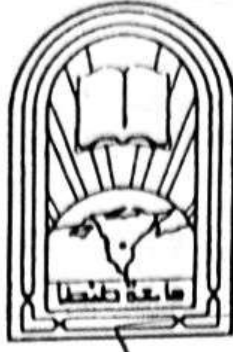


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العدد الأول

Towards

***An Islamic Institutionalization
of Joint Stock Company And
Stock Exchange***

With a portofolio choice application

By Dr. Yousef Abdullah Al-Zamel

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Abstract :

Section II of this research shows the legitimate and Islamic historical grounds of the Major Principles of Joint Stock Company. In Section III, The Modern phenomenon of public dealing in Joint Stock Companies shares (through an Exchange) is analysed within the context of two dimensions. The first dimension relates to the legitimacy of the basic (fundamental) process of public dealing in shares. The second dimension of legitimacy relates to public dealing in shares within the framework of modern sophistications of deals as practiced in conventional Stock Exchanges. Such sophisticated conventional Stock Exchange represents substantial number of deal forms, rules, conditions, practices of specialists & speculators, and organizational procedures. Some of these deal forms and practices could violate directly some Islamic principles such as short selling or financing a deal with interest loan. Despite external rules to limit speculations, it is still a general phenomenon in conventional Stock Exchanges. It

has been shown that Islamic principles of Stock Exchange would permit low opportunity for speculation. When some Islamic Stock Exchange principles were introduced to the analysis of investor portfolio choice, it is shown mathematically and graphically, in section IV, that investor's optimum choice would lead to higher return at the same level of risk, higher investment, and less tendency toward speculation.

When it comes to the decision of the investor to optimize his returns of a portfolio of shares, the research introduces the principles of Zakat and Free interest to analyze, mathematically and graphically, their effects on determining the optimum portfolio of a muslim investor. The instantaneous effect is to lead to a portfolio of lower risk and lower return. However, when free interest and other measures of Islamic economy begin to decrease cost, the muslim investor will be able to attain an optimum portfolio that gives higher return at the same level of risk.

1. Introduction

As means of Investment and capital accumulation, the joint Stock company and Stock Exchange, have played more important role in the business sector of the developing countries for the last two decades. However, as other institutions and systems imported from industrialized countries, the Joint-Stock company and Stock Exchange are duplicated and implemented in society without deep investigation of possible major- or minor - necessary changes and adjustments for these institutions to be fully adapted to social values and incentives. Therefore, The outcome and implications could result in lower than optimum efficiency which could be usually attained from such institutions in the industrialized countries, let alone a possibility to increase their optimum efficiency.

The current research shows that modern joint Sttock Company, in its major principles and rules, could be historically traced back to historic variants of Islamic companies. Only the major Correlations and similarities between principles of old islamic companies and principles of modern Joint Stock compnay are high lighted without further analysis. Besides, this research doesn't offer further development of conventional Joint Stock Company, such as developing its managerial rules, or analysis of its

backward and fortheward linkages with society, for the puropose of higher efficiency. Similarly, some detailed rules or non essential principles which contradict Islamic legality (such as prefered stock) are neglected since they don't relate with the essence of this institution.

Conventional Stock Exchange is of two dimensions in its relation to Islamic principles. While public dealing in shares is, in essence, legitmate, the empirical *modus operandi* of financial market contradicts major principles and rules of Islam. It would be shown that such reality of conventional Stock Exchange encourages speculation and decreases efficiency. Reconstructing Conventional Stock Exchange to correspond to Islamic principles would direct more funds toward productive investment and lessen tendency toward speculation.

When it comes to the decision of the investor to optimize his returns of a portofolio of shares, the research introduces the principles of Zakat and Free interest to analyze, mathmatically and graphically, their effects on determining the optimum portofolio of muslim investor. The instantaneous effect is to lead to a portofolio of lower risk and lower return. However, when free interest and other measures of Islamic economy begin to decrease cost, the muslim

investor will be able to attain an optimum portfolio that gives higher return at the same level of risk.

II. The Joint Stock Company : An Islamic Institutionalization

Institutionalization of Joint Stock Company in an Islamic framework begins, first, with a shariah historic definition of company. The analysis, second, turns to give a brief review of the development of the modern joint Stock Company. Third, the principles and origins of modern joint Stock company are rooted back to the general Islamic principles of historic variants of companies.

a - An Islamic definition of Company

A "Company" in Islam is defined in general as "an assembly due to a right or due to actions". "An assembly due to a right" implies the public or private company ownership of an asset, debt⁽¹⁾, or utility due to a legal cause. "Assembly due to actions" implies all contracts of Joint Venture Companies whether to be pure capital, pure labour, pure venture, pure honour or any combination of these. A Joint Venture Company, such as Sharikat Almudharabah⁽²⁾ which includes both capital and labour, is defined as a legal

contract among two or more persons for a collaborated action by provision of one or more business resources that include capital, labour, honour, to achieve a profit and bear a risk⁽³⁾.

