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# Economic consequences of applying Islamic principles in Muslim societies

Applying  
Islamic  
principles

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## **Introduction**

There are more than one billion Muslims living in various parts of the world. In some countries, including most Arab societies of the Middle East and North Africa, as well as Afghanistan, Bangladesh, Brunei, Indonesia, Iran, Pakistan, Senegal and Turkey, the Muslim population exceeds 80 per cent of the total population. Muslims in some other countries, such as Malaysia and Nigeria, make up well over half of the total population. And while Muslims may be a minority in other countries, e.g. India, Philippines, South Africa, UK and CIS, they are millions in number.

It must be made clear from the outset that Muslim countries vary greatly in the degree to which they follow the Islamic teachings. Some are stricter than others. However, there is no Muslim society, at present, which can be called an Islamic economy (i.e. an economy which follows wholly the Islamic laws in a strict fashion and in which these laws are enforced by faith and civil laws). Historical comparisons are not available, either. The experiences of early Islamic economies are often not directly relevant today since the earlier economies were much less complex than those of contemporary Muslim countries.

However, a growing number of Muslim countries are expressing the desire, and in some cases (Iran, Pakistan and Saudi Arabia) taking serious actions to turn to Islamic laws and teachings (*shariah*) in modelling their way of life, including their economic behaviour.

This paper attempts to investigate the consequences of applying Islamic principles to economic behaviour in Muslim societies. The paper is divided into five sections. Section one briefly describes the main economic postulates of Islam. The implications of Islamic principles for consumers' and producers' equilibria are discussed in sections two and three respectively. Section four analyses the consequences of application of Islamic principles and the behaviour of investment. Finally, section five briefly evaluates the performance of Islamic (interest-free) banks.

## **Economic postulates of Islam**

The teachings of Islam have many important economic principles. Some of these are now discussed.

Muslims regard resources of various kinds as the gifts of God which have been delivered as a trust into the hands of the human being, the trustee, who is

to utilize them in the most efficient manner to produce the maximum output and to fulfil God's plan of establishing prosperity here on earth and, more fittingly, there in the hereafter, a goal to be achieved for himself (herself) and all others at the same time. Such an idea has implications of vital importance for ownership either of wealth or of the means of production. Accordingly, a Muslim has to engage in economic activity actuated by the relatively impersonal motive of filling his (her) obligation of trust. This principle of economic trusteeship in Islam is dramatically opposed to the self-interest principle which is the cornerstone of the free-market economy but may be very difficult to apply.

Islam recognizes private ownership. This recognition extends to various means of production. However, the right of private ownership accorded by Islam is not absolute and unconditional. First, private ownership in Islam is subject to the interest of the community. If the state considers that it should reserve for itself the ownership of some specific property, then the ownership of such property cannot be acquired by the individual. This is one of the guiding principles of the *shariah* (Islamic laws) which decrees that the private interest of the individual should be secondary and subsidiary to that of the community as a whole. So where the interest of the individual conflicts with that of the state, which represents the community as a whole, the individual must give way to the interest of the state. Second, Islam has totally prohibited earning income through production and sale of alcoholic substances and pig products, usury, gambling, black marketing, dispute, deceptive purchases and conducting business in manners harmful to the cause of people. Also not permitted is any form of hoarding. Nobody can be a legitimate owner of anything earned through the above means (Kuran, 1995).

According to Islam the technique of "co-operative forces" and not the technique of "opposites" should be used in achieving equilibrium in different fields. Muslims (whether buyers, sellers, wage-earners, profit-makers, etc.) observe the *Qur'an's* words "Let there be amongst you traffic and trade, by mutual goodwill" (*The Qur'an*, 4:29).

Co-operation, in Islam, is the proper spirit for satisfactory give-and-take of goods or services or factors of production. This may be possible either through co-operative organization of enterprise, co-operative buying and selling or even ordinary private buying and selling with the principle of co-operation guiding the buyer and the seller. Such a spirit of co-operation justifies profit only within reasonable limits and high prices of necessities resulting solely from scarcity without a shift in cost conditions is alien to such a principle. However, it is very difficult to define "reasonable" or "fair" profit.

The role of property in Islam is unique. Purely personal enjoyment of property with merely individualistic ends is relentlessly despised by the *Qur'anic* injunction, "O Ye, who believe, eat not up your property among yourselves in vanities" (*The Qur'an*, 4:29). This determines the role property has to play, as productive capital intended to increase the volume of national output and raise the standard of living. This tendency, together with the radically distributive nature of Islamic laws of inheritance, sets into operation a

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continuous flow of benevolent forces in contrast to the undeniable effects of the capitalistic conception of property. The spirit that permeates the whole scheme of Islamic distribution is echoed in the vital expression, "In order that it [wealth or property] may not make a circuit between the wealthy among you" (*The Qur'an*, 59:7). Thus Islam combats the accumulation of wealth and its concentration in the hands of the few. Some argue that this may have some adverse effects on the incentive to work and save.

