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ISSUES IN ISLAMIC CORPORATE FINANCE:

CAPITAL STRUCTURE IN FIRMS

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A MEMBER OF THE ISLAMIC DEVELOPMENT BANK GROUP

ISSUES IN ISLAMIC CORPORATE FINANCE: CAPITAL STRUCTURE IN FIRMS

Habib Ahmed

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In the name of Allah, the Most Merciful, Most Beneficent

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FOREWORD

The Islamic Research and Training Institute (IRTI) of the Islamic Development Bank (IDB) was established in 1401H (1981G) "to undertake research for enabling the economic, financial and banking activities in Muslim countries to conform to *Shari'ah*". In order to discharge its responsibilities, IRTI pays special attention to basic and applied research in the areas of Islamic economics, banking, and finance relying on its in-house research capabilities and mobilizing external scholars.

Until now most of the research in Islamic economics and finance has focused on financial intermediation and supply side of finance. The demand side of financing involving the financial decisions of firms has received little attention. The research paper is a contribution in this area and examines the corporate finance decisions of firms from an Islamic perspective. The paper explores the implication of relevant Islamic principles on capital structure in firms. In particular, the paper outlines a pecking order theory of determining the choice of different debt and equity instruments that eventually determines the capital structure in firms. The results from the study will give useful insights to firms that would like to operate under Islamic principles. Suggestions of the institutional arrangements and instruments needed for fulfilling the corporate finance needs of firms are also given.

Given the lack of literature in corporate finance from Islamic perspectives, there are many areas in which contributions can be made. As few firms are operating under Islamic principles, it is difficult to undertake theoretical research that explains real-life experiences. The lack of operational Islamic firms also makes empirical research on the topic impossible. There is, however, need for researchers to put forward ideas that can be used by firms that want to operate under Islamic principles. This paper is one of first attempts to address the some of the issues related to corporate finance in general and capital structure in particular. I hope that the publication of this research paper will stimulate further research along these lines.

Bashir Ali Khallat
Acting Director, IRTI

1. INTRODUCTION

Capital structure of firms has interested researchers of contemporary firm theory and corporate finance. Starting with seminal contribution of Modigliani and Miller (1958) which asserted that the value of the firm is independent of the capital structure, numerous theoretical and empirical papers have attempted to explain the capital structure in firms. Even though corporate finance in general and capital structure in particular have been important areas of research in conventional finance, research on these themes have been scant from Islamic perspectives. While a bulk of research in Islamic economics and finance has focused on financial intermediation and supply side of finance, the demand side relating to the financial decisions of firms has received little attention. This paper is a contribution in this area. It examines corporate finance decisions of firms from an Islamic perspective and provides a theoretical basis of determining its capital structure. After reviewing the relevant literature on corporate finance, the paper outlines how Islamic firms determine financing instruments and the resulting capital structure.[1]

The theory of firm and its financial management decisions are intricately related and these form the bases of understanding issues like capital structure, corporate governance, risk management, and valuation of a firm (Zingales 2000 and Kimball 2000). Thus, discussing the theory of capital structure would require studying the salient features of firms and the nature of instruments used to finance investments. The paper explores the implications of relevant Islamic principles on the capital structure of firms. The study will give useful insights to firms interested to operate under Islamic principles. Suggestions will also be given for the institutional arrangements needed to meet the corporate finance needs of firms.

Capital structure of a firm relates to the composition of the debt/equity in financing its assets. In a typical balance sheet, assets are classified as current and fixed. Fixed assets are those with long life and can be tangible and intangible.[2] The assets of the firm are financed by short-term (or current) and long-term liabilities and equity. The management of a firm has to deal with two issues related to corporate finance. The first is the short-run decision of

[1] The term 'Islamic firm' is used to mean a firm operating under Islamic principles.
[2] See Appendix I for definitions and concepts related to balance sheet of a typical firm.

managing working capital and liquidity. The second problem relates to the firm's long-term financing decisions that determines its capital structure.[3] The manager has to choose a capital structure as a mix of debt and equity so as to maximize the value of the firm. In the paper, the focus is on the latter decision of capital structure in firms.

The paper uses a variant of the Pecking Order theory to explain how the capital structure of an Islamic firm would be determined. The theory assumes that the objective of a firm is to minimize the total cost of financing. The paper shows that the choice of instruments and the capital structure of a firm depend on the constraints it faces. If a certain low cost instrument is not available to a firm due to some constraint, it will move on to the next low cost instrument. Moving up the pecking order, the firm decides on the composition of debt and equity to finance assets.

The paper is organized as follows. The next section outlines the theories in conventional finance that explain the capital structure in firms. Section three briefly reviews the literature on issues related to firms and corporate finance in the case of Islamic firms and introduces the main Islamic financing instruments. Section four discusses some issues that form the building blocks of the theory that is presented in Section five. Section six draws on lessons and suggests areas of further research. Section seven concludes the paper.

2. FIRMS AND CAPITAL STRUCTURE: LITERATURE REVIEW AND BACKGROUND MATERIAL

Contemporary firm theory has evolved from the neoclassical theory that views firm as a profit-maximizing unit of production to one that considers firm as a coalition of agents with conflicting goals. In corporate finance, the concept of firms has also moved from an entrepreneurial organization to a corporate one in which ownership and control are separated. While in entrepreneurial firms the owner and the manager are the same, in corporate firms owners of assets do not have the skills needed to operate the firm and hire a manager to do the job. This is due to some specific non-transferable management knowledge and skills that managers possess. As such, the managers have comparative advantage over

[3] Note that long-term financing sources can also be used to finance working capital gap. There may well be a permanent component of the working capital that is financed by long-term sources.

owners to manage the operations of the firm (Fama and Jensen 1983 and Spulber 1999, p. 307). Given the complexity of the organizations, human capital becomes a vital element of the 'new firm' along with physical capital (Zingales 2000). A central issue in theories that explain corporate firms is the relationship between ownership and control of the residual.

The separation of ownership and control gives rise to certain agency problems. Agency theories are concerned with studying both the principal-agent problem and the incentive problem in contracts. The agency problems involving different agents are resolved by employing incentive compatible contracts. In this new framework, a firm can be viewed as "the nexus of contracts, written and unwritten, among owners of factors of production and customers" (Fama and Jensen 1983, p. 302). These contracts not only outline rights of each agent, performance criteria, and payoff functions, they also determine the costs of production and the profitability of the firm. Contracts, however, are incomplete as it is very costly to include decisions on all possible anticipated future events. Due to the incompleteness of contracts, frictions may arise among the agents. Given the above background of the new firm, the focus of this paper is to understand the corporate finance decisions in general and capital structure in particular. We briefly discuss the theories of capital structure in this section and report some empirical findings on the topic.

2.1. Theories of Capital Structure

As mentioned above, interest and research on capital structure started with the assertion of Modigliani and Miller (1958) that the financing choices between debt and equity did not affect the value of the firm (termed as proposition I MMI). Their paper also indicates that debt-equity ratio and the cost of debt determines the cost of equity. In particular, a firm's use of debt and cost of equity are positively related (termed as proposition II or MMII). The proposition that financing doesn't matter, however, assumes perfect and frictionless capital markets. Different theories have since evolved to explain the capital structure of firms. These theories show that financing matters in an imperfect world with taxes, frictions in the markets, brokerage costs, etc. While no universal theories of capital structure exist, some theories try to explain the debt-equity ratios in

different firms (Myers 2001). The foremost theories in conventional literature explaining the capital structure of firms are discussed below.[4]

2.1.1. Tradeoff Theory

Tradeoff theory explains the capital structure by looking as the cost-benefit aspect of debt. Interest payments can be deducted from corporate profit as costs but dividends cannot be. As such, by adding debt to its capital structure, a firm can lower the expected tax liability and increase the after-tax cash flow or profit. This would imply that most firms would opt for high leverage ratios due to the tax advantage. Thus, MMI proposition may not hold when tax benefits on debt relative to equity are considered.

Most firms, however, show moderate debt ratios. This can be explained by considering the cost side of debt. Adding debt to the capital structure increases the probability of financial distress. Financial distress adds to the costs in terms of "the costs of bankruptcy or reorganization" and also "the agency costs that arise when a firm's creditworthiness is in doubt" (Myers 2001, p. 89). Myer (1977 and 2001) points out another indirect cost of leverage as the reduction in the value of the financially distress firm due to cutbacks of investment. Higher debt increases the probability of financial distress and raises the cost of raising funds. As a result, valuable investment opportunities may be postponed or given up. Due to the under-investment, the profit of firms is affected adversely.