b - Development of Joint -Stock company

The legal variants of Joint Venture Companies deviate and develop with change and development in objectives, business circumstances and social and economic environment through time and across cultures. The unprecedented growth in commerce and industry in modern history has created the need for huge financial capital that could not be attracted without motivating savings of numerous individuals. Therefore, new variants of Joint Venture companies were created to comply with this need. The most striking example of such variants is the Joint Stock Company, that is defined as a Joint Venture Contract among many individuals where each of them provide capital *per se*, within a limited range, in terms of equally valued shares that limit their financial liability, and where a managerial board of the company is collectively elected through the general assembly in presence of a quorum of share holders⁽⁴⁾.

Since such companies claim a large quantity of society's capital, that is owned by many individuals, and often gain natural or authorized monopoly

on particular resources, it becomes necessary for a government-related authority to draw standard rules for such companies concerning their establishment, organization, management, share dealings, rights of share holders and customers, and liquidation⁽⁵⁾. Within the general framework of standard rules, the founders of each particular Joint Stock Company put detailed regulations that fit best their particular environment and circumstances.

C. An Islamic Institutionalization of Joint-Stock Company

How could principles and origins of the Joint Stock Company be institutionalized within the framework of general Islamic principles *Alshariah Al-Islamiah* of "Company" and rooted back to the Islamic historic variants of companies? Firstly, the Joint Stock Company is basically a contract among founders of the company who agree and accept to cooperate in providing the efforts of establishment, organization, part of capital, and by publicly letting the rest of capital to be equitably bought in equally valued shares by many individuals who agree and accept to be Joint Ventures within the Founders' binding contract⁽⁶⁾. Secondly, the Joint Venture Contract of the Joint Stock Company, as a contract of modern capital companies, could be considered as a development that is based on the company contracts of *Sharikat Alanan*,

Sharikat Almudharabah and *Al-Ijarah* Contract, which are historically variants of companies that are well known in *Alshariah Al-Islamiah*⁽⁷⁾. The basic rules of *Almudharabah* and *Alanan* variants of Joint Venture companies are as follows: partners must provide capital but with possibly different shares, only some of the partners could act on behalf of the rest of the partners as totally responsible for management of the company, and responsibility of the partners is according to their respected shares of capital. With much more elaboration and sophistication, the very nature of such rules become major principles of the modern Joint Stock Company. Fixed payments of wages and salaries are in most cases the only compensations that are paid for management efforts and labour offered by either partner (or non-partner) members of the Managerial Council of the Joint Stock Company or to its employed staff or hired workers. Consequently, the fixed payment principle of *Al-Ijarah* is annexed to the above principles drawn from *AlAnan* and *Almudharabah* to make up the four principal corners of the "Joint Stock Company".

Thirdly, in *AlAnan* company, the continuation of the Company, in case of the death of a partner, or the legal prevention of a partner, is

Islamically legal but conditioned on the acceptance of the other partners. The sophisticated principles which were demonstrated above, as represented by limitation of financial liability according to shares of capital, and independence of management, let the continuation of the company life, beyond its owners lives, an inevitable necessity that represents a fifth principle of the Joint Stock Company.

Fourth, an immediate outcome of the above principles is the introduction of the independent right of the Joint Stock Company *Althimah Almaliah Almastakilah* that let the company's rights represent the individual rights of its partners. Having been known in *Alshariah Al-Islamiah* in relation to such public identities as the Mosque *Almasjid*, *Alwakaf* and the House of Finance *Bait Almal*, *Althimah Almaliah Almastakilah*, works out with other principles, derived above from private identities, of *Almudharabah*, *Alanan* and *Al-Ijarah* Contracts, to let the major principles of Joint Stock Company not only legally accepted but also historically well practised in Islamic Society.

Lastly, the Joint Stock Company features of continuation, independent right, high divisibility of capital, numerous owners and limited liability according to shares of capital bring up an urgent inquiry of how and to what extent change in identities of ownership (Secondary Exchange) are settled?

Could secondary Exchange of Joint Stock Company Shares be free to any buyer, or should it be bound (or privileged) to the existing other (owners) share holders? What are major Islamic principles of Exchange?. What about future market of Stock Exchange? Could it be accepted or rejected? For the sake of full efficiency, flexibility and liquidity, the conventional economies choose next to full freedom of secondary Exchange. To investigate this goal ramifications on economic efficiency and equitability, the next phase of this study aims to evaluate, Islamically and economically, the major principles of the secondary Exchange as represented by conventional Stock Exchange and provide alternative suggestions toward building a theory of an Islamic Stock Exchange.

III. The Basics of Stock Exchange Reconsidered in The Sharial-Framework

a. An Islamic View of Stock Exchange's Core Deal

It is not islamically illegal to conduct selling of shares by current partners of Joint Stock Companies to new partners either directly or indirectly through secondary Stock Exchange. The basis of such legality is built upon the fact that a share or a Stock of sharing contract, of a company is an existing object of a particular unique "*Aien Maujudah*". Each share in the joint stock company represent a homogenous fraction of the company's assets. Although

it represents an indivisible right of a share in the company, it is a specific percentage (%) of the company's assets which are well known in both their market value and their qualifications. Therefore, the company partner is an owner of a share that he could claim a right to sell it just like an owner of a commodity. How are the buyers (new partners) and the price of shares indentified and determined? It is settled through public dealing in shares or an "Exchange". A public dealing in shares or "A Stock Exchange" is implicitly authorized, by *the modus operandi* of rules and laws of joint venture enterprises, to settle both the value of the company's shares and the identity features of its owners. Within this context, once partners of a venture choose the joint stock enterprise variant of companies, they must have implicitly agreed upon letting change in shares values and change in their owners to be decided by publically through Stock Exchange market. In its pure sense, such mere implicit agreemnet, that is conventionally authorized and organized by the western law, has no contradiction or violation of islamic law.

However, Beyond recognizing the islamic legality of the core deal of Stock Exchange, research should go further to investigate the Islamic Economic appropriatness of related empirical applications and conduct of public dealing in shares as represented by the whole organizational body of conventional Stock Exchange.

b. Conventional Stock Exchange and Speculation

Despite many merits of public dealing in shares, such as higher liquidity and higher saving and investment, the conventional western Stock Exchange is a speculation oriented market. Speculation is considered, in many respects, shown in this paragraph, a serious problem that could impede efficient allocation of economic resources.

To begin with its wider sense, Speculation is a phenomenon that becomes an increasingly eminent feature of the capitalistic societies since the first quarter of the twentieth century. Therefore, an important part of the Keynesian system is intended to deal with the role of speculative motives in the relation of investment and demand for money with interest-bearing bonds⁽⁸⁾. However, beyond bonds role, speculative money demand in financial markets is much more influenced by role of shares with respect to both its proportional size of the Financial markets their higher degree of price change. A conventional Stock Exchange in shares is much more speculation oriented than bonds market, this is due to the particular features of shares. On the one hand, although shares represent original contracts of joint venture companies, which are of no violation of Islamic rules, they could be viewed, in Modern Stock Exchange terms as close substitute to bonds concerning regular risk

and return, this is due to the expedient public dealing in shares that decreases further the already limited liability of partners towards their corresponding companies⁽⁹⁾. Consequently, share holders are representing more of the role of corporate credit or corporate financial capital lenders than the role of joint venture partners. On the other hand, during financial crises, the shares in several respects, have stronger tendency, over bonds, toward deterioration. Firstly, shares dividends are directly affected during times of economic fluctuations. Secondly, prices of shares are also affected by variable expectation of traders and speculators. Thirdly, in case of liquidation, nominal value could not be refunded until all debts are settled. However, they also have a stronger tendency toward appreciation over bonds due to the probability of higher profit above the normal return. Such built in speculation tendency in conventional financial market could be intensified by change in several other factors, that include interest rates, future markets, short selling..etc.⁽¹⁰⁾.

C. Speculation and Economic Implications

Speculation changes the original object of the deal away from serving its economic purposes of transmitting items such as a product, a service, a resource, a debt, or an ownership among different persons in society, to let a

dealing *per se* be an end through which profit is maximized. In this context of speculation, dealing in shares becomes an object to make profit with, rather than a mean of transactional stage through which resources are reallocated efficiently among different persons and purposes to cope with changes in needs and capabilities of different parties of societies. Consequently, Financial markets lose a lot of their efficient role of allocating of resources; since prices would represent speculative motives along with motives of real economic change.

Detrioration of efficient role of conventional financial market as well as their high *ad hoc* fluctuation result in many negative impacts on the economy some of which are:

- (1) Higher tendency toward boom or bear market that could sometimes culminate in a collapse of the Financial Market⁽¹¹⁾.
- (2) Increase in the sensitivity of the market to reflect any information whether inaccurate, real, or rumor.
- (3) Decrease of confidence and increase of risk in financial investments which lessens volume of finance for new investments.
- (4) Increase of hoarding capital in the form of liquidity for the purpose of conducting a speculative rather than productive activities.
- (5) Effectivness of monetary policy are intervened by fluctuation in financial markets; so that more counter action policies are necessary to acheive goals of the central bank.

- (6) An unjust redistribution of income and wealth is an eminent outcome among participants in the financial markets.
- (7) Tremendous amounts of efforts and times of individuals are allocated in non productive speculative activities.
- (8) Deterioration of emotional stability of many individuals particularly during times of high fluctuation in the market.