While the free-market economies of the West are dominated by private monopolistic and oligopolistic industries, even in areas of great significance to common benefit, Islam ensures public ownership and management of all utilities in the broadest sense. The principle to be applied here is obtained from one authoritative saying of the Prophet: "People have common rights in regard to water and pasturage and fire". The spirit of the Prophet's principle demands that all extractive industries relating to production of water, mining and even food should be treated as state enterprises. Also, all kinds of fuels, domestic and industrial, cannot justifiably be left in the hands of private entrepreneurs. This may result in a large public sector as is currently the case with all the Arab Gulf economies.

Every Muslim whose wealth exceeds a particular level (called *nisab*) is obliged to give a share of that wealth to the poor and needy in the form of a religious tax called *zakat*.

*Zakat* is the cornerstone of the financial structure in an Islamic economy. It is one of the fundamental tenets of Islam. Literally, *zakat* means purification. Technically it means a contribution of a proportion of wealth for the use of the poor and needy as a sanctification for the remainder of the property. Hence in modern terminology, *zakat* is a tax collected from the relatively richer Muslims and distributed (mainly) among the poorer Muslims.

"Keep up prayer and pay *Zakat*", is the constant theme of the *Holy Qur'an*. There are at least 27 passages in *The Qur'an* where the order to pay *zakat* and the order to establish prayer occur jointly. The objects of the disbursement of *zakat* are shown in *The Holy Qur'an* in Chapter 9, verse 60:

Alms are for the poor, and the needy, and those employed to administer the funds, and those whose hearts have been reconciled to truth, and those in debt and those in the cause of Allah, and the Wayfarer.

While *The Holy Qur'an* prescribed the objects of the disbursement of *zakat*, no form or ratio of the tax has been prescribed by the *Qur'an*. The Prophet prescribed different ratios on different incomes and assets. According to the contemporary religious views, *zakat* is imposed at a levy of 2.5 per cent (or  $\frac{1}{40}$ <sup>th</sup> portion) on all idle assets (with very few exceptions) including cash in hand, idle deposits with banks, silver, gold and other jewellery; and on net earnings from transactions and at a levy of 10 per cent on net returns from investments (i.e. after allowing for depreciation).

There is for each kind of income and wealth a minimum exemption called *nisab*. In the case of gold it is approximately three ounces; in the case of silver 21

ounces. In the case of other forms of income and wealth, the *nisab* is judged by their value in silver.

*Zakat* is not payable on dwelling houses; wearing apparel; household utensils; riding animals; arms for use; food; articles of adornment, other than gold and silver; coins for personal expenditure; books; tools and machinery used for further production; and animals used in agriculture.

It must be clear from the above discussion that *zakat* differs radically from progressive taxation in many ways (Metwally, 1993). However, many Muslims believe that *zakat* is the only legitimate dues which a Muslim government can impose. This is a wrong view which needs to be corrected if *zakat* is to be enforced by civil laws.

Islam prohibits many types of speculation which are considered an integral part of economic life in non-Islamic economies. *The Holy Qur'an* says (Chapter 2, verse 219):

They question thee about ... games of chance [speculation]. Say: in [this] is great sin and [some] utility for men; but [its] sin is greater than [its] usefulness.

*The Qur'an* also states (Chapter 5, verse 93):

O ye who believe alcoholic drinks and games of chance and idols and divining arrows are only an infamy of Satan's handiwork, leave it aside in order that ye may succeed.

The type of speculation prohibited by Islamic doctrines covers not only races, games of cards and other (conventional) gambling activities but also many types of forward transactions. Thus it is claimed that the Prophet said, "He who accumulates stocks of grain during shortages of it (with a view to profiteering later) is a great sinner" (Qureshi, 1967).

The Prophet said, "One who imports from outside and sells at the market rate for his maintenance is blessed, while he who withholds transactions in view of estimated dearness in future, is thrown away from God's pleasure" and "Evil indeed is that man who withholds transactions in anticipation of rise in prices".

Islam regards many forward transactions as harmful to society. It is claimed that the Prophet prohibited purchase and sale of date palms until the dates ripened, and dealing in ears of corn until they grew (ripe and) white, or they were safe from calamities. Islam prohibits the exchange of a commodity not in stock, with another. In other words, all sales are prohibited by Islam, where actual deliveries cannot take place. The Prophet said, "Bargain not about that which is not with you".

The prohibition of these types of speculation in Islam has three main economic implications:

- (1) No savings will be directed (through the prohibited types of speculation) towards holding assets with the intention of making capital gains. Thus, if savings were to be activated at all, they would be directed towards real investment.
- (2) There would exist no basis for "liquidity preference" for the speculative motive. The demand for money for speculative purposes, in the Keynesian sense, is non-existent.

- (3) The expected rates of return on investment (or the marginal efficiency of capital) will not exhibit the typical short-run instability caused by the speculative activity in the capital markets.

