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MUDARABAH AS A MODE OF FINANCE IN ISLAMIC BANKING: THEORY, PRACTICE AND PROBLEMS

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ABSTRACT

This paper seeks to analyze some of the aspects of mudarabah as a mode of financing business both from the theoretical and operational angles. At the theoretical plane the paper tackles the issue of the determination of the sharing of profit ratio for the outside financier in a competitive setting i.e. where the interest-free and interest-based systems operate side by side. It would show in a micro framework that the determination of this ratio would be a function of profit expectations, leverage ratio, rate of interest, and the risk factor. On the operational side, the paper analyzes the reasons of the unpopularity of the instrument not only with the financiers but also with the borrowers, and suggests some organizational arrangements to overcome the difficulties. The argument is set in a historical perspective.

I. Introduction

Until the thirteenth century *mudarabah* remained, and was expected to continue as the dominant form of financing business in the Muslim world (Rodinson, p.51). However, with the contraction of the Muslims' rule, and eventual colonization of their territories by the European powers, the scenario of social and business organization under went drastic changes, and *mudarabah* lost quite rapidly its importance as a financing mode in the realm of trade and commerce.

After the Second World War, Muslim countries along with others also won their independence from the alien rule, and embarked on road to economic progress and prosperity for their masses. This endeavor was characterized, especially since the mid-seventies, by the desire to inject norms and tools in the conduct of business, which conformed to the Islamic requirements, and aspirations. In the field of financing the most important of requirements were the abolition of interest, and its replacement with Islamic instruments.

In this context *mudarabah* also was seen as one of the modes of financing available to the upcoming interest free Islamic system where the bank would advance money to a firm engaged in a productive activity on a profit and loss sharing (PLS) basis. The sharing of profit ratio for the bank was to be determined through negotiations between the parties. However, the loss, if any, was to be shared by them always in the same proportion as contributions made to the capital employed in the participatory business. This modernized definition of *mudarabah* retained the essence of its classical puritan form we shall have occasion to state later. A distinctive feature of *mudarabah* was that the bank would have no right to participate in the business decision- making. (Ghazali pp 84 - 85).

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It was expected that *mudarabah* too would have its due place in the arsenal of Islamic tools for erecting a new interest free financial system. This expectation did not come true; in fact, *mudarabah* is today among the most sparingly used tools of financing in Islamic banking (Presley and Abulkhail p.273). There is a vivid declining trend in most cases. For example, in the case of Bank Islam Malaysia Bhd the proportion of *mudarabah / musharakah* investment almost regularly declined from 4.3 % in 1984 to 0.04 % in 1994 while that of deferred sales went up from 86.3 % to 90.2 % during the same period (Annual Reports of Bank Islam, 1984-1994).

This paper seeks to unfold the reasons for the unpopularity of *mudarabah* acting at both the theoretical, and operational levels. In the process, it spells out some measures to make the instrument more workable and useful. At the theoretical level, the paper deals with the issue of determination of the sharing of profit ratio for the outside financier in a competitive setting where interest-free and interest-based systems operate side by side. We would show that the ratio would be a function of profit expectations, leverage ratio, rate of interest, and the risk factor. On the practical side, we shall deal with the reasons of the unpopularity of the instrument not only with the financiers but also with the borrowers, and suggest some institutional arrangements to overcome the difficulties.

The paper is divided into four sections including the present one. The following section presents the process of ratio determination explaining how the indicated variables would play their role, and how changes in them are expected to affect the equilibrium ratio. Section 3 looks at the issue of relative profitability of the two systems of finance – with and without interest – from the viewpoint of the outside financier and the firm. Section 4 deals with the reasons of the prevalent unpopularity of *mudarabah* financing in the Islamic system, and suggests some measures to overcome the problem. Section 5 contains a few concluding remarks. An appendix provides the details of arriving at the main equations used in the paper.

It is well to mention that the author had developed the arguments for determination of the profit sharing ratio, and profitability comparison in one of his earlier works (Hasan 1985) The same are used here in a concise and much improved form to help break some fresh ground in the area of *mudarabah* financing.