Consequently, stability, efficiency, and equitability are not optimized within the context of a conventional western financial market. The above major drawbacks, mostly caused by role of speculation, have driven away conventional financial market far from achieving goals of perfect competition. Despite many market regulations that aim to restore stability and to preserve competition, their role are largely confined to symposiumic restrictions such as defining a maximum limit on credit to finance a security deal⁽¹²⁾, and confining conditions of dealing in securities by directors of listed companies⁽¹³⁾. Although tendency of financial markets toward fluctuations have been lowered by such regulations, they didn't deter such fluctuations which often culminated in financial crises as happened in 1987. A western financial market is a speculation oriented market that lack a number of principles and conditions which could have substantially increased its efficiency role in resources allocation, stability and equitability. *Qua* individual freedom and efficiency are highly priced *vis a vis* equity, overall average

productivity, and average social efficiency.

d. Towards reconstructing Stock Exchange: An Islamic Framework

The Stock Exchange of the islamic economy permits very limited role for speculation. On the one hand, an adherence of individuals in islamic society to sharia framework, which affects their stimul and ultimate aims, leads to willingly accepting and applying islamic principles' conditions, and regulations that could be shown to reduce, substantially, tendency of the Islamic Stock Exchange toward speculation. On the orther hand, if speculation could be proved logically and islamically to lead to gambling, then the individuals of islamic society should show voluntary reluctance to conduct speculative deals. Consequently, muslims exchange in shares would reflect productive and non speculative purposes.

To be sure, external regulations by government or one of its representatives, such as the board of the Stock Exchange, are only required in either one of the following cases:

- (1) Degree of voluntary adherence to Islamic principles are not sufficient enough to deter speculation.
- (2) . Speculation could not be shown to lead ultimately to islamically illegal gambling in shariah framework.

There are several (Islamic) major principles and measures that need to

be introduced for reconstructing a stock exchange within the context of the general framework of an Islamic economy. These principles and measures are voluntarily watched by Muslims, and are expected to reduce tendency of the market towards speculation. The following is a summary of such principles and measures and their role in decreasing speculation:

- (1) Financial transactions are to be conducted basically on terms of participation (*Almusharakah*). There is no role for interest rates. In consequence, savings and loanable funds are considered non productive, as long as they are not involved in productive and profitable activity. In such case we expect no role for bonds and business loans. This would substantially push up cash margin requirement on shares transactions⁽¹⁴⁾ and therefore limit speculative activity.
- (2) Cumulative rises in the overall prices of shares in the Stock Exchange or in one particular company could be caused partly by monopolistic activity of one (or a group) of dealers or big owners of shares of some companies. This is not expected to exist in an Islamic economy because monopoly, that implies oppressive action, is prohibited in Islamic shariah⁽¹⁵⁾.
- (3) "*Al Gharar*" and ignorance is prohibited in Islamic Shariah. This implies that high level of real information should exist about the item to be exchanged. Also, the contract should be profound and determined in a

way that doesn't contain unclear situations that lead to partially or fully adherence to gambling. Consequently, there are behavioural actions and forms of exchange contracts which are prohibited and unaccepted within the framework of an Islamic society. Examples of such actions are indicated below:

- a. Rumors are expected to be very limited due to the Islamic prohibition of falsehood, lies, myth, cheating, and fabrication. The avoidance of such prohibited behaviour helps to lessen the high oscillations of Stock Exchange prices as well as lowering the difference between prices and real values of stocks,
- b. Reselling could not be conducted on items that are not owned or held in possession of current seller, or stored under his whole warrant. These conditions render some contracts, such as short selling, illegitimate. Such restrictions would help to lessen uncertainty, risk, speculation, and therefore lead to an efficient and equitable Stock Exchange that encourage productive investment.

(4) Exchange of Shares of Financial companies (i.e. Banks) are permitted in Islam under two special conditions:

- a. The price of the share must equal (liabilities-debts) / number of shares of the company.

- b. The execution of the transaction of money and share between seller and buyer must be immediate with no time permitted to any party.

These two conditions are based on the shariah rule that require the exchange between any two *usury commodities* (such as between two silvers, two golds, two monetary commodities) to be legal; only if it is immediate and on equal amounts, otherwise it is illegal to exchange between those two commodities.

Such two conditions have tremendous effects on lowering tendency toward speculation. Both conditions work to tight heavily the speculative deals in both money market and future market.

- (5) Selling shares of realstate companies are privileged to existing holders of company shares at the market price. This right of *Al Shufah* lessens the rate of turnover of realstate share and therefore reduces partially, the size of the financial market fluctuation.