Islam prohibits the payment of interest on *all* types of loans (personal, commercial, agricultural, industrial, etc.) whether these loans are made to friends, private or public companies, government or any other identity. The relevant verses of *The Holy Qur'an* are clear and unambiguous. Some of these verses may be mentioned here:

Those who devour usury will not stand except as stands one whom The Evil One by his touch hath driven to madness. That is because they say: "Trade is like usury". But Allah hath permitted trade and forbidden usury... (2:275).

Allah will deprive usury of all blessing, but will give increase for Deeds of Charity: For He loveth not creatures ungrateful and wicked (2:76).

O Ye who believe! Fear Allah and give up what remains of your demand for usury, if Ye are indeed believers. If Ye do it not, take notice of war from Allah and His Apostle: But if Ye turn back, Ye shall have your capital sums: Deal not unjustly and Ye shall not be dealt with unjustly (2:278-279).

O Ye who believe! Devour not usury, doubled and multiplied; but fear Allah; that Ye may [really] prosper. Fear the Fire, which is prepared, for those who reject Faith (3:130-131).

That which Ye give in usury in order that it may increase on [other] people's property hath no increase with Allah: but that which Ye give in Charity, seeking Allah's countenance, hath increased manifold (30:39).

The Prophet has condemned both the receiver and the giver of usury. It is claimed that the Prophet said "Sell not gold for gold except in equal quantity, nor sell silver for silver except in equal quantity, nor sell anything present for that which is absent".

The following points need to be emphasized:

- "Usury" is translated to mean *riba*. *Riba* literally means an excess or addition. With reference to debt it means any excess above the principal lent. Since interest, however small, is an excess over the capital lent, it is prohibited according to verse 279, Chapter 2 of the *Qur'an*. It is a common mistake, particularly in the Western thinking, to believe that Islam prohibits usury (excessive interest) and not (mild or small) interest.
- Islam prohibits interest on all types of loans. It is not simply true to say that Islam prohibits interest only on personal loans and allows it for productive loans where the borrower uses the money to make a profit. It should be noted that even in the early days of Islam, money was borrowed not only for consumption purposes, but also for trade. And it is very clear from verse 275, Chapter 2 of the *Qur'an* (quoted above), that Islam permits trade and prohibits interest.
- Islam prohibits all kinds of "back-door" dealings with interest, particularly those practices followed by some financial institutions of lending money for the purchase of durable goods on instalments.

It is clear from the above that an Islamic economy is an interest-free economy. This poses a number of important questions.

- What would be the price for parting with liquidity?
- How can the money market be cleared? Would there be any alternative control variable which the Muslim authorities can use to bring the demand for money into equilibrium with the money supply?
- How could general equilibrium be achieved in an interest-free Islamic economy?
- If the fixed interest charge is replaced by a profit (loss) sharing principle, how would the banks finance non-productive projects (e.g. consumer durables, housing and personal loans) without using interest in a fancy dress (e.g. as a fixed mark-up or charge or commission or profit which is determined in advance and varies directly with the period of loan without any risk justification)?
- If a discount is desirable, what rate of discount can be used? Would it be possible to use the expected rate of profit? Which rate? Would there be one rate available to different investors such as the market (or current) rate of interest? How would that rate be determined?
- If an investor is to decide between investing and not investing, and if there is no market rate of interest to use as a yardstick, how is the decision made?
- How is the optimal stock of capital determined in an interest-free economy?
- What criteria can be used in allocating funds to government projects?
- What alternatives would be available to replace short-term or near money?
- If equity will play an important role in an Islamic economy, would it be possible to establish a stock exchange without allowing gambling in this interest-free economy?

### **Islamic principles and consumers' equilibrium**

Islamic teachings have some serious implications for consumers' equilibrium. The objective function of a Muslim consumer differs from that of other consumers. A Muslim consumer does not achieve satisfaction from mere consumption of outputs and the holding of capital goods. His (her) economic behaviour pivots around the achievement of God's satisfaction. For a true Muslim must believe in the *Qur'anic* words "O My Lord! grant me that I may do right acceptable unto Thee and be gracious to me in my issue. Truly have I turned to Thee and truly do I bow [to Thee] in Islam" (46:15). This suggests that the utility of a Muslim consumer would not be a function of only outputs consumed and commodities possessed, but also a function of "good deeds". For the Muslim believer knows that "Wealth and sons are allurements of the life of this world; but the things that endure, Good Deeds, are best in the sight of Thy

Lord, as rewards and best as [the foundation for] hopes" (18:46). The doing of "good deeds" was mentioned in the *Qur'an* 62 times in 36 Chapters (out of a total of 114 Chapters). "Good deeds" take many forms, but basically, they revolve around "charity". Spending on charity by those who possess the means is crucial in Islamic doctrine (Ahmad, 1964). *The Qur'an* says "And spend something (on Charity) out of the substance which we have bestowed on you, before death should come to any of you and he should say 'O my Lord why didst Thou not give me respite for a little while? I should have been one of the doers of good" (63:10). Spending on charity may take the form of direct payment to the poor and needy in the community. It may also take the form of a contribution towards the building of hospitals and schools to cater for the relatively poor sections of the Muslim community or the building of mosques to promote Islam and maintain Islamic ideology. In general, charity includes all monies spent to help the poor and the needy, to fight in the cause of God, so as to spread Islam and promote continually its teachings and applications (Sharif, 1980). The above clearly suggests that a Muslim consumer would have as an object spending on charity or good deeds. This object has no counterpart in non-Islamic economies. Moreover, spending on Good Deeds is an object which must, for a Muslim consumer, be realized whether utility is maximized.

