A comparative analysis of the implications of the Islamic religion on corporate capital structures of firms in emerging market countries

Theresa Gunn
School of Business, Alfred University, Alfred, New York, USA, and
Joshua Shackman
College of Business Administration, Trident University, Cypress, California, USA

Abstract
Purpose – The purpose of this study is to examine the impact of the Muslim religion on firm capital structure.

Design/methodology/approach – The authors compare financing patterns in Muslim versus non-Muslim countries using 658 firms in 16 countries covering a period of seven years.

Findings – No significant differences between Muslim and non-Muslim countries were found in terms of total debt ratios. However, significant differences were found in the choice of short-term versus long-term debt, with firms in Muslim countries showing a strong preference for short-term debt.

Research limitations/implications – The findings confirm existing theories on the impact of the Islamic religion on short-term versus long-term debt preferences. However, the findings concerning the lack of an impact of the Islamic religion on total debt preferences are surprising and contrary to existing theories.

Practical implications – Firms in Muslim countries appear to have the flexibility to adopt overall leverage ratios comparable to those in non-Muslim countries. However, firms in Muslim countries may be disadvantaged in that there appear to be impediments to the use of long-term debt.

Originality/value – This paper presents one of the first empirical studies of the impact of the Muslim religion on corporate financing choices across a large cross-section of firms in Muslim and non-Muslim countries.

Keywords Capital structure, Islamic finance, Emerging market countries, Long-term debt, Short-term debt

Paper type Research paper

Introduction
One of the main business principles consistently agreed upon by the Shariah and the Quran is the disallowance of the payment or charging of interest, known as Riba (Zaher and Hassan, 2001, p. 156; Farooq, 2012). This is known as an unjustified enrichment and should be eliminated from the exploitation of business operations for Shariah-compliant companies. Interest is categorized traditionally as an amount that was predetermined and fixed at the beginning of the contract. The charging of interest is seen as an unfair
advantage to the lender because the repayment happens whether the investment prospers or not, so there is no equitable sharing of the risk involved.

This restriction on charging interest has been proposed as one possible explanation for low rates of economic growth in the Islamic world (Mossaad, 2005). Debt financing is generally considered to be of lower cost than equity financing due to asymmetric information problems. Furthermore, these asymmetric problems may be amplified in the developing world as compared to the developed world. Given that most, if not all, of the Islamic world is categorized as being in the developing or emerging market world, firms in Islamic countries would seem likely to be heavily disadvantaged when it comes to financing options.

In spite of Shariah restrictions on interest, little is known about how these restrictions translate into capital structure decisions in Islamic countries. Some recent studies have investigated capital structure of firms in the Islamic world (Abraham, 2013; Hassan et al., 2012), but these studies have generally been single-country studies. Multi-country studies have shown an impact of culture and religion on capital structure (Antonczyk and Salzmann, 2013; Baxamusa and Jalal, 2013; Lam et al., 2013), but these studies did not specifically investigate the impact of Islam on capital structure. In this paper, we contribute to these literatures by comparing capital structure and debt maturity in firms in Islamic and non-Islamic countries.

Consistent with a theoretical model of Islamic banking developed by Aggarwal and Yousef (2000), using our sample of firms in Islamic and non-Islamic countries, we present evidence that Islamic law does not disadvantage firms in terms of the overall levels of debt compared to equity financing. We find no difference in the level of total debt to total assets when comparing capital structure in firms from Islamic countries to firms in non-Islamic countries. However, we do find evidence that firms in Islamic countries may have less access to long-term debt than firms in non-Islamic countries. Using panel data for the years 1998-2005 from over 600 firms from 16 countries, we find no impact of Islamic law on overall capital structure but a strong negative impact on the choice between long-term and short-term debts.

**Islamic finance and capital structure**

One of the key principles of Islamic finance as stated in the Quran is the prohibition of Riba, which is defined as “any predetermined or fixed return in financial transactions” (Aggarwal and Yousef, 2000, p. 96). Furthermore, this prohibition on Riba is also commonly interpreted among the financial world that any form of interest is prohibited (Aggarwal and Yousef, 2000, p. 96). As an alternative to debt finance, the key mode of commercial finance should be the profit–loss principle, whereby banks issue equity-based instruments such as the Mudarabah or Musharaka that involve shared risk and profit between the bank and the entrepreneur (Aggarwal and Yousef, 2000, p. 96; Al-Ajmi et al., 2009).

Choudhury and Al-Sakran (2001) argue in favor of using equity instruments as opposed to debt-based financing in keeping with the Islamic financing scheme within Saudi Arabia. “Islam supports the view that Muslims do not act as nominal creditors in any investment but as partners in the business” (Hourani, 2004, p. 46), or, in other words, the Islamic religion promotes equity-based financing. As a partner, Islamic finance promotes the use of profit and loss sharing and joint ventures for financing sources. Both types of funding involve the use of equity funds with a linking of the management
with the sweat equity to form joint working relationships, thereby offering a vested
interest to the parties. By using equity-based financings, the firms complying with the
Islamic religion should be promoting a lower debt ratio.

While Islamic law is widely interpreted as strongly discouraging the use of interest
paying instruments such as debt, there are Islamic debt-like instruments issued by
banks. Instruments such as the Miharaba and Ijara involve the purchase of an asset by
the bank, with the firm purchasing the asset from the bank at a fixed markup price over
a period of time. Some Islamic scholars believe these instruments, although widely used
in Islamic banking, should be avoided or restricted, as they may be a “back door” for
charging interest (Aggarwal and Yousef, 2000, p. 97).

Derigs and Marzban (2008) point out that contemporary Shariah scholars do not
necessarily call for Islamic firms to have zero debt in their capital structure but instead
seek to establish various threshold financial ratios. Derig and Marzban’s review of the
major screening indices used by Islamic funds and indices (which are typically advised
by Shariah scholars) found a range of 30-40 per cent to be an acceptable maximum debt
to equity ratio. Similar results were found by Bellalah et al. (2013). Based on these
results, it appears that current interpretations of Shariah by established scholars
encourage firms to limit their overall debt levels but not necessarily to avoid debt
altogether.

Empirical research on capital structure in Islamic countries has generally been
limited to single-country studies. In a study of Malaysian firms, it was found that
Shariah-compliant firms had no significant difference in debt ratios compared to
conventional firms (Hassan et al., 2012). Abraham (2013) finds that among banks in
Saudi Arabia, domestically owned banks have lower leverage than banks with
significant foreign ownership. Given that much of the foreign ownership in the banks in
this study was from Western non-Islamic countries, this study suggests that Islam may
influence capital structure. In one of the few multi-country studies on capital structure in
Islamic countries, Omet and Mashharawe (2003) find that firms in Kuwait, Jordan,
Oman and Saudi Arabia generally have low leverage ratios. However, because they do
not compare them with firms in non-Islamic countries, it is not clear if the low leverage
ratios are a general phenomenon of all firms in developing countries or due to a specific
influence of Islam.

Previous multi-country studies have not looked at the impact of Islam on capital
structure specifically but have found that national cultural values do help explain
cross-country variation in capital structure (Lam et al., 2012; Antonczyk and Salzmann,
2013; Ramirez and Kwok, 2009). It seems logical that national religious values may also
influence capital structure. In one of the few multi-country studies on religion and
capital structure, Baxamus et al. (2013) find evidence that firms in predominantly
Protestant countries tend to have lower debt levels than those in predominantly Catholic
countries.

Overall recent multi-country studies on capital structure have provided evidence that
culture and religion influence a firm’s capital structure decisions, but little research has
been done specifically comparing capital structure in Islamic versus non-Islamic
countries. Recent literature on Islamic finance has shown that firms in Islamic countries
have a variety of options for debt financing, but that current interpretations of Shariah
generally encourage firms to limit their total amount of debt. Hence, we expect among
corporations in Islamic countries that there will be a tendency toward more equity and
less debt in their overall capital structure compared to firms in non-Islamic countries. To test this theory, we propose the following hypothesis:

\[ H1. \text{ There is a negative relationship between Islam as the predominant religion in a country and the debt to equity ratio of firms within that country.} \]

Little research has been done regarding debt maturity structure in firms in Islamic countries. Aggarwal and Yousef (2000) find, based on their review of data from studies on banking in Iran, Jordan, Malaysia and Egypt, that the vast majority of Islamic debt instruments are issued for short-term debt rather than for long-term debt. They propose agency costs and moral hazard as an explanation for the preference for short-term lending by banks in Islamic countries. Tradable security markets for Islamic bonds such as \textit{sukuk} may also follow a similar pattern. A research report conducted by Ernst & Young (2009) found that \textit{sukuk} is primarily a short-term rather than long-term debt instrument, with the majority of \textit{sukuk} issued worldwide having maturity of one to three years. However, based on these studies, it is not clear whether these results are due to the impact of Islam or part of a general pattern in the developing world of a preference for short-term debt.

When comparing the preference for short-term or long-term lending to corporations across Islamic and non-Islamic developing countries, one must consider the key difference between conventional debt instruments and Islamic debt instruments. Islamic debt instruments involve bank ownership of a specific asset that is owned by the bank, and ownership of the asset is not transferred to the borrower until the debt is paid back in full. This has the advantage to lenders that in the case of default, there is no question of control or ownership of the asset. This is in contrast to Western countries such as the USA where default can lead to lengthy bankruptcy proceedings and long delays in transfer of ownership from borrower to lender.

So while this clear delineation of ownership rights under Islamic debt instruments may lower the cost of capital for loans that can be tied to a specific asset, it may also lead to a preference for short-term lending tied to more liquid assets. Because lenders must take ownership of an asset and would be responsible for the sale or maintenance of such asset in case of default, it may be the case that the larger and less liquid the asset the tougher it will be to find a lender willing to issue a debt instrument backed by this asset. Furthermore, Casey (2012) points out that while governments own specific long-term infrastructure assets such as roads and airports, commercial enterprises may not own specific assets with an appropriate lifespan to back long-term \textit{sukuk}. Long-term debt may be easier to obtain in conventional lending environments where the lender would have a claim against the entire firm in case of default rather than just one specific asset. To test this theory that Islamic debt instruments are more likely to be used toward short-term lending, we propose the following hypothesis:

\[ H2. \text{ There is a negative relationship between Islam as the predominant religion in a country and the amount of long-term corporate debt of firms within that country.} \]

Sample and database
We chose a sample of 658 firms from both Muslim and non-Muslim countries over the period of 1998-2004. The main source of data for this study is Worldscope Global, published by Thomson Financial, which includes financial information on public
companies in 53 countries covering 186 industries. Worldscope Global has been widely used in other international finance studies (Schmukler and Vesperoni, 2006; Fan et al., 2012; Fauver et al., 2003). We also used Mergent Online for data on Saudi Arabia, as data for firms in this country were not available in Worldscope. The other Muslim countries in our sample include Jordan, Turkey, Pakistan, Malaysia, Egypt and Indonesia. Because these Muslim countries are generally considered to be emerging or developing market economies rather than developed economies, we chose non-Muslim countries generally classified as developing or emerging countries including Brazil, India, South Korea, Zimbabwe, Thailand, South Africa, Mexico, Greece and Israel. These are all countries generally classified as emerging markets in the recent emerging market literature (Buchanan and English, 2007; Brooks, 2007).

Firms in each country that used the primary standard industrial classification code relative to the banking industry are eliminated from the sample data. Previous studies on financing structure have also excluded financial firms and banks from their sample, notably Schmukler and Vesperoni (2006), Chui et al. (2002), Omet and Mashharawe (2003). In our sample data, four Islamic countries had only 18 or fewer firms available; hence, we limit our sample to the largest 50 non-financial firms in each country to keep our sample relatively equally weighted between Islamic and non-Islamic firms.

Measurement of variables
The independent variable in this study is measured simply as a dummy variable with a value of “1” if the country has a majority Muslim population and “0” otherwise. The dependent variable for H1, the debt to equity ratio, is measured by the financial ratio of total debt/total equity to compare debt ratios. This is a commonly used ratio previously used in other comparative capital structure studies (Booth et al., 2001; Chui et al., 2002; Rajan and Zingales, 1995).

H2 concerns the term structure of debt, specifically the choice of long-term or short-term debt. In measuring short-term versus long-term debt decision, we will use the financial ratios of short-term debt/total debt and long-term debt/total debt, which is along the lines of the ratios used in previous capital structure studies such as Gonenc (2003) and Booth et al. (2001). The Worldscope Global database recorded a line for each company titled long-term debt, where the value was used for this study as the long-term debt value. For short-term debt, the database provided a value for short-term debt and a value for current portion of long-term debt. Both values were added together for this research to represent the short-term debt value for each company.

We use two control variables that are measures at the firm level and four control variables that are measures at the country level. The first variable is firm size. This variable has been used in many other capital structure studies (Titman and Wessels, 1988; Barclay and Smith, 1995; Rajan and Zingales, 1995; Harris and Raviv, 1991; Al-Sakran, 2001; Fan et al., 2012). Barclay and Smith (1995) provided evidence of large firms having a larger percentage of long-term debt while small firms focused more on short-term debt. Their findings are consistent with Myers (1977) and the contracting-cost hypotheses. To measure firm size, I will use the natural log of total assets for this variable. This is the same measurement that is used in Al-Sakran’s (2001), Akhtar (2005), Fan et al. (2012) studies.

The second firm-level variable used as a control variable is firm profitability. This variable has been used in previous capital structure studies (Titman and Wessels, 1988;
Titman and Wessels (1988) looked to profitable firms having an inverse relationship with the level of debt held by the firm (Titman and Wessels, 1988). If a company is profitable and has substantial retained earnings, it would be anticipated that the company would have less of a need to use debt for financing. Al-Sakran’s study (2001) relates that “according to the pecking order theory, firms prefer internal financing over external equity or debt issuing” (Al-Sakran, 2001, p. 62). To have this ability, profitability of a firm would be an important characteristic of a firm and worth documenting in this study.

To measure firm profitability, we will use the return on assets (earnings before interest and taxes (EBIT)/total assets). This measurement was also used in Titman and Wessels (1988). Fan et al. (2012) also used a measurement of total assets but chose net income instead of EBIT. The measure of EBIT was used here to avoid the issues of different tax interpretations among the 16 countries.

We also include several country-level variables. The security offered within the legal system of a country has the potential to pose a great threat to any company within that particular country. If the legal system is weak, then the creditors of companies may not be willing to take many risks with loans, accounts payables and investments. From La Porta et al. (1997, p. 1,137), we adopt their Creditor Rights Index. This is a scale “that aggregates the various rights that secured creditors might have in liquidation and reorganization”. The scale is defined as “0” representing a pro-debtor country and “4” representing a pro-creditor country, with the range in between a sliding scale. We also adopt from La Porta et al. (1997) their shareholder protection index as well as their use of a “rule of law” variable adopted from the Political Risk Yearbook which is designed to measure the overall integrity of a country’s legal system. Similar to Chiu et al. (2002) and Demirguc-Kunt and Maksimovic (1999), we also control for gross national income per capita.

**Descriptive statistics**

Table I includes some basic descriptive statistics for key variables with debt ratios scaled as percentages. Overall debt ratios in the Muslim countries, on average, are very similar to those in non-Muslim countries. However, the variance in debt ratios has a huge variance in Muslim countries with total debt to equity having a variance of 25 per cent. Many firms in Muslim countries have zero or negative debt levels, but others have

<table>
<thead>
<tr>
<th>Mean values for Muslim and non-Muslim countries in total</th>
<th>Muslim</th>
<th>Non-Muslim</th>
<th>Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log of total assets</td>
<td>6.913 (1.716)</td>
<td>7.307 (1.241)</td>
<td>7.173 (1.432)</td>
</tr>
<tr>
<td>Return on assets</td>
<td>0.129 (0.719)</td>
<td>0.103 (0.115)</td>
<td>0.112 (0.430)</td>
</tr>
<tr>
<td>Creditor Rights Index</td>
<td>3.542 (0.841)</td>
<td>2.389 (1.412)</td>
<td>2.768 (1.365)</td>
</tr>
<tr>
<td>Gross national income per capita (000s)</td>
<td>5095.14 (3617.41)</td>
<td>11043.52 (7350.80)</td>
<td>9020.00 (6931.97)</td>
</tr>
<tr>
<td>Debt to equity ratio</td>
<td>1.06 (25.009)</td>
<td>1.092 (6.533)</td>
<td>1.08 (15.518)</td>
</tr>
<tr>
<td>LT debt to equity ratio</td>
<td>0.899 (23.630)</td>
<td>0.685 (5.126)</td>
<td>0.758 (14.394)</td>
</tr>
<tr>
<td>Oil industry</td>
<td>0.082 (0.274)</td>
<td>0.081 (0.273)</td>
<td>0.081 (0.274)</td>
</tr>
<tr>
<td>Number of observations</td>
<td>1,533</td>
<td>2,974</td>
<td>4,507</td>
</tr>
</tbody>
</table>

**Table 1.**

Descriptive statistics

Standard deviations are listed in parentheses
enormously high debt ratios. The size of the firms as measured by total assets and the return on assets is similar for firms in Muslim countries as compared to non-Muslim countries. Overall, the primary difference between the firms in Muslim versus non-Muslim countries is the much larger variance in debt levels.

**Results**

Table I reports the results for regression models that test $H1$ concerning the impact of Islam on the overall capital structure. The first regression specific in this table uses three different measures of institutional strength but no industry dummy variables. The second specification does not use either dummy variables or institutional variables. The final specification includes both industry dummies and all three institutional variables. Overall, little evidence is found of any impact of Islam on capital structure, as the “Muslim” dummy variable fails to reach significance in any of the three regression models. Also, the adjusted R-squared is low for all three regression specifications (Table II).

Tables III and IV below report the results for regression models that test $H2$ concerning the impact of Islam on the choice of short-term versus long-term debt. Overall, all of the regression models provide strong support for the notion of short-term debt being preferred to long-term debt in Islamic countries. As predicted by $H2$, the sign of the coefficient for the Muslim variable is negative and significant at the 1 per cent level for all three regression models in Table III, indicating a negative relationship between Islam and long-term debt. As an additional test of $H2$, we also test the relationship between Islam and short-term debt. As shown in Table IV, there is a significant positive relationship between the Muslim variable and short-term debt at the 1 per cent level. Overall, this is strong evidence of a tendency toward short-term rather than long-term debt in predominantly Muslim countries.

In addition, the adjusted $R$-squared values are higher, and the significance of the control variables is also greater when short-term or long-term debt is the dependent variable rather than total debt being the dependent variable. It appears that differences

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Dependent variable: total debt to equity ratio Newey–West standard errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muslim</td>
<td>$-35.103 (65.249)$</td>
</tr>
<tr>
<td>Log of total assets</td>
<td>$22.476 (23.946)$</td>
</tr>
<tr>
<td>Return on assets</td>
<td>$-0.492 (0.565)$</td>
</tr>
<tr>
<td>Creditor’s rights</td>
<td>$48.241 (34.216)$</td>
</tr>
<tr>
<td>Law and order</td>
<td>$-40.452 (37.435)$</td>
</tr>
<tr>
<td>Shareholder protection</td>
<td>$-39.666 (31.683)$</td>
</tr>
<tr>
<td>Gross national income per capita</td>
<td>$0.974 (1.906)$</td>
</tr>
<tr>
<td>Oil industry dummy</td>
<td>$33.976 (27.590)$</td>
</tr>
<tr>
<td>Other industry dummyier</td>
<td>No</td>
</tr>
<tr>
<td>Constant</td>
<td>$73.748 (142.191)$</td>
</tr>
<tr>
<td>Number of observations</td>
<td>$4,429$</td>
</tr>
<tr>
<td>Adjusted $R^2$ (from OLS regression)</td>
<td>$0.0004$</td>
</tr>
</tbody>
</table>

**Notes:** ***Significant at 1 per cent

Table II. Tests of $H1$
in religion and institutions are much more significant in explaining the term structure of debt decision rather than the overall capital structure decision.

**Conclusion**

Overall, we have found no support for $H1$ but strong support for $H2$. It appears that firms in Muslim countries have similar financing patterns to firms in non-Muslim countries when it comes to total debt ratios. However, there does appear to be a strong
effect of Islam on the choice between long-term or short-term. Firms in Islamic countries demonstrate a significant tendency toward short-term debt over long-term debt.

An implication of the results of this study is that Islamic finance does appear to be flexible enough to allow for firms to raise funds in ways other than equity that overall allow firms in Muslim countries to maintain similar leverage ratios as firms in non-Muslim countries. However, firms in Muslim countries may experience some disadvantages over the long run in that they cannot necessarily take advantage of the stability offered by long-term debt. Long-term debt allows for debt payments to be more stable over a period of several years without the need to continually seek new financing. The tendency against long-term debt may also deter some long-term investments which may slow down economic growth in Muslim countries. Future research should be done to see if the tendency against long-term debt has a negative impact on long-term investments in Muslim countries.

A limitation of this study is that we only compared firms in Muslim versus non-Muslim countries but did not take into consideration differences in levels of how well government enforces Islamic law among different Muslim countries. Government legal restrictions and policies vary greatly in the Islamic world, with some governments such as Iran and Pakistan placing a heavy emphasis on Shariah-compliant finance and other governments allowing extensive conventional finance to coexist within the economy (Wilson, 2012). Future research should be done to create overall measures of the extent of legal restrictions on debt financing among different Muslim countries. This would allow us to distinguish the extent to which the bias toward short-term debt in Muslim countries is due to legal restrictions or due to cultural/societal pressure.

References


**Further reading**


**Corresponding author**

Joshua Shackman can be contacted at: Joshua.shackman@trident.edu

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