ECONOMICS OF
DIMINISHING MUSHARAKAH

ISLAMIC RESEARCH AND TRAINING INSTITUTE (IRTI)

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(B) To provide for the training and development of professional personnel in Islamic Economics to meet the needs of research and shari'ah-observing agencies;

(C) To train personnel engaged in **development** activities in the Bank's member countries;

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(E) To undertake any other activities which may advance its purpose.

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Location

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ECONOMICS OF DIMINISHING *MUSHARAKAH*

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ISLAMIC DEVELOPMENT BANK

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

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FOREWORD

Research on Islamic modes of financing and Islamic financial instruments is a regular feature of the activities of the Islamic Research and Training Institute (IRTI). IRTI has so far published several papers on this theme including, e.g., comparative economics and practices of Islamic financing techniques, principles of Islamic financing, *mudharabah, ijara, istisna'* contracts and their modern applications etc. In the framework of the same theme, the present paper on economics of diminishing *musharakah* (DM) has been jointly undertaken by two IRTI researchers.

Including the introduction, the paper is comprised of seven sections. In Section Two the authors discuss the need of an Islamic economy for systematically concluding profit and loss sharing financial contracts. In Section Three the authors describe the concept of diminishing *musharakah.* In Section Four they discuss the cases where the application of the Islamic principles of participatory financing has so far remained very limited. According to the authors' assessment, DM is relevant in such cases. Certain efficiency conditions of the DM contract are discussed by the authors in Section Five. In Section Six, they suggest a probability framework for analysis of DM contracts. Conclusions of the paper are briefly presented in the last Section.

All research of IRTI is refereed by the Academic Committee. As usual, the first draft of the present paper was sent to two referees. In the process of clearing the paper for printing it was considered that the publication of referee reports on the paper could be useful. Reports of the three referees as well as re-joinder by the authors is therefore appended with the paper. It is hoped that readers may find this paper interesting. The new direction of research in the area of economics of Islamic financial contracts implied by the paper may well be found provocative.
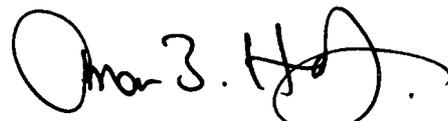
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I INTRODUCTION

1. BACKGROUND

The academic discussion on the Islamic financing system has passed through several evolutionary phases. The regulation of financial transactions following the prohibition of *riba* and *gharar* has always been the central concern of the academic works. In the recent past, the discussion started with a critique of interest. Then an alternative interest-free financial system was visualized, followed by a number of policy oriented studies for state-induced financial Islamization. Recently, empirical studies on the operations of Islamic banking have also been undertaken. An interaction of theoretical and empirical studies is a sign of the maturity of an academic pursuit. The academic field of the Islamic financial system now has reached this level of academic maturity.

As a result, the understanding of the Islamic principles of financing has broadened during the past few years. A holistic view of this understanding is provided in the recent literature. We feel that, the next stage of theoretical research in the field should be directed towards an analytical and critical assessment of different Islamic modes of finance under different real world situations. This has to be done under the real world institutional scenarios, for, a study undertaken as such can always be more useful if institutional conditions improved to match our ideals.

2. OBJECTIVE

The Islamic Research and Training Institute has rightly undertaken a number of survey works on various Islamic modes of financing, namely, comparative economics of Islamic financing techniques, principles of Islamic financing, *mudharabah, ijara, istisna'* contracts and their modern applications, contemporary practices of Islamic financing techniques etc.

The objective of this paper is to formally discuss the need of the Islamic economy for systematically terminating *musharakah* contracts. We

particularly, aim to present and discuss certain conomic issues relating to the concept of diminishing *musharakah* (DM) as described in Box-1. In this paper we do not aim to deal with considerations about absorption of this new idea in the *shari'ah* literature. Also, we do not intend to suggest DM to be a panacea for all problems to be confronted by the Islamic financing system. If that was true, the DM would have become widely popular among Islamic banks.

In Section Two we discuss the nature of *musharakah* and *mudharabah* contracts and the need for DM type of terminating contracts. Section Three describes a DM contract. Section Four briefly discusses the cases where the application of the Islamic principles of participatory financing have so far remained restricted to mere academic discussions. In these cases, despite the urging need, practices of participatory financial principles have not taken ground. According to our assessment DM is relevant in such cases. In Section Five, certain efficiency conditions of the DM principle are discussed. In Section Six, we suggest a probability framework for future analysis of DM contracts. Section Seven provides a brief conclusion of the paper.

II

PERPETUAL MUDHARABAH AND MUSHARAKAH CONTRACTS: PROBLEMS OF APPLICATION TO ONGOING ENTERPRISES

Mudharabah and *musharakah (M-M)* are the two traditional Islamic modes of participatory financing. Once any of the M-M contracts is formulated, it cannot be re-structured or abrogated without cost and prior to the conclusion of the M-M enterprise. Thus, we call the M-M contracts as perpetual/permanent or non-terminating profit and loss-sharing contracts.

In earlier Islamic periods, these contracts were used to finance operations of Caravan trade. With the help of the M-M contract a trader would acquire finance to organize trade missions. Once agreed, the contract could not be terminated before the conclusion of the trade mission. The mission would conclude within a short period (may be not exceeding a period of 3 months). Upon conclusion of the mission, the growth in the initial funds would be calculated by liquidating the enterprise. An increase in the funds (profits) if any would be shared as a priori agreed. A decrease in funds (losses) would be recorded according to the M-M rules. In any case, with the conclusion of the enterprise, the actual funds would be free for another use. Due to the short life and liquidating nature of the M-M enterprise, the need for terminating M-M contract does not arise.

The above is not the case with most modern applications of the M -M modes. Most finance to re-sale-trade is provided by direct-credit-lines or advance delivery by large-scale multinational producers, for instance, the Japan's General Trading Companies (see OECD 1984) in their case. Finance for end-use-trade e.g., an equipment for a firm or a public utility project and a car for a household is provided by debt-creating modes including the mark-up mode of Islamic banks. In modem applications, the M -M contracts are therefore, more suitable for longer-term project financing[2]. The contemporary industrial projects are unlike the traditional Caravan trading enterprises. In this respect, therefore, the liquidating M-M contracts are expected to function similar to the traditional equity financing.

The developed economies have relatively competitive capital markets. Information and empirical data in the field of capital markets is not only available but also reliable. Thus the research dealing with the problems and prospects, pros and cons of equity financing vis-a-vis debt financing constitutes a scientific part of the literature on economics.

However, when we compare the premises and underlying economic environment of this literature with the economic environment in the Muslim countries, we find striking and fundamental differences. In the developed capital markets, firms' assets are perfectly divisible into tradable shares. This is not the case with the economic environment prevailing in most Muslim countries.

Perfect divisibility of firms' assets depends on the existence of efficient capital markets. Assets of incorporated firms are traded in almost perfectly competitive stock markets. Under such conditions, when needed, a bank can sell its equity or M-M ownership shares conveniently. For two reasons, this condition is non-existent in the Muslim countries.

First, in many Muslim countries, stock markets do not exist. What ever meager presence of stock markets is noticed, it cannot be considered competitive and efficient.

Second, there is *a shar'iah* restriction on banks to participate in stocks where the capital structure of firms are dubious with respect to the existence of interest-based finance.

In its 7th Session held in Jeddah, 7-12/11/1412H (May 9-14, 1992), the learned *Fiqh* Academy of the Organization of Islamic Conference considered the legal status of Islamic banks' owning shares of such companies' whose capital structure includes interest-based funds and the following resolution was made,

"....it is originally unlawful to participate in companies dealing sometimes in unlawful things, like interest etc.; despite the fact that their activities are basically lawful".

This resolution was reiterated in the recommendations of the seminar on Problems of Islamic Banks, jointly organized by the OIC-FA and IRTI-IDB, held in Jeddah during 22-10-1413H (14-4-1993).

If the banks and their clients are not able to transact in the stock markets, the M-M based firm-bank relationship becomes direct with a one to one correspondence. This relationship is unique in the modern context, but it is similar to the traditional M-M-trader relationship. Thus once a direct and one to one bank-firm relationship (like the traditional M-M-trader relationship) is established, due to permanent nature of the modern firm, the discontinuation of this contractual relationship is not possible (unlike the traditional M-M-trader relationship in an enterprise of 3 months).

The application of the M-M contracts originally designed for liquidating enterprises in ongoing enterprises has prohibitive consequences on the use of the M-M principles of finance to any significant scale. Some aspects of this phenomenon are worth mentioning:

i)   There are numerous economic activities and needs of the society which require finance but where the bank-firm contractual relationship must gradually and systematically terminate during a reasonable period of time. This should ensure an unequivocal transfer of the enterprise's ownership to the firm. In these activities, even though the need for finance may be urging and both parties may benefit from it, the creation of finance may not be possible if the transfer of ownership is not ensured. Section Three of the paper aims to identify examples of such cases. However, in the outset, the example of owner operated firms may be given. Because of the nature of ownership implied in these modes, the traditional M-M modes do not meet the financing requirements of such firms.

ii)   Retained profits are a major source of financing the growth of companies (about 80% in average in the OECD countries, and about 58% in average in a number of developing countries; see Sing and Hamid 1992). If retention is allowed under *mudharabah,* in the second period, *mudharabah* will be transformed into *musharakah.*. Thus growth of the firm is financially constrained under the M-M modes[3], can be enhanced by this transformation of the contracts.

iii)   The non-terminating nature of the bank-firm contractual relationship imposes limitations on the provision of bank finance to newer projects and entrepreneurial activities. In the developing Muslim countries an infinite number of small enterprises are needed to alleviate poverty. The bank's cannot have ownership relationship in infinite number of enterprises at a time as required under the M-M modes.

iv)   The non-terminating nature of the relationship also imposes restrictions on the short-term cash flows of the bank and its capability to generate enough liquidity.

v)   The relationship poses incentive compatibility problems in the form of lack of the entrepreneurial interests in the longer-term growth of the firm.

III

DIMINISHING MUSHARAKAH:
PARTICIPATORY FINANCING OF
ONGOING **ENTERPRISES**

From the discussion of Section Two, the need of the Islamic economy for such participatory financial contracts which can be applied in the ongoing projects becomes clear. In the outset, it may be mentioned that the problem is one of finding a mechanism through which the financier can liquidate itself from the ongoing enterprise after participation in its capital.

1. HISTORY OF EVOLUTION OF THE DM

The *shari 'ah* has categorically prohibited *riba.* In addition, *gharar is* prohibited on case by case basis (i.e., *gharar al fahish* - excessive uncertainty prohibited). Keeping in view these two prohibitions, researchers have the freedom to develop financial instruments convenient to meet various needs of the Islamic economy. As Hassan (1992) suggested, an effective methodology in this regard is to combine the characteristics of the various permissible modes and develop new instruments.

The diminishing *musharakah* (DM) is a new financing technique. While discussing the implications of the traditional M-M principles in the longer-run economic perspective, Homoud (1974) confronted the following problem. Since an Islamic bank is a non-biological entity, its life span can be very long compared to human beings. Given this reality, if Islamic banks used the non-terminating M-M contracts (in the ongoing enterprises) at a larger scale, in a period of say 100 years, they would be controlling a disproportionate amount of the economic resources. This may neither be manageable nor equitable. Thus he proposed the concept of *musharakah yantahi bi al tamlik (musharakah* which ends in transferring ownership to one party - the entrepreneur).

According to this concept, an Islamic bank and an entrepreneur may develop a joint project which could later lead to sole ownership of the entrepreneur. In the proposed contract, profits and losses are shared according

to the *musharakah* principle. A certain proportion of the entrepreneur's share in profits is kept in a screw account. As soon as the value of this account becomes equivalent to the value of the financier's ownership in the joint enterprise, the payment for this ownership is made and the entrepreneur becomes the sole owner. This proposal was subsequently discussed and approved as a permissible mode of financing by the First International Conference on Islamic Banking, held in Dubai, during 23-25 Jamad al Thani 1399H (1979)[4].

The idea of developing an Islamic version of the conventional concepts of preferred stocks, particularly "redeemable capital" must have occurred to professionals working in the Islamic banks. However, when the issue of designing appropriate modes for financing *Awqaf* properties was considered in the Islamic Development Bank, a task force appointed for this purpose recommended the DM as a sole appropriate mode (see IDB 1987). The consideration was based on the peculiar legal position of ownership of the *waqf* properties; i.e., a financier cannot keep permanent ownership in *a waqf* property which is essentially a separate legal entity.

The IDB task force thus suggested that the *waqf* as a legal entity with participation of its properties and an Islamic bank as a financier can develop a profit sharing joint enterprise. The ownership of the bank will be timely liquidated in favor of the enterprise. Thus within a given period of time, the *waqf* ownership will be completely returned.

Participation Term Certificates (PTCs) used by the Bankers' Equity (BE) Pakistan, in fact, resemble the redeemable capital of firms in the conventional sense. Briefly, under the PTC arrangement, a firm under the sponsorship of the BE (an agency managing the funds of commercial banks) issues PTCs (property ownership certificates) to the BE. The principal amount of these PTCs is however, guaranteed. After making allowances for several considerations, the profits if any, are shared by the firm and the BE according to agreed ratio. From its part of the profits, the firm will, on priority basis, re-purchase the PTCs on installments. In case of loss, the firm will issue common stocks in favor of the BE. The arrangement has several pitfalls, the discussion of which is not a subject matter of this paper[5]. The purpose of mentioning this

arrangement here is only to highlight the declining nature of the financier's ownership of the PTCs.

Box-1. DIMINISHING *MUSHARAKAH:* Variant of Sudanese Islamic Bank

...*musharakah* in fixed assets utilizes a formula of diminishing partnership whereby **at the time of liquidation the partner client would become the sole owner of assets** (bold added). Upon approval of application, SIB (Sudanese Islamic Bank) negotiates the basis of partnership, determines the respective contribution by partners and how the industrial operation will be operated. SIB will normally be involved in musharakah in working capital as well. A contract is subsequently signed specifying the details of the partnership, the respective contributions and shares of partners, responsibility for management etc. In contracts stipulating diminishing partnership, the partner client will undertake to allocate a proportion of his annual profits for the purchase of a certain pre-agreed percentage (say 20 %) of SIB's contribution to the partnership. In effect, the respective contribution to (of) the partners do not remain the same for the whole duration of partnership. At the end of the first year, the partner-client would come to increase his contribution by buying part of SIB's. If the part bought each year is 20%, then at the end of the fifth year, the whole share of the SIB would have been taken over by the partner-client. In view of the changes in the relative proportion of contribution of each of the two partners, the contract would provide a formula for a corresponding adjustment of shares in profits according to the increase or decrease of each of the two partners.

Khaleefa (1993 p. 42)

The Sudanese Islamic Bank (see Box-1), the Al Barakah Bank (see Box-2) and the Jordan Islamic Bank (see Ahmad 1993) are using DM, but at a very limited scale. A scheme similar to the one described in Box-2, known as rent-sharing was also experienced in Pakistan (see Kahf and Khan 1992).

2. SOME *SHARI'AH* CONSIDERATIONS

Although the DM idea is new, it has achieved substantial recognition. Some *shari'ah* scholars take the permissibility of DM for granted (see e.g. Hassan 1992). Nevertheless, since the DM is innovative and combines the major attributes of the M-M and sale principles of Islamic financing, care must be taken against any violation of the *shari'ah* principles. A subject similar to the case presented in Box-2 came under deliberations of the Fifth Session of the *Fiqh* Academy of the Organization of Islamic Conference under the title,

"real estate financing". After preliminary discussions this subject was postponed for want of more research (see OIC 1989) and has not yet been resolved.