The tradeoff theory considers the benefits and costs of adding debt to the capital structure of a firm. This theory suggests that the optimal debt in the capital structure is the point where the tax benefit from the additional unit of debt equals the increase in the expected costs of financial distress. Note that the tradeoff theory does not distinguish between the equity from retained earnings or external stocks issue.

2.1.2. Signaling and the Pecking Order Theory

Signaling and pecking order theories of capital structure consider information costs resulting from asymmetric information problems. In these theories, managers are assumed to have better information about the firm than the shareholders. The signaling theory maintains that the choice of debt and equity

[4] For surveys of capital structure theories see Myers (2001) and Harris and Raviv (1991).

to finance investments emits different signals to investors. An increase in debt gives a signal that the firm is expecting a higher cash flow in the future from which it will enable it to service debt. Signals from equity issuance are different. The managers are aware of the true value of the stock vis-à-vis the market price. If the stock price is overvalued then it is attractive to issue new stock, as it transfers value from new investors to existing shareholders. If, however, the stock is undervalued then the manager would opt for debt instead of issuing equity.

Assuming the managers work in the interest of the existing shareholders, the investors consider issuing new stocks as signal of overvalued stocks. Thus, result of new stock issues is the dampening of its prices, thereby lowering the value of existing shareholders' interests. Barclay and Smith (2001, p. 201) call the dilution in shareholder interests as '*information costs*' of raising outside capital. As the market takes a signal (of overvaluation of firm) from new issue of stocks, some good firms with undervalued assets do not issue stocks to avoid information costs and instead opt for debt.

The packing order theory uses the concept of information costs to outline the order of preference of financing and determining the capital structure in firms. The theory maintains that firms prefer the safest modes of financing (in terms of cost) and move up to the next level when funds from a certain mode are exhausted (Myers 1998). Accordingly, firms prefer internal to external financing as the former has lower information costs. Internal financing comes in the form of retained earnings, which is the residual cash available to the firms after paying for interest payments and dividends. It is assumed that dividends are 'sticky' as the variation in the dividends paid out in consecutive periods is not too much. Firms can use the remaining excessive available cash (in form of retained earnings) without incurring any information costs. External financing is sought when internal source of financing is not available. In external financing, the firm prefers debt first as it is the safest security in terms of having lower information costs. If there is need for more funds, the firm moves on to more riskier debt and quasi-equity securities (like preferred stock or convertible securities) before finally offering new stocks.

The implication of the pecking order theory is that managers do not set target or optimal leverage ratios. A firm's capital structure reflects the cumulative requirement for different kinds of financing in the order given above.

This theory also implies that firms with fewer investment opportunities and higher profitability will have low debt ratio. Due to the lack of retained earnings, high-growth firms with smaller cash flows will be more leveraged.

2.1.3. Contracting or Organizational Theory of Capital Structure

As pointed out above, the goals of the owner of a firm (the principal) and the manager (the agent) who controls the firm can be divergent in a corporate firm. Managers may take decisions that serve their interests and deviate from those of the owners. The profit of the firm depends on the quality of the manager's effort and the way the resulting profit is used. Specifically, profit can be either distributed to the shareholders or used by managers to finance their perks. The returns to investors will thus depend on how the profit or 'free cash flow' is used. Jensen and Meckling (1976) point out the costs of using free cash flows for perks of managers instead of giving it to the investors. They define the loss resulting from agent's nonconforming actions (termed as residual loss) as *agency costs* (Jensen and Meckling 1976, p. 305).

Note that similar conflict may arise between the firm and creditors (Brewer et.al. 1996). A moral hazard problem may arise if the firm invests in riskier projects after credit has been provided. The creditors need to be careful that the firm does not invest in excessively risky projects as a failure in project may result in a default on debt. To avoid such problems the creditors monitor the firm's activities, advance credit against collaterals, and design contracts that imposes restrictions on the use of funds through covenants.

Hart (1995) and Jensen and Meckling (1976) discuss capital theory in the light of contracting theory. Using agency cost approach to capital structure would involve arriving at a debt-equity ratio that would minimize the loss resulting from agent's nonconforming actions resulting in residual loss. Noting that with debt financing the firm has to pay a fixed amount of cash, the optimum leverage ratio from the owners' perspective would be the point where the firm has just enough cash to finance the positive net present value projects. Myers (1998), however, asserts that the agency cost theory is more about the market for corporate control rather than capital structures.

2.2. Empirical Findings and Theories of Capital Structure

The following are some of the main results on debt-equity choices as reported in different studies.

A-1. There is no fixed or optimal capital structure among firms within an industry (Myers 2001).

A-2. Most of the aggregate gross investments are financed by internal cash flow that includes depreciation and retained earnings. Only about 20 percent of the aggregate investments come from external sources (Myers 2001).

A-3. Profitability and debt are inversely related (Rajan and Zingales 1995, Kester 1986 and Titman and Wessels 1988).

A-4. Debt ratio is low in firms with higher business risk or volatility of assets (Myers 2001).

A-5. Leverage ratio is positively related to the size of the firm (Banerjee et.al. 2000, Rajan and Zingales 1995). Specifically, leverage ratio is higher in larger mature firms and lower in growth firms (Long and Malitz 1985, Smith and Watts 1992).

A-6. Leverage increases with the increase in tangible assets or fixed to total asset ratio (Banerjee et.al. 2000, Rajan and Zingales 1995).

A-7. Issue of new stocks lowers the stock price (Asquith and Mullins 1986, Myers 2001).

We note that the trade-off theory explains couple of findings pointed out above. Mature firms with tangible assets will have higher leverage ratios. Due to the problem of financial distress, firms with intangible assets and growth potentials will choose low debt ratio to avoid loss of value from under-investment. Evidence supports these assertions as it has been found that growth firms with few tangible assets are less leveraged than mature firms with large tangible assets (points A5 and A6). The tradeoff theory also implies that firms would be more profitable with higher debt ratio. Evidence, however, shows a strong inverse relationship between profitability and leverage, with the most profitable firms borrowing less within an industry (point A-3).

The pecking order theory can explain a few observed facts mentioned above. The theory explains the negative relationship between profitability and leverage (A-3). Higher profitability enables firms to use internal resources and as such avoid debt. With sticky dividends, profitable firms with more internal cash will have less debt and firms with little retained earnings may end taking up more debt. The theory's prediction that stock price falls with new issue of stocks

is found to be true. As pointed out, it has been observed that markets react negatively to new stock issues (A-7).

2.3. Different Costs Associated with Raising Funds

Discussions on capital structure theories suggest that other than the direct costs of funds (cost of funds and floatation costs), there are indirect costs associated with raising funds. Various costs associated with different instruments of financing are discussed below.

2.3.1. Direct Costs

Directs costs are those that a firm has to pay explicitly in pecuniary terms for arranging finance from the suppliers of funds. These costs would include the following.

a). Costs of Funds (C_f): The costs of funds are the direct costs paid to the providers of finance. The costs of funds typically depend on the different risk/maturity profiles of the instrument. Specifically, the cost of debt is the rate of interest/mark-up charged and the cost of equity is the dividend paid out. The cost of retained earnings is the opportunity cost of the funds and equals that of common stock. In case of stocks, the dividends will determine their costs. The dividends have to be larger, the longer the maturity and riskier the securities. Given the low risk factors of debt relative to equity, the former costs less than the latter.[5]

b). Contracting/Floatation Costs (C_c): These costs are related to the expenses incurred to carry out the transaction. Contracting costs are incurred when writing a contract for a financial transaction. This includes the legal and other costs incurred when a firm takes funds from a financial institution (either bank or venture capital). Floatation costs are additional costs incurred for launching securities. Though floatation cost is inversely related to the amount of the funds raised, it is always less for debt compared to equity (Lee et al 1996, Brigham and Houston, 1988, p.363). Furthermore, floatation cost of IPOs are higher than

[5]Empirically it has been found that rate of return on equity is much higher than what can be explained by the risk-premium. This is termed as the 'equity premium puzzle' in the literature. See Kocherlakota (1996) and Mehra and Prescott (1985) for a discussion on equity-premium puzzle.