If the degree of public voluntary adherence to the above Islamic measures and principles is low, or speculation could not, nevertheless, be deterred; then exogenous regulations by Stock Exchange board are introduced to the market. These regulations could be related to registration procdures, turnover period of a share, restictions and control of licenses of brokers and dealers, .. etc.

IV. Towards An Analytical Framework of the Adjusted Stock Exchange: The Muslim Investor Portofolio Choice

Below are some assumptions which are necessary, for adjusting Stock Exchange basis to correspond to shariah rules and provide sufficient simplification of the investors portofolio analysis.

- (1) Riskless or low risk bonds, as conventionally known, are expected to play virtually no role in an Islamic economy. Consequently, we assume no lending or borrowing in the Islamic model of Portofolio Analysis.
- (2) Shares are the only financial article available for an investor in the Stock Exchange.
- (3) No short selling is allowed.
- (4) To avoid risk, the investor could transfer portion of his portofolio's shares into interest free cash or checking accounts.
- (5) The average proportion of investor's prefrence of cash to total portofolio is expected to be fixed in the short run (within a period of a year). Therefore, sums of cash of investors will be applicable to Zakat (2.5%).
- (6) No taxes are allowed. Redistribution of income is acheived through Zakah & Sadaqat (Charity). However, payment of Zakat & Sadaqat is not considered a burden, or liability. On the contrary, paying Zakah &

Sadaqat is an activity which yields benefits for individual and society. For the individual payer, a reward. For the hereafter as well as contemporary pleasure & self-contention is expected to the whole society national income is expected to increase due to increase in demand and supply.

Allah (S.W.T) In Koran (S.34,A 38) Said:

قال الله تعالى : لوما أنفقتم من شيء فهو يخلفه وهو خير الرازقين

And nothing Do ye spend in the least (in his cause) but he replaces it: For He is the best of those who Grant sustenance.

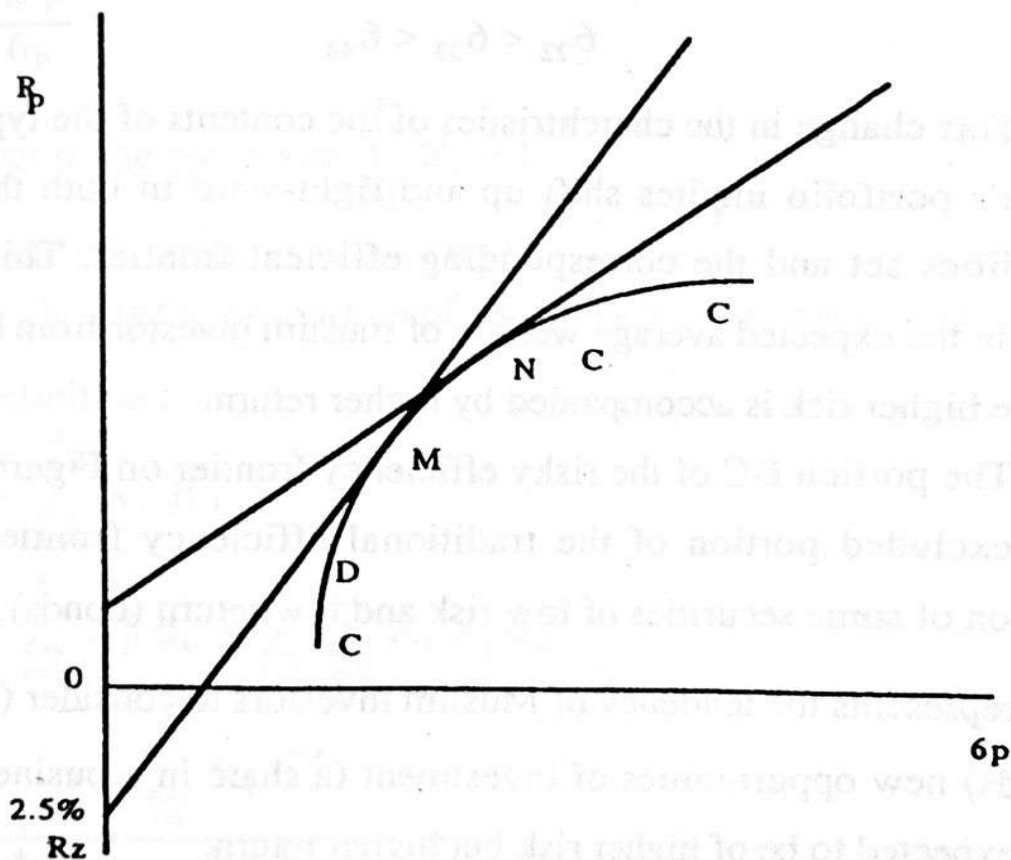
- (7) The manager of a portofolio of risky assets for an investor chooses the optimal portofolio without regard to the investor's particular preference function.
- (8) There are only three risky Shares in the investor's portofolio.
- (9) Correlation Coefficient between securities $P_{A,B}$ is (.5).
- (10) Sums of speculators balances, whether in shares or in cash, are subject to 2.5% Zakah each year.