The *shari'ah* problem as discussed by the experts, revolves around the fact that DM contract contains a sale provision. The financier agrees to sell a certain part of its ownership share every year to the entrepreneur. To some scholars, this agreement, even if it may merely be a promise, implies that a sale contract has effected. A number of problems arise from this: First, if the sale has effected i.e., the bank has sold its ownership, what then, entitles the financier for his claim on the profits of the enterprise? Second, if a sale contract has effected, what is the exact amount of the price and what is the exact description of the object of sale? In the absence of the two, a sale provision of the DM contract becomes null and void. Third, it is unjust to make the entrepreneur binding to purchase something in the future. Similarly, it is unjust to fix tomorrow's prices today.

These issues arise from: a) The legal status of a promise. Is a promise to sell or buy binding legally? There is a difference of opinion among *shari'ah* scholars on this issue. al Amin (1993) concludes that for the sake of justice and efficiency in Islamic banking, a promise should be made binding and

b) Can the sale provision in the DM contract be made binding for both parties? This is a crucial question. It can cautiously be inferred from the *OIC Fiqh* Academy Resolution No. 2 that the sale provision of the contract can be made binding only on the financier. Invoking Resolution No. 5 of the Academy, we infer that the sale will only be effected at the prices prevailing at the time of the actual sale.

Thus with the following modifications in the SIB variant of the DM we can overcome some of the *shari 'ah* objections: a) The bank makes a binding promise to put a specific part of its ownership of the project on sale in specific future date, b) The purchase is however, not binding on the entrepreneur and, c) prices will be determined only at the time of actual sale.

If the purchase of the financier's ownership is not made binding on the entrepreneur, one may question the rationale of the DM contract. In this regard a number of points need clarification:

First, throughout this paper we, assume that an entrepreneur has an inherent motivation to acquire ownership. Due to this desire, even if the promise is not binding on him, the entrepreneur would like to buy the ownership sold by the financier.

Second, the financier is bound by his promise to sell his ownership. Although the entrepreneur will enjoy priority rights of purchasing the assets, some other parties may always show their interests in purchasing the shares. A purchase by other buyers will reflect a managerial inefficiency on part of the entrepreneur. In the longer-run it may lead to the take-over of the enterprise by some other parties. This signal can be an effective control on the management of the enterprise and can enhance managerial efficiency.

Finally, as argued in the paper, the DM contract is also in the interest of the financial institution. If the banks can systematically liquidate themselves from maturing projects and divert their funds as such released towards infant enterprises, the society can also benefit.

3. SALIENT FEATURES OF THE DM

From what has been discussed above, the salient features of a DM contract may be summarized

i)   A client entrepreneur and a financier develop a joint project on the basis of *musharakah.*

ii)   The profits are shared according to an agreed ratio, and losses in proportion to capital contribution.

iii)   The financier makes a binding promise to sell its ownership shares of the enterprise on installments.

iv)   The client voluntarily buys the shares of the financier at the prices[6] prevailing at the time of sale, so that the at maturity of the contract the entrepreneur becomes sole owner of the project.

Share prices are determined in stock markets. These markets are not efficient in the Muslim countries. Therefore, the parties may face difficulty with respect to "prevailing prices" of shares. To avoid this problem, the parties a priori agree to accept the share prices yearly indicated by their auditors.

v)   The project may also be developed on orders of the client and subsequently sold to the client. The client will buy the shares from the revenues generated by the project.

vi)   The sale component of the DM contract is binding only on the financier.

4. IMPLICATIONS OF DM FOR COOPERATIVE SPIRIT

Islam has high regard for mutual cooperation among people and parties in acts of good deeds. Under the DM arrangement, as the scarce technical and financial resources of the bank will continually be released from maturing projects, the more needy firms can have an excess to these retiring resources. Hence, the terminating relationship between the financier and the bank is expected to enhance the sense of cooperation among firms of different maturity. Moreover, if needed the matured enterprises can undertake M-M or DM enterprises in conjunction of other enterprises. The existence of a DM contract does not necessarily imply abrogation of the M-M contracts. DM is only as an additional contract. Its introduction provides the users an opportunity to choose amongst a wider group of Islamic modes of financing.

5. FLEXIBLE M-M CONTRACTS

It is very interesting to consider M-M contracts which are neither [*]terminating like the DM, nor non-terminating and fixed like the M-M type. The fact that the sale provision must be binding on the financier does not necessarily imply that the contract should terminate. The possibility of a flexible M-M contract can thus be visualized[.] In this type of contracts the

bank-firm relationship may be permanent. However, the ownership stakes of the two parties in the enterprise will fluctuate subject to market conditions. A continuous process of bargaining will exist between the two parties on the ownership shares and profit sharing ratio. However, the present paper does not aim to analyze such contracts which must be addressed in latter occasions.

IV

THE NEED FOR DIMINISHING MUSHARAKAH:

SOME PRACTICAL CASES OF APPLICATION

As noticed above, the ownership pattern in both *musharakah* and mudharabah contracts are non-terminating in any organic and systematic sense[8]. In case of *mudharabah* the *rab al mal* (owner of funds) remains the owner till the contract comes to an end. In *musharakah* also, the ownership ratios of the two parties are perpetual and fixed for the life time of the contract. In case of liquidating enterprise, these characteristics of the M-M contracts do not pose any difficulty. But, financing a ongoing enterprise with such M-M contracts becomes a really impracticable phenomenon.

Generally speaking, with a given economic environment, different modes of Islamic financing are relatively more or lesser effective in meeting the financing requirements of different activities. However, if there is a need for the termination of one party's ownership, DM type of arrangements become more relevant. In the present section, we discuss the economic significance of systematic termination of the financier's ownership in projects with illustrations from different sectors and economic activities.

1. PROMOTIVE ACTIVITIES

Despite its wide scale criticism, the infant industry argument (since newer firms cannot compete with the matured ones, such weaker firms need to be protected), is still a major driving force in formulation of economic policies in many countries[9]. Two important implications of the infant industry argument vis-a-vis the Islamic financing system are worth mentioning.

First, given the role of interest in shaping the flow and allocation of resources in the contemporary economies, mandatory elimination of interest by itself, is in fact a very serious interference in the so-called free operation of the market forces. Some influential Western scholars argue that such an interference will cause an efficiency and welfare loss for the society at large.[10] Although, this view has been thoroughly evaluated and refuted by the Islamic

scholars", yet, it is unsafe to deny the fact that Islamic financial system has to operate in a hostile as well as competitive environment.

On the other hand, the practice of the Islamic financing principles is a fundamental need of a Muslim society. But the experience is new. At present, the Islamic financial institutions cannot compete with the services offered and technology used by their conventional counterparts12. Therefore, if left to the mercy of the "free operation" of the interest-based market forces, these indigenous institutions will not be able to develop. Moreover, it is unrealistic to assume that signals given by the conventional interest-based financial markets could truly guide the operations of the Islamic financial institutions.
Thus, the Islamic banks need to adopt conscious regulatory policies and develop institutional arrangements with a longer-run perspective.

Second, commercial banks, though important, represent, only one section of financial intermediaries - others being investment banks, merchant banks, thrift institutions, development financing institutions etc. There could not be two opinions that the Islamic financial system requires these institutions. However, the above mentioned consideration calls for an important comparison of Islamic financial institutions to be made with the concept of investment promotion and development financing institutions, having particularly national mandate and operating in the developing countries. These institutions are prevalent in almost all the developing countries[13]. The objective of these public sector institutions is to promote investment by their direct investment as well as indirect promotive efforts.

Certain fundamental considerations, namely, lack of entrepreneurial skills, technical facilities required to undertake investment, finance and infrastructural facilities justify the operation of these institutions. The need for the Islamic NDFls can hardly be over-emphasized. Such institutions when established would also require appropriate promotive strategies.

But, if the idea that Islamic financing system should not solely rely on the market signals of the interest-based system but should also adopt certain regulatory mechanism is accepted, we may find similarities between NDFIs and Islamic banks. Islamic banks like NDFIs would require to undertake direct investment and investment promotion activities. As such, they also confront

the problems faced by NDFIs particularly relating to the availability of entrepreneurial activities, technical and institutional facilities.
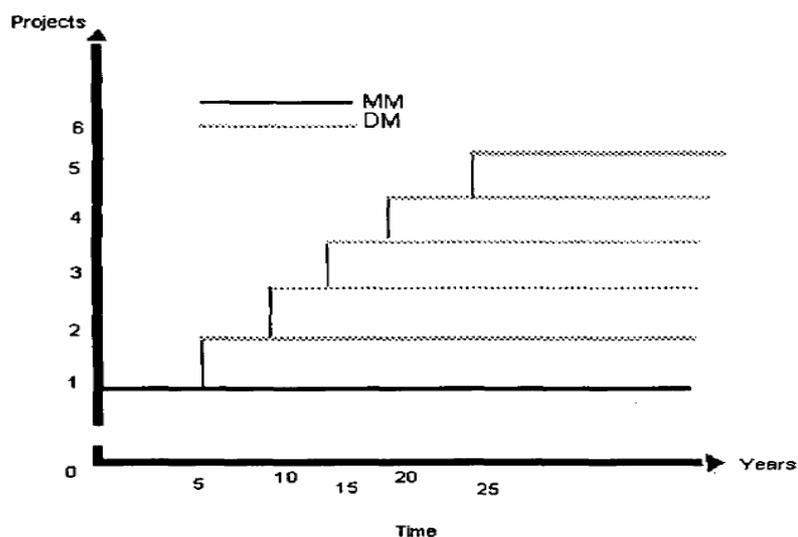

Figure - 1. Project Promotion under DM.

With such an environment, it is imperative for Islamic banks to undertake promotion activities. Several studies have emphasized such a role for the Islamic bank[14]. This can be done by the Islamic banks by undertaking more of *musharakah* and *mudharabah* type participatory activities in longer-run investment projects. But, as mentioned above, there are a number of prohibitive factors for such an exposure of the Islamic banks.

i) The basic objective of the Islamic commercial banks is to manage the depositors' money (the maturity of which, in the average does not exceed 2 years) in a prudent and permissible manner. Due to the danger of investing short-term funds into long-term investment, it is not prudent for the Islamic financial institutions to opt for long-term investment stakes[15] as required by the M-M contracts.

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ii)   As far as *musharakah* is concerned, the bank has to participate in the management of the projects. If it was a matter of a small number of projects, the banks may be able to participate in the management of enterprises. But to participate in the management of infinite number of projects, which is required by the M-M contracts is certainly highly inconvenient. Even if it is considered convenient, it must involve an additional cost for the bank, and

iii)   If stock markets were developed, when required, a bank may sell its ownership shares. But, in the developing countries Islamic stock markets do not exist. Therefore, once a project is undertaken, under the M-M arrangements, the bank cannot give up its shares till the project is liquidated.

Therefore, despite a great liking for these two modes, their practice is not common. Even, if the practice was common, their role in the promotion of entrepreneurs would be limited due to the non-terminating nature of the ownership of the financier which will certainly limit the banks involvement in projects.

The question therefore is, how can an Islamic financial institution contribute to the promotion of entrepreneurs without at the same time sacrificing its financial prudence and without incurring an additional cost?

Some studies suggest that the participatory nature of Islamic financing system has an in-built mechanism to promote entrepreneurial activities[16]. However, we have assumed that the Islamic banks need to undertake certain regulatory policies to correct some of the problems caused by the interest-based environment. It is with this background that the DM must be of interest for the Islamic financial institutions.

As it is obvious from our description of the DM, the Islamic bank's ownership of a project declines with the maturity of the project and that of the client partner (the entrepreneur) increases. Thus, the Islamic banks will promote entrepreneurs by simply undertaking DM projects.

The relative effectiveness of the DM compared to the M -M in promoting entrepreneurs is easy to visualize. In Figure - 1, project promotion under the M-M and DM contracts are compared. In a period of 25 years, and

with a given amount of funds allocated to a single project, the Islamic bank will stuck-up with only one project under the M-M option. But under the DM option, there is no such restriction imposed by the contract. Given five years maturity of a DM contract, under the DM option, an Islamic bank can promote 5 projects in 25 years. Seen in a longer-run perspective, and in the perspective of banks involved in projects, the promotive effect of the DM is easy to visualize compared to the M-M contracts.

The retirement of the Islamic bank from the projects can be designed in a manner to match the maturity of the bank deposits. Due to revenues from the continuous sale of ownership shares, in normal circumstances, the short-term liquidity position of the bank will be better under DM compared the M-M contracts. In this manner, the DM overcomes the three essential limitations of the sharing modes mentioned earlier:

i)   Long-term investments become possible without the banks necessarily having long-term exposure with the projects as it is under the case of the M-M,

ii)   The project after becoming successful, is taken over by the entrepreneur - i.e., each DM project necessarily generates the associated entrepreneurial activities, which is not the case under the previous two cases. Consequently, banks become relieved to initiate other projects, and

iii)   The possibility of exposure of short-term deposits to long-term risks is overcome, which is otherwise not possible under the sharing arrangements.

2. ISSUES IN EXTERNAL RESOURCE MOBILIZATION

As a group, Muslim countries' resource endowment is rich. But for the utilization of these endowments, their reliance on foreign resources does not require any elaboration. The capital importing countries need foreign capital as well as technology intensive services. The capital exporting Muslim countries require imported technology and related services. The discussion of appropriate forms of mobilizing foreign resources (capital, technology intensive services etc.) for the indebted countries has recently attracted

considerable attention[16]. Some Islamic economic aspects of this issue have also been discussed[17].

A number of pertinent issues arise, whenever an attempt is made to develop appropriate alternative modes of mobilizing external resources. Most of these issues are generically related to two basic considerations: i) Non-commercial risks and ii) efficiency considerations.

Non-commercial Risks under DM vis-a-vis FDI

Foreign direct investment (FDI) is an obvious alternative to debt financing. But one of the basic reasons of prevalence of interest-based debt finance in international context is the relatively lesser exposure of these to non-commercial risks compared to FDI as well as equity participation. Certain level of non-commercial risks are always related to the issue of ownership. It is generally understood that wholly foreign owned projects are likely to confront more non-commercial risks compared to foreign-local joint ventures[18]. Therefore; it is widely accepted that the non-commercial risks related to projects can be reduced by increasing the share of the local interest groups in a project in absolute terms. The implication of this consideration for the general investment climate is significant[19]. The argument can be summarized in the following form: In terms of minimizing non-commercial risks of projects which seek foreign resources, a joint venture is preferable compared to a wholly foreign owned enterprise. Similarly, a larger domestic interest is preferable to a smaller local interest and applying the same logic, declining foreign interest is better than a constant state of foreign interests. This point marks DM superior to traditional FDI and more relevant mode for external resource mobilization.

Non-commercial Risks in DM vis-a-vis Leasing or Installment Sale

The other alternatives of mobilization of external resources are leasing and installment sale. Leasing in context of external resource mobilization will imply, i) equipment leasing where the foreign financier owns an equipment and the local party uses it with or without a sale of ownership and ii) industrial projects, or a real estate owned by foreigners and leased out to local parties with or without the sale of ownership. Provided that users

possess the technical and professional capability needed to fully utilize the leased equipments and plants, they may be interested in this arrangement, as it facilitates the use of assets without actually bothering for meeting the full purchase cost or the risk of ownership.

But as ownership is held by the financier, without proper international guarantees, it is very difficult for the developing countries to acquire this type of finance to any meaningful extent. Because, it involves a high risk of maintenance problems, selective procurement, obsolescence, low re-sale value of the asset, default in rent services, low liquidity of assets and what is more important is the fact that laws of different countries related to ownership of assets, leasing, and tax structures etc., could pose prohibitive limitations.

Installment sale certainly improves the financier's risk exposure as the ownership is transferred to the user. Therefore, the capital importing countries may have a better access to this type of financing.[20]

Installment-sale is *a* shari'ah-based alternative to interest-based debt financing, ensures the use of financial resources in specific investment projects and it does not involve any non-commercial risks. However, in certain areas improvement is always possible.