common stocks. Note that retained earnings though equity, have no floatation costs.[6]

2.3.2. Indirect Costs

Indirect costs are those that are implicit and not out-of-pocket expenses given to provider of funds. These costs are of the following types.

a). Distress Costs (C_d): As pointed out above in the trade-off theory, higher leverage ratios increases the probability of financial distress, which adds not only to costs of bankruptcy or reorganization but also the agency costs arising from doubtful creditworthiness of the firm. The result of more debt will be higher cost of funds and reduction in the value of the financially distress firm due to cutbacks of investment.

b). Information Costs (C_i): As discussed in the pecking order theory new stock issues gives a signal of overvalued share prices. As such, issuing new stocks reduces the stock prices thereby lowering the value of existing shareholders interests. The deterioration in shareholder interests resulting from raising outside capital is termed as information costs.

c). Dilution Costs (C_e): Dilution in rights of the shareholders can occur in two ways. First, more stocks implies dilution in the rights to residual profit, as the resultant profit is shared more widely. Second, the dilution can occur in terms of relatively lower control rights with the dispersion of voting rights among newer shareholders. While the former dilution cost is measurable, the latter is more subjective and depends on the attitudes and preferences of the shareholders.[7]

d). Agency Costs (C_a): From the fund providers perspective, excess cash at the hand of managers may lead to agency costs. The shareholders would prefer the firm to use more debt so that after paying for the fixed dues, the residual loss and

[6] In the US, average total floatation costs for bonds, preferred stocks, additional common stocks, and initial public offerings for issue size of USD 5 to 9.9 million are 3.2 percent, 2.6 percent, 8.1 percent and 17.8 percent respectively. These costs for issue size of under USD 1 million or less is 14 percent, 22 percent and 31.7 percent for bonds, additional shares, and IPOs respectively (Brigham and Gapenski 1991, pp 594-95).

[7] Surveys of entrepreneurial firms indicate that a large number of owners of firms prefer not to dilute their ownership and control of the firm. For empirical studies see Al-Hajjar and Presley (1996), Abalkhail and Presley (2002) and Ali (2003) for a theoretical exposition.

the resulting agency cost would be small. As such, more debt may be preferred relative to equity to reduce the agency costs.

3. ISLAMIC FIRM AND CAPITAL STRUCTURE: LITERATURE REVIEW

The literature on firms and capital structure from an Islamic perspective can be broadly categorized into two major themes. First, the nature of financing instruments and second, the nature of firms. These are discussed below.

3.1. Features of Basic Financial Contracts

Assets of firms can be financed in a variety of ways in the Islamic framework. We first discuss the basic features of traditional nominate contracts and then describe the modifications of these instruments that are appropriate for contemporary firms in the next section. Traditional Islamic modes of financing can be broadly classified into profit-sharing and sale-based instruments. Profit sharing instruments are *mudarabah* and *musharakah*. Sale based instruments are fixed-income instruments and include *murabahah* (cost-plus or mark-up sale), *bai-muajjal* (price-deferred sale), *istisna/salaam* (object deferred sale or pre-paid sale) and *ijarah* (leasing).[8] We outline the basic concepts and properties of these instruments below.

a) *Musharakah*: *Sharikah* is a partnership between parties in which financial capital and/or labor act as shared inputs and profit is distributed according to the capital share of the partners or in some agreed upon ratio. The loss, however, is distributed according to the share of the capital. Though there can be different kinds of partnerships based on money, labor, and reputation, one case of *sharikah* is participation financing or *musharakah* in which partners share both in capital and management of the business enterprise. Thus partners in *musharakah* have both control rights and claims to the profit.

b) *Mudarabah* (or *qirad* or *muqadarah*). *Mudarabah* is similar to the concept of silent partnership in which financial capital is provided by one or more partner(s) (*rab ul mal*) and the work is carried out by the other partner(s) *mudarib*. The funds are used in some activity for a fixed

[8]For a discussion on these modes of financing see Ahmad (1993), Kahf and Khan (1992), Khan (1991), and Usmani (1999).

period of time.[9] The financiers and the managers of the project share the profit in an agreed upon ratio. The loss, however, is borne by the financiers according to their share in the capital. The manager loses opportunity cost of his/her time and effort. As the *rab ul mal* is sleeping partner, he/she has a claim on profit without any say in the management of the firm.

c) *Murabahah/Bay Muajjal*: *Murabahah* is a sale contract at a mark-up. The seller adds a profit component (mark-up) to the cost of the item being sold. When the purchase is on credit and the payment for a good/asset is delayed, then the contract is called *bay-muajjal*. A variant would be a sale where the payments are made in installments. These contracts create debt that can have both short and long-term tenors. In these debt contracts the supplier of the good has claims on a fixed amount that must be paid before arriving at profits.

d) *Salam/Istisna*: *Salam* sale is an advance purchase or product-deferred sale of a generic good. In a *salam* contract, the buyer of a product pays in advance for a good that is produced and delivered later. The contract applies mainly for agricultural goods. *Istisna* contract is similar to the *salam* contract with the difference that in *istisna* the good is produced according to the specifications given by the buyer. This applies mainly to manufactured goods and real estate. Furthermore, in *istisna* the payments can be made in installments over time with the progression of the production. Note that in case of a firm *istisna* can be used in a couple of ways. First, the firm can get funds to finance its working capital needs. *Istisna* contract is a debt contract that can be used only if the financier is willing to purchase the goods at the stipulated time of delivery. The second approach would be for the firm to ask the financier to provide asset (like real estate) and the payments are made over a period of time in the future. In this case the financier may need to have a parallel *istisna* and sub-contract the project to a third party for its completion.

e) *Ijarah*: *Ijarah* is a lease contract in which the lessee pays rent to the lessor for use of usufruct. In *ijarah* the ownership and right to use an

[9] See Siddiqi (1987, pp.86-91) for a discussion.

asset are separated. It falls under a sale-based contract as it involves the sale of usufructs. A lease contract that results in the transfer of an asset to the lessee at the end of the contract is called *ijarah wa iqtina* or *ijarah muntahia bittamleek. Ijarah wa iqtina* combine sale and leasing contracts and use the hire-purchase or rent-sharing principles. The ownership of the asset is transferred to the lessee as payments for the asset are also made along with the rent. After the contract period is over, the lessee assumes the ownership of the asset. [10]

3.2. Nature of an Islamic Firm

The discussions on the nature of the Islamic firm can be classified into two broad headings. First, a significant number of papers discuss the nature of objective functions that Islamic firms as a unit of production should maximize. For example, Mannan (1991) postulates that the objective function of a producer is economic welfare. Similar views are expressed by Metawally (1984) who suggests that the objective function of an Islamic producer should include profit and giving charity. Iqbal (1992), among others, questions this assumption in a profit sharing mode of production. He maintains that a partner does not have the right to distribute charity out of common profit.

Siddiqi (1988, p. 136) maintains that the objective of an economic enterprise is to attain satisfactory profits. Satisfactory profits may be different from that attained by profit maximization in the neoclassical sense as social and ethical factors will affect the production decision. He maintains that a Muslim producer will not engage in forbidden things and produce fewer luxuries and more necessities. He further asserts that more resources will be used to produce cultural goods and services (education, intellectual enlightenment, etc.) as they benefit the society. He also points out that other than profit, a Muslim producer's decision will also be affected by factors like the desire to serve the society by producing some thing people need or some thing that will improve it.

The second topic that has received attention in literature is the financing modes that can be used by firms. Chapra (1985) discusses various types of business organizations that can be formed under *mudarabah* and *shirkah*

[10] Though a simple *ijarah* appears similar to a conventional operational lease and *ijarah wa iqtinah* a financial lease, there are differences. One such difference relates to maintenance of the underlying assets.

(*musharakah*). He points out that contractual *shirkah* can be of four types. In *shirkah al-mufawadah* capital contributed is of equal amount and all partners have full authority and obligation. In *shirkah inam*, partners have unequal capital contribution and management responsibility. In *shirkah abdan* and *shirkah wujuh* no capital is required. While the former is a partnership of human efforts and skills, the latter is a reputation based partnership in which no capital is required.

