Syndicate.* 6 January 2012. http://www.project-syndicate.org/commentary/islamic-finance-unbound

Munnell, A., G. Tootell, L. E. Brown, and J. McEaney. 1996. "Mortgage Lending in Boston: Interpreting HMDA Data." *American Economic Review* 86(1).

Peterson, R. L. 1981. "An investigation of sex discrimination in commercial banks' direct consumer lending." *Bell Journal of Economics* 12(2).

PricewaterhouseCoopers Malaysia. 2008. *Malaysia, Asia's Islamic Finance Hub (Kuala Lumpur*. http://www.pwc.com/my/en/publications/islamicfinance-hub.jhtml

Ray, N.D. 1995. *Arab Islamic Banking and the Renewal of Islamic Law*. London: Graham & Trotman.

Reuters. 2012. "Global Islamic finance assets hit $1.3 trillion". March 29, 2012. http://www.reuters.com/article/2012/03/29/islamic-finance-growth-idUSL6E8ET3KE20120329

Thambiah S., S. Ramanathan, and M.N.H. Mazumder. 2012. "The Determinants of Islamic Retail Banking Adoption in Malaysia." *International Business & Economics Research Journal* 11(4).

Seibel, Hans-Dieter. 2005. "Islamic Microfinance in Indonesia." Bonn: GIZ, July.

Table 1: Data Description and Sources

Variable	Description	Source
Formal account (0/1)	Binary variable that takes the value of one if the respondent reported to currently have, possibly together with someone else, a bank account at a formal financial institution---a bank, credit union, cooperative, post office, or microfinance institution. This includes having a debit card	Global Findex / Gallup 2011
Formal savings (0/1)	Binary variable that takes the value of one if the respondent reported to have saved or set aside money in the past 12 months using an account at a bank, credit union, cooperative, or microfinance institution	Global Findex / Gallup 2011
Formal credit (0/1)	Binary variable that takes the value of one if the respondent reported to have borrowed money from a bank, credit union, microfinance institution, or other formal financial institution in the past 12 months	Global Findex / Gallup 2011
Family/friends credit (0/1)	Binary variable that takes the value of one if the respondent reported to have borrowed money from family or friends in the past 12 months	Global Findex / Gallup 2011
Any credit (0/1)	Binary variable that takes the value of one if the respondent reported to have borrowed money from a bank, credit union, microfinance institution, family, friends, employer, store or another private lender in the past 12 months	Global Findex / Gallup 2011
Religioun as barrier (0/1)	Binary variable that takes the value of one if the respondent answered affirmative to "Because of religious reasons" as a reason why he or she does not have an account at a bank, credit union, or other financial institution. Asked only to those without an account.	Global Findex / Gallup 2011
Muslim (0/1)	Binary variable that takes the value of one if the respondent self-identifies as a Muslim.	Gallup 2011
Female (0/1)	Binary variable that takes the value of one if the respondent is female.	Global Findex / Gallup 2011
Age	Age in years	Global Findex / Gallup 2011
Age squared	Age in years, squared	Global Findex / Gallup 2011
Urban (0/1)	Binary variable that takes the value of one if the respondent lives in an urban area and 0 otherwise. An urban area is based on the interviewer's perception of whether a respondent lives large city or a suburb of a large city.	Global Findex / Gallup 2011
Income: poorest 20% (0/1)	Binary variable that takes the value of one if the respondent falls in the lowest income quintile and 0 otherwise. Income quintiles are based on the incomes of the respondents in a country.	Global Findex / Gallup 2011
Income: second 20% (0/1)	Binary variable that takes the value of one if the respondent falls in the second lowest income quintile and 0 otherwise. Income quintiles are based on the incomes of the respondents in a country.	Global Findex / Gallup 2011
Income: middle 20% (0/1)	Binary variable that takes the value of one if the respondent falls in the middle income quintile and 0 otherwise. Income quintiles are based on the incomes of the respondents in a country.	Global Findex / Gallup 2011
Income: fourth 20% (0/1)	Binary variable that takes the value of one if the respondent falls in the second highest income quintile and 0 otherwise. Income quintiles are based on the incomes of the respondents in a country.	Global Findex / Gallup 2011
Income: richest 20% (0/1)	Binary variable that takes the value of one if the respondent falls in the highest income quintile and 0 otherwise. Income quintiles are based on the incomes of the respondents in a country.	Global Findex / Gallup 2011

