

**THE VIABILITY OF ISLAMIC MICROFINANCE: FINANCIAL SUSTAINABILITY
AND OUTREACH CAPABILITIES OF FIRMS IN THE MIDDLE EAST AND NORTH
AFRICA**

by

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Allyson Cross, B.Phil

Microfinance has been gaining momentum and popularity over the past 40 years. As it has grown, it has been at the center of a critical debate: commended by some as a practical tool to fight poverty and criticized by others as over-praised and under-effective, the role of microfinance in serving the poor and alleviating poverty is ever in question. However, what has failed to enter the central debate is the lack of sharia-compliant services for the Muslim poor who may require them. Some Muslims exclude themselves from conventional financial tools because charging interest is prohibited in Islam. An increase in sharia-compliant financial services could not only broaden access to financial tools, but play an important role in the economic development of Muslim-majority countries. This paper analyzes the impact of sharia compliance on financial sustainability indicators (financial self-sufficiency ratio and return on assets ratio) and outreach indicators (percent of borrowers who are female and average balance per borrower/GNI per capita) of 54 firms in the MENA region by employing the OLS regression method. The goal of this research is to determine whether Islamic MFIs are a viable alternative for conventional MFIs, with the hope of contributing to the discussion on whether the expansion of Islamic microfinance will be beneficial for serving the Muslim poor. The results of this study corroborate previous studies and conclude that Islamic microfinance is a practical substitute for conventional microfinance with comparable outcomes in financial sustainability and outreach, at least in the MENA region. The results and complications throughout the study further conclude that, as the debate around microfinance in general and Islamic microfinance specifically continues, a wider variety of studies related to Islamic microfinance as an alternative and its role in poverty alleviation overall are necessary.

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Preface

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1.0 Introduction

Microfinance has been a movement gaining momentum and popularity since Mohammad Yunus' creation of the Grameen Bank in 1983. Recently, microfinance institutions (MFIs), which help the poor obtain credit to advance income-generating activities, have been at the center of a critical debate. Commended by some as a practical tool to fight poverty and criticized by others to be over-praised and under-effective, microfinance is being examined for sustainability and impact on many levels.

While there are many studies on the various aspects and effects of microfinance, very few take up the study of sharia-compliant microfinance, which has the potential to offer religiously suitable services to the Muslim poor who desire or require them. About one quarter of the world's population are Muslim (World 2010) and a majority live in low-income countries. Further, these populations are expected to increase by 36.9% by 2050 (Earlbeck, Altunas, and Berry-Stolze 2011).

In Islam, conventional methods of finance are unsuitable because they charge interest, which is forbidden under sharia financial law. This may be a contributing factor to the trend of Muslims using fewer financial services than non-Muslims (Mohieldin et al. 2011). An increase in sharia-compliant financial institutions, specifically microfinance institutions, has the potential to reach more of the poor and play a significant role in the economic development of many Muslim-majority countries. According to a World Bank study, a large number of microenterprise owners and low-income individuals interviewed in the Middle East and North Africa (MENA)

would prefer sharia-compliant financial products. Over 60% of those interviewed in the West Bank and Gaza would prefer Islamic products, even at a higher price. 32% of Jordanians interviewed cite religion as a reason for not obtaining a loan, with 18.6% ranking religious reasons as number one. An estimated 40% of poor Yemenis demand Islamic financial services, even if it is more expensive. In Syria, 43% consider religious reasons as the largest obstacle to microcredit. Finally, in Indonesia, 49% of those interviewed consider interest prohibited and would prefer sharia-compliant institutions (Mohieldin et al. 2011). This demand underscores the need for greater examination of the benefits of offering sharia-compliant financial services to an underserved and in-need population and the impact that this might have on overall poverty, women, and the wellbeing of families.

This paper examines the impact of sharia compliance on four outreach and financial sustainability indicators of MFIs in the MENA region and explores whether Islamic microfinance is a viable alternative for conventional microfinance. It analyzes the effect of being a sharia-compliant firm with the goal of discovering whether Islamic MFIs are as financially sustainable as conventional MFIs and if they perform competitively in outreach to in-need communities. The effect of sharia-compliance will be tested through running OLS regressions on the four indicators. The financial self-sufficiency and return on assets ratios are used to indicate financial sustainability, while the percentage of borrowers who are female and average balance per borrower/GNI per capita are used to indicate outreach to in-need borrowers. The hypothesis, which is largely confirmed by the results for the MENA region, is that there is not a significant difference between Islamic and conventional MFIs in financial sustainability and outreach to the poor. The implications of this conclusion include that an expansion of Islamic microfinance could benefit the Muslim poor in the MENA region through increasing access to financial

services without compromising measures of financial sustainability and outreach. An increase in Islamic microfinance goes beyond the scope of the many individuals that would gain access to financial services and could benefit countrywide economies and the global economy at large.

The first section of this paper provides a detailed overview of microfinance and its surrounding debates as it grows in the global economy as a method of addressing poverty. The second section explains Islamic finance and microfinance, covering its technicalities and differences from conventional microfinance. This section will also address the challenges and debates surrounding Islamic microfinance as they contribute to the future of microfinance and the Islamic version as a viable alternative. The third section presents findings from previous studies and how their conclusions relate to the questions that this paper seeks to answer. The fourth section provides a detailed description of the model being used and the data from which this paper's conclusions will be drawn. The fifth section presents the results of the regressions and discusses their implications. The final section offers conclusions drawn from this study, a discussion of the limitations and complications of this study, and recommendations for further exploration of the topic

2.0 An Introduction to Microfinance

Microfinance became famous in the 1970s with the advent of Muhammad Yunus' Grameen Bank. Yunus saw how little access to finance people had and began a lending experiment to people in a village near Chittagong University in Bangladesh. The small loans helped the businesses of the villagers and, despite having little to offer in collateral, repayments remained high. After successfully trying these small loans in a different part of the country, he founded Grameen Bank and revolutionized the group-lending model (Armendariz and Morduch 2005). Yunus' model highlighted the need for innovative solutions like microfinance to provide financial services to the poor. His version and the adaptations that followed address some of the underlying problems concerning the poor and financial markets, including information asymmetries, discrimination, and the complications that arose from subsidized state-run banks.

Financial markets are intended to fix asymmetries, but do not always work efficiently, which can lead to costly consequences (Demirgüç-Kunt and Beck 2008). Among these is inequality in access to financial services, which can highly impact the poor. Traditionally, moneylenders would lend to the poor rather than formal financial institutions and would charge high rates, have monopoly power, and have the ability to keep people in a cycle of debt (Armendariz and Morduch 2005). This happens because the poor are risky. They do not have collateral and often do not work in the formal market, and thus cannot borrow against future income. Small transactions are also costly to institutions, especially when information on

borrowers and collateral are absent. This is compounded by the necessity of a high volume of transactions due to the small absolute value of profit (Demirgüç-Kunt and Beck 2008).

Traditional banks have typically stayed out of small transactions because information asymmetries and the cost associated with enforcing contracts make it difficult to glean profits (Cull, Demirgüç-Kunt, and Morduch 2006). For such reasons, government-subsidized banks were tasked with serving the poor, typically focusing on farming communities. State banks, however, proved problematic due to their political associations. They would often charge interest rates well below the market rate, did not pursue repayment efficiently (Cull, Demirgüç-Kunt, and Morduch 2008), and would tend to forgive loans before elections (Armendariz and Morduch, 2005). Further, they distorted the market rationing mechanism which, theoretically, leads to those with the most worthy projects being willing to pay the market rate (Armendariz and Morduch 2005).

Even though state banks turned out to be inefficient and costly, the idea of diminishing returns to capital still applies: capital should be going to poor entrepreneurs who can reap high returns and pay high interest rates to cover their risk (Armendariz and Morduch 2005). However, this has not happened, which leads to the need for an alternative approach such as microfinance.

2.1 The Need for Microfinance

Discrimination is a reality in financial markets. Most scholars agree that increasing access is not only beneficial for the individual, but for the overall economy as well. Demirgüç-Kunt and Beck (2008) find that “lack of access to finance [is] a critical mechanism for generating persistent income inequality, as well as slower growth” (ix). Imperfections in the market will affect the talented poor who lack collateral, credit history, and connections (Demirgüç-Kunt and Beck 2008). If these imperfections aren’t addressed, unequal access may be perpetual. Microfinance seeks to correct some of these asymmetries and problems. One major information asymmetry is limited liability, which, in the case of serving the poor, is the lack of collateral that causes banks to not do business with poor customers. Adverse selection is another common information asymmetry, which is when banks lack information against risky borrowers and cannot discriminate against them, leading to high interest rates. Moral hazard, which has two main forms, is a third major information asymmetry and generally relates to the failure to safeguard against risk because protection is guaranteed. Ex ante moral hazard comprises unobservable actions taken by the borrower after the loan has been received but before returns are realized, while ex post moral hazard is the possibility that the borrower invests the money but does not pay back the loan when returns are realized. These problems are compounded by the nature of serving poor and rural communities and led to the need for a new way to distribute loans and increase access to financial services while reducing transaction costs (Armendáriz and Morduch 2005).

Microfinance has come a long way since its beginnings with Grameen Bank and has transformed to meet the specific needs of the diverse communities that MFIs serve. Microfinance began with the group lending approach, in which groups are comprised of voluntary members

who insure each other's repayments and face collective penalties if default occurs. Lending to individuals has grown in practice and, despite breaking away from group loans, new forms of microfinance contracts have managed to maintain high repayment rates of over 95% (Cull, Demirgüç-Kunt, and Morduch 2006). While it cannot be a panacea for poverty on its own, microfinance can expand the poor's ability to smooth consumption and deal with emergencies (Cull, Demirgüç-Kunt, and Morduch 2008). These different manifestations of microfinance have a variety of mechanisms in place to address information asymmetries and ensure repayment, including the institution's lending method and structure, innovative repayment incentives and solutions for covering risk, incorporating savings, and a focus on gender.

2.2 Group Versus Individual Lending

Many MFIs, even Grameen Bank, have strayed from the group-lending model and have begun lending to individuals. Both structures face higher costs when serving poorer clients, but present different benefits and drawbacks to both the bank and clients.

In group lending, groups, often self-formed, assume joint liability for repayment. This reduces limited liability, moral hazard, and adverse selection because the bank capitalizes on local information while decreasing the costs of conducting due diligence on clients and enforcing contracts, thus allowing for lower interest rates (Armendariz and Morduch 2005). Research done by Gine et al. (2006) also shows that dynamic incentives, joint liability, peer monitoring, and self-selection increase repayment in group lending. In addition to improving repayment through peer pressure, group-lending mechanisms offer channels for support and education. Because group members often live and work together, they can impose both social and economic

sanctions in a way that the bank cannot when restrained by the absence of collateral and weak legal enforcement (Armendariz and Morduch 2005). The group-lending model has shown how creative contracts can work where conventional ones have not.

There are a number of problems that arise in the group lending model, which are sometimes contradictory to what other research has claimed as a benefit. While many supporters of group lending argue that the structure reduces risk to the institution by having group members insure each other, high communication among members is found in experiments done by Gine et al. (2006) to increase collusion among group members, which can lead to a greater risk of moral hazard. For example, if the members of the group all agree not to repay, all members are better off, the threat of social sanction diminishes, and the bank bears the cost. In addition to collusion, groups can spawn free riding problems in the same way that has been exhibited by abuse of public goods and tragedy of the commons (Cull, Demirgüç-Kunt, and Morduch 2006). Further, if some members do not repay, this is a disincentive for remaining members to repay, as, due to the structure of most group loans, they have already lost their prospects for securing future loans (Demirgüç-Kunt and Beck 2008). Montgomery (1996) finds that group lending can lead to disciplining borrowers in ways that are “unnecessarily exclusionary,” such as barring defaulters from day-to-day activities and social and religious events and can diminish the social aims of the MFI. However, Karlan (2007) finds that while groups are more likely to punish defaulters, they are also more likely to forgive debt, implying a distinction between default and bad luck, which could mitigate concerns of excessive social sanctions.

Individually based loans have a number of different characteristics than group-based loans. They are often larger and associated with the wealthier poor. They have also been more successful in areas with deeper social divisions, sparse populations, high costs of peer

monitoring, and limited effectiveness of social sanctions (Armendariz and Morduch 2005). Additionally, research done by Cull, Demirgüç-Kunt, and Morduch (2006) suggests that individually based loans can be beneficial for customers that are willing to invest in larger ventures and for whom group-lending becomes a burden. Financially, lending to individuals is typically associated with higher average profit levels and has been a good option for MFIs that choose to become commercial entities (Demirgüç-Kunt and Beck 2008). These firms have also been able to maintain high repayment rates through options like repaying in public, being barred from future access if they default, and dynamic incentives upon successful repayment.

Unique difficulties have also developed for MFIs offering individually based loans. For example, in big cities where there is often an inclination towards these loans, social sanctions can be less effective because community relationships often aren't as strong. Mission drift, the tendency to move away from serving the poorest customers, is also common for MFIs offering individual loans. While not necessarily a negative change, it does mean a shift in the social mission of the MFI and can lead to the poorest of the poor remaining without financial access. Finally, outreach indicators for MFIs offering individual loans tend to be lower than those offering group loans (Cull, Demirgüç-Kunt, and Morduch 2006). Neither group nor individual loaning schemes can be said to be definitively better or more effective, but should be considered based on the needs of the individual community in which the MFI is operating.

2.3 Organizational Structures

Microfinance institutions typically take on one of three institutional structures: non-bank financial institutions (NBFIs), non-governmental organizations (NGOs), and commercial banks.

This overview will deal NGOs and commercial banks, as NBFIs take on many different forms and cannot typically be generalized.

NGOs are more likely to be non-profits and tend to offer smaller loans. For example, Cull, Demirgüç-Kunt, and Morduch (2009) find on average that loans from NGOs are less than a quarter of the size of those offered by commercial microfinance banks, which indicates that NGOs typically have better outreach to the poor. Conversely, commercialized microfinance banks are more likely to be for-profit institutions, provide larger loans, and loan to fewer women, but achieve higher profitability and are able to function at lower costs per dollar lent because of their increased size (Cull, Demirgüç-Kunt, and Morduch 2008).

A large benefit of operating as a NGO is that they do not experience mission drift as often as commercialized microfinance banks. Even though they tend to remain more committed to serving the poorest borrowers, NGOs remain among the leading MFIs and serve more borrowers overall and a greater number of borrowers at profit. Mission drift still exists for NGOs, but Cull, Demirgüç-Kunt, and Morduch (2009) explain that this is not necessarily bad because serving more profitable customers can lead to reaching a larger absolute number of poor customers through internal cross-subsidization and scale economies. Many studies argue that increasing access to financial services is good for the overall economy, thus increasing access to any underserved population is still beneficial to society and the larger economy.

Subsidy dependence is the most-cited pitfall of the NGO structure and leads to the argument that non-commercialized microfinance is unsustainable (Demirgüç-Kunt and Beck 2008). However, Cull, Demirgüç-Kunt, and Morduch (2008) find that conclusion to be limited due to disregarding the ability of MFIs to shift strategies and optimize resources in the face of decreasing or eliminated subsidization. Further, studies analyzed in Armendáriz and Morduch

(2005) conclude that even when the cost of subsidization is factored in, microfinance remains a positive social investment. At the bottom line, however, most NGO-structured MFIs are likely too small to reach scales large enough to be sustainable (Demirgüç-Kunt and Beck 2008).

In addition to subsidy dependence, NGOs must charge the highest interest rates because they make the smallest loans to the poorest customers, which entail high unit costs. However, contrary to this logic, there are a number of examples of MFIs that charge much higher rates after commercialization because of their commitments to profitability and shareholders. One prominent example is Banco Compartamos in Latin America, which commercialized and saw impressive returns and rapid expansion, but also increased interest rates to over 100% per year when inflation was only 4% (Armendariz and Morduch 2005).