The vector of commodities which a non-Muslim consumer may be able to choose from is quite different from that of a Muslim consumer, even if all elements of goods and services were available. This is because Islam prohibits Muslims from consuming certain commodities or indulging in some activities. Muslims are forbidden to consume alcohol, eat pig meat, or gamble. Thus if a non-Muslim consumer can allocate his budget on goods  $x_1, x_2, \dots, x_n$ ; a Muslim consumer can allocate his income between only  $x_1, x_2, \dots, x_k$  where  $k < n$ . The difference  $(n - k)$  represents the forbidden goods and services.

Since the Muslims are forbidden to receive or pay usury (interest) on any type of loan (personal or otherwise), the annual premium ( $r_j$ ) paid by the Muslim consumer for holding the  $j$ th durable good would not include an interest element. This does not mean that these goods come free since interest in Islamic economies is replaced by some cost in terms of profit-sharing (Chowdhury, 1992). However, unlike interest, this cost is not a predetermined fixed charge independent of risk. Unfortunately, it is not so easy to incorporate this profit-sharing cost in the budget constraint of the Muslim consumer. But for purpose of simplicity, we shall assume that it is an element added to depreciation and repair cost. Thus, the Muslim consumer's budget constraint may take the form:

$$G + \sum_{j=1}^k (P_j x_j) + \sum_{i=1}^m l_i y_i = M; G > 0 \quad (1)$$

where  $l_i$  = the annual premium for holding the  $i$ th durable good ( $y$ ) by a Muslim consumer,  $x_1$  represents depreciation and repair cost, and opportunity cost of holding capital goods,  $P_j$  = the price of the  $j$ th consumer good ( $x$ ),  $G$  = spending on "good deeds" and  $M$  = total income.

To a Muslim consumer, the budget available for optimizing consumption is the net income after the payment of *zakat*. If we assume the rate of *zakat* equals  $\alpha$ , the budget constraint of a Muslim consumer becomes:

$$\sum_{j=1}^k (P_j x_j) + \sum_{i=1}^m l_i y_i - (1 - \alpha)M + G \quad (2)$$

A Muslim consumer is expected to refrain from indulging in extravagant consumption following the *Qur'anic* order "Squander not your wealth in the manner of a spendthrift. Verily spendthrifts are brothers of the Evil one. Is to his Lord [Himself] ungrateful".

The above analysis suggests that the Muslim consumer's problem is:

$$\text{Max: } U = U(x_1, x_2, \dots, x_k; y_1, y_2, y_m, G)$$

Subject to (2) above.

Using Kuhn-Tucker conditions and under the assumptions that  $x_j > 0$  ( $j = 1, \dots, k$ ) and  $y_i > 0$  ( $i = 1, \dots, m$ ) we obtain at optimality:

$$\frac{(\partial U / \partial x_j)}{P_j} = \frac{(\partial U / \partial Y_i)}{l_i} = \partial U / \partial G \quad (3)$$

According to this equation, the equilibrium condition of a Muslim consumer requires that output consumed and the holding of capital stock should be carried up to some point at which the ratio between marginal utility and price (premium) is the same for all output and capital stock and equals the marginal utility of spending on charity. In addition to this condition we observe that:

- a Muslim consumer is restricted in terms of the type of goods from which he/she derives utility;
- a Muslim consumer cannot purchase capital goods using loans which carry interest; and
- the budget of the Muslim consumer is his (her) net income after the payment of the religious tax of *zakat*.

If we assume that the marginal utility of money for a Muslim consumer is positive, we also obtain from the solution of the consumer's problem:

$$(M - Z) - \sum_{j=1}^k P_j x_j - \sum_{i=1}^m l_i Y_i - G = 0 \quad (4)$$

which suggests that a Muslim consumer would spend all his (her) income ( $M$ ) net of *zakat* and other taxes and dues ( $Z$ ) on the goods and services he/she consumes, the assets he/she possesses and on "good deeds". However, while the marginal utility of all goods and assets is subject to diminishing returns the

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marginal utility of spending on “good deeds” remains constant the more a Muslim spends in that direction, i.e.

$$\partial^2 U / \partial G^2 = 0 \quad (5)$$

This is so since a Muslim regards this type of spending as some form of investment which gives a very lucrative return, not only in the hereafter but also in this life. For a Muslim believes in the *Qur'anic* words “The parable of those who spend their wealth in the way of God is that of a grain of corn which groweth seven ears, in every ear a hundred grains. God gives increase manifold to whom He will, God is All Embracing, All Knowing” (2:261).

A Muslim consumer believes that the return of this investment (i.e. spending on good deeds) are all acts of God that bring “good luck” and “fortunes”. These acts may take the form of windfall profits, unexpected discoveries, unplanned advancement, or other sorts of miracles.

The above analysis suggests that the traditional consumer analysis may not apply to consumers whose economic behaviour is determined to a large extent by religious (or other non-economic) considerations. Utility or satisfaction (and their opposites) must not be interpreted too narrowly. Maximizing satisfaction should embrace all uses of one’s income including those which appear to be generally regarded as unselfish, religious or socially desirable.

### **Islamic principles and producers’ equilibrium**

A Muslim entrepreneur considers resources of various kinds as the gifts of God which have been delivered as a trust into the trustee’s hands in order to utilize them in the most efficient manner to fulfil God’s plan of establishing prosperity on earth and, more importantly, in the hereafter – a goal to be achieved for oneself and all others at the same time.

Accordingly, a Muslim entrepreneur engages in business motivated by the relatively impersonal purpose of filling his (her) obligation of trust. The principle of economic trusteeship in an Islamic economy is dramatically opposed to the self-interest principle which is the cornerstone of the free-market economies of non-Islamic societies.

This clearly suggests that the object of an Islamic firm will not be profit maximization. Rather, the firm may be satisfied to realize a “reasonable” or “fair” level of profit if that enables it to achieve the more important goal of “doing good to please God”.

A Muslim businessman would not seek to maximize profits for the purpose of accumulating wealth. The owners and managers of an Islamic firm would have as one major object spending on charity or good deeds. This object, which has no counterpart in non-Islamic free market economies, need not be without an economic meaning. Spending on charity or good deeds, in a society which wholeheartedly believes in it as the means to achieve God’s satisfaction, must create a goodwill for the firm’s products, which in turn helps increase the demand for them at given prices. Thus if we denote spending on charity or good deeds by  $G$  and price by  $p$  we would expect:

$$\frac{\partial p}{\partial G} > 0.$$

In a sense, therefore, these expenditures on good deeds resemble spending on advertising. The difference is that, for a non-Islamic firm, advertising expenditure is pushed to the level which profit maximization warrants. In an Islamic firm, spending on good deeds is an object which must be realized whether profits are maximized or not. In other words, an Islamic firm may state this objective in the form of a positive dictum (e.g. it must spend 5 per cent of its revenue on charity) or it may be stated in a non-operational form (e.g. the firm may desire to be a leader in the industry or even the community in spending on good deeds) which will be a guide in decision making over the allocation of resources. The above does not suggest that spending on charity or good deeds by an Islamic firm will be a total substitute for advertising. There will always be a place for "informative" advertising but the decision to advertise or not (and how much should be spent on advertising) would be completely separate from that of spending on charity or not. However, as we shall see later, there will be no place for "deceptive" advertising by an Islamic firm.

An Islamic firm may consider expansion in numbers employed beyond the level warranted by profit maximization a form of good deeds, since this may contribute towards solving the problem of unemployment (if one exists). But as we mentioned in the case of the Muslim consumer, good deeds may also take the form of building hospitals and schools to cater for the relatively poor sections of the Muslim community; of building mosques to promote Islam and maintain the Islamic ideology and generally it includes all monies spent to help the poor and the needy, to fight in the cause of God, to spread Islam and to promote continually its teachings and applications.

The firm's profit within an Islamic framework maybe expressed as:

$$F = (1 - \alpha - \beta) (R - C - G) \quad (6)$$

where  $F$  is profit,  $\alpha$  is the rate of *zakat*,  $\beta$  rate of other dues,  $R$  total revenue, and  $C$  total production cost. The demand curve in this model is assumed to be negatively sloping, but charity expenditures help increase demand for the firm's product. Thus we have,  $\partial P/\partial q < 0$  and  $\partial P/\partial G > 0$ , where  $q$  = quantity produced.

The firm's objective would be to maximize some utility function in profits and good deeds subject to the distribution of a minimum acceptable amount of profit  $\pi$  to satisfy its owners and maintain its business. In other words, the objective function is:

$$\begin{aligned} &\text{Maximize } Y = Y(F, G) \\ & q, G \\ &\text{subject to} \\ & \psi = \pi - F \leq 0 \end{aligned} \quad (7)$$

The above maximization problem can be solved using the Kuhn-Tucker conditions and solving the Lagrangian:

$$L = Y(F, G) + \lambda (\pi - F) \quad (8)$$

Under the reasonable assumption that  $q > 0$ ,  $G > 0$ , we obtain:

$$\left( \frac{\partial R}{\partial q} - \frac{\partial c}{\partial q} = 0 \right) \quad (9)$$

or MR = MC, and

$$\frac{\partial R}{\partial G} = 1 - \frac{Y_G}{Y_F} \frac{1}{\lambda(1 - \alpha - \beta)} \quad (10)$$

or

$$\frac{\partial R}{\partial G} = 1 - \frac{r_{GF}}{\lambda(1 - \alpha - \beta)} \quad (11)$$

where

MR = Marginal revenue

MC = Marginal cost

$r_{GF}$  = Marginal rate of substitution between expenditure on charity (or good deeds) and distributed profits of  $G_{G,F} = \frac{Y_G}{Y_F}$ .

Equation (9) suggests that for an Islamic firm equilibrium requires that marginal revenue equals marginal cost. This does not mean that the resulting optimal output would be the same as that of a profit maximizing firm. For, in our case,  $\partial R/\partial q$  is implicitly a function of  $G$ . Hence the optimal values of output will be different in the two cases. For an Islamic firm with similar cost structure, equilibrium output and equilibrium price will be higher than in the case of a non-Islamic firm.

### Islamic principles and investment

It is clear from the above analysis that according to Islamic doctrine, interest is not a barrier to increasing investment because lending at interest is not an alternative to investment and, therefore, the rate of interest does not enter into investment calculations.

Since lending at interest is not permitted in Islam, the alternative to real investment is holding *idle* funds. *Zakat* will be payable on these funds at the rate of say,  $Z_A$ . *Zakat* is also payable on profits from investment, at the rate of say,  $Z\pi$ . According to contemporary Islamic views, *zakat* is payable on net profits from *fixed* investment (i.e. profits after deduction of depreciation) at the rate of 10 per cent, while *zakat* is payable on idle assets, capable of growing, at the rate of 2.5 per cent. Hence  $Z\pi \neq Z_A$ .

Now, the amount of *zakat* which savers would pay if they decided not to invest is  $Z_A I$ , where  $I$  is the volume of funds available for investment.

It follows that the effective expected (net) rate of return on investment ( $g$ ) will be equal to net expected rate of profit ( $r$ ) plus the rate of *zakat* on idle assets ( $Z_A$ ) or:

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International  $g = r(1 - \pi) + Z_A$  (12)

Journal of Social Investment will continue as long as  $g > 0$ , i.e.

Economics  $r(1 - Z\pi) > -Z_A$  (13)

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And investment will cease when  $g = 0$ , or

**952**  $r(1 - Z\pi) = -Z_A$  (14)

According to equation (14), investment in an Islamic economy will cease when the expected rate of profit drops to a negative value given by

$$r = \frac{Z_A}{Z\pi - 1} \quad (15)$$

Thus, when the expected rate of profit is zero, investment will still be undertaken, a result which could not be achieved in economies not following Islamic teachings where the rate of interest has a positive value.

The demand for new investments will fall to zero, in economies following Islamic laws, only at the point where the expected rate of profit has the negative value  $Z_A/Z\pi - 1$ . Above this point, investment is an increasing function of the expected rate of profit.

Notice that according to Islamic principles there is no case where the opportunity cost of not investing idle assets is zero. In other words, all the idle assets (including interest-free loans) whose values exceed the "*nisab*" and other necessities of life, are subject to the tax of *zakat*. Hence the possibility for  $r(Z_A - 1) = 0$  does not exist.

The above analysis, however, fails to determine the level of investment undertaken at a particular time. All it says is that investment will continue to take place as long as the expected (net) rate of return exceeds the rate of *zakat* on idle assets. Just how much will be invested at various expected profit rates cannot be determined in the absence of a substitute to the rate of interest.

The Islamic principles related to the rate of interest and the payment of *zakat* would have some serious implications on the determination of the desired stock of capital in Muslim societies who wish to apply Islamic teachings. There is nothing wrong with a firm, faithful to the Islamic code of behaviour, determining its optimum capital stock by a process of maximizing the present value of a stream of net proceeds, i.e. total revenue less labour costs, *zakat* and gross investment.

To determine the present value we need a relevant rate of discount which represents the opportunity cost of lending the funds used to buy the stock of capital. In non-Islamic economies this opportunity cost is the market rate of interest. But in an economy which follows Islamic teachings there is no place for interest. Hence, a firm which decides not to invest will have no alternative but to leave the funds idle. But if it did that, it will have to pay *zakat* on these funds at the prescribed rate. Thus, if the rate of *zakat* was ( $h$ ), the opportunity cost for not investing the funds would be ( $-h$ ).

If this discount rate ( $-h$ ) is used in determining the equilibrium level of capital stock of an Islamic firm we obtain very different conclusions to those obtained using interest as the discount rate. To clarify, consider the following production function,

$$q_t = \phi(N_t, K_t), \quad (16)$$

where:

$q_t$  is the firm's output in period  $t$ ;

$N_t$  is labour input in period  $t$ ;

$K_t$  is the stock of capital at the beginning of period  $t$ .

Let  $p_t$ ,  $w_t$  and  $m_t$  be respectively, the price of a unit of output, the wage rate and the price of a unit of capital (e.g. a machine at the beginning of period  $t$ ). Let  $I_t$  be gross investment in capital in real terms (i.e. number of machines). Net proceeds are defined as:

$$R = pq - wN - mI \quad (17)$$

The present value of the anticipated stream of net proceeds, at some time  $t = 0$  could be expressed as:

$$V = \int_0^{\infty} e^{ht} (pq - wN - mI) dt, \quad (18)$$

where  $h$  is the rate of *zakat* on idle funds. (Note that *zakat* is a tax and not a reward as interest.)

The firm's problem is to maximize (18) subject to the production function:

$$\phi(q, N, K) = 0 \quad (19)$$

and,

$$I_t = \partial K_t + \frac{dK}{dt} \quad (20)$$

where:

$$I_t = I(t) + \partial K_t \quad (21)$$

Thus,  $\partial K_t$  represents economic depreciation. From (20) and (21) we have:

$$\dot{K}(t) - I(t) + \partial K(t) = 0 \quad (22)$$

Solving the problem with the use of the Lagrangian function and Euler conditions, we obtain:

$$p \frac{\partial q}{\partial K} = -m(\delta - h - \dot{m}/m) \quad (23)$$

Equation (23) says that an Islamic firm will reach an equilibrium level of capital stock when the value of the marginal product of capital is equal to the price of the machine times its rate of depreciation minus the rate of *zakat* on idle funds minus the expected rate of capital gains per period owing to a rise in the price of the machine.

Thus if the rate of *zakat* on idle funds  $h = 0.025$  and if the rate of depreciation  $\delta = 0.10$  and assuming no capital gains (i.e.  $\dot{m}/m = 0$ ) an Islamic firm will invest in a machine costing \$10,000 if the value of its marginal product equals \$750. It is clear that the effect of *zakat* on the incentive to invest is positive. *Zakat*

encourages the direction of saving resources towards real investment rather than the holding of idle funds. The value of the marginal productivity of a specific unit of capital needed to justify the addition to the desired stock of capital of a machine of equal value will always be smaller in an Islamic economy than in a non-Islamic economy. The difference will be greater the higher is the market rate of interest in the non-Islamic economy. Thus, if in our example the market rate of interest (which represents the opportunity cost in a non-Islamic economy) was 10 per cent, the aforementioned machine would not be bought unless the value of its marginal productivity exceeds \$2,000.

The above analysis uses the rate of *zakat* as a discount rate in determining the optimal capital stock. But this is not satisfactory since the rate of *zakat* (unlike interest) is fixed. And the future returns cannot be discounted using a tax rate. This suggests that an alternative to interest (as a variable) must be found to use for discounting purposes.

### **Islamic principles and the banking system**

Given the complexities of modern economies, institutions which can satisfy the needs of both savers and those requiring funds are essential and those opposed to interest have recognized that modern banks perform a useful function which cannot simply be ignored. Traditional sources of finance such as borrowing from relatives, friends or local moneylenders may well be appropriate for private individual needs to those of small businesses, but for large-scale projects there is no real alternative to modern bank finance. In addition, traders need to have the same range of financial services available locally as do their Western counterparts.

According to Islamic teachings, banks may perform most, if not all, their functions provided that they avoid the payment and receipt of interest. This experience already exists and is being constantly refined and modified to meet the rapidly changing needs of ever more sophisticated businesses. The essential principle of interest-free banking is profit/loss sharing. By this means both the supplier of the capital and the borrower share in the risks; both prosper when returns are favourable and suffer together when returns are poor. This is the basis for what became known as "interest-free Islamic banks".

The first interest-free bank (Dubai Islamic Bank) was established in the United Arab Emirates in 1973 with a paid-up capital of US \$14 million. This was followed by the Islamic Development Bank in Jeddah (Saudi Arabia) in 1975.

Currently, there are more than 100 interest-free banks active in 45 different countries. The Al Baraka group, which began at the start of the 1980s, is the fastest growing Islamic banking group with interests in the Middle East, Africa and Europe.

The Al Rahji group, which was developed by a group of Saudi money changers in 1978, is also expanding into the UK. This group, together with the Al Baraka group and the Kuwait Finance House, established the Islamic Banking System International which has founded a separate Islamic bank in

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Denmark (IBID) – the first such European-based bank – designed to encourage trade and development participation between Scandinavia and the Middle East.

Very few business people approach the new interest-free banks, however, as they are regarded as a strange kind of institution which functions in unusual ways that few can understand, although this is now beginning to change as such institutions penetrate European financial services and set up branches there. Normally, however, the first indirect contact most Western business people have with these banks is when importers in the Islamic world arrange their own credit through Islamic banks, and some of the documents get passed on to the Western exporter or the exporter's bank. It is clearly important for the Western importer to have some understanding of Islamic banking methods, even if the importer is not involved directly with an Islamic bank and the contact is through a Muslim importer, so that the Western importer can appreciate the principles of operation involved (Wilson, 1985).