First, for utilization of the resource-base of developing countries and changing the longer-run resource structure, development of entrepreneurs and transfer of technical know-how to the developing countries is important. FDI and joint ventures facilitate this crucial transfer. Whereas, installment sale though may alleviate the financial constraint on resource allocation, it cannot be considered as effective as joint ventures and direct investment.

Second, installment sale transfers ownership to the home country and transforms the interests of the financier into secured debt liabilities. Thus, it does not link debt services with the outcome of the projects. On the other hand, the linkage between debt services and the ability of the projects to pay these liabilities is considered to be an important attribute of an appropriate form of external finance.

Third, whether it is direct purchase by the developing countries or an installment sale arrangement, there is always a risk of moral hazard on the supply side - defective supplies etc. This consideration often inflates procurement costs in the first instance, maintenance and operational costs in the second. Direct investments and joint ventures also overcome this problem as in both cases it could be expected that the foreign party will have a comparative advantage in procurement as well as his interests are tied-up with the outcome of the project.

A DM contract, as described in Section One is a suitable strategy for external resource mobilization. The foreign investors will be associated with projects for a known time period (e.g., for 15 years) and the ownership of projects will ultimately be transferred to local parties. Thus political sensitivities will be minimized, as a result, non-commercial risks will be minimized. A better investment climate will be ensured. Moreover, as the foreigners will have a serious stake in the success of the projects, they will make efforts in order to ensure the efficiency of the projects.

3. ISSUES IN LAND AND WATER RESOURCE DEVELOPMENT

Land-based resources still constitute the backbone of the socio-economic system in many Muslim countries. Some characteristics of the existing state of affair of land and water resource development in the Muslim countries may be worth mentioning.

First, land is considered as one of the most secure assets. This traditional belief has been strengthened by inflation, population explosion, and low growth of non-agricultural sectors. Acquiring the ownership of a piece of land has therefore, become a secure investment, particularly for those who hesitate to participate in the interest-based capital and financial markets.

Second, owner-operated farms are still considered to be the most efficient forms of land utilization[21]. Theoretically, , other efficient forms of land use are the sharing arrangements with contractually internalized cost and revenue structures.

Third, technological improvement has made land and water resource development easier. However, in the developing countries, this process has merely been limited to the public sector. The public sector has taken the responsibility of land development sometimes using pricing methods or often bearing all costs. The private sector has not been able to undertake land development activities to any substantial degree, except for some residential purposes.

Private land and water resource development, has remained hampered due to lack of non-availability of proper finance. The traditional source of rural credit in the developing countries i.e. interest-based informal lending is not popular in the Muslim countries due to the belief of the masses in the injunction against riba (interest). It may however be found among non-Muslim or marginally among Muslims but the cost of finance as well as the social exploitation associated with it is always inhuman.

Formal private financial institutions have no rural spread. Whatever rural credit is available, it is provided by the para-statal organizations e.g. the Agricultural Development Bank or the nationalized commercial banks in Pakistan and similar institutions in other countries. This type of credit has certain inappropriate features:

i) It threatens the ownership of land as land is kept as a collateral against the interest-based finance as such provided. Thus the credit is not popular among enterprising forms. Moreover, the collateral is often too high as land is not divisible and the cost of fragmentation is high.

ii) Therefore, only marginal cases secure finance with a land collateral. The purpose of this finance is often not land or farming enterprise development, rather it is to meet some pending social needs such as wedding, repair of a house or meeting health costs of a family member.

iii) Finance which can make a quantitative significance is always provided with a non-commercial (political) assessment of the clients. Due to this reason rural credit schemes in fact do not contribute to the development of farm based economic activities.

iv)   Whatever finance is provided, it is against a secured land collateral. The financial institutions, therefore remain unconcerned with the ultimate use of the finance. In many cases, people secure rural credit against land collateral and divert the money to non-farm activities often in the urban areas.

v)   It is a fact that farm productivity can be improved by preparing land for optimal use, which necessitates a) leveling land, b) preparing it for maximum crop production c) ensuring optimal development and use of water resources and d) developing a marketing link for the farm output. This requires an initial investment outlay for which suitable forms of Islamic modes of finance are required.

The traditional Islamic modes of financing have their limitations for application in land development. For example, *muzara'* and *musaqa* are relevant only if the owner of land himself is not willing to operate the farm. If the owner of land himself wants to operate the land and he needs financing, *muzara'* and *musaqa* do not remain relevant. Leasing is relevant to the extent that equipments can be used for leveling and preparing. the land. Given the mechanized facilities, this does not require much finance.

If the land was for the purpose of sale, it could be developed on the basis of the M-M contract, and sold. With allowance for other costs, the difference between pre-development and post-development price would constitute the profit and shared accordingly. However, most rural land is self operated and not for sale. Due to ownership sensitivities, the use of the perpetual *musharakah* is also very limited'. Therefore, if self-operation is the objective, as the case is with most rural land, the M-M based-pure sharing principle of financing is not relevant.

We can also visualize the use of the deferred sale principle, whereby, the land owner can contract land development to a party, the payments to be paid after sometime. At present, this is the most common form of land development practices, though very limited in use. But a financing institution is not supposed to undertake the development of land by itself. Once finance is available, the two parties (land owner and the bank) may agree to contract the development work.

Box-2. Diminishing *Sharikah* al amlak-cum-ijarah: The Case of Barakah Bank

A London-based subsidiary of al Barakah Group of Islamic banks provides finance to its clients for the purchase of residential and commercial buildings.

Contractual relationship rests on the basis of the participation between the client and al Barakah in purchasing a real estate according to agreed-upon proportions.

The portion of al Barakah is not to exceed 70% in the case of residents and 85% in the case of non-residents.

The price of the real estate is divided into shares, the value of each share being 1 £. This value remains fixed through out the contractual period. If the price of the purchased house is 100,000, al Barakah's portion of shares would be 70,000 and that of the client 30%.

It is incumbent on the client to purchase al Barakah's shares within an agreed-upon period, which should not exceed 7 years for non-residents, and 20 years for residents. Shares of al Barakah decrease gradually until the real estate becomes wholly owned by the client.

Since the client is interested in purchasing the real estate in order to realize the purpose by which he has been prompted to purchase it, the partners will fix a rent for the real estate which will be re-considered with a view to raising or lowering it, according to real estate market.

The real estate is to be registered by the name of the client. It is mortgaged to the benefit of al Barakah as a guarantee for payment.

The two parties agree selling the real estate in case the client fails to purchase al Barakah's portion of shares in the real estate.

Abdallah (1991)

Another land development arrangement is known in Tunisia23, whereby the owner of land and the land developer enter into a contractual arrangement for the development of land. After the development of land according to agreed specifications, a piece of land is given in reward to the developer[24] This arrangement need to be re-discovered, particularly for the development of large tracks of un-irrigated land in many Muslim countries. But, for owner-operated lands its use is very limited as it will cause a fragmentation of land ownership.

Under these conditions, DM becomes relevant. If the land is developed, its productivity and value will increase. The expected difference between the pre and post development land value can be the basis for the land

owner and a financial institution to develop a joint venture contract with contribution of land and finance respectively. The two parties will contractually agree to share the output and losses if any. After the land is developed, the share of the financial institution will gradually be re-purchased by the owner-operator. Thus during a specific period of time the share of the financial institution in the joint venture will be transferred to the land owner.

4. ISSUES IN HOUSING FINANCE

Owning a house or shelter is one of the basic human motivations to undertake economic activities. But in general, construction of a house is a very expensive activity. One cannot expect in the developing countries that shelter can be provided at a large scale by welfare programs. The market has to look after it. But housing involves large investments compared to general household income. Therefore, availability of cheaper finance plays an important role in the provision of housing.

If the motivation of construction of a house is for self use, residing in it or its renting, rather than sale, the M-M are again irrelevant. The installment sale technique has a wide application in this case. But it is argued that to make the contract fully consistent with the *shari'ah* requirements of sale, double registration is required. This will inflate the cost of finance.

DM is another and more suitable alternative[25]. One model of the DM used by al Barakah London for housing finance is provided in Box-2. More generally, a financial institution and a prospective owner client may jointly buy or construct a house. The client user may gradually buy the share of the financial institution irrespective of the market rent of the property. Alternatively, the two parties my opt for rent sharing. Initially, the two parties will share the market rent of the house in accordance with their share in the initial ownership. As the client will buy the ownership of the financier, the financier's share in total rent will gradually decline to zero with the decline in its ownership.

5. ISSUES IN MARKET-BASED POVERTY ALLEVIATION

BOX-3: An Economic Guideline from the Prophet(peace be upon him)

It is reported that once a companion of the Prophet (pbuh) asked him for some charity. The Prophet (pbuh) enquired about his ownership. The companion mentioned that he owned a blanket and a cup. The Prophet (pbuh) asked him to present these articles. When the articles were presented, the Prophet auctioned them for two dhirhams. The Prophet (pbuh) gave the two dhirhams to the man and asked him to purchase an axe and bring it to him. When the axe was brought, the Prophet (pbuh) asked the man to cut woods and sell them and report back after a fortnight. After a fortnight the person came back and told the Prophet (pbuh) that he earned 12 dhirhams during the period. The Prophet (pbuh) replied, "this is better than begging and disgracing yourself on the Day of Judgment".

Alleviation of poverty is a major concern of the Islamic economic system. One of the most important guidelines in this regard is found in the advise of the Prophet (pbuh) to one of his companions (see box - 3). It can be inferred from this guideline that:

i)   The best strategy of poverty alleviation is to enable the concerned people to participate in the market by improving their capabilities.

ii)   The best indicator of poverty alleviation is to make the poor permanent owners of certain income generating real assets.

iii)   The role of guidance, promotion and consultancy is vital in the alleviation of poverty.

All these are now accepted as universal principles[26]. The central issue is therefore, how to enhance the capabilities of the poor to participate in the market for generation of productive assets and enhance the productivity of these assets overtime? In terms of this consideration, households can be classified into a number of categories, such as:

  i)   Household which do not posses any physical assets nor they possess any human assets such as enterprising capabilities,

ii)   Households holding physical assets but lacking human assets to utilize them,

iii)   Households not holding any physical assets but having enterprising capabilities and

iv)   Households holding both assets but face institutional constraints, such as lack of opportunities etc.

Charity, employment opportunities, training facilities and other welfare programs are often used to improve the capabilities of the poor to participate in the markets. An important and effective policy which may also supplement all these programs is to utilize the existing enterprising capabilities of the poor directly through the market. As such, policies could be aimed at making the poor as owners of physical and human assets. The DM principle has substantial potential in this regard.

The potential of the DM in improving the efficiency of owner operated small agricultural farms and development of small entrepreneurs has already been mentioned. These will have a direct impact on poverty alleviation.

The Islamic banks have specialized in trade financing. This specialization of the Islamic banks may be combined with the DM principle to design market-based poverty alleviation programs.

The Islamic banks are expected to play an important social development role. The social development role of the Islamic banks should be market oriented, otherwise the capital base of the banks will erode. Since, creation of ownership for the poor is most effective means of poverty alleviation, the Islamic banks through their specialized subsidiaries may promote small scale trading and productive enterprises.

To start with, the banks should undertake conscious social development strategies. For this purpose, they may need to establish various subsidiaries. These subsidiaries then in turn can develop a chain of small enterprises with a line of *murabaha* (mark-up). Given the degree and scale of poverty in the Muslim countries, an infinite number of such enterprises is

needed. The involvement of a bank in a large number of small enterprises may not be feasible and cost effective. Therefore, the bank has to design a planned and contractually arranged system of liquidation of its ownership in the enterprises. For this purpose, DM enterprises in the form of the contract described in Section One of the paper would be suitable device.

Such enterprises, would not only be instrumental in the promotion of income generating activities, and thus alleviating poverty, but would also improve the cash-flow of the banks. Moreover, it will ensure the generation of entrepreneurs. It will also enhance the involvement of the bank in real trading activities, which is a condition to justify a return on financing[27]

6. RESTRUCTURING OF ENTERPRISES

An important consideration for the efficiency of the Islamic financial system is the re-structuring of the existing enterprises and firms in the Muslim countries with a view to, i) optimize the efficiency of the firms, ii) "cleanse" these firms from Islamic perspective and iii) privatization.

The existence of financially sick firms is a common phenomenon in the developing counties. The cause of the sickness may be due to a number of factors, such as, financial mismanagement, scale of operations, institutional factors, etc. Improvement of efficiency of such firms is expected to have favorable implications for the whole economy. A sick firm's market value is expected to be low. The Islamic banks may buy-out such firms at cheaper prices, optimize their economies of scale by merging them, improve their market value and gradually sale-out their ownership.

Another need for re-structuring the firms capital and financial status arises from an Islamic requirement. The Islamic banks cannot hold the stocks of such firms whose capital structure comprises an element of interest.

Therefore, if the Islamic banks have to be active in the stock market, they need to initiate, a "cleansing" process to remove the element of interest in the capital structure of the firms. This indicates the significance of the Islamic banks' involvement in the financial re-structuring of firms.

If such an activity is undertaken by the Islamic banks, an Islamic market similar to the market for "corporate control" may emerge. If there is a political will, perhaps the Islamic banks may he encouraged by proper legislation to initiate the task of Islamizing the corporate financial structure in the Muslim countries. In both cases of re-structuring, the Islamic banks may design strategies to reach at DM type of joint venture arrangements with the owners of selected firms. Whereby, interested firms will be bought, merged together, their capital structure reviewed, economies of scale optimized and ownership gradually re-transferred to the original or new owners.

The arrangement will also introduce a discipline on corporate managers and ensure a gradual financial solvency in the Muslim countries. This in turn will improve the operational environment for the Islamic banks. and in may motivate the development of Islamic stock markets. The initiative may also be instrumental in the evolution of Islamic multinational enterprises[28].

7. MOBILIZATION OF EXPATRIATE SAVINGS[29]

Expatriate remittances constitute a large part of foreign exchange earnings in many Muslim countries. But these earnings are not productively utilized. Moreover, a good proportion of expatriate earnings are not remitted due to non-availability of investment opportunities in their home countries. Thus by creating appropriate investment opportunities these vital earnings can be utilized for national development in the Muslim countries.

It is generally known that the expatriate manpower inspire for developing some productive assets in their home countries as a guarantee for better standard of living on their return. This positive desire needs encouragement and patronage. It can be more effectively utilized by developing appropriate institutions.

The DM concept may be effectively used in this regard too. The expatriate earnings may be pooled to develop a permanent joint venture. This institution can be assigned the responsibility to identify projects, and expatriates investors who would be interested in the longer-run ownership of these projects. The institution can than develop DM-based contractual relationship with the expatriate investors. The expatriates, while working

aboard can remit funds for particular enterprises promoted by the parent institution. Upon completion of the funds and on return to their home countries the expatriate can take charge of their projects. In this form the institution can develop assets and ensure productive utilization of the expatiate savings. Thus the DM concept can be greatly useful in national development in many Muslim counties.

V

EFFICIENCY AND EQUITY: A TRADE-OFF

In the previous section, our argument for DM is based on the fact that in certain cases, the systematic termination of the financier's ownership of projects is an imperative. Some examples of such cases were provided. Equity concern is central to all the cases cited. In the present section, the inherent incentive characteristics of DM which make it an efficient contract are discussed. Although, the discussion is relevant in general, we specifically assume that the DM is used by an Islamic financial institution to promote projects and entrepreneurs.

We also assume that the firm is interested in the acquisition of independent ownership. In smaller and growing enterprises, an entrepreneur's initial priority would be to strengthen internal ownership of the enterprise. This enables him to take independent economic decisions (sale, hire-fire policies, inheritance, etc.). Only at latter stages when the enterprise expands and divisibility of its ownership becomes economical, the firm starts issuing equities and develops into a corporation.

We assume that an entrepreneur prefers the investment of his savings in the growth of the enterprise rather than keeping them outside. However, in the initial stages of the enterprise, the entrepreneur prefers some risk-sharing arrangement as it spreads the risk.

Therefore, the promotive role of an Islamic bank is essential due to an infant entrepreneur's attitude towards risk. Gradual acquisition of ownership is expected to improve entrepreneurial risk profile. DM encourages entrepreneurial initiatives and ensures a systematic process for their promotion.

We assume that a DM enterprise starts operation with a capital contribution by the entrepreneur equal to an amount B, and a capital contribution by the financier equal to an amount K. Compared to K, B is a small amount. Hence, K can be re-written as $K = NB$; N being a real number. Consequently, the project needs $B+K = B+NB = (1+N)B$ amount of capital in

each period. With respect to profits and re-invested profits, we consider two cases.

Case-1

First Assumption: We assume that the project yields profits equal to P_1 for all periods. In period ti, the entrepreneur's share in profits would be

$$Sh_1 = \frac{P_1}{N+1} \text{ and}$$

Similarly, if the joint nature of the enterprise is contractually agreed for 6 years, the share of the entrepreneur in profits in period t6 can be written as

$$Sh_6 =$$

$$\frac{P_1}{N+1} \left\{ 1 + 5\frac{P_1}{(N+1)B} + 10\frac{P_1^2}{(N+1)^2 B^2} + 10\frac{P_1^3}{B^3(N+1)^3} + 5\frac{P_1^4}{(N+1)^4 B4} + \frac{P_1^5}{(N+1)^5 B^5} \right\}$$

$$= \frac{P_1}{N+1} \left[1 + \frac{P_1}{B(N+1)} \right]^5$$

Given this pattern, we can deduce that at period j, the share of the entrepreneur will be

$$sh_j = \frac{P_1}{N+1} \left[1 + \frac{P_1}{(N+1)B} \right]^{j-1} \tag{1}$$

Second Assumption: We assume that the share of the entrepreneur in total profits is entirely re-invested in the project for buying-out the ownership shares of the bank. If we donate by C_{j-1} the entrepreneur's capital contribution in period j-1 and sh_{j-1}, the entrepreneur's re-invested profit-share in that same period, the entrepreneur's total capital contribution in period j (C_j) can be written as follows:

$$C_j = C_{j-1} + sh_{j-1} \tag{2}$$

Similarly,

$$C_{j-1} = C_{j-2} + sh_{j-2}$$

and so on. Hence, equation(2) can be rewritten to take the following form.

$$C_n = C_1 + \sum_{j=1}^{n-1} sh_j \tag{3}$$

where C_1 = B. Equation (3) shows that the entrepreneur's contribution in period n can be expressed in terms of his previous shares.

As the share of the entrepreneur in total profits increases and that of the financier decreases every year, due to share in ownership, the relationship between the profit P_1 and the period j is important. For the project to belong to the entrepreneur in period j, the necessary condition is that his profit-share should be equal to the total profits of the project. In other word, we must have the following equality in period j.

$$\frac{\frac{P_1}{N+1}\,[\,1 + \frac{P_1}{B(N+1)}\,]^{j-1}}{P_1} = 1$$

which leads to

$$[\,1 + \frac{P_1}{B(N+1)}\,]^{j-1} = N+1$$

$$(j-1)\,\text{Log}\,(1 + \frac{P_1}{B(N+1)}) = \text{Log}\,(N+1)$$

$$j-1 = \frac{\text{Log}\,(N+1)}{\text{Log}\,[\,1 + \frac{P_1}{B(N+1)}\,]} \tag{4}$$

Equation (4) shows that time needed for the entrepreneur to take over the project under DM and under the profit conditions cited above is inversely related to the amount of profit yield. In other words, as P_1 increases the time needed for the project to pass under the ownership of the

entrepreneur decreases. In addition, computing the derivative of equation (4) with respect to P1, we get:

$$\frac{d(j-1)}{dP_1} = \frac{-\text{Log}(N+1)}{\text{Log}\left[1 + \frac{P_1}{B(N+1)}\right]^2} \cdot \frac{1}{P_1 + B(N+1)} \qquad (5)$$

Equation (5) is negative which shows the inverse relationship between the time period j and the profit P_1. As P1 increases, the time period needed for the entrepreneur to take over the project decreases less than proportionately.

Over time, the contribution of the entrepreneur increases, which of course, induces him to increase his effort level and increasing his productivity and consequently increasing the profits. This is so because the entrepreneur is taking more risk by investing more and more from one period to another. This increase in profit as a result of the increase in productivity through the increase in entrepreneurship will have a positive effect in reducing the length of time j as shown by equation (4) or (5). As P1 increases as a result of an increase in productivity, the denominants of the right hand side of equation (4) increases and hence the right hand side of equation (4) decreases, that is j decreases.

Depending on the motivation for acquisition of ownership, the entrepreneur is expected to improves his effort level, minimize the non-pecuniary expenditures (e.g., on expensive office furniture etc.), even report the project over efficient, improve his saving and may even seek *qard* for quickly completing payments and getting ownership. Thus, it can be expected that the incentive for ownership will work as a deterrent against moral problems.

With the passage of time, the bank's contribution in the project diminishes so that the entrepreneur becomes the sole proprietor of the project. As the bank's ownership of the project decreases, its cash flow improves. With recovery of its initial capital contribution and its own share of profits, the bank can start a new project with another entrepreneur. The bank therefore, becomes a source of generating new projects and a promoter of new

entrepreneurs. The bank's share in projects can be maintained until the entrepreneurs become self-supporting and be able to enter into competition.

$$P_1 = B(N+1)\left[(N+1)\frac{1}{j-1} - 1\right] \tag{6}$$

Equation (6) shows the relationship between the profit P1 and the period j needed for the entrepreneur to take over the project entirely according to the principle of DM and under the conditions cited above.

Case - 2

First Assumption: In this case, we assume that the profit yield in each period is different that is $P_1, P_2, \ldots P_j$ are different.

Second Assumption: The entrepreneur's capital contribution in period j depends on his initial contribution (B) to which he adds a part of his profits-share of the previous period. In other words, we assume the following relationship between his total capital contribution in period j and his profit-share in period j-1.

$$C_j = B + sh_{j-1} \tag{7}$$

Following this pattern, we can compute the capital contribution and the profit-share of the entrepreneur in each period.

In period 1:

$$C_1 = B \quad sh_1 = \frac{P_1}{N+1}$$

In period 2:

$$C_2 = B + \frac{P_1}{N+1} \qquad sh_2 = \frac{P_2}{N+1} + \frac{P_1 P_2}{B(N+1)^2}$$

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In period 3:

$$C_3 = B + \frac{P_2}{N+1} + \frac{P_1 P_2}{B(N+1)^2} \qquad sh_3 = \frac{P_3}{N+1} + \frac{P_2 P_3}{B(N+1)^2} + \frac{P_1 P_2 P_3}{B^2 (N+1)^3}$$

etc.

Following this pattern, we can deduce the following formula for the entrepreneur's profit-share in period j.

$$sh_j = \frac{P_j}{N+1} + \frac{P_j \cdot P_{j-1}}{B(N+1)^2} + \ldots + \frac{\prod\limits_{k=1}^{j} P_k}{(N+1)^j B^j} \tag{8}$$

Equation (8) can also be rewritten as:

$$sh_j = \sum_{k=1}^{j-1} \frac{\prod\limits_{n=k}^{j-1} P_{j+1-n}}{(N+1)^k B^{k-1}} \tag{9}$$

where S and P denote respectively the sum and product signs.

It is worth noticing that the entrepreneur does not reinvest all his previous capital contribution in the current period. For instance, in period 2, his contribution

was $B + \dfrac{P_1}{N+1}$;

and his profit-share was equal to $\dfrac{P_2}{N+1} + \dfrac{P_1 P_2}{B(N+1)^2}$; the new capital contribution in period three is equal to his profit-share in period two plus the amount B. Hence, the difference from his second period contribution $\dfrac{P_1}{N+1}$ will be left to him to use it either for his own consumption, saving or to start another project etc.

As we can notice, it is difficult to get from equation (9) an exact formula that help us knowing the length of time needed for the entrepreneur to take over the project. Given this difficulty, we assume that the profits yield in all periods are equal to [P130] From equation (9) the profit share of the entrepreneur in period j becomes equal to:

$$sh_j = \frac{P_1}{N+1}\{1 + \frac{P_1}{B(N+1)} + \frac{P_1^2}{(N+1)^2 B^2} + \ldots + \frac{P_1^{j-1}}{(N+1)^{j-1} B^{j-1}}\}$$

$$sh_j = \frac{P_1}{N+1}\{\frac{1 - [\frac{P_1}{B(N+1)}]^j}{1 - \frac{P_1}{B(N+1)}}\} \qquad (10)$$

Given the initial capital contributions of the financier and of the entrepreneur and the expected profit P_1 which is assumed to be the same from period one to period j-1; equation (10) gives us the ability to compute the profit share of the entrepreneur in period j. A necessary condition for the entrepreneur to own the project at 100% at the end of period j, is that his percentage profit share

shj must equal to one. Hence, from equation (10), we get

$$\frac{shj}{P_1} \text{ must equal to one. Hence, from equation (10), we get}$$

$$\frac{shj}{P_1} = \frac{1}{N+1}\{\frac{1 - [\frac{P_1}{B(N+1)}]^j}{1 - \frac{P_1}{B(N+1)}}\} = 1$$

which implies

$$\frac{1 - [\frac{P_1}{B(N+1)}]^j}{1 - \frac{P_1}{B(N+1)}} = N+1$$

Simple algebraic manipulations lead to

$$j = \frac{\text{Log} \left(\frac{P_1}{B} - N \right)}{\text{Log} \dfrac{P_1}{B(N+1)}} \qquad (11)$$

-Equation (11) gives the length of time needed for the entrepreneur to get over the project. The length of time j depends on three factors which are the capital contribution of the financier, the capital contribution of the entrepreneur and the expected profit in each period assumed to be the same across periods.

VI
CHARACTERIZATION OF DM CONTRACT:
A PROBABILITY APPROACH

The DM contract combines the prime characteristics of the sale and sharing contracts: it transfers ownership through sale and does so through profit sharing arrangement. This fact makes the DM as a special contract. In the present section, we highlight this point and we put forward some considerations about the implications of this for the objective functions of the bank and the entrepreneur. We preliminarily observe that because of the transfer of ownership feature of the contract the entrepreneur interest in the project is enhanced. Similarly, because of the sharing feature of the contract the financier's interest in the project is enhanced. This leads to consistency in the objective functions of the two parties. Thus, our observation opens a new venue for discussion. The objective of this section is therefore, to initiate this discussion.

We consider a market consisting of a large number of risk-neutral entrepreneurs and risk averse Islamic financial institutions. The Muslim entrepreneur approaches the Islamic financial institution to contract a diminishing *musharakah* on a project. We assume that the project yields an expected return of R_t in period t with the probability of success d and loss - L, (1-d). Naturally, the return R_t depends on the total amount invested (B+W) as well as on d. The function R_t increases as the amount invested in the project increases, at a decreasing rate. Moreover, R_t also increases as d increases.

The Islamic financial institutions are assumed to be able to observe ex-post, whether a project succeeded or failed, but not the actual realized return. In other words, the function R_t (., .) is common knowledge to both the entrepreneur as well as financial institution. d varies across entrepreneurs and is known only to the entrepreneur himself. On the other hand, each Islamic financial institution knows the cross-sectional distribution F (d) of d's in the pool of credit applications.

Each entrepreneur possesses an initial endowment W. The Islamic financial institution enters into the diminishing *musharakah* with an amount B

which is assumed to be large with respect to W. The Islamic financial institution studies ds across projects and then chooses to enter into the contract or not. In other words, the bank associates its "entering" probability p to the project. Hence, the Islamic financial institution accepts to enter into the project with probability p or refuses with probability 1-p. Let k denote the fraction of the profit sharing ratio accruing to the financial institution from the project. Let r_t indicate the percentage from the entrepreneur's profit that will be transferred to the financial institution and that enables the entrepreneur to buy the shares of the financial institution. That is, rt allows the transfer of ownership gradually from the financial institution to the entrepreneur. Banks compete on four factors :

1. The entering probability p.
2. The size of the bank's participation B.
3. The financial institution's profit sharing ratio k.
4. The fraction of the entrepreneur's profit ratio that will be transferred to the financial institution at the end of each period that permits the purchase of bank shares, r_t.

Hence, we can define a diminishing *musharakah* contract to be a four dimensional vector.

$$C_{D.M} = (\pi, B, k, r_t) \tag{12}$$

Where the values of p, B, k and rt have to be specified by the contract. A DM policy might be thought to be the set of all DM contracts offered by a bank. The objective of the bank is to promote these small entrepreneurs without of course making a loss. In other words, it is important to design an optimal DM policy that permits to maximize the expected profit of the entrepreneur over the desired period, subject to the constraint that the bank's profit must be greater or equal to zero. The next step would be therefore, to derive the expected profit of the entrepreneur as well as the
expected profit of the Islamic financial institution under a CDM. For this we

construct the following probability trees for the entrepreneur as well as for the financial institution.[1]

The expected gross wealth Rt varies from one period to another depending on the economic environment such as the demand elasticity of the good produced by the project, and other political and economic factors. In addition, the probability of success d varies also from one period to another for the same reasons. However, for the sake of simplicity of exposition, we have taken d to be the same across time.
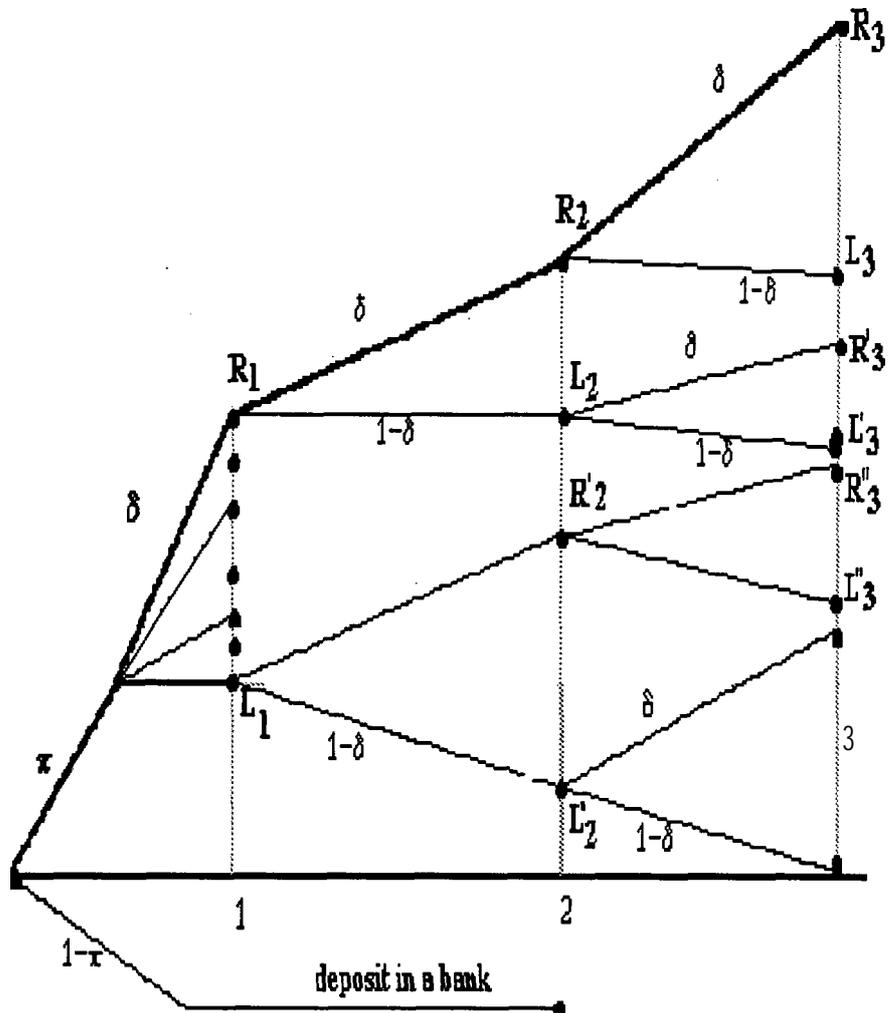
From Fig.2, the expected profit of the entrepreneur at the end of the first period is the equal to

$$E(P_1^e) = \pi[\ \delta(1-k)(1-r_1)\ R_1\ (\delta, W+B) - (1-\delta)\ \frac{W}{W+B}\ L_1\ ]$$
$$+ (1-\pi)(1+q)\ W$$

(13)

Where $\dfrac{W}{W_1 + B}$ denotes the fraction of the loss born by the entrepreneur.

