IIUM Journal of Economics and Management 14, no. 2 (2006): 117-145

FISCAL POLICY IN AN ISLAMIC ECONOMY AND THE ROLE OF *ZAK•T*

Mohammed B. Yusoff

Professor, Department of Economics, Kulliyyah of Economics and Management Sciences, International Islamic University Malaysia, P. O. Box 10, 50728 Kuala Lumpur, Malaysia (email: mohammed.yusoff@iiu.edu.my).

ABSTRACT

This study incorporates *zakŒt* into a simple macroeconomic model of an Islamic economy and analyzes the role of *zakŒt* in the national income determination. The reduced form aggregate consumption function suggests that the determinants of consumption are: *ZakŒt* expenditure, taxes, income and asset holdings of individuals. *ZakŒt* could be used as a counter-cyclical policy through discretionary and non-discretionary fiscal policy. Discretionary fiscal policy is carried out by varying the disbursement of *zakŒt* to the recipients. During the expansion phase of the business cycle, the government reduces *zakŒt* expenditure to close the inflationary gap. This action helps increase the *zakŒt* surplus, in the *Baitul-MŒl*. Likewise *zakŒt* expenditure could be increased by using the *zakŒt* surplus accumulated during the boom periods, when the economy is in the down-swing to spur aggregate spending and economic activities. Therefore, *zakŒt* could complement taxation and government spending as tools of stablization policy.

JEL classification: E20, E62, H30

Key words: Fiscal policy, Islamic economy, *ZakŒt*

1. INTRODUCTION

An Islamic economy is one that has established an Islamic economic system based on the *Qur'Œn* and *Sunnah*. The Islamic economic

system recognizes the importance of ownership of resources, motivation, and the decision making process. Islam allows private and public ownership, but in the final analysis everything belongs to Allœh. The wealth must be *úalœl*, devoid of *ribœ'*, and when the wealth is above the *ni§œb*, the owners must pay *zakœt*. The basic motivation of an individual Muslim is to be successful in this world and hereafter. Islam recognizes the importance of profits as an objective of a Muslim entrepreneur to give him an incentive to work hard and be successful. Thus, a Muslim producer faces a constrained profit maximization not only by the resource constraints but also by Islamic laws and Islamic ethical values.

In the case of privately owned resources, the decision making process is based on market forces or the price system, Islamic laws and Islamic values. Prices will guide the decisions of the firms and consumers with regard to the allocation of resources. Higher prices for certain goods and services indicate that the *ummah* wants more of the resources allocated for the production of those goods and services. In the case of public ownership, the decision can also be based on market forces but the major goal of public ownership is public welfare. The role of the Islamic state is to set rules and regulations and to establish institutions to govern the state in accordance to the *Shar¥ªah* and to safe-guard law and order, while the economic objectives of an Islamic state include: to achieve high economic growth with full employment, price stability, a just distribution of income and wealth and sustainable development.

The main aim of this study is to build a simple macroeconomic model which incorporates *zakœt* to analyze the impact of *zakœt* on the determination of equilibrium income and see how *zakœt* plays its role in the demand management policy of the state to improve the economic performance of an Islamic economy. The paper begins with a discussion on *zakœt* and its role in an Islamic economy. The third section explains briefly about the concepts of national income accounting, followed by a detailed analysis on national income determination, the multipliers and stabilization policy. The final section summarizes the findings of the study.

2. *ZAK•T*

Although Islam recognizes the importance of the market or price system as a means of allocating of resources, the market, by its nature is man-made and will therefore result in favor of the privileged, the haves, while disfavoring the have-nots. The more skillful and highly educated group will receive higher wages and salaries; people who own properties receive high rental incomes; while those who have less education, less skills receive less income; those with no education, no skills receive much reduced income, and those who cannot participate in the market system will receive no income. The market system results in a certain degree of inequality in the distribution of income and wealth. Toward this end, Islam has made the *zakŒt* system a mechanism of wealth distribution in an Islamic state. *ZakŒt*, including *§adaqah*, are considered as a social safety net for an Islamic state.