Siddiqi (1987) points out that the concept of classical partnerships (*mudarabah* and *musharakah*) can be used in modern industrial production. El-Asker (1987) also outlines the various sources of funds available for an Islamic firm. Other than the traditional ones, he also points out Participation Term Certificates and Participating Shares. While the former are attached to fixed assets of the firm, the latter is a share that is based on profit and loss sharing principle. Khan (1995) points out to instruments like bonds under profit-loss sharing (PLS) scheme and diminishing *musharakah*. Mukherji (1984) models a firm that face financial constraints. He examines the case of zero-interest economy in which firm is equity-financed. Though this model includes financing constraints, it takes a neo-classical approach ignoring the agency-problems that arise between owners and managers of firms.

Research on corporate finance related issues in general and capital structure in particular from Islamic perspectives is scant. Khan (1995) has discussed how firms chooses among different instruments by examining the risk-return factors. He concludes that established and growing firms prefer fixed-return instruments so that they can invest the surplus to enhance growth. Ali (2003) also examines the demand side of financing and studies the risk return factors to explain the use of debt/equity instruments by firms. He asserts dilution of ownership as an important factor of firms for not using equity instruments. Iqbal (1992, p. 212) discusses the differences between the owner and entrepreneur (manager) of a firm and points out that traditional theories of firms leave out the financing part of a firm's decision.

Iqbal (1992) and Siddiqi (1987) have discussed the use of different profit sharing modes of financing in an Islamic firm. These papers, however, do not discuss either the nature of the capital structure nor provide a theory that explains the debt-equity ratios in firms. This paper outlines a theoretical basis of determining the capital structure for an Islamic firm. Note that we discuss both

an entrepreneurial firm and corporate firm. Thus, a firm would refer to the owner/manager in case of the former firm and manager acting on behalf of the owners in the latter case. Next, we briefly outline the features of the various instruments that can be used by firms operating under Islamic principles to finance their assets.

4. CAPITAL STRUCTURE OF AN ISLAMIC FIRM: BASIC CONCEPTS AND RELATIONSHIPS

Given the characteristics of different instruments of finance and types of firms, we discuss some basic concepts and derive relationships that will form the building blocks for the theoretical exposition in the next section. As we are dealing with the capital structure, we assume a firm that has capital and can have debt.[11] To comprehend the boundaries that Islamic principles impose on the capital structure of a firm, we outline the elements of the balance sheet of a typical firm. Assets can be classified as current (A_c) and fixed (A_f). Current assets are those having short-term maturity (less than a year) and include cash, account receivables, and inventories. Fixed assets have long lives and classified and tangibles (A_{fi}) and intangibles (A_{fi}). Similarly, liabilities (L) are classified according to their maturity as current (L_c) and long-term debt (L_d). The current liabilities consist of account payables that may include payments for short-term debt. Total shareholder equity (E) is composed of common stock (E_c), additional paid-in capital (E_a), and retained earnings (RE). The basic identity of the balance sheet states that the value of the assets (A) should equal liabilities (L) and equity (E). That is,

$$A = L + E, \tag{1}$$

or,

$$A_c + A_{ft} + A_{fi} = L_c + L_d + E_c + E_a + RE. \tag{1'}$$

Note that short-term financial management involves managing liquidity by balancing the current assets with the liabilities of the firm. The capital structure of the firm relates to the long-run problem of determining the debt/equity (i.e., L/E) ratio in the balance sheet.

[11]Firms types that do not require capital (*shirkah abdan* and *shirkah wujuh*) are excluded.

4.1. Restrictions on the Debt in an Islamic Firm

A constraint applies to the use of debt in a firm operating under Islamic principles. As debt has to be asset-backed, a firm operating under Islamic principles cannot have debt exceeding the tangible assets.[12] Thus, we get the following constraint:

$$L_d \leq A_{ft} \tag{2}$$

Dividing both sides by the total assets gives the constraint in terms of ratios as:

$$l \leq a_{ft} \tag{2'}$$

where a_{ft} is the tangible assets to total assets ratio and l_d is the debt to asset ratio. A firm operating under Islamic principles will have a leverage ratio lower than the boundary shown in the Equation 2'. The implication is that a firm with less tangible assets will have relatively lower debt ratio.

4.2. Islamic Corporate Finance Instruments

While the general features of the Islamic financial instruments were outlined in Section 3.1, we discuss these here in the light of corporate finance needs of a firm. Other than retained earnings, we distinguish between two types of equity shares. The first type of shares will have similar features to those issued by the founders of the firm. These shares have rights to both control (voting) and profit. The second type of equity stock is one that has a right to share of the profit, but no control rights. In the light of the nominate contracts, the former would be a *musharakah* type share and the latter can be categorized as *mudarabah* type. We call the former as Class B stocks and the latter Class A stocks. Note that firms can seek equity financing from financial institutions like banks on the basis of *mudarabah/musharakah*, instead of issuing stocks. This case would be similar to financing using private equity. In this case, while there are no stocks issued

[12] Note that couple of instruments like *bai-al-einah* and *tawarruq* can be used through which unsecured loans can be provided. As these instruments are still being debated and no consensus has been arrived at, we do not consider them in our analysis. Furthermore, some of the current assets like inventories can also be tangible. We exclude these from our definition as these would be more relevant in discussions of working capital needs of firms. The exclusion of current tangible assets will not change the qualitative results of the model presented.

publicly, the funds are provided by the financial institution as implicit private equity shares.

There are a few important differences between these two kinds of stocks. The Class A (*mudarabah*) stocks will be for a fixed period while Class B (*musharakah*) shares will be for longer periods and last until the life of the project. The buyers of Class A stocks will be a dispersed group of investors who are not interested in the control rights, but with the short-run value maximization. These dispersed shareholders have no incentive to monitor the management as monitoring is costly (Hart 1995, p. 127). The concentrated group of Class B stockholders, however, have a larger stake in the firm and will be interested in its long-run profitability and management of the organization. Given the nature of Class A stocks, the share of the profit/loss has to be distributed to these shareholders before the decision of retained earnings is taken by the management (board). After the profit is distributed to Class A shareholders, the founders' (or Class B) shareholders can decide how much of remaining profit to keep as retained earnings and how much to distribute as dividends.[13]

A firm that would prefer not to dilute ownership will issue Class A stock instead of Class B shares. Note that while the Class A stocks do not dilute the ownership in terms of control rights, it has dilution cost in terms of sharing profits and losses. As the profit is distributed to these shareholders before the decision of retained earnings is made, a large number of Class A shareholders would mean relatively small amount of profit left for retained earnings and dividends for Class B shareholders. Thus, while issuing these shares prevents dilution of control rights, it does have a cost. Too much of Class A shares may increase the burden on reinvestments from retained earnings from the profit of Class B shareholders.

[13] Relative to conventional corporate finance, the nature of *musharakah* stocks can be thought of Class B stocks that are founders stock with full voting rights but no dividend rights until the firm holds retained earnings of a certain level. *Mudarabah* stocks would be a combination of Class A stocks and preferred stocks. Class A stocks do not have voting rights but have right to dividends and preferred stocks have the first claim to profit after paying debt dues (see Appendix 1). Unlike conventional preferred stocks, however, the returns on *mudarabah* stocks are not guaranteed and fixed.

Not all firms, however, will be able to issue Class A stocks. Only large firms with good reputation and prior history of giving stable and superior returns to investors will be able to attract investors to purchase these stocks. These stocks are issued for limited period of time and the firm can divest these stocks upon maturity. As Class A stocks will be for a limited period (say a year) it is important for investors to expect positive returns during this period. Smaller firms with no prior history may not be able to convince investors of being able to give dividends on these shares in the short run.

In order to raise funds to expand operations, the firm can also incur debt to finance its assets. Note that in a simple *ijarah*, the rental payments made are captured in the current liabilities in the balance sheet. In case of *ijarah wa iqtinah*, however, the leased item would be in form of a debt during the period of lease. Similarly, debt can arise from sale modes in the form of either *murabahah* or *istisna.* In case of *istisna,* the fair value of the good or asset in question will be recorded.[14] These debts, however, are not pure monetary transactions as in case of loans in conventional economies. Being debt, payments for *ijarah* and *murabahah/istisna* will have a claim prior to profit.