.

Fig.2: Entrepreneur's Perspective of Project Outlays

From Fig. 3, the expected profit of the bank at the end of the first period is equal to

$$E(P_{IFI}) = \frac{\pi[\,\delta k (1+R_i)\,R_i\,-\,(1-\delta)\,\dfrac{B}{W+B}\,L_i\,]\,+\,(1-\pi)\,(+q)\,B}{(1+q)} \qquad (14)$$

Fig. 3: Bank's Perspective of Project outlays
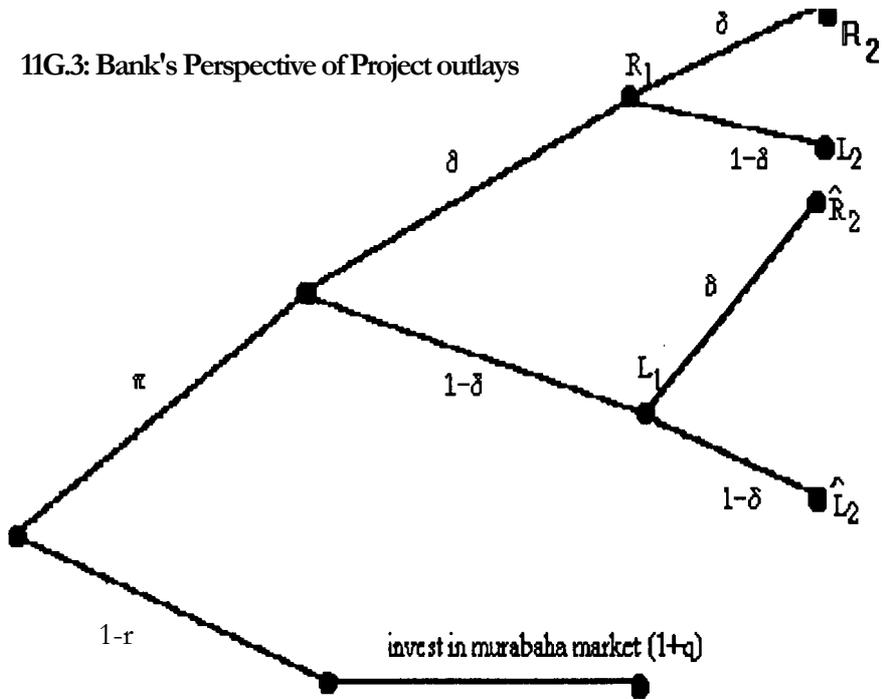
After deriving the expected profits for the entrepreneur and the financial institution, we turn now at the maximization problem. Given the promotive role of the Islamic financial institutions, the problem would be to maximize the utility of the entrepreneur which we will assume to be a function of the expected profit, subject to the constraint that the expected profit of the

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bank is greater or equal to its opportunity cost which equals to what it will gain from investing that amount in the *murabahah* market.

The maximization of the utility of the entrepreneur boils down to the maximization of his expected profit which is equivalent to the maximization of the expected profit of the financial institutions as well. However, this maximization problem takes into account the characterization of the diminishing *musharakah* contract which embodies the profit sharing ratio of the financial institution and takes also into consideration the social promotive role of the financial system as a whole. Thus, the maximization of the expected profit of both the entrepreneur and the financial institution does not eliminate the case that the financial institution would be satisfied with a profit equal to the profit that it gets from investing its capital in the *murabaha* market and gives a higher profit sharing ratio to the entrepreneur. This larger profit sharing ratio will encourage the entrepreneur to work harder, increasing, therefore, his productivity and efficiency. Moreover, it will shorten the period of transfer of ownership and hence its dependence from the sphere of joint ownership. We may therefore expect that this method will increase specialization, productivity and alleviate poverty through the built-in redistribution mechanism.

VII

VII CONCLUSIONS

In this paper we argued that in certain economic activities the need for the contractual and gradual termination of the financiers' ownership is a necessity. These activities include, for instance, entrepreneurial and investment promotion activities under the Islamic financial system, financial re-structuring for "cleansing" and efficiency, market-based poverty alleviation strategies, development of owner-operated agricultural farms, housing, and external resource mobilization. In general, all these activities require the ultimate contractual termination of ownership of one party - the financier. Therefore, in these cases diminishing participation on the part of the financier becomes inevitable.

We showed that, if acquisition of ownership offers a motivation and incentive for undertaking an economic activity, then DM will improve efficiency of the firm[31]. Therefore, given the transfer of ownership characteristic of the DM principle, we conclude that this mode of Islamic financing is simultaneously efficient and equitable. We also suggested a probability framework for the analysis of DM contracts.

In this paper our main purpose was to identify the areas where traditional forms of Islamic financing are less relevant. The resultant problem can be overcome by resorting to DM. We understand that the paper has therefore paved the way for a number of policy oriented research works. For example, each area identified in this paper can be taken as a separate research topic for in-dept investigation. Also our work can be extended to develop academic frameworks for the evolution of efficient contracts in the Islamic framework.

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NOTES

1. See e.g., Kahf and Khan (1992).

2. See, e.g., Chapter (1985).

3. Earlier (Choudhury 1986, pp48-50) argued that firms under Islamic financing should maximize dividend payments. We do not disagree with this position in general. However, selfinancing in the paper is seen as incentive compatable mechanism for institutional intervention in promoting projects for enabling the infant entreprenuers to stand on their own feet and participate in the market.

4. See Abdallah (1991).

5. For an evaluation of the PTCs one may refer to Khan (1985).

6. This is the most restricted conditions of the permissibility of DM and is considered essential by few scholars, particularly Sheikh Siddique al Dharir. See, Abdallah (1990). In the present paper we follow this principle, for, in our view it has an important implication for the value of the firm.

7. We thank our anonymous referee to bringing this point into our notice. However, it must also be noted that similar framework has already been used by some researchers in Islamic economics (for instance, one may refer to Choudhury 1986 pp 72-86).

8. See e.g., Hassan (1992) p 108

9. Considering the strong linkage of protectionist sentiments with this argument, it can be seen that it plays a crucial role in the formulation of economic policies even in the developed economies (including the United States and the European Community).

10. Lectures delivered by Maurice Allias at the IDB and Centre for Research in Islamci Economics during 1992.

11. See Siddiqi 1983, Chapra, 1985 and Ahmad 1986, etc.

12. For example, depositors' decisions are largely determined by the efficiency and convenience provided by the banking institutions. The efficiency and convenience in turn depend on electronic banking facilities, cash and credit cards etc. An infant and small bank cannot compete in this regard with a matured banking network.

13. It is untrue that developed economies entirely rely on market forces to shape the in and outward flow of finance and investment. Rather they do rely on institutions aimed at promotion (for instance, the Overseas Private Investment Corporation in the US, German Investment Guarantee Program etc.) look after their respective national interests in this regard.

14. Particulary,, Siddiqi, Ahmad and Chapra.

15. Alias, strongly argues that one of he major causes of the present world monetary crisis is the fact that commercial banks have involved in long-term lending where these banks mobilize funds on the basis of short-term deposits. See Alias (1992).

16. See Khan (1992). If there is any such a mechanism, it would certainly be in the interest of the system.

17. Se Khan (1991) and Boulem (1993).

18. In additon to minimizing non-commericla risks, joint ventures also help in establishing liaison with officials, division of work and development of entrepreneures and transfer of know-how.

19. Excamples are Malaysia, Indoensia, etc.

20. In fact, this is evident form the growing importnace of IS in some Islamci banks' operation in its use in soem Islamizing economics.

21. See Gulaid (1990).

22. In cases where land developemtn is the only objective, parties can use the sharing principle for its devleopment. For exmaple, the land can be valued before any devleopemnt investmetns and it can be valued after udnertakign the **devleopemnt** investmetns. The different between the prices can be shared between the two parties on the basis of *mudharabah* or *musharakah.*

23. We are grateful to Dr. ridha Saadallah, who brought this into our notice.

24. A similar arrangement, known as "production -in-hand contract" contract is common in the Algerian manufacturing sector, For details, see Khan (1991).

25. For more detials of these see proceeings of housing smeianr, orgnaized by IRTI in Khartoum (1991).

26. Maurice Allias in his lecture delivered in the CRIE, jeddah, put speical exphasis on this.

27. Another crucial utilziation of DM in this regard is the devleopment of *Awqaf* properties. With the obejctive to design appropriate insturments for the devleopemnt of *Awqaf* properties, a study was undertaken in the IDB. This study recommended the DM as most sutiabel mode of finance.

28. The debate od debt-equity covnersion also coems in this framework. But the *shari 'ah* positon on this issue is nto yet clear.

29. We are thankful to Dr. Sami Hamoud for bringing this importnat area to our notice, where DM can be utilized.

30. Thisdoes nto pose any practical difficulty as the maturity of the contract is an ex-post phenomenon. Our interst at present is only related to the explanation of the contract. For this purpsoe, as a bench-mark, we can take the averages of some hypothetical realized profits over the period of the contract. A crucial statemnt can therefore be safely made: If, the realized profits were that much, the contract will mature (ownership will completely tranfered) in a particualr time period.

31. This can also be shown in the theoretial framework of Jensen and Meckling (1976).

APPENDICES

Note: The first draft of this paper was sent to two referees. The reports of these referees are appended as Reports of Referee No.1 and 2. The authors revised their paper accordingly. The revised version of the paper was sent to Referee No.2 for final evaluation of the paper. The report of the referee is enclosed as Comments of Referee No.2 on the revised version of the paper. These comments were passed on to the authors. The authors revised their paper again but also submitted some observations not agreeing with some of the positions taken by the referee. These observations of the authors are also enclosed. The paper was thus sent to the third referee to play the role of an arbitrator between the authors and the referee. The third referee's comments are also included in the appendix.

COMMENT OF REFEREE # 1

I have gone through the paper "Economic of Diminishing *Musharakah"*. The basic purpose of the paper is to discuss the economic feasibility of the instrument of diminishing *msharakah* (hereinafter referred to in this comment as DM) and to identify the different areas of financing in which this instrument can be used effectively. The author has also pointed out the areas in which DM may prove more successful than any other Islamic mode of financing.

As a whole, the paper may be taken as a worthwhile effort to probe the subject of Diminishing *Musharakah.* The author is successful in visualizing the different areas in which DM can work as good alternative to the interest-based financing. Thus, the paper will help in carrying out a propose evaluation of this form of financing from pure economic point of view. However, the following aspects are worth consideration:

1. The "Diminishing *Musharakah" is* a general term for a complex transaction which can be carried out in different ways. For example, there may be a situation in which the financier leases his share in the joint ownership to the client and receives a periodical rental on it, such as in the case of house financing, but there are other situations where the share of the financier cannot be leased out, such as in the case of DM in a joint venture. Similarly, the gradual purchase of the financier's share may be at a pre-agreed price of each unit, or at a price which may be determined at the relevant time in accordance with an agreed formula.

Therefore, it should have been clarified in the paper as to what form or forms of DM can be applied to an area where the use of DM is suggested.

This is necessary from the Shari'ah point of view, because the form of DM adopted in house financing (on the basis of a periodical rental claimed from the client) cannot be adopted in restructuring of enterprises

(on the basis of profit-sharing) as suggested by the author in para 2.6 of his paper.

Therefore, it is advisable, rather necessary in some cases, that the detailed procedure of the operation of DM be explained in relation to each area where the DM technique is suggested.

2.   It should be borne in mind that the "Diminishing Musharakah" is not found as such in the list of the traditional contracts enumerated in Islamic Fiqh. It is a combination of several transactions which has recently been termed as DM. For its validity in Shari'ah, it is necessary that each transaction is effected separately on its proper time. Otherwise, it is a well-known principle of *Shari 'ah* that two transactions should not be conditional to each other. Therefore, the scholars who have allowed the DM technique, have subjected its validity to certain conditions, including the principle that each transaction should be effected separately at its proper time.

Although the paper under consideration is restricted to the economic aspect of the DM transactions, yet the concept being new, it is necessary that the nature of the operation, as allowed by the scholars of *Shari 'ah* should be fully described.

3.   The author has discussed in detail the practical implications and probabilities in using the DM technique to promote projects and entrepreneurs. This discussion is interesting and fruitful. However, the practical implications of other proposals should have been discussed also. For example, if the house-financing is carried out on DM basis, what will be the net result for the financier and the client, and in what manner this result will differ from the interest-bearing housing schemes? A case study from this point of view seems to be essential for the purpose of this paper. The author has referred to the Sudanese experiment only, but the experiment of DM in the field of house-financing, is also carried out by the Government of Pakistan. One Muslim housing corporation is working in Toronto and another in Los Angeles. The actual statistics can be easily obtained from them.

Similarly, the author has suggested that the DM technique may also be used to mobilize the `Expatriate Savings'. He has proposed that the expatriate earnings may be pooled together to develop a permanent institution, but he never discussed its details and practical implications. I feel that this important proposal deserves more than a cursory remark.

4.   The author has confined himself to the merits of the DM techniques. In each area he has discussed the economic advantages of the DM operations, but he has not pointed out to any disadvantage which may result from the system. It is obvious that there may be some disadvantages from the economic point of view. One can say that the advantages are more, but it is necessary for an impartial researcher that he shows both sides of the picture without which the study looks one-sided and one can accuse it of being biased.

5.   In some places, the mode of DM is suggested without going into the *Shari 'ah* implications of the proposal. For example, it is suggested in para 2.3 that the DM technique may be used in agriculture also. It should have been clarified that the DM instrument can be used only where a new land is being purchased. The land in this case will be purchased jointly by the financier and the client. But where the land is already owned by the client, the DM instrument will imply a buy-back agreement which is not allowed by the *Shari 'ah* scholars. It should also be mentioned that the output accruing during the current of the DM agreement should be distributed between the financier and the client according to a pre-agreed ratio. If the intention is that all the shares of the financier in the land will be repurchased from him before cultivation, the validity of DM in this case will be doubtful, because the transaction in this case will have no meaningful different from advancing money on interest-basis.

6.   Some contemporary juristic views have been taken in the paper as settled, while they are not agreed upon by the contemporary *Shari 'ah* scholars and a meaningful debate regarding them is going on. For example, the author has taken it for granted that a Muslim cannot buy or sell the shares of joint stock companies through the stock markets available in different countries (para 2 (I)) while the buying and selling of the shares is not in itself prohibited by the *Shari 'ah,* unless the relevant company is

carrying out an un-Islamic enterprise. Most of the contemporary *Shari 'ah* scholars of the Islamic world are of the view that if the basic business of a company is not violative of *Shari'ah,* its shares can be acquired for both investment and capital gain purpose, even if the company deposits its surplus money in an interest-bearing account. This, of course, subject to certain conditions, yet it will be a wrong presumption to say that a Muslim cannot in any way invest his money through the stock markets. Instead of giving such impression, the author should clarify that the investment in shares has some practical difficulties for a Muslim, therefore, the DM can work as a better alternative for him.