A portofolio manager in an Islamic economy could choose among various combinations of three risky shares depending on expected return and risk of each share. His choice, however, could be expected to be among portofolios on the efficient frontier which represent minimum risk for each level of return as represented by the curve cc' in Figure (1).

The portofolio manager and investor could be percieved to choose

portion of wealth to be in cash for different reasons such as speculation, precaution demand, etc. All or part of investor's wealth could be in cash but cash is applicable to a 2.5% Zakah per annum. Within this context, the ray R_ZM indicates the practical efficiency frontier of the Muslim investor. The optimum portfolio of Risky Assets is the portfolio M. However the investor could choose to hold different portions of his wealth in cash by choosing any point on the ray between R_Z and M. (See Figure 1).

Figure (1)



Assume that an individual in a pre-Islamic society has 3 securities available for his portfolio. $\bar{R}_1 < \bar{R}_2 < \bar{R}_3$ are expected returns of these securities ordered from low to high values. Their corresponding expected risk values (as represented by standard deviations) are $\sigma_{11} < \sigma_{22} < \sigma_{33}$. If security number 1 of our individual portfolio is assumed to be a bond and the society presumes an Islamization of its institutions, then we would expect that investment opportunities would permit an alteration of security 1 with a security in a sharing company that offers higher expected return but higher risk than all his previous securities. The order of expected return and risk in the Muslim's portfolio is :

$$\bar{R}_2 < \bar{R}_3 < \bar{R}_4$$

$$\sigma_{22} < \sigma_{33} < \sigma_{44}$$

This change in the characteristics of the contents of the typical Muslim investor's portfolio implies shift up and right-ward in both the portfolio possibilities set and the corresponding efficient frontier. This implies no change in the expected average welfare of muslim investor from his portfolio set since higher risk is accompanied by higher return.

The portion DC of the risky efficiency frontier on Figures (1) and (2) is the excluded portion of the traditional efficiency frontier due to the exclusion of some securities of low risk and low return (bonds). The portion C' C₁ represents the tendency of Muslim investors to consider (as alternative to bonds) new opportunities of investment (a share in a business company) that is expected to be of higher risk but higher return.

On the aggregate, however, the Islamic economy will be expected to induce reduction of average cost of production for its firms *vis a vis* conventional firms. The basic reasons include reduction in labor cost due to cooperation and participation, reduction or virtually elimination of active role of taxes and insurances, elimination of interest cost, etc⁽¹⁶⁾. The lower cost implies higher profit and therefore higher expected return on each share. In example, this is represented by higher returns ($\bar{R}_1 > \bar{R}_2, \bar{R}_1 > \bar{R}_3, \bar{R}_1 > \bar{R}_4$) at the same risk level $\sigma_{22} < \sigma_{33} < \sigma_{44}$.

To determine the optimal portfolio M^* for the Muslim investor, we need to maximize the objective function:

$$(1) \quad \theta = \frac{\bar{R}_P}{\sigma_P} \quad (1)$$

Subject to the constraint $\sum_{i=1}^4 X_i = 1$

where θ : the slope of the ray $R_Z M^*$

X_i : is the proportion of wealth to be invested in share i .

By definition :

$$\bar{R}_P = \sum_{i=1}^4 X_i \bar{R}_i \quad (2)$$

$$\sigma_P = \sum_{i=1}^4 X_i^2 \sigma_i^2 + \sum_{i=1}^4 \sum_{j=1}^4 X_i X_j \sigma_{ij} \quad (3)$$

$$\theta = \frac{\sum_{i=1}^4 X_i \bar{R}_i}{\sum_{i=1}^4 X_i^2 \sigma_i^2 + \sum_{i=1}^4 \sum_{j=1}^4 X_i X_j \sigma_{ij}} \quad (4)$$

To find the maximum of θ , we take the derivative of θ with respect to each X_i and set it equal to zero.

$$(2) \quad \frac{d\theta}{dX_2} = -(\lambda X_2 \sigma_{22}^2 + \lambda X_3 \sigma_{23} + \lambda X_4 \sigma_{23}) + \bar{R}_2^* = 0 \quad (5)$$

$$\frac{d\theta}{dX_3} = -(\lambda X_3 \sigma_{33}^2 + \lambda X_2 \sigma_{32} + \lambda X_4 \sigma_{34}) + \bar{R}_3^* = 0 \quad (6)$$

$$\frac{d\theta}{dX_4} = -(\lambda X_4 \sigma_{44}^2 + \lambda X_2 \sigma_{42} + \lambda X_3 \sigma_{43}) + \bar{R}_4^* = 0 \quad (7)$$

$$\text{Where } \lambda = \frac{\sum_{i=2}^4 X_i R_i^*}{[\sum_{i=2}^4 X_i^2 \sigma_i^2 + \sum_{i=1}^4 \sum_{j=1}^4 X_i X_j \sigma_{ij}]^2} \bar{R}_p / \sigma_p^2$$