Finally, this paper does not deal with the use of *mudarabah* by Islamic banks for mobilizing investment deposits: it focuses only on its financing of business aspect. Also, we follow the view of *mudarabah* that is taken as standard in the current literature, *albeit* there are several juridical variants of the concept (Hasan, 1985 pp.14-15). Alternative models can be developed. In practice, we perhaps need to integrate the *hikmah* of interpretations by different juridical schools of thought.

II. Determination of the Sharing of Profit Ratio

In *mudarabah* the financier assigns resources to the productive sector through a firm in exchange for a share in the return on *his* investment. One implication of the concept is important. In most cases, when a firm borrows, the financier contributes a portion of the firm's total investment K, the other portion K_O coming from its owners. Cases of pure *mudarabah* where the entrepreneur is empty handed and the financier provides the *entire* capital (Khan 1995, p.80) may be of use even in modern times but *m*ixed cases dominate the business world. Thus, if the financier provides λ fraction of K the share of total profit P attributable to *his* contribution will be λP. The concept of sharing profit in *mudarabah* relates to this portion of profit (Usmni pp.53 -54). If the ratio allowed to financier for sharing it is σ^* the financier will get $\sigma^*\lambda P$ from total profit. This makes the proportion σ for the financier's share in total profit P equal to $\sigma^*\lambda$, meaning that σ shall be smaller than both σ^* and λ as each of them is less than 1.Losses would fall on capital K alone and in the same proportion as contributions made to K. Therefore, λ becomes also the loss sharing ratio of the financier. Thus, in *mudarabah* we have $\sigma < \lambda$ as a matter of principle. This conforms well to the Juristic position that in *mudarabah* the profit sharing ratio of the financier σ has to be smaller than

his loss-sharing ratio λ. A portion of λP i.e. $(1 - \sigma^*)$ is retained in *mudarabah* by the firm for the entrepreneurial services it renders to the financier in making his investment earn profit.

In the following discussion we shall use σ, not σ^*, as the profit sharing ratio of the financier as it would retain in focus λ which is both his loss-sharing ratio and the leverage for the firm. Notice that σ is not comparable to the rate of interest r_i of the conventional financing. Since in profit sharing the financier may lose money as well, the risk factor largely absent in interest financing becomes important under the Islamic arrangement. We may draw the reader's attention to the fact that an Islamic bank is just an outside financier having no permanent interest in a firm that borrows from it under a *mudarabah* contract. His money has to be returned after the stipulated period. Adding two more symbols r the rate of return on total capital i.e. P/K, and α the premium for measurable risk to those mentioned above, we construct a model to explain the determination of the profit sharing ratio σ for the financier. The ratio for the firm would obviously be $(1 - \sigma)$. The model is based on a few simplifying assumptions independent of the market structure that we shall relax later to examine their implications. The assumptions are as under:

1. That both the firm and the financier maximize P subject to Islamic constraints, P here being expected profit.
2. That there are no taxes or transaction costs.
3. That profit expectations of the firm and the financier for a given investment K as well as their risk estimates do not differ.
4. That there are no market impediments to the process of adjustment.
5. That the cost of loan able funds is the same in the two systems of finance i.e. with and without interest

The absolute values of the variables can be horizontally added up for an aggregative analysis. Since we are taking a scenario where the financial systems with and without interest compete with one another, the likely choice of a firm for borrowing would be the source that is expected to give a higher rate of return on the owners capital K_O. However, under the sharing of profit system the financier bears additional risk of default. As such the firm may be willing to compensate him by offering a risk premium $\alpha\lambda K$ Under the circumstance, the minimal requirement for the firm to prefer the sharing system would be:

$$(1-\sigma)P \geq P - r_i\lambda K - \alpha\lambda K \qquad (1)$$

Dividing through by K, and simplifying we get

$$\sigma \leq \left[\frac{(r_i + \alpha)}{r}\right]\lambda \qquad (2)$$

Similarly, the financier may be willing to have a part of profit that is more than or at least equal to what lending on interest plus the risk premium might give him. In symbols,

$$\sigma P \geq r_i\lambda K + \alpha\lambda K \qquad (3)$$

This reduces to

$$\sigma \geq \left[\frac{(r_i + \alpha)}{r}\right]\lambda \qquad (4)$$

Equations (2) and (4) show that there would be only one solution acceptable to both the financier and the firm:

$$\sigma = \left[\frac{(r_i + \alpha)}{r} \right] \lambda \qquad (5)$$

Thus, equations (2) and (4) provide us only a corner solution, not the demand and supply curves of the usual sort to determine the sharing of profit ratio σ. This is because of the assumptions we have imposed on our model. However, it does show that in a mixed system the ratio would be a function of four variables – rate of interest r_i, rate of profit r, risk premium α, and the leverage ratio λ. In symbols $\sigma = f(r, r_i, \alpha, \text{and } \lambda)$. Also, it helps us to unfold the nature and direction of the relationships between the ratio and its determinants.

The interrelations between r, r_i and α on the one hand, and their linkages with the demand and supply of investment funds on the other remain of the same sort as in mainstream economics. Also, their determination or changes in them due to variations in the business and social environment work along the customary lines. And important is the fact - contradicting demonstrations as in Siddiqi 1983 or Khan 1987 – that the demand and supply of funds neither determine the profit sharing ratio σ directly nor are strictly speaking determined by it. For σ is not a *price* i.e. units of money exchanged for a unit of some commodity; it is a *ratio* meant for dichotomizing a volume of money. Any meaningful analysis of the determinants of the sharing ratio should be routed through the rate of return r that is the price.

Equation 5 depicts a configuration of variables in a state of equilibrium. It may be likened to a bowl holding several balls in balance that would be disturbed if any one of them were moved. Therefore, the issue in *mudarabah* is how σ would change if other variables change. Rate of interest r_i is an exogenous factor serving as a benchmark in a mixed system. Risk premium α is a subjective element, and its estimation will invariably pose problems. Remaining variables σ, r, and λ are of real significance for the issue under consideration. Assuming $(r_i + \alpha)\lambda = \beta$ a constant, we have from (5):

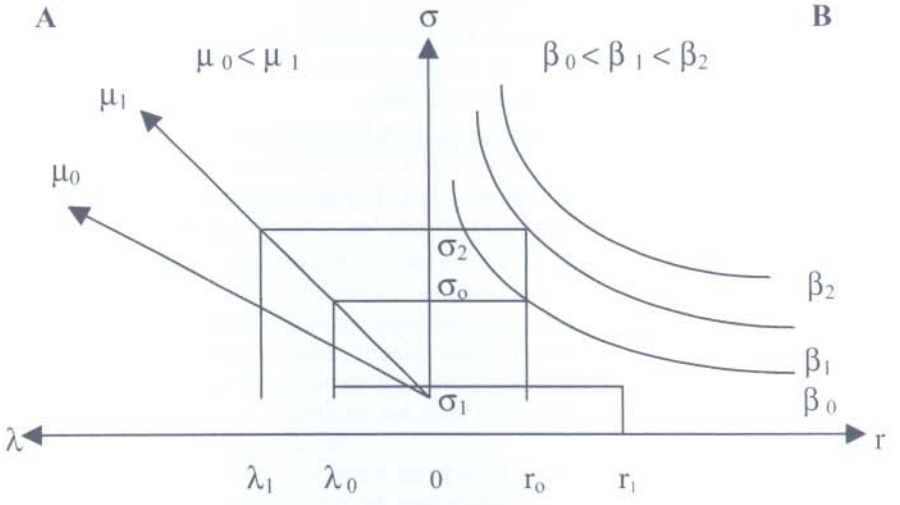
$$\sigma r = \beta \qquad (6)$$

Likewise, assuming $(r_i + \alpha) / r = \mu$ a constant, we have:

$$\sigma = \mu \lambda \qquad (7)$$

Equation (6) establishes a relationship between σ and r represented by a rectangular hyperbola, while equation (7) shows σ as a linear function of λ with a positive slope, and passing through the origin. We show the two functions with their backs joined in Figure 1 below.

Figure 1: Interrelationships between σ, r, and λ



Notice that in section B of the figure each of the curves shows an inverse relationship between profit sharing ratio σ and the expected rate of return on the capital employed in a firm in a *ceteris paribus* frame. Since we have assumed that r_i, and α remain constant β increases only with an increase in λ and vice versa. On the other hand, in section A, σ is a linear and increasing function of λ with r remaining constant. All curves in the figure trace the equilibrium path of σ with reference to some stated variables and constants. It is easy to understand the interrelations of the three main variables the figure configures.