7.   The language and style used in the paper needs improvement. Some expressions are so tight that the sense is not clear. To quote just one example, the author while explaining the DM mode of financing, has said :

> "The project may also be developed on orders of the client to
> be bought from the revenues of the project."

The expression needs more clarity.

8.   Transliteration of the Arabic words is also to be improved which should be based on a harmonious scheme which is closer to the original Arabic pronunciation.

Conclusion

Subject to the comments already explained, the paper under consideration is a good paper of average standard. I am not fully conversant with different categories classified by the IRTI for the evaluation of the papers. However, it seems to me that it can be classified as a `discussion paper' or as a `background paper'.

COMMENT OF REFEREE # 2

Summary Of Paper

The paper takes the stand, that the old approaches on *Mudarabah* and *Mushaarakah* as modes of financing adopted by Islamic financial institutions are not adequate in attaining goals of economic efficiency, distributive equity, full entrepreneurial ownership, incentives and mobilization of resources. The point made in this regard is that MM as a contract between the entrepreneur and the financier relegates high stake and shareholding rights on the financier. The contract remains non-terminating one during the term of the contract. This in turn, ties in entrepreneurial capital with the financier, which otherwise, in a state of contingency-specific claims by the entrepreneur, could have been released for other worthwhile economic projects and activities. The holding of financial capital disproportionately exposes the financier to high financial risks.

The author thus points out, that Islamic banks cannot do optimal justice to MM modes of financing, since such institutions are not to devote themselves to long term investments in the light of *Shari 'ah.* The author sees Islamic banks to be predominantly managers of short-term deposits.

In regards to the above-mentioned observations on the author's stand on the subject matter, the following statements can be noted: "Once any of the M-M contracts is formulated, it cannot be re-structured or abrogated without cost and prior to the conclusion of the M-M enterprise. Thus, we call the M-M contracts as perpetual/permanent or non-terminating profit and loss-sharing contracts." (pg.1-2) Next, "The basic objective of Islamic commercial banks is not to take a longer-run interest in an investment enterprise but to manage the depositors' money..in a prudent and permissible manner." (pg.11).

In the face of these limitations of traditional approaches to MM mode of financing as perceived, the author goes on to propose the alternative of terminating MM schemes, called the Diminishing

Musharakah, DM. The author maintains the superiority of this alternative scheme in the areas of long-term financing, market-driven transformation of interest-free financial institutions, ownership, efficiency, equity, productivity etc. See pages 13-14; pages 23-24; etc.

The principal arguments proffered by the author in respect of DM are as follows: (a) DM provides flexible availability of liquidity to generate alternative activities by the entrepreneur. (b) DM while being in accord with *Shari'ah* combines the features of MM, trade financing, leasing, joint ventures to offer a prospect for institutional reform of the capital markets in Muslim countries. The author correctly states, that such institutional reforms are necessary for the development of Islamic capital markets and for securing Islamic financial institutions from their vulnerability to the external environment ridden by interest bearing transactions.

Finally, the author claims that DM would help attain simultaneity between economic efficiency and distributive equity, as must be the goal of Islamic financing. The author develops a mathematical model to prove that the time of phasing out a terminating DM happens to be inversely related to the profitability of the enterprise. This is discussed first, by means of a sinking fund method applied to constant and variable shares. Secondly, a probabilistic tree model is used to set up the problem of agent-specific welfare maximization problem between the entrepreneur and the financier. In this regard the author treats time-dependent expected profits of the entrepreneur (hence of the financier as a scalar quantity). See pages 28-44.

The author deduces by differential operations on the shares with respect to entrepreneurial profitability, that the declining time for the entrepreneur to take over the project is based on gains on productivity and promotional activities that positively influence increases in profitability. For much of the paper, the author relies upon the example of Sudan Islamic Bank and Al-Barakah Group of Islamic Banks in London, to deduce the current acceptability of the DM mode of financing. The statement of the SIB in this regard is, "In effect, the respective contribution to (of) the partners do not remain the same for the whole duration of partnership." (pg.6).

Positive Features of the Paper

The author provokes thinking in the area of discussion on *Shari'ah* issues on modes of financing. Such an approach is manifest by the author's courageous venture to question the old approaches to MM modes of financing and propose his DM. The old question on MM being by itself the backbone of Islamic mode of financing capable of replacing the institution of interest, has been questioned because of the way MM is defined and institutionally construed in the literature, and thereby, in the operation of Islamic financial institutions. Yet by itself, MM has never appeared as the most distinct mode of financing in Islamic traditions either by the actions of the Prophet Muhammad or by pious Caliphs. It is instead, the principle of economic co-operation that remains fundamental to all financial modes as merely instruments. This is the message we derive from the relationship between the *Ansars* and the *Muhajireen* in Madinah during the time of the Prophet Muhammad. The Prophet did not stop the practice of MM, but guided it toward the Qur'anic direction: "Cooperate in acts of righteousness and piety, but do not cooperate in sinful and aggressive acts. Fear Allah: for Allah is strict in punishment" (Sura Al-Maidah, verse 2). The concept of trade is to be taken up in this light. Its felicity cannot be realized unless it is extensive in embracing the principle of co-operation --interaction and integration.

The point on the need for market driven transformation of Islamic institutions toward establishing MM, DM and alternative forms of financing institutions to replace the institution of interest and attain developmental goals, is also an important one brought up by the author. The author states in this regard, "The Islamic banks have specialized in trade financing. This specialization of the Islamic banks may be combined with the DM principle to design market-based poverty alleviation programs." (pg.25)

The market-based emphasis here strikes the important Islamic note for fusing institutionalism (such as the <u>extensive</u> concept of the *Shuratic* process) with the ethicized market venue, by circular cause-effect interrelationships.

The author's treatment of Islamic banks as part of an economy-wide social institution to promote developmental roles is an important one. This points to the indispensable need for establishing inter-sectorial linkages, in which Islamic banks are recommended by the author to be playing a linking, promotional and catalytic role. The author writes in this regard, "The Islamic banks are expected to play an important social development role. The social development role of the Islamic banks should be market oriented, otherwise the capital base of the bank will erode." (pg. 25)

The author's recognition of the possibility of variable contracts in the MM scheme mentioned in the Sudan Islamic Bank's version of such contracts, and embodied in the characterization of DM, is important to note. The existence of variable MM contracts is simply the fair reflection of market-driven adjustments that must take place to returns and property rights. This is also the result of the central principle of equity-efficiency simultaneity in all forms of Islamic resource allocation. It is the reality of a strictly non-neoclassical order and necessitates systemic interactions in the *Shuratic* process relations between decision makers, institutions and markets in any Islamicizing programme.

Critical Evaluation of the Paper

1.   <u>Textual Part.</u>

The stated objective of the paper "to formally present and discuss certain economic issues relating to the concept of PM", has not been examined in an orderly fashion with sharpened in-depth analysis devoted to specific issues. There are too many statements and implied results of expected results of DM without any formal analysis. Thus, nowhere in the paper one finds in-depth analysis of statements, such as, the following: Analysis of the figure 1: Project Promotion under DM and the statement, "As it is obvious from the description of DM (box-1), the Islamic bank's ownership of a project declines with the maturity of the project and that of the client partner..." (pg.13). In this manner, the DM overcomes the three essential limitations of the sharing modes mentioned earlier..." (pp. 13-14). "A DM contract, as described in Section One is a suitable strategy for external resource mobilization...." (pg.17) "... policies can be aimed at

making the poor as owners of physical and human assets. The DM principle has substantial potential in this regard." Similar to these statements, the paper abounds in implications rather than results of analysis. This style is profuse in the textual part, and makes the paper lose its focus on its stated objective.

The author's critique of the MM mode of financing arises from its comprehension as an instrument solely between a given entrepreneur and a financier, without regarding the central issue of <u>co-operation,</u> that essentially must underlie all such contracts in the first place. Hence, the author's critique starts from the observation of this relation in the absence of relating to the underlying principle. The same remiss is carried over in the author's treatment of DM, treated merely as a terminating MM contract, rather than as inducing the essence of co-operation into it in the first place.

Indeed, this is not simply the remiss of the author alone in regards to understanding the true nature of Islamic financing instruments. There are very few works in the literature on Islamic economics (Islamic political economy as exception), that treat the foundational question of economic co-operation to underlie all modes of Islamic financing in the first place, and then to subsequently treat MM as an instrument to realize that co-operation. Thus MM is essentially a profit-loss sharing arrangement in an Islamic economy under economic co-operation, broadly defined.

In the presence of this remiss, the author's critique of MM and the development of DM, lacks substance. Consequently, much of the social and developmental questions associated with Islamic financing have not and cannot be realized. This point will be further elaborated in the next section.

In the same light, the author makes the statement, but does not seem to understand the analytical meaning, of the principle of simultaneity between economic efficiency and distributive justice (social justice). This simultaneity principle is fundamental in studying Islamic institutionalism, of which is the capital market. Such a study can be shown to comprise the

area of bargained contractual relations between and among the entrepreneurs and financiers.

However, there lies good scope in the paper to treat this fundamental element of Islamic institutionalism. This is particularly important of note here, because the author emphasizes institutional reform for generating Islamic financing viability.

The author sees the need of DM as a terminating MM contract to maximize availability of liquidity, ownership and alternative usage to the entrepreneur. He interprets the Sudan Islamic Bank statement to mean this singular case of DM. This is neither true nor are terminating contracts desired features of variable and flexible MM financing. Variability as condition arising from market driven and equitable sharing of resources in joint ventures, does not mean terminating contracts, even in the face of increasing entrepreneurial profitability. It also does not mean lower demand for external financing by growth enterprises in an MM financing situation. The missing point here is the recognition of a general equilibrium financial market and the foundational question of <u>economic co-operation</u> in all financial contracts. Without this fundamental recognition of essence, all contractual relations remain simply as instrumental ones between firms and financiers. The greater interest of the economy, social questions of development, development of capital markets, economy-wide mobilization of resources, viability of Islamic financial institutions, economic efficiency, social justice, productivity, financial restructuring, risk diversification, and global Islamic economic co-operation, cannot be realized. Thus, in the absence of the author's recognition of this fundamental fact of economic co-operation, many of his goals under DM, remain merely desired ones, not analytically established.

2.   <u>Methodological Questions.</u>

The paper runs into serious methodological problems emanating from the textual part mentioned above. Also, there appear to be incorrect formalization of stated goals in Section III. These questions are now examined. The very definition of DM as terminating MM contract does not emanate from the principal premise of economic co-operation of any

Islamic financial contract. Thus, only participation between 'entrepreneur and financier is instrumental in the author's conception of MM and DM, and not the varying contracts that can be formulated in a state of economic co-operation. This means, that co-operation is a function of interactive decision making on an on-going basis. Thus, the contracts underlying such decision making are bound to be influenced, changed and continued, as market conditions, profitability, capital financing needs change. Along with this, the shares in MM are bound to change, and there would be a tendency for the profit-sharing contracts to reach temporary equilibrium. These are issues with regards to MM, that have been taken up in the literature in Islamic economics for some time now. But only the important augmentation of all Islamic financial contracts by the foundation of co-operation, endows financial contracts with their underlying knowledge-induced interactive processes.

When so viewed, there is no particular reason why terminating contracts would exist or even be considered worthwhile for reasons of demand for liquidity, flexibility, economic efficiency, ownership, distributive equity etc. Rather on the contrary, consider the following problem in the case of variable MM contract with economic co-operation:

The economy has two firms, A and B, in a joint venture and one. financier, F, an Islamic bank. We assume first, that there exists a DM between A and F. Consequently, the capital withdrawal by A with its increased profitability would lead to a shortage of capital in F to finance B's operations. Consequently, economic co-operation between A and B through the service of F declines, until A and B are reduced to a state of competition rather than co-operation. This is the case of reversal to the neoclassical case from an Islamic one. Such a result is symmetric with respect to B and all such generalization.

Second, take the case when DM exists for both A and B, with growing profitability in both of these firms. Then there comes about a time when there is no need for either economic co-operation between A and B or for the relevance of F in this arrangement. This result is symmetric with respect to many firms as well, thus reducing the entire economy to a neoclassically individuated, self-seeking and atomistic, competing state.

None of these evolutions is found to be endowed by the principle of Islamic economic co-operation alongwith economic efficiency (the case of efficiency-equity simultaneity).

The above arguments can be simply explained by the following diagram: Here let D_1 denote the economy-wide demand for financial resources, K, from all available financiers, when the profit-sharing ratio is s_1. S_1 denote the corresponding supply curve of K. Equilibrium point of the financial contract is E_1 (s_1, K_1). When profit share increases from s_1 to s_2, retained earnings gain the principal form of financing, and the demand for external capital falls to K_2. The new equilibrium point is D_2 (s_2, K_2), with S_1 having shifted to S_2. But the very signal of $s_2 > s_1$, will draw other expanding firms to enjoy the released capital now available with the financier. Consequently, S_2 will once again spring back and settle anywhere between E_2 and E_1. Downward movement of s will once again induce firms to renew and continue MM contracts, and so on. An equilibrating process is thus engendered, in which all firms now take advantage. Furthermore, relative profitability between firms in a cooperative economic environment will induce shifts in the demand curve as well. The region of temporary equilibria is now shown by the field E_1E_2. Thus, equilibrating contracts will always govern variable MM modes of financing without there being any incentive on firms to terminate contract.

Fig. Continuous Equilibrating Process of Variable MM Contracts. S
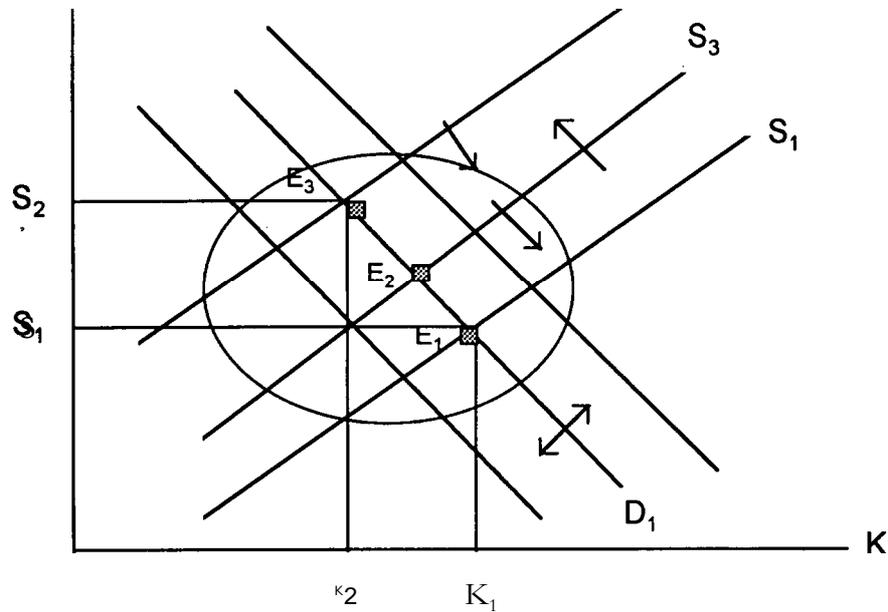
The problem so posed becomes all the more morally harrowing when we consider the central need for economy-wide sectorial interlinkages, joint ventures, and growth with distributive equity (social justice) in an Islamic economy. The extension of the above-mentioned arguments points to an overall de-linked development.

As well, there exists no recognition of the following consequence: Growing profitability will drive firms either to finance through retained earnings or financing would be done by greater demand on share capital. When retained earnings are maximized, the unit value of dividends paid declines. The need for short-run operating capital increases; but demand

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for long-term capital needs declines. When demand for growth is predominant, share capital financing increases. The result is a changing and equilibrating MM sharing ratios between firms and financiers. This is indeed, the case of variable contracts, not a terminating one. I believe that the variable MM contract is the kind that comes nearer to the one advocated by the Sudan Islamic Bank (Box-1 in the paper).

