



CAPITAL STRUCTURE AND PERFORMANCE OF
ISLAMIC BANKS: DETERMINANTS AND
OPTIMALITY

BY

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ABSTRACT

As new comers to the market, Islamic Banks (IBs) are facing a trade-off. They can either employ high capital ratios which increase the soundness and safety of the bank and lowers the required return (risk) by investors, or depend on deposits and Islamic bonds which are considered cheaper sources of funds due to their tax deductibility. IBs' management must carefully decide upon the appropriate mix of debt and equity, namely, capital structure, in order to maximize the value of the bank. This study examines the effect of capital structure on IBs' performance in an attempt to provide guidance to managers in the issue of raising capital. The study also examines whether regulatory capital requirements are the first-order determinants of IBs' capital decisions. Furthermore, the study calculates the optimal capital structure for the sample IBs and uses it as guidance for capital structure decisions. Using a sample of 85 IBs covering 19 banking systems, the study uses a Two-Stage Least Squares (2SLS) method to examine the performance determinants of IBs' in order to control for the reverse causality from performance to capital structure and uses the Ordinary Least Squares (OLS) method to examine the determinants of IBs' capital structure. After controlling for macroeconomic environment, financial market structure and taxation, results indicate that IBs' performance (profitability) measures respond positively to increases in equity (capital ratio). The result is consistent with the signaling theory which predicts that banks expected to have better performance credibly transmit this information through higher capital. As for the reverse causation from performance to capital structure, results indicate that more profitable IBs employ higher leverage. This is consistent with the efficiency-risk hypothesis which predicts that more profitable firms choose lower equity ratios (higher leverage). Risk is found to be an insignificant factor in determining leverage, which indicates that minimum capital requirements are not first-order determinants of IBs' capital structure and that standard determinants of capital structure can explain variation in IBs' book capital. Results of optimal capital structure finds that the capital-asset ratio has an increasing effect on IBs' profitability. The optimal capital ratio is found to be 37.41%. At capital ratios below 37.41% equity is expensive and has a negative effect on return on equity (ROE) due to the higher required return by investors. Beyond 37.41% equity starts to have a positive effect on ROE and becomes a cheap source of financing. As a general guide, IBs should have minimum capital ratios of 37.41% to be viewed as safe and sound by investors and to lower the cost of issuing additional equity.

خلاصة البحث

البنوك الإسلامية تواجه خيارين كونها جديدة على السوق. بإمكانها أن تعتمد على حصص المساهمين التي تريد من أمان البنك وتقلل من العائد المطلوب (المخاطرة) من قبل المستثمرين، أو أن تعتمد على الودائع والسندات الإسلامية والتي تعتبر مصادر رخيصة بفضل خصم الضرائب. على البنوك الإسلامية أن تقرّر بعناية الخليط المناسب بين الدين وحصص المساهمين، والتي يطلق عليها مصطلح هيكل رأس المال، من أجل تعظيم قيمة البنك. هذه الدراسة تفحص أثر هيكل رأس المال على أداء البنوك الإسلامية وذلك في محاولة لإعطاء توجيهات للمدراء في قضية زيادة رأس المال. هذه الدراسة أيضاً تفحص سواء كانت مطلوبات رأس المال التنظيمية هي المحدد الأول لقرارات رأس مال البنوك الإسلامية. بالإضافة إلى ذلك، فإن هذه الدراسة تحسب رأس المال الأمثل لعينة البنوك الإسلامية وتستخدمه كتوجيه لقرارات هيكل رأس المال. باستخدام عينة مكونة من ٨٥ بنك إسلامي والتي تغطي ١٩ نظام بنكي، هذه الدراسة تستخدم طريقة مرحلتين المربعات الصغرى لفحص محددات أداء البنوك الإسلامية وذلك لكبح الأثر العكسي من الأداء إلى هيكل رأس المال، و تستخدم طريقة المربعات الصغرى العادية لفحص محددات هيكل رأس المال. بعد الأخذ بعين الاعتبار البيئة الاقتصادية وهيكل السوق المالي والضرائب، فإن النتائج تشير إلى أن أداء البنوك الإسلامية (ربحيتها) تستجيب إيجاباً للزيادة في حصص المساهمين. هذه النتيجة متلائمة مع نظرية الإشارات والتي تتنبأ بأن تقوم البنوك التي تتوقع أداء أفضل بإرسال هذه المعلومة من خلال رفع حصص المساهمين في رأسمالها. بالنسبة للأثر العكسي من الأداء إلى هيكل رأس المال فإن النتائج تشير إلى أن البنوك الإسلامية التي تتمتع بربح أكثر تعتمد على نسب دين أعلى. هذه النتيجة متناقضة مع فرضية كفاءة الخطر والتي تتنبأ بأن تقوم الشركات الأكثر ربحاً بإختيار نسبة حصص مساهمين أقل (دين أعلى). النتائج تدل على أن الخطر ليس عامل هام في تحديد الدين وهذا يدل على أن الحد الأدنى لمتطلبات رأس المال ليست المحدد الأول لهيكل رأس المال للبنوك الإسلامية و أن معايير رأس المال بإمكانها أن تفسر الاختلاف في رأس المال المحاسبي للبنوك الإسلامية. نتائج رأس المال الأمثل وجدت بأن نسبة حصص المساهمين للموجودات له أثر متزايد على ربحية البنوك الإسلامية. قيمة التحوّل هي ٣٧,٤١٪. البنوك التي حصص المساهمين فيها تقل عن ٣٧,٤١٪ فإن حصص المساهمين تكون مكلفة ولها أثر سلبي على العائد على حقوق المساهمين وذلك نتيجة إرتفاع العائد المطلوب من قبل المستثمرين. أما البنوك التي حصص المساهمين فيها ٣٧,٤١٪ فما فوق فإن حقوق المساهمين يصبح لها أثر إيجابي على العائد على حقوق المساهمين وتصبح مصدر تمويلي رخيص. كإرشاد عام، على البنوك الإسلامية أن تحتفظ بقيمة حقوق المساهمين بنسبة ٣٧,٤١٪ كحد أدنى لكي تعتبر آمنة وموثوقة من قبل المستثمرين ولكي تخفّض من تكلفة إصدار أسهم جديدة.

