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Is Faith a Luxury for the Rich? Examining the Influence of Religious Beliefs on Individual Financial Choices

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Introduction

The influence of religion on economic behavior has generated a steady stream of scholarly discourse over the past decade. However, the academic roots of this discussion extend even further back to Adam Smith's discussion of the market structure of religious institutions in *The Wealth of Nations* and Max Weber's work on the existence of a "protestant ethic" as the source of modern capitalism. More recently, as religion has continued to exert a significant impact on economic outcomes, there has been a resurgence of interest in the economic analysis of religious beliefs, preferences and institutions.[1] This chapter aims to add to this growing body of literature by providing some unique evidence for the influence of religious beliefs on individual financial choices within the context of the rapidly growing Islamic banking industry.

We look at the individual decision to select a basic savings account and examine various reasons for the substantially higher demand for these accounts at a small, newly established Islamic bank in comparison to a larger, well-established conventional bank located in the same area and offering similar returns with lower risk. We test various reasons for the popularity of the Islamic bank in our sample including a lack of awareness of alternative options, lower financial literacy, private information on management and the expectation of better services. None of these factors seems to explain why the religious accounts are chosen twice as often as conventional bank accounts over the same time period and why Islamic religious account holders tend to maintain significantly higher balances in those

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accounts than individuals holding similar accounts at comparable conventional banks.

Our proposed explanation of the existence of a nonmonetary "faith premium," where more religious people derive greater benefits from opening religious bank accounts, provides one way to understand the selection of religiously prescribed bank accounts. The existence of this faith premium, along with the existence of decreasing absolute risk aversion with wealth, may explain the growing popularity of religious accounts and the Islamic banking industry.

The chapter is organized in five sections. *Section 1* provides some background on the economics impact of religion and describes the core prohibitions that underpin the Islamic banking industry. *Section 2* presents a simple portfolio choice model with private religious benefits that can be used to examine the risk-return tradeoffs involved in the selection of an Islamic bank account. *Section 3* describes the dataset and methodology. *Section 4* presents the results from various tests of the data and *Section 5* concludes with a discussion of the findings and their limitations.

Background

Religion does not seem to be fading away anytime soon. Rather, in contrast to the predictions of a secularization thesis that viewed religious beliefs as primitive, irrational quirks that were doomed to disappear in a modern era of science, technology and enlightenment,[2] religiosity has experienced a strong revival in many parts of the world.[3] Evangelical Christianity has been resurgent in the United States, Protestantism has expanded through Latin America and Africa, religious affiliation has rapidly escalated in the former Eastern Bloc and more fundamentalist strains of Islam have gained popularity throughout the Muslim world.[4]

In recent years, a growing body of literature has emerged to examine the relationship between religion and economics at various levels. At the macroeconomic level various economists have examined the connection between religion, institutional forms and economic development. Using data from the World Values Survey—a cross national survey based analysis of various countries—Guiso et al find that average religious beliefs are associated with attitudes that are conducive to higher per capita income and growth, and Christianity is more positively associated with these positive attitudes than other religions.[5] Barro and McCleary look at church attendance and religious beliefs in the U.S. to find that economic development is positively correlated with belief—not church attendance.[6] This leads them to conclude that growth depends on believing rather than belonging.

At the social and institutional level, various papers have explored the role of religion in shaping institutional forms and group values. Certain

types of social behavior—such as criminal activity, drug/alcohol consumption, marriage, fertility and divorce—are often influenced by religious beliefs and have economic significance. Freeman finds that African Americans attending church are less likely to smoke, drink or engage in drug usage.[7] Gruber finds that increased religious participation leads to higher education and income, less reliance on social insurance programs and higher rates of marriage in the U.S.[8] However, it is important to note that while it is possible that there is a causal link between religious beliefs and socio-economic behaviors, it is also possible that a different set of underlying characteristics shapes both religious and individual behaviors such that "good" people may be more likely to go to church and stay away from drugs, crime and alcohol.[9]

At the household level, neoclassical models of utility optimizing choice behavior have traditionally remained silent on the role of religion in determining individual preferences. Formal research in this area began with Azzi and Ehrenberg, who used Becker's model of household consumption[10] to develop a model of church attendance that included the concept of afterlife utility associated with religious activities. Greeley et al extended this model by defining faith as a type of human capital and religious choice as the result of expected utility maximization. In all these models, individuals allocate their resources so as to maximize the overall utility derived from religious and secular commodities.

While religious activities can be incorporated into a household utility function in terms of preferences, it is interesting to consider the case where adherence to a set of religious beliefs requires behaviors that constrain individual utility maximization and lead to a deviation from first best choices.[11] Iannaccone and others have used the model of club goods[12] and agency theory to explain such religious restrictions and costly rituals as optimal responses to the inherent free rider problem faced by religious institutions providing a public service. According to this model, since religious affiliation provides certain material and social benefits, religious groups impose costly behavioral restrictions on members to signal group commitments, enhance intra-group trust and facilitate collective action. For example, Berman finds that Israeli Ultra-Orthodox men continue to study full time in yeshiva—a religious seminary that provides virtually no practical training—until their forties because yeshiva attendance signals commitment to the community, which in turn provides mutual insurance to its members.

Similarly, Carr explains religiously mandated dietary restrictions such as those prohibiting Roman Catholics from eating meat on Fridays, Muslims from eating pork and drinking alcohol and Jews from deviating from an entire set of strict dietary laws known as the kashrut as a way to build group trust and identify outsiders. While viewing religious organizations

as clubs can explain certain religious actions from a maximization perspective, it fails to explain cases where religiously motivated actions—such as donating to churches or investing in religious funds—are performed in private and do not accrue social and material benefits via signaling group commitment. This chapter focuses on the latter case and uses a unique dataset of customer level data to understand the demand for Islamic banking products through the existence of a private, utility-augmenting faith premium associated with the selection of these products.

The Islamic Banking Industry

> *Those who charge usury are in the same position as those controlled by the devil's influence . . . those who persist in usury, they incur Hell, wherein they abide forever.*
>
> (The Quran, Al-Baqarah 2:275)

Since the 1970s, increasing religiosity across the Muslim world fueled by increasing oil revenues has transformed the world of Islamic banking from a handful of local banks to an increasingly sophisticated, global industry with an estimated market size of over $1 trillion.[13] While this is still relatively small in comparison to other sectors of the financial industry (about half the size of Citibank in 2010), the substantial growth rates in this sector—as much as 20 percent a year since 2003—make it a significant force in global finance. Furthermore, the industry taps into a large and increasingly captive market of 1.6 billion Muslims around the world. Currently, over 56 percent of the Islamic Finance market is located in the Middle East, 20 percent in Asia and about 14 percent in Europe.[14]

At its core, Islamic banking is a prohibition-based industry emerging from *shari'a* (Islamic law) restrictions on *riba* (interest), *gharar* (transactions involving uncertainty or speculation such as derivative trading and insurance) and businesses associated with particular immoral sectors such as alcohol, pornography or gambling.[15] The core prohibitions on interest are an outcome of the general belief that it is unjust to earn income without assuming risk.[16] So, according to *shari'a* rules, unless a depositor assumes some of the risk inherent in investing her funds, she is not entitled to a return on her money. Given that the payment of a fixed rate of interest is strictly prohibited in this model, all financing is based on the principle of buying and selling tangible assets.

In order to make sure that Islamic banks conform to strict Islamic principles of banking, a "*shari'a* board" composed of various religious scholars is used to supervise the development and creation of all financing products and services offered by the bank. This board usually ranks above the Board

of Directors within the organizational structure of an Islamic bank and is empowered to issue fatwas (legal pronouncements) on any matter proposed to it by different business units of the bank.

According to the *shari'a* model of finance, Islamic bank deposits are based on the principles of profit and loss sharing (PLS) where the depositor enters into an equity type relationship with the bank. Instead of receiving a pre specified rate of interest on their accounts (as they would at a conventional bank) depositors at an Islamic bank receive profit shares that tend to fluctuate over time. In practice, these fluctuations usually follow the movements of ordinary interest rates since Islamic banks in turn often invest their deposits into bonds and other interest bearing instruments. As Kuran points out, "employees of the Islamic banks often unofficially promise potential depositors returns no lower than the prevailing interest rate. . .in countries where Islamic banks compete with conventional banks, the ostensibly interest-free returns of the former essentially match the explicitly interest-based returns of the latter."[17]

However, despite being closely matched to conventional bank returns in practice, the profit rate based Islamic bank returns are *not* guaranteed in advance and are supposed to be entirely dependent on bank performance. Depositors are required to specifically acknowledge the risk that if the bank makes a loss, they will earn no returns and may even lose their principal. So at least as far as the specific financial contracts are concerned, the PLS *shari'a*-compliant deposits are inherently riskier than conventional bank deposits that guarantee a fixed rate of return. Mainstream banks guarantee a specific return to their account holders even if the bank is making a loss. In the worst-case scenario of a bank failure in the absence of FDIC type depositor insurance, account holders at conventional banks are preferred residual claimants and have some legal rights to recovering their deposits. On the other hand, if an Islamic bank suffers a loss, depositors suffer. Depending on the magnitude of the loss, depositors may not only lose their returns but they may also lose their principal. And in case the bank fails, since Islamic account holders are considered risk-sharing investors in the bank, they have the same rights as bank shareholders and are obliged to share the losses.

Furthermore, given that depositors do not have the ability to control or monitor bank investment activities, there is an additional risk of moral hazard since banks can pass on any losses to their account holders. In fact, this information asymmetry led to the spectacular failure of Islamic Money Management Companies (IMMCs) in Egypt during the late 1980s. Millions of Egyptians lost their savings to these Islamic institutions that functioned as giant pyramid schemes under the cloak of religious investment houses.