Let us take r_o and λ_o as initial configuration with σ_0 as the sharing of profit ratio. Now if r the profit expectations were higher i.e. r_i,σ could have been lower; for, due to higher r the slope of the line in section A would be smaller at μ_o. In contrast, if at r_0 the firm negotiated with the bank for more finance such as λ_1, the sharing ratio could be higher at σ_2 as increase in λ would push up the curve to β_1. Numerous other combinations of the three variables are possible.

We may now have a look at our crucial assumptions that profit expectations as also the risk estimates of the firm and the financing bank coincide. Presumably that would mostly be the case as α in the above model is defined as a determinable cost element. Even so if the bank estimate of α were larger than of the firm, it is likely to insist on a higher σ, while the firm may respond by scaling down the amount of borrowing. However, profit expectations can perhaps be more objective and rational. Negotiations between the parties may narrow down the differences. In any case, in a period of high expectations both parties would gain; loans may come in more readily and sharing ratios demanded by the banks may not be on the higher side due to competition with providers of finance on interest. Opposite is likely to happen when business prospects are not so bright. In a competitive setting a more important question is if there is a theoretical basis for firms and the banks to prefer *mudarabah* to interest finance.

III. Profitability Comparison

In the literature on profit sharing one often comes across expressions of doubt on the higher profitability potential of the Islamic system vis-à-vis the conventional interest based financing. One even finds assertions that Islamic banks may tend to vanish in the long run unless efforts are made to sustain them through non-financial sort of supplementary business (Nienhaus, 1993) Let us consider if such presumptions have any theoretical basis.

One distinct attraction of interest finance is that leverage – the use of term loans as part of business finance - normally tends to enhance the rate of return Φ on the owners' part of investment K_O i.e. (1 - λ) K relative to the overall profit rate r. In other words Φ tends to be greater than r. Assuming that expected profits are realized, in interest-based finance we have:

$$(\Phi - r) = \left[\frac{(P - r_i \lambda K)}{(1-\lambda)K}\right] - \frac{P}{K} \tag{8}$$

It reduces to

$$(\Phi - r) = \frac{(r - r_i)\lambda}{(1-\lambda)} \quad \text{where } r > r_i \tag{9}$$

It follows from (9) that higher is the proportion of loan λ in K greater will be the gain from leverage to the owners. Inflation is both the cause and in some measure the effect of rising leverage ratios in modern economies. However, as leverage increases so also the risk of loss for the owners (Baumol, p.461) and probably at a faster rate Thus, in interest finance leverage cannot be pushed up beyond a point.

It is interesting to note that *mudarabah*, having $\sigma < \lambda$ too offers a leverage caused benefit to the owners of a firm. To formalize the matter we may write:

$$(\Phi - r) = \left[\frac{(1-\sigma)P}{(1-\lambda)K}\right] - \frac{P}{K} \tag{10}$$

It yields,

$$(\Phi - r) = \frac{r(\lambda - \sigma)}{(1-\lambda)} \tag{11}$$

Putting the value of σ in (11) and simplifying we get:

$$(\Phi - r) = \frac{(r - r_i - \alpha)\lambda}{(1-\lambda)} \tag{12}$$

A comparison of equations (9) and (12) shows that the leverage gains to the owners of the firm shall be smaller under *mudarabah* as compared to interest-based finance, the difference being equal to $\left[\frac{\lambda \alpha}{(1-\lambda)}\right]$ fraction of P. However, the owners would be compensated for the short fall in profit by the proportionate transfer of risk to the bank. For the same reason the bank is likely to get a return higher than r_i under the profit sharing scheme to the extent of risk premium involved, other things

remaining the same. One more implication of the difference may be noted. The leverage can perhaps be carried to higher levels under *mudarabah* compared to interest finance, and the amplitudes of trade cycles would perhaps be smaller as banks would be more constrained in expanding credit when the tide is rising. The difficulty with *mudarabah* as a tool of financing business presumably is not that its relative profitability is suspect in principle; it seems to lie in putting the system into operation.