Primary education or less (0/1)	Binary variable that takes the value of one if the respondent completed elementary education or less (up to 8 years of education) and 0 otherwise.	Global Findex / Gallup 2011
Secondary education (0/1)	Binary variable that takes the value of one if the respondent completed secondary education and some education beyond secondary education (9-15 years of education) and 0 otherwise.	Global Findex / Gallup 2011
Tertiary education or more (0/1)	Binary variable that takes the value of one if the respondent completed four years of education beyond high school and/or received a 4-year college degree and 0 otherwise.	Global Findex / Gallup 2011
Employed for employer (0/1)	Binary variable that takes the value of one if the respondent is employed for an employer, either full or part time, and 0 otherwise.	Gallup 2011
Unemployed (0/1)	Binary variable that takes the value of one if the respondent is unemployed and 0 otherwise.	Gallup 2011
Out of workforce (0/1)	Binary variable that takes the value of one if the respondent is out of the workforce and 0 otherwise.	Gallup 2011
Employed for self (0/1)	Binary variable that takes the value of one if the respondent is self employed and 0 otherwise.	Gallup 2011
Television (0/1)	Binary variable that takes the value of one if the respondent if the respondent reports having a television in her home.	Gallup 2011
Mobile (0/1)	Binary variable that takes the value of one if the respondent if the respondent reports having a mobile phone in her home.	Gallup 2011
Internet (0/1)	Binary variable that takes the value of one if the respondent if the respondent reports having internet access in her home.	Gallup 2011
Born abroad (0/1)	Binary variable that takes the value of one if the respondent if the respondent reports having been born in another country.	Gallup 2011
Married (0/1)	Binary variable that takes the value of one if the respondent is married and 0 otherwise.	Gallup 2011
Divorced/Separated (0/1)	Binary variable that takes the value of one if the respondent is divorced or separated and 0 otherwise.	Gallup 2011
Log of household size	Logarithm of household size.	Gallup 2011
Religion important	Binary variable that takes the value of one if the respondent reports that religion is an important part of her everday life.	Gallup 2011
Attend religious services	Binary variable that takes the value of one if the respondent reports that she attended a religious service at least once in the past seven days. Coverage is limited to 9 countries in Eastern Europe and Central Asia and India.	Gallup 2011
Religion identification	Measure from 1 to 5 of how strongly respondent identifies with her religion (5 is strongest). Coverage is limited to 6 countries in Eastern Europe and Central Asia.	Gallup 2011
Has heard of Islamic banks (0/1)	Binary variable that takes the value of one if the respondent answered affirmative to having heard about Islamic banks in her country that "offer services to people like you"	Gallup 2012
Uses Islamic banking service (0/1)	Binary variable that takes the value of one if the respondent answered affirmative to currently using an Islamic banking service	Gallup 2012
Prefers more expensive, Islamic loan (0/1)	Binary variable that takes the value of one if the respondent reports preferring a loan (equal to 15% GDP per capita) that is from an Islamic bank and comes with a 20% APR over a loan from a conventional bank that comes with a 15% APR	Gallup 2012
Prefers more cheaper, conventional loan (0/1)	Binary variable that takes the value of one if the respondent reports preferring a loan (equal to 15% GDP per capita) that is from a conventional bank and comes with a 15% APR over a loan from an Islamic bank that comes with a 20% APR	Gallup 2012
No preference between loans (0/1)	Binary variable that takes the value of one if the respondent reports being indifferent to a loan (equal to 15% GDP per capita) from a conventional bank that comes with a 15% APR and a loan from an Islamic bank that comes with a 20% APR	Gallup 2012
Islamic Banking %	Islamic banks' share of total banking sector assets (country-level variable)	Beck, Demirguc-Kunt, Merrouche (2013)

Table 2: Summary Statistics

This table shows summary statistics for all variables used in our analysis. Weighted means ("Wgt. Mean") use economy-level adult population weights. Both means use individual-level weights.

Variable	Obs.	Wgt. Mean	Non-wgt. Mean	Non-wgt. Std. Dev.	Min.	Max.
Formal account (0/1)	66,484	0.36	0.45	0.50	0	1
Formal savings (0/1)	66,484	0.15	0.19	0.39	0	1
Formal credit (0/1)	66,484	0.09	0.10	0.30	0	1
Family/friends credit (0/1)	66,484	0.25	0.25	0.43	0	1
Any credit (0/1)	66,484	0.36	0.38	0.48	0	1
Religion as barrier (0/1)	36,329	0.06	0.06	0.23	0	1
Muslim (0/1)	66,484	0.36	0.38	0.49	0	1
Female (0/1)	66,484	0.51	0.53	0.50	0	1
Age	66,484	37.1	39.4	16.8	15	99
Age squared	66,484	1638	1832	1520	169	9801
Urban (0/1)	66,484	0.29	0.38	0.48	0	1
Income: poorest 20% (0/1)	66,484	0.23	0.21	0.40	0	1
Income: second 20% (0/1)	66,484	0.23	0.20	0.40	0	1
Income: middle 20% (0/1)	66,484	0.19	0.20	0.40	0	1
Income: fourth 20% (0/1)	66,484	0.19	0.20	0.40	0	1
Income: richest 20% (0/1)	66,484	0.16	0.20	0.40	0	1
Primary education or less (0/1)	66,484	0.60	0.35	0.48	0	1
Secondary education (0/1)	66,484	0.40	0.64	0.48	0	1
Tertiary education or more (0/1)	66,484	0.07	0.13	0.34	0	1
Employed for employer (0/1)	66,484	0.29	0.31	0.46	0	1
Unemployed (0/1)	66,484	0.05	0.07	0.26	0	1
Out of workforce (0/1)	66,484	0.43	0.38	0.48	0	1
Employed for self (0/1)	66,484	0.24	0.24	0.43	0	1
Television (0/1)	66,484	0.74	0.76	0.43	0	1
Mobile (0/1)	66,484	0.78	0.80	0.40	0	1
Internet (0/1)	66,484	0.16	0.30	0.46	0	1
Born in another country (0/1)	66,484	0.01	0.04	0.19	0	1
Married (0/1)	66,484	0.63	0.56	0.50	0	1
Divorced/Separated (0/1)	66,484	0.02	0.03	0.17	0	1
Log of household size	66,484	1.55	1.38	0.65	0	4.6
Has heard of Islamic banks (0/1)	5,071	0.46	0.50	0.50	0	1
Uses Islamic banking service (0/1)	5,071	0.03	0.02	0.15	0	1
Prefers more expensive, Islamic loan (0/1)	4,051	0.48	0.42	0.49	0	1
Prefers more cheaper, conventional loan (0/1)	4,051	0.21	0.26	0.44	0	1
No preference between loans (0/1)	4,051	0.17	0.18	0.38	0	1
Islamic Banking % (country-level)	10	-	8.26	10.09	0.17	33.8

Table 3: Summary Statistics, by Muslim Self-Identification and Country

This table includes mean values for our three main financial inclusion variables by Muslim and non-Muslim for all countries ("World"), each region, and each country. World and regional averages are weighted by economy-level adult population. The "sig" columns refer to significance from univariate ttests of the financial inclusion variable by the "Muslim" variable. ***,**, and * represent significance at 1%, 5%, and 10% level respectively.