2.4 Mitigating Risk

The risks associated with serving lower-income customers, information asymmetries, and the weak legal systems that characterize low-income countries have combined with the evolution of the microfinance industry and resulted in a variety of creative ways to incentivize repayment and mitigate adverse selection and moral hazard. Many mechanisms exist that aim to reduce these risks, but the most widespread are higher interest rates, flexible and financial collateral, dynamic incentives, frequent installments, public repayment, and cross reporting.

High costs of monitoring, lack of collateral, and greater risk of default contribute to high interest rates present in microfinance. While skeptics criticize these rates as being excessive, supporters of microfinance argue that, in addition to simply reflecting the cost of doing business, clients have the ability to pay high rates because of their high marginal returns to capital

(Demirgüç-Kunt and Beck 2008). At high rates, however, Cull, Demirgüç-Kunt, and Morduch, (2006) find that there are instances of only low-quality borrowers being willing to take loans, which runs counter to the argument presented earlier that rates weed out low-quality projects, leaving the analysis on rates inconclusive.

To incentivize repayment, some MFIs have innovatively reintroduced collateral, which the poor typically cannot offer. Using assets of notional or abstract value in place of those with resale value can give the MFI more leverage and improve repayment (Demirgüç-Kunt and Beck 2008). BRI of Indonesia has had success with this and accepts any item of personal value as collateral (Armendariz and Morduch 2005). Many institutions have also incorporated financial collateral by requiring borrowers to prove that they can save regularly before obtaining a loan or requiring savings alongside loans. For example, Grameen Bank requires all clients to deposit a portion of the loan that they can only withdraw when they leave the program. In addition to serving as financial collateral, savings can help borrowers accumulate money for investment, retirement, and unexpected expenses. Requiring savings, however, is criticized for diminishing the essential and limited personal capital available to clients (Armendariz and Morduch 2005).

Dynamic incentives have had success in reducing moral hazard in both group and individual liability contracts. These include exclusion from obtaining a loan in the future as punishment for default and the opportunity to obtain larger loans in the future as reward for repayment (Gine, et al. 2006). However, if the market is highly competitive and data sharing resources are insufficient, bad borrowers can exploit the system, decreasing the effectiveness of dynamic incentives. Such loopholes have led to solutions such as requiring a guarantor, officer visits to homes to evaluate the borrower's character, and improving cross reporting among lenders (Armendariz and Morduch 2005).

Requiring small, frequent repayment installments is another technique that has kept repayment high for both group and individual liability loans. Frequent installments can also have the added benefit of serving as an early warning sign for default. However, some critics argue that small, frequent installments can be illogical and counterproductive if the investment has not had time to become profitable or if the borrower is engaged in a seasonal activity (Armendariz and Morduch 2005).

Public repayment increases the threat of social sanctions, thereby encouraging timely repayment. This method has been widely used by MFIs and is still employed by Grameen Bank for both group and individual loans. Even when liability is individual, group meetings and public repayments have kept repayment rates high through the inherent threat of the community knowing about and punishing defaulters. Further, when repayments are done in public groups, collection costs decrease for the MFI. For both group and individual liability loans, requiring public group repayment can provide the MFI with more information about the borrowers, as group members can be good sources of information about each other, and create opportunities to offer education and training to the group as a whole (Armendariz and Morduch 2005).

2.5 Women and Microfinance

Gender is an integral topic to any discussion on microfinance. Many scholars and practitioners see targeting women as a factor for success and a measure of achieving social goals (Demirgüç-Kunt and Beck 2008). For example, Grameen Bank grew from an initial 44% female client base to 95%, a bias that has continued due to women's better repayment records compared to men (Armendariz and Morduch 2005). Many scholars also cite women as being more reliable

customers and less prone to moral hazard (Gine, et al. 2006). Further, micro businesses often operate in the informal sector, of which women make up a large and growing part. Armendáriz and Morduch (2005) point out that women are less mobile, which makes contract enforcement and monitoring easier. Less mobility also increases the impact of social sanctions, leading to women making less risky investments. They also show women to be biased in favor of public goods that benefit the family or community. When women have control over money, they spend more on household expenditures like healthcare and education relative to men. For example, Thomas (1990) shows that the health of children in Brazil improves when women control non-labor income. In a subsequent study in Brazil, Thomas (1994) finds that an increase in women's bargaining power is positively correlated with health spending. Receiving a loan can also increase the opportunity cost of a woman's time, which can have a negative effect on the fertility rate and a positive effect on using contraception (Armendariz and Morduch 2005).

A major criticism of microfinance and its focus on women is that women who receive loans do not actually control the money. A study from Goetz, and Sen Gupta (1996) shows that 40% of women in the study had little to no control over their investment activity. Rankin (2002) further criticizes that women are often pushed into industries like "sweater knitting" that allow them to remain secluded. Armendáriz and Morduch (2005) analyze a number of studies and find a pattern indicating that focusing on women perpetuates their reliance on male family because they lack access to the right inputs and facilities. They also find patterns of increased violence against women as a result of microfinance. For example, Rahman (1999) finds that 70% of female borrowers in one village experienced an increase in violence as a result of their involvement. Rahman theorizes that violence increases because of tensions men feel as their traditional role is threatened in patriarchal societies. Armendáriz and Rome (2008) also point to

this possibility, but state that mixed groups can mitigate this and can eradicate any uncertainty about what women are being loaned, which men often overestimate and then force their wives to divert to household needs.

Banerjee et al. (2014) evaluate the effects of borrowing after two end line results from a randomized evaluation of a group lending microfinance program in Hyderabad, India. They find no effect on women's empowerment¹ after 18 to 36 months and that 70% of women still prefer borrowing from other sources. Contrary to other studies, they find no change in the probability that children and teenagers are enrolled in school. While the study indicates no positive effect of microfinance on women's empowerment or school enrollment of children and teens, it deals only with a for-profit MFI in one Indian city, so the evaluation should be replicated across different institutions and areas. Despite contradicting studies, focusing on women is still widely practiced and seen as a positive indicator of outreach for MFIs.

2.6 The Future of Microfinance

Banerjee et al. (2014) concludes that microfinance is not for everyone and that the vast majority of microbusiness owners do not experience “miraculous transformations” in their profits or lives. Despite conflicting studies yielding inconclusive results for most of the debated topics about microfinance, the principle that increasing access to financial services is good for the overall economy has held. Many critics have shown that microfinance has been successful in some contexts and applications and that it has the potential to increase incomes, allow

¹ The study measures women's empowerment by testing for differences in children's education (school, enrollment, attendance, and private schooling) and children's labor supply. These metrics are chosen because when women have more choice over how household funds are spent, they tend to spend in ways that benefit their children's education and health.

microentrepreneurs to invest in their businesses, and alleviate poverty. The growth of microfinance has resulted in many variations on the original model. However, further innovations and improvements are essential as the industry continues to grow and serve a wider variety of customers. Islamic microfinance has come about as one of these variations and offers different products and institutional structures in addition to religious adherence that may better serve the needs of some of the world's poor.

3.0 Overview of Islamic Finance and Microfinance

With roots dating back to Cairo in 1963, Islamic finance is where law and economics meets religion and politics (Bianchi 2007)—an economic system that works towards attaining the dual goals of religious piety and profit maximization (Robbins 2010). Since its modern inception, the industry has grown to a size of around 1.6 trillion US dollars (Global 2013) and is expected to continue growing around 10-15% annually (Freudenberg and Nathie 2012), making it an increasingly important player in the global financial system. In its ideal form, the Islamic financial system (IFS) is based on ethical rules with a moral purpose rather than pure capitalism. Several aspects of the secular financial system, such as interest-based loans, are prohibited under Islamic financial law, creating the demand for an alternative financial system. The demand for this system can be seen in its rising popularity that is reflected in the Islamic microfinance industry as well, with growth in clients exceeding 1.2 million borrowers (El-Zoghbi and Tarazi 2013).

Among the most prominent differences of the IFS is the prohibition of interest and excessive uncertainty or speculation. The IFS employs products designed to avoid these characteristics and strives to create an alternative financial system that reconciles religious principles with the modern global economy. However, critics point out that interest is effectively taken by a different name (i.e. markups) and is still used to benchmark the time value of money (Asutay 2012). In theory, the system should be grounded in asset accumulation rather than cash

accumulation and is intended to reinforce the principle of money as a means of exchange and store of value rather than a commodity with intrinsic value. Islamic financial institutions (IFIs) should also not generate unjustified income through lending (Hourani 2004). In place of conventional loans, the ideal framework in the IFS for financing is profit sharing and partnerships. In practice, however, tools are largely a product of financial engineering that allows sharia-compliant products to serve the same purposes as their commercial counterparts, thus adhering to the formal technicalities of Islamic financial law while largely avoiding complying with the spirit and purpose of the system. This same phenomenon is present in Islamic microfinance. Critics such as Hamoudi (2007) explain that the IFS is more formal than functional in nature. In reality, it has mechanisms that effectively act as interest, and financing through profit and loss-sharing mechanisms makes up a miniscule part of the system [less than 10% according to Asutay (2008)]. Instead, there is a heavy reliance on financial engineering that does not prevent the commodification of money. IFIs also tend to avoid industries that deal in gambling, pornography, alcohol, tobacco, pork, and media products like gossip magazines (Robbins 2010). A final prominent difference of IFIs is the support and maintenance of a sharia board, which provides guidance to the company's leadership on matters of sharia compliance.

Islamic microfinance, more than enshrining the same sharia-compliant principles, is relevant to the Islamic banking industry because the ideal Islamic economic system places greater social welfare and religious responsibilities on institutions and individuals. These include commitments to promoting social justice, income equality, and economic development (Dusuki 2008). For example, as social protection and justice is among the major goals of the system, the practice of requiring only 1% of the outstanding installment to be returned in the fact of default can diminish the threat of a free-fall into indebtedness (International 2012). However, this

practice is a recommendation and is not required. The Islamic economic system also strives for a standard of living for all that encompasses each being able to satisfy his basic needs (Atia 2011). Therefore, sharia-compliant microfinance activities further the social commitments of the system through promoting financial services for the poor (Dusuki 2008).

In principle, the IFS is intended to encourage wealth creation through equal access to participation in income-generating activities for all social classes. Islamic microfinance institutions (IMFIs) can facilitate this goal by investing in and sharing risk with microenterprises (El-Zoghbi and Tarazi, 2013). However, El-Zoghbi and Tarazi (2013) show that profit-and-loss sharing contracts make up only 6% of the portfolios surveyed. Additionally, according to the International Fund for Agriculture Development (2012), IMFIs offer terms and conditions that are often more favorable for the most vulnerable groups due to their risk sharing and minimization of uncertainty. If this is true in practice, IMFIs can help further the aim of greater social welfare. However, despite the strong support that the ideal Islamic economic system shows for Islamic microfinance, there has not been strong development of sharia-compliant institutions that serve the poorer segments of society. Instead, contemporary Islamic finance has, for the most part, stayed out of microfinance (Ahmed 2007). Further, Asutay (2012), points out that CSR in general in the IFS has been poor. He claims that IFIs have largely failed to engage in social and sustainable development, which he explains as essential to the Islamic moral economy that Islamic finance is intended to support.

3.1 Differences in Islamic Microfinance

Islamic microfinance addresses the same issues as conventional microfinance: information asymmetries, inequality and discrimination in financial markets, lack of collateral, and high costs of doing business. Islamic microfinance goes a step further by providing services for borrowers who are unwilling to participate in interest-based financing or who would prefer a sharia-compliant alternative. This outreach may be essential to addressing these needs even if the system in practice is more of a formal than functional alternative, as a number of critics claim.

Islamic microfinance exhibits several other important characteristics that differentiate it from conventional microfinance. These generally, but do not have to, include financial support from Islamic charities, focus on the family unit, religious incentives, spousal guarantees, and the inclusion of religious development programs (Abdelkader and Salem 2013). Below, [Table 1](#) outlines the major theoretical and practical differences that might arise between the two systems:

Table 1: *Comparison between Conventional and Islamic Microfinance Institutions*

Items	Conventional MFI	Islamic MFI
Liabilities (Source of Fund)	External Funds, Saving of client	External Funds, Saving of Clients, Islamic Charitable Sources (<i>Zakat, Waqf</i>)
Assets (Mode of Financing)	Interest-Based	Islamic Financial Instrument
Funds Transfer	Cash Given	Goods Transferred
Deduction at Inception of Contract	Part of Funds deducted as Inception	No deduction at Inception
Target Group	Women	Family
Work incentive of employees	Monetary	Monetary and Religious
Dealing with default	Group/center pressure and threat	Group center, Spouse Guarantee and Islamic Ethic
Social Development Program	Secular, behavioral, ethical and social development	Religious (includes behavior, ethics and social)

Source: Ahmed (2002)

3.2 Size and Scope

The Islamic financial industry has grown tremendously over the past few decades, with Islamic bonds emerging to capture the biggest share of the market (Iqbal and Ariff 2011). A variety of other products are available as well, many of which have been adapted for the micro scale. A description of those most pertinent to this study can be found in a later section. The size of the Islamic microfinance industry, while still small in comparison to conventional microfinance, has also seen impressive growth. Prior to 2013, there was a four-fold increase in the number of clients, estimated at 1.28 million, and a doubling in financial service providers, reaching over 250 institutions. However, despite this growth, Islamic microfinance accounts for less than 1% of total microfinance outreach (Abdelkader and Salem 2013).

Islamic microfinance has spread throughout the various regions of the world and is present in most Muslim-majority developing countries. As seen in [figure 1](#), East Asia and the Pacific together have the largest number of institutions and are followed by the MENA and South Asia, respectively. The presence of Islamic microfinance is least prevalent in Sub-Saharan Africa and Europe and Central Asia (El-Zoghbi and Tarazi 2013). However, as indicated by El-Zoghbi and Tarazi (2013), as of 2013 there were only 255 institutions and 64% were in East Asia and the Pacific, suggesting that the sector is dominated by a small number of providers concentrated in several countries.

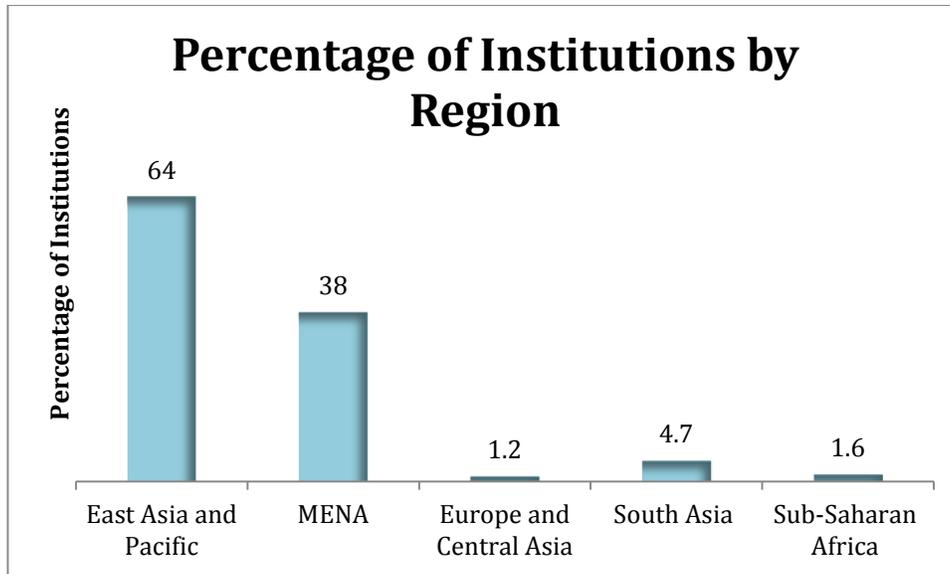


Figure 1: Percentage of IMFIs by Region
Source: El-Zoghbi and Tarazi, 2013, 2).