To simplify the procedure of solving equations 5-7, let $Z_i = \lambda X_i$ and move the variance covariance terms to the right-hand side of the equations.

$$(3) \quad \bar{R}_2^* = Z_2 \sigma_{22}^2 + Z_3 \sigma_{23}^2 + Z_4 \sigma_{24}^2 \quad (8)$$

$$\bar{R}_3^* = Z_3 \sigma_{33}^2 + Z_2 \sigma_{32}^2 + Z_4 \sigma_{34}^2 \quad (9)$$

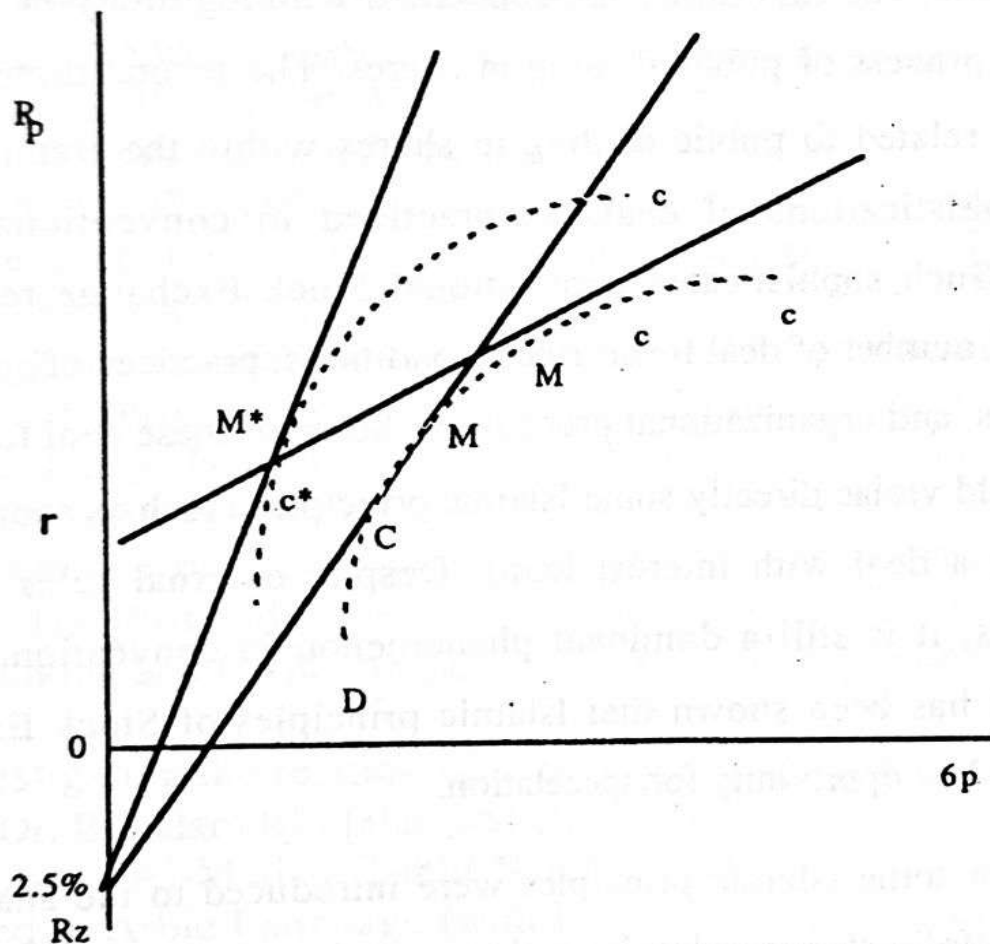
$$\bar{R}_4^* = Z_4 \sigma_{44}^2 + Z_2 \sigma_{42}^2 + Z_3 \sigma_{43}^2 \quad (10)$$

Solving equations (8), (9), (10) for the unknowns Z_2, Z_3, Z_4 we will be able to determine X_i by the following rule :

$$(4) \quad X_i = Z_i / \sum_{i=2}^4 Z_i$$

Graphically on diagram 2 the optimal portfolio of Muslim investor is illustrated by a left and upward shift of the risky efficient frontier CC_1 to $C^*C_1^*$ to represent higher returns. Hence, the optimal risky portfolio for a Muslim investor is represented in Figure (2) by the point M^* which is determined by the tangency between the Ray R_zM^* and the risky efficiency frontier $C^*C_1^*$.