Table 1: Characteristics of Islamic Corporate Finance Instruments

Properties	**Class B *(Musharakah)* Shares**	**Class A *(Mudarabah)* Shares**	***Ijarah***	***Murabahah/ Istisna***
Balance Sheet Entry	Equity	Equity	Debt	Debt
Control Rights	Yes	No	No	No
Cash Flow Rights	Profit/loss Share	Profit/loss Share	Fixed	Fixed
Priority of Claim	Final (after RE)	Before RE	Before Profit	Before Profit
Maturity	Perpetual	Fixed	Fixed	Fixed
Transferability of Securities	Negotiable	Negotiable	Negotiable	Non-Negotiable

Note that other than equity shares, other instruments can be securitized and traded at negotiable prices if these represent real physical assets. As such,

[14] For a discussion on accounting rules for *istisna*, see discussion on accounting standards for *salam* and parallel *salam* in AAOIFI (1998).

debt instruments can be transferred only at face value.[15] The different characteristics of Islamic modes of financing are summarized in Table 1 and main features of the instruments and their payoff schedule are summarized below.

4.2.1. Basic Features of the Instruments

1. Like the conventional case, the funds that can finance investments in firms can be classified as debt and equity. While debt is always external, increase in equity can either be internal (in the form of insider finance or retained earnings) or external (as private equity, Class A and Class B shares).
2. Debt is created in real transactions. Thus, all debt is backed by assets.
3. The Class A (*mudarabah*) stocks are for a fixed period while Class B (*musharakah*) shares will last for the life of the project.
4. Class B shares have both control (voting) rights and rights to profit/loss (residual).
5. The group of Class B stockholders are interested in the long-run profitable investments of the firm.
6. The Class B stockholders are concerned about the dilution of ownership.
7. The buyers of Class A stocks will be a dispersed group of investors who are not interested in the control rights, but with the short-run value maximization.
8. Issuing stocks will have information costs, but the extent of these costs will depend on the debt ratio of the firm (discussed below).

4.2.2. Payoff Schedule of the Instruments

1. Debt has the first claims on profit.
2. Class A stock holders share in the profit/loss of the firm for the duration of the contract. For a firm with relatively stable income, the dividends paid to Class A stockholders will not change much from period to period.

[15] For a discussion on the guidelines of issuing Islamic securities see Ahmad and Khan (1997).

3. Class A shares have a priority in payoffs and not affected by dividend policy and the decision on retained earnings.
4. The dividends paid to Class B shareholders can vary from period to period. These dividends depend not only on the profit/loss of the firm, but also on the dividend policy and the decisions of retained earnings that is held by the firm.

4.3. Cost Structure of Different Instruments

We discussed various direct and indirect costs related to different instruments used for raising funds in a firm. We now evaluate the costs of the different Islamic instruments by examining their nature. To quantify different costs, we rank them as high, medium, low, and negligible and give a numerical value of 3, 2, 1, and 0 respectively. The cost structure of different instruments are summarized in Table 2 below. The various rankings of direct and indirect costs and the resulting total costs for each of the instruments are shown in the last column of Table 2.

Table 2: Costs of Various Corporate Finance Instruments

Instruments	**Direct Costs**		**Indirect Costs**			**Total Costs**
	Funds C_f	***Contracting/ Floatation*** C_c	***Dilution*** C_e	***Distress*** C_d	***Information*** C_i	
Retained Earnings	H(=3)	N (=0)	N (=0)	N (=0)	N (=0)	3
Debt	L (=1)	L (=1)	N (=0)	M (=2)	N (=0)	4
Ijarah	L (=1)	L (=1)	N (=0)	M (=2)	N (=0)	4
Class A Stocks	M(=2)	M (=2)	M(=2)	N (=0)	L (=1)	7
Class B Stocks	H(=3)	H (=3)	H (=3)	N (=0)	M (=2)	11

H=High (with value 3), M=Medium (with value 2), L=low (with value 1), and N=negligible (with value 0).

Table 2 shows that retained earnings have a high cost of funds as they equal their opportunity cost (the dividend paid to the shareholders). Retained earnings, however, do not have any floatation, dilution, distress, or information

costs. Using retained earnings to finance investments enables the firm to increase its equity without issuing new stocks. By doing so, the existing stockholders do not dilute their ownership. Furthermore, financing investments by using retained earnings the firm does not increase the distress costs and also increases the firm's long-term growth potentials which shareholders value. The index for total cost for retained earnings equals 3.

As for external funds in form of debt, it can be *murabahah* or *ijarah*.[16] The contracting cost for these instruments are relatively low as these will be negotiated with financial institutions and will involve no floatation costs as in case of securities. Debt instruments do not have dilution costs and information costs. An Islamic firm may opt for debt because not only that debt is cheaper than other alternatives, but also because it does not dilute ownership. These instruments, however, have inherent distress costs as too much debt can have adverse effects of financial distress on firms. The extent of distress costs, however, will be lower in case of an Islamic firm relative to conventional firm as debt is asset-backed in case of the former. This is seen by the restriction imposed on the leverage ratio by Islamic principles (Equation 4). The total costs for debt instruments (*murabahah* and *ijarah*) add up to 4.

Before discussing the cost structure for equity instruments, we first explain the nature of information costs in Islamic firms. In the conventional pecking order theory, investors interpret issuance of new stock as over-valuation of stock. As a result when new stocks are issued, the reaction in the market is a fall in the stock price. This leads to information costs resulting from lower value of stocks held by existing shareholders. The nature of information costs may be different in case of Islamic firms as the signals emitted under an Islamic environment will be different. The reaction of the investors to stock issuance may depend on the debt outstanding relative to tangible assets. If the situation is such that the total debt is less than the value of the tangible assets and the firm issues stocks, then the investors will react in the same way as in the case of traditional pecking order theory. There will be a negative reaction in the

[16] In case of financial institutions, a transaction that involves transferring an asset to a firm, the financial institution can use either of the two modes of finance (*mudarabah* and *ijarah*). Though there are differences between the two modes, the end result of using the two modes is almost the same.

market and the shareholders will incur information costs in terms of lower stock prices.

If, however, the stocks are issued when the value of debt is close to that of the tangible assets, issuance of the stocks may not convey the same message to investors. They will realize that the limits of debt has been reached and raising capital through debt is not an alternative. In such a case, the market may not react as strongly as the earlier case. The implication is that if stocks are issued when the value of the debt of the firm is close to the value of the tangible assets then the information costs of stock issuance will be lower than the case when debt is not exhausted. Furthermore, the information costs may be lower in case of Class A stocks compared to that of Class B stocks as the former stocks are temporary instruments issued for fixed periods of time. Thus, information costs are ranked 'low' for Class A stocks and 'medium' for Class B stocks in Table 2.[17]

The cost of funds for Class A shares will be smaller than the Class B stocks as not being affected by dividend policy, the returns will be less volatile. Being less risky, Class A stocks will command a lower risk premium. Similarly, being short-term stocks with shorter maturities the floatation costs for Class A stocks will be relatively lower than that for Class B stocks.[18] As pointed above, Class A stocks get a profit-share but do not have control (voting) rights. As they share in the profit only, they have medium dilution costs. In case of Class B stocks the dilution costs will be high as the control and ownership gets more widely distributed. Being equity, both of these instruments do not have any distress costs. The total costs of raising funds for using Class A stocks is 7. With the costly funds, floatation, dilution, and information costs, the total adds up to 11 for Class B stocks. Note that private equity provided by institutions like venture capital firms will have properties similar to that of Class B stocks with high costs of funds.

[17] The corresponding ranking for conventional stock issue would have a ranking of high.
[18] In debt and conventional finance preferred stocks have relatively lower floatation costs than that of common stocks. As Class A stocks do not fall in the category of common stock, they will have lower relatively lower floatation costs.

5. TOWARDS A CAPITAL STRUCTURE THEORY OF AN ISLAMIC FIRM

Berger and Udell (1998) discuss the financial growth cycles of different firms. They point out that sources of finance depend on the firm size, firm age, and information available. When an entrepreneur starts up a firm, finance for the project may come from the entrepreneur or close associates. These partners have control rights and may also have a say in the management of the firm. As firms age and grow developing a track record they can get access to intermediated finance. External financing can come in the form of private equity, debt from institutional sources, and eventually as publicly raised equity and debt.

The capital structure theory in conventional finance literature focuses on incorporated firms only. As most firms in developing counties, including member states of the Islamic Development Bank are entrepreneurial firms, it is important to discuss the financing decisions of these institutions to enhance the understanding of their capital structure. We, therefore, discuss both non-incorporated entrepreneurial enterprise and incorporated firm. We describe how both types of firms operating under Islamic principles will choose the instruments to finance their assets and as such determine the capital structure. The basic structure of the theoretical exposition of determining the capital structure of a firm operating under Islamic principles is similar to the conventional pecking order theory. We assume that the manager acts in the interest of the shareholders. As such the agency costs discussed in the organizational theory of capital structure do not arise. We, however, use the concept of distress costs from the tradeoff theory.