IV. Problems and Remedies

As indicated earlier, providing funds for business on profit sharing basis is one use of *mudarabah* instrument in interest free banking, the other being the acceptance of deposits from the public on the same principle. Interestingly, *mudarabah* for mobilizing savings has been quite popular with both the banks and non-bank financial institutions – *mudarabah* companies as deposit receptors tend to mushroom in not a few Muslim countries, especially Pakistan. However little of the deposits are being used to finance long-term business requirements. Mostly the funds make their way to stock markets or finance trade. What can explain this tendency of the Islamic financial institutions – not banks alone - to shy away from long-term industrial investment, especially when the system as a whole remains awash with surplus funds?

The literature on the subject contains a number of presumptive arguments on the point. For example, Ahmad blames the unpopularity of *mudarabah* as a mode of business finance mainly on the lack of adequate legal safeguards to the provider of capital. Bacha provides a more formal argument. He starts with certain clarifications arguing that bank *mudarabah* is a hybrid of equity and debt as it has important features of both. Thus, it would be misleading for the firm to treat *mudarabah* financing as *pure* loan, and for the bank to take it *completely* as equity. Bacha then proceeds to discuss the agency problem as it arises in each case: equity, loan, and *mudarabah*. He finds that the agency problem is likely to be more serious for *mudarabah* than either for loan or equity. The conclusion obviously is that for the financier *mudarabah* financing would be the least attractive. Bacha's observations find ample support from the interesting empirical study of Fatih, Khalil, Rickwood, and Murinde.

The essence of the argument is that the main deterrent for the financier is the estimation of risk involved in lending on a participatory basis. In this context, it may perhaps be helpful to recall the well-known distinction Knight made between risk and uncertainty (For a discussion see Hasan 1975 pp. 28-33) Risk according to him is the part of uncertainty that can be estimated using an appropriate probability distribution, and can therefore be insured against for a premium, if one so chooses. In the foregoing discussion α signifies this premium for bearing risk: it represents an estimated but unrecorded element of cost expressed as a proportion of capital K. Since in *mudarabah* the profit sharing ratio σ has to remain independent of the financier's loss sharing ratio, it had to be conceived in a way as would exclude any possibility of loss: assumption of an *ex ante* profit is a necessary condition for dealing with the determination of σ.

The true risk of business consists, says Knight, in the part of uncertainty that cannot be measured and cannot thus be met at a cost: it constitutes uninsurable risk say $\alpha\cdot$, a purely perceptive entity. The issue of aversion refers to $\alpha\cdot$. Figure 2 explains the implications Here curves 1 and 2 depict the possible risk-profit combinations involving $\alpha\cdot$, i.e. risk *net of* α. They are convex to the profit axis implying that additional units of profit can be had only at increasing $\alpha\cdot$.

The indifference curves ICs incorporating. α· are in contrast drawn concave to

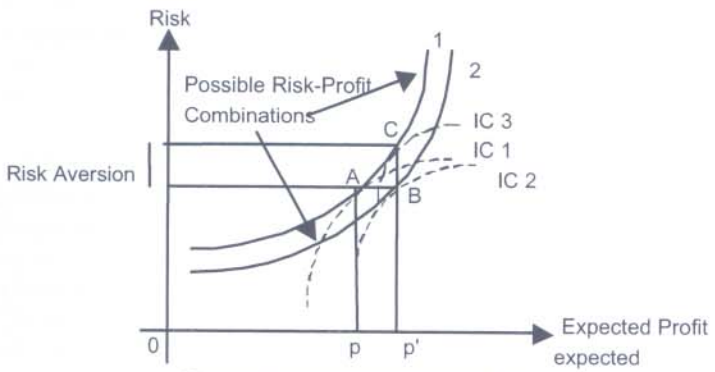


Figure 2: Profit possibilities and Risk Aversion

profit axis, as people normally prefer lower points on the curves i.e. smaller risk for a given profit. To begin with, let A the tangency point of profit possibility curve 1 and IC1 show the initial equilibrium for both the firm and the bank under interest finance (Recall the assumptions of the model). With the removal of interest in the Islamic system risk associated with λK portion of K is passed on to the bank. So the profit possibility curve will shift for the firm to the right, say to position 2. The curve is now tangent to a lower indifference curve IC2 at point B. Thus the firm in a *mudarabah* contract is likely to be more venturesome willing to borrow further to expand profit from p to p'. But this does not in general seem to be the case with Islamic banks. Rather, the fear of immeasurable risk α· seems to shift the indifference curve in most cases to IC3 position, with C as the tangency point. Risk aversion restrains the banks from granting more loans to firms for investment even though they may also stand to gain. Thus, due to the banks' risk aversion CB for providing additional finance there is no expansion of the output to allow movement to the right of A.