In Islam all resources belong to Allah and the wealth is held by human beings only in trust. The third pillar of Islam is *zakŒt*, which is an obligatory religious due, payable on various categories of assets either physical or financial assets, notably savings and financial investments, produce, inventory of goods, saleable crops and cattle, and precious metals. *ZakŒt* transfers some of the income and wealth from the haves to the have-nots as the *zakŒt* collection is disbursed to the various categories of people as specified by Islamic laws. The word *zakŒt* is mentioned more than thirty times in the *Qur'Œn*, usually along with *§alŒt*. Muslims are also encouraged to contribute the voluntary charity called *§adaqah*. A generous person can pay more than the amount of *zakŒt*, although the excess is treated and rewarded as voluntary charity, *§adaqah*, which can be utilized to bridge the gap between the rich and the poor, and can also be used for financing useful projects for the betterment of the community.

The giving of *zakŒt* is an act of sharing of wealth between the contributors with others who are less fortunate. The word *zakŒt* means purification and growth as our assets are purified when a portion of it is set aside for those who are in need. In other words, *zakŒt* purifies the assets of the contributor and his heart from selfishness and greed. At the same time, it also purifies the heart of the recipient from envy and jealousy, hatred and uneasiness; therefore *zakŒt* fosters goodwill,

brotherhood and warm wishes between the contributor and the recipients. As a Muslim pays *zakŒt* he takes it as an investment to get rewards in hereafter and also to reduce the economic imbalance and social injustice in society. This trust must be discharged, as instructed by Allah, since a portion of our wealth legally belongs to other people and this portion must rightly be given out to them:

> Of their wealth, take alms so you may purify and sanctify them; and pray on their behalf. Verily thy prayers are a source of security for them; and Allah is one who hears and knows. (*al-Qur'Œn*, 9:103)

ZakŒt has a deep humanitarian and socio-political value; for example, it frees society from ill feelings and distrust and from corruption. Islam encourages private enterprise and recognizes property rights, but it does not tolerate selfishness and greed. Islam encourages moderation and always guides individuals to take a positive and effective path between individual and society, between the citizen and the state, and between materialism and spiritualism.

According to Zarqa (1992), three of the major goals of the distributive justice in Islam are: guarantee of fulfillment of basic needs for all, reduction of inequalities in income and wealth, and purification of the donors inner self and their wealth. The basic issues of Islamic distributive justice of income and wealth among the individuals in the economy can be achieved through the *zakŒt* system. In particular, the concept of personal distribution of income is important because it indicates how total income is apportioned among the individual households in the economy. The patterns of personal income distribution affects the composition and amount of good and services produced. The more unequal the distribution of income, the greater the demand for luxury goods, and the producers allocate more resources toward the production of more of luxury goods in response to the market forces and as a result, the production of basic goods and services may be neglected.

The personal distribution of income will also indicate the apportionment of national output into consumption goods and investment

goods. An economy which has relatively larger size of investment goods in relation to consumption goods will attain higher economic growth over time. As saving is that part of output that is not consumed, saving can be increased only at the expense of current level of consumption. Through saving, more resources are available to raise the level of production of investment goods to produce more consumption goods in the future. Thus, higher saving rates will promote higher investment and economic growth, which in turn increase the *zakŒt* collection and also reduces the number of eligible *zakŒt* recipients.

2.1 DISTRIBUTION OF *ZAK•T*

> Alms are for the poor and the needy, and those employed to administer the funds; for those whose hearts have been (recently) reconciled (to the truth); for those who are in bondage and in debt; in the cause of AllŒh; and for the wayfarer; (thus it is) ordained by AllŒh, and AllŒh is full of knowledge and wisdom. (*al-Qur'Œn*, 9:60)