#### **Tools of interest-free banks**

Interest-free banks use tools which are quite different from those used by traditional banks. The most important of these tools are:

- *Partnership (musharakah)*. Under this method, the bank and the would-be customer agree to join in a partnership for effecting certain operations within an agreed period of time. Both parties contribute to the capital of the project and agree to divide the net profits in proportions determined in advance. There is no fixed formula for profit-sharing and each case is dealt with on its own merit.
- *Lending with no participation in management (mudarabah or qiradh)*. Under this method, the bank provides all the capital of the operation and the client is fully responsible for management. In consideration, the partner gets an agreed proportion of the net profits. In case of loss resulting from normal business activities, the bank bears all the losses and the client loses only the profit that would have been the reward of his effort.
- *Resale contract (mrabaha)*. Under this method the client requests the bank to buy a specific commodity. The bank resells the commodity at a price which covers the purchase price plus the profit margin agreed on by both parties, which transforms traditional lending into a sale and purchase agreement.
- *Good loan (quard hassan)*. A loan without interest. Literally a "good loan". This is a loan by which a borrower is obliged to repay the lender the principal sum borrowed on the loan. It is left to the discretion of the borrower to reward the lender for his loan by paying any sum over and above the amount of the principal.
- *Leasing or renting the physical capital/equipment*. The bank, in this case, purchases capital/equipment and rents it to the client. This procedure can be converted into a reduced renting procedure whereby the customer,

by paying every year an instalment of the value of equipment/physical capital, reduces the rent, until the whole equipment is owned by him and the rent is eliminated.

- *Takafol*. Mutual support which is the basis of the concept of solidarity among Muslims as an alternative to Western insurance. The idea is that the various participants agree to pay instalments to a *takafol* fund managed by the Islamic bank. The Islamic bank acts as management company – thus it admits participants, collects instalments, provides management services, invests the funds in Islamic projects, and pays *takafol* benefits – all to achieve solidarity and co-operation under the conditions of contract.
- *Post delivery sale (bai salam)*. The bank buys certain goods on post delivery and pays the cost immediately or sells certain goods on post delivery and receives its cost immediately. In this sale, cost of goods is fixed and paid in advance but the delivery of the sold item is postponed or delayed up to a certain period. Similarly, the place of delivery, its expenses and quantities of the sold goods should also be fixed and defined as they are conditions for such a sale.

It should be emphasized, however, that most, if not all Islamic banks, depend heavily on the *Morabaha* method of finance. The banks claim that there is no element of *riba* (interest) in this method since the agreement of the bank and the actual execution of buying do not contribute any legal obligation (according to *shari'ah*) on the customer to buy. Until the partner fulfils his original promise of “rebuying” the commodity, the risk remains with the bank, which justifies the profit. Some Muslim economists are concerned about this method of finance on the following grounds:

- The bank may not actually own the commodity required by the client.
- The bank itself may not finalize the deal with the owner of the good unless the bank's client approves the purchase or pays a (non-refundable) deposit or offers some sort of security to guarantee that the transaction will not fall through. Hence the risk element may not exist.
- It is not clear how the profit margin is determined.
- If the profit margin varies with the time over which the price is repaid, in what way does it differ from interest?

Currently, Islamic banks are not really as interest-free as they claim. These banks channel their deposits into bonds and other interest-bearing instruments. Because of this the profit shares which these banks offer follow the movements of ordinary interest rates (Kuran, 1995). The use of mark-up and/or profit margin in *morabaha* transactions does not free these banks of all traces of interest. Moreover, these banks are still facing problems of financing consumption loans (Metwally, 1994), attracting deposits and reducing liquidity (Ray, 1995).

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### Conclusions

The application of Islamic principles in Muslim societies is likely to have far reaching effects on various economic aspects. The traditional economic tools of analysis (whether classical, Keynesian or neo-classical) may not be appropriate in studying the implications of the application of Islamic principles. These tools suggest that Islamic societies are likely to face many problems if they free their economies completely from all traces of interest, impose the religious tax of *zakat* in a strict fashion, and abandon all kinds of speculation. The traditional tools of analysis leave a great number of questions unanswered.

On the other hand, the first roads that were open in the way of application, namely the establishment of Islamic banks and the collection of *zakat*, were not paved in the anticipated manner. Islamic banks did not prove to be “interest-free” in a true sense; *zakat* is not enforced by civil law in any Muslim society and the behaviour of various economic units in those societies who claim to be applying Islamic principles does not seem to lean heavily on Islamic values.

The above does not necessarily mean that Islamic principles have no place in contemporary economies. To understand the implications of these principles fully, we need new tools of analysis capable of dealing with this particular social framework.

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