Their collapse damaged the reputation of Islamic banks in Egypt to such an extent that today, despite being one of the most populous Muslim nations, Egypt only has a few Islamic banks that operate on the margins of the state dominated conventional banking system. More recently in 2001, the Ihlas Finance House (IFH)—the largest of the six Islamic banks in Turkey with over 40 percent of the sector deposits—collapsed after illegally appropriating almost its entire $1 billion deposit base. When the IFH was liquidated, the misappropriation of funds was so large that the bank was unable to pay back its depositors.[18] As seen in these cases, the risk associated with investing in an Islamic financial institution is certainly not reduced if it happens to be located in a Muslim country.

A Portfolio Choice Model of Religious Asset Consumption

We propose a simple model of portfolio choice based on the mean variance analysis of Markovitz (1952) and as described by Campbell and Viciera to describe the decision to allocate wealth (savings) towards Islamic banking products.[19]

We assume that the individual at time t faces a wealth allocation decision between two different types of accounts. One is a riskless, conventional bank account offering entirely deterministic returns, r_{t+1} from time t to time $t+1$, while the other is a risky Islamic bank account offering a return of ρ_{t+1} from time t to time $t+1$ with a conditional mean $E_t\rho_{t+1}$ and conditional variance σ_t^2. The individual allocates a proportion α_t of her initial wealth, W_t to the Islamic asset. At time, $t + 1$ her accumulated wealth is:

$$W_{t+1} = \alpha_t W_t(1+E_t\rho_{t+1}) + (1 - \alpha_t)W_t(1 + r_{t+1}) \tag{1}$$

(1) can also be written in terms of the total returns on her portfolio as:

$$W_{t+1} = (1 + R_\alpha)W_t \tag{2.1}$$

$$\text{where } \mathrm{E}_1 R_\alpha = r_{t+1} + (E_t\rho_{t+1} - r_{t+1})\alpha_t \text{ and } \mathrm{Var}(R_\alpha) = \sigma_t^2\alpha_t^2 \tag{2.2}$$

The individual chooses α_t to maximize her total utility and solve for:

$$\underset{\alpha_t}{Max}\ U(E_t W_{t+1}(\alpha_t), \eta_t(\alpha_t)) \tag{3}$$

where $E_t W_{t+1}(\alpha_t)$ is the utility she derives from maximizing expected wealth at the end of the period and $\eta_t(\alpha_t)$ is the non-monetary utility or faith premium she derives from allocating α_t toward a religious asset. η_t is the indicator of individual religiosity such that $\partial U/\partial \eta_t = 0$ for non-religious people who derive no additional non-monetary benefits from the allocation of α_t toward a religious asset.

Assuming additive and separable utility, (3) can be rewritten as:

$$\underset{\alpha_t}{Max}\ U(E_t W_{t+1}) + U(\eta_t(\alpha_t)) \tag{4}$$

In order to solve (4), we further assume a power utility function with respect to wealth such γ that is the coefficient of relative risk aversion and—the returns on the Islamic banking asset ρ—are lognormally distributed.[20]

$$U(E_t W_{t+1}) = E_t\left(\frac{W_{t+1}^{1-\gamma}}{1-\gamma}\right) \tag{5}$$

For all $\gamma < 1$ we can ignore the scale factor since it is positive and does not affect the solution of the maximization problem. Converting (5) to log form we get:

$$E_t\left(\frac{W_{t+1}^{1-\gamma}}{1-\gamma}\right) = (1-\gamma)\log E_t W_{t+1} \tag{6}$$

Using the general result for any lognormal random variable X:

$$\log E_t X_{t+1} = E_t \log X_{t+1} + \tfrac{1}{2} Var_t \log X_{t+1} \tag{7}$$

We can write (6) as:

$$(1-\gamma)\log E_t W_{t+1} = (1-\gamma)E_t \log W_{t+1} + \tfrac{1}{2}(1-\gamma)^2 Var_t \log W_{t+1} \tag{8}$$

dividing by $(1-\gamma)$ we get

$$E_t \log W_{t+1} + \tfrac{1}{2}(1-\gamma) Var_t \log W_{t+1} \tag{9}$$

We can rewrite the budget constraint (2.1) in log form as:

$$\log W_{t+1} = \log(1+R_\alpha) + \log W_t \tag{10}$$

Replacing (10) into (9) and simplifying, we get the first part of the objective function as:

$$E_t \log(1+R_\alpha) + \tfrac{1}{2}(1-\gamma)\sigma_t^2 \alpha_t^2 \tag{11}$$

To convert (11) from portfolio returns to the individual underlying asset returns, we can use apply the Taylor approximation of the nonlinear function relating log individual asset returns to log portfolio returns:[21]

$$\log(1+R_\alpha) - \log r_{t+1} \simeq \alpha_t(E_t \log \rho_{t+1} - \log r_{t+1}) + \tfrac{1}{2}\alpha_t(1-\alpha_t)\sigma_t^2 \tag{12}$$

Which allows us to write (11) as:

$$U(E_t W_{t+1}) = \alpha_t(E_t \log r_{t+1} - \log r_{t+1}) + \tfrac{1}{2}\alpha_t(1-\alpha_t)\sigma_t^2 + \tfrac{1}{2}(1-\gamma)\sigma_t^2 \alpha_t^2 \tag{13}$$

And assuming $U\eta_t(\alpha_t)) = \eta_t\alpha_t$ (14)

We can rewrite the utility maximization problem (4) as:

$$\underset{\alpha_t}{Max}\ \alpha_t(E_t\log\rho_{t+1} - \log r_{t+1}) + \tfrac{1}{2}\alpha_t(1-\alpha_t)\sigma_t^2 + \tfrac{1}{2}(1-\gamma)\sigma_t^2\alpha_t^2 + \eta_t\alpha_t \quad (15)$$

Such that:

$$\alpha_t^{\cdot} = \frac{E_t\log\rho_{t+1} - \log r_{t+1} + \sigma_{t/2}^2 + \eta_t}{\gamma\sigma_t^2} \quad (16)$$

As expected, $\alpha_t^{\cdot}$ —the optimal allocation to the religious bank account increases if the expected returns on the religious account increase relative to the returns offered by the conventional bank. $\alpha_t^{\cdot}$ also increases if η_t which is the faith premium associated with the allocation α_t increases. This makes intuitive sense since more religious people realize higher faith premiums and therefore hold higher $\alpha_t^{\cdot}$ as an optimal allocation.

$\alpha_t^{\cdot}$ decreases if the coefficient of relative risk aversion goes up. This implies that the more risk averse an individual is, the less likely she is to invest her savings in an Islamic bank account. By extension, since γ is a constant which implies decreasing absolute levels of risk aversion, if our model is correctly specified then by assumption as the level of wealth goes up, the optimal amount of savings invested in an Islamic asset, $\alpha_t^{\cdot}W_t$ will also go up. When individuals are wealthier, they have lower levels of absolute risk aversion and are more likely to consume the riskier Islamic banking assets. The assumption of decreasing absolute risk aversion (DARA) is consistent with most experimental and empirical evidence and makes intuitive sense since a billionaire is far less likely to worry about a $100 loss than a graduate student on a stipend.

In the following section we use the empirical results from our survey to test some of the implications of our empirical model of portfolio choice with private faith premium benefits.

Data, Context and Methodology

The Banking Industry in Pakistan

Pakistan, with a population of close to 180 million and a per capita GDP of $2,600 (2008, PPP) has recently been singled out as one of the most turbulent regions in the world. However, it is also the fifth largest emerging market by population and faces many of the same challenges of development and growth being confronted by other developing countries around the world. Like various emerging markets, the level of financial exclusion in Pakistan is very high. Only about 17 percent of the population (30 million) has a bank account while less than 4 percent (5.5 million) has access to formal credit.

Pakistan's total financial assets are primarily determined by the banking industry, which holds about 95 percent of the total $175 billion (110 percent of GDP) in the system. Bank shares also constitute 40 percent of total stock market capitalization. The banking sector consists of three main groups (see Table 1 in Appendix). The first group is made up of the five largest banks in the country that cumulatively account for 53 percent of total banking assets.[22] These banks were nationalized in 1974 in an effort to expand credit distribution. Subsequently, under the more recent process of financial restructuring, all but one of them was privatized between 1991 and 2002. The second group consists of smaller, local banks that were allowed to operate in the private sector from 1991 onwards and are primarily based in the most densely populated, urban areas. This group includes the recently popular Islamic banks. The third group is made up of various foreign, multinational banks that until very recently were only allowed to operate through a limited number of branches. Although some of these restrictions have now been removed, the central bank must approve of all new branch openings.

Until 1991, the five nationalized banks made up the entire banking sector. Since that time they have continued to enjoy significant market power. The real rate of return on deposits has invariably been negative and banking spreads have remained very high. This reflects the generally inelastic deposit supply, interest insensitivity and long-term structural excess liquidity in the banking system that has allowed large banks to keep their funding costs down and generate substantial profits that have made Pakistan's banking sector the second most profitable in the world after Colombia.[23]

In an effort to reduce the banking spreads, the Central Bank (SBP) introduced a minimum deposit rate of 5 percent on all savings deposits in June 2008 (which was a significant change from the average rate of 2 percent paid by banks up until that time). The survey component of our research was conducted shortly after this change, over a period of three months between December 2008 and February 2009. However, the vast majority of our respondents—over 95 percent—were entirely unaware of the returns on their savings account.