Thus, *zakŒt* is distributed among the 8 categories of people, namely: the poor, one who has neither material assets nor means of livelihood; the needy, one with insufficient means of livelihood to meet basic needs; the *zakŒt* administrator, one who is appointed to collect and administer *zakŒt*. In order to accomplish a more efficient implementation of this Pillar of *Islam*, it will be necessary to appoint people in the community to administer the collecting and spending of *zakŒt* funds. The *zakŒt* administrators must take an accurate account of all transactions and they are to be paid fair wages from the *zakŒt* fund itself, according to the services provided, as AllŒh has ordered in the *Qur'Œn*. They should also offer assistance to help individuals do their *zakŒt* accounting correctly. Other recipients include the one who has converted to Islam; one who wants to free himself from bondage or the shackles of slavery; an individual who is in debt when he/she borrows money to buy basic needs, spending in the path of AllŒh, i.e., striving for the cause of AllŒh; and finally one who is stranded in a journey. A detailed discussion on *zakŒt* in Malaysia is found in Hassan (1987).

2.2 GOVERNMENT SPENDING, TAXES AND *ZAKŒT*

For analytical purposes, an economy can be classified into three major sectors: the household, business, and the government sectors. The household sector supplies the factors of production to the business and government sectors, receive income in return and then spends on goods and services. It is the major sector in terms of spending. Business firms employ labor and other factors of production to produce goods and services while the government sector collects *zakŒt* and taxes from the household and business sectors and also allocates the budget for various government expenditures. Muslim economists argue that if an Islamic State has insufficient financial resources, the State could establish a just tax system to collect taxes, Faridi (1983)[1] and Kahf (1998).[2] A just tax system should not burden the tax payers and therefore taxation should be based on the ability to pay principal.[3] In the context of Islam, the tax system has to follow the principles of the *zakŒt* system. Specifically, a tax must be imposed on the rich in accordance to their income level, direct taxation is preferred to indirect taxation, and tax exemption should always be provided. Therefore the major tax base should be the personal income tax and the corporate income tax, Kahf (1998).

Although *zakŒt* payment is a religious obligation, practically the payment of *zakŒt* by individuals, in some Muslim countries, are individual choices in the sense that there has been no concerted effort by the authorities to enforce the payment of *zakŒt.* Furthermore, the collection of *zakŒt* is rather unorganized. The governments may have their agencies to collect *zakŒt* but as far as an individual Muslim is concerned, he can still fulfill his *zakŒt* obligation by paying his *zakŒt* due direct to the target groups; they consider this act as more rewarding and this point is very difficult to challenge. The *zakŒt* collection is disbursed to the special people who are clearly stated in the *Qur'Œn* and this act is a divine requirement and therefore *zakŒt* is a special form of transfer payments.

The tax collection is used by the government to purchase goods and services such as military equipment, build highways, schools, universities, hospitals, and pay salaries to the government servants. The government may also make disbursement to transfer the tax collection to the populace in the form of welfare payments to the less fortunate. Government purchases are exhaustive in the sense that they

directly absorb or employ resources to produce goods and services. Transfer payments are, on the other hand, non-exhaustive as they do not employ resources and therefore do not directly contribute to the production of current output.

Government purchases and transfer payments have different impacts on the allocation of resources. Government spending results in reallocation of resources for the production of more public goods, while the government transfers will change the composition of private goods and services. Roughly speaking, if the government taxes RM500, then the tax payers' expenditure would decrease by about the same amount. When the government uses this RM500 to purchase public goods, the government on behalf of the public is, in fact, substituting public goods for private goods.

Transfer payments, on the other hand, are quite different in the sense that they rearrange private consumption. The RM500, if left to the tax or *zakŒt* payers, might lead to the purchase of more luxurious goods or services; but the RM500 given to the recipients of transfer payments will end up purchasing more basic necessities such as food, clothing and low cost housing and hence, alters the production of private goods toward the essential goods sector, that are probably mostly produced by the small and medium scale enterprises. Thus, the transfer payments could promote the growth of small and medium scale industries and generate more employment opportunities for the poorer groups.

3. NATIONAL INCOME ACCOUNTING

In order to assist our understanding on the process of the determination of national income, in this section, we briefly discuss the concepts of national income accounts which are constructed in such a way that the aggregate economic variables are useful for economic analysis. The most often used measure of aggregate economic activity is the gross domestic product (GDP), which is the market value of final *úalŒl* goods and services produced within an Islamic State during a specific period of time.[4] The national income is measured in two ways: the product approach and the income approach. We shall explain both approaches as the concepts are utilized in the analysis of *zakŒt* in relation to national income determination. To simplify the analysis, we assume that the indirect taxes and depreciation are zero. These assumptions are important

to ensure that the GDP is equal to the national income which will become more obvious later.