	N	% Muslim	Formal credit			Formal account			Formal savings		
			Non-Muslim	Muslim	Sig	Non-Muslim	Muslim	Sig	Non-Muslim	Muslim	Sig
World	66,484	0.36	0.09	0.07	**	0.44	0.24	***	0.18	0.09	***
High income	11,386	0.04	0.17	0.14		0.96	0.83	***	0.5	0.27	***
East Asia & Pacific	3,925	0.55	0.14	0.09	***	0.48	0.21	***	0.29	0.14	***
Europe & Central Asia	16,761	0.47	0.08	0.07		0.5	0.4	***	0.1	0.04	***
Middle East & North Africa	5,026	0.95	0.08	0.05		0.26	0.13	***	0.11	0.02	***
South Asia	7,443	0.29	0.09	0.09		0.37	0.24	***	0.12	0.08	***
Sub-Saharan Africa	21,943	0.31	0.05	0.03	**	0.28	0.14	***	0.16	0.09	***
Albania	998	0.74	0.14	0.05	***	0.3	0.28		0.12	0.08	
Angola	995	0.02	0.08	0.02	***	0.39	0.42		0.16	0.09	
Austria	981	0.03	0.08	0.04		0.97	1	***	0.53	0.21	**
Azerbaijan	999	0.98	0.12	0.18		0.31	0.15		0.02	0.02	
Bosnia and Herzegovina	1,007	0.41	0.16	0.09		0.59	0.52		0.07	0.05	
Bangladesh	1,000	0.88	0.4	0.21	**	0.5	0.38		0.28	0.15	
Belgium	987	0.04	0.1	0.23		0.98	0.9		0.44	0.16	***
Benin	1,000	0.28	0.04	0.05		0.1	0.12		0.06	0.1	
Bulgaria	995	0.12	0.07	0.13		0.56	0.32	***	0.05	0	***
Burkina Faso	990	0.59	0.03	0.03		0.13	0.14		0.08	0.08	
Burundi	1,000	0.04	0.01	0.11		0.07	0.14		0.03	0.06	
Cameroon	995	0.26	0.05	0.02	*	0.17	0.09	**	0.11	0.07	
Canada	979	0.02	0.21	0.3		0.97	0.78		0.54	0.14	***
Chad	1,000	0.62	0.04	0.08		0.1	0.08		0.08	0.06	
Congo, Dem. Rep.	999	0.04	0.02	0	***	0.04	0	***	0.02	0	***
Denmark	1,002	0.01	0.19	0.02	***	1	0.93		0.57	0.09	***
Egypt, Arab Rep.	1,026	0.96	0.08	0.03		0.14	0.1		0.05	0.01	
France	992	0.04	0.19	0.05	***	0.98	0.79	*	0.51	0.27	**
Georgia	1,000	0.07	0.11	0.08		0.34	0.18	**	0.01	0	***
Ghana	999	0.14	0.06	0.05		0.29	0.3		0.16	0.16	
Greece	990	0.05	0.08	0.09		0.79	0.62	*	0.2	0.18	
Guinea	1,000	0.88	0.04	0.02		0.02	0.04		0.02	0.02	
India	3,465	0.14	0.08	0.06		0.37	0.26	***	0.12	0.09	
Indonesia	977	0.86	0.09	0.09		0.3	0.17	*	0.28	0.13	**
Iraq	994	0.97	0.01	0.08		0.16	0.1		0.11	0.05	
Israel	987	0.14	0.15	0.29	*	0.92	0.83		0.26	0.17	
Kazakhstan	977	0.65	0.12	0.14		0.47	0.39	*	0.07	0.07	