Islamic Banking in Pakistan

Given that Islam was the raison d'être for the creation of Pakistan in 1947 as a separate and independent country within the British-ruled Indian subcontinent, it is not surprising to find Islamic banking in Pakistan. However, it was not until General Zia-ul-Haq seized control of the country after a military coup in 1977 that efforts to "Islamize" the economy and convert the financial sector to a *shari'a* compliant mode took off in earnest. While it was not entirely clear if Zia's religious motivations emerged from personal conviction or political strategy, but in accordance with his mission to propagate

religious values in the public space, he mandated a conversion of the existing conventional banking system to an Islamic model over a period of three years. Unsurprisingly, given the abrupt and ad-hoc nature of the intended switch, the exercise was a complete failure and conventional banks simply continued doing business as usual after making a few cosmetic changes—such as renaming savings accounts as profit and loss sharing (PLS) accounts without changing any of the underlying structures.

Around 2002, the State Bank of Pakistan (SBP) adopted a more nuanced approach to Islamic banking. Instead of mandating a conversion of the entire system, the SBP issued licenses for new Islamic banks. These new, religious banks would co-exist with existing conventional banks and form what is now known as a dual financial system where customers had the option to select a *shari'a* compliant Islamic bank or a standard, conventional bank. The existence of a dual financial system is very typical of the Islamic finance industry in general where almost every country that has an Islamic banking presence also has a substantially larger and better-established conventional banking sector. The market share of Islamic banking varies from a high of around 15 percent of total deposits in Malaysia and the UAE, 11 percent in Bahrain, about 2 percent in Indonesia and an insignificant amount in other places like Singapore and the UK.

The first stand-alone Islamic bank in Pakistan was set up in 2003. By 2010, six out of the thirty-two banks in Pakistan were fully Islamic while twelve additional conventional banks had licenses to operate dedicated Islamic banking branches. At present the Islamic banking industry accounts for a market share of 4.5 percent of total banking industry assets.[24] Islamic banks had over 330 branches in 2009 and were present in all the major urban cities as well as some other smaller towns (see Table 2, Appendix).

The specific case of Pakistan—a country that has been rocked by successive periods of intense political and sectarian violence since its inception—also provides an interesting context for exploring the impact of environmental uncertainty on individual religiosity. On the one hand, if violence, uncertainty and political instability lead to increased religiosity, we should expect more people to gravitate towards Islamic assets. Alternatively, if uncertainty leads individuals to move toward better-established, lower-risk financial alternatives then we should expect them to place their assets in a conventional banking system.

We leave a more detailed discussion of this theme for subsequent work but it should be noted that Islamic banking did not emerge during a particularly violent phase in Pakistan's history. Instead, these banks grew most rapidly over a five-year period during the relatively stable and economically prosperous era of military dictatorship under General Pervez Musharraf.

Dataset—Description and Survey Methodology

Data on Islamic banking customers and their conventional banking counterparts were collected over a period of six months from the leading Islamic Bank in Pakistan and a comparable leading conventional bank. Meezan Bank, the Islamic bank in our study (henceforth referred to as IB), was established in 2003 with a single branch and currently has over 150 branches located in major cities and urban centers. The bank has assets of PKR 20 billion ($0.28 billion) accounting for about 42 percent of the total Islamic banking industry. In contrast, Habib Bank Limited, the conventional bank in our study (henceforth referred to as CB) was founded in 1941. The CB is one of the largest banks in Pakistan and has maintained a dominant market position through almost three decades of nationalization induced monopoly power during which time it expanded across the entire country via a network of over 1500 branches.[25] As a result, the CB enjoys particularly strong local brand recognition and was recently ranked as the most recognizable banking brand in Pakistan.[26] The CB has an asset base of PKR 488 billion ($6.8 billion).

In contrast to foreign, multinational banks that cater to a wealthier, upper middle class set of customers, the CB and the IB attract a similar, middle-income class demographic and are generally regarded as comparable banks in terms of customer profiles and brand positioning. Both banks regard each other as competitors, though given the substantial differences in size and market penetration, the CB is more likely to identify larger banks as more direct competitors. In recent years, despite the size, market power and brand recognition advantages enjoyed by the CB, its moderate 10–15 percent per year deposit growth has been eclipsed by the IB's significantly higher 40–100 percent per year rate of deposit expansion. This chapter attempts to explore reasons behind this substantial difference in popularity between the two banks.

Data on customers was collected from the IB and the CB based on a number of exclusionary criteria. We examined basic, customer-level data on the IB in October 2008. Given that the IB has most of its branches (35) located in Karachi, the survey responses were limited to retail banking customers in that city.[27] Fifteen IB branches located in different sectors of the city were selected. The sector stratification was based on residential income levels and specific branches were selected on the basis of age—with preference given to IB branches that had been opened earlier and were better established.[28] The 15 IB branches were matched with 15 CB branches located in the same locality to create 15 bank clusters with matched pairs of IB and CB branches (see Table 3 in the Appendix for a map of the branch cluster locations and associated residential income levels).

The branch matching process itself was fairly straightforward. After the selection of the initial 15 IB branches based on stratification by location and branch age, the CB staff was approached to identify the closest CB branch to each of the 15 IB branches that had been selected. Since the CB had over 150 branches in the city and the smaller IB had branches that were located in the most densely populated areas, it was easy to find a matched pair. In the case that more than one CB branch matched up with an IB branch, the IB branch managers were contacted for their opinion on the CB branch that they considered the closest competitor to their branch. To make sure that we had the comparison right, we consulted branch managers at both banks to confirm that each co-located pair of IB and CB was matched appropriately. At the end of the matching process, in nine of the clusters the IB and the CB were located within a mile of each other, in two cases they were located right next to each other or in the same building while in the remaining four cases, they were located within a two mile radius.

At each of the 30 branches within the 15 clusters, customer level data was collected for new accounts opened at the bank between January 2007 and May 2008. We looked at simple savings accounts offering low, non-zero rate of returns on deposits. These accounts are particularly relevant for a country like Pakistan, where capital markets are inadequately developed and there are very few alternative investment opportunities. Depositors placing their money in these accounts are typically small account holders who cannot predict their future liquidity needs and need a bank account for safety and transactionary purposes. These basic savings accounts represent the bulk of all interest-bearing consumer banking accounts in Pakistan and are easy to compare between banks because they offer similar returns and provide very few services in addition to the basic ability to withdraw money without penalties.[29]

We also limit our focus to basic interest (or profit) bearing savings accounts because checking accounts do not pay any interest to their customers and as such are permissible according to *shari'a* rules regardless of whether they are based at the CB or the IB. More sophisticated savings products and time deposits were also excluded because the rates and services associated with these products were difficult to compare across the banks.

The time frame was selected in order to find customers who were making a banking choice between the religious and non-religious options. As such, we exclude long-term CB customers who had been with the bank before the IB option (most of their branches were opened after 2005) was available in their preferred location. These customers may well have (weakly) preferred the IB to the CB but may not have switched due to inertia and/or above zero switching costs.

The initial data collection from 30 branches in 15 location clusters yielded a set of 9,078 customers out of which 2,802 had opened accounts at the CB and 6,276 had opened accounts at the IB. Given that we were looking at all new customers opening a basic savings account at either bank within a specific timeframe of January 2007–May 2008, the substantially greater number of IB customers in our sample supports the general trend of higher growth rate being experienced by Islamic banks in comparison to conventional banks.

As discussed earlier, in comparison to conventional bank accounts, religious savings accounts are inherently riskier since neither the actual returns nor the principal is guaranteed. The IB in our sample has a significantly smaller branch networks and offers a narrower product portfolio than the CB. It is also very new, and as such may be considered less stable than the CB, particularly in the context of a turbulent country like Pakistan where in the absence of any FDIC type depositor guarantee borrowers are forced to rely on the stability of a particular banking institution as the ultimate guarantee of the safety of their funds. Yet, despite the higher risk of investing in a new bank that offers uncertain returns in a turbulent environment, as seen in Table 1, more accounts were opened at the IB in every location and the average balances in these accounts were higher than those being held at the CB.

One possible explanation for the popularity of saving deposits at the IB may be because these banks offer a limited set of products in comparison to the CB. It is possible that the IB customers selected the basic savings account because they did not have many product choices at their preferred religious bank, while the CB customers were able to choose from a more diverse portfolio and selected other, more sophisticated accounts. However, while differences in product range may explain why the IB accounts held higher average balances than the comparable CB accounts, but they do not explain why the IB was chosen in the first place.

Alternatively, given that there are relatively few options for someone who wants to open a religious bank account aside from the IB, it is possible that the CB was unable to attract customers because the market for conventional bank accounts is more competitive. A wealthy person who is not motivated by religious sentiments can choose his bank from a wide array of options that includes, but is not limited to the CB. On the other hand, a religiously motivated person cannot really do much better than the IB. This explanation can explain why more customers are demanding religious banks but does not address why their average balances are higher at the IB.

Table 1: Summary Statistics for Accounts Opened and Average Balances

The sample includes all new, basic savings accounts opened at the IB and the CB between January 2007 and May 2008. C-1 to C-15 identify the paired, co-located branch clusters. Mean and median average balances are reported for each bank type within each cluster as well as for the entire sample and by cluster. The p-value for the difference between the mean average balances between the IB and the CB at each cluster is also reported.