The paper does not consider the central role of risk diversification by Islamic firms and financiers. Consequently, this leads the author to make Islamic banks shy away from long-term investments, barring them from using short-term fund diversification into financing long-term investments. The author's argument is based on the avoidance of excessive uncertainty (avoidance of *Riba* and *Gharar).* But the approach remains untenable in the absence of explicitly considering risk-diversification effects.

On a formal note, if we accept the foundational premise of economic co-operation, variable contracts, and equilibrating MM shares arising out of continuing transactions in a contract under a combination of institutional and market forces, then there must exist a large number of co-operating firms and financiers. Now assume, that there exist a DM for any one firm. This must then mean eventually, one firm less in the specific risk sharing pool. As the process of DM continues, the risk sharing pool dwindles until it is reduced to nothing. Risk diversification consequently, disappears. Such a state causes investor `jitteriness'; immiserization growth; substitution rather than simultaneity between economic efficiency and distributive equity, etc.

Contrarily, for risk-diversification to continue, investments in other firms must continue to flourish. This implies that variable MM contracts under economic co-operation must always exist.

In summary, therefore, there remain serious methodological problems in the treatment of DM as `terminating' contract, rather than as variable MM contract under economic co-operation and explicit consideration of risk diversification in. this exercise.

3.   A Critique of Mathematical Results

On page 30 begins the author's formalization. But, it appears, that if at any point of time, capital contribution by enterprise is B; capital contribution by financier is N, then total capital needs of the project must be $K=B+N$. I cannot understand why this is instead, taken to equal $(1+N)B$. The consequence then is permanent throughout the expressions that follow in the paper.

I believe that the author is using a sinking fund method to accumulate shares. But this method seems to be applied to a ratio (pure number), $sh_1=P_1/(N+B)$; P_1 being profits earned. Instead, it would appear that the method should be applied to P_1 and not to sh_1. If so, then the sinking fund method on a three periods (0,1,2) case yields,

$V_3 = x+x(1+i)+[x+x(1+i)] (1+I) = x+2x(1+i)+x(1+i)^2$
$= x[1+2 (1+I) + (1+I)^2] = x(1+i)^2 [1+k+k^2] =$
$x(1+i)^2. (1-k^2) / (1-k);$

where, $k=(1+i)'_1$; $i=sh_1=P_1/ (N+B)$, constant profit sharing ratio; $x=P_1$.

Thus, $v_3 = {}^{(N+B)} [(1+P1/(N+B))2 - 1]$.

In general, $V. = (N+B) [(1+P_1/ (N+B))^{n-1}- 1]$.

Now, $dVn/dP_1= (n-1) (1+P_1/ {}^{(N+B)})^{n-2} > O$.

That is the time period of the contract, n is of the form, $n = [A {}^{(N+B)} + {}^PI] / [{}^{N+B+P}I]•$

There is now no obvious reason why n will be inversely related with P_I. This contradicts the author's results on the relationship between terminating time and profitability in the DM.

In the case of variable MM contract, the problem is much more elaborate, as the political economy of knowledge-induced contractual interactions must be taken into account in the firm-financier bargaining

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problem. But even in the simplest case, where only short-run contracts are invoked, so that no particular knowledge induction may be allowed to influence potential variability of contracts, the following formalization appears to be in place:

From our above formalization of the cooperative nature of all Islamic financial contracts, the following functionals must hold:

$P_1 = G(N,B);$

and, $V_n = F(P_1,N,B).$

Now, $dV_n = (\partial F/\partial P_1) \, dP_1 + (\partial F/\partial N) \, dN + (\partial F/\partial B) \, dB$
$= (\partial F/\partial N) \, dN + (\partial F/\partial B) \, dB + (\partial F/\partial P_1) \, [(\partial G/\partial N) \, dN + (\partial G/\partial B) \, dB].$

Consequently,

$dV_n/dP_1 = [(\partial F/\partial N) + (\partial F/\partial P_1)(\partial G/\partial N)] \, (dN/DP_1)$
$\qquad + [(\partial F/\partial B) + (\partial F/\partial P_1)(\partial G/\partial B)] \, (dB/dP_1) > 0.$

This expression implies, that it becomes necessary in a financial contract to consider variations across the entire funding scheme in order to determine the effect of n, P_1, N, B on it.

In the special case, when equilibration in profit shares in variable MM contract gives, $\partial F/\partial P_1 = \partial G/\partial P_1 = \partial G/\partial B = \alpha$, say, and possibly also, $\partial G/\partial N = \partial G/\partial B = \beta$, say, then,

$dN/dB = \gamma - (\alpha\beta + \partial F/\partial B) / (\alpha\beta + \partial F/\partial N),$

where, y is a suitable constant.

This expression gives the cursory result, that variability of the MM contract depends upon the relative variations of the efficiency of N and B in the sinking fund (or terminal-period valuation function). As the efficiency of N on F increases, it leads to an increase in N over B, and vice versa. The equilibrating situation, wherein optimal sharing ratios are

established, is given by $\partial F/\partial B \rightarrow \partial F/\partial N$, as n increases and bargainin interactions in variable MM contracts in concert with market forces, ri diversification, sectorial interlinkages, etc., continue. Now, $N = a + b.B$, wi a and b being final state coefficients. The implication is that in variab MM contract, the contract remains perpetual economy-wide. The result contrary to the one given in the paper.

The above results imply, that the introduction of a DM in the probabilistic formulation of the agent-specific problem, must yield an interdependent welfare index of the agents, financier and entrepreneur as follows:

$$W = W(P_1, N, B; \text{associated conditional probabilities})$$

Now we cannot be sure of conditions of the following type in the presence of DM: $\partial W/\partial N > 0$, $\partial W/\partial B > 0$, and $\partial W/\partial P_1 > 0$; for now, $dP_1/dN < 0$, as n $\rightarrow$ terminating period with P_1 increasing and B increasing. Consequently, none of the maximizing conditions of welfare (utility) maximization of the joint agent problem can be meaningful. The problems here are deeper than the approach undertaken by the author in a traditional neoclassical frame. In fact, no such neoclassically oriented welfare function should be invoked for explaining the joint agent contractual problem.

There is no precise result derived from any of the above formalizations to suggest, that n is inversely related with P_1 as surmised by the author in his DM formalization; or that a DM generates social welfare for the contractees. The central problem of both textual and methodological orientations arise because of the absence of global economic co-operation (not simply participation) in the author's characterization of MM and DM.

Recommendations

The paper is a fairly well-written piece; but it should be sharpened up in its analytical presentation and syntactically as well. The paper invokes investigation in the area of DM as variable MM contract. In my

opinion, the research represents an honest endeavour on the part of the author. The contribution should therefore, be respected.

However, certain revisions would be required prior to putting the piece in some publishable form. I therefore recommend, that <u>The paper be published as a Discussion Paper after the following revisions have been incorporated in the final version:</u>

1. Incorporate in the paper the central relevance of economic co-operation in multilateral financial contracts in the general equilibrium framework of capital markets and the real economic sectors.

2. Check out the mathematical formalizations in light of the alternative derivations provided above.

3. Include a technical appendix briefly bringing out in it the economic analysis of some of the statements made by the author in various parts of the paper. Some of these statements were pointed out earlier.

. 4. Sharpen on the written style of the text to give it a better analytical content.

Conclusion.

I trust that the task of an Islamic reviewer of papers is to learn and teach. It is not to be unduly incriminating on views presented, even though such views may not be the correct ones, textually or methodologically. I have tried to conduct my review of the paper in this light.

I have learnt, particularly from the author's illuminating step toward opening up *a Shari 'ah* debate on alternative modes of financing. Such discussion is indeed a sign of knowledge development that lie embedded in the *Shuratic* process. However, as a teacher I am ocnvinced, that the fundamental principle of co-operation in any Islamic financial contracts vis a vis the global order, nationally, internationally and in localized sense as well, must be ever present to make the exercise Islamically relevant. This fundamental part has not showed up distinctly in the paper. It has to be incorporated.

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REJOINDER OF AUTHORS-

We have received reports of two anonymous referees. One referee has concentrated on *Shari 'ah* related issues and the other has dealt in detail with the economic aspects of the paper. From both of these valuable reports, we have benefited a lot. The following is a summary of the changes made in the paper. Some explanations are also given for not fully considering few suggestions of the learned referees.

Changes made in the paper in response to the Economic reviewer

1. The referee suggested that, the DM may not always be a terminating contract. We found this a very useful point. To incorporate this point, we had to re-write the entire section on the description of the DM. Also we incorporated the referee's suggestion that the DM should not be indifferent to the spirit of cooperation between the economic agents.

However, under the assumptions of our paper the DM is necessarily a terminating contract. Our conclusion that DM as a terminating contract is an efficient mechanism to enhance cooperation among economic agents (which was implicit in our paper before, now made explicit) is however, not acceptable to the reviewer. The reason for this is the reviewer's understanding of our presentation on the contractual relationship between parties to a DM contract. This understanding is clear from the following example provided by the reviewer on pages 8-9 of his report:

(Suppose The economy has two firms, A and B, in a joint venture and one financier, F, an Islamic bank. We assume first, that there exists a DM between A and F. Consequently, the capital withdrawal by A with its increased profitability would lead to a shortage of capital in F to finance B's operations. Consequently, economic cooperation between A and B through the service of F declines, until A and B are reduced to a state of competition rather

than cooperation. This is the case of reversal to the neoclassical case from an Islamic one. Such a result is symmetric to B and all such generalization.

This example of the reviewer, in which the entrepreneur withdraws capital is exactly an opposite of the contractual relations we have discussed in the paper. In our case, for all practical purposes, the entrepreneur will always accumulate (will never withdraw capital) and the financial institution will withdraw capital. In our model, thus the withdrawn capital of the financial institution will always be available to the more capital needing entrepreneurs, like B in the example of our reviewer. Thus our model meets the entire requirements of our reviewers humanitarian considerations. This is what we tried to make clear in the paper. In addition, we argued that the contract is efficient because, it harmonizes, the interests of the entrepreneur, e.g., for capital accumulation, with that of the financier, e.g., cash flow consideration, as well as the society, e.g., the capital needing entrepreneurs through the vitalization of the promotive role of the Islamic banks.

2. The reviewer had put question marks on several sentences. These were very useful. We tried to make such sentences clearer.

3. A typing error was causing high confusion in interpreting the model. We are extremely thankful to the reviewer for identifying this. This is related to the capital contribution by the financier. In fact, this amount is K (not N) and K is much larger than B (entrepreneur's capital contribution) and N is any real number. Therefore K=NB and thus total capital contribution in the DM project can be written as (1+N)B. This correction has been made in the paper.

However, there are some errors of formulation in the report of the learned referee:

(i)   In the last sentence of page 13 of the referee report, the expression should be $V_3 = x(1+i)^2 (1+2k+k^2)$

$$= x(1+i)^2 (1+k)^2$$

(ii)   At the top of page 14 of the referee comments. The expression $(1-k^2)/(1-k)$ simplifies to $1+k$ which is different than the value of V_3.

(iii)   Again on page 14, line 4 from the top, the expression between brackets in V_3 should be squared.

The review of the referee of this Section of the paper depends on these results discussed in page 13 and 14 of the report. These two pages contain the above mentioned errors. In consequence, the remaining part of this review does not remain relevant.

However, the ideas of the referee about the functional forms of P_1 and V_n which allow the study a new dimension in the continuous form must be very useful extensions of the idea of DM and must be taken up in future studies.

Observations on the sharia'h scholar's points

1.   Most of the comments required some changes and re-phrasing in the paper. These have been done.

2.   To incorporate the major *sharia'ah* points we thoroughly revised the section on the DM. However, we do not agree with an important point raised by the reviewer: In our paper, we have mentioned that the *shari 'ah* has a dislike for trade in such companies' stocks which have dubious capital structure with respect to *riba.* The learned reviewer considers our understanding unnecessarily restricted. In the revised version of the paper, we substantiated our position by producing quotes from the OIC Fiqh Academy Resolutions in this regard. The arguments of the paper, nevertheless remain valid under more flexible framework too.

What we did not do?

One of the reviewer has asked the authors to write a technical appendix on Section Two of the paper. We understand that the technical aspect of the points raised in Section Two of the paper are covered in Sections Three and Four (four and five of the revised version) of the

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paper. The other reviewer has called for detailed analysis of each case where the relevance of the DM has been suggested.

The sole purpose of this paper was to establish that a terminating profit and loss sharing (PLS) contract is inevitable, if the PLS principle has to be used at a larger scale. We believe that in Sections One and Two (two, three and four in the revised version) we have made an attempt to drive the problem home (safely, through the tides of the *shari 'ah* implications). Our effort 'has not only been appreciated by both the *shari 'ah* and economic reviewer, but our honest critical look at the static state of the Fiqh of the PLS has also been hailed by both the two.

The *shari 'ah* reviewer observes that:

The paper may be taken as a worthwhile effort to probe the subject of DM. The author is successful in visualizing the different areas in which the DM can work as good alternative to interest-based financing.

The economic reviewer observes that:

The author provokes thinking in the area of discussio on *shari 'ah* issues on modes of financing. Such an approach is manifest by the author's courageous venture to question the old approaches to MM modes of Financing .... I have learnt, particularly from the author's illuminating step toward opening up *a shari 'ah* debate on alternative modes of financing.

Our paper aimed to identify those areas where *mudharabah-musharakah* principles have faced practical difficulties. On this count, the learned reviewers have acknowledged the success of our effort. The several areas identified by the paper deserve separate studies. Some of these studies are in progress and others are planned. For example; one forthcoming IRTI research is specifically concentrating on housing finance, another one on financing small scale firms, still another one on financial re-structuring of companies with respect to elimination of

interest-based debt. As a result of the discussions initiated in the present study all these forthcoming works undertaken by different scholars are dealing with the DM in detail. The modest contribution of the work is thus clear even before its publication.

SECOND COMMENT OF REFEREE # 2

Having gone through the re-write of the paper by the authors, I find that the central point of my earlier critique of the paper has been totally left out. Besides, on the mathematical part, leaving aside the meticulous derivation of formulas to the authors, I revert to my rejection of the authors' premise (their rejoinder page 2). I shall now explain the principal grounds of the problem in the paper. further comments can be read off the margins in the paper (returned herewith).

The authors start from the premise that there is a two-person zero sum games being played between the entrepreneur and the financier. Any third entrepreneur forms a contract in the event of a liquidation of contract with the first one. Thus, the authors' optimization of entrepreneurial asset ownership is being sought from the event of liquidation of an existing contract. The implication then, all through the paper is, that a cooperative environment between the financial sector and the real goods sector is gradually eliminated by the liquidation caused with DM in place. Now what is true of a two-person game is equally true of n-person zero-sum game of the above type. Thus, the whole economy reverts to a methodologically individuated and competitive one not a cooperative (or better term I have used elsewhere, competitive-cooperation) order. This indeed is the optimum efficiency of the DM contract that the authors refer to in the paper and rejoinder.

It is really the very definition of *Mudarabah-Musharakah* and its permanence under extensive and non-ending cooperation in the Islamic political economy as a system, not simply a two-person game, that renders the paper a mere neo-classical model of individuation, having neither *shari'ah* appropriateness nor methodological rationality for an Islamic politico-economic order. Thus, it is not <u>at all</u> sufficient to claim authors' exoneration by simply stating: "However, under the assumptions of our paper the DM is necessarily a terminating contract."

The authors claim that they are treating cooperation by diversion of financiers' funds into a new contract with a second needy entrepreneur. The methodological problem here is that in such a process, the whole of the economy with finite entrepreneurs and financiers, is finally completely individuated. Then all relevance of cooperation and general equilibrium treatment of resource allocation, risk-diversification, complementarity, participation and resulting determination of technological evolution influencing production menus, growth and distribution, are all lost to a neo-classical case of final state individuated forms. How can this be a treatment of Islamic political economy (economy), which is essentially distinctive from the neo-classical system, as it is established upon systemic interrelationships, general equilibrium treatment, positive sum games, and extensive interactions at the level of participation and knowledge induction? In the Islamic system, cooperation is a specific form of knowledge gained through interactions in the socio-economic world. Thus, if cooperation as institutional form of interaction between financier and entrepreneur is knowledge induction, then it cannot cease. It can only expand and generalize permanently economy-wide. What we have then is a permanent cooperative nature of variable M-M contracts -- not a DM. It is true that some firms can opt out of one contract. But they will enter other contracts in the economy-wide sense of economic cooperation.

Given this particular emphasis on cooperatively induced variable M-M contracts in economy wide (general equilibrium or systemic) sense, the paper falls apart.

On page 10 appears my comment that a methodologically individuation ensues in the model by a sale provision as necessary part of the system -- not simply as a voluntary option by a <u>particular</u> entrepreneur/financier.

The question of ownership in the extended meaning of valuation of cash-flows under 'uncertainty, rejects the limited idea of ownership as 100 per cent retained earnings-financing by entrepreneurs. This is not even the semblance of financial organization in a modern economy on growth and risk-diversification grounds (e.g. real estate investment), not to say of the great and extensive role of systemic cooperation provided by Islam for

growth, felicity and security (see the meaning of these attributes arising from Sura Nahl).

The persistent stand by the authors on their two-person systematically non-interactive (no consideration to general equilibrium treatment of cooperative M-M contracts) model has led them to many kinds of gross anomalies for an Islamic economic treatment. The treatment of infant industry protection is not seen in terms of such arrangements. An Islamic bank is shown to be a mere commercial enterprise de-linked and as if protected by *shari 'ah,* to remove itself from the greater systematically cooperative general equilibrium interrelationships of the Islamic political economy. This cannot be true.

Poverty alleviation is shown to emanate from DM for no good reasons of superiority over M-M. The neo-classically reprehensible idea of `trade-off' becomes a logical methodological consequence of the two-person zero sum game of competition and substitution between an entrepreneur and a financier. Now the most important objective is seen to be optimization of physical ownership of assets, subject to the requirement that all financing ultimately reverts to retained earnings in this final state of the contract. The relevance of the financier then falls apart. This consequence is methodological generalizable over all participants.

These are problems of unrealism in respect to an Islamic economy. Indeed, I must more strongly say that they appear to contravene *shari 'ah* requirement of extensive systemic cooperation across the economy yielding, product-, economi-, risk- diversifications, growth, security, distribution and felicity (some kind of social welfare in the Islamic sense).

Finally, on returning to the mathematical part, the results are once again found to be steeped in the assumption of a two-person zero sum game between entrepreneur and financier. Whereas, in the presence of systemic and extensive interactions with economic cooperation, which must characterize the real role of money, finance and production, investment and institutions in an Islamic economy, the derived results are totally untrue.

I leave it to the authors to figure out the following, as I would not like to undertake meticulous calculations at this time:

1. Variable M-M contracts would equilibrate at the average profit sharing ratios being equalized for all participants. That is, instead of the authors' result on page 34 (for DM), a variable M-M as the essential type of contract in Islamic political economy gives the equilibrium expression,

$a_i.P_i\,K_i$ = const. P_i denotes the profits owing to ith. participant; K_i is the capital investment by the ith. participant; a_i is a social parameter for purposes of weighting (distributional or valuation factor); $i=1,2,...,n$. Thus, a, $.^{=}K_i$. That is, profit accumulation is equivalent to accumulation of capital or increased capital expenditure (like an investment accelerator model). The authors can try out a simple valuation model for this cash-flow version in the state of equilibrium of resource sharing among all participants. They will then find that n, the time period of variable contracts, will always be positively related with Ps, and hence with Ks. The authors' conclusion is thus negated on grounds of the extensive nature of cooperation, distribution, secured ownership, various kinds of diversifications, growth and technological advance. The systemic interrelationships in other words, never cease in the Islamic economy.

Such methodological reservations arise again in the authors' probablistic model. I have left these comments by the margins in the paper.

In this way, all my previous reservations on the paper, both methodological and mathematical ones, remain intact. I, therefore, find that the authors have not represented the true picture of what the role of financier-entrepreneur contract is in an essentially Islamic economy. That is to establish interrelationships of extensively systemic cooperation and enhancement of interactions. The DM as an economy-wide result is catastrophic for these principles and are totally neo-classical reversal in the paper.

Finally, I find that the paper even after revision, has really caused confusion rather than advancement of the true nature of financial contracts in the truly systemic context of Islamic economy by means of the DM. The

results are thus unrealistic ones as far as the principles of Islamic economy are concerned.

On these grounds, I cannot change my recommendations that the authors be asked for a complete revamp of their paper in the light of comparing the efficacy of variable M-M contract vis a vis a DM contract. The mathematical and methodological content must then be thoroughly re-examined and reformulated.

I also find that portions of the paper -- specially in the beginning and in the discussions of ethical issues, poverty, infant industry protection -- are too many words rather than substance.

With these reservations, I must decline recommending the paper for publication in any other form but as a discussion paper, so that readers may have chance to comment upon the content.

COMMENT OF REFEREE # 3

Having gone through the author's paper and after studying both referees, reports as well as the author's revised paper and observations on the referees reports and the comments of referee No.2 on the revised version of the paper, 1 did take the endeavour to evaluate the paper according to the pinpoints of (CTC) as following:

1- **Academic and technical guidelines** The

Author has fulfilled all required standards.

2- (i,ii,iii)

The submitted research is analytical and is considered professionally deep. The Islamic dimension is the center of the research.

2- (iv)

The paper provides new ideas in Diminishing Musharakah, that is expected to enhance researches on Islamic finance of projects.

2- (v.)

The work is fully documented, as it is obvious from the numerous notes of the author through the paper, and the author is familiar with the relevant literature on the subject. familiarity of the author on the subject is indicated by the learned back ground section as well as his explanation on mudharabah and his review of the history of evolution of the DM, and others. The author is successful in providing full referencing. The language is clear and the material is presented coherently.

2-   (viii)

In my view the paper is published and it meets the standards of research paper/study due to the following considerations.

a -   The paper provides an in-depth analysis that lead to contribution to present   literature.

b -   The theoretical and mathematical analysis is rigorous and highly professional.

c -   The paper is extremely relevant to specific target groups which include.

1 - Professional economists inside the Muslim world as well as outside the Muslim world in the area of Financial Economics.

2 -   Policy makers for the sake of financing public projects.

I have gone through the mathematical formulation of DM on Page (33) as the following:

First : Checking the author's Formulation:

The Author's formulation, which compute the snare of the entrepreneur in profits for 6 periods, could be shown as :

$$Sh_6 = \frac{P_1}{N+1}[1 + \frac{P_1}{B(N+1)}]^5$$

Using Binomial Theorem, we find that :

$$[1 + \frac{P_1}{B(N+1)}]^5 = [1 + 5\frac{P_1}{B(N+1)} + \frac{5(4)}{2!}\frac{P^2}{(N+1)^2 B^2} + \frac{5.4.3}{3!}\frac{P_1^3}{(N+1)^3 B^3} + \frac{5.4.3.2}{4!}\frac{P_1^4}{(N+1)^4 B^4}$$

$$+ \frac{5.4.3.2.1}{5!}\frac{P_1^5}{(N+1)^5 B^5} = [1 + 5\frac{P_1}{(N+1)B} + 10\frac{P_1^2}{(N+1)^2 B^2} + 10\frac{P_1^3}{(N+1)^3 B^3} + 5\frac{P_1^4}{(N+1)^4 B^4} + \frac{P_1^5}{(N+1)^5 B^5}]$$

Then,

$$Sh_6 = \frac{P_1}{(N+1)}[1 + 5\frac{P_1}{(N+1)B} + 10\frac{P_1^2}{(N+1)^2 B^2} + 10\frac{P_1^3}{(N+1)^3 B^3} + \frac{P_1^4}{(N+1)^4 B^4} + \frac{P_1^5}{(N+1)^5 B^5}]$$

Therefore, this result is equivalent with the author's formulation. Then the general formulation is applicable to be shown as :

$$Sh_j = \frac{P_1}{N+1}[1 + \frac{P_1}{(N+1)B}]^{j-1}$$

Second : The, Referee's comment on page 13, 14, (enc.5).

The referee tries to show that there is no relation between terminating time (n) and profitability int he DM formula (1) P. 33, in the Author paper (enc.4).

In fact, the author's formulation of DM, under the profit condition, would be inversely related with P_1. This inverse relation could be shown in the following lines :

The necessary condition (eq. 4, P: 34 enc. 4) implies that the entrepreneur's profit share should be equal to the total profits of the project in period j:

The mathematical form of this condition is :

$$\frac{\frac{P_1}{(N+1)}[1+\frac{P_1}{B(N+1)}]^{j-1}}{P_1} = 1$$

Which leads to :

$$[1+\frac{P_1}{B(N+1)}]^{j-1} = N+1$$

$$(j-1) \ Log \ (1+\frac{P_1}{B(N+1)}) = \ Log \ (N+1)$$

$$j-1 = \frac{Log \ (N+1)}{Log[1+\frac{P_1}{B(N+1)}]} \qquad (^\ast)$$

The equation (* shows that if p_i increases, (n) will decrease.

To be sure, we may introduce a numerical example that shows inverse relation between p_i, n :

Let :

$$(N + 1) = 10, P_1 = 5, \text{ then}$$

$$(j - 1) = \frac{Log\ (10)}{Log\ \left(1 + \dfrac{10}{5\ (10)}\right)} = \frac{1}{.0792} = 12.6$$

If the value of p_1 to increase to 15, then

$$(j - 1) = \frac{Log\ (10)}{Log\ \left(1 + \dfrac{15}{50\ (10)}\right)} = \frac{1}{.1193} = 8.8$$

It is clear that there is inverse relation between p_i, n.

Third : Errors of referee mentioned by the author.

The author referred in his report to some errors of formulation in the report of the referee as the following :

i) In the last sentence of page 13 of the referee report, (enc. 5) the referee derived V_3 as:

$$V_3 = X(1 + i)^2\ (1 + K + K^2)$$

However the author indicate, in his observation on referee's report (enc. 3), that V_3 should be as :

$$V_3 = X(1 + i)^2\ (1 + 2K + K^2) = X(1 + i)^2\ (1 + K)^2$$

This observation of the author is true because of :

$$V_3 = X + X(1 + i) + [X + X(1 + i)](1 + i)]$$
$$= X + 2X(1 + i) + (1 + i)^2$$
$$= X[1 + 2(1 + i) + (1 + i)^2]$$

$$V_3 = X(1 + i)^2 [\frac{1}{(1-i)^2} + 2 \frac{1}{(1+i)} + 1]$$
$$= X(1 + i)^2 [1 + 2(1+i)^{-1} + (1 + i)^{-2}]$$

Let
$$K = (1 + i)^{-1} \quad then$$
$$V_3 = X(1 + i)^2 (1 + 2K + K^2)$$

ii) At the top of page 14 of the referee report (enc.5), the expression $(1-K^2)/(1-k)$ simplifies to $(1+K)$ which is different from the value of V_3 written in page 13, (enc.5).

Also this observation of the author is true because of the following :

on page 13 the referee shows that :

$$\mathbf{V3} = X(1 + i)^2(1 + K^2)$$

From this equation, he derived, mistakenly, the formula on page 14, as following :

$$V_3 = X(1 + i)^2 (\frac{1-K^2}{1-K})$$

Obviously the two expressions of V_3 are not equal because :

$$(1 + K)^2 \neq (\frac{1-K^2}{1-K}) \quad \text{Since}$$

$$(\frac{1 + K^2}{1-K}) = 1 + K$$

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iii)   Comment of the author (enc.3) on referee's Equation Line (4) form the top of page (14) (enc.5) need to be squared.

        This is the only untrue notice of the author since there is no need for squaring between brackets.

ISLAMIC DEVELOPMENT BANK (IDB)

Establishment of the Bank

The Islamic Development Bank is an international financial institution established in pursuance of the Declaration of Intent by a Conference of Finance Ministers of Muslim countries held in Jeddah in Dhul Qa'da 1393H (December 1973). The Inaugural Meeting of the Board of Governors took place in Rajab 1395H (July 1975) and the Bank formally opened on 15 Shawwal 1 395H (20 October 1975).

Purpose

The purpose of the Bank is to foster the economic development and social progress of member countries and Muslim communities individually as well as jointly in accordance with the principles of Shari'ah.

Functions

The functions of the Bank are to participate in equity capital and grant loans for productive projects and enterprises besides providing financial assistance to member countries in other forms of economic and social development. The Bank is also required to establish and operate special funds for specific purposes including a fund for assistance to Muslim communities in non-member countries, in addition to setting up trust funds.

The Bank is authorized to accept deposits and to raise funds in any other manner. It is also charged with the responsibility of assisting in the promotion of foreign trade, especially in capital goods among member countries, providing technical assistance to member countries, extending training facilities for personnel engaged in development activities and undertaking research for enabling the economic, financial and banking activities in Muslim countries to conform to the *Shari'ah.*

Membership

The present membership of the Bank consists of 48 countries. The basic condition for membership is that the prospective member country should be a member of the Organization of the Islamic conference and be willing to accept such terms and conditions as may be decided upon by the Board of Governors.

Capital

The authorized capital of the Bank is six billion Islamic Dinars. The value of the Islamic Dinar, which is a unit of account in the Bank, is equivalent to one Special Drawing Right (SDR) of the International Monetary Fund. The subscribed capital of the Bank is **3.654.78** million Islamic Dinars payable in freely convertible currency acceptable to the Bank.
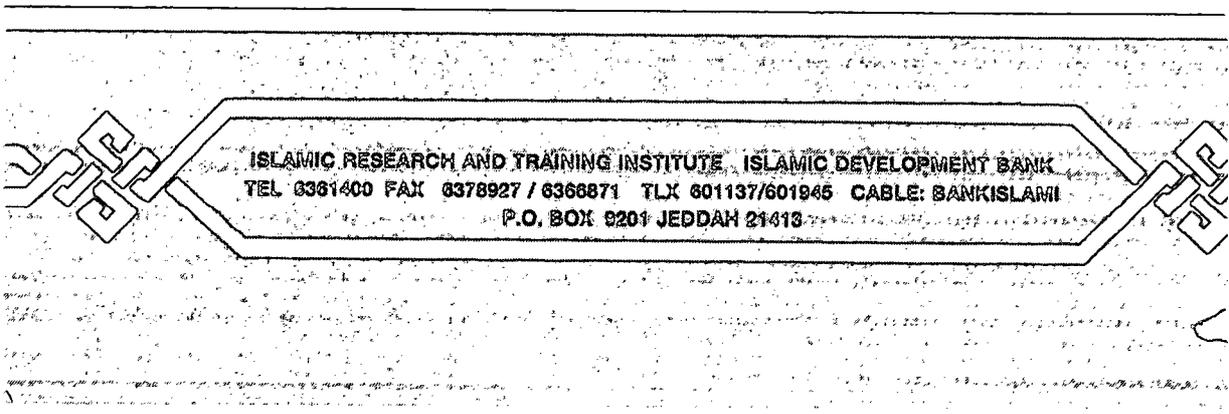
Head Office

The Bank's head office is located in Jeddah in the Kingdom of Saudi Arabia and the Bank is authorized to establish agencies or branch offices elsewhere.

Financial Year

The Bank's financial *year* is the Lunar Hijra *year.*

Language

The official language of the Bank is Arabic, but English and French are additionally used as working languages.