It follows that the basic problem in Islamic finance is of attitude towards bearing true risk or uncertainty. To appreciate the problem one perhaps has to go back a little into the historical evolution of financing in the Islamic lands. Let us make a little digression for the purpose.

Mudarabah is one of those pre-Islamic institutions (Al-Saadi, p. 27) that not only survived the advent of Islam, but also were encouraged to flourish in Muslim lands for centuries. *Mudarabah* was well ingrained in the temporal social milieu; it served as an important source of finance for trade, the main economic activity of the times. It operated on a one-to-one basis where the entrepreneur (*mudarib*) and the financier (*rub-al-maal*) knew and trusted each other, the use of finance was clearly defined, and the period of the contract was relatively short. In the circumstance, the risk the financier faced was limited, and the fear of moral hazard even smaller. Goitein (1955 p.78) observes that Muslim traders and investors were involved in all areas of economic and financial activities. They were not seen as risk averters. Udovitch's works also seem to support this view. Accordingly, *mudarabah* along with other modes of Islamic financing flourished in the Muslim lands.

Mudarabah in those days expressed an economic relation between two individuals one of whom was an owner of the means of production, and the other not. It was probably the first, albeit elementary, evidence of the capitalist mode of production making its way into the Muslim world. The mode expanded quite fast, especially in Egypt, and with it *mudarabah* contracts became increasingly complicated over the years though the basic rules of the game remained intact

(Rodinson pp. 51, 53). The evolving capitalist mode of production, as adapted to Islamic ethos, significantly helped take the Muslim politico-economic dominance of the world to its zenith by the twelfth century. However, the next hundred years or so saw the gradual decline of this dominance that was almost complete with the Muslims' exit from Spain.

This is not the place to go over the reasons for this decline, and the eventual subjugation of Muslims by the Europeans. But relevant to mention in the present context is gross detraction from the love for invention, exploration, and adventure among Muslims. In the realm of business too they soon showed aversion for enterprise, and developed what was once called ' the horror of risk '. Over time they showed marked preference for investing their savings in short-term, fast maturing, and low risk projects promising to bring in large returns. Investment in real estate, especially in urban centers, or in stocks of the going concerns, for example, often found favor to the exclusion of slower and lower returns industrial projects (Rodinson, pp. 161-163). The legacy of the colonial era seems to continue.

Over the past hundred years or so the forms of business organization have undergone radical changes. The classical view of industry as a forest of tiny owner-managed firms operating in a highly competitive setting has long been transformed, with the rise to dominance of modern multi-product international corporations, into that of a sea where the big fish eat up the smaller ones. Finance likewise is provided, and controlled by large sized local and international institutions. In this scenario *mudarabah* finance modeled on the old one-to-one person basis tends to become less important, and the mixed financing models with Islamic banks providing part of capital to corporations are assuming increasing importance in the literature.

Presumably, Muslim entrepreneurs have not yet been able to shrug off the traditional risk aversion they imbibed from their colonial past. It does reflect in the way they run their banks. A substantial part of the funds the Islamic banks mobilize are used to finance purchase and sale of goods - producer or consumer – on mark-up pricing. The practice, particularly in Pakistan, is so rampant that one suspects if it has not already degenerated into taking interest from the back door (Ahmad, T.1 p.34, Usmani p.241). Such indiscreet use of a financing mode rooted in the *Shari'ah* cannot effect changes that the Islamization of Muslim economies is supposed to bring about, for example, in terms of reduction in the concentration of wealth or the alleviation of poverty (Khan, 1995 p.13). Other popular uses of funds with the banks are leasing, hire purchase, and buy back arrangements, essentially short-term, and quick yielding. Some banks have higher preference for equity participation, and indulge in *mudarabah* financing too but the proportion of funds going into these channels has so far been meager in the overall picture. Presumably, the banks are not entirely responsible for this state of affairs; greater part of the blame seems to fall on the absence of the needed dash and dynamism in the community.