5.1. Choice Process and Constraints

To arrive at a capital structure theory for an Islamic firm, we need to consider the nature of financing instruments and the parameters set by Islamic principles. The theoretical basis of determining the capital structure of a firm is entailed in the following assumptions that will serve as axioms of the model.

1. Optimizing the *objective function* in the capital structure framework would imply minimizing the total costs of financing. Given the choices, a firm will opt for the least costly option of financing and move up in a sequence of lowest to highest if a certain alternative is not available. Note that minimizing the cost of financing does not contradict the value

maximization goal of the firm. Value maximization with respect to the sources of funds implies minimizing their costs. The cost schedule of different instruments is given in last column of Table 2.

2. Any expansion in operations of a firm will entail partly expansion of its tangible assets. The proportion of the tangible assets to total assets will vary depending on the type of industry.

3. *Internal funds* constraint indicates that retained earning can only be used for investment purposes if it is available. That is, a firm can only use internal funds if there are funds available after paying off for debt dues and dividends to Class A shareholders. If excess exists, then the dividend decision of the board will determine the amounts available for investments through retained earnings.

4. The *institutional-debt* constraint implies that funds are not available in form of debt (*murabahah* and *ijarah*) from institutions like banks unless the firms have good reputation, collateral, and financial standing.

5. The *debt-ratio* constraint maintains that it cannot exceed the ratio of tangible assets to total assets. Note that the debt-ratio constraint is irrelevant if the firm is facing institutional constraints for debt.

6. *Private equity* constraint indicates that firms with binding institutional debt constraints will also not qualify for private equity funds if they do not have good growth potentials. Firms with prospects of adding value to assets can get funds in equity/debt from equity-based institutions like venture capital firms.

7. *Stock-issue* constraint relates to the conditions of issuance of Class A and Class B stocks. Not all firms will be able to issue IPOs. Only firms that are relatively large and have established a good reputation will be able to successfully launch themselves in the stock market. Class A shares can be issued only after a firm has been incorporated (i.e, after Class B shares have been issued). Again, the reputation and health of the firm will determine whether a firm will be able to issue Class A shares. The firm will, however, issue these stocks to a point where the cost of the Class A stocks in terms of not participating in the retained earnings (due to distribution of profits prior to dividend policy) exceeds the benefit (of avoiding ownership dilution).

The above axioms determines how a firm would use different financing instruments at various stages of its growth and would shape the capital structure in firms. The axioms indicate that two main factors determine the choice of instruments for investment by a firm. First, the objective function of a firm would imply choosing the least cost alternative available. Note that discussions in Section 3 specify various proposals of an appropriate objective function of an Islamic firm. While accepting that the objective function of an Islamic firm will have some ethical dimensions, we assume that when it comes to capital structure decisions, the manager strives for efficiency and minimizes the costs of financing assets. Thus, in deciding what kind of instruments to use, the firm would opt for the least cost alternative available. Specifically, the order of preference in choosing instruments would be in ascending order of total costs as indicated in Table 2. This would be in the following order: retained earnings, debt, *ijarah*, Class A stocks, and finally Class B stocks.

The second factor that will determine the choice of instruments is the constraints that firms face. Depending on their size and status, firms may face one of the constraints discussed above (i.e., internal funds, institutional, debt-ratio, private equity, and stock-issue constraints). For example, if the internal funds constraint is binding as the firm cannot generate retained earnings, it may opt for debt from institutional sources. If the firm can acquire financing from banks (i.e., the institutional constraint is not binding), then maximum debt will be determined by the debt-ratio constraint.

Given the above framework, we discuss the financing decisions for two types of firms. The first kind is a small start-up firm and the second a larger incorporated firm. Note that while some of the constraints are relevant to incorporated firms most may be binding for entrepreneurial firms. We discuss the capital structure theory in terms of the constraints to have a better understanding of the operations and the restrictions these enterprises of different sizes and ages face. The sequence of financing outlined here follows from the assumptions given above. While there may be many ways in which the instruments to finance assets can be chosen, the pecking order of instruments discussed here gives a basic framework that may determine the capital structure in Islamic firms.

5.2. Capital Structure in a Small Firm

The first case discussed are firms that are start-ups and gradually mature to the point where they can issue stocks as initial public offerings. When the firm is new, it starts out as a small enterprise. In many cases, this may be an entrepreneur developing a business with very little tangible assets. The internal fund constraint is binding as there are no profits generated within the firm that can be used for the expansion of the enterprise. Berger and Udell (1998, p. 616) point out "informational opacity" and the inability of these firms to "credibly convey their quality" as factors that inhibit getting finance from traditional institutional sources. New entrepreneurs often do not have any track record or acceptable physical collateral to obtain intermediated debt finance. As the institutional constraint is binding, the least cost debt alternatives (*murabahah* and *ijarah*) are not available to these firms. Similarly, not being incorporated, Class A stocks are also not available.

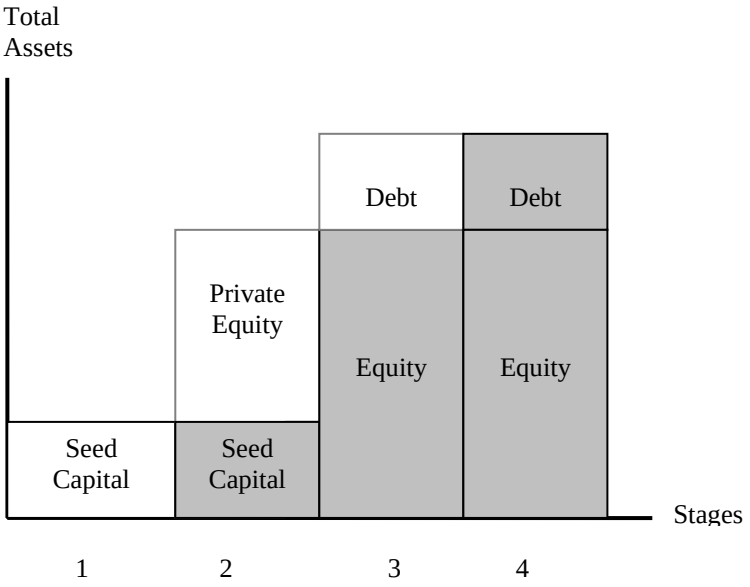
With no funds available from internal and external sources, the only source of finance for these firms is insider finance, where an individual or a group (family members, friends) uses their savings to finance the setting up of the project and bear the operating costs. Angel finance, where one or few high net-worth individuals provide funds, can also be sources for initial rounds of finance in some cases. This stage is shown as Stage 1 in Figure 1.

Firms with high growth potentials and good management can approach venture capital institutions to finance their expansion by acquiring private equity. The venture capitalists are selective and invest when they see that value can be added to the project. If firms qualify and the private equity constraint is not binding, then funds from venture capitalist may be available. The costs of funds of private equity provided by the venture capitalists is very high, but given the information opacity and no track record, it may be the only option available to an entrepreneur (Stage 2 in Figure 1). Other than providing equity financing, venture capitalists are actively involved in operations of the firm that includes product development, production, and marketing. Thus, the status of private equity is similar to the Class B shares discussed above, but the venture capitalists are more involved in the enterprise.

With the involvement of the venture capitalist the institutional debt constraint facing the firm may be relaxed. This can happen in two ways. First, the involvement of a reputable venture capitalist may enable the firm to get

credit from institutional sources. This would include not only banks, but also mezzanine lenders.[19] Second, the venture capitalist itself may prefer to finance part of the assets using debt instruments like *murabaha* and *ijarah* to reduce the risk and get some stable income. With debt, the firm moves from a purely equity based institution to one with a capital structure that has a combination of debt and equity (as shown in Stage 3 in Figure 1).

Figure 1: Evolution of Capital Structure in an Entrepreneurial Firm



Being financial intermediaries, venture capitalists exit after adding value to the firm to recover their funds back along with returns. A preferable exit strategy is the issuance of public offerings (IPOs) through which the venture

[19] Mezzanine lending is "a layer of financing that is more risky than senior bank debt but less risky than venture capitalist's investment" (Levin 2002, p.1-5). Mezzanine lenders finance constitutes high-yield subordinated debt with equity related options (like warrants, conversion rights, etc.).

capitalists sells the shares of the firm to the public for the first time.[20] Note, however, that this alternative will occur more often if there is an efficient stock market in operation. The shares issued would in the form of Class B stocks giving both control and profit rights to the new owners.

5.3. Capital Structure in an Incorporated Firm

In a medium or large incorporated firm, control rights are reflected in the voting rights in proportion of Class B shares held. These votes can be used to choose the members in the board of directors who oversee and influence the management of the firm. Incorporated firms with track record and acceptable collateral can get intermediate and long term finance from institutional sources. In addition, larger established firms can raise funds from the public by issuing securities. In determining which instruments a corporation may use, we consider the assumptions listed above regarding features of different instruments and attitudes of shareholders. The resulting sequence of instruments that a large firm may use to finance investments are discussed below.

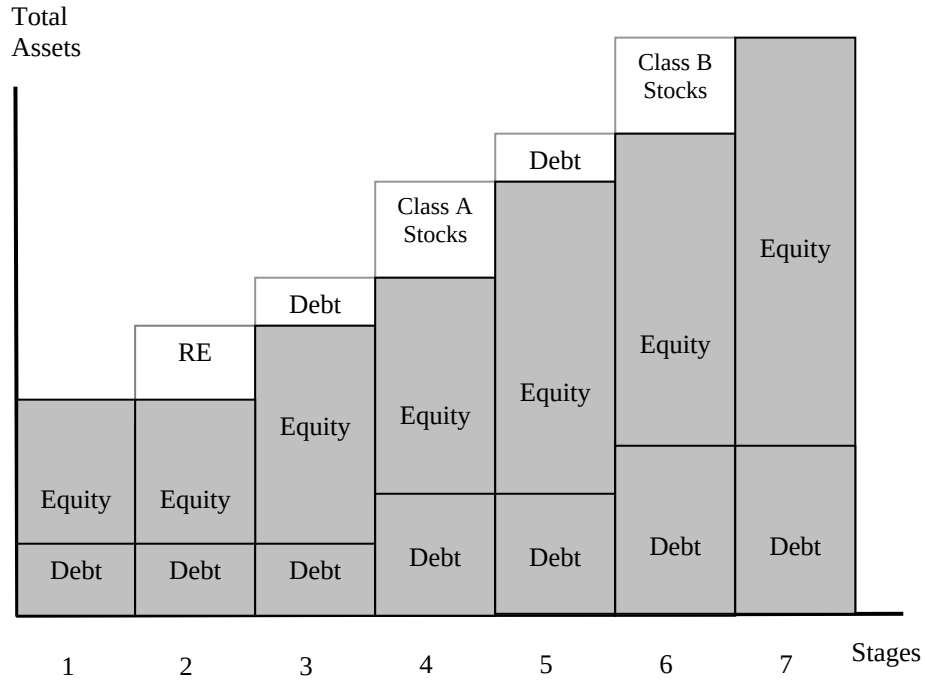
In a large mature firm with adequate cash-flows, the internal funds constraint may not be binding. As such, retained earnings can be the first source of finance as it is the cheapest with no floatation costs and indirect costs of funds. Retained earnings may be preferred by the shareholders as it does not dilute the ownership and improves the firm's long-term growth potentials (Figure 2, Stage 2). If there is a need for funds beyond that of retained earnings, then these firms will opt for debt as it is the next least costly instrument. In case of large firms, securing debt from institutional sources would not be difficult. Assuming that the institutional constraint is not binding, the firm can opt for increasing amount of debt. Addition of debt in the capital structure of firm is shown as Stage 3 in Figure 2.

If the firm needs more funds but cannot use debt due to the debt-ratio constraint, then it can move on to the next cheapest instrument, Class A stocks. As pointed out above, however, only large firms with good reputation and prior history of giving stable returns to investors will be able to attract investors to buy these stocks. Smaller firms with no prior history may not be able to

[20] For a discussion on the venture capital cycle see Gompers and Lerner (2000). For various exit strategies for a venture capital firm see Cumming and MacIntosh (2001). For an discussion on Islamic venture capital cycle see Ahmed (2004).

convince investors of being able to distribute dividends on these shares. Stage 4 in Figure 2 shows the increase in equity portion of capital structure resulting from financing generated from issuing Class A stocks.

Figure 2: Evolution of Capital Structure in a Corporate Firm



With the increase in equity, the debt constraint may be relaxed again if the firm's additional assets constitute tangible assets. If more funds are needed at this stage, the firm will be able to get debt from institutional sources again. Increase in debt after equity is shown as Stage 5 in Figure 2. If, however, the funds needed are so large that debt-constraint becomes binding again, then the last option available to a firm to raise capital for investments will be to issue new Class B stocks. As mentioned above, these securities give shareholders rights to profit along with control. Other than having high direct costs, this option has high information and dilution costs. This option, would, therefore, be used in case when there is a need of large amounts of funds for major investments and

financing is not available from other sources. The addition of equity and the resulting capital structure of the firm is shown as Stage 6 in Figure 2.

6. IMPLICATIONS OF THE RESULTS AND WAY FORWARD

The theoretical analysis shows how the capital structure of an Islamic firm is determined. The analysis shows that the capital structure of an Islamic firm will depend on the status of the firm in terms of size, growth potentials, tangible assets, and information content of the firm. Thus, a new small firm with information opacity will be wholly equity-based (will be located at either Stage 1 or 2 of Figure 1) and a larger corporate firm will be publicly held with capital structures that has a mix of debt and equity (will be located at the Stage 6 or 7 of Figure 2). Furthermore, the debt of the latter firm may have a mix of *ijarah/murabahah*, and its equity may include retained earnings/Class A/Class B stocks. In this section, we first highlight the main conclusions regarding the capital structure of Islamic firms. We then discuss the need for new institutions and instruments to facilitate firms to operate under Islamic principles.

6.1. Implications of the Results

The following implications arise from the above theoretical discussions:

1. The capital structure of a firm will depend on various factors. The size and status of a firm is an important determinant of its debt-equity ratio.
2. The composition of equity will depend on not only the size of the firm, but also on the cash flow generated and debt-ratio at different stages of financing.
3. Leverage ratio in an Islamic firm cannot exceed the value of tangible assets. This condition implies that firms with more tangible assets will be able to have more debt than firms that have relatively fewer tangible assets.
4. New growth firms will be less leveraged relative to incorporated firms. This will not only be due to the lack of tangible assets that a firm may possess, but also because of lack of information and acceptable collateral needed to get funds from institutional sources.
5. Large firms with low current net income will not be able to use retained earnings for investments. As such, debt ratio in these firms will be relatively higher.

6. An increase in equity will most likely be followed by an increase in debt in the next round. This is because increase in equity relaxes the debt constraint enabling more leverage. While the quantity of debt may increase, the ratio of debt to equity will be governed by leverage ratio condition (point 3).
7. Given the industry-specific characteristics of tangible assets, conclusions 3 and 6 imply that the leverage ratio (and the capital structure) will be relatively stable for the similar class of firms within an industry.

6.2. Development of New Instruments and Institutions

The theoretical exposition on capital structure outlines how the financing needs of firms operating under Islamic principles can be met. The discussion points out to the instruments and institutions that would be needed to facilitate financing of assets in these firms. While some variations of these instruments and institutions exist, others are either in their initial stages of development or absent. Enhancing the ability of financing assets in firm under Islamic principles needs the development of right instruments and institutions. This is required not only to satisfy the financing needs of firms, but also expand the range and scope of the Islamic financial sector. Some of the issues related to the capital structure of firms are discussed below.

We have distinguished stocks as Class A and Class B according to difference in rights in profit and ownership. A variety of other classes of securities can satisfy different needs of the firm and the investors. For example, classes of stocks can be built with the appropriate risk-return features. One way to create these would be to have securities of different maturities and the priority of claims. While some securities could have the first claim on profit before the dividends policy is announced, another class of stocks would get returns after a certain threshold level of retained earnings are withheld. These stocks may be of longer maturities and have a higher profit sharing ratio compared to first class of stocks mentioned above.

As the focus of the paper is on capital structure, one aspect relating to the short-term financing needs of firms is not explicitly discussed in this paper. This relates to the appropriate instruments for financing working capital. There is a need to devise short-term instruments that would comply with Islamic principles and readily accepted by the investors. Another aspect of raising funds would be through securitizing. A firm can, for example, issue *ijarah* bonds or *sukuk* against tangible assets to raise funds for investment. There is a need to

study the nature of *sukuk* and see the various ways in which these can be used by firms.

While Islamic banks can finance the debt of firms using *murabahah* and *ijarah* modes of financing, institutions that can provide equity and enable the issuance and use of securities are still lacking. Specifically, there is a need for institutions like venture capital that can provide equity to the entrepreneurial firms. As pointed out, however, one condition for venture capitalists to exist is to have institutional setup through which IPOs can be sold. Thus, a well-functioning stock market is one of the prerequisites of developing the equity-based institutions like venture capital firms. Efficient and well-functioning capital markets are also important for exchanging different kinds of asset-backed securities and equities issued by relatively larger established firms.

7. CONCLUSION AND SUGGESTIONS FOR FURTHER RESEARCH

The paper explains the composition and determination of capital structure in both non-incorporated entrepreneurial firm and a corporation operating under Islamic principles. The paper derives the basic concepts for analysis from contemporary capital structure theories and uses these to develop a theoretical basis of determining the capital structure in Islamic firms. After describing the nature of instruments and their total costs of financing to firms, the paper explains how firms would chose among these instruments. The paper outlines a pecking order theory of determining the choice of different debt and equity instruments that eventually determines the capital structure in firms. The underlying assumption of this theory is that the firm minimizes the total cost of financing when choosing among the different available alternatives. When a certain low cost instrument is not available, the firm moves to the next low cost alternative. The capital structure of firms, thus, depends on various factors that are both internal and external to the firm. While internal factors relate to the size and profitability of the firm, the external aspects are concerned with the availability of instruments and institutions that enable funding.

While much has been written on the supply side of financing in Islamic economics and finance, relatively little attention has been paid to the demand side. Given the dearth of literature in corporate finance from Islamic perspectives, there are many areas in which contributions can be made. While theoretical research is undertaken to explain real-life experiences, this may not

be the case with Islamic corporate finance at present due to the absence of firms operating under Islamic principles and environment. The lack of operational Islamic firms also make empirical research on the topic impossible. This should, however, not stop researchers to use newer tools and methods to understand and examine the implications of Islamic principles on the economy in general and different economic agents in particular. In this regard, an area that needs to be addressed is the relevance of the Modigliani-Miller (MM) theory to Islamic corporate finance. Specifically, some of the following questions may be explored and addressed: the implications of absence of interest tax shield as in an Islamic economy; the affect on the cost of Islamic debt compare with conventional debt and for the trade-off theory in the absence of tax shield; the implications of costly Islamic debt in terms of the MM framework; the preference for equity to debt Islamic corporate finance in the MM framework; and the direct and indirect cost of financial distress for the Islamic firm given that total debt is bounded by the tangible assets. [21]

The paper also points out some other areas where further research on topics related to capital structure of firms is needed. These include developing various instruments by firms to raise funds to meet their short-term and long-term financing needs. Development of various institutions that can offer services to firms operating under Islamic principles are also needed. Specifically, for smaller firms there is a need to develop institutions that can provide equity financing and for larger firms it is essential to develop various low cost debt and equity based securities to meet their financing needs. Progress in both of these entities would depend on the development of capital markets. Thus, there is a need to advance along two complementary lines. First, the governments need to build the necessary infrastructure to develop capital market institutions like the bond/stock markets and the legal system that supports exchanges in these entities. Second, researchers and professionals in the field have to come up with innovative ideas to enlarge the menu of various types of securities that can meet the different needs of the firms.

[21] I am grateful to one of the referees who has pointed out most of these topics.

APPENDIX I: BASIC DEFINITIONS AND CONCEPTS[22]

The balance sheet shown in Table 1 indicates that assets can be classified as current and fixed. Current assets (also called working capital) are those having a maturity of less than a year and include cash, accounts receivables, and inventories. Fixed assets have long lives and are classified as tangibles and intangibles. The former would include the value of the fixed assets like buildings, trucks, computers owned by the firm. The latter would include things like trademark and patents.

Table 3: A Balance Sheet of a Typical Firm

Value of Assets (A)	**Value of Liabilities (L) and Shareholder Equity (E)**
Current Assets (A_c)	Current Liabilities (L_c)
Fixed Assets (A_f) -Tangible Fixed Assets (A_{fi}) -Intangible Fixed Asset (A_{ti})	Long-term Debt (L_d) Shareholder Equity (E) - Common Stock (E_c) -Additional Paid-in Capital (E_a) -Retained Earnings (RE) (Total Common Shareholders Equity $=E_c+E_a+RE$)

Similar to assets, current liabilities are claims on the firm that must be paid within a year. These would be the accounts payables that would include payment of short-term debt. Long-term debt is the debt that is due on the firm in coming years. Shareholders equity has many components. Common stock is the number of shares outstanding valued at par value. Additional paid-in capital or capital surplus is the excess capital derived from issuing new stocks. If the market price of stock is greater than the par value, then the firm collects a surplus by issuing new shares. This surplus is the paid in capital and equals the difference between the market value of the share and the par value times the number of the shares sold. Retained earnings show the accumulated amount of

[22] The material presented is adapted from Brigham and Houston (1998), Brigham and Gapenski (1991) and Ross et.al (1995), unless otherwise stated.

profit that is not distributed to shareholders and held by the firm for financing investments. The sum of stocks at par value, additional paid in capital, and retained earnings constitute the total common shareholders equity or common net-worth of the firm. Note that retained earnings are not included in the total common equity of the firm but in the shareholders equity.

The problem of capital structure relates to how a firm raises capital in a mix of debt, preferred stock, and common stock to finance its assets. Specifically, long term financing decisions determine the long-term equity and debt in the balance sheet of the firm and the short-term decisions relate to working capital needs. Net working capital is the difference between current assets and current liabilities. Par value of a stock is its face value. The book value of a stock of the firm equals the total shareholders equity divided by the total shares outstanding. The market/book ratio is the ratio of stocks' market price and its book value.

Types of Stocks

Though there are various types of stocks and securities, the ones that are relevant to the paper are given below:

Class A Stocks: Sold to the public have a right to dividends but not voting rights.

Class B Stocks: Also called founders shares have full voting rights but no dividend rights until the firm had net income enough to have retained earning to a certain agreed upon level.

Preferred Stock: is a hybrid and has features of both debt and equity. The rate of return on preferred stocks are fixed as a percentage of par value. Though these stocks have the first claim on first profit after paying of debt dues, nonpayment of dividends do not force a firm into bankruptcy.

Monthly Income Preferred Stocks (MIPS): MIPS is a deeply subordinated preferred stock that pays monthly dividends (Irvine and Rosenfeld 2000).

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CAPITAL STRUCTURE IN FIRMS

Habib Ahmed has M.A. (Economics) from University of Chittagong, Bangladesh, Cand. Oecon. from University of Oslo, Norway, and Ph.D. from University of Connecticut, USA. Before joining Islamic Research & Training Institute of the Islamic Development Bank Group in February 1999, he taught at the University of Connecticut, USA, National University of Singapore, and University of Bahrain. He has more than 35 publications, which include articles in international refereed journals, research papers/monographs, chapters in books and books. His current research interests are Islamic economics and finance. His recent publications in Islamic economics and finance include Islamic Law, Adaptability, and Financial Development; Money and Exchange Rate in an Islamic Economy; Operational Format for Islamic Equity Finance: Lessons from Venture Capital; Frontiers of Islamic Banking: A Synthesis of Social Role and Microfinance; The Islamic Financial System and Economic Development: An Assessment; Role of Zakah and Awqaf in Poverty Alleviation; A Microeconomic Model of an Islamic Bank; Exchange Rate Stability: Theory and Policies from an Islamic Perspective; Corporate Governance in Islamic Financial Institutions (with Umer M. Chapra); and Risk Management: An Analysis of Issues in Islamic Financial Industry (with Tariqullah Khan).

[Email: hahmed@isdb.org]

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P.O. Box: 9201, Jeddah 21413, Kingdom of Saudi Arabia
Tel: +966-2-6361400, Fax: +966-2- 6378927, 6366871
E-mail: irti@isdb.org
Website: www.irti.org