Figure (2)



- (1) western MKT
- (2) Zakok + (omit cond) + (add ashare)
- (3) Reduction in cost.

U Conclusions

It has been shown that the Major principles of Joint Stock Company such as limited financial liability, independence of management from ownership continuity, and the existence of indepent action right for the company, are legitimate principles that are historically rooted back to the famous Islamic contract compaines of *Alanan*, *Almuduarabah*, *Alijarah*, and *Alwakaf*. The modern phenomenon of public dealing in Joint Stock Compaines shares (through an Exchange) is analysed within the context of two dimensions. The first dimersion concerned with legitimacy of the basic (fundnental) process of public dealing in shares. The second dimension of legitimacy is related to public dealing in shares within the framework of modern Sophistications of deals as practiced in conventional Stock Exchanges. Such sophisticated conventional Stock Exchange represents substantial number of deal forms rules, conditions, practices of specialists & speculators, and organizational procedures. Some of these deal forms and practices could violae directly some Islamic principles (such as short selling or financing a deal with interest loan). Despite external rules to limit speculations, it is still a dominant phenomenon in conveational Stock Exchange. It has been shown that Islamic principles of Stock Exchange would permit low opprtuinity for specalation.

When some Islamic principles were introduced to the analysis of investor portofolio choice, it has been shown mathmatically and graphically that Investor's optimun choice would lead to higher return at the same level of risk, higher investment, and less tendency toward speculation.

Endnotes

- (1) Some Schools of Islamic Law, as Al-Malikiah and Al-Hanabilah and some scholars of Al-Hanafiah, didn't include debt as a cause of ownership company. That is justified on the grounds that a debt is of immaterial character.
- (2) Shaikh Abdullah Al-Bassam Nail Al-Marib Fi Tahthib Sharh Aumdat Altalib, Bab Alsharikah; also, Alsharikat Fis Alshariah Alaslamiyah Wa Alkanoon Al Wathai, pp. 33-41, First Edition, Wizart Alawakaf Wa Al-Shaon Wa Almugadasat Al-Islamiah (Cooperative Association of Printing Workers, Amman, Jordan).
- (3) Alkhayat, Abdulaziz; as ref. [2], pp. 41-45.
- (4) For Example, see Companies Laws: Directory of Common Share Companies: Kingdom of Saudi Arabia and Industrial and Commercial Chamber, Riyadh, Kingdom of Saudi Arabia, 1407H, p. 15; also Yakoob Yousef Sarkhwah, Shares and its dealing in common Shares Companies in Kuwaiti Law, a comparative Study n Arabic, French and English Laws (1992), Dar Al-Nahdah Alarabiah, p. 21.
- (5) Alkhayat, Abdulaziz; as ref. (4), pp. 53-56.
- (6) Sarkhwah, pp. 178-180.
- (7) For an explanaton of such companies contracts, refer to Sheikh Abdullah Albassam, "Nail Al Marib .
- (8) Inspecting the relation of money demand to speculation is widely exposed in macroeconomics and money and banking text books, see for example Barry N. Siegel, Money, Banking, and the Economy, Academic Press, (New York: 1982), pp. 9-10, p. 198.
- (9) An elaboration of these ideas is found in sir John Hick "Limited Liablity: The Pros and Cons" in Tooy Orhnial Limited Liability. Croon Holu: London and Camberra pp. 11-21. Also refer to Barry Siegel, pp. 58-62.
- (10) For investigating the relation of speculation to collapse of the market refer to Dr. Boualam Bin Jelali and Dr. Yousef Al-Zamel, "Nahwa Eitar Islami Lisoak Al-Maliah: Tahlil Nathari Wa Riyadhi" An arricle to be published in Arbic Language (with English Sumary) in Journal of the College of Adminisrative Sciences King Suad University, pp. 14-15.
- (11) For details on this, refer to Boualam Bin Jelali and Yousef Al-Zamel, pp. 12-15.
- (12) It is usualy defined "Margin Requirment" and Particulary used as an instrument of monetary policy. See on this Barry Siegel p. 198.

- (13) For details on information and directors dealing, refer to The International Stock Exchange: Official Year Book 1989-1990. (Macmillan Publishers: London) p 23, p. 32.
- (14) The margin requirement could reach 100%, i.e. all financial transactions are settled and cleared immediately. However, the seller of a share could agree to postpone payment from buyer in return for higher price. This process is actually a finance from the seller, but it is legitimate and non usurious action in the framework of Islamic Shariah.
- (15) Defining what is exactly prohibited of Monopolistic activity and how to deal with such problem need independent research .
- (16) For a more detailed discussion of reduction in cost, refer to Yousef A. Zamel & Boualam Bin Jelali in a paper to be published in Arabic Language with English Summary title "Theoretical and Mathematical Analysis of Investment function from an Islamic perspective".

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