	N	% Muslim	Has Formal Credit			Has a formal account			Saves formally		
			Non-Muslim	Muslim	Sig	Non-Muslim	Muslim	Sig	Non-Muslim	Muslim	Sig
Kosovo	895	0.90	0.07	0.06		0.53	0.43	*	0.07	0.05	
Kyrgyz Republic	1,000	0.89	0.05	0.12	***	0.1	0.03	**	0.03	0.01	
Lebanon	996	0.58	0.12	0.11		0.47	0.3	***	0.23	0.13	***
Macedonia, FYR	958	0.40	0.14	0.05	***	0.79	0.65	***	0.09	0.05	**
Malawi	1,000	0.15	0.1	0.04	***	0.17	0.13		0.09	0.04	*
Malaysia	949	0.67	0.15	0.1	*	0.71	0.64		0.37	0.35	
Mali	1,000	0.95	0.04	0.04		0.12	0.08		0.08	0.04	
Mauritius	994	0.17	0.15	0.1		0.82	0.72	**	0.31	0.3	
Montenegro	995	0.14	0.21	0.24		0.53	0.34	***	0.04	0.01	
Mozambique	1,000	0.07	0.06	0.08		0.39	0.49		0.17	0.2	
Nepal	993	0.05	0.1	0.24		0.25	0.3		0.09	0.13	
Netherlands	975	0.02	0.12	0.35		0.99	0.98		0.59	0.4	
New Zealand	987	0.02	0.27	0.19		1	0.9		0.61	0.36	
Nigeria	998	0.33	0.02	0.03		0.34	0.2	***	0.27	0.16	***
Pakistan	989	0.97	0.04	0.02		0.05	0.1		0	0.01	***
Philippines	999	0.09	0.11	0.04	***	0.28	0.11	***	0.16	0.04	***
Russian Federation	1,949	0.09	0.07	0.14		0.49	0.44		0.11	0.08	
Rwanda	989	0.03	0.08	0.1		0.33	0.24		0.18	0.17	
Senegal	992	0.95	0.01	0.04	*	0.08	0.06		0.06	0.04	
Serbia	1,001	0.02	0.12	0.05	***	0.63	0.4	**	0.03	0.03	
Sierra Leone	1,000	0.71	0.07	0.06		0.26	0.11	***	0.21	0.12	**
Singapore	1,000	0.15	0.1	0.09		0.98	0.98		0.59	0.52	
South Africa	1,000	0.03	0.09	0.09		0.53	0.6		0.22	0.28	
Sri Lanka	996	0.03	0.18	0.02	***	0.69	0.66		0.29	0.08	***
Sudan	993	0.97	0	0.02	***	0.08	0.07		0.01	0.03	**
Sweden	1,003	0.01	0.23	0.24		0.99	1	*	0.64	0.36	*
Tajikistan	992	0.99	0.05	0.05		0.11	0.02		0	0	**
Tanzania	999	0.41	0.08	0.05	*	0.18	0.16		0.13	0.1	
Thailand	1,000	0.03	0.2	0.11		0.73	0.58	**	0.43	0.17	**
Togo	1,000	0.17	0.04	0.03		0.1	0.11		0.04	0.03	
Trinidad and Tobago	503	0.05	0.08	0.19		0.77	0.67		0.44	0.48	
Tunisia	1,015	0.93	0.05	0.03		0.35	0.32		0.08	0.05	
Turkey	999	0.98	0.03	0.05		0.86	0.57	***	0.05	0.04	
Turkmenistan	1,000	0.94	0.01	0.01		0.03	0	*	0.01	0	
Uganda	1,000	0.15	0.09	0.06		0.21	0.16		0.17	0.14	
Uzbekistan	996	0.98	0	0.01	***	0.16	0.23		0	0.01	***
West Bank and Gaza	995	0.98	0.07	0.04		0.47	0.19		0.11	0.05	

Table 4: Summary Statistics of Islamic Finance Variables, by Country

This table includes mean values for the Islamic finance specific database covering five countries. "All" averages are weighted by economy-level adult population. Due to survey execution errors, data from Egypt, Arab Rep. is not included in the loan comparison summary statistics.

	N	Has heard about Islamic banks	Currently uses an Islamic banking service	In cheaper conventional vs. more expensive Islamic loan choice:			
				Prefers loan from Islamic bank	Prefers loan from conventional bank	Does not have a preference	Don't know/ Refuse
All	5,071	0.48	0.02	0.45	0.27	0.1	0.17
Algeria	1,022	0.35	0.03	0.49	0.27	0.22	0.03
Egypt, Arab Rep.	1,020	0.49	0.03				
Morocco	1,000	0.41	0.01	0.54	0.16	0.13	0.17
Tunisia	1,029	0.57	0.02	0.31	0.4	0.12	0.17
Yemen, Rep.	1,000	0.53	0.01	0.37	0.18	0.22	0.22

Table 5: Financial Inclusion among Self-Identified Muslims

This table presents probit estimations using 66,484 observations from 64 countries. The dependent variable is listed at the top of each column. All variables are defined in Table 1. Standard errors are in parentheses and are clustered at the country level. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