3.3 Sharia Law, Regulation, and Sharia Boards

The regulations for Islamic finance and microfinance come from sharia law, which is based on the Quran, the sunnah or hadith, the qiyas, and ijma. Sunnah and hadith are often used synonymously and refer to the recordings of the prophet’s actions and words (Ma’sum Billah 2007). Qiyas are clarifications and analogies of the hadith that make them applicable to current conditions, and ijma is the consensus of jurists (Robbins 2010). Hamoudi (2007 & 2008) clarifies the Islamic legal-financial system in practice. He explains that the majority of laws regarding the basis of Islamic finance come from interpretations made by jurists before the emergence of the modern financial system, and that the system is based largely on formalities and functionally irrelevant differences.

There are a number of bodies that oversee the system, interpret sharia, make recommendations, issue fatwas, and offer guidance. However, these institutions are young,

developing, and sometimes do not agree on interpretations and compliance. They are also international organizations and produce only guidelines, not binding laws (Robbins 2010). These bodies, while all aiming to create a more cohesive Islamic financial system, claim to serve slightly different purposes, leaving the absence of one cohesive, comprehensive authority. For example, the Accounting and Auditing Organization for Islamic Financial Institutions sets accounting, auditing, governance, ethics, and sharia standards for IFIs. The Islamic Financial Services Board likewise aims to set industry-wide standards, but also works towards enhancing the soundness and stability of IFIs. Outside of setting standards, institutions like the Islamic International Rating Agency provide quality and sharia compliance ratings for a variety of financial instruments and products. To address developing issues, the International Islamic Fiqh Academy studies contemporary problems in the financial industry and offers new solutions that comply with authentic interpretations of sharia law (Robbins 2010).

On an individual level, sharia boards are also responsible for reviewing the compliance of the IMFI's operations, products, and transactions. Sharia boards can become involved on levels ranging from working closely with management in the firm's operations to being consulted on a transaction-by-transaction basis. The board typically arrives at decisions by consensus. When the scholars reach consensus the board issues a fatwa (pronouncement) verifying that the transaction is compliant (Basu et al. 2009). The approval process varies among IMFIs and can include hiring an organization for sharia certification, government supervision, supervision by a local religious council or mosque committee, employing an external sharia board/advisor, and employing an internal sharia board/advisor (El-Zoghbi and Tarazi 2013). Both ordinary and microfinance institutions face a shortage of sharia scholars, who are few in number and stretched thin advising the growing number of IFIs worldwide (Basu et al. 2009).

3.4 Funding IMFIs

The funding structure of IMFIs has the potential to differ significantly from that of conventional MFIs. In addition to employing the typical mix of donations, income from assets, and returns on loans to finance their operations and financial products, IMFIs have the opportunity to draw on charitable resources unique to Islam such as zakat, sadaqa, and waqf.

Zakat is among the more prominent features of the Islamic economic system. It is the third pillar of Islam and is similar to alms. Muslims who are able to must pay zakat equivalent to 2.5% of their net worth after meeting their needs. It is most often given to the poor through a mosque or an Islamic NGO. Recipients are typically the poor, the needy, the administrators of zakat funds, recent or potential converts, those in need of being freed from bondage, overburdened debtors, and travellers returning home (though these interpretations are changing). A significant number of Ulama argue for opening up the interpretation of recipients. Even the Grand Mufti and Sheikhs from Al-Azhar, the premier center for Sunni learning in the Islamic world, have issued fatwas for opening the interpretation (Atia 2011). Zakat is important in Islamic society as it is intended for treating poverty and can be used as a tool for ensuring more equitable wealth distribution, achieving social stability, purifying wealth, and discouraging hoarding (Atia 2011). One prominent use of zakat in Islamic microfinance is for consumption purposes to avoid loan and asset diversion (Ahmed 2004). However, zakat can also be used to build assets and for other productive purposes that supplement IMFIs funds. These uses, with direct use for consumption, have the potential to decrease diversion and default and increase the performance of IMFIs (Ahmed 2007).

Sadaqa, or benevolence, is a broader form of Islamic charity, which includes, in addition to zakat, qard al-hassan (interest free loans) and sadaqa jariya (sustainable giving). Sadaqa is an

act of devotion that purifies the giver and his money, like zakat. Unlike zakat, sadaqa is not mandatory, but rather is a voluntary charity with the same social and economic aims as zakat, but without restrictions on recipients. In Islamic microfinance, it is used to fund microenterprises and finance the operations of the IMFI (Atia 2011).

Waqf is similar to an endowment and has several manifestations. In Islamic finance, money can be made into a waqf and used for interest-free loans to the beneficiaries or can be invested and its return given to the beneficiaries. A waqf typically involves an asset that has the feature of perpetuity. It can range from building a mosque or a home to digging a canal so that the gift continues to benefit people. The objective of a waqf can vary widely—providing religious services, working towards social-economic relief, education, science, or other objectives. One use could be establishing a nonprofit financial institution like an IMFI or qard al-hassan bank. The returns from the waqf can be further used to complement sadaqa to finance microenterprises (Ahmed 2007).

Habib Ahmed gives an example of how a waqf-based MFI is structured:

Table 2: *Balance Sheet of a Waqf-based Islamic MFI*

Assets	Liabilities
Cash (C)	Savings Deposits (D)
Assets (A)	Qard AlHassan Deposits (Q)
- Low-risk assets (F)	Waqf Certificates (S)
- Microfinancing (M)	Takaful Reserves (T)
-Loans- Qard AlHassan (Q)	Profit Equalizing Reserves (P)
- Investments (I)	Reserves / Economic Capital (V)
<i>[Murabah, ijarah, salam,</i>	Capital-waqf (W)
<i>istisna, mudarabah, musharakah]</i>	

Source: Ahmed (2007)

Ahmed (2007) describes the functioning of a waqf-based IMFI as follows: A cash endowment, the waqf, is the capital of the MFI and can generate more funds by issuing certificates. The IMFI brings in deposits taking the form mudarabah (passive partnership) through the provision of sharia-compliant savings. Since reserves are necessary to insure against

risk, the IMFI can offer takaful, a form of sharia-compliant insurance, to its borrowers, which builds reserves through collecting weekly or monthly insurance payments made by the beneficiaries. These takaful reserves would be used to help beneficiaries who are unable to make payments on time due to unexpected problems. A profit-equalizing reserve could be created to further reduce risk through taking a small share of profits during lucrative periods and later using these to increase payments made to savings account holders during slower periods. The IMFI would also build up a surplus reserve to cushion against shocks. In addition to the firm's microfinancing activities such as investments and qard al-hassan loans, the IMFI would generate revenue through low-risk, fixed-income assets. Deposits and waqf can be used to fund investments, whereas qard al-hassan loans are financed only by waqf funds. As the corpus of the waqf must remain in tact, careful risk management is essential. Takaful can cover some losses, but increasing reserves can reduce the IMFI's need to finance defaults with returns from the low-income assets, which should instead be used to maintain the waqf.

Ahmed (2007) summarizes that a large amount of the waqf can be used for microfinance if takaful reserves are high. While reserves accumulate, IMFIs can use the waqf to invest in low risk assets and move to using more of the waqf for microfinancing over time. To protect against risk, the IMFI uses takaful and profit equalization reserves.

3.5 Islamic Financial Products

IMFIs use a variety of contracts that allow them to provide financing through sharia-compliant alternatives to interest-bearing loans. The intention is for these products to be more equitable and less risky for the borrower than standard interest rates. The borrower is supposed to hold more

power than in conventional finance. For that reason, some scholars assume that this will lead to borrowers feeling a stronger obligation towards the terms of the loan and being more dedicated to repayment when their project earns profit (El-Komi, Mohamed, and Croson 2013).

3.5.1 Qard Al-Hassan

Qard al-hassan, which means benevolent loan, is simply a loan that does not involve interest, but may involve a fixed fee or markup for use of the funds (Robbins 2010). Qard al-hassan loans are the only permissible monetary loans and are traditionally distributed as charity, rather than as part of a business (El-Zoghbi and Tarazi 2013). IMFIs have begun to change this, bridging the tradition of qard al-hassan with modern microfinance (Atia 2011). They are one of the easiest options to administer, but do not always cover administrative costs and are usually forgiven in the case of default. As of 2013, qard al-hassan had the second largest outreach among Islamic microfinance products, reaching an estimated 191,000 clients (El-Zoghbi and Tarazi 2013).

3.5.2 Mudarabah

Mudarabah, best described as a passive partnership, is a profit sharing contract between an IFI or an investor and an entrepreneur. The parties determine a ratio of the profit and loss to be shared that is agreed upon when the contract is signed (Robbins 2010). In the agreement, one partner, the rab-al-mal, provides the capital, while the other, the mudarib, manages the investment (Hourani 2004). Ideally, if the rab-al-amal provides all of the capital, he usually bears all financial losses, whereas the mudarib bears the opportunity cost of his time and labor, unless the losses are due to the mudarib's negligence (Iqbal and Ariff 2011). Additionally, the mudarib can

buy out the rab-al-mal's investment (Hourani 2004). While this method fits the principles of Islamic finance well, it is not common in practice. Close monitoring is necessary for such an investment, which means it entails high costs that neither regular nor micro institutions are likely willing to bear. Savings products can also be in the form of mudarabah, with savers depositing money in the institution, which invests the money in sharia-compliant enterprises with which it shares profits and losses (El-Zoghbi and Tarazi 2013).

3.5.3 Musharakah

Musharakah, or joint venture financing, is an arrangement in which each partner in the agreement has equal authority over the venture, even when invested capital is not equal (Robbins 2010). It is similar to mudarabah, but both partners are entitled to be active participants in managing and endowing the venture or investment. Profits and losses are shared at an agreed upon ratio at the time the contract is signed. Profits and losses are usually shared taking into consideration the capital provided and the labor involved in management (Iqbal and Ariff 2011). Musharakah is not very common in practice for the same reasons as mudarabah.

Diminishing musharakah is a variation of musharakah in which the capital provider and the payee enter a musharakah agreement to own an asset, but the provider sells his investment to the payee at a predetermined price and time frame (Iqbal and Ariff 2011). It is most commonly used to finance high-value assets like homes or ventures (Sadique 2008). Partnership and participation in this form means that the bank must monitor the venture, though this can create costs that deter banks from engaging in this type of contract.

3.5.4 Murabahah

Murabahah has many variations and is the most widely used product in both normal and micro Islamic finance. In microfinance in particular, IMFIs lend approximately \$413 million through murabahah to an estimated 672,000 customers (El-Zoghbi and Tarazi 2013). At its core is an arrangement in which an IFI buys an asset for the beneficiary and sells it to him at a markup. The beneficiary can either make a single deferred payment or multiple deferred payments over time. The purchase, sale price, and markup are determined when the contract is signed at the original sale. Profit margins are seen as acceptable for IFIs because they are considered compensation for the time value of the money used to buy the asset (Robbins 2010). Rules regarding the value associated with the time, however, are ambiguous and leave the door open for excessive markups in the place of excessive interest rates in traditional finance. The mark-up differs from interest in name, but is functionally the same as a fixed interest loan. In theory, the IFI bears the risk of purchasing and owning the asset pending the client's purchase (Hourani 2004), but in practice the buyer is committed to the purchase prior to the bank's purchase of the asset, and the bank only owns the asset for a negligible amount of time. In microfinance, murabahah reduces the risk of moral hazard as an asset is purchased for the client rather than distributing monetary loans (Atia 2011). Although there is no legal limit on the size of markups, assuming IMFIs stay true to their social goals, the markup is expected to be fair.

A variation on mudarabah is tawarruq. Because the lease of a physical asset cannot support all endeavors, Islamic finance has created solutions like tawarruq. In its simplest form, tawarruq is an arrangement in which a company or individual buys a commodity from a bank or institution and then resells the commodity to a third party for liquid funds (Robbins 2010).

Tawarruq, however, has been widely criticized in terms of its sharia compliance since the assets are not actually held.

3.5.5 Ijarah

Ijarah, which means compensation or substitute, is most like a simple lease in traditional finance. It is a contract that involves the lease of an asset for an agreed-upon period in exchange for predetermined compensation and uses that capital to generate revenues (Robbins 2010). The lease is normally not for the entire useful life of the asset, but for a shorter, renewable period. The lessor is the owner of this capital, thus, in the ideal contract, bears the risk and responsibility of ownership, including upkeep of the asset (Iqbal and Ariff 2011). In practice, this is unlikely. The lender reserves the right to renegotiate the contract. The beneficiary, in traditional ijarah agreements, does not have the option to purchase the asset at the end of the leasing term because it is considered as excessive uncertainty (Hourani 2004). This, however, seems impractical, which is why there is ijarah wa iktina, a variation on traditional ijarah.

In ijarah wa iktina, the beneficiary leases the capital equipment at an agreed-upon rate as in ijarah, but because there is danger of misuse in short term leases, the lessee has the option at the signing of the contract to purchase the asset at market value at the end of the lease, with lease payments included as part of the price (Iqbal and Ariff 2011).

3.5.6 Salam

Salam, or a deferred contract, is a sales contract for which the price is paid in advance at the time the contract is signed against the delivery of a good or service at a future date. Both the price and

date must be defined explicitly in the contract. This is similar to conventional futures contracts, but is only applied to fungible commodities (Iqbal and Ariff 2011) and is often used to finance agriculture production (Hourani 2004).

3.5.7 Takaful

Takaful is an alternative to insurance and is carried out ideally on the tenets of shared responsibility, brotherhood, solidarity, and mutual security from risk (Iqbal and Ariff 2011). Insurance alongside microfinance has been growing in practice, thus an Islamic alternative is an important tool for a comprehensive and inclusive Islamic microfinance system. A contribution, or premium, is made by the participant and is put into two accounts: one for investment and another that is treated as a donation (Ma'sum Billah 2007). Generally, the idea is that beneficiaries pay into a mutual pool of funds that can be drawn upon in the future in case of a financial emergency, usually based on the share they commit. All of those paying in would be owners of the fund. This is in place of conventional insurance, in which the policyholder would pay a premium to a third party that could either make or lose money based on how many of their clients make claims, indicating uncertainty. The transaction in the takaful structure is supposedly free from uncertainty, unjust enrichment, and interest (Ma'sum Billah 2007). Ahmed (2007) argues that takaful in microfinance could be a form of insurance on repayment. A reserve would be created by small contributions from the borrowers and would be used to support them if they are unable to make a payment on time due to an unexpected problem.

3.6 Use of Products

The products most common in Islamic microfinance are murabahah, qard al-hassan, musharakah, and mudarabah. While a number of products not listed exist, the supply is concentrated in those three, and overwhelmingly in murabahah and qard al-hassan. [Figure 2](#) below shows the breakdown of portfolio by product type.