Attitudinal problems apart, there are crippling structural flaws in the organization of Islamic financing for business that essentially remains geared to providing short-term funds. Real investment banking catering to the long-term industrial needs for venture capital has yet to emerge in Muslim economies. Partly the situation could be the result of a little patchy, and uneven industrialization in the Muslim world. Taken as a whole, the major portion of the GNP of Muslim countries still comprises of the contributions from trade in primary produce, remittances from migrant labor, agriculture, and small manufacturing. It is only lately that a few countries have emerged as significant producers in some selected industries. This is not to say that nothing can or needs to be done until industrialization appears on the scene in a big way.

It is argued that potential risks to which *mudarabah* finance may expose the investors can be mitigated through careful analysis (Clode, p.4/12). Compared to interest finance, *mudarabah* leaves the bank in a state of uncertainty both with reference to the earnings and the return of money advanced, let alone the difficulties concerning the determination of the profit sharing ratio. The situation in this regard can be improved within the prevailing structural format of Islamic banking if a clause could be inserted in the mudarabah contract by mutual agreement to treat the bank among the preferential creditors of the borrowing firm in case of insolvency. Time limit for legal action in cases of default can be extended. Alternatively, the bank can be allotted redeemable preference

shares for the money advanced. The *Shari'ah* can presumably accommodate these provisions, but juridical exploration is required for the final decision in such cases.

However, the eventual requirement is to separate investment institutions from the usual sort of commercial banking in the provision of Islamic finance. For, the risks involved, and managerial skills needed in the two cases are quite different. More qualified and alert staff is required for evaluating long-term projects, and keep track of their progress, particularly in *mudarabah*. Possibly, a separate Investment Bank can be established for each major area or industry to have greater specialization. The issue of their organization and *modus operandi* can better be left for another paper. However, their shareholding may be distributed among the public, financial institutions, firms in the industry, and the state in predetermined proportions. They can operate on lines similar to mutual funds, taking in addition the refinancing of *mudarabah* papers. An apex institution can perhaps provide coordination and consultancy services. The separation can also help overcome certain legal disabilities that tend to impede the progress of interest free finance. For instance, investment banks can be allowed to underwrite securities and stocks that often lie outside the jurisdiction of ordinary commercial banks. Muslim economies are far from mature for indulging in 'universal' banking, as Islamic requirements would logically lead to. Universal banking is not common even in the West except some countries like Germany.

Finally, Muslims both as entrepreneurs and bankers have to be more venturesome. Entrepreneurs in many cases wait to secure a niche in public sector economic programs rather than make an independent plunge into business. Entrepreneurship training and expansion schemes may prove beneficial. For example, the recently established ministry for entrepreneurial development in Malaysia has initiated some promising programs that have already started showing results. The banks too must shrug off their risk complex. Notice that no Islamic banks have so far failed because they made *mudarabah* a vibrant financing activity. There ought to be some test cases of risk taking, of course based on rational business judgment.

V. Concluding Remarks

We have tried to demonstrate that profit sharing ratio σ for the outside financier in *mudarabah* financing of business has to be less than his loss sharing ratio, and that it would in competition with interest finance vary inversely with the expected rate of return r on capital employed K, but directly with the leverage ratio λ. We showed that the leverage would tend to magnify the profit rate on the owners' capital in the same manner, though to a lesser extent, as in interest finance.

The major difficulty of *mudarabah* finance is the uncertainty about the *ex post* rate of profit as also about the return of money advanced to the firm. The uncertainty is aggravated due to asymmetric information and gives rise to agency problems. The literature on Islamic finance contains discussions on the subject. What it does not mention is the problem of attitudes which is basic in the matter; Muslims probably are unduly risk averse in matters of business and can be seen going for safer, shorter, and high return investments, in some measure. The paper suggests *inter alia* establishment of separate investment banks for providing long-term finance to industry, leaving the business of meeting the short duration credit needs of trade and commerce to the conventional sort of Islamic banks. It proposes the launching of special programs to develop entrepreneurship among both the seekers and providers of credit for business on Islamic lines.

Furthermore, some writers, as hinted in Khan (1995, pp.17, 245), believe that Islamic banking, let alone *mudarabah* cannot succeed so long as the interest option remains open. However, the ground reality insists that if Islamic banking is to succeed, it has to succeed in competition with *that* option. For one cannot hope to shun interest finance completely from the Muslim lands for a variety of reasons. That this is possible is evident from the Malaysian example where the Islamic banking sector is expanding, and already accounts for 6.9% of the total bank assets, and 7.4% of deposits in the economy (Bank Negara Report 2000 p.149). The empirical work of Sudin Haron also shows

that Islamic banks are not necessarily less successful compared to those providing finance on interest (p.57).

Finally, Islamic banking performance, including *mudarabah* is to be evaluated not only by the system's *Shari'ah* compliance but also by its innovation, efficiency, and the end results. The success would depend, as Zeti – the governor of Bank Negara, Malaysia – rightly puts it "on confidence in the system ... availability of a wide range of quality products, and willingness by investors and industry to use these products". We feel that the desired success is presumably difficult to come by unless reforms are initiated in the sort of directions indicated in this paper.

Appendix

This Appendix explains how equations 2, 4, 9, 11, and 12 used in the text are obtained:

A. $(1-\sigma)P \geq P - r_i \lambda K - \alpha \lambda K$ (1)

Divide both sides by K, we get

$$(1-\sigma)r \geq r - r_i \lambda - \alpha \lambda \qquad \frac{P}{K} = r$$

Divide both sides by r, we have

$$1-\sigma \geq 1-\lambda\left[\frac{(r_i+\alpha)}{r}\right]$$

1 is cancelled on both sides, and change of sign from negative to positive reverses the inequality. Thus we finally have:

$$\sigma \leq \lambda \frac{(r_i+\alpha)}{r} \quad (2)$$

B. $\sigma P \geq r_i \lambda K + \alpha \lambda K$ (3)

Divide both sides by K and rearranging we have:

$$\sigma \geq \lambda \frac{(r_i+\alpha)}{r} \quad (4)$$

C. $(\Phi - r) = \left[\frac{(P - r_i \lambda K)}{(1-\lambda)K}\right] - \frac{P}{K}$ (8)

Simplifying the R.H.S we have:

$$\left[\frac{P}{(1-\lambda)K}\right]-\left[\frac{r_i \lambda K}{(1-\lambda)K}\right]-r$$
$$=\left[\frac{r}{(1-\lambda)}-\frac{r_i \lambda}{(1-\lambda)}\right]-r$$
$$=\left[\frac{(r-r_i \lambda)}{(1-\lambda)}\right]-r$$
$$=\frac{[r-r_i \lambda-r+r\lambda]}{(1-\lambda)}$$
$$=\frac{\lambda(r-r_i)}{(1-\lambda)}$$

Thus $$(\Phi-r)=\frac{\lambda(r-r_i)}{(1-\lambda)} \qquad (9)$$

D. $$(\Phi-r)=\left[\frac{(1-\sigma)P}{(1-\lambda)K}\right]-\frac{P}{K} \qquad (10)$$

Simplifying the R.H.S we get:

$$\left[\frac{\{(1-\sigma)\frac{P}{K}\}}{(1-\lambda)}\right]-r$$
$$=\left[\frac{(1-\sigma)r}{(1-\lambda)}\right]-r$$
$$=\frac{[r-\sigma r-r+\lambda r]}{(1-\lambda)} \qquad (11)$$
$$=\frac{r(\lambda-\sigma)}{(1-\lambda)}$$

But $$\sigma=\left[\frac{\lambda(r_i+\alpha)}{r}\right]$$ [from (5) above]

Substituting the value of σ in (11) above we have:

$$\frac{(r\lambda-r_i\lambda-\alpha\lambda)}{(1-\lambda)}$$

This leads to the final result:

$$(\Phi-r)=\frac{(r-r_i-\alpha)\lambda}{(1-\lambda)}, \quad r>(r_i+\alpha) \qquad (12)$$

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