	(1) Formal credit	(2) Family/friends credit	(3) Any credit	(4) Formal account	(5) No account: Religious reasons	(6) Formal saving
Muslim (0/1)	-0.04	0.02	0.01	-0.16***	0.25***	-0.16***
	(0.05)	(0.03)	(0.04)	(0.02)	(0.09)	(0.03)
Female (0/1)	-0.03	-0.05***	-0.05***	-0.06*	-0.08*	-0.06**
	(0.03)	(0.02)	(0.02)	(0.03)	(0.04)	(0.02)
Age in years	0.05***	0.02***	0.03***	0.03***	0.02***	0.01***
	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Age in years, squared	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***	-0.00**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Log of household size	0.05*	0.06***	0.07***	-0.14***	-0.04	-0.10***
	(0.03)	(0.02)	(0.02)	(0.02)	(0.04)	(0.02)
Married (0/1)	0.13***	-0.02	0.04	0.08**	0.00	0.08***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.02)
Divorced/separated (0/1)	0.11*	0.07	0.09*	0.07	0.01	-0.06
	(0.06)	(0.05)	(0.05)	(0.06)	(0.09)	(0.05)
Secondary education completed (0/1)	0.13***	-0.06***	-0.02	0.44***	-0.04	0.27***
	(0.03)	(0.02)	(0.02)	(0.03)	(0.04)	(0.04)
Tertiary education or more (0/1)	0.14***	-0.07**	0.01	0.43***	-0.06	0.27***
	(0.04)	(0.03)	(0.03)	(0.04)	(0.06)	(0.03)
Income: second 20%	-0.03	-0.05**	-0.05**	0.12***	0.03	0.14***
	(0.04)	(0.03)	(0.02)	(0.03)	(0.04)	(0.04)
Income: middle 20%	0.04	-0.10***	-0.07***	0.20***	0.09*	0.19***
	(0.04)	(0.03)	(0.02)	(0.03)	(0.05)	(0.04)
Income: fourth 20%	0.02	-0.12***	-0.08***	0.27***	0.10**	0.32***
	(0.04)	(0.03)	(0.03)	(0.03)	(0.05)	(0.04)
Income: richest 20%	0.08*	-0.15***	-0.09**	0.49***	0.06	0.50***
	(0.04)	(0.04)	(0.03)	(0.04)	(0.08)	(0.04)
Urban (0/1)	-0.04	0.04*	0.02	0.08***	-0.03	0.04
	(0.03)	(0.02)	(0.02)	(0.03)	(0.05)	(0.03)
Employed for an employer (0/1)	0.33***	0.15***	0.33***	0.65***	0.02	0.40***
	(0.05)	(0.03)	(0.03)	(0.05)	(0.05)	(0.04)
Unemployed (0/1)	-0.05	0.27***	0.24***	-0.02	0.07	-0.11**
	(0.05)	(0.03)	(0.03)	(0.04)	(0.06)	(0.05)
Self-employed (0/1)	0.33***	0.14***	0.25***	0.37***	-0.02	0.40***
	(0.04)	(0.03)	(0.03)	(0.04)	(0.06)	(0.04)
Television (0/1)	0.11*	-0.02	-0.01	0.35***	0.08	0.31***
	(0.06)	(0.04)	(0.04)	(0.05)	(0.09)	(0.07)
Internet (0/1)	0.08*	-0.09***	-0.04	0.24***	0.00	0.19***
	(0.04)	(0.03)	(0.03)	(0.03)	(0.07)	(0.03)
Mobile phone (0/1)	0.20***	0.08***	0.09***	0.31***	-0.08	0.26***
	(0.05)	(0.03)	(0.03)	(0.05)	(0.06)	(0.05)
Born abroad (0/1)	-0.06	0.01	-0.03	-0.08	-0.02	-0.03
	(0.06)	(0.05)	(0.04)	(0.08)	(0.13)	(0.05)
Constant	-3.19***	-1.57***	-1.68***	-2.82***	-1.96***	-2.89***
	(0.16)	(0.10)	(0.09)	(0.14)	(0.15)	(0.18)
Observations	66,484	66,484	66,484	66,484	36,231	66,484
Model	Probit	Probit	Probit	Probit	Probit	Probit
Sample	All	All	All	All	Unbanked	All
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Table 6: Financial Inclusion among Self-Identified Muslims, by Region

This table presents probit estimations using 66,484 observations from 64 countries. The table replicates Table 5, by region. Each regression controls for all the variables shown in Table 5 and only "Muslim (0/1)" is shown. The dependent variable is listed at the top of each column. All variables are defined in Table 1. Standard errors are in parentheses and are clustered at the country level. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Formal credit	Family/friends credit	Any credit	Formal account	No account: Religious reasons	Formal saving
All						
Muslim (0/1)	-0.04	0.02	0.01	-0.16***	0.25***	-0.16***
	(0.05)	(0.03)	(0.04)	(0.02)	(0.09)	(0.03)
Observations	66,484	66,484	66,484	66,484	36,231	66,484
# countries	64	64	64	64	64	64
High income						
Muslim (0/1)	0.19*	0.20*	0.27**	-0.30***	0.74	-0.32***
	(0.10)	(0.12)	(0.11)	(0.10)	(0.60)	(0.11)
Observations	11,386	11,386	11,386	11,386	216	11,386
# countries	12	12	12	12	12	12
East Asia & Pacific						
Muslim (0/1)	-0.25**	0.21***	0.08	-0.22	0.46*	-0.24
	(0.10)	(0.05)	(0.08)	(0.17)	(0.28)	(0.24)
Observations	3,925	3,913	3,925	3,925	1,962	3,925
# countries	4	4	4	4	4	4
Eastern Europe & Central Asia						
Muslim (0/1)	-0.06	-0.11**	-0.08	-0.15***	0.11	-0.15***
	(0.12)	(0.05)	(0.07)	(0.03)	(0.13)	(0.04)
Observations	16,761	16,761	16,761	16,761	9,627	16,761
# countries	16	16	16	16	16	16
Middle East & North Africa						
Muslim (0/1)	0.04	0.31***	0.22***	-0.18***	0.42	-0.25***
	(0.08)	(0.10)	(0.05)	(0.04)	(0.45)	(0.06)
Observations	5,026	5,026	5,026	5,026	3,734	5,026
# countries	5	5	5	5	5	5
South Asia						
Muslim (0/1)	-0.20	0.01	-0.06	-0.16**	0.07	-0.18
	(0.18)	(0.06)	(0.09)	(0.07)	(0.17)	(0.14)
Observations	7,443	7,443	7,443	7,443	4,502	7,443
# countries	5	5	5	5	5	5
Sub-Saharan Africa						
Muslim (0/1)	-0.02	-0.01	-0.02	-0.12***	0.33***	-0.07
	(0.06)	(0.05)	(0.05)	(0.04)	(0.12)	(0.04)
Observations	21,943	21,943	21,943	21,943	16,008	21,943
# countries	22	22	22	22	22	22
Model	Probit	Probit	Probit	Probit	Probit	Probit
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Table 7: Islamic Finance: Awareness, Use, and Preferences