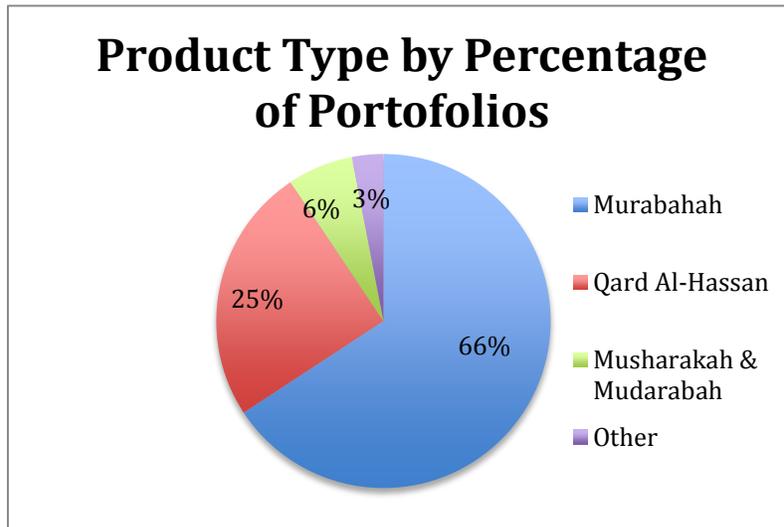


Figure 2: Portfolio by Type of Product.
Source: El-Zoghbi and Tarazi (2013)

3.7 Organizational Structures

Like conventional finance, the types of institutions offering sharia-compliant microfinance vary greatly. In Islamic microfinance, 77% of institutions are village or rural banks. These are organizations that are member-based, such as financial cooperatives or credit unions, and often rely on pooled savings as the primary source of funds. Within these organizations, members usually have a commonality like location. The benefit of membership lies in the distribution or use of profits directly for members. These types of institutions are highly common in Indonesia

and in areas where formal institutional registration would create excessive obstacles (Obaidullah and Khan 2008).

NGOs, a common form of organization in conventional microfinance, are the second most common form of MFIs. They typically pursue both a social objective and microfinance. Islamic NGOs also often rely on a donor base to operate. In addition to questions of financial sustainability, NGOs face criticism regarding their boards not representing shareholders with the money at stake and are limited in the products that they can offer since they face more restrictions, such as laws prohibiting non-bank institutions from collecting savings. Islamic NGOs also face pressure from some critics to strive for greater financial sustainability and pursue commercialization, which can lead to mission drift (Obaidullah and Khan 2008).

Engaging in financial inclusiveness is not limited to NGOs and community organizations. Obaidullah and Khan (2008) explain that commercial banks, especially those with social missions like Islamic banks, can greatly benefit the poor. As commercial banks have more resources, they can use their branch networks, wide variety of services, and funds to help improve systems and technical skills. Through mobilizing their resources and capitalizing on their capabilities, they have the potential to reach and positively impact those lacking access to modern financial products or training. Further, while commercial banks make up only 3% of MFIs, they represent 60% of clients served, showing that the outreach potential of commercial institutions is high (El-Zoghbi and Tarazi 2013). Although, as in conventional microfinance, commercialized Islamic microfinance banks typically serve the less poor.

Institution and Client Coverage

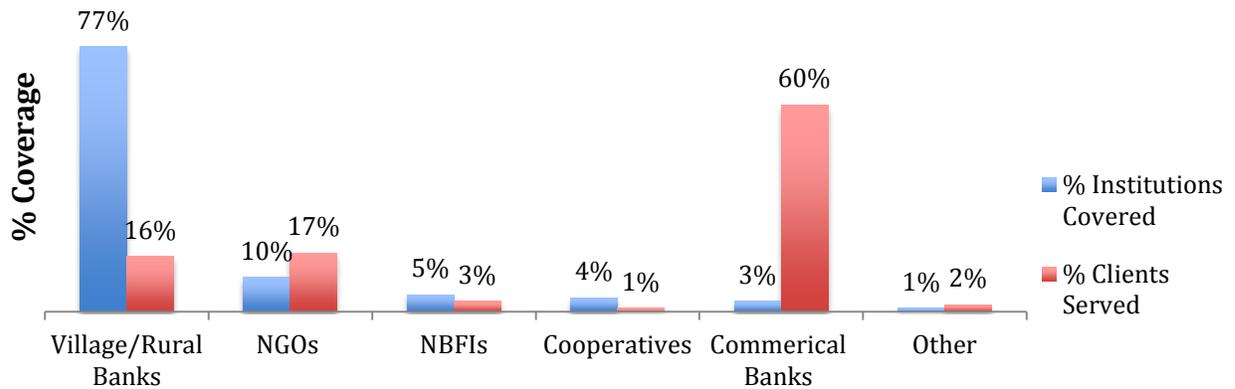


Figure 3: Institutions Offering Islamic Microfinance Products and Client Reach by Institution Type
Source: El-Zoghbi and Tarazi (2013)

3.8 Mitigating Risk

One of the features of both conventional and Islamic microfinance is correcting information asymmetries. Adverse selection and moral hazard, discussed previously, can be mitigated with interventions like requiring collateral or monitoring. However, when working with the poor, requiring collateral can be near impossible and monitoring accrues extra costs due to the large volume and small size of the loans.

In Islamic microfinance, groups are used to mitigate information asymmetries in a similar way to conventional microfinance, but with some important distinctions. The group structure with peer pressure allows the IMFI to use Islamic brotherhood along with the religious duty of debt repayment to strengthen the group relationship and ensure the payment of installments. These ethics underlying the religious structure of the organization are solidified through the educational component of the social development program that most IMFIs employ (Ahmed

2002). The Islamic approach has several additional benefits. For example, borrowers are often more comfortable with the provisions of the contract as they take place within a larger religious context. Borrowers also, in the spirit of comradeship in Islamic teachings, are often willing to help one another when a payment may be missed. Additionally, not paying back debt is considered sinful, which creates another motivation to repay (Ahmed 2002).

El-Komi and Croson (2013) conducted a study in which compliance is tested in profit and loss sharing (PLS) contracts used in some Islamic microfinance arrangements versus interest-based contracts used in conventional microfinance. They find that compliance rates are significantly higher for joint ventures (regardless of enforcement) and profit sharing contracts (with enforcement) than in interest-based contracts. They attribute this trend to increased feelings of obligation to comply with an equitable contract. PLS contracts, however, remain a large minority in Islamic microfinance, even though they represent the ideal contractual form. Despite this, a greater focus on these types of contracts could prove to be beneficial in terms of mitigating risk, if monitoring or other costs can be limited.

3.9 Sustainability

As with conventional microfinance, the question of sustainability is integral to the future of Islamic microfinance. The main problem is many IMFIs are funded by subsidies. Subsidies are important initially, but most microfinance scholars agree that firms should aim to pursue self-sufficiency. However, for IMFIs especially, the push for sustainability is weakened by the widespread provision of financial services for the poor being seen as an act of charity (El-Zoghbi and Tarazi 2013). In the case of IMFIs funded through waqf endowments, costs are already

lower by virtue of the charitable characteristics of the waqf whose providers do not expect returns (Ahmed 2007). The unique funding nature and the religious-based charitable character of IMFIs compared to conventional MFIs could make pursuing financial self-sufficiency in place of relying on subsidies and donations less of an issue for IMFIs. However, most conventional literature calls for self-sufficiency and El-Zoghbi and Tarazi (2013) suggest that more experimentation in methods of product delivery is necessary so that IMFIs can find better ways to reduce costs and improve financial self-sufficiency.

The nature of Islamic banks is another aspect of the IFS that could lead to increased sustainability, as they ideally have a social mission and could engage in microfinance if the situation is beneficial to both parties. Because of their scale, banks can provide services at lower operating costs than MFIs. They could also capitalize on their existing infrastructure to provide financial services to the poor without having the additional expenses of rent, utilities, and manpower if branches are already present in or near poor areas. Islamic banks, which have more liquidity than other financial institutions due to the shorter-term nature of most sharia-compliant financial market instruments, could use their extra funds relatively easily to engage in microfinance at little extra cost and more efficiently than IMFIs operating independently (Ahmed 2007).

3.10 Women and Islamic Microfinance

The conversation about women is inseparable from that of microfinance, and skeptics consider it a significant issue in the formation of a viable Islamic microfinance industry. IMFIs have the potential to benefit and empower Muslim women, and in gender-segregated societies, the need to

provide women with financial services is no less relevant. Despite working with women being complicated at times due to social codes, MFIs in Muslim countries have improved their outreach to women, who now comprise over 50% of customers on average (Siraj and Lim 2005). However, this average varies significantly by country and even with these gains, Abdelkader and Salem (2013) suggest that conventional MFIs are better at empowering women, though the sheer volume of borrowers that conventional MFIs reach may impact this.

Targeting women does not only have potential effects like female empowerment, but is also reflective of the proportion of the poor that women represent (Hailey 2009).² Karim, Tarazi, and Reille (2008) cite Islamic microfinance as having client bases that are 59% female on average, but this can reach as high as over 90% in Bangladesh or the West Bank and Gaza. MFIs, like conventional MFIs, choose to focus on women for a number of reasons, including elements of social pressure, risk, empowerment, and access to families. Women tend to be more susceptible to social pressure, thus the threat of social collateral is stronger. A number of studies also agree that women generally pick less risky investments than men. Empowerment, a theme common in the discussion on microfinance and women, is also seen as a benefit of engaging with women through Islamic microfinance, as it can give them financial authority that they often do not otherwise have. Benefiting the family unit is another reason targeting women is seen as beneficial because they are generally more concerned with the wellbeing of their children and often work from home. Working from home also makes women easier to monitor, as they are less mobile than their male counterparts (Hailey 2009).

Aspects of different Islamic societies can make it more difficult for microfinance to work with women. For example, in Saudi Arabia women cannot drive, greatly limiting their mobility.

² Roughly 70% of 1.3 billion people living on less than \$1 per day.

More broadly, in conservative societies, there can be large stigmas against women being alone with men outside of their families. These barriers could make it difficult for loans to be administered to women and for women to be employed to do the administration (Hailey 2009). This could call efficiency and empowerment into question, as male relatives may have to be present for transactions between the IMFI and the female borrower. Conservative social codes could also make running a business more difficult in general for women.

Hailey (2009) asks the question of whether MFIs should only work in places where women can sign their own contract, control their own loan, and run their own business, or rather if the goal of MFIs should be to improve the economic outlook wherever they operate. Even Grameen Bank in Bangladesh faced problems loaning to women in the beginning due to conservative communities having issues with granting women greater independence and allowing them to meet with officers alone. Over time, as the positive effects of microfinance were realized, these barriers were eroded, and Grameen now has a 97% female client base (Hailey 2009). It is hopeful that a similar trend could occur in other conservative areas, slowly working to give women more independence and freedom to pursue profitable projects. Despite the greater difficulty women face operating in conservative contexts, Costa, Makhoul, and Mazaud (2010) cite that approximately 86% of women engaged in Islamic microfinance in Egypt note a positive impact from microfinance in general and 45% report improvements in their life relating to education and economic possibilities since they began participating in microfinance.

Habib Ahmed (2002) explains his interpretation of an effective and efficient IMFI and how the question of women might be addressed in Islamic microfinance differently from conventional microfinance: the focus on empowering the family unit rather than women individually. MFIs target women because they believe that women make better clients, become

more empowered, and respect themselves more through financial liberation and independence. However, some studies have shown that there are instances where men either use their wives to obtain credit or end up controlling all or a portion of the funds they receive, while leaving the women responsible for repayment. This can create problems within the family and can undermine any empowerment that may have been achieved. Ahmed explains that, while IMFIs tend to work with women directly, the focus should be on the family. This alternative focus would be reflected in the contract, which both the woman and her husband sign and are jointly responsible for. Contact is maintained mostly with the women, as they are easier to work with and more able to attend weekly meetings. The women are also the primary participants in the social development program, a part of which teaches Islamic values and is seen as favorable by society because women impart those teachings on their children. The biggest advantage of the family unit approach is minimizing tensions regarding the loan within the family. Costa, Makhoul, and Mazaud (2010) explain that focusing on the family avoids disturbing social codes in patriarchal societies, which allows for greater outreach, although this explanation is controversial for skeptics who champion women's empowerment through microfinance. Regardless of the benefits of adherence to social convention, it could be the case that this structure still places most of the responsibility on the woman without giving her any additional freedom or independence.

3.11 Limitations of Islamic Finance and Microfinance

There are a number of problems that Islamic finance and microfinance face as they develop into larger and more global industries. First, Islamic finance has spread across the globe. Each

country has its own unique legal code and various religious sects have their own interpretations and rules that can change unexpectedly, contributing to confusion and instability in the system (Robbins 2010). Greater coordination through Islamic international organizations would mitigate inconsistencies and could offer recommendations for legal frameworks that would allow for greater policy unification. IMFIs also have a great need for improved networks to share resources for purposes such as discussing regulations, sharing information, and scaling training programs. There are several regional networks, but a major coordinating body to unify the sector, improve efficiency, and create regulations could be greatly beneficial.

Second, many Ulama serve on a number of boards and advise companies and governments while being auditors, consultants, and clients (Bianchi 2007), making conflicts of interest a compounded problem. Regulations on the number and variety of advising positions a single scholar may hold would reduce this problem. However, this could lead to further problems as there is a limited supply of scholars with the specialization necessary to serve on sharia boards. Therefore, an increase in scholars specialized in this field is necessary in order to implement regulations that reduce conflicts of interest without also constraining the ability of IFIs to fill their boards.

A third issue is that the sector heavily relies on murabahah, which has been subject to a great deal of criticism focusing on how the markup structure is essentially charging interest (El-Komi, Mohamed, and Croson 2013). Critics of the industry often argue that, in practice, Islamic finance is just the repackaging of conventional financial products that do not offer many real changes, and that clients can be dissatisfied by the lack of substantive differences.

Fourth, IFIs must adapt to challenges like integrating with the global financial system and penetrating markets with different interpretations of sharia law and conflicting cultural, political,

and economic conditions. For example, as Islamic banks seek to penetrate Western markets, they must deal with skepticism and current overblown fears of manipulation by terrorist groups (Robbins 2010).

The limited availability of funds presents a fifth issue for IMFIs, making growth and efficiency difficult to achieve. Funds available from governments can have restrictive conditions and other external funding sources may be given on or require interest, making them non-sharia compliant (Ahmed 2007). Although donations can mitigate the limited supply of funds, financial unsustainability due to reliance on charity is not necessarily good for the growth of the sector. According to Karim, Tarzai, and Reille (2008), firms should focus on becoming self-sufficient if Islamic microfinance is to be viable on a large scale.

Sixth, the costs associated with administering and monitoring many of the sharia-compliant products make financial sustainability difficult. For example, using sale-based, profit sharing, and partnership modes of financing decreases operational efficiency and sustainability because of the small scale of operations and the high cost of monitoring (Ahmed 2007). Products like *mudarabah* and *musharakah* require high amounts of reporting, monitoring, and transparency for the transactions to be completed fairly. So even though these modes are sharia-compliant, the opportunity cost makes them difficult to scale for efficiency (Ahmed 2002). These monitoring costs are among the reasons that profit sharing and partnership methods of financing have been employed substantially less than other methods.

Finally, there is a deficit in education and training among borrowers and officers, which can limit the growth of the firm. To be successful, the sector needs more resource centers and training programs in local languages (Obaidullah and Khan 2008).

The Islamic microfinance sector offers great potential for aiding the Muslim poor. To become a large-scale contender of conventional microfinance, more reforms must be made to create a comprehensive and efficient method of alleviating poverty (Obaidullah and Khan 2008). Despite its limitations, Islamic finance has been making impressive strides and shows potential for penetrating untapped markets. As this expansion continues, better networks and more uniform regulations will likely follow out of necessity and a greater number of scholars will emerge, which will decrease conflict of interest on sharia boards and provide greater expertise on the Islamic finance and microfinance sectors.