	Total Sample				IB				CB				IB-CB	
	# Accts	Mean Balance	Median Balance	Std. Dev	# Accts	Mean Balance	Median Balance	Std. Dev	# Accts	Mean Balance	Median Balance	Std. Dev	Difference	p-value
Total	9078	138181.1	20709.5	576757.6	6276	162924.1	25385.6	667252.5	2802	82760.8	14481.0	275901.5	80163.3	0.000
C-1	388	249933.1	26507.7	1284773.0	269	288,339.2	30360.23	1486033	119	163116.1	21550.03	622203.5	125,223.1	0.377
C-2	970	94123.8	15841.3	426275.1	608	112,188.7	18926.67	520013.5	362	63782.6	12282.53	177738.9	48,406.1	0.087
C-3	103	171384.6	24207.4	564227.7	85	200,438.8	29732.4	617267.4	18	34183.9	15460.07	57301.32	166,254.9	0.258
C-4	750	104749.6	20774.8	266235.2	492	120958	25241.1	260011.3	258	73840.9	18519.13	275594.9	47,117.0	0.021
C-5	507	212882.3	33793.8	670005.2	369	243241	37427.9	747844.3	138	131705.1	23150.62	382897.7	111,536.1	0.095
C-6	493	124256.9	17093.2	440210.0	317	159886	22237.6	532943.1	176	60083.6	10928.44	159677.9	99,802.6	0.016
C-7	683	87891.7	13105.2	325132.0	483	87705	12057.2	298706.9	200	88341.5	16081.94	382322.2	–636.1	0.981
C-8	225	191423.3	16026.3	881169.2	203	198207	15315.5	920229.9	22	128826.5	23536.69	363385.1	69,380.7	0.727
C-9	543	138693.7	12759.6	979051.8	294	236436	22915.9	1321495	249	23286.9	7030.63	83393.63	213,149.3	0.011
C-10	660	173140.2	30109.1	428696.9	543	180065	32448.0	452599.9	117	141001.6	19366.56	292696.9	39,063.6	0.372
C-11	550	126024.6	19210.0	598713.7	331	171154	21321.5	762790.4	219	57815.0	15994.59	119060.2	113,339.2	0.030
C-12	817	169922.1	33954.6	553207.1	699	176247	37011.3	584036	118	132455.2	13161.29	312790.6	43,791.7	0.427
C-13	1198	95848.4	21148.4	294200.7	719	100713	25866.6	310544	479	88545.8	18235.33	267955.5	12,167.6	0.483
C-14	812	118816.2	22532.5	372168.1	546	130243	27330.0	419655.8	266	95361.4	16770.01	246735.5	34,881.5	0.210
C-15	379	233773.9	23171.3	774622.2	318	271981	30233.0	840194.4	61	34598.7	11296.89	50347.37	237,381.8	0.028

It is possible that Islamic banking customers are simply unaware of the conventional banking option available to them. However, this explanation is also difficult to support because until 2003 the only type of banks operating in Pakistan were mainstream, conventional banks. Even now 95 percent of the total banking sector operates on a conventional basis so it is difficult to imagine that IB customers would be unaware of conventional banks. Also, given that our sample was drawn from an urban population in the most cosmopolitan city in the country with the highest financial penetration rates, it is even more unlikely that people were not aware of the dual banking system. Furthermore, we based our analysis on clusters of co-located banks where the CB was physically close to the IB making it even more difficult to argue that IB customers were simply unaware of the CB option.

Given the predictions of our theoretical model and the higher risk associated with IB accounts, it is possible that the IB customers were less educated and financially savvy than those who selected the conventional bank. So even if they were aware of the existence of a CB alternative, we may believe that they were not able to comprehend the risk-return calculation unlike customers who selected the CB. On the other hand, despite the fact that the IB was new and less established, perhaps IB customers knew something about the management of the Islamic bank that others did not know and were able to trust it more than the CB. Also, perhaps despite the uncertainty associated with IB returns, $E(\rho) > i$, the IB customers actually expected higher net returns on their accounts than those being offered by the conventional banks. Finally, it is also possible, as predicted by our model, that customers were willing to pay a "faith premium" for Islamic banking assets, $\eta_t > 0$ and even if there was no significant difference between expected profits on the IB accounts and the interest rate paid on the CB accounts, IB account holders derived a positive faith premium from selecting these assets. We use the results from our survey to test the validity of each of these predictions.

Sample Selection and Survey Design

From the initial list of 9,078 customers in our sample, a target of 50 customers from each of the 30 branches in our sample was set up. These customers were to be randomly picked from the larger sample of all customers who had opened a new bank account between Jan 2007 and May 2008 at a particular branch and were asked to respond to a survey questionnaire designed to examine individual religiosity and criteria for bank selection (see Table 4 in the Appendix for a summary of the survey).

In developing the questionnaire, a set of various factors that are considered relevant for bank selection was derived from existing literature on the

subject.[30] For example, Kaufman and others looked at bank selection decisions in the U.S. and found that the most influential factor reported by households was convenient location.[31] Various subsequent studies conducted in different countries have further corroborated the importance of branch location on bank selection. Ross finds that the influence of friends and low service charges matter.[32] Laroche et al surveyed households in Canada and found that the friendliness of staff plays a major role in the bank selection decision process, followed by hours of operations, size of waiting lines and convenience of location.[33] Kaynak surveyed bank customers in Finland and found that the main determinants of bank selection were reception at the bank, efficient services and lower service charge while Mylonakis et al. studied bank selection decisions in Greece and found that the most important selection factors were location and the quality of service.[34] All of these potentially relevant bank selection factors were used to develop the initial questionnaire used in the survey. Local banking officials were also consulted to make sure that we had identified a relevant list.

Indicators to test individual religiosity were determined through detailed discussion with religious experts in the region and verified through more informal discussions with members of the local population. In order to make sure that the survey was generating the right responses, we pilot tested it with 100 randomly chosen respondents who held bank accounts outside our sample space and adjusted the initial questionnaire for relevance and clarity. In its final form, after pilot testing adjustments, the survey was conducted over the phone in Urdu and had a final response rate of approximately 30 percent. Out of every 10 people called from the banks' list of customers, in approximately 3 cases the account holder was available on the phone and in almost every case agreed to participate in the survey. The reason for the common willingness to talk was possibly due to the fact that phone based surveys are very uncommon in Pakistan and the recipients were not paying for the call.[35] Almost all of the non-responses in our sample were due to an inability to contact the customers because their phone numbers had changed or because they did not respond to the call.[36]

Surveys were administered through five research assistants who had been trained to follow a specific survey script and methodology. In order to make sure that there was no "interviewer effect" in the results, the branches were randomly assigned across clusters between the research assistants and no single research assistant was interviewing customers from both the IB and the CB branch in one cluster.

Sampling Robustness Checks

Out of the total sample of 9,078 we called 5,133 (3,629 from the IB and 1,504 from the CB) customers by alphabetically arranging customer lists by

branch and selecting every second customer on the list.[37] In comparison to the total sample where average balances for all customers was PKR 138,181 (PKR 162,924 for IB and of PKR 82,761 for CB), those who were called had an average balance of PKR 98,606 (PKR 127,498 for IB and PKR 72,184 for CB) since it was difficult to reach high balance customers on the phone. Finally, the survey respondents in the sample had average balances of PKR 92,974 (PKR 102,045 for the IB and PKR 83,338 for CB).[38]

While the sampling population is generally comparable to the total population of new customer at the 30 IB and CB branches, it is important to note that our sample is biased away from customers that were holding the highest account balances and response rates were lower in higher income areas. This is due to the fact that it was more difficult to reach high income/high balance customers on the phone and they were less likely to respond to survey questions than the general population. Given that we have the same bias for both the IB and the CB customers, this should not change the general validity of our conclusions. If average balances are correlated with education it is possible that our sample does not include the most educated and financially savvy end of the spectrum. However, we don't see this correlation in our data where average balances are not a significant predictor of education.

Given population limitations at some of the clusters, the final sample of survey responses was also weighed more heavily towards the IB. Table 2 describes summary statistics from the survey sample. The total sample of 1,480 survey responses was used to test various predictions from the model described earlier. The results from this analysis are described in the next section.

Results from Survey Analysis

The results from the survey enable a more nuanced description of individuals who are choosing Islamic banking products. Contrary to the hypothesis that the IB customers may be less financially savvy than their CB counterparts, our results show that IB customers are actually *more* educated than their CB customers. They are also older and have traveled more than CB customers. As such, if there is any difference between the two groups, the IB customers may be expected to know more about alternative financial options available to them than the CB customers.[39]

Furthermore, in selecting the Islamic bank, more customers seem to have switched from another bank than to have newly entered the formal banking sector from the previously unbanked population. This further contradicts the possibility that Islamic banking customers may not be aware of other options. It also negates the view that customers selecting an Islamic bank

were the previously unbanked and had remained outside the conventional banking sector because it was not in accordance with their religious beliefs.

We also find that the desire to open Islamic bank accounts is not explained by a lack of trust or satisfaction with the CB relative to the IB because levels of reported trust and satisfaction are similar at both banks. In fact, relative to the IB, the level of trust in a CB is more skewed towards higher levels, which is not surprising given the fact that the CB is an old, well-established bank and the IB is very new and relatively unfamiliar. It does not, however, explain why more customers in our sample select an IB versus a CB.

Interestingly, given the higher risk associated with holding IB products, we find that IB account holders are almost twice as likely as CB account holders to maintain additional accounts in other banks. Moreover, in almost every case, these bank accounts are not being opened at multinational banks or specialized banking institutions offering specific products that are not available at the IB. Rather, these additional bank accounts are opened at comparable conventional banks that provide very similar products to those being offered at the IB. Both the expected profit on an IB account $E_t\rho_{t+1}$ and the returns on the CB, r_{t+1} seem to be very weak motivators for selecting a bank account. Over 94 percent of the customers being surveyed did not know the profit /interest rate they were earning on their savings accounts. While this is not entirely surprising since our sample is constrained to look at basic savings accounts and these accounts may not be the most profit sensitive portion of an individual financial portfolio, it also reduces the relevance of the profit motive in choosing an IB.

Furthermore, it is interesting to note that in comparison to CB customers, relatively more Islamic bank account holders claimed to know the profit rates on their accounts and that on average, they expected lower expected profit/returns than CB customers (Table 2). While this finding needs to be interpreted with caution since only 5 percent of the respondents reported knowing the returns they earned, it further refutes the profit motive $E_t\rho_{t+1} > r_{t+1}$ for selecting an Islamic bank account.[40]

Given these results, if we go back to our portfolio selection model and assume that $E_t\rho_{t+1} = r_{t+1}$, which in effect eliminates the profit motive, we find that:

$$\alpha_t^{\cdot} W_t = \left(1/2\gamma + \eta_t/\gamma\sigma_t^2\right) W_t \tag{5}$$

According to (5), the optimal investment in the IB depends on (i) the degree of risk aversion, (ii) the level of individual religiosity and (iii) wealth.

While it is difficult to find empirical evidence of risk aversion, we can use the various dimensions of individual religious practices measured in

Table 2: Summary Statistics for Survey Sample

The table provides summary statistics for a randomly chosen sample of savings account holders at the IB and the CB. Mean, median and standard deviation statistics for each variable are reported by bank type and for the entire cluster. The p-value for the difference between the mean averages between the IB and the CB is also reported. BALANCE is the average balance held in each savings account. AGE is the age of account holders. GENDER is an indicator variable that is equal to one if the respondent is a female. HHDSIZE shows the size of the respondent's household. EDUCATION categorizes education levels on an increasing five-point scale where no schooling = 0, some school = 1, junior high = 2, high school = 3, bachelors = 4, masters and higher = 5. INTLTRAVEL shows the number of countries the respondent has visited outside Pakistan. SWITCHER is an indicator variable that is equal to 1 if the respondent switched into the current bank (the CB or the IB) from another bank. SWITCHER is equal to 0 if the respondent did not have another bank account before. MULTIPLE is an indicator variable that is equal to 1 if the respondent currently has more than one bank account. CREDIT is an indicator variable that is equal to one if the respondent has accessed credit from a bank. EXPPROFIT is the reported annual profit rate that respondents think they are getting on their bank accounts. TRUST shows the level of trust that the respondent has in his bank where no trust = 0, a little trust = 1, somewhat/average trust = 2, above average trust = 3, exceptional trust = 4.

	Total Sample				IB				CB				IB-CB	
	Obs	Mean	Median	Std. Dev	Obs	Mean	Median	Std. Dev	Obs	Mean	Median	Std. Dev	Difference	p-value
BALANCE	1293	92974.0	15421.63	338664.5	666	102045.2	17560.9	377489.1	627	83338.5	14893.92	291821.4	18706.7	0.321
AGE	1372	41.9	39	15.3	772	44.0	42.0	15.8	600	39.1	37	14.1	4.89	0.000
GENDER	1480	0.41	0.0	0.49	853	0.40	0.0	0.49	627	0.42	0.0	0.49	−0.02	0.553
HHDSIZE	1397	5.94	5.00	3.02	779	5.71	5.00	2.79	618	6.22	6.00	3.27	−0.52	0.002
EDUCATION	1440	3.41	4.00	1.28	818	3.56	4.00	1.20	622	3.22	4.00	1.36	0.33	0.000
INTLTRAVEL	1464	0.992	0	1.264	838	1.260	1	1.33	626	0.633	0	1.067	0.628	0.000
SWITCHER	1463	0.426	0	0.495	839	0.517	1	0.500	624	0.303	0	0.460	0.214	0.000
MULTIPLE	1461	0.334	0	0.472	838	0.412	0	0.492	623	0.230	0	0.421	0.182	0.000
CREDIT	1467	0.070	0	0.254	846	0.054	0	0.227	621	0.090	0	0.287	−0.036	0.008
EXPPROFIT	85	5.887	5	4.583	67	5.802	5	4.597	18	6.203	5	4.646	−0.402	0.744
TRUST	1458	2.665	3	0.892	837	2.601	3	0.894	621	2.750	3	0.882	−0.149	0.002

our survey to generate an indicator for individual religiosity and examine if this indicator is correlated with a preference for the IB. Similarly, while we do not have access to data on individual wealth, we can use the information we have from our survey responses to find some reasonable indicators for household income and see if they are correlated with the selection of the IB.

The Impact of Religiosity and Wealth on IB selection

When survey respondents were asked about bank selection criteria, the vast majority (62 percent) of the IB customers said that they chose the IB because it offered *shari'a* compliant, Islamic products. This was followed in a distant second by salary accounts,[41] where 13 percent of the respondents were using the IB because their employer directly deposited funds into their accounts at that bank while 10 percent of the IB customers chose their bank primarily due to its location and 8 percent came to the bank on someone's recommendation. In contrast, branch location seemed to be the most important selection criteria for 44 percent of the CB customers. This was followed by 16 percent who maintained salary accounts at the CB, 12 percent were attracted by the banks service and image, another 12 percent picked the CB because another member of their family already banked there and 9 percent came to the CB on someone's recommendation. Table 3 summarizes general religiosity trends for customers at the CB and the IB.

We also find that IB customers are more religious than CB customers—even in a context where most people appear to be fairly religious. The variables that are most strongly related to individual religiosity—memorizing the Quran, growing a beard, praying five times (or more) every day, attending religious classes and going to Saudi Arabia on a religious pilgrimage—are all higher for IB customers and the differences are statistically significant.

We used a weighted average of different religiosity indicators to construct a composite religiosity variable that is used to test for the impact of religiosity on the likelihood of selecting the IB. The religiosity indicator was constructed from sections of the survey described in Table 3 indicating whether the respondent had performed a Hajj pilgrimage, if they had memorized the Quran, if anyone else in their family had memorized the Quran, if they prayed five times a day, went to religious classes, if the men in their family had a beard, if the women in the household covered their head when they went out or if they watched religious TV regularly.

Given the different levels of individual religiosity associated with these indicators and their distribution within our sample, we weighed the performance of Hajj, self memorizing the Quran, praying five times a day and attending religious classes twice as much as the other indicators that were

Table 3: Summary Religiosity Based Statistics for Survey Sample

The table provides summary religiosity based statistics for a randomly chosen sample of savings account holders at the IB and the CB. Mean, median and standard deviation statistics for each variable are reported by bank type and for the entire cluster. The p-value for the difference between the mean averages between the IB and the CB is also reported. HAJJ is an indicator variable that is equal to 1 if the respondent has gone to Saudi Arabia for a religious pilgrimage. HAFIZ is an indicator variable for memorizing the Quran, FAMILYHAFIZ is an indicator variable for someone in the respondents immediate family having memorized the Quran. PRAYER is an indicator variable that is equal to 1 if the respondent prays five times or more every day. RELIGCLASS is an indicator variable to show if the respondent has attended formal religious classes discussing the Quran or the *Hadith* (the sayings of the Prophet Muhammad). PURDAH is an indicator variable that is equal to 1 if the women in the respondent's house veil themselves when they go outside the house. BEARDS is an indicator variable that is equal to 1 if the men in the respondent's house have beards. Beards and to a lesser extent purdah are both indicators of religiosity. RELIGTV is an indicator variable that is equal to 1 if the respondent watched specifically religious TV channels.

	Total Sample				IB				CB				IB-CB	
	Obs	Mean	Median	Std. Dev	Obs	Mean	Median	Std. Dev	Obs	Mean	Median	Std. Dev	Difference	p-value
HAJJ	1475	0.368	0	0.482	848	0.496	0	0.500	627	0.195	0	0.396	0.302	0.000
HAFIZ	1476	0.045	0	0.207	849	0.059	0	0.236	627	0.026	0	0.158	0.033	0.002
FAMILYHAFIZ	1473	0.237	0	0.425	846	0.257	0	0.437	627	0.211	0	0.408	0.046	0.040
PRAYER	1468	0.560	1	0.497	845	0.628	1	0.484	623	0.467	0	0.499	0.161	0.000
RELIGCLASS	1468	0.469	0	0.499	843	0.544	1	0.498	625	0.366	0	0.482	0.178	0.000
PURDAH	1462	0.815	1	0.388	842	0.825	1	0.380	620	0.802	1	0.399	0.024	0.247
BEARDS	1455	0.619	1	0.486	833	0.667	1	0.471	622	0.553	1	0.498	0.114	0.000
RELIGTV	1475	0.642	1	0.480	849	0.651	1	0.477	626	0.629	1	0.483	0.022	0.385

somewhat weaker indicators of personal religiosity and may have been more vulnerable to a positive response bias. For example, over 80 percent of the respondents in our sample reported that the women in their households covered their heads when they went out, a majority of the men had beards and over 64 percent watched religious TV on a regular basis. As such, these indicators were weighed less than other indicators that were more strongly correlated with individual religiosity, such as self memorizing the Quran—something that was only done by less than 5 percent of our respondents. The composite religiosity indicator had an average inter-item covariance of 0.072 and a Cronbach's alpha of 0.48. Table 4 shows the results from various logit models for the selection of an Islamic bank using the composite religiosity indicator.

In terms of our portfolio choice model, the results shown in Table 4 show that IB customers extract a positive faith premium from allocating their savings to Islamic assets and $\eta_t > 0$. These results are robust to adding other explanatory factors for the choice of an IB and religiosity remains a significant predictor of IB selection even after controlling for various demographic factors. IB customers are more educated than CB customers. They have also traveled more (and as such are likely to have had more financial exposure) than the CB group.

Table 4 also describes the results of various robustness checks using alternative specifications. We find that religiosity remains significant as a predictor of IB selection, even when we constrain the sample to only look at individuals who have switched from conventional banks to the IB (3) and individuals who have additional, conventional banking accounts in addition to their account at the IB (4). We do find, however, that individuals who maintain dual bank accounts are more educated than those that only bank at the IB or the CB and that these individuals tend to have traveled more internationally. We also restrict our model to cases where the IB is located very close to the CB (less than a mile apart) (5) and find that religiosity matters even more when the IB is chosen over a proximate CB. Finally in (6) we also look at the effect of environmental uncertainty and constrain the sample to banks located in areas with a higher than average level of violence. And while we find that in more violent areas, religiosity matters more than it does in the full sample, we also find that education levels of these customers are somewhat lower. However, since violent areas are also negatively related to residential income levels and the survey was conducted during a period of relatively low local violence, the results of this model should be interpreted with caution.

As predicted by our theoretical model, religiosity appears to be the most significant predictor of selecting an IB. However, if we examine the propensity

Table 4: Logit Models for the Selection of an Islamic Bank

Coefficients in all specifications are estimated by using maximum likelihood and are reported in exponential terms as odds-ratios. All regressions include a constant. Standard errors are in brackets and have been adjusted for clustering by the fifteen branch location groups. Coefficients that are significant at the 1 percent, 5 percent and 10 percent levels are indicated by ***, **, and *, respectively. (1) and (2) test the entire sample of customers in the survey who have selected an IB. (3) is restricted to customers who switched into the IB from a conventional bank (i.e., customers who have had prior [conventional] banking experience and were not part of the unbanked population). (4) is restricted to IB customers who also have another conventional bank account. (5) only looks at clusters where the IB and the CB are located within a one mile radius of each other while (6) is restricted to customers at IB and CB branches that are located in areas with high levels of violence. RELIGIOSITY is a composite indicator of individual religiosity. LOGBALANCE is the natural log of average balances, GENDER is an indicator variable that is equal to 1 if the respondent if female. HHDSIZE shows the household size, EDUCATION categorizes education levels on an increasing five point scale where no schooling = 0, some school = 1, junior high = 2, high school = 3, bachelors = 4, masters and higher = 5. CREDIT is an indicator variable that is equal to one if the respondent has accessed credit from a bank. AGE is age. INTLTRAVEL shows the number of countries the respondent has visited outside Pakistan. INCOMEGROUP shows the residential income levels of the location where the respondent opened his bank and ranges from 1 = low income to 4 = high income.

	(1)	(2)	(3)	(4)	(5)	(6)
	IB	**IB**	**SWITCHERS**	**IBANDCB**	**IB** ***Adj Branch***	**IB** ***Violent***
RELIGIOSITY	5.488***	5.542***	5.571***	5.052***	6.524***	6.475***
	(1.722)	(1.288)	(1.220)	(1.548)	(1.743)	(1.391)
LOGBALANCE		0.972	1.035	1.018	0.963	0.924
		(0.061)	(0.073)	(0.089)	(0.071)	(0.075)
GENDER		0.891	0.695	0.665	1.112	0.911
		(0.274)	(0.202)	(0.214)	(0.357)	(0.350)
HHDSIZE		0.933*	0.909**	0.919**	0.946	0.960
		(0.035)	(0.035)	(0.036)	(0.043)	(0.046)
EDUCATION		1.334***	1.466***	1.589***	1.366***	1.245***
		(0.107)	(0.138)	(0.132)	(0.136)	(0.096)
CREDIT		0.554	0.752	0.598*	0.418**	0.483**
		(0.200)	(0.276)	(0.186)	(0.146)	(0.142)
AGE		1.020***	1.028***	1.029***	1.023***	1.018***
		(0.006)	(0.007)	(0.008)	(0.006)	(0.006)
INTLTRAVEL		1.557**	1.795***	1.602**	1.221	1.245
		(0.351)	(0.406)	(0.350)	(0.254)	(0.275)
INCOMEGROUP		0.692*	0.681**	0.784	0.716	0.857
		(0.135)	(0.123)	(0.167)	(0.311)	(0.167)
OBSERVATIONS	1435	1131	882	826	861	839
PSEUDO R^2	0.07	0.1453	0.194	0.186	0.155	0.123

to choose Islamic banks in terms of specific types of religious behavior and characteristics, we find that the single most important predictor of the likelihood to invest in Islamic bank account is the performance of Hajj—a religious pilgrimage to Mecca that is obligatory only on Muslims who can afford the journey. Table 5 shows the results of various logit models for the selection of an Islamic bank using disaggregated religiosity indicators.

The most stable predictor of selecting an Islamic bank appears to be the performance of the Hajj. Our results are robust to alternative specifications in (3) and where we restrict the model to only look at customers who had switched from a conventional bank to the IB and (4) where we look at IB customers who also maintain additional bank accounts at conventional banks. In every case, and particularly in the case where IB account holders also have conventional bank accounts, the performance of Hajj is a significant predictor of the selection of the IB.

However, it is important to note that with an average cost of over $2,000 in 2006—roughly two and half times Pakistan's per capita GDP for the same period according to Clingingsmith—the Hajj is a significant expenditure for most households in the country. It is not just an indicator of religiosity but it is also an indicator of wealth. In fact, unlike the other "pillars" (*arkan*) or fundamental duties of Islam, such as regular prayers, fasting, charity, etc., the Hajj pilgrimage is not mandatory unless individuals have enough resources to finance the pilgrimage after they have adequately fulfilled all other basic financial needs. As such, it is not surprising that the performance of Hajj in our sample is also correlated with higher average bank balances.[42] Furthermore, as seen in Table 2, IB customers are more educated and have traveled to more countries and are more likely to hold multiple bank accounts than CB customers—all of which point toward the possibility of higher income levels.

The fact that wealthier individuals are more likely to choose an IB account and hold higher average balances in those accounts also fits the predictions of our model where if W_t increases, then given γ as a constant level of relative risk aversion, $\alpha_t^{\cdot} W_t$ also increases and the individual is more likely to allocate funds to an Islamic bank account.

Discussion

Our results point toward the existence of a positive and significant nonmonetary benefit associated with the consumption of religious goods. This benefit, which we term a faith premium, is the primary determinant of consumer demand for an asset that may otherwise have very limited value in a competitive financial market. Contrary to any expectations of individuals choosing religious assets due to a lack of information or knowledge, we find

that customers choosing to hold their savings in Islamic banks are more educated and better informed than their counterparts at conventional banks. However, we also find that religious account holders are also far more likely to diversify their savings across different bank types and the wealthier they are, the more willing they are to accept the higher risk associated with holding an Islamic bank account.

We find that religiosity is far more complex than a simple indicator variable that makes the more religious people choose religious options while less religious ones do not. Rather, in this case, it appears that investing in Islamic banking products is a luxury where those who can afford to indulge their religious preferences do so, and they do so within a context that often does not exclude the simultaneous consumption of "non-religious" conventional alternatives to balance and support the consumption of their preferred religious good.

As with all studies conducted within a particular environment, there are several reasons to generalize these results with caution. First of all, there are some concerns about external validity. We conducted our surveys in the context of a deeply religious country that has sustained frequent bouts of political and economic crises that may have further entrenched religious sentiments within the population. Even in the context of a globally resurgent Islam, it is not clear that we will find similar religious attitudes outside Pakistan. However, as Islamic banking continues to gain popularity in various parts of the world, including in the U.S. where smaller community banks like the Devon Bank in Chicago are offering Islamic financial products to their customers, it is clear that even outside Pakistan, individual religiosity influences economic decisions.

So while our conclusions may be sensitive to specific context, they are likely to remain broadly applicable in a more general framework. In addition to restricting our investigation to a particular country, we also restricted our analysis to basic savings accounts that are easiest to compare across bank types. It is possible that the profit motive we find irrelevant in our survey could actually be increasingly relevant as we move toward more sophisticated financial products where individuals who are more interested in optimizing the return on their savings are likely to place their money. Since the substantial growth experienced by Islamic banks is not limited to basic savings accounts, a natural extension of our work would examine the determinants of demand for various types of religiously motivated financial products to see if our conclusions hold for less liquid assets with higher expected returns.

Our work has various practical implications for managers of financial institutions. Given the presence of a positive faith premium associated with

Table 5: Logit Models for the Selection of an Islamic Bank Using Disaggregated Religiosity Indicators

Coefficients in all specifications are estimated by using maximum likelihood and are reported in exponential terms as odds-ratios. All regressions include a constant. Standard errors are in brackets and have been adjusted for clustering by the fifteen branch location groups. Coefficients that are significant at the 1 percent, 5 percent and 10 percent levels are indicated by ***, **, and *, respectively. (1) and (2) test the entire sample of customers in the survey who have selected an IB. (3) is restricted to customers who switched into the IB from a conventional bank (i.e., customers who have had prior [conventional] banking experience and were not part of the unbanked population). (4) is restricted to IB customers who also have another conventional bank account.

	(1)	(2)	(3)	(4)
	IB	**IB**	**SWITCHERS**	**IBANDCB**
HAJJ	3.799***	3.112***	3.042***	3.278***
	(0.913)	(0.489)	(0.569)	(0.845)
HAFIZ	2.299*	2.519*	1.305	1.853
	(1.112)	(1.247)	(0.827)	(1.200)
RELIGIONCLASS	1.825***	2.117***	2.311***	2.134***
	(0.383)	(0.388)	(0.395)	(0.412)
BEARDS	1.243	1.408*	1.387*	1.446*
	(0.225)	(0.251)	(0.267)	(0.305)
LOGBALANCE		0.965	1.040	1.018
		(0.059)	(0.071)	(0.088)
GENDER		0.918	0.707	0.669
		(0.271)	(0.199)	(0.201)
HHDSIZE		0.937*	0.912***	0.926**
		(0.032)	(0.032)	(0.035)
EDUCATION		1.302***	1.433***	1.565***
		(0.103)	(0.135)	(0.122)
CREDIT		0.564*	0.770	0.654
		(0.193)	(0.277)	(0.180)
AGE		1.017***	1.026***	1.026***
		(0.006)	(0.008)	(0.007)
INTLTRAVEL		1.286	1.433*	1.221
		(0.291)	(0.283)	(0.243)
INCOMEGROUP		0.642**	0.635**	0.716
		(0.129)	(0.113)	(0.160)
OBSERVATIONS	1449	1139	888	832
PSEUDO R^2	0.095	0.160	0.209	0.210

Islamic accounts, managers of conventional banks operating in countries with a significant, religiously motivated Muslim population should pay close attention to the growth of their Islamic banking counterparts and consider offering *shari'a*-compliant banking products that can leverage their existing expertise in offering financial products and enable the bank to earn higher returns and diversify risk without incurring any significant startup

costs. In fact, this is already happening as most conventional banks, including Citibank, Standard Chartered, HSBC and almost every local bank in a Muslim majority country, have jumped on the Islamic banking bandwagon by opening up special Islamic banking "windows" and branches. For the managers of existing Islamic banks, it is important to note that the most significant source of demand for their products comes from the faith premium that is generated by the individual belief that Islamic banking products are religiously appropriate and necessary. As such, as Islamic banks continue to grow, they should take extreme care to remain within the boundaries of strict *shari'a* interpretations. In fact, Islamic banks should actively signal their religious commitments to their customers by employing the most credible religious scholars on their boards and adopting the most stringent, voluntarily transparent product structuring and operating processes. Furthermore, given that Islamic banking customers are more than twice as likely to have additional bank accounts, managers at Islamic banks should focus on expanding their product range and finding ways to signal bank stability to their customers.

Beyond the direct application of our findings to the financial industry, our framework and empirical results may have more general implications for future research on the economics of individual choices where there are positive non-monetary benefits associated with the consumption of specific preferred goods and services. Outside the field of religiously motivated economic choices and the faith premium associated with these choices, our findings connect to a growing body of work that has examined the nature of private non-monetary surpluses associated with socially responsible and ethical investments. For example, Hiscox and Smyth find that in the context of an upscale home furnishing store in New York, sales of particular items increased if they were labeled as being made under good labor standards—even when their prices increased by 10–20 percent.[43] In another context, Stern looks at the relationship between wages and the scientific orientation of R&D organizations that allowed researchers to publish and pursue individual research agendas.[44] He finds that conditional on scientific ability, scientists pay to the tune of a 25 percent wage discount for the privilege of being associated with a science friendly organization. In these and many others cases, we see that individuals generate private benefits from the consumption of particular goods that impact utility optimizing choices even though they do not have a monetary impact.

Our findings on the demand for Islamic banking confirm that as long as individuals derive positive benefits from behaving in accordance with their religious, ethical or social beliefs, they may be willing to compromise on the profit motive. Religion matters and in the context of Islamic banking

it matters a lot. Moreover, within the religiously motivated population, we find that income also matters and wealthier, more educated individuals are more likely to consume Islamic banking assets than those who are not as well off. At least in the context of opening an Islamic bank account, it appears that faith is a luxury that is easier to afford for the wealthy.

Appendix

Table 1: Ownership of Banks, 1997–2008
(P = Public sector banks, LP = Local private banks, F = Foreign banks)

End of Year	1997				2000				2007				Jun 2008			
Banks	**P**	**LP**	**F**	**All**	**P**	**LP**	**F**	**All**	**P**	**LP**	**F**	**All**	**P**	**LP**	**F**	**All**
Commercial Banks	6	16	20	42	6	14	21	41	4	26	6	36	4	25	6	35
Largest 10	3	3	4	10	3	3	4	10	2	8	–	10	2	8	–	10
All Others	3	13	16	32	3	11	17	31	2	18	6	26	2	17	6	25
o/w Islamic	–	–	1	1	–	–	1	1	–	5	1	6	–	5	1	6
o/w MFBs	–	–	–	–	–	–	–	–	–	–	–	–	–	6	–	6
o/w other	3	13	15	31	3	11	16	30	2	13	5	20	2	6	5	13
Specialized Banks	4	–	–	4	4	–	–	4	4	–	–	4	4	–	–	4
All Banks	10	16	20	46	10	14	21	45	8	26	6	40	8	25	6	39

Source: SBP

Table 2: Islamic Banks in Pakistan

Description	Dec. 03	Dec. 04	Dec. 05	Dec. 06	Dec. 07
Total Assets	13	44	71	119	206
% of Banking Industry	0.5%	1.5%	2.0%	2.8%	4.0%
Deposits	8	30	50	84	147
% of Banking Industry	0.4%	1.3%	1.8%	2.6%	3.8%
Financing & Investment	10	30	48	73	138
% of Banking Industry	0.5%	1.3%	1.7%	2.3%	3.5%
Full Fledged Islamic Banks (IBs)	1	2	2	4	6
Branches of IBs	10	23	37	93	186
Conventional Banks with IBBs	3	9	9	12	12
Branches of CBs	7	25	33	57	103
Total Islamic Banking Institutions	4	11	11	16	18
Total No. of Branches	17	48	70	150	289

Table 3: Income Levels and Location of Bank Clusters Used for Sampling

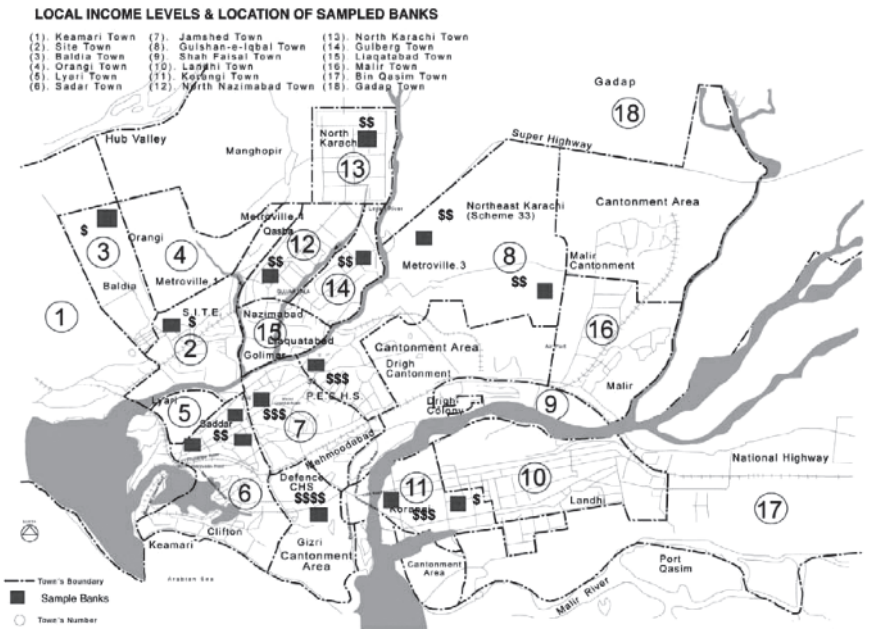

Table 4: Survey Questionnaire

Gender	0 = Male, 1 = Female
Name/Branch Name/Month of Birth	
Type of work?	1 = salary, 2 = own business, 3 = other, 4 = salary and business
Household size	
Education	Some school = 1, Junior high school = 2, High school = 3, Bachelors equivalent = 4, Masters plus = 5
Educational Institute where the last degree was obtained	
Account opening year	
Criteria for bank selection (ask for a reason without prompting but if asked, suggest options from the list)	1 = location, 2 = recommendation, 3 = family relationship, 4 = good service/image, 5 = better rates/profit, 6 = lower fee, 7 = product range, 8 = Islamic products, 9 = incentive/gift, 10 = salary account, 11 = other
Do you know the profit /return being offered by the bank on your savings account?	0 = No, 1 = Yes
If yes, how is this profit on an annual basis?	
Did you switch to this bank from another bank?	0 = No, 1 = Yes
If yes, what was the name of the Bank you switched from?	
Do you maintain accounts at other banks?	0 = No, 1 = Yes
If yes, what are the names of the bank(s) at which you hold additional accounts?	
Have you ever taken out a bank loan?	0 = No, 1 = Yes
If so, what type of loan did you take out?	1 = Car, 2 = Home, 3 = Personal, 4 = Business
Which bank did you take this loan from?	
Have you performed Hajj?	0 = No, 1 = Yes
Other countries visited?	0 = zero, 1 = one other country, 2 = between one and three, 3 = three or more
Do you watch QTV or Peace TV (dedicated religious TV channels)?	0 = Not at all, 1 = Sometimes, 2 = A lot
Have you memorized the Quran?	0 = No, 1 = Yes
Has someone in your immediate family memorized the Quran?	0 = No, 1 = Yes
What is the frequency of your daily prayers?	0 = Less than five times, 1 = Five times (or more)
So you participate in religious classes?	0 = No, 1 = Yes
Do the women in your household wear a wear a veil/purdah outside?	0 = No, 1 = Yes
Do the men in your household have beards?	0 = No, 1 = Yes
How much trust do you have in your bank?	0 = None at all, 1 = A little, 2 = somewhat/average, 3 = Above average, 4 = A lot/exceptional
Are you satisfied with bank service?	0 = No, 1 = Yes

Endnotes

1. For an overview of the economics of religion, see Laurence R. Iannaccone, "Introduction to the Economics of Religion," *Journal of Economic Literature* 36:3 (1998): 1465–1495.
2. Gerhard Lenski, *The religious factor; a sociological study of religion's impact on politics, economics, and family life* (Garden City, N.Y.: Doubleday, 1963); Peter Berger, *The Sacred Canopy: Elements of a Sociological Theory of Religion* (Garden City, N.Y.: Doubleday, 1967); and Bryan Wilson, *Religion in Secular Society: A Sociological Comment* (London: Watts, 1966).
3. Many of the most ardent proponents of the secularization thesis have recently distanced themselves from the theory that modernization necessarily means an end of religiosity. As Peter Berger stated in his 1999 book, *The Desecularization of the World: Resurgent Religion*, "the world today is as furiously religious as it ever was, and in some places more so than ever. This means that a whole body of literature by historians and social scientists loosely labeled 'secularization theory' is essentially mistaken."
4. John L. Esposito, Voices of Resurgent Islam (Oxford: Oxford University Press, 1983).
5. Guiso et al, "People's Opium? Religion and Economic Attitudes," *Journal of Monetary Economics* 50:1 (2003), 225–282.
6. Barro and McCleary, "Religion and Economic Growth across Countries," *American Sociological Review* 68:5 (2003), 760–781.
7. Richard Freeman, "Who Escapes? The Relation of Churchgoing and Other Background Factors to the Socioeconomic Performance of Black Male Youths from Inner-City Tracts," in *The Black Youth Employment Crisis*, edited by Richard Freeman and Harry Holzer (Chicago: University of Chicago Press, 1986).
8. Jonathan H Gruber, "Religious Market Structure, Religious Participation, and Outcomes: Is Religion Good for You?," *Advances in Economic Analysis & Policy* 5:1 (2005).
9. Iannaccone, "Introduction to the Economics of Religion."
10. Corry Azzi and Ronald Ehrenberg, "Household Allocation of Time and Church Attendance," *The Journal of Political Economy* 83:1 (1975), 27–56.
11. From mainstream Jews, Muslims and Christians to groups as diverse as the Nuer of Sudan and the Iatmul of New Guinea, religious beliefs impose a set of constraints on individual actions and prescribe particular models of behavior that impose a substantial cost on practicing believers. In fact, more successful religious groups that provide public goods often weed out potential defectors by requiring sacrifices as signals of commitment. For further discussion, see E. Berman, "Sect, Subsidy, And Sacrifice: An Economist's View of Ultra-Orthodox Jews," *Quarterly Journal of Economics* 115:3 (August 2000): 905–953.
12. Laurence R. Iannaccone, "Sacrifice and Stigma: Reducing Free-riding in Cults, Communes, and Other Collectives," *Journal of Political Economy* 100:2 (1992): 271–291; see also James M. Buchanan, "An Economic Theory of Clubs," *Economica* New Series 32:125 (1965): 1–14.

13. The breakdown has been estimated as: Islamic banks with $320 billion, Islamic windows with $320 billion, and funds under management with $380 billion.
14. Key countries include Saudi Arabia, Bahrain, the U.A.E. and Kuwait in the Middle East, Malaysia in Asia and the UK in Europe.
15. Islam does not allow a separation between mosque and state. *Shari'a* law prescribes a complete code of life and determines every aspect of a Muslim's religious practices, everyday life, and economic activities.
16. M. Umer Chapra, *Islam and the Economic Challenge* (Leicester, UK: Islamic Foundation, 1992).
17. Timur Kuran, "Islamic Economics and the Islamic Subeconomy," *The Journal of Economic Perspectives* 9:4 (1995): 155–173.
18. Wafik Grais and Matteo Pellegrini, "Corporate Governance in Institutions Offering Islamic Financial Services: Issues and Options," World Bank Working Paper, WPS 4052. 2006. Available at http://go.worldbank.org/WX8PQZQ570.
19. Harry Markowitz, "Portfolio Selection," *Journal of Finance* 7 (1952): 77–91; John Campbell and Luis Viceira, *Strategic Asset Allocation: Portfolio Choice for Long-Term Investors* (Oxford: Oxford University Press, 2002).

    The pioneering rational choice model of religious consumption described by Azzi and Ehrenberg in their model of household participation in church related activities provides some very useful conclusions with respect to the voluntary selection of religious activities over leisure and other income generating activities. However, in this case, since we are looking at a choice between holding two financial assets that vary in terms of religious benefits and risk, a portfolio choice model generates more relevant and testable conclusions.
20. The assumption of CRRA utility in a power utility function also implies DARA (decreasing absolute risk aversion) with respect to wealth and makes intuitive sense since a billionaire is likely to be less worried about the same gamble that a very poor person would refuse. The assumption of lognormal returns (unlike the assumption of normal returns) holds at every time horizon since the products of lognormal random variables are also lognormal. See Campbell and Viciera for details.
21. Refer to Campbell and Viciera for a more detailed discussion of the Taylor approximation, which is valid under short time intervals. As seen in (12), the difference between the log portfolio returns and a linear combination of the individual asset returns is zero if . The expansion also rules out bankruptcy () and leverage ().
22. The five banks were the National Commercial Bank (NCB), Habib Bank Limited (HBL), Muslim Commercial Bank (MCB), United Bank Limited (UBL) and Allied Bank.
23. Banking spread in Pakistan has oscillated between 5.95 and 9.58 percent during 1990–2008 and was around 8 percent in January 2009. For comparison purposes, the average interest rate spread in Canada was 1.3 percent, in the UK 2.3 percent, in Spain 2.4 percent, in the U.S. 2.8 percent, in Australia 3 percent and in France 3.1 percent. Generally acceptable levels of bank spreads are 3.5 percent.

24. The market share of deposits is at 4.2 percent.
25. The CB also has 55 international branches located in Afghanistan, Australia, Bahrain, Bangladesh, Belgium, Canada, China, France, Hong Kong, Iran, Kenya, Lebanon, Maldives, Nepal, Netherlands, Nigeria, Oman, Singapore, Sri Lanka, Turkey, the U.A.E., the U.K. and the U.S.A.
26. "Top 500 Banking Brands," *The Banker*, February 2009, http://www.thebanker.com/news/fullstory.php/aid/6416/Top_500_banking_brands.html.
27. Karachi is amongst the most densely populated cities in the world. In 2005, its population was estimated at 15.1 million and is expected to reach 27.5 million by 2020. The population is diversified in terms of ethnicity and economic conditions. About 75 percent of the households fall in the category of poor and low-income groups, while 25 percent constitute the middle and high-income groups. Education levels are higher than the national averages.
28. We excluded all IB branches that had opened after January 2007 since we were looking at the data in late 2008 and most of these branches had only been functional for a few months. As such, it was not possible to find a significant sample of customers from these newly established branches. Also it was possible that customers at these new branches had not had enough time to evaluate the performance of their bank.
29. The IB was not able to offer a return ex-ante. Instead, it showed all new customers a table of "historical" monthly returns over a 6-month period as a signal to approximate future returns. These returns were very closely matched those being offered by the CB.
30. D. Ross, "Your banks and how to choose them," *Accountancy* 104 (1989): 130.
31. G. G. Kaufman, "Business firms and households view commercial banks: a survey of Appleton, Wisconsin," 1967 Report to the Federal Research Bank of Chicago.
32. D. Ross, 1989.
33. Laroche, Rosenblatt, and T. Manaing, "Services used and factors considered important in selecting a bank: an investigation across diverse demographic segments," *International Journal of Bank Marketing* 4:1 (1986): 35–55.
34. Erdener Kaynak, "Retail banking in Nordic countries: the case of Finland," *International Journal of Bank Marketing* 13:8 (1995): 10–20; Mylonakis, Malliaris, and Siomkos, "Marketing-driven factors influencing savers in the Hellenic Bank Market," *Journal of Applied Business Research* 14:2 (1998): 109–116.
35. Also, all the research assistants conducting the survey were female and culturally people were more likely to cooperate with them.
36. Initially, survey respondents were going to be offered the chance to enter a gift lottery for their participation. However, since the IB pointed out that this could be construed as breaking the Islamic injunctions against gambling, the gift lottery option was removed. None of the survey participants were in any way compensated for their participation.
37. An exception to this rule was made in the case of branches that had less than 100 customers opening new accounts in the 17-month period. In this case, every single customer was called.

38. All amounts are in terms of Pakistani rupees. The conversion rate at time of writing fluctuated between Rs 70 and Rs 80 to the U.S. dollar.
39. 54.2 percent of Islamic banking customers have travelled internationally to countries other than those visited for religious purposes compared to 36.7 percent for conventional banking customers.
40. Four outliers were removed, all of them were from the IB and reported profit rates ranging from 25 percent to 210 percent.
41. These are accounts that are set up by corporations to hold the salaries for all individual employees.
42. Respondents who had performed the Hajj had an average balance of 119,186 compared to those who had not performed the Hajj and held and average balance of 78,142 in their accounts. These differences were statistically significant at the 5 percent level.
43. Michael J. Hiscox and Nicholas Smyth, "Is there Consumer Demand for Improved Labor Standards? Evidence from Field Experiments in Social Product," 2008 working paper available online at http://www.people.fas.harvard.edu/~hiscox/papers.html.
44. Scott Stern, "Do Scientists Pay to be Scientists?," *Management Science* 50:6 (2004): 835–853.