This table presents probit estimations using 5,064 observations from Algeria, Egypt, Morocco, Tunisia, and Yemen. The dependent variable is listed at the top of each column. Age squared, marital status, household size, employment, and foreign-born variables are included but not shown. Due to survey execution errors, data from Egypt, Arab Rep. is not included in columns 3-8. Standard errors are in parentheses and are clustered at the country level. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Has heard of Islamic banks in Country	Currently uses Islamic banking service	Prefers Islamic Bank (no Egypt)		Prefers Conventional Bank (no Egypt)		No preference (no Egypt)	
Has formal account (0/1)				-0.07*		0.02		0.09
				(0.04)		(0.11)		(0.12)
Formal borrowing (0/1)				0.17***		0.07		-0.09
				(0.03)		(0.16)		(0.13)
Has heard of Islamic banks (0/1)				0.41***		-0.12		-0.06
				(0.11)		(0.08)		(0.08)
Uses Islamic banking service (0/1)				0.76**		-0.37		-1.12**
				(0.30)		(0.42)		(0.47)
Female (0/1)	-0.17	-0.26**	0.05	0.08*	-0.10	-0.11	-0.21***	-0.21***
	(0.12)	(0.13)	(0.07)	(0.05)	(0.10)	(0.09)	(0.03)	(0.03)
Age in years	0.03***	0.01	-0.00	-0.01	0.01	0.01	0.01	0.01
	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)
Secondary education completed (0/1)	-0.43***	-0.25***	-0.08	0.01	-0.08**	0.10**	0.04	-0.02
	(0.13)	(0.10)	(0.09)	(0.10)	(0.04)	(0.05)	(0.07)	(0.06)
Tertiary education or more (0/1)	0.25***	0.03	0.05	0.02	0.01	0.01	-0.06	-0.07
	(0.09)	(0.21)	(0.11)	(0.11)	(0.15)	(0.14)	(0.07)	(0.08)
Income: second 20%	0.02	0.01	-0.07***	-0.01	-0.04	-0.11**	0.07	0.05
	(0.02)	(0.19)	(0.03)	(0.08)	(0.05)	(0.05)	(0.09)	(0.06)
Income: middle 20%	0.04	0.04	-0.07*	0.07**	-0.15***	0.04	0.11	-0.07
	(0.06)	(0.15)	(0.04)	(0.03)	(0.06)	(0.05)	(0.08)	(0.09)
Income: fourth 20%	0.25***	0.19	0.08	0.11	-0.11	-0.05	-0.06	-0.13*
	(0.06)	(0.13)	(0.07)	(0.09)	(0.09)	(0.10)	(0.07)	(0.07)
Income: richest 20%	0.26***	0.26*	-0.05	-0.02	0.00	0.06	0.07*	0.00
	(0.08)	(0.15)	(0.10)	(0.13)	(0.07)	(0.05)	(0.04)	(0.12)
Urban (0/1)	0.21*	-0.08	0.06	0.02	-0.14***	-0.13***	0.18*	0.18*
	(0.11)	(0.13)	(0.07)	(0.07)	(0.04)	(0.04)	(0.10)	(0.10)
Television (0/1)	0.65***	0.95***	0.13*	0.03	-0.05	-0.02	0.18***	0.20***
	(0.12)	(0.22)	(0.07)	(0.06)	(0.06)	(0.06)	(0.07)	(0.08)
Internet (0/1)	0.19**	0.43***	-0.09**	-0.13***	0.10	0.11	0.06	0.07
	(0.09)	(0.10)	(0.04)	(0.04)	(0.08)	(0.06)	(0.12)	(0.11)
Mobile phone (0/1)	0.12	0.22	0.23**	0.22**	0.07	0.08*	-0.13	-0.13
	(0.08)	(0.18)	(0.10)	(0.11)	(0.05)	(0.05)	(0.10)	(0.10)
Country = Egypt, Arab Rep.	0.38***	-0.08						
	(0.04)	(0.07)						
Country = Morocco	0.28***	-0.40***	0.12***	0.08*	-0.42***	-0.41***	-0.23***	-0.23***
	(0.04)	(0.07)	(0.04)	(0.05)	(0.03)	(0.05)	(0.04)	(0.04)
Country = Tunisia	0.54***	-0.34***	-0.50***	-0.60***	0.37***	0.39***	-0.35***	-0.33***
	(0.02)	(0.04)	(0.01)	(0.02)	(0.02)	(0.04)	(0.01)	(0.03)
Country = Yemen, Rep.	1.05***	-0.41***	-0.24***	-0.40***	-0.33***	-0.29***	0.25***	0.27***
	(0.10)	(0.15)	(0.07)	(0.08)	(0.05)	(0.07)	(0.05)	(0.05)
Constant	-1.65***	-3.64***	-0.34***	-0.38***	-0.29	-0.44	-1.16***	-1.08***
	(0.25)	(0.43)	(0.12)	(0.13)	(0.26)	(0.28)	(0.12)	(0.10)
Observations	5,064	5,064	4,045	4,045	4,045	4,045	4,045	4,045
Model	Probit	Probit	Probit	Probit	Probit	Probit	Probit	Probit
Sample	All	All	No Egypt	No Egypt	No Egypt	No Egypt	No Egypt	No Egypt
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes