Cost of capital of Islamic banking institutions: an empirical study of a special case

Kadom Shubber

Westminster Business School, University of Westminster, London, UK, and

Eid Alzafiri

Kuwait Petroleum Corporation, Kuwait, United Arab Emirates

Abstract

Purpose – The paper's purpose is to ascertain how computing the cost of capital for Islamic banks may differ from the case of conventional ones.

Design/methodology/approach – The published accounts of four major Islamic banks were analysed, so as to test the set hypotheses. Also, two surveys were undertaken on this issue, one for banking officials; the other for depositors at a major Islamic bank.

Findings – For Islamic banks, it became clear that deposit accounts were not a liability, as these fell within the definition of "profit-and-loss sharing" instruments. In fact, a high-positive correlation coefficient was apparent between an Islamic bank's market value and the size of its deposits. Also, the market value of Islamic banks was clearly independent of its cost of capital.

Research limitations/implications – The two surveys expressed the views of respondents, and these could be subjective. Also, the core sample studied in depth was limited to four banks, and this could be widened in subsequent research.

Practical implications – Risk associated with deposit-taking needs to be looked at differently in the case of Islamic banking institutions. Also, return provided to shareholders came out higher than for depositors.

Originality/value – The paper sheds new light on how the cost of capital may be computed in the case of Islamic banks. Also, the relationship between depositors and shareholders is investigated, though additional research is required on this aspect.

Keywords Cost of capital, Banks, Banking, Islam

Paper type Research paper

1. Introduction

It is incumbent upon top management of any business organisation to ascertain the firm's relevant cost of capital. Typically, corporations – large, medium and small – draw their requisite capital from several sources (e.g. ordinary shares, preference shares, traditional debentures, convertible bonds, long-term bank borrowing), and there exists an ascertainable cost associated with each source.

From the firm's angle, the cost of each source of capital reflects the level of return which providers of that source require, taking all relevant factors into consideration, especially the degree of inherent risk. These levels of return (or costs) tend to vary over time, due to changes in the nature and make-up of the business, alterations in officially-set rates of interest, stock market sentiment, investors' perceived degree of time-preference, and risk linked to each class of security issued by the firm.

It is therefore imperative that treasury management keeps a dynamic profile of the cost of each source of capital that is presently utilised, as well as any that is potentially available and can be tapped. For sources that are currently utilised, a weighted average needs to be computed. Such figures are instrumental for certain major financial/treasury decisions, particularly in the field of raising external finance, evaluating proposed investment projects and deciding on dividend policy.

1.1 Relevant theories

Based on empirical research, a number of theories, concepts, and models have been evolved over the past five decades, aiming to compute the respective cost of each source of capital, such as equity and redeemable bonds. Starting from the late 1940s, experts in finance recognised that intelligent manipulation of debt and equity could enhance corporate value, via producing an optimal (or near-optimal) mix of capital. Over the 1950s, 1960s, and 1970s five concepts of finance theory were developed on this area, viz:

(1) early gearing (leverage) models;

(2) the model of Modigliani and Miller (MM);

(3) capital asset pricing model (CAPM);

(4) arbitrage price theory (APT); and

(5) Gordon model.

Early theories on corporate gearing (leverage) argued for a certain amount of debt in the capital structure up to an optimum degree, which reduces the average cost of capital to minimum. However, the MM model advanced the concept of separating capital structure from cost of capital, due to the process of arbitrage practised by investors, and assuming perfect conditions, including the absence of dealing costs, personal and corporate taxes. For his part, Gordon developed a model for measuring the cost of equity capital.

On the other hand, CAPM postulated a linear relationship between cost of equity capital and degree of systematic risk (β), assuming that investment portfolios were diversified and unsystematic risk had been eliminated. The APT was developed in order to tackle some of the shortcomings of CAPM. APT regarded asset returns as a function of certain key variables, which vary from stock to stock. Under APT, no assumption of efficient diversification was made, while the key independent variables needed to be selected in each case, so as to construct the regression equation (see in this regard the following Ross, 1976; Modigliani and Miller, 1958; Fama, 1978; Sharpe, 1964).

Correspondingly, additional models were developed, putting forward the notions of the weighted average cost of capital (WACC) and marginal weighted cost of capital. The latter was a refinement of the former, whereby treasury/finance directors could compute the cost of acquiring new capital from either a single source or multiple sources.

1.2 Computing WACC

Once the cost of each source of capital is ascertained, a weighted average can be computed, this being the "WACC". Assuming that, the organisation draws its capital

from three distinct sources (e.g. ordinary shares, preference shares and bonds), the relevant WACC formula would be:

$$\text{WACC} = \left[\text{Ke}^* \frac{E}{E+P+D}\right] + \left[\text{Ke}^* \frac{P}{E+P+D}\right] + \left[\text{Kd}^* \frac{D}{E+P+D}\right]$$

where E, P, and D stand for the market values of equity, preference shares and bonds. Also, Ke, Kp and Kd represent the respective costs of equity, preference shares and bonds.

If any of these three components is made up of more than one type, the respective variable will be a weighted average for that category. For instance, if the organisation is making use of three different types of debts (e.g. bank borrowing, convertible bonds and traditional bonds), then both D and Kd will, respectively, be weighted averages of the total value of debt and their individual costs.

2. Advantages and drawbacks of debt

Conventional thinking within the area of finance theory has always assumed that a certain amount of debt in the capital structure is a good thing. This is due to the relative cheapness of debt, thereby lowering WACC. However, "debt" is characterised by rigidity, in terms of the servicing required, and thus any delay/failure to make timely payments of interest and/or principal will cause substantial distress to the business, and may even result in liquidation – as evidenced by the continual phenomenon of corporate collapses.

Hence, treasury management has a duty to watch the level of gearing (leverage), so as to prevent debt from exceeding its "optimal" level in the capital structure. As the degree of gearing approaches this "ideal" point, and particularly when it is exceeded, the respective costs of all sources of capital (including debt) would be rising, due to perceived increments in financial risk associated with the firm.

This reasoning applies to all businesses, whatever the economic sector in which they function. It is thus relevant to financial institutions, such as banks where the level of borrowing and deposits need to be watched and measured *vis-à-vis* equity capital. A major objective of banking regulation in all countries/regions is to keep financial risk within acceptable parameters and prevent the level of liabilities from spiralling out of control.

3. Special case of Islamic banks

When considering financial institutions purporting to operate in accordance with Islamic principles, we find that the situation with regard to debt/deposits is markedly different from conventional banks. For one thing, both borrowing and lending with a pre-determined rate of interest is contrary to Islamic Sharia, and hence cannot be practised. For another, depositors are guaranteed neither the recovery of their money nor any specific rate of return.

3.1 Rationale of Islamic finance

The whole rationale of Islamic Finance is that the two sides of the equation (i.e. fund-providers and fund-users) work in harmony as partners, without depositors being assured of any guaranteed return from those who utilise their money. In practice, Islamic banks draw around three-quarters of the funds under their management from

www.man

their depositors, while at the same time do not guarantee any specific level of return to these fund-providers.

All this alters the risk associated with deposits, and help to build a new profile of the capital structure/base for these institutions. A case can be made out for the assertion that deposits at Islamic banking institutions represent a hybrid source of capital, which combines certain characteristics of both debt and equity as we commonly know these.

It is noteworthy that – in the case of Islamic banks – returns paid to depositors are not deducted from operating income as an expense. However, in practice Islamic banks do attempt to shadow the level of interest payments made by conventional banks. This is corroborated by the observation that top managers at Islamic banks attempt to lower their fees on deposits whenever they view the prospective level of return on deposits to be rather low.

The question therefore arises as to whether the curve representing average cost of capital WACC is U-shaped, in the case of Islamic banking institutions. The curve would be U-shaped if at first a higher proportion of deposits reduces the cost of capital, then an optimum (minimum) level is reached, after which any increments in the ratio of deposits raises WACC.

3.2 Research hypotheses
In order to examine the special case of Islamic banking institutions, the following four hypotheses were set, so that they can be tested in this research:

H1. WACC is independent from the level of deposits.

H2. An increase in the size of deposits does not raise the level of financial risk.

H3. Higher deposits have a positive impact on the bank's earning per share (EPS).

H4. An increase in the size of deposits will raise the market value of the bank.

4. Four cases of Islamic banks
In order to test the hypotheses, four major Islamic banks were looked at. These cases were considered in some depth, and related to the following prime institutions:

(1) Kuwait Finance House (KFH).
(2) Dubai Islamic Bank (DIB).
(3) Qatar Islamic Bank (QIB).
(4) Bahrain Islamic Bank (BIB).

In each of the four cases, the respective costs of equity and deposits were calculated, and then the weighted average was found. In the case of equity, the cost (Ke) was computed by using the following formula:

$$\text{Ke} = Z + d + g$$

where, Z is "zakat" which is a compulsory religious levy, amounting to 2.5 per cent of equity funds. d represents the dividend yield and g is the expected rate of growth in dividend per annum.

Typically, Islamic banks have three types of deposit accounts, namely "term deposits" "saving accounts" and "investment accounts". Hence, the cost of deposits (Kd) was calculated via the following formula:

$$DtX_1 + StX_2 + ItX_3$$

where, Dt, St and It represent the respective costs of term deposits, saving accounts and investment accounts. The relevant weights of these three types are symbolised by X_1, X_2 and X_3.

4.1 Cost of capital for major banks
Taking a five-year period up to 1996-1998, Tables I-IV provide a summary of the results obtained. "Ke" stands for the annual return on equity, "Kd" for the three types of deposits (combined), while WACC is the weighted average cost of capital.

It must be noted that, the total weight of equity and deposits does not come up to 100 per cent, as there are other liabilities/assets under management, especially current-account funds which attract no return. Also, the cost of each source of capital has been assumed to be the return paid to providers of that source, without considering (in the case of equity holders) any capital gain element.

Year	Ke (per cent)	Kd (per cent)	WACC (per cent)
1993	7.2	5.5	5.1
1994	8.5	5.7	5.3
1995	7.0	6.0	5.2
1996	6.6	6.0	5.2
1997	6.6	6.1	5.1
Average	7.2	5.9	5.2

Table I.
Cost of capital figures for KFH (1993-1997)

Source: Kuwait Finance House (1991-1997) as summarised in Alzafiri (2001, p. 174)

Year	Ke (per cent)	Kd (per cent)	WACC (per cent)
1992	7.1	5.7	5.3
1993	8.4	5.6	5.1
1994	8.1	5.7	5.7
1995	2.5	5.6	5.3
1996	2.5	5.6	5.3
Average	5.7	5.6	5.3

Table II.
Cost of capital figures for DIB (1992-1996)

Source: Dubai Islamic Bank (1992-1996) as summarised in Alzafiri (2001, p. 189)

Year	Ke (per cent)	Kd (per cent)	WACC (per cent)
1994	5.8	5.1	4.2
1995	5.7	5.0	4.6
1996	12.1	4.9	5.0
1997	8.8	4.9	4.7
1998	3.9	4.8	4.3
Average	7.3	4.9	4.6

Table III.
Cost of capital figures for QIB (1994-1998)

Source: Qatar Islamic Bank (1992-1997) as summarised in Alzafiri (2001, p. 204)

These results support the (*H1*) hypothesis that deposit accounts are not viewed as a liability, due to the fact that neither the principal nor the rate of return were assured. This makes deposit accounts fall within the definition of "profit-and-loss-sharing" instruments. Indeed, contractual provisions stipulate that depositors are not entitled to any specific rate of return if the bank does not earn a profit.

4.2 Link to market value
The four cases also showed that higher deposits have the consequence of increasing the market value of the bank. The rationale for this is that funds under management open the way for enhancing added value, as the return attained on deposits usually exceeds the level of payment to depositors. Simultaneously, higher amounts of deposits are not normally perceived to raise financial risk, as no given level of return is guaranteed to depositors. This underpins the hypothesis that increasing deposits should leave a positive impact on the market value of an Islamic financial institution.

In this regard, the strength of association between total market value of each bank and its size of deposits was measured by computing Pearson's linear correlation coefficient. In all four cases, the figure exceeded 0.7, thereby indicating a strong correlation. The value of the correlation coefficient reached a maximum value of 0.881 in the case of QIB, while its minimum value was 0.720 for DIB.

Taking the four banks together, the average correlation coefficient again came out sufficiently high at 0.83. To compute this measure, all figures for deposits and market value were converted into US$ for each bank and over the seven-year spell 1994-2000. These figures are shown in Table V. All this underpins the (*H4*) hypothesis of this

Year	Ke (per cent)	Kd (per cent)	WACC (per cent)
1994	8.2	4.5	4.8
1995	9.4	4.3	4.8
1996	8.4	4.4	4.7
1997	7.2	4.4	4.7
1998	6.4	4.4	4.6
Average	7.9	4.4	4.7

Source: Bahrain Islamic Bank (1993-1997) as summarised in Alzafiri (2001, p. 219)

Table IV.
Cost of capital figures for
BIB (1994-1998)

Year	Combined deposits (US $m)	Combined market value (US $m)
1994	6,015	773
1995	6,323	1,161
1996	6,585	1,796
1997	7,203	1,981
1998	7,288	2,417
1999	7,879	2,255
2000	8,447	2,186

Note: Coefficient of correlation = 0.83
Source: Alzafiri (2001, p. 232)

Table V.
Combined correlation
coefficient between
deposit levels and market
capitalisation (KFH, DIB,
QIB, and BIB) 1994-2000

research that an increase in the level of deposits enhances the market value of an Islamic Banking Institution.

All four cases demonstrated that EPS improved as the level of deposits went up, as depositors were viewed as sharers in the profit/loss, rather than being entitled to a fixed interest rate. This corroborates the (*H3*) hypothesis of the research which says that increasing deposits have a positive impact on EPS.

Increasing deposits, therefore, do not lead to any increment in the cost of equity. Indeed, equity holders benefited from larger deposits, as owners of the latter pay management fees, which are deducted from the depositors' share of the profits. Also, the market value of Islamic banks is independent of WACC.

4.3 Comparative returns to depositors and shareholders
The four cases studied show that shareholders enjoyed a higher level of return, as compared with depositors. It can be argued – with some justification – that the higher return to shareholders is explained by the higher degree of risk to which they are exposed. Table VI provides a summary of the comparative levels of return to shareholders and depositors over the three-year spell 1994-1996 for the four banks in question. The return to shareholders takes into account the dividend paid, as well as any capital appreciation.

As in the case of conventional banks, WACC is the real cost of funds borne by Islamic banking institutions, which is the weighted average annual return rendered by the institution to equity-holders plus all types of depositors/creditors. For Islamic banks, this model is composed of the following elements:

- dividend paid to shareholders;
- cost of "Zakat" paid on shareholders' funds;
- rate of growth in dividend to shareholders; and
- return provided to depositors, as well as the rate of increase thereon.

5. Survey results
In addition to the analysis of the published accounts of four major Islamic banks, two additional surveys were carried out. One survey was aimed at seeking assessments from Islamic-banking officials; the other was to obtain the views of KFH depositors.

5.1 Survey of banking officials
Officials of 20 Islamic banks were questioned, using a pre-set questionnaire. Ten of these banks were in the Gulf region, and were individually visited for the purpose,

| | Average annual returns to | |
Bank	Shareholders (per cent)	Depositors (per cent)
KFH	43.5	5.9
DIB	9.2	5.6
QIB	5.1	5.0
BIB	6.8	4.4
Average	16.2	5.2

Table VI.
Comparative levels of annual return to shareholders and depositors (1994-1996)

Source: Alzafiri (2001, p. 239)

www.man

while the other ten banks were operating in other parts of the world, including Europe, Asia, Egypt and Jordan. Banking officials in this latter group were sent the questionnaire by courier mail.

The objective of the questionnaire was to procure additional evidence to test the hypotheses set. It contained a total of 30 questions, all of which were of the multiple-choice type. The questionnaire looked at Islamic banking products, cost of capital, and other issues.

Most responses by bank officials to the questionnaire indicated that the CAPM could not be applied in computing the cost of capital for Islamic financial institutions, as the latter do not utilise a risk-free rate of return. Almost 70 per cent of respondents expressed this view, while 15 per cent thought that somehow CAPM could be of benefit in this connection. A further 15 per cent could not express an opinion.

Another major question related to the link between the level of deposits and WACC. Again, almost 70 per cent of banking officials did not believe that there was a relationship between the size of depositors' fund and WACC. Also, 77 per cent of these officials expressed the view that any increase in deposits does not enhance the level of risk for their institution, nor does it result in a higher risk of bankruptcy.

Over 90 per cent of responses from bank officials emphasised that higher deposits did not raise the cost of equity to their respective banks. Nor did they see any direct (positive) correspondence between the size of deposits and the cost of deposits to these banks. Indeed, the majority of responses indicated quite plainly that depositors' funds were not considered to be a liability to the bank in the same sense that "debts" were, i.e. giving creditors a claim on borrowers' assets.

Yet, the above point was rather contentions, as 15 per cent of respondents perceived depositors to have a claim on the bank's assets, while a further 8 per cent did not put forward an opinion.

Like stockholders, depositors received dividends. Hence, most respondents felt that there was no conflict between depositors and equity-holders. Most officials contacted made clear that Islamic banks did not face interest-rate risks, but they were exposed to foreign currency risks. However, due to prohibition by Sharia, currency-related derivatives could not be employed to cover currency risks.

5.2 Survey of depositors

The survey focused on KFH depositors had the objective of ascertaining any knowledge concerning conventional bank, comparative levels of return to shareholders, and the degree to which depositors were satisfied with the level of their return. All respondents indicated their unwillingness to receive interest payments from conventional banks, viewing such payments as "usury".

The majority of those questioned (over 81 per cent) had invested their funds with KFH for more than five years, while another 11 per cent had been with the bank for less than three years. The majority of depositors (61 per cent) were not satisfied with the level of return they were receiving, while a large minority (39 per cent) were. A similarly large majority (63 per cent) were aware of the level of return KFH shareholders were getting, but again a large minority (37 per cent) were not. It is probably in order to hypothesise that depositors appreciated the relatively easy access to their funds and felt exposed to lower risk than shareholders, thereby prompting them to acquiesce to a lower level of return, compared to equity-holders.

It is interesting that a minority of the KFH depositors surveyed (41 per cent) had compared their level of return with those of shareholders, while the rest (59 per cent) said they did not make any such comparison. Also, the vast majority (97 per cent) would not transfer their money to conventional banks, even if the latter paid rates of interest exceeding the level of return they were procuring form KFH.

6. Conclusions

Taking the findings of the four case studies, as well as the two surveys, ten main conclusions can be presented. All these relate to the cost of capital of Islamic banking institutions:

(1) Islamic banks can acquire as much finance as needed by way of deposits, without incurring any extra risk.

(2) Deposit accounts are neither a liability nor equity capital. They are a "hybrid" source of capital, and must be recognised as such. Depositors are partners with the bank, but possess no ownership rights.

(3) Cost of equity capital is not sensitive to the size of deposit funds, as the latter can generate their separate returns. Also, the cost of deposit accounts is not related to the volume of these accounts.

(4) There is no interest-rate risk for Islamic banks. However, the latter are subject to currency exchange risks, but cannot hedge against this exposure.

(5) Shareholders enjoy a higher level of return than depositors, though it is arguable that the former are exposed to higher risks.

(6) Depositors favour Islamic banks due to Islam's prohibition of fixed interest, whereby the latter is viewed as "usury".

(7) Increases in the size of deposits have a positive impact on EPS, as a portion of depositors' profits is deducted as a fee for the benefit of the bank and its shareholders.

(8) The majority of KFH depositors are not satisfied with their level of return, especially when they compare this with that paid to shareholders.

(9) Islamic banks attempt to shadow the level of interest payments made to depositors at conventional banks. This is evidenced by the fact that a decision is occasionally taken to reduce management fees on deposits whenever potential returns to depositors are viewed to be inadequate.

(10) Market value of an Islamic bank will increase when the size of deposit accounts rises.

References

Alzafiri, E.S. (2001), "Relevance of the notion of 'Cost of Capital' to Islamic banking institutions: a theoretical and empirical study", unpublished PhD thesis, University of Westminster, London.

Bahrain Islamic Bank (1993-1997), *Annual Reports 1993-1997*, Bahrain Islamic Bank, Manama.

Dubai Islamic Bank (1992-1996), *Annual Reports 1992-1996*, Dubai Islamic Bank, Dubai.

Fama, E.F. (1978), "The effects of a firm's investment and financing decisions", *American Economic Review*, Vol. 68, pp. 272-84.

Kuwait Finance House (1991-1997), *Annual Reports 1991-1997*, Kuwait Finance House, Kuwait.

Modigliani, F. and Miller, M. (1958), "The cost of capital, corporate finance and the theory of investment", *American Economic Review*, Vol. 48, pp. 260-97.

Qatar Islamic Bank (1992-1997), *Annual Reports 1992-1997*, Qatar Islamic Bank, Qatar.

Ross, S.A. (1976), "The arbitrage theory of capital asset pricing", *Journal of Economic Theory*, Vol. 3, pp. 346-62.

Sharpe, W.F. (1964), "Capital assets prices: a theory of market equilibrium under conditions of risk", *Journal of Finance*, Vol. XIX, pp. 425-42.

Further reading

Ahmad, S.M. (1985), "Banking in Islam", *Journal of Islamic Banking and Finance*, April/June, pp. 13-27.

AL-Fadhli, M. (1998), "Financial performance of Islamic banking in Kuwait", PhD thesis, Loughborough University, Loughborough.

de Belder, R.T. and Khan, M.H. (1993), "The changing face of Islamic banking", *International Financial Law Review*, Vol. 12 No. 11, pp. 23-6.

Gafoor, A.L.M. (1996), "Interest free commercial banking", *Journal of Economic Literature*, Vol. 34 No. 4.

Karim, R.A.A. (1991), *The Impact of Profit and Loss Sharing on Capital Structure of Islamic Banks*, The Financial Accounting Organisation for Islamic Banks and Financial Institutions, Manama.

About the authors
Kadom Shubber specialises in finance, investment, international business, and general management, with experience (in academia and outside) stretching over three decades, in both the UK and Middle East. Currently, he is a Principal Lecturer in Finance at Westminster Business School, London, UK, where he has been course leader of the Masters programme in International Finance since 2001, and module leader of Modern Finance. Kadom Shubber is the corresponding author and can be contacted at: Shubbek@wmin.ac.uk

Eid Alzafiri is currently the Chief Financial Officer at United Real Estate Company, Kuwait and previously worked for the Kuwait Petroleum Corporation. He is also the Vice President of United Real Estate Facility Management and a Board Member for Kuwait Hotels Co. He gained his Masters at Azusa Pacific University, USA and his PhD in finance at the University of Westminster, UK. He is also a member of the Association of Corporate Treasurers, UK, the International Society for Financial Analysts, USA, the Association of Investment Research & Manageemnt, USA and the Kuwaiti Association for Accountants & Auditors, Kuwait.