APPROVAL PAGE

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DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

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**THE DYNAMIC RELATIONSHIP BETWEEN CAPITAL STRUCTURE
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I dedicate this dissertation to my beloved father and mother...

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LIST OF ABBREVIATIONS

IBs	Islamic Banks
CBs	Conventional Banks
M&M	Modigliani and Miller Theorem
WACC	Weighted Average Cost of Capital
NPV	Net Present Value
PLS	Profit and Loss sharing
CR	Capital-asset ratio
ROE	Return on equity
ROA	Return on assets
BTP/TA	Profit margin
NIM	Non-interest margin
GROW	Growth opportunities
Coll	Collateral or tangibility
LONTA	Loan to assets ratio
GDP	Gross Domestic Product
CPI	Consumer Price Index
GDPGR	Real GDP growth rate
INF	Annual inflation rate
CSTFTA	Consumer and short-term funding to total assets
NEATA	Non-earning assets to total assets
OVHHD	Overhead to total assets
TAX	Taxes paid over before tax profit
RES	Reserves of the banking system over deposits of the banking system
BNK	Total assets of deposit money banks over GDP
MCAP	Stock market capitalization over GDP
HERF	Herfindahl index
SHARE	Bank's market share
MKTGROW	Growth of market deposits
L	Leverage
2SLS	Two-Stage Least Squares method
OLS	Ordinary Least Squares method
AR	First-Order Autoregressive
LLC	Levin-Lin and Chu test
IPS	Im, Pesaran and Shin test

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

In achieving a return on equity, firms can employ a variety of techniques and strategies. One strategy is through capital structure. The relationship between capital structure and return on equity is indeed of considerable importance to all firms. The capital structure decision is especially important to banks because they are sensitive to changes in financial leverage due to their low level of equity capital to total assets. Moreover, the capital structure of banks is highly regulated (Hutchison and Cox, 2006). According to conventional wisdom, higher financial leverage augments the return on equity when operating profitability is positive.

In 1963, Islamic banking came into existence on an experiment basis on a small scale in a small town of Egypt. The bank lasted for only 4 years until 1967. This experiment opened the doors for a separate and distinct market for Islamic banking and finance and as a result in the 1970s, Islamic banking came into existence at a moderate scale and a number of full-fledged Islamic banks (IBs hereafter) were introduced in Arabic and Asian countries (Moin, 2008). Having started on a small scale, IBs and non-banking financial institutions are now in operation even on more intensive scale, they have grown in size and number around the world. Today, Islamic banking is growing at a rate of 10-15% per year and with signs of consistent future growth. Islamic banks have more than 300 institutions spread over 51 countries as well as an additional 250 mutual funds that comply with Islamic principles. It is estimated that over US\$822 billion worldwide Sharia-compliant assets are managed

today. This represents approximately 0.5% of total world estimated assets as of 2005. In Iran, Pakistan, and Sudan the entire banking system has been converted to the Islamic mode of finance. In most countries where IBs operate however, conventional banking institutions are still dominating the banking system. Nevertheless, Islamic banking is still the highest growing segment of the credit market in Muslim countries (Hassan, Farahat and Bashir, 2003).

Given the long history of conventional banking business, IBs are considered to be relatively new institutions. Anyone who attempts to evaluate the experience of Islamic banking has to recognize the circumstances under which IBs have been working. Broadly speaking, IBs are found to operate in two distinct environments. First, IBs co-exist with interest based banks and second, IBs operate under a binding and all-embracing Islamic banking system (Homoud, 1994). Under the first category, there may be a single IB operating in a country, such as Banque Albaraka D'Algerie in Algeria or the Iraqi Islamic bank for Investment and Development in Iraq (Shahid, 2008). Or there might be more than one IB operating in the same country such as Qatar, Egypt, Bahrain and Bangladesh. These banks practice Islamic banking in an environment predominated of the interest based banking system as far as their integration and the support guaranteed by the credit system are concerned. In addition to these specialized IBs, conventional banks are allowed to provide Islamic financing and investment to their clients through Islamic windows in some countries such as Bahrain, Indonesia, Malaysia, UAE and Yemen. However, in other countries such as Kuwait and Turkey, Islamic windows are not allowed. It is worthwhile to mention in this context that some banks that operate in non-Islamic countries are also engaged in certain types of Islamic transactions. Moreover, there are a number of Islamic banks

that are registered and currently in operation in non-Islamic states such as Denmark and Luxembourg (Hamoud, 1994).

Under the second category are the banks in Sudan, Pakistan and Iran, where the entire banking system has been Islamized. In Iran, since the inception of the Islamic Revolution, all banks have been nationalized. In Pakistan and Sudan however, there is still governmental banks as well as banks owned by the private sector. The scholars belonging to the Imamate School undertook serious discussions concerning the issue of bank nationalization in Iran until the opinion calling for nationalization won the battle (Hamoud, 1994).

The distinguished features of IBs are that they are unleveraged firms, interest free and do not make loans (Hassan, Joseph and Bashir, 2003). IBs are usually considered an all equity institutions because of the special nature of the deposits in IBs. This is assured by Hassan's (1999: 6) statement "The transition from an interest based-system to one that relies on profit and loss sharing (PLS) makes Islamic banks essentially an equity based system where equity capital is provided by the depositors, who receive no fixed interest on their funds but a dividend out of the bank's profit." Zaher and Hassan (2001: 158) stress on the same idea "depositors in Islamic banks are really shareholders who earn dividends when the bank turns a profit, the Islamic financing functions much like Western equity financing. Investors and lenders have the right to a decent rate of return; it is just the certainty of the return that is an issue." Muljawan, Dar and Hall (2004: 2) also assert the same notion, in their own words: "Conceptually, an Islamic Bank has an equity-based capital structure, dominated by shareholders' equity and investment deposits based on profit and loss sharing [PLS]. There is no need for capital adequacy regulations if the Islamic banks are structured as pure PLS-based organizations." Hassan et al. (2003) also make the same argument

that investment accounts that operate under PLS scheme where capital is not guaranteed, nor there is a fixed predetermined return makes the account holders very close to shareholders at least with respect to downside risk. In the event of loss the Mudaraba depositors and shareholders would share the loss. However, Hassan et al. (2003) recognize that current account holders act as creditors to IBs because the current account balances are the bank's non-contingent liability to pay on demand.

In Islamic banking, investment deposits have a special feature in that their capital value and rate of return are not guaranteed. Some authors argue that this feature increases the potential for moral hazard, and creates an incentive for risk taking. Cihak and Hesse (2008) acknowledged the fact that addressing the unique risks of Islamic banking requires adequate capital and reserves, along with appropriate pricing and control of risks.

The sources of funds for IBs are mainly from paid-up capital, reserves and deposits. Paid-up capital is provided by shareholders and is mobilized under the Musharaka principles of Islamic Shariah. Musharaka is actually a joint-venture of two or more persons who jointly provide capital and have right to participate in the profit and management of the investment and have the obligation to bear proportionate loss (Hassan, 1999). Deposits in IBs are mobilized through the application of two Shariah principles; Al-Wadiah and Mudaraba. Under Al-Wadiah principle, the bank receives the funds with the undertaking to refund the deposit on the demand of the depositor, while the bank gets the authorization from depositors to use the funds for the benefits of and at the risk of the bank. The current account deposits are managed under this principle. However, by opening such account, the depositor does not gain any management (voting) right on the Bank nor on the funds deposited.

Profit and loss sharing accounts and various terms deposits are conducted on the principle of Mudaraba. This principle implies that the bank receives the authority from the depositors of an exclusive right to manage the fund, and based on a pre-agreed ration, the profit resulting from such deposits will be shared between the bank and depositors. The loss however, if not resulting from the negligence of the bank or any of its employees, will be borne by the depositors (Hassan, 1999).

Despite the arguments that substantiate the idea that deposits in IBs should be treated like equity, Zaher and Hassan (2001) notice that Islamic banking in its current practice diverges from its ideal version in several important ways. They summarize these differences in four main points, in which the first difference is of relevance to this study. It is that all deposits, including investments, are always explicitly or implicitly guaranteed. They acknowledged that in some cases, the capital values are formally guaranteed in laws and regulations, in other cases however, it is based on implicit understanding among the authorities, banks, and the public (Zaher and Hassan, 2001). Muljawan, Dar and Hall (2004) argue that because of information asymmetry and risk aversion behavior of investors; there currently exist fixed claim liabilities on IBs' balance sheets. Therefore, IBs should operate under capital adequacy regulations although theoretically they should operate as having an equity-based capital structure. Regulators in Western countries can and do argue that IBs should carry more, rather than less, capital since Islamic banking is relatively new and because IBs' assets are often long-term and illiquid (Zaher and Hassan, 2001).

The extent of literature on Islamic banking can be divided into theoretical and empirical dimensions. The previous attempts to study Islamic Banks (Ahmed 1981, Karsen 1982 as cited by Hassan and Bashir, 2003) focused primarily on the conceptual issues underlying interest-free financing. Today, there has been an

increasing number of empirical studies in the Islamic banking literature, most of which is devoted to assess the performance of IBs. The relationship between profitability and banking characteristics has been closely examined in many studies (for example Samad, 1999; Bashir, 2000; Samad and Hassan, 2000; Hassan and Bashir, 2003; Haron, 2004; Samad, 2004). Although investigating the determinants of profitability has been one of the most popular topics among researchers in Islamic banking studies, and although capital measures have been included in performance studies as one of the bank characteristics affecting IBs' profitability¹, there has not been a single study, up to my knowledge, that rigorously quest the effect of capital structure on IBs profitability per se while at the same time control for reverse causality of the effect of profitability on IBs capital structure. Thus, there is a strong need for such study. In addition, all previous studies lack a representative sample as they investigate on a small sample of banks which limits the generalization of their results. This study will overcome this issue by examining a relatively large sample of IBs (85 banks).

While the relationship between capital structure and return on equity is studied closely for conventional banks (Berger, 1995; Berger and de Patti, 2002; Eriotis, Frangouli, & Ventoura-Neokosmides, 2002; Hutchison and Cox, 2006) there is still a shortcoming of studies for IBs.

The whole rationale of Islamic Finance is that fund-providers and fund-users work in harmony together as partners without depositors being assured of any guaranteed return from those who utilize their money. Thus, one can argue that this alters the risk associated with deposits, and help to build a new profile of the capital

¹ Since both shareholders and depositors in IBs are the residual claimants to the bank's profits, bank profitability is the specific measure of performance (Hassan and Bashir, 2003). Thus, throughout this paper, profitability and performance are used interchangeably.

structure base for these institutions. An argument can be made, that deposits at Islamic banking institutions represent a hybrid source of capital, which combines certain characteristics of both debt and equity (Kadom and Eid, 2008).

Indeed, consolidation among banks, rising competition and continuous innovation to provide financial services, all are factors that contribute to the growing interest in a detailed and critical evaluation of IBs (Hassan and Bashir, 2003). In fact, a close examination of IBs' capital structure as to its effect on performance, along with an examination of its determinants is very essential for managerial as well as regulatory purposes. While managers are usually eager to determine the specific effect of their capital structure decisions on their performance, bank regulators are concerned about the safety and soundness of the banking system and pay a special attention to banks' capital structure for regulatory purposes.

Capital structure decisions are not only important for managers and regulators, but are also of interest to shareholders. In deciding upon its capital structure, banks should take into consideration regulatory requirements, its soundness and the rate of return to equity holders. Equity holders are especially interested in the banks' capital structure because it is detrimental to their rate of return and safety of their investments in the bank. A high leveraged bank is a more risky bank, however, according to conventional wisdom; it is expected to pass high returns to its shareholders. Therefore, the capital structure decision imposes a risk-return tradeoff for the bank.

As for the determinants of banks' capital structure, the standard text book answer is that capital regulation is the main determinant, thus, there is no need to investigate banks' financing decisions (Gropp and Heider, 2009). As Mishkin (2000: 277 as cited by Gropp and Heider, 2009: 7) put it in his own words: