Allocation of Investment in an Islamic Zero-Interest-Rate Economy

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Abstract. This paper answers briefly basic questions on *how* an Islamic zero-interest-rate economy (*ZIRE*) allocates, through the market, real and financial investments. Questions addressed include: What is the meaning and scope of the zero-interest imperative? Wouldn't zero-interest regime deprive an economy of the price signal essential for efficient market allocation of real and financial investment, hence require central planning to maintain efficiency? The overall conclusion is that disallowing the charging of interest on loans and debts in such an economy is balanced by its clear respect of private ownership, free markets, and the price signals generated by voluntary exchanges among economic agents as well as its approval of credit sales and rentals. It is a feasible system that permits efficient market allocation of financial and real investable resources.

Keywords: Zero Interest Rate Economy, Interest Rate, Discounting, Allocation of Investment, Capital Allocation.

KAUJIE Classification: G33.

1. Introduction and Limitations

Our focus is on a zero-interest-rate economy (ZIRE). Accuracy requires adding an Islamic adjective to that economy because even within zero-interest-rate systems there are significant differences regarding the scope of usury prohibition and the existence of other institutions that may buttress or undermine that prohibition.

Islam has much to say about economic aspects of life, but none of its teachings raises more questions in the mind of a modern economist than that of the zero-interest rate imperative *aka* strict prohibition of usury.

What I describe as *Islamic* is based on normative Islamic law (Sharīʿah) as understood by the overwhelming majority of Muslim scholars, classical and modern. Where there are significant dissenting views, I shall warn the reader. This paper abstracts from the practices of modern Islamic finance industry which, for regulatory and other reasons, do not always reflect the normative Islamic position on which this paper is based.

2. Meaning and Scope of the Prohibition of Charging Interest

The prohibition of charging interest applies to all loans and debts. No distinction is made in Islam between interest and usury. Both are strictly prohibited and defined as: any stipulated or customary *extra* above the principal of a loan. The prohibition applies to money and any fungible good, whether the *extra* is a good or a service, fixed or variable.

An important implicit exception relates to the permissibility of credit sale, to be discussed later.

Debt in Sharīʿah (Islamic Law) may arise contractually through a loan or a credit sale or non-contractually as a result of a tort or a legal obligation such as family maintenance. Every debt, no matter how it originated, is subject to the following rules:

(a) Debt rescheduling (rollover) for a *larger* deferred sum is strictly prohibited. Thus, debt may not increase by mere passage of time. An able but delinquent debtor may be punished, but not by increasing his debt.

(b) It is not permissible to discount money debt by selling it to a 3rd party at a price different from its face value[1].

(c) Collateral, surety/ guarantor may be demanded in all types of debt and loans.

Rules **(a)** and **(b)** affect the behavior of suppliers and demanders of such debt making an Islamic debt significantly different, both micro and macro wise, from conventional interest-based debt. This is an important topic for research.

3. Credit Sale: A Centuries-Old Question

Should a credit sale, for a deferred price higher than the cash price be permitted in a ZIRE?

• Pagan Arabs objected to the prohibition of usury, asserting that is like credit sale, and both should be permissible.
• Pope Alexander III (1159-1181 CE) declared that credit sales at a price above the cash price were usurious, and should be disallowed (Homer and Sylla, 2005, p. 68).
• Allah says in the Holy Qur'ān: "…they say: 'buying and selling is like usury', even though God has made buying and selling lawful and usury unlawful" (Qur'ān, 2:275).

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(1) Money debt is thus substantially illiquid because to buy it at face value generates no profit. The buyer in effect is advancing an interest free loan to the seller of debt. Other important rules include:
  • Deliberate failure to repay any debt on time is a grave sin for an able debtor.
  • Debtors who through no fault or misdeed become unable to repay debts contracted for legitimate personal, business or philanthropic purposes, are entitled to public assistance from an earmarked portion of *zakāh* (an annual levy on the rich), explicitly stated in the Holy Qur'ān (9:60). Creditors are encouraged, not obliged, to reduce or forgive the debt, but have the right to insist on bankruptcy.
  • Forbearance with a debtor in straitened situation is mandated.

An overwhelming majority of Muslim scholars, while asserting the prohibition of interest on loans and debts, note that lawful "buying and selling" in the above verse includes credit sale above the cash price.

The quoted verse does not deny some similarity but asserts the Divine ruling that allows "buying and selling" while prohibiting usury. It also implies, but does not spell out, the differences that justify that ruling. Muslim scholars have discussed this issue at length and I shall not attempt a summary here[2].

4. Main Islamic Financing Modes

The two major categories of finance in an Islamic ZIRE are: the philanthropic or not-for-profit, catered to by *loanable funds*, and the commercial or for-profit finance, catered to by *investable funds*.

4.1 Loanable funds

In an Islamic financing system, a *loan* in money or in kind may only be interest-free. Such benevolent loans are very much encouraged as a form of charity to the needy and courtesy to family and friends.

With no return permitted for advancing a *loan*, only philanthropy and religious incentives would generate a supply of *loanable funds* in such a system. An economist will readily note that funds demanded will certainly exceed those supplied (excess demand at the zero-interest price ceiling) and hence, have to be allocated among recipients by non-price mechanisms such as intensity of need and social priorities.

In other words, advancing loans is not a money making activity and borrowing is not meant to be a usual mode for financing productive enterprise in an Islamic ZIRE. Rather, loans are one of several institutions, (a) to help the poor, and (b) to replenish social capital by concretizing the spirit of brotherhood and solidarity.

4.2 Investable funds

Investable funds are the mainstay of business financing and generate lawful (*ḥalāl*) income to their providers, the financiers.

Main types of lawful profit seeking finance in such an economy are:

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(2) The justifying differences are not confined to the micro-contractual relation between the two parties, but spill over to macro externalities of debt. Al-Suwailem provides an excellent brief (2006, pp. 96-100).

(1) Trade-credit modes, **generating debt**. Here sellers of good and services, be they producers or traders, finance the buyers through credit sale for a deferred price, usually higher than the cash price. The reverse is also permitted where buyers finance sellers by paying in advance for goods or services to be delivered later[3]. The advance price paid is usually lower than the now-expected market price at delivery date.

That markup above the cash price (or markdown below it) is a return to the party providing finance and is an integral part of the resulting debt which equals the total deferred price. Trade-credit can be short or long term.

(2) Equity financing modes where profits and losses are shared and no debt is generated among the parties. There are many classical forms with various risk profiles, including *muḍārabah* (*commenda*) and partnerships. New innovative forms are also acceptable provided they do not violate the basic contractual principles. Thus, the structure of a modern stock company with limited liability has been accepted almost unanimously by modern Muslim scholars.

(3) Rental of real assets. Many varieties of finance are based on rental of real assets. They deserve note in this paper because they generate market price signals that compete with the traditional interest rate as bases for many economic decisions, especially in investment, for both individuals and business.

Equity financing and rentals generate rates of return which are market price signals for the cost-of-equity (more on this later) and cost of rental finance. Trade-credit modes generate markups between cash and deferred prices, which are market signals for cost-of-debt.

All three modes are driven by the free interaction of market supply and demand. They generate the price signals needed to impute discount factors for efficient investment and saving decisions and for allocating funds and real resources among different users and uses.

4.3 The essence of 'for-profit' Islamic finance

Naked credit or pure financing epitomized by interest-based loans is strictly prohibited. This, however, is less restrictive than appears at first sight, because an Islamic ZIRE permits for-profit financing, in different modes, all hinged on real economic activities that usually produce real income or wealth. In other words, credit may not generate a return to the creditor unless it is integrated with a real economic activity that usually generates real income.

5. Allocation of Investment

The interest rate in conventional economics is presented as the price signal to be used in making efficient investment decisions. A zero-interest economy of any hue, Islamic, socialist or otherwise, would lose that signal and make inefficient investments. A non-market allocative mechanism would then have to be used; so the story goes.

I purport to show that this argument is technically deficient for failing to recognize the rate of return on real investment as an alternative price signal. This failure is caused by deriving analytic conclusions on the basis of "perfect foresight" simplifying assumption, then forgetting to qualify the results.

6. Distinguishing Rates of Return from Interest Rates[4]

The most important difference, from an Islamic point of view, between a rate of interest on a loan and a rate of return on some real investment, is that the former is strictly prohibited while the latter is clearly allowed. But before we consider other differences, let us acknowledge the apparent similarities and interconnection between the two rates.

Firstly, both the rate of return and the rate of interest are percentages. *Secondly*, in a capitalist market with no government interference, significant changes in rates of return must pull interest rates in the same direction. For, when rates of return go up, it becomes more attractive to borrow and purchase equities, hence to bid up interest rates. Conversely, when rates of return decline, it becomes more

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(3) This is called *salam* contract for real fungible goods and generates a debt-in-kind on the seller of the good. *Istiṣnā'* contract is used for financing non-fungible made-to-order goods.

(4) Several quotations in this paper use the "rate of return" and "rate of profit" interchangeably, and following them, I have occasionally done so. Both concepts are identical in simple one-period cases and I use either one to refer to an uncertain yield on equity capital.

attractive to sell equity and lend the proceeds at interest, hence to bid interest rates down. In other words, the long-run tendency in a free market is for the rate of interest to follow the rate of return, not the other way round (Robinson, 1952, p. xxii; Boulding, 1966, p.140; Hicks, 1965, pp. 287-92). *Thirdly*, the most noteworthy similarity between the rate of return and the rate of interest is that the two become identical twins if we assume agents have perfect foresight[5]. It stands to reason that if we had perfect foresight, shares of common stock – whose future values and earnings would be known exactly – must in equilibrium yield the same return as do bonds whose principal and future interest payments are exactly specified by contract.

Needless to say, once we drop the perfectly false assumption of 'perfect foresight', the rate of return (in the absence of government interference) becomes distinctly different from, and higher than, the rate of interest.

Let us now turn to other basic differences in the nature of the two rates and in the way they affect economic agents. We should first recognize an oft-forgotten truth, namely that the rate of return is a primary phenomenon originating from real investment quite independently from the rate of interest which arises from lending-borrowing relationships. Robinson Crusoe may be able to calculate rates of return for some simple projects available to him even though an interest rate is inconceivable in his one-man economy. It is meaningless to think of Crusoe lending to himself at interest! Similarly, a modern firm which decides for whatever reason to completely shut itself off from the outside capital market (i.e. no borrowing and lending and no new equity financing), can still meaningfully calculate rates of return for various internal projects and efficiently allocate its retained earnings among them.

Another distinguished economist, Frank H. Knight, tried to "eliminate *the terrible confusion* which results from mixing up the rate of return on investment with the rate of interest on loans..." (Knight, 1944, p. 29, emphasis added).

Because the rate of return arises directly from real investment, it is "entirely independent of the institutional arrangements of the economy" (Solow, 1963, p. 16). It exists and can be clearly defined whether or not society permits interest or even private ownership of capital.

No real investment in society can be free from uncertainty, hence, prospective rates of return are inherently uncertain. Risk-free interest is an institutional arrangement which exists because society decides to permit it and give it legal backup, not because it inheres in any productive activity. In fact, interest-financing of a business cannot possibly exist without hanging on the essential equity-financing. For "a business cannot be financed entirely by risk-free capital [interest bearing loans]. There must be a certain proportion of venture capital, or equity, to make the guarantee effective" (Dorfman, 1972, p. 245).

Conclusion: the rate of return is a primary concept that is distinct from and antecedes, both economically and logically, the rate of interest. Every economy which undertakes investments generates rates of return, whether or not it permits the institution of interest.

7. Different Scenarios for Zero-Interest-Rate[6]

One should distinguish among different economic environments where ZIR may be observed.

(A) Schumpeterian ZIR

Samuelson (1951, pp. 1151-6) defended a view that J. Schumpeter held fast (against strong criticism) that a zero interest rate will obtain in a steady state of a capitalist economy. Later on, Samuelson in his introductory textbook (1976, pp. 605-6) posed the question: Is a zero (equilibrium) rate of interest possible? His answer was that under conditions of *perfect certainty*, this is not possible unless we have capital saturation i.e. capital is so abundant that its net productivity is zero. But under the realistic

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(5) In a world "of certainty and perfect markets, the ratio of the dividends paid by a stock (including net appreciation in the value of the stock) to the original price of the stock, the ratio of the rent of an asset (net of depreciation and other operating costs) to the original price of the asset, and the ratio of the profit of a firm to the amount invested in it all have a common value, equal to the rate of interest" (Patinkin, 1968, p.472). "Assuming perfect competition and sidestepping ...uncertainty…we can strictly identify the profit rate with the pure interest rate" (Samuelson, 1959, p. 409n).

(6) I am indebted to M. Nejatullah Siddiqi for alerting me long time ago to this important idea.

conditions of uncertainty, *zero equilibrium rate is possible in the unfortunate case of severe recession.*

(B) An Islamic ZIR

This is a religiously mandated *zero price ceiling* that is legally imposed only on *funds advanced as loans*. This price ceiling is a fundamental part of the system and hence, is not subject to policy review.

However, as mentioned earlier, there are parallel *investable funds markets*, generating usually positive market-determined rates of return signals on lawful modes of finance.

Note that an Islamic ZIR on loans is a deliberate moral choice maintained by administrative action. It is not an equilibrium value emerging in a hypothetical economy saturated with real capital. Nor does it assume cost-free financing to business. Nor yet does it mean "cheap capital policy", because it is quite consistent with very high or very low opportunity cost of investable funds in the economy.

(C) Zero interest-rate policy (ZIRP)

This is an ad hoc novel monetary policy adopted nowadays by central banks in some capitalist economies facing the specter of severe recession.

8. Discounting in an Islamic ZIRE

Three questions and answers

Discounting future flows of benefits and costs is important analytically in investment theories, and practically in project evaluation. Discounting is often presumed to be based on, or at least intimately connected with, the rate of interest.

Since Islam advocates the complete abolition of interest on loans, the concept and practice of discounting raise several questions:

Q1: "Shall we apply the method of discounting to arrive at the present value of resources utilized in the productive process? Or does that method contradict with some fundamental principles of Islamic economics? If there is a contradiction, what alternative method is available?" (Abu Ali, 1978, p. 9).

Q2: Does not a price ceiling of zero interest rate on loans logically lead to zero discount rate resulting in loss of efficiency in investment?

Q3: Is it coherent to reject interest on loans and keep using so-called "Compound Interest Tables" in decision making in finance, capital budgeting and project evaluation?

Answer 1: Discounting is permissible

(A) Discounting in investment project evaluation is meant to make comparable prospective sums of money or resources occurring at different time periods, thus, facilitating comparison of investment alternatives. Sharīʿah scholars affirm the permissibility of such discounting, notwithstanding the fact that the same mathematical formulas are used in interest-based lending[7].

Is discounting desirable from a Sharīʿah point of view? The answer depends on whether it helps in the achievement of a Sharīʿah objective. Economists generally hold that discounting improves efficiency (i.e. avoid *isrāf* or wastefulness which is an important Sharīʿah objective), so one may conclude it is not only permissible but rather desirable. But this conclusion is circumscribed in cases where discounting takes us away from some other Sharīʿah objectives, such as caring for future generations.

(B) However, *discounting in the sense of buying, at a discount, debts* (such as trade bills), bonds or business receivables, is unequivocally prohibited as it amounts to lending at interest to the owner of the debt.

Answer 2: An Islamic ZIR is consistent with positive discount rates

Note that Islamic ZIR is confined to loanable funds. Discounting, to the extent it is desirable economically, should be based not on the rate of interest on loans, which is fixed at zero ceiling in an Islamic ZIRE, but on the opportunity cost of investable funds in their different modes.

Answer 3: No reason to avoid "compound interest tables"

The basic formula from which such tables are calculated have no intrinsic connection to interest nor even to economics. It is true for any quantity that changes at a steady rate over time. It has been used

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(7) This was the explicit answer I obtained in the early 1980's from two top scholars: Dr. Al-Siddeeq M'd. Al-Ameen Al-Dhareer, Chairman of Shariah Board of Faisal Islamic Bank in Sudan, and Sheikh Mustafa Al-Zarqa, Professor of Islamic Shariah, University of Jordan.

to calculate the growth of bacteria and decay of radioactive materials, and to approximate growth of human populations and many economic and social variables. The fact that this same formula can also be used to calculate the growth of an interest-bearing loan is no reason to insist on calling it "the compound interest formula", nor for avoiding its use if it is so called. Steady Growth (and Decline) Tables is a factual and more accurate name to use.

Marxist economists reject discounting for ideological reasons but seem to accept it as a requirement for investment efficiency[8]. Some Western economists deemed this a theoretical retreat from Marxist principles (Samuelson, 1976, p. 606; Eckaus, 1972, pp. 40-42). Does not the acceptance of discounting by Muslim economists represent a similar theoretical retreat?

The answer is clear: No. The Marxists' dilemma is rooted in their rejection of profits and rates of return on privately owned investments as legitimate sources of income. It is irrelevant to an Islamic economy as featured above.

9. Should Discounting be based on Interest Rates or Profit Rates?

Many project evaluation and engineering economy books and manuals inaccurately use the rate of interest as a synonym for the discount rate.

When the fact of uncertainty is explicitly acknowledged, economists generally recognize that:

- the rate of interest and the rate of return (on equity) are no longer equal even in perfect markets;

- the rate of return and not the rate of interest is the proper rate of discount.

Discounting by a rate of return is based on the principle of opportunity cost. Since no real investment is free from uncertainty, cash flows of prospective investments should be discounted not by a riskless interest rate but by their true opportunity cost, which the firm could obtain "by taking equity interests in

other firms that appear to involve an element of risk about the same as that involved by further investment within the firm" (Lamberton, 1965, pp. 113-14; and similar conclusion in Dorfman, 1972, p. 245).

Some economists choose to arrive at the rate of return by adding a risk premium to the pure interest rate (Baumol, 1979, pp. 478-79; Prest and Turvey, 1966, p. 171; UNIDO, 1973, p. 114). It is another way of saying that the rate of interest is not the proper discount rate under uncertainty.

10. Lessons from Corporate Finance

The focus of corporate finance is on maximizing the value of the firm while economists focus on maximizing efficiency. In pursuing their supposedly loftier goal, economists unfortunately start by putting on a heavy blinder: the assumption of "perfect foresight". It is not surprising that corporate finance analysts, with that blinder off, are able to see and analyze vital issues missing in most economic theorizing, such as: the risk of default and bankruptcy, the impact of equity compared to debt, and the difference between rates of return and interest rates. I briefly state now their results on the question of *the cost of capital of a firm:* i.e. what is the *appropriate rate* to use in discounting prospective cash flows of projects facing a firm in order to maximize the market value of its common stock.

The traditional and dominant view in corporate finance is that *the appropriate rate* is a weighted average of the cost of different sources of financing (interest-bearing debt and equity), with weights being equal to the share of each source. Thus, for a firm leveraged with such debt, the rate of interest will influence its *appropriate rate*.

But an all-equity firm (with zero long term debt) should not use the market rate of interest on loans in determining its *appropriate rate*, but should rather use the cost of its equity, which boils down to the expected rate of return on the firm's previous investments (Lewellen, 1976, p. 44; Bromwich, 1976, pp. 115-120,138 and 147). It is approximated in simple cases by the market discount (capitalization) factor, i.e.:

$$\frac{\text{expected earnings per share}}{\text{price per share}}$$

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(8) Robinson and Eatwell, (1973, p. 80) call it "a premium charged for investible resources as a determinant of the degree of mechanization of technique". For an authoritative account of the introduction of profits and capital charges in Soviet enterprises after the economic reforms of the 1960s see (Wilczynski, 1973, Chs. 2 and 7).

10.1 The Modigliani-Miller model (M-M)

According to M-M, a change in the capital structure of a firm (debt/equity) has no impact on its market value or its *appropriate rate of discount*. Even if a firm uses borrowed funds at a fixed rate of interest to finance a new project, it should *not* use that rate of interest for discounting. Its *appropriate rate* is the same risky rate of return that an all-equity firm uses. In other words, regardless of the mode of financing, the cost of capital to a firm is essentially the rate of return of its risk class (of other firms that are subject to a similar degree of risk). M-M analysis takes into account the crucial fact that as the firm contracts more debt to finance promising projects, expected profits increase along with – and exactly offset by – the risk of bankruptcy. This result is predicated on *the assumption, among others, of no taxes and no transaction costs*[9].

Conclusion from corporate finance: Even in a capitalist economy where charging interest on loans is permitted, the use of rates of return for discounting cash flows of prospective investments is a well-established principle in corporate finance under many scenarios.

11. Cost of Capital for An Islamic Firm[10]

Assume a firm is financed by all three lawful modes: equity, Islamic debt, and rentals. Its cost of capital will be a weighted average of all its sources of financing.

The implicit cost of debt for such a firm may be derived from the markup it expects to incur on purchases of fixed capital on installment basis[11]. Similarly for the cost of rentals.

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(9) For lucid presentation of M-M model see Baumol, (1979, pp. 488-96). Also, Bromwich, (1976, pp. 112-167); Lewellen, (1976, pp. 52, 72 and *passim*); and Mossin, (1973, p. 123)*.*

(10) I am grateful to Sami Al-Suwailem for a very helpful discussion on this section.

(11) markup = (total deferred price) – (cash price).
The cost of debt implicit in such a transaction equals the (discount rate) that equates the (cash price) to the deferred price, whether the latter is a future lump sum or a series of installments. That *discount rate* is numerically calculated using the usual discounted cash flow equation, the same way as the internal rate of return of an investment cash flow. Since all deferred sums here are non-negative, the rare problem of multiple solutions for the equation will not arise. Thus, each trade on credit will have one corresponding cost of debt.

Needless to say, the cost of debt, rentals, and equity as noted earlier, are not arbitrary values but are rather economic variables subject to market forces. For instance, in deciding the markup he wants to charge, a seller has to keep in mind rates of return he expects to get from real investments in equities or rentals as alternatives to selling on credit. Also, he must mind what other sellers are charging on similar deals. A similar logic applies to a buyer on credit.

12. Is An Accounting Interest Rate Needed?

The absence of an interest rate on loans in an Islamic ZIRE prompted some writers to suggest the need for an accounting or shadow rate of interest to efficiently allocate investments[12]. This old idea used to be suggested for a centrally planned socialist economy that has no capital market signals.

I hope the earlier discussion makes clear the irrelevance of this idea to an Islamic ZIRE which has observable market signals needed for efficient allocation.

There may be reason however to use accounting or shadow *rates of return* in an Islamic economy, not because interest is banned, but *because of possible market imperfections that distort such rates*. When market signals fail to express the true opportunity costs to society, welfare theory advises public authorities to use accounting rates of return to maintain efficiency in their investment decisions.

"If the idea is that the Central Bank keep a certain rate of profit in view and reject such projects as fail to promise a return commensurate with that rate, why insist on calling it an accounting rate of interest?" (Siddiqi,1981, p. 68).

13. Other Views

A commonly encountered statement in economic literature runs like this:

the interest rate has an important function in capitalistic, or any other kind of economic system.... [it] acts as a sieve or rationing device: all projects that can yield 10 percent are undertaken before any projects that yield only 8 percent... The interest rate must be used to allocate scarce 'capital supplies' optimally and to determine the priority of alternative projects. (Samuelson, 1976, p. 640).

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(12) Naqvi (1981, p.120). A brief review of similar earlier views is given in Siddiqi's, admirable 1981 *Survey*, pp. 67-8.

Such statements gloss over the fiction of perfect foresight on which they are based, thus contributing to "the terrible confusion" against which F.H. Knight warned. One may validly cross out in the above quotation the words "rate of interest" and replace them with "rate of profit", or "rate of rent". For in that fiction, all these rates are identical triplets and serve equally well the purpose of allocation[13]. By the same reasoning, we note that models of a growing economy occasionally include the rate of interest among their variables, thus giving the unintended impression that interest is somehow essential to growth. The acute researcher should note that such models disregard uncertainty, hence are color-blind to the difference between interest and profit. A prime example is J. Von Neumann's model of a growing economy, where one can speak, as in fact Samuelson does (1980, pp. 706, 710) of the model's balanced growth rate being equal to the interest rate or the profit rate. The same is true of Naqvi's (1982) model.

14. The Tyranny of Discounting

The purpose of discounting is to achieve efficiency (i.e. to avoid waste or *isrāf*) which is *one* valued goal in Islam. Failure to discount, when one should, results in using up more resources than the minimum necessary to achieve a given goal.