3.13 Achievements and Prospects

Islamic microfinance offers some benefits and advantages that conventional microfinance lacks. Social sanctions resulting from default are often not as extreme in Islamic microfinance as they can be in conventional microfinance. Due to aspects of risk and profit sharing (although PLS contracts account for less than 10% of the sector), investors and clients share the investment and the risk, so the agreement is attractive for both. This contributes to borrowers carrying less risk than in conventional microfinance. Under some contracts, the lending institution becomes a co-owner of the business, cultivating greater interest, a stake in its success, and allowing for the possibility of high returns if the investment is successful and does not have a decreasing contract or buyout mechanism (International 2012). However, these contracts are the minority. A greater focus on such contracts could create socially beneficial results, but as mentioned above, might be unrealistic due to their costs. The structure of Islamic finance also addresses one of the main concerns in conventional microfinance of exorbitant interest rates by forbidding interest,

although there still exists the opportunity for firms to effectively charge high rates through the markup.

Finally, Islamic microfinance mitigates two major issues in conventional microfinance relating to the use of funds. The use of zakat funds for consumption smoothing and the prevalence of IMFIs dealing in assets rather than money helps prevent loans and assets from being diverted for other purposes (Ahmed 2002). The risk of the user of the funds being different from the beneficiary can also be mitigated by the focus on the family unit. When firms expect family members to use the funds jointly for productive purposes, the problem is diminished since the relevant parties are liable to the contract.

Islamic microfinance presents great potential for addressing some of the problems that arise when expanding financial inclusion to poor or rural communities. With technical issues addressed, regulation improved, and cooperation expanded, Islamic microfinance can be a real contender of conventional microfinance in providing financial tools for the Muslim poor. It remains an important question, however, to determine if Islamic microfinance can achieve the outreach and financial sustainability requisite for being a viable industry in the long run.

4.0 Previous Analyses on Financial Sustainability and Outreach

While many studies have been conducted evaluating the effect of different variables on the outreach and financial sustainability of conventional MFIs, only two previous studies have been found that evaluate the outreach or financial sustainability of Islamic MFIs versus conventional MFIs.

Habib Ahmed (2002) critically analyzes conventional MFIs and presents IMFIs as a viable alternative both theoretically and empirically through a study on three IMFIs in Bangladesh. His findings are based on information collected in a field survey and interviews with institution officials. Ahmed examines financial profitability and efficiency by comparing profitability indicators such as total profit (income-expenses) and operating income (operating income-expenses) and efficiency indicators such as return on assets (ROA) (net income/total assets), net interest margin (NIM) [(investment returns-interest expenses)/average earning assets], operating costs as a percentage of loan disbursed (OCL), and beneficiaries to employee ratio (BER). ROA is used to indicate how well the institution's assets are used to generate income. NIM measures the efficiency of the intermediation of funds from different sources to users. OCL is an indicator of operating efficiency and should be smaller for IMFIs, as they focus on small loan sizes/funds. Finally, BER measures the efficiency of employees in reaching the beneficiaries.

In assessing profitability, Ahmed (2002) concludes that IMFIs have the ability to be sufficiently profitable. In his assessment of their efficiency, Ahmed compares the results for each

bank with Grameen Bank, as it is well established and is the largest MFI in Bangladesh. Overall, the three IMFIs compare relatively well to Grameen Bank. Ahmed finds comparable or better results for the efficient generation and use of funds, but poorer results for efficiently reaching borrowers. Ahmed concludes that the three Bangladeshi IMFIs in his study perform better than Grameen Bank overall. He argues that this could be due to the benefits of social capital that come from Islamic values and principles: employees have a religious incentive to work to improve the lives of the poor, Islamic teachings increase solidarity among beneficiaries and improve social collateral, and beneficiaries consider repayment of a debt a religious obligation under Islam. Thus, Ahmed suggests that, at least in Bangladesh, Islamic microfinance is a viable alternative for conventional microfinance.

Abdelkader and Salem (2013) test the financial performance and outreach of IMFIs and conventional MFIs in MENA countries. They use a non-parametric data envelopment analysis (DEA) to estimate the efficiency of microfinance firms in the MENA region. The study analyzes 65 Arab MFIs in Sudan, Palestine, Yemen, Iraq, Jordan, Lebanon, Syria, Egypt, Morocco, and Tunisia from 2005-2010. They use 3 inputs and 2 outputs, similar to other DEA model analyses of MFIs. Inputs are resources used by the unit to produce its output, which are the measures of efficiency. In this study, they use total assets, number of employees, and operating expenses as inputs and financial revenue and active borrowers*% female borrowers as outputs. Financial revenue measures financial performance, while active borrowers*% female borrowers measures the breadth and depth of outreach.

The study shows that conventional firms employ 3 times as many people and have five times as many female clients as Islamic firms. They argue that this suggests that conventional firms better achieve the empowerment of women. However, this could be unclear due to the

potential focus on family making it unclear how the loan is classified and who is benefiting most from the loan. There is also the unresolved argument on whether reaching women is even a true indicator of actual empowerment. The estimators indicate that IMFIs were more efficient than conventional MFIs from 2005-2007, but conventional MFIs performed better than IMFIs from 2007-2011. The authors conduct a hypothesis test to analyze whether the efficiencies of the groups are identical and conclude that they are, meaning that neither conventional nor Islamic firms perform better. They determine that, based on a non-parametric DEA model, there is not a statistical difference between the efficiency of Islamic and conventional MFIs and that religion, or the use of sharia-compliant products, does not affect the efficiency of an MFI in the MENA region. Therefore, they suggest that Islamic microfinance could be a viable alternative to conventional microfinance in the MENA region.

5.0 Data and Methodology

5.1 Overview of the Empirical Model

This study analyzes the outreach and financial sustainability of Islamic and conventional microfinance firms in the MENA region following a method similar to that of Cull, Demirgüç-Kunt, and Morduch (2006), which analyses the financial performance and outreach of MFIs globally. This study follows their method in using cross-country OLS regressions to determine the effects of the independent variable on the same financial sustainability and outreach indicators, but analyzes different independent variables, focusing instead on the impact of being an Islamic firm on the indicators, and employs a time series element as well.

5.2 Data and Sample

The data on MFIs used in this study are from the Microfinance Information Exchange (the MIX). The MIX is the leading source of objective, qualified performance data on microfinance firms. Firms for this study are selected based on the quality and extent of their data between the years of 2010-2013. One potential complication about data from the MIX is that generally only top firms are willing to provide their data, so the dataset may only contain institutions committed to financial sustainability and that are willing to comply with the MIX's reporting standards. However, even though the firms are supposed to comply with certain standards to be listed on

the MIX, data is self-reported and financial data is often unreliable coming out of the Middle East and North Africa. This could therefore pose a potential complication in terms of accuracy.

In this study, firms are selected from Egypt, Iraq, Jordan, Lebanon, Palestine, Syria, and Yemen with the condition that they use sufficient data for one or more independent indicators in one or more of the years 2010-2013. The dataset includes 11 firms from Egypt (20.37%), 8 from Iraq (14.81%), 8 from Jordan (14.81%), 6 from Lebanon (11.11%), 9 from Palestine (16.67%), 3 from Syria (5.56%), and 9 from Yemen (16.67%). The firms represent a relatively even spread across MENA countries with the exception of Egypt, which accounts for slightly more MFIs, and Syria, which accounts for slightly fewer. 17 IMFIs and 37 conventional MFIs make up the 54 total firms analyzed in this study. Islamic firms are less common than conventional firms, so the unequal representation is expected. As any complete set of data from any year in the time period is used as a sample, many firms are represented over 2-3 years as different samples, resulting in 146 total samples. However, not all of these have the requisite information to be included in all of the regressions, so the sample size varies across different regressions.

As presented in [table 3](#), the firms represented in this study comprise 37 NGOs (68.5%), 6 NBFIs (11.11%), 7 banks (12.96 %), and 4 “other” types of institutions (7.41%). In the breakdown of Islamic firms, 11 are NGOs (64.71%), 3 are NBFIs (17.65%), 3 are banks (17.65% of Islamic firms), and 1 is an “other” type of institution (5.88%). Among the conventional firms, 26 are NGOs (70.27%), 3 are NBFIs (8.11% of conventional firms), 5 are banks (13.51%), and 3 are “other” types of institutions (8.11%). NGOs make up the majority of both Islamic and conventional firms in this study, followed by banks, NBFIs, and the “other” classification, respectively.

Table 3: All Firms by Structure

Overall Structures of MFIs	
Conventional NGO	26
Islamic NGO	11
Conventional NBFI	3
Islamic NBFI	3
Conventional Bank	5
Islamic Bank	2
Other	3
Islamic Other	1
Total	54

Source: Author's calculations based on data from the Microfinance Information Exchange (MIX)

5.3 Variables

5.3.1 Dependent Variables

Following the method used in Cull, Demirgüç-Kunt, and Morduch (2006), the key dependent variables for financial sustainability are financial self-sufficiency (FSS) and return on assets (ROA) (explanations of variables and summary statistics can be found in [table 4](#)). FSS measures the ability to generate sufficient revenue to cover costs, indicated as being able to do so by a value above 1. Higher values for FSS are associated with improved financial sustainability. ROA is the ratio that indicates the profit the MFI earns as a percentage of its overall resources. Higher values for ROA are also associated with improved financial sustainability.

Also following Cull, Demirgüç-Kunt, and Morduch (2006), the dependent variables for outreach are average balance per borrower (ABB)/GNI per capita and the share of loans extended to women (explanations of variables and summary statistics can be found in [table 4](#)). ABB/GNI per capita is a measure of loan size and is used as an indicator for outreach because smaller loan sizes typically indicate better outreach to poor borrowers. Therefore lower values of ABB/GNI per capita are associated with better outreach. The average loan size is divided by GNI per capita to normalize the loan size so that it is adjusted for the average wealth of the country. A slight problem could surface from this indicator because it does not address inequality within countries, but in a similarly structured study, Cull, Demirgüç-Kunt, and Morduch (2006) find that the results for ABB/GNI per capita are comparable to those for ABB/GNI per capita of the poorest 20%, which accounts for inequality. The share of loans extended to women is used as an indicator for outreach because women are generally poorer clients, and most literature cites an increase in the percentage of female clients as a positive indicator of outreach and social benefit. Therefore, higher percentages of female borrowers are associated with better outreach.

5.3.2 Independent Variables

A number of qualitative and quantitative independent variables (explanations of variables and summary statistics can be found in [table 4](#)) are used in the regressions that account for the sharia-compliance of the firm, profitability, institutional structure, interest rate (or effective interest rate), the firm's age, size and costs, lending mechanism, how many loans different staff members are responsible for, the share of women that make up the firm's clients, and the country that the firm is located in.

FSS is also used as an independent variable in the outreach regressions because the profitability of the firm could impact its ability to reach poor customers and can indicate worse outreach if higher profitability is associated with larger loans. Therefore, it is expected that higher values of FSS will have a positive impact on ABB/GNI per capita, indicating larger loans and poorer outreach measures. It is not expected that the value of FSS will have a significant impact on the percentage of borrowers who are female. FSS is chosen as the measure of profitability over ROA because it includes more inputs and outputs and is a stronger indicator of profitability and financial soundness.

Percent female borrowers is also used as a dependent variable in the financial sustainability models because women often have a higher repayment rate than men, which may affect the profitability of the firm. Therefore, it is expected that higher percentages of borrowers who are female will have a positive impact on both FSS and ROA.

The variable Islamic is the indicator for sharia compliance and is a binary variable for which a value of 1 indicates that the firm is sharia-compliant. A value of 0 indicates that the firm lends through conventional methods. Conventional firm is the omitted variable for this designation, so the coefficient on the Islamic variable will represent the effect of sharia-compliance relative to ordinary methods of microfinance. This variable is the primary consideration for this study and is expected to be insignificant for all dependent variables in both financial sustainability and outreach models, which would indicate that IMFIs do not perform differently than conventional MFIs.

The variable age is a measure of how long the firm has been operating. It is expected that older firms will be more financially sustainable than younger firms. An increase in the age value, therefore, should have a positive impact on both financial sustainability indicators. Regarding the

outreach indicators, the MFI's age could be associated in two ways: an increase in age might improve outreach as the firm has better resources and methods to reach poorer borrowers, resulting in a negative association with loan size, or an increase in age could coincide with mission drift and be positively associated with larger loans. This study will not take a particular expectation with how the age of the MFI will impact outreach, but will include the variable as a point of interest to see if one effect outweighs the other or if it proves to be insignificant. The age variable is the logged value of the firm's age in years to control for a wide range of age values.

The real yield is the real yield on the gross loan portfolio, which is a measure of interest (or what would effectively be interest in Islamic finance). The squared real yield accounts for the potential nonlinear effect of the interest rate on financial sustainability and outreach indicators. The indicator of interest is expected to be nonlinear and have an initial positive effect on both financial sustainability indicators and then eventually take on a negative effect. The real yield and squared real yield are not expected to have a significant impact on the percentage of borrowers who are female. Higher values of real yield and squared real yield combined are expected to be associated with smaller values ABB/GNI per capita, as firms often charge higher rates on smaller loans.

The effect that being a sharia-compliant institution has on the real yield and squared real yield's effects on the dependent variables is accounted for by the interaction of the Islamic variable with both the real yield and squared real yield variables. These interactions derive the more specific effects of being an Islamic MFI. Specially, these coefficients will indicate the difference between the effects of the interest rate that the real yield variables account for and the effects of sharia-compliant methods of financing that do not require a formal interest rate. The

effect of being Islamic on the real yield variables' effect on the financial sustainability indicators is expected to be insignificant.

The institution variables are binary variables that account for whether the MFI is structured as a bank, NBF, NGO, or an "other" institution. These variables account for the possibility that the institutional structure of the MFI could have a significant impact on the outcomes for financial sustainability and outreach. Each institutional structure is represented by a binary variable with a value of 1 indicating that that is the structure of the firm and a value of 0 indicating that the firm has a different structure. The variable bank is the omitted variable. Banks are for-profit institutions, so it is expected that they have a greater positive impact on financial sustainability than the other structures. Being more commonly for-profit, they would also likely have an association with larger loan sizes compared to the other institutions since small loans are riskier and more expensive to service, indicating poorer outreach. The coefficients of the institution types indicate how that institution type compares relative to banks. NBFs are generally structurally similar to banks, but may not operate as commercially and have different requirements and characteristics depending on each country's laws. For these reasons, it is expected that they will perform slightly worse than banks in terms of financial sustainability and should therefore have a negative impact on the financial sustainability indicators. Similarly it is expected that they should perform better than banks in terms of outreach to poor borrowers. Therefore, being a NBF should have a positive effect on the percentage of borrowers who are female and a negative impact on ABB/GNI per capita. NGOs are usually non-profit MFIs and are commonly associated with better outreach performance and poorer financial performance than banks. Therefore it is expected that being a NGO will have a negative impact on both indicators of financial sustainability, a positive impact on the percentage of borrowers who are

female, and a negative impact on the ABB/GNI per capita. The “other” variable indicates that the firm is not a bank, NBF, or NGO and might have a unique structure or classification in the host-country’s legal system. Because of that ambiguity, this study takes no specific expectation with how being an “other” MFI will impact the financial sustainability and outreach indicators.

The effect that being an Islamic MFI has on the institution type’s effect on the dependent variables is accounted for by the interaction of being Islamic with the NGO and NBF variables. The effect of being an IMF on the effect of being an “other” institution cannot be included because of collinearity. These interactions indicate whether being sharia-compliant affects the dependent variables differently across the various institution types and are not expected to be statistically significant for any of the indicators of financial sustainability or outreach.

The lending mechanism is accounted for by the solidarity variable. This indicates the percentage of loans in the MFI’s portfolio that are administered through solidarity groups. The solidarity variable will indicate the effect on the dependent variable relative to individual loans. Solidarity loans are commonly associated with poorer communities and smaller loans, so a negative impact on the ABB/GNI is expected. Group solidarity loans are also often associated with groups of poor, rural women, so a positive association with the female indicator is expected. Solidarity loans are expected to have a positive impact on measures of financial sustainability because, despite being typically associated with riskier groups and institutions like NGOs, lending through this method is expected to increase repayment rates, which would have a positive effect on financial sustainability.

The rural variable indicates the percentage of the firm’s clients that are located in rural areas. Greater outreach is generally associated with reaching rural, poorer areas, so it is expected

that a greater percentage of rural borrowers vis-à-vis urban borrowers would have a negative effect on loan size and a positive effect on the percentage of borrowers who are female.

The size of the firm is accounted for through the size of its gross loan portfolio (GLP). The log of the GLP is used to account for the wide range of values across MFIs. The expectation is that larger firms can reach more borrowers, thus the effect of the firm size on outreach may be negative for ABB/GNI per capita. It is not expected that the firm size will have a significant impact on the percentage of borrowers who are female. Since larger firms have more borrowers, the effect of the associated risk of any one borrower is reduced. This diversification of borrowers is expected to lead to higher revenues and have a positive impact on financial sustainability.

The costs associated with servicing loans are accounted for by the cost per loan (CPL) variable. The higher the CPL, the less profitable and financially sustainable we would expect the firm to be, therefore an increase in the CPL is expected to have a negative impact on the FSS and ROA. A higher ratio, however, could be associated with greater outreach because the loans of rural and poorer clients are more expensive to monitor and service. There is not expected to be a significant impact of the CPL on the percentage of borrowers who are female.

The variable measuring the average number of loans each staff member needs to service is loans per staff member (LPSM). The higher this ratio is, the less expensive administrative costs are expected to be, thus is expected to result in a positive effect on financial sustainability. A higher value of LPSM is expected to have a negative impact on the outreach, as each staff member would have less time to administer the smaller, more time consuming loans associated with better outreach, though it might indicate greater number of clients reached. Therefore it is expected that an increase in the LPSM will have a positive impact on the ABB/GNI per capita,

indicating larger loan sizes. The LPSM is not expected to have a significant impact on the percentage of borrowers who are female.

The Loan Loss Rate (LLR) is the value of loans written off (less those recovered) as a percentage of the gross loan portfolio. A higher LLR is expected to negatively impact the financial sustainability indicators and is not expected to have a significant impact on the percentage of borrowers who are female.

The Donations variable is the ratio of funds donated to the firm divided by assets to normalize the value of donations across firms of different sizes. A high value of donations is expected to negatively impact both measures of financial sustainability. Larger donation sizes are also expected to have a positive impact on measures of outreach, so it is expected that increases in the donation sizes will have a positive effect on the percentage of borrowers who are female and a negative impact on the ABB/GNI per capita.

The model controls for firms being located in different countries by including binary variables for Iraq, Jordan, Lebanon, Palestine, Syria, and Yemen. Egypt is the omitted variable, so the coefficients on each country will indicate the effect that that country's location has on financial sustainability and outreach relative to MFIs in Egypt. This study does not take a specific expectation regarding how the MFI's location will impact the indicators of financial sustainability and outreach, but includes the countries to control for varying situations and factors across countries.

Table 4: Variable Descriptions & Summary Statistics

Variable Name	Definition	Mean (std. dev.)	Min	Max
Financial self-sufficiency (FSS)	Adjusted operating revenue / (Financial expense + Loan-loss provision expense + Operating expense + Expense adjustments)	1.421 (0.636)	-0.433	4.3443
Return on assets (ROA)	(Net adjusted operating income – taxes) / Average Assets	0.043 (0.132)	-0.880	0.2614
Percent female (Female)	Number of female clients / Total number of clients	0.560 (0.300)	0	1
Average balance per borrower / GNI per capita (ABBGNI)	(Gross loan portfolio / number of borrowers) / GNI per capita	2.073 (18.800)	0.049	216.940
Islamic	1 = Islamic	0.295 (0.457)	0	1
Age (LogAge)	Log(age)	2.326 (0.707)	0	4.143
Real yield (RealYield)	Cash financial revenue from loan portfolio / Average gross loan portfolio	0.204 (0.086)	-0.038	0.439
Real yield * Islamic (RYIslamic)	(Cash financial revenue from loan portfolio / Average gross loan portfolio) x Islamic	0.052 (0.091)	0	0.341
Squared real yield (Yieldsq)	(Cash financial revenue from loan portfolio / Average gross loan portfolio) ²	0.049 (0.038)	0	0.193
Squared real yield * Islamic (RY2Islamic)	(Cash financial revenue from loan portfolio / Average gross loan portfolio) ² x Islamic	0.011 (0.02)	0	0.116
NGO	NGO = 1	0.658 (0.476)	0	1
NGO * Islamic (IsNGO)	NGO x Islamic	0.179 (0.385)	0	1
NBFI	NBFI = 1	0.185 (0.390)	0	1

NBFI * Islamic (IsNBFI)	NBFI x Islamic	0.055 (0.228)	0	1
Other	Other = 1	0.082 (0.276)	0	1
Solidarity	Number of solidarity loans / Total number of loans	0.303 (0.350)	0	1
Rural	Number of loans to rural residents / Total number of loans	0.359 (0.304)	0	1
Gross loan portfolio (LogGLP)	Log (gross loan portfolios)	15.945 (1.242)	12.422	18.323
Cost per loan (CPL)	Total cost of servicing loans / Number of loans	170.670 (196.183)	0.737	1134.019
Loan loss rate (LLR)	(Value of write-offs - value of loans recovered) / average gross loan portfolio	0.0167 (0.139)	-0.065	1.565
Donations	Value of donations / Value of assets	0.042 (0.133)	0	1.261
Iraq	Iraq = 1	0.144 (0.352)	0	1
Jordan	Jordan = 1	0.185 (0.390)	0	1
Lebanon	Lebanon = 1	0.103 (0.305)	0	1
Palestine	Palestine = 1	0.164 (0.372)	0	1
Syria	Syria = 1	0.055 (0.228)	0	1
Yemen	Yemen = 1	0.116 (0.322)	0	1

Source: Author's calculations based on data from the Microfinance Information Exchange (MIX)

6.0 Results and Discussion

6.1 Financial Sustainability Models

As mentioned before, the dependent variables used to indicate financial sustainability are financial self-sufficiency and return on assets. Higher values of both FSS and ROA are indicative of better financial sustainability. Twenty four independent variables are included that account for the effects of the interest rate (or markup), the firm's age, its institutional structure, the types of loans it gives, its size, the cost of loaning, donations, the spread of loans over staff, the number of defaulted loans, the proportion of borrowers that are female, and the firm's host country. In addition to these categories, variables for the interaction between the Islamic character of the firm and both the firm's interest rate and institutional structure are included to analyze more precisely how being sharia-compliant affects financial sustainability. The coefficients for the Islamic variable, the institutional structure, the interactions between the Islamic variable and institutional structure, and the interactions between the Islamic variable and the real yield indicators represent the effect on FSS and ROA relative to a conventional, Egyptian MFI structured as a bank. The equations for FSS ([equation 1](#)) and ROA ([equation 2](#)) for the OLS regressions follow:

$$\text{Equation 1. } FSS = \beta_0 + \beta_1\text{Islamic} + \beta_2\text{RealYield} + \beta_3\text{RYIslamic} + \beta_4\text{Yieldsq} + \beta_5\text{RY2Islamic} + \beta_6\text{LogAge} + \beta_7\text{NBFI} + \beta_8\text{IsNBFI} + \beta_9\text{NGO} + \beta_{10}\text{IsNGO} + \beta_{11}\text{Other} + \beta_{12}\text{Solidarity} + \beta_{13}\text{LogGLP} + \beta_{14}\text{CPL} + \beta_{15}\text{Donations} + \beta_{16}\text{LPSM} + \beta_{17}\text{LLR} + \beta_{18}\text{Female} + \beta_{19}\text{Iraq} + \beta_{20}\text{Jordan} + \beta_{21}\text{Lebanon} + \beta_{22}\text{Palestine} + \beta_{23}\text{Syria} + \beta_{24}\text{Yemen}$$

$$\text{Equation 2. } ROA = \beta_0 + \beta_1\text{Islamic} + \beta_2\text{RealYield} + \beta_3\text{RYIslamic} + \beta_4\text{Yieldsq} + \beta_5\text{RY2Islamic} + \beta_6\text{LogAge} + \beta_7\text{NBFI} + \beta_8\text{IsNBFI} + \beta_9\text{NGO} + \beta_{10}\text{IsNGO} + \beta_{11}\text{Other} + \beta_{12}\text{Solidarity} + \beta_{13}\text{LogGLP} + \beta_{14}\text{CPL} + \beta_{15}\text{Donations} + \beta_{16}\text{LPSM} + \beta_{17}\text{LLR} + \beta_{18}\text{Female} + \beta_{19}\text{Iraq} + \beta_{20}\text{Jordan} + \beta_{21}\text{Lebanon} + \beta_{22}\text{Palestine} + \beta_{23}\text{Syria} + \beta_{24}\text{Yemen}$$

6.1.1 Regression Analysis for FSS and ROA

Overall, the model produces a higher R-squared value when testing the effects of the independent variables on ROA, meaning that this model indicates the variables account for a higher percentage of the variation in ROA than they do for FSS (83.37% versus 78.06%, respectively). A summary of the regression output can be seen in [table 5](#) for FSS and [table 6](#) for ROA.

6.1.1.1 Significance of Variables in the FSS Model

Seven variables significantly and positively affect the financial self-sufficiency of the MFI. Following expectations, increases in the MFI's age and LPSM have positive impacts on the FSS. However contrary to expectations, being an Islamic NBFI, increases in the LLR, and the interaction between increases in real yield and being an Islamic MFI have positive effects on the

financial self-sufficiency of the firm. Being located in Iraq also has a positive effect on FSS. The positive impacts of these variables on FSS indicate they have a positive impact on the financial sustainability in this model.

Ten variables have significant and negative effects on the financial self-sufficiency of the MFI. Following expectations, being a NBFi or NGO, and increases in the CPL and the percentage of the firm's revenues that comes from donations have negative impacts on the MFI's financial self-sufficiency. Contrary to expectations, however, being Islamic, the interaction between the squared real yield and Islamic, and increases in the log of the GLP and percentage of borrowers who are female also negatively impact the FSS. Being an "other firm" and being located in Syria are final factors that resulted in a statistically significant negative impact on the MFI's FSS. The negative impact of these variables on FSS indicates that they have a negative impact on financial sustainability in this model.

Following expectations, the effect of being Islamic on the FSS of a NGO is not significant. The other variables that have an insignificant impact on the FSS of the MFI are the real yield, the squared real yield, the percentage of loans that are solidarity loans, and being located in Jordan, Lebanon, Palestine, and Yemen.

Table 5: Financial Self-Sufficiency Regressions

Variable Name	Expected Sign	Coefficients
Islamic	ns	-2.227** (0.794)
RealYield	+	1.667 (2.271)
RYIslamic	ns	18.706 *** (6.294)
Yieldsq	-	-1.497 (4.400)
RY2Islamic	ns	-44.011*** (15.702)
LogAge	+	0.166* (0.096)
NBFI	-	-1.791*** (0.580)
IsNBFI	ns	1.246*** (0.423)
NGO	-	-1.513** (0 .594)
IsNGO	ns	0.295 (0 .445)
Other		-2.045*** (0.626)
Solidarity	+	0.035 (0.239)
LogGLP	+	-0.095* (0.053)
CPL	-	-0.002** (0)
Donations	-	-1.277** (0.583)

LPSM	+	0.002*** (0.001)
LLR	-	1.08** (0.533)
Female	+	-0.9572*** (0.340)
Iraq		0.675** (0.263)
Jordan		0.153 (0.199)
Lebanon		-0.022 (0.223)
Palestine		0.263 (0.203)
Syria		-0.844*** (0.294)
Yemen		-0.080 (0.269)
Constant		4.166*** (1.212)
Observations		79
R-squared		0.7806

*= significant at 10%, ** = significant at 5%

***=significant at 1%

+ = positive impact on dependent variable

- = negative impact on dependent variable

ns = not significant

blank = no strong expectation

Source = Author's calculations based on data from the
Microfinance Information Exchange (MIX)

6.1.1.2 Analyzing the Islamic Variable in the FSS Model

As mentioned above, the binary variable indicating that a firm is Islamic is significant in the FSS model. The coefficient ($\beta_1 = -2.227$) is negative for this variable, meaning that being an IMFI will decrease the FSS ratio. Specifically, being an IMFI structured as a bank has a negative effect on financial self-sufficiency.

The coefficients β_2 , β_3 , β_4 , and β_5 measure the effects of real yield (which reflects the interest rate or markup) and being Islamic on the effects of real yield on the FSS. The effect of the real yield on the FSS (β_2) and the effect of squared real yield on the FSS (β_4) are not statistically significant from zero, so cannot be said to impact the FSS according to this model. The effect of being an IMFI on the real yield's effect on FSS ($\beta_3 = 18.706$) is positive and significant, while the effect of being an IMFI on the squared real yield's effect on FSS ($\beta_5 = -44.011$) is negative and significant. This means the overall effect of being an IMFI structured as a bank on the FSS is $\beta_1 + \beta_3(\text{RealYield}) + \beta_5(\text{Yieldsq})$. This will produce an overall negative effect of being an IMFI structured as a bank on FSS, indicating that IMFIs structured as banks do not achieve financial self-sufficiency as well as conventional MFIs structured as banks.

The coefficients β_7 and β_8 measure the effect of being a NBFIs on FSS and the effect of being Islamic on the FSS of a NBFIs, respectively. The effect of being a conventional NBFIs on FSS ($\beta_7 = -1.791$) is negative and significant, while the effect of being an IMFI on the FSS of a conventional NBFIs ($\beta_8 = 1.246$) is positive and significant. Other things equal, the gross effect of being an Islamic NBFIs will be $\beta_1 + \beta_7 + \beta_8$. This produces an overall decrease in FSS for both conventional NBFIs (β_7) and Islamic NBFIs ($\beta_1 + \beta_7 + \beta_8$). The negative effect of the coefficients is larger for Islamic NBFIs than conventional NBFIs, suggesting Islamic NBFIs do worse overall in financial self-sufficiency than conventional NBFIs. When the effects of being an Islamic firm

on the real yield are considered $[\beta_3 (\text{RealYield}) + \beta_5(\text{Yieldsq})]$ with these findings, the overall effect remains negative on FSS for all values of real yield.

The coefficients β_9 and β_{10} measure the effect of being a NGO on FSS and the effect of being Islamic on the FSS of a NGO, respectively. The effect of being a conventional NGO on FSS ($\beta_9 = -1.513$) is negative and significant, while the effect of being an IMFI on the FSS of a NGO (β_{10}) is not statistically significant. This means the overall effect of being an Islamic NGO on the FSS is $\beta_1 + \beta_9$, which produces an overall negative effect on the FSS. Both Islamic and conventional NGOs negatively impact FSS, with Islamic NGOs performing worse than conventional NGOs. When the effects of being an Islamic firm on the real yield are considered $[\beta_3 (\text{RealYield}) + \beta_5(\text{Yieldsq})]$ with these findings, the overall effect remains negative on FSS for all values of real yield.

This model indicates that for all institutional structures and values of real yield, Islamic microfinance firms have lower FSS values than their conventional counterparts, indicating that they are less financially self-sufficient. However, the mean of FSS ratios for IMFIs in this study is 1.602 and the median value is 1.2422, indicating that, at least for the firms in this dataset, IMFIs are still reaching financial self-sufficiency on average, just not as well as conventional firms. This is further supported by the spread of the data: at the 10th percentile, the FSS value is 0.9957, and at the 25th percentile it is at 1.0541, indicating that 90% of the MFIs in this study are at least close to covering their costs and 75% are bringing in revenues that exceed their costs. In fact, only 4 Islamic firms in the sample are not achieving sufficient FSS scores. While the significant impact was unexpected and contradictory to the findings of Abdelkader and Salem (2013), which cite no significant difference in financial efficiency, this impact could possibly be attributed to factors such as different lending mechanisms or social services indicative of IMFIs

that are more expensive, resulting in higher costs and lower financial self-sufficiency, or to a difference in variables and methodology between this study and previous studies from which expectations were drawn.

6.1.1.3 Significance of Variables in the ROA Model

The only variable that significantly and positively affects the ROA in this model is the loans per staff member, which follows the original expectations. This indicates that an increase in the number of loans per staff member will result in a higher ROA, which is associated with better financial sustainability.

Three variables significantly and negatively impact the ROA. Following expectations, an increase in the percentage of a firm's revenues that comes from donations has a negative impact on the MFI's ROA. Contrary to expectations, an increase in the percentage of borrowers who are female has a negative and significant impact on ROA. Finally, being located in Syria also has a negative impact on the ROA. The negative impact of these variables on the ROA indicates that they have a negative effect on the financial sustainability of MFIs in this model.

Twenty variables in this regression are statistically insignificant and do not have an impact on the ROA of the firm. Following expectations, being an Islamic MFI, the effect of being an Islamic MFI on both NGOs and NBFIs, and the effect of being an Islamic firm on the real yield and squared real yield are all insignificant in affecting the ROA. Contrary to expectations, the real yield, the squared real yield, the MFI's age, being a NBFi or a NGO, the percentage of loans offered as solidarity loans, the log of the GLP, and the LLR also are all statistically insignificant. Finally, being an "other" firm and being located in Iraq, Jordan,

Lebanon, Palestine, or Yemen likewise do not have a significant impact on the ROA in this study.

Table 6: Return on Assets Regression

Variable Name	Expected Sign	Coefficients
Islamic	ns	-0.233 (0.154)
RealYield	+	0.331 (0.511)
RYIslamic	ns	1.869 (1.405)
Yieldsq	-	0.446 (0.991)
RY2Islamic	ns	-4.816 (3.527)
LogAge	+	0.002 (0.0211)
NBFI	-	-0.155 (0.097)
IsNBFI	ns	0.129 (0.081)
NGO	-	-0.101 (0.096)
IsNGO	ns	0.061 (0.073)
Other		-0.315 (0.110)
Solidarity	+	0.010 (0.056)
LogGLP	+	0.003 (0.013)
CPL	-	0 (0)
Donations	-	-0.282** (0.137)
LPSM	+	0.0003* (0.0002)

LLR	-	0.026 (0.124)
Female	+	-0.204** (0.079)
Iraq		-0.003 (0.062)
Jordan		0.060 (0.048)
Lebanon		-0.023 (0.054)
Palestine		0.063 (0.048)
Syria		-0.408*** (0.069)
Yemen		0.066 (0.064)
Constant		0.073 (0.283)
Observations		78
R-squared		0.8337

*= significant at 10%, ** = significant at 5%
 ***=significant at 1%
 + = positive impact on dependent variable
 - = negative impact on dependent variable
 ns = not significant
 blank = no strong expectation
Source = Author's calculations based on data from the
 Microfinance Information Exchange (MIX)

6.1.1.4 Analyzing the Islamic Variable in the ROA Model

None of the variables used in this model to test the effects of being an Islamic firm were significant in the ROA regression. The lack of statistical significance for any variable related to the Islamic character of the MFI suggests, in line with expectations, that for this model, being an IMFI does not have a significant effect on the firm's return on assets.

The insignificance of being Islamic in determining the ROA taken in consideration with the mean of the FSS values for IMFIs being above the minimum necessary to achieve financial self-sufficiency indicate that Islamic microfinance, at least in the MENA region, is a financially viable alternative for conventional microfinance.

6.2 Outreach Models

As discussed previously, the dependent variables used to indicate outreach performance are the percent female borrowers and the ABB/GNI per capita. Higher values for the percentage of loans extended to women and lower values for the ABB/GNI per capita, indicating loan size, are associated with better outreach. The independent variables in this model represent the Islamic nature of the firm, the firm's age, its institutional structure, its size, the monetary and personnel costs of its loans, loan defaults, the percentage of rurally based borrowers, the type of lending, the firm's yields, its donations, the financial self-sufficiency, and the host country. Interactions between the sharia-compliant nature of the firm and its institution type are also included to portray a more accurate sense of whether the effects of being an Islamic firm are consistent

across the various institution types. In variables where a binary is included, the variables' effects on the percent female borrowers and the average balance per borrower/GNI per capita are relative to a conventional, Egyptian MFI structured as a bank. The equations for percentage of borrowers who are female ([equation 3](#)) and ABB/GNI per capita ([equation 4](#)) for the OLS regressions follow:

$$\begin{aligned} \text{Equation 3. Female} = & \beta_0 + \beta_1 \text{Islamic} + \beta_2 \text{LogAge} + \beta_3 \text{NBFI} + \beta_4 \text{IsNBFI} + \beta_5 \text{NGO} + \\ & \beta_6 \text{IsNGO} + \beta_7 \text{Other} + \beta_8 \text{LogGLP} + \beta_9 \text{CPL} + \beta_{10} \text{LPSM} + \beta_{11} \text{LLR} + \beta_{12} \text{Rural} + \\ & \beta_{13} \text{Solidarity} + \beta_{14} \text{RealYield} + \beta_{15} \text{Yieldsq} + \beta_{16} \text{Donations} + \beta_{17} \text{FSS} + \beta_{18} \text{Iraq} + \beta_{19} \text{Jordan} \\ & + \beta_{20} \text{Lebanon} + \beta_{21} \text{Palestine} + \beta_{22} \text{Syria} + \beta_{23} \text{Yemen} \end{aligned}$$

$$\begin{aligned} \text{Equation 4. ABBGNI} = & \beta_0 + \beta_1 \text{Islamic} + \beta_2 \text{LogAge} + \beta_3 \text{NBFI} + \beta_4 \text{IsNBFI} + \beta_5 \text{NGO} + \\ & \beta_6 \text{IsNGO} + \beta_7 \text{Other} + \beta_8 \text{LogGLP} + \beta_9 \text{CPL} + \beta_{10} \text{LPSM} + \beta_{11} \text{LLR} + \beta_{12} \text{Rural} + \\ & \beta_{13} \text{Solidarity} + \beta_{14} \text{RealYield} + \beta_{15} \text{Yieldsq} + \beta_{16} \text{Donations} + \beta_{17} \text{FSS} + \beta_{18} \text{Iraq} + \beta_{19} \text{Jordan} \\ & + \beta_{20} \text{Lebanon} + \beta_{21} \text{Palestine} + \beta_{22} \text{Syria} + \beta_{23} \text{Yemen} \end{aligned}$$

6.2.1 Regression Analysis for Percent Female and ABB/GNI Per Capita

The model testing the effects of the independent variables on the average balance per borrower/GNI per capita has a higher R-squared value (90.40%) than the model testing the independent variables on the percentage of borrowers that are female (87.69%). This means that the variables account for a higher percentage of the variation of the ABB/GNI per capita model than of the percent female model. A summary of the regression output can be found in [table 7](#) for the percent female borrowers and [table 8](#) for the ABB/GNI per capita.

6.2.1.1 Significance of the Variables in the Percent Female Model

Three variables have significant and positive effects on the percentage of borrowers who are female. As the original expectations assumed, an increase in the percentage of loans that are solidarity loans has a positive impact on the percent female borrower indicator. However, contrary to the expectations, the interaction between being a NGO and Islamic also has a positive effect on the indicator. Likewise, being located in Jordan results in positive effects on the percent female borrowers in this model. The positive effect of these variables on the percentage of borrowers who are female indicates that they have a positive impact on the outreach of the MFI as measured by outreach to women in this model.

Five variables have negative and significant impacts on the percentage of borrowers who are female. Conflicting with original predictions, an increase in the GLP, CPL, and better values of FSS negatively impact the percentage of borrowers who are female in this model. Additionally, being an “other” firm and being located in Iraq also result in lower percentages of borrowers who are women. The negative impact of these variables on the percentage of borrowers who are female indicates that they have a negative effect on the outreach of MFIs in this in this model.

Fifteen variables do not significantly impact the percentage of borrowers who are female in this model. As per expectations, being an Islamic firm, the effect of being an Islamic firm on the percentage of female borrowers for a NBF, and increases in the LPSM and LLR have no significant impact on the MFI’s percentage of borrowers who are female. Being a NGO or a NBF, the firm’s age, the percentage of borrowers who live rurally, the real yield, the squared real yield, the proportion of the firm’s revenue that comes from donations, and being located in Lebanon, Palestine, Syria, or Yemen are also not statistically significant in this model.

Table 7: Percent Female Borrowers Regression

Variable Name	Expected Sign	Coefficients
Islamic	ns	-0.153 (0.168)
LogAge		0.018 (0.038)
NBFI	+	-0.289 (0.214)
IsNBFI	ns	0.185 (0.164)
NGO	+	-0.334 (0.207)
IsNGO	ns	0.265* (0.159)
Other		-0.620*** (0.222)
LogGLP	ns	-0.046** (0.022)
CPL	ns	-0.001*** (0.0002)
LPSM	ns	0 (0)
LLR	ns	0.139 (0.213)
Rural	+	0.078 (0.077)
Solidarity	+	0.310*** (0.080)
RealYield		0.898 (0.782)
Yieldsq		-0.484 (1.595)
Donations	+	-0.023

		(0.241)
FSS	ns	-0.111** (0.049)
Iraq		-0.263** (0.108)
Jordan		0.124* (0.071)
Lebanon		-0.055 (0.084)
Palestine		0.127 (0.077)
Syria		-0.101 (0.118)
Yemen		0.029 (0.099)
Constant		1.540*** (0.432)
Observations		75
R-squared		0.8769

*= significant at 10%, ** = significant at 5%

***=significant at 1%

+ = positive impact on dependent variable

- = negative impact on dependent variable

ns = not significant, blank = no strong expectation

Source = Author's calculations based on data from the Microfinance Information Exchange (MIX)

6.2.1.2 Analyzing the Islamic Variable in the Percent Female Borrowers Model

The variable Islamic (β_1) is insignificant in this model. This implies that there is not a significant difference in the percentage of borrowers who are females between IMFIs structured as banks and conventional MFIs structured as banks.

In this model, the effect of being a NBFi on perfect female borrowers (β_3) and the effect of being an IMFI of the percent female borrowers of a NBFi (β_4) are insignificant. The total effect of being an IMFI structured as a NBFi on the percent female borrowers is measured by $\beta_1 + \beta_3 + \beta_4$. Since all three are insignificant, this model implies that there is no significant difference among the effects of NBFIs, Islamic NBFIs, banks, and Islamic banks on the percentage of borrowers who are female.

The effect of being a NGO on the percent female borrowers (β_5) is insignificant. However, the effect of being an IMFI on being a NGO's effect on the percent female borrowers (β_6) is positive and significant. The total effect of being an Islamic NGO is measured by $\beta_1 + \beta_5 + \beta_6$. Only β_6 is significantly different from zero, so this suggests that, while being a NGO does not produce a significantly different effect on the percentage of borrowers who are female, being an Islamic NGO does produce a significant increase in the percentage of borrowers who are female.

This model suggests overall that being an Islamic firm does not produce significantly different percentages of loans extended to women, save for a small but significant increase for Islamic NGOs. This difference, while unexpected, might be attributed to the nature of NGOs in general, which tend to focus more on their social mission than other institution types. It could be possible that the religious character of the firm creates an added commitment to the NGO's

social mission, resulting in better outreach as measured by percentage of borrowers who are female. However, overall, the hypothesis holds true and we can assume that this model concludes that there is not a major difference in outreach between Islamic and conventional MFIs in the MENA region as measured by the percentage of borrowers who are women.

6.2.1.3 Significance of the Variables in the ABB/GNI per capita Model

Eight variables have positive and significant impacts on the ABB/GNI per capita of MFIs in this model. As expected, increases in the size of the firm as measured by the log of the GLP and the squared real yield have positive impacts on the ABB/GNI per capita. Contrary to the original expectations, being an IMFI, being a NBFi or NGO, and increases in the CPL also have positive impacts on the ABB/GNI per capita. Being an “other” MFI and being located in Palestine likewise positively impact the ABB/GNI per capita. A higher value of ABB/GNI per capita means a larger loan size. Therefore, the positive impact of these variables on the ABB/GNI per capita value indicates poorer outreach performance for MFIs in this model.

Four variables in this model have negative, statistically significant impacts on the ABB/GNI per capita indicator. In line with the expected results, an increase in the percentage of borrowers who are rurally located and higher values of real yield result in lower values for ABB/GNI per capita. In contradiction to the original expectations, the effect of being an IMFI on the ABB/GNI per capita of a NGO has a significant and negative impact on the ABB/GNI per capita. Being located in Lebanon also has a negative impact on the ABB/GNI per capita. The negative effect of these variables on the ABB/GNI per capita indicate smaller loan sizes, and thus better outreach performance for MFIs in this model.

Ten variables in this model are not statistically significant in affecting the ABB/GNI per capita. As expected, the effect of being an IMFI on the ABB/GNI per capita of a NBFI is not statistically significant. The firm's age, LPSM, LLR, percentage of loans distributed as solidarity loans, percentage of revenues that are donations, the FSS, and being located in Iraq, Jordan, Syria, or Yemen are also insignificant in determining loan size in this study.

Table 8: ABB/GNI per capita Regression

Variable Name	Expected Sign	Coefficients
Islamic	ns	0.742*** (0.220)
LogAge		-0.006 (0.050)
NBFI	-	0.897*** (0.282)
IsNBFI	ns	-0.288 (0.215)
NGO	-	0.908*** (0.272)
IsNGO	ns	-0.688 (0.209)***
Other		0.544* (0.291)
LogGLP	+	0.074** (0.028)
CPL	-	0.001*** (0.0002)
LPSM	+	-0.0007* (0.0004)
LLR		-0.276 (0.280)
Rural	-	-0.505*** (0.101)
Solidarity	-	-0.0937 (0.105)
RealYield	-	-3.455*** (1.027)
Yieldsq	+	4.814** (2.095)
Donations	-	0.031

		(0.316)
FSS	+	0.081 (0.065)
Iraq		-0.106 (0.142)
Jordan		-0.003 (0.093)
Lebanon		-0.423*** (0.110)
Palestine		0.378*** (0.101)
Syria		0.044 (0.155)
Yemen		0.040 (0.130)
Constant		-1.289** (0.567)
Observations		75
R-squared		0.9040

*= significant at 10%, ** = significant at 5%
***=significant at 1%
+ = positive impact on dependent variable
- = negative impact on dependent variable
ns = not significant, blank = no strong expectation
Source = Author's calculations based on data from the
Microfinance Information Exchange (MIX)

6.2.1.4 Analyzing the Islamic Variable in the Average Balance Per Borrower/GNI Per Capita Model

The variable Islamic is positive and significant in this model. The coefficient for this variable ($\beta_1 = 0.742$) implies that IMFIs have higher ABB/GNI per capita than conventional banks, or that their average loan sizes are higher. This typically indicates poorer outreach.

The effect of being a NBFi ($\beta_3 = 0.897$) on ABB/GNI per capita is positive and significant. This means that being a NBFi increases the ABB/GNI per capita as compared to a conventional microfinance bank, implying that NBFis have larger loan sizes than conventional microfinance banks. The effect of being an IMFI on the NBFi's ABB/GNI per capita (β_4) is insignificant. The total effect of being an Islamic NBFi on ABB/GNI per capita is $\beta_1 + \beta_3 + \beta_4$. As only β_1 and β_3 are significantly different from zero and both are positive, the overall effect of being an Islamic NBFi on ABB/GNI per capita is positive, indicating larger loan sizes and weaker outreach.

The effect of being a NGO ($\beta_5 = 0.908$) on ABB/GNI per capita is positive and significant. Therefore, this model implies that being a NGO tends to be associated with larger loan sizes and weaker outreach. When the effect of being an IMFI on a NGO's ABB/GNI per capita is considered ($\beta_6 = -0.688$), the result is negative and significant. The total effect of being an Islamic NGO on the ABB/GNI per capita as compared to a conventional microfinance bank is measured by $\beta_1 + \beta_5 + \beta_6$ and produces an overall positive effect which is only slightly larger than the effect of being a conventional NGO (β_5). This means that the model suggests Islamic NGOs

typically have higher values for ABB/GNI per capita, indicating that Islamic NGOs might extend slightly larger loans than other institutions and perform worse in outreach to the poor.

This model suggests overall that being an Islamic firm is associated with lower levels of outreach as measured by higher ABB/GNI per capita due to the higher values for ABB/GNI per capita that Islamic firms have compared to their counterparts. These results differ from the conclusions of Ahmed (2002), which claims that IMFIs tend to extend smaller loans, but are confirmed for this data set after further exploration of the means, medians, and spreads of the subsets for Islamic and conventional MFIs. While this result was contrary to the literature and to expectations, the higher expenses that IMFIs face and their need to cover those costs, which could result in larger loans, might explain this result. This outcome, in conjunction with the results on outreach as measured by percentage of borrowers who are female, does not preclude Islamic microfinance as a viable alternative in terms of outreach, but instead highlights that Islamic microfinance is competitive in outreach to women and underscores an area where Islamic MFIs are not as competitive, outreach to the poor as measured by smaller loan sizes, and thus must improve in order to stay true to the ideals upon which Islamic microfinance is supposed to be built.

7.0 Conclusions and Recommendations

The purpose of this study is to identify whether Islamic microfinance institutions perform competitively with conventional microfinance institutions in key performance indicators of financial sustainability and outreach. As increasing access to financial inclusion and microfinance remain important to the development agenda, answering these questions can help determine if Islamic microfinance is a practical alternative for offering financial services to the poor who prefer religiously compliant options.

The results of this study are mixed in the comparison of IMFIs to conventional MFIs in the financial sustainability and outreach indicators. The results for determining financial self-sufficiency indicate that Islamic microfinance firms perform worse than conventional microfinance firms across all institutional structures. The mean value of FSS for IMFIs, however, indicated that they still achieve financial self-sufficiency on average. Additionally further breakdown of scores shows that at least 75% of IMFIs in this study are achieving the minimum value to be considered financially self-sufficient. There is no significant effect of being an IMFI on return on assets, indicating that the IMFIs aren't performing worse than conventional MFIs. These results are comparable to the previous studies in that they indicate that Islamic microfinance is likely not performing better than conventional microfinance in financial sustainability, but that they are not doing poorly overall and are doing well enough to continue to be considered as a viable alternative.

Greater ambiguity occurs in addressing the effect of being an IMFI on outreach performance. Overall, there is no significant difference between Islamic and conventional MFIs for the percentage of borrowers who are women, except for Islamic NGOS, which have a statistically significant, though small, positive effect. The effect of being an IMFI on the ABB/GNI per capita is positive and statistically significant. This means that IMFIs tend to distribute larger loans, suggesting they reach less poor borrowers. These results suggest overall that Islamic firms are statistically doing as well in reaching female borrowers, but do not achieve outreach as well when measured by loan size, leaving the overall differences in outreach between Islamic and conventional firms inconclusive.

Notable complications and limitations emerged in this study. Primary among the complications is that the data available for firms in the MENA region are limited and often incomplete. Information on a greater number of firms and more thorough and accurate monitoring and reporting from these firms are crucial for further study. A significant limitation of the study is the sample size of the study, so a study involving a larger number of conventional and Islamic firms could lead to more conclusive results. A second limitation is the focus on the MENA region. The results present an indication on how IMFIs are performing in this region and can be used for reference and comparison when exploring other regions, but cannot be extrapolated to explain trends across different regions or worldwide.

These complications and findings present several conclusions. Primarily, at the very least, Islamic microfinance firms are doing well enough to continue to be considered as viable alternatives to conventional firms, especially if this means providing access to financial services to the poor who will not partake in the conventional financial system for religious reasons. At the very least, the findings and complications in this study offer indications of areas that IMFIs can

focus on improving. The results of this study do not contradict the previous studies, but add another layer of context to their findings that opens the door for more questions regarding Islamic microfinance to be explored and expanded on.

Based on these conclusions, further exploration and research on Islamic microfinance is essential to creating a better understanding of its benefits and drawbacks. While this study reflects on how Islamic microfinance performs in the Arab world, more diverse analyses will contribute to an informed debate regarding Islamic microfinance as an alternative to conventional microfinance and the role of Islamic microfinance in improving financial inclusion. Employing different methods and models of analyzing the effects of Islamic microfinance would provide a more robust perspective. For example, global and regional assessments of its viability are essential for drawing broad conclusions and offering suggestions to these questions that are not MENA-specific. As the argument of the Islamic financial system being more socially just than the conventional system emerges in the literature, qualitative studies of a broad range of Islamic firms could offer tangible data in analyzing this claim and comparing the ideal vision of the Islamic financial system with the reality on the ground. Finally, as microfinance is increasingly questioned as an effective and favorable form of alleviating poverty, impact studies on how involvement in Islamic microfinance has benefited and hurt participants and communities are essential in determining the future of Islamic microfinance.

This study began with the question of whether Islamic microfinance is a viable alternative to conventional microfinance. The results of the regression analysis in this study, corroborated by previous studies, indicate that it is, at least in the MENA region. Providing financial access to the poor helps overcome discrimination in financial markets and can play an important role in poverty alleviation, development, and broader economic prosperity.

Additionally, increasing equitable access to financial services through providing sharia-compliant alternatives that address the religious needs of different individuals and communities could add to these benefits. As the debate on microfinance continues and the need for new and different ways to approach the problems associated with poverty remains strong, the role of Islamic microfinance in addressing economic discrimination and poverty more broadly should remain an option that is explored and evaluated.

Bibliography

- Abdelkader, Ines Ben, and Asma Ben Salem. "Islamic vs Conventional Microfinance Institutions: Performance Analysis in MENA Countries." *International Journal of Business and Social Research (IJBSR)* 3.5 (2013): n. pag. Web.
- Ahmed, Habib. "FINANCING MICROENTERPRISES: AN ANALYTICAL STUDY OF ISLAMIC MICROFINANCE INSTITUTIONS." *Islamic Economic Studies* 9.2 (2002): n. pag. Print.
- Ahmed, Habib. *Integrating Awqaf in the Islamic Financial Sector*. N.p., 2007. Web. 9 Nov. 2014.
- Ahmed, Habib. "Zakah, Awqaf, and Poverty Alleviation: Assessments, Policies, and Institutional Development." *Role of Zakah and Awqaf in Poverty Alleviation*. Jeddah, Saudi Arabia: Islamic Development Bank, Islamic Research and Training Institute, 2004. 109-32. Print.
- Armendariz, Beatriz, and Jonathan Morduch. *The Economics of Microfinance*. Cambridge, MA: MIT, 2005. Print.
- Asutay, Mehmet. "Conceptualising and Locating the Social Failure of Islamic Finance: Aspirations of Islamic Moral Economy vs the Realities of Islamic Finance." *Asian and African Studies* 11.2 (2012): 93-113. SSRN. Web. 15 Feb. 2015.
- Asutay, Mehmet. "An Introduction to Islamic Moral Economy and Reflecting on the Resilience of Islamic Finance Against the Financial Crisis." El Shaarani Centre for Islamic Finance and Business Inaugural Session. Birmingham. 15 Feb. 2015.
- Asutay, Mehmet. "Islamic Banking and Finance: Social Failure." *New Horizon* 169 (2008): n. pag. SSRN. Web.
- Atia, Mona. "Islamic Approaches to Development: A Case Study of Zakat, Sadaqa and Qurd Al Hassan in Contemporary Egypt." *8th International Conference on Islamic Economics and Finance* (2011): n. pag. JSTOR. Web.
- Banerjee, Abhijit, Esther Duflo, Rachel Glennerster, and Cynthia G. Kinnan. *The Miracle of Microfinance? Evidence from a Randomized Evaluation*. Working paper no. 18950. The National Bureau of Economic Research, Mar. 2014. Web. 12 Nov. 2014.

- Basu, Ranajoy, Diane Wood, Atif Hanif, Emmanuel Hadjidakis, Amar Meher, Salam Alsmadi, Jonathan Marshall, Chang C. Hoong, Oscar F. Tan, Christina Koh, and Afsha Karim. *ISLAMIC MICROFINANCE REPORT*. Rep. N.p.: INTERNATIONAL DEVELOPMENT LAW ORGANISATION, Allen & Overy LLP, 2009. Print.
- Bianchi, Robert R. "The Revolution in Islamic Finance." *Chicago Journal of International Law* 7.2 (2007): 569-81. Web. 30 Apr. 2014.
- Costa, Valentia, Hala Makhoul, and Perrine Mazaud. *Women's Empowerment through Islamic Microfinance in Egypt*. Thesis. Centre for Economic and International Studies Tor Vergata, 2010. N.p.: n.p., n.d. Print.
- Cull, Robert, Asli Demirgüç-Kunt, and Jonathan Morduch. *Financial Performance and Outreach: A Global Analysis of Leading Microbanks*. Working paper no. 3827. N.p.: World Bank, 2006. Print.
- Cull, Robert, Asli Demirgüç-Kunt, and Jonathan Morduch. *Microfinance Meets the Market*. Working paper no. 4630. N.p.: World Bank, 2008. Print.
- Cull, Robert, Asli Demirgüç-Kunt, and Jonathan Morduch. *Microfinance Tradeoffs: Regulation, Competition, and Financing*. Working paper no. 5086. N.p.: World Bank, 2009. Print.
- Demirgüç-Kunt, Asli, and Patrick H. Beck. *Finance for All? Policies and Pitfalls in Expanding Access*. Rep. Washington D.C.: World Bank, 2008. Print.
- Dusuki, Asyraf Wajdi. "Banking for the Poor: The Role of Islamic Banking in Microfinance Initiatives." *Humanomics* 24.1 (2008): 49-66. Web.
- El-Komi, Mohamed, and Rachel Croson. "Experiments in Islamic Microfinance." *Journal of Economic Behavior & Organization* 95 (2013): 252-69. JSTOR. Web. 9 Nov. 2014.
- El-Zoghbi, Mayada, and Michael Tarazi. *Trends in Sharia-Compliant Financial Inclusion*. Publication. Vol. 84. Washington D.C.: CGAP, 2013. Print.
- Freudenberg, Brett, and Mahmood Nathie. "Chasing Islamic Finance: A Framework to Assess the Potential Benefits of Australian Tax Reforms to Facilitate Islamic Finance." *Review of Business* 32.2 (2012): 58-71. Academic OneFile. Web. 30 Apr. 2014.
- Giné, Xavier, Pamela Jakiela, Dean Karlan, and Jonathan Morduch. *Microfinance Games**. Working paper no. 3959. N.p.: World Bank, 2006. Print.
- Global Islamic Financial Report 2013*. Rep. EdBiz Consulting, 2013. Web. 30 Apr. 2014. <<http://www.gifr.net/>>.

- Goetz, Anne Marie, and Rina Sen Gupta. "Who Takes the Credit? Gender, Power, and Control over Loan Use in Rural Credit Programs in Bangladesh." *World Development* 24.1 (1996): 45-63. Print.
- Hailey, Paul. "Microfinance and Islamic Finance: Can They Be Reconciled and How Can They Benefit One Another?" Thesis. HEC Paris - MBA, 2009. Print.
- Hamoudi, Haider. "Jurisprudential Schizophrenia: On Form and Function in Islamic Finance." *Chicago Journal of International Law* (2007): n. pag. SSRN. Web. 15 Feb. 2015.
- Hamoudi, Haider. "The Muezzin's Call and the Dow Jones Bell: On the Necessity of Realism in the Study of Islamic Law." *The American Journal of Comparative Law* (2008): n. pag. SSRN. Web. 15 Feb. 2015.
- Hourani, Husam. "The Three Principles of Islamic Finance Explained." *International Financial Law Review* 23.5 (2004): 46-47. Web. 30 Apr. 2014.
- International Fund for Agriculture Development. *إسلامية التمويل الميكرو: إطلاق إمكانات جديدة لمكافحة الفقر الريفي*. Rep. Rome, Italy: IFAD, 2012. Print.
- Iqbal, Munawar, and Mohamed Ariff. "Development, History, and Prospects of Islamic Banking." *The Foundations of Islamic Banking*. Cheltenham: Elgar, 2011. N. pag. Print.
- Karim, Nimrah, Michael Tarazi, and Xavier Reille. *Islamic Microfinance: An Emerging Market Niche*. Rep. no. 49. Washington D.C.: CGAP, 2008. Print.
- Karlan, Dean S. "Social Connections and Group Banking." *The Economic Journal* 117.517 (2007): F52-84. Web.
- Ma'sum Billah, Mohd. "24. Islamic Banking and the Growth of Takaful." *Handbook of Islamic Banking*. By Kabir Hassan and Mervyn Lewis. Cheltenham, UK: Edward Elgar, 2007. N. pag. Web. 30 Apr. 2014.
- Mohieldin, Mahmoud, Zamir Iqbal, Ahmed Rostom, and Xiaochen Fu. *The Role of Islamic Finance in Enhancing Financial Inclusion in Organization of Islamic Cooperation (OIC) Countries*. Working paper no. 5920. N.p.: World Bank, 2011. Print.
- Montgomery, Richard. "Disciplining or Protecting the Poor? Avoiding the Social Costs of Peer Pressure in Micro-credit Schemes." *Journal of International Development* 8.2 (1996): 289-305. Print.
- Obaidullah, Mohammed, and Tariqullah Khan. *ISLAMIC MICROFINANCE DEVELOPMENT: Challenges and Initiatives*. Policy Dialogue. Vol. 2. Jeddah, Saudi Arabia: Islamic Research and Training Institute, 2008. Print.

- Rahman, Aminur. "Microcredit Initiatives for Equitable and Sustainable Development: Who Pays?" *World Development* 26.2 (1999): 67-82. Print.
- Rankin, Katherine N. "Social Capital, Microfinance, and the Politics of Development." *Feminist Economics* 8.1 (2002): 1-24. Print.
- Robbins, Holly E. "Soul Searching and Profit Seeking Reconciling the Competing Goals of Islamic Finance." *Texas Law Review* 88.5 (2010): 1125-153. Web. 30 Apr. 2014.
- Sadique, Muhammad A. "Financing Micro and Medium Sized Enterprises through Decreasing Partnership (Musharakah Mutanaqisah): Refining Shariah and Banking Aspects for Enhanced Applicability." *ISLAMIC FINANCE FOR MICRO AND MEDIUM ENTERPRISES*. N.p.: Islamic Research & Training Institute-Islamic Development Bank, Centre for Islamic Banking and Finance and Management, Universiti Brunei Darussalam, 2008. 53-74. Print.
- Thomas, Duncan. "Intrahousehold Allocation: An Inferential Approach." *Journal of Human Resources* 25.4 (1990): 635-64. Print.
- "World: People and Society: Religions." *Central Intelligence Agency*. Central Intelligence Agency, 2010. Web. 30 Apr. 2014. <<https://www.cia.gov/library/publications/the-world-factbook/geos/xx.html>>.