But discounting may produce morally repugnant results, especially in long term inter-generational investments (Arrow, 1996). For instance, at 7.5% discount rate, a sum in 65 years shrinks to less than 1%, and in 99 years to less than 1 in a thousand. To give so little weight to the welfare of later generations begs ethical justification, even in the minds of the non-religious[14]. In Islam, caring for the welfare of later generations is an explicit goal. Many policies to protect the environment will be abandoned if the discounting calculus is to reign supreme.

Optimization in any system with multiple goals, such as an Islamic economy, logically requires tradeoffs among goals whenever they become competitive.

I conclude that there are several considerations that justify occasionally modifying the dictates of discounting in theory and practice.

15. Final Conclusions

(A) A modern economy that chooses to disallow charging interest on loans and debts, along the Islamic lines outlined, will not miss any allocative function commonly attributed to the interest rate.

(B) An Islamic ZIRE can allocate funds and real investment among users and uses based on market price signals generated by lawful transactions within the system.

(C) Loans may only be interest-free, so *loanable funds* have to be allocated by non-price mechanisms.

(D) Profit seeking *investable funds* in equities, rentals and various credit sales are allowed and generate market price signals that economic agents can use in their decisions.

(E) Misapprehensions about this topic are quite common and emanate mostly from :

1) Applying analytical results based on the assumption of "perfect foresight", i.e. assuming away uncertainty. This is the most serious.

2) Mixing up the rate of return on real investment with the rate of interest on loans.

3) Unawareness of essential features of an Islamic economy, especially (D).

I addressed only the allocative *feasibility* of an Islamic ZIRE, not its advantages, which are considerable especially with regards to economic stability and distributional equity[15].

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(13) Bromwich writes: "In a world of certainty and perfect markets, the rate of interest serves as the cost of capital .. our objective.. [is] to derive discount factors which can, in an uncertain world, serve the same role as did the rate of interest under certainty" (Bromwich, 1976, pp. 113 and 114); and Samuelson (1980, p. 577) ".. the interest rate ..[and] the profit rate .. are the same thing in absence of uncertainty". See also Dorfman (1972, p. 244) and Keirstead (1959, pp. 58-60).

(14) Note that for believers, there is also the motive of earning rewards on the Day of Judgment for philanthropic investments, as in *waqf*, no matter how far in the future their benefits extend.

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(15) On stability of interest free banking see: M.S. Khan (1986), Mirakhor and Zaidi (1991), and al-Suwailem (2006, pp. 96-100). On distributional equity and other advantages see: Chapra (1985), Siddiqi (2004, pp. 91-114), and IAIE (2008).

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تخصيص الاستثمار في اقتصادٍ إسلاميٍ معدل الفائدة فيه صفر

محمد أنس الزرقا

مستشار - شورى شريعة للاستشارات - الكويت

المستخلص. تجيب هذه الورقة بإيجاز عن أسئلة أساسية حول الكيفية التي يتم بها تخصيص الاستثمارات الحقيقية والمالية في اقتصادٍ إسلاميٍ معدل الفائدة فيه صفر، من خلال السوق، بين مختلف المستثمرين والمجالات. ومن تلك الأسئلة: ما معنى تحريم الفائدة، وما نطاق تطبيقه؟ وأيضا: ألا يفقد ذلك الاقتصاد الذي يجعل الفائدة صفرا، مؤشرا سعريا مهما لتخصيص الاستثمار الحقيقي والمالي بكفاءة بواسطة نشاط الأسواق؟ ثم ألا يحتاج ذلك الاقتصاد حينئذ إلى استخدام التخطيط المركزي للمحافظة على كفاءة الاستثمارات؟ والنتيجة العامة التي انتهى إليها هي أن تحريم الفائدة على القروض والديون يوازنه احترام الملكية الخاصة والأسواق الحرة، والمؤشرات السعرية الناتجة عن المبادلات الرضائية بين الوحدات الاقتصادية، فضلا عن إباحة التمويل (الائتمان) التابع للبيوع وإباحة التأجير. إنه نظام قابل للتطبيق، يسمح بتخصيص ذي كفاءة، من خلال السوق، للموارد الاستثمارية المالية والحقيقية على السواء.

الكلمات المفتاحية: معدل الفائدة، تخصيص الاستثمارات، خصم الاستثمارات المستقبلية.