It is further assumed that the amount of *zakŒt* disbursed to the recipients may be less or equal to the *zakŒt* fund depending on the economic situation. During the expansion phase of the business cycle, the *zakŒt* collection may be more than the *zakŒt* disbursement as more people are employed and there would be less eligible *zakŒt* recipients, and therefore we would have *zakŒt* surplus. During the recessionary phase, we would expect a fall in *zakŒt* collection and a rise in *zakŒt* disbursement as more people are eligible to receive *zakŒt.* This leads to *zakŒt* deficit and this deficit should be covered by the *zakŒt* surplus accumulated from previous years. However, *zakŒt* disbursement should be at most equal to the *zakŒt* fund available. In this case, we have a balanced *zakŒt*, i.e., although the government can discretely change the amount of *zakŒt* to be disbursed, the total disbursement of *zakŒt* by the *zakŒt* authority in a particular year, should be at most, equal to the *zakŒt* fund available. *ZakŒt* deficit should be discouraged in Islam as it reflects extravagance, but *zakŒt* surplus is encouraged as it reflects thriftiness:[5]

> Those who, when they spend, are not extravagant and not niggardly, but hold a just (balance) between those (extremes). (*al-Qur'Œn*, 25:67)

The above verse clearly indicates that Islam encourages moderation in spending. There are differing views among Muslim economists as to whether *zakŒt* could be used as a fiscal instrument for stabilization policy. Faridi (1983) advocates *zakŒt* to be a fiscal policy tool. He argues that *zakŒt* collection and its disbursement may act as a stabilizing tool on an Islamic economy through the built-in stabilizer and as a discretionary stabilizer through *zakŒt* disbursement. Ahmed, Iqbal and Khan (1983) point out that there are a group of economists who are in favor of using *zakŒt* as a countercyclical policy as it is not obligatory to disburse all the *zakŒt* collection within a specific period, implying that some *zakŒt* proceeds could be withheld during an inflationary period, and then used during the recessionary period to improve the economic performance. However, they argue that there are also others who argue otherwise.

3.1 THE PRODUCT APPROACH

The product approach measures the flows of currently produced *ūalāl* goods and services in an economy. This method measures national income by summing up the expenditures on the currently produced *ūalāl* goods and services by the consumers, businesses, government, and foreigners as shown by this identity:

$$(1) \qquad GDP = Y = C_1 + C_Z + I + G + X - M$$

where Y is the total production or output produced in the economy, $C = C_1 + C_Z$, is the personal consumption expenditure, I is the gross private domestic investment, G is the government spending, while X and M are the exports and imports of goods and services respectively. Since depreciation is assumed to be zero, then in this case, I is the net investment; hence *GDP* is equal to net domestic product.

The personal consumption expenditure ($C = C_1 + C_Z$) is the consumption by the domestic households on final goods and services. C_1 is the consumption of individuals who pay *zakāt* and C_Z is the consumption of *zakāt* recipients. The consumption expenditures include expenditures on consumer durable goods, nondurable goods, and services. Consumer durables are consumer goods such as computers, cars, televisions, and refrigerators. The nondurable goods and services are goods such as food, clothing, fuel, and services including education, health care, transportation, restaurants, banking, and tourism services.

Gross private domestic investment (I) is the spending on new capital goods which is called business fixed investment and also the changes in the firm's inventory holdings called business inventory. Investment or investment spending are business transactions that result in capital accumulation which will increase in productive capacity, and thus potential output of the economy. These transactions include the purchase and installation of new machinery and equipment, the construction and purchase of new commercial buildings and housing, and a change in business inventories. Thus, the business fixed investment includes expenditures by the business firms on structures such as factories, warehouses and the producers' durable equipment such as machines, vehicles, and computers. All the residential structures are considered

as investment. For rental housing, the rents are entered as consumer expenditure on services. For owner-occupied housing, the rental has to be imputed and entered as consumer expenditure on services, while on the income side, an imputed net rental income is added. The change in business inventories is the change in the stock of inventories from the beginning to the end of an accounting period.

Government purchases of goods and services (G) are expenditures of the federal government on national defense and internal security; emolument, government investment, public consumption expenditures and also the expenditures by the state and local governments.

An Islamic state will also be involved in international trade in goods and services. These include the purchases of domestic goods and services by foreigners called exports, and the domestic residents' purchases of goods and services produced by foreign countries called imports. The net exports ($X - M$) is included in GDP. In this analysis, we assume the economy is not open to international trade and therefore the term ($X - M$) is excluded.

3.2 THE INCOME APPROACH

The second approach is the income approach which measures the income received by the factors of production. The income received is classified into three: wages and salaries, income from assets (wealth), and profits.

Wages and salaries, denoted as Y_w, are the returns to the services of labor for its contribution in the production of úalŒl goods and services. Labor is the work time and work effort the people devote to producing goods and services. Labor includes the physical and mental talents of people working in the agricultural, manufacturing, and services sectors. The quality of labor depends on human capital which is the knowledge and skills that the people have acquired through education, on-the job training, and work experience.

Income from assets, Y_A, consists of rental income received by the owners of land and other real properties, and payments made for the use of money capital by Islamic financial institutions to the depositors

whose deposits are extended as loans to business firms or individuals who want to make investments.

Profits (Y_π) are the rewards to the factor of production called management or entrepreneurial ability for their innovation and risk taking, that is the ability of the managers to allocate and mix the resources in an optimal manner in their effort to produce goods and services for the betterment of the *ummah*. In practice, these profits are compensation paid to the owners of sole proprietorships and corporate firms.

Combining all the three sources of income, we obtain the national income as:

$$Y = Y_W + Y_A + Y_\pi \tag{2}$$

The gross domestic product is obtained by adding the indirect taxes and depreciation, that is:

$$GDP = Y_W + Y_A + Y_\pi + TIND + \delta \tag{3}$$

where *TIND* is the indirect taxes and δ is the depreciation. To simplify our analysis we shall assume that both indirect taxes and depreciation are zero. These assumptions do not affect the general conclusions of the study.

3.3 DISPOSITION OF NATIONAL INCOME

We can also breakdown GDP according to how the national income is used as follows

$$Y = C_1 + S + Z + T \tag{4}$$

Thus, the national income Y is used for consumption, C_1, by the households who pay *zakāt*, saving by the households and saving by the businesses in the form of undistributed profits, S; Z is *zakāt* payments and T is the net tax payments after deducting the domestic transfer payments and subsidies.[6]

4. THE AGGREGATE OUTPUT-EXPENDITURE ANALYSIS

In recent years there have been numerous studies focusing on Islamic banking and finance sector. Although it has been recognized that *zakŒt* can be an instrument of fiscal policy for an Islamic state, there is little literature on macroeconomic models in an Islamic framework which incorporate *zakŒt* as one of the fiscal policy instruments to analyze the efficacy of fiscal policy to stabilize economic performance.

Metwally (1983) finds that *zakŒt* expenditure has the ability to increase the aggregate consumption since the marginal propensity to consume of the *zakŒt* payers is lower than that of *zakŒt* recipients. This implies that the *zakŒt* expenditure has a role in national income determination; the higher the *zakŒt* expenditures the higher the increase in the equilibrium output.

Zangeneh (1995) formulates a neoclassical macroeconomics model for an interest free economic system. He finds that even though the rules of conduct for Muslims in an Islamic economic system are different from those in the non-Islamic economic systems, the model shows that saving and investment do not necessarily fall in an Islamic economic system, as some economists suggest. The model indicates that, in general, an Islamic economic system is viable and the model also provides unique solutions for income, employment, and prices.

Tahir (1989) develops and introduces *zakŒt* in an Islamic macroeconomic model focusing on the determination of aggregate output associated with the degree of inequalities in an Islamic economy. He finds that the aggregate output depends on autonomous expenditures, income distribution, and *zakŒt* flows.

Our paper analyzes the impact of *zakŒt* on the determination of national income. We divide the population into two groups: those who pay *zakŒt* and those who receive *zakŒt* as transfer payments which is similar to the approaches taken by Muslim economists, such as Ausaf Ahmad (1987) and Sayyid Tahir (1989). We formulate equations for consumption, *zakŒt*, and taxes and then derive the reduced form consumption equation and the *zakŒt* multipliers from which we infer the impact of *zakŒt* on national income determination and its efficacy as an instrument for stabilization policy.

4.1 AGGREGATE CONSUMPTION

The desired consumption of the group of individuals who pays *zakŒt*, C_1, is:

$$(5) \qquad C_1 = C_{01} + c_1(Y - Z - T), \qquad 0 < c_1 < 1$$

where c_1 is the marginal propensity to consume (MPC_1), C_{01} is the autonomous consumption, Y is the national income, and T is taxes. Thus, $(Y - Z - T)$ is the disposable income after deducting *zakŒt* and tax payments. We would expect c_1 to be relatively low.

The desired consumption of the group who receives *zakŒt*, C_Z, is:

$$(6) \qquad C_Z = C_{0z} + c_z Z_E, \qquad 0 < c_Z < 1$$

where c_z is the marginal propensity to consume of *zakŒt* recipients (MPC_z). The intercept term, C_{0z}, is the autonomous consumption where this group of individuals have to consume even when they do not receive any *zakŒt* as they may be receiving charitable contributions from the rich in the form of *§adaqah*. Z_E is the amount of *zakŒt* disbursed by the government. To simplify our analysis further, we assume that the *zakŒt* recipients do not have income and assets and therefore they are totally dependent on the *zakŒt* fund allocated to them.[7]

If the *zakŒt* recipients spend all the *zakŒt* received for consumption purposes, then $c_z = 1$ and therefore equation (6) becomes:

$$(6b) \qquad C_Z = C_{0z} + Z_E$$

giving the consumption function of the *zakŒt* recipients as a horizontal line. This *zakŒt* identity holds:

$$(6c) \qquad Z_E = C_z + S_z$$

where C_z and S_z are the consumption and saving of *zakĒt* recipients respectively. Taking total differential of (6c) and dividing both sides by dZ_E, we have:

$$1 = dC_z / dZ_E + dS_z / dZ_E$$
$$= MPC_z + MPS_z$$

where MPC_z is the marginal propensity to consume of the *zakĒt* recipients and MPS_z is their marginal propensity to save. If $MPS_z = 0$ then $MPC_z = 1$. But there are a number of *zakĒt* recipients who may choose to save a portion of the *zakĒt* they receive; an example of these individuals are the *zakĒt* administrators. And therefore the marginal propensity to consume of *zakĒt* recipients as a group is less than one but should be relatively higher than the marginal propensity to consume of the *zakĒt* payers.

The aggregate consumption, *C*, is:

(7) $$C = C_1 + C_z$$
$$= C_{01} + c_1(Y - Z - T) + C_{0z} + c_z Z_E$$

If $c_z = 1$ then

(7b) $$C = C_{01} + c_1(Y - Z - T) + C_{0z} + Z_E$$

We shall use consumption equation (7) in the subsequent analysis.

4.2 *ZAKŌT* COLLECTION

In this analysis *zakĒt* is payable on individual income, wealth (assets) and profits of business firms.

ZakĒt from wages and salaries: The *zakĒt* collection from individuals' wages and salaries, Z_w, is

(8) $$Z_w = z_w(Y_w - C_{0w} - C_{0n})$$

where C_{0n} is the *nisab* which is fixed and it is the minimum amount of consumption that an individual must have in an Islamic state. C_{0w} is the exemption given to the *zakŒt* payers to cover the basic needs, while z_w is the *zakŒt* rate which is also fixed. Kahf (1997) suggests that these basic needs include food, shelter, clothing, medicine (health-care), furniture, tools of craftsman, transportation, and books for students or scholars. Thus, the term $(Y_w - C_{0w} - C_{0n})$ is the *zakŒt*able income. To a certain extent, the state can vary the *zakŒt* collection by changing the exemption level, C_{0w}, when the need arises. For example when the cost of living is high due to inflation or during recession the State may decide to increase the exemption level. Y_w is the income from wages and salaries. For further discussion of *zakŒt* from wages and salaries or income, refer to Kahf (1989).

*ZakŒt from assets (wealth): ZakŒt*able wealth or assets consist of savings in financial institutions, properties, equities, Islamic bonds, gold, and silver. A more detailed discussion on *zakŒt*able items is given in Kahf (1989). Wealth is a stock variable and therefore its value is measured at a point in time. To simplify our argument, let us assume an individual owning an asset (wealth) *A*. The value of the asset at the beginning of the year is A_0 and this value grows at a rate of r_A. Therefore the value of the asset at the end of that year is:

$$A_1 = A_0(1 + r_A)$$

where r_A is the rate of return from the asset and $r_A A_0$ is the income generated by the asset after a year has elapsed. Let the *zakŒt* rate be z_A. If $r_A \geq z_A$ then the asset has generated at least sufficient income to pay *zakŒt*. If $r_A < z_A$ then conceptually the asset's owner has to liquidate some of the asset to pay *zakŒt*. This implies that in order to avoid the wealth from eroding, as a result of *zakŒt* payments, individuals who own *zakŒt*able assets should obtain a return of at least z_A per annum from their wealth, implying that wealth in an Islamic society should not be left idle.

ZakŒt collection from the assets from all individuals, Z_A, is:

$$Z_A = z_A(A_1 - C_{0A} - C_{0n}) \tag{9}$$

Substituting $A_1 = A_0 (1 + r_A)$ and letting $Y_A = r_A A_0$, equation (9) can be written as:

$$Z_A = z_A A_0 + z_A Y_A - z_A (C_{0A} + C_{0n}) \tag{10}$$

where C_{0A} is the exemption given to the individuals who earn income from the buying and selling of assets. Notice that the term $z_A A_0$ is written separately as it does not contribute toward the production of currently produced goods and services and therefore, is excluded from GDP, whereas the income generated by the assets, Y_A, is included in GDP.

Zakt from profits: Zakt collection on profits of all firms, Z_π, is:

$$Z_\pi = z_\pi (\pi - C_{0\pi} - C_{0n}) \tag{11}$$

where π is the profits before taxes, $C_{0\pi}$ is the exemption and C_{0n} is the nisab level. The exemptions given to firms ($C_{0\pi}$) include their expenditures on R&D, training and re-training, and trade exhibition overseas.

4.3 TOTAL *ZAK•T* COLLECTION

The total *zakt* collection, *Z*, is the sum of the *zakt* collected from wages and salaries, income from assets, and business profits written as:

$$Z = Z_w + Z_A + Z_\pi$$

Substituting for Z_w, Z_A, and Z_π, we have:

$$\begin{aligned} Z = {} & z_w (Y_w - C_{0w} - C_{0n}) + z_A (Y_A - C_{0A} - C_{0n}) \\ & + z_\pi (Y_\pi - C_{0\pi} - C_{0n}) + z_A A_0 \end{aligned} \tag{12}$$

For simplicity let the *zakāt* rates be equal, then equation (12) reduces to:

$$(13) \qquad Z = z(Y - C_{0E} - C_{0N}) + zA_0$$

where $Y = Y_w + Y_p + Y_A$; $C_{0E} = C_{0w} + C_{0A} + C_{0\pi}$; and $C_{0N} = C_{0n} + C_{0n} + C_{0n}$.

4.4 TAX COLLECTION

The government collects taxes from wages and salaries of private individuals, income from property owners and profits of firms. The net tax collection from wages and salaries, T_w, is written as:

$$(14) \qquad T_w = T_{w0} + t_w[Y_w - Z_w]$$

Net tax collection from profits, T_π, is:

$$(15) \qquad T_\pi = T_{\pi 0} + t_\pi[Y_\pi - Z_\pi]$$

Net tax collection from asset income, T_A, is:

$$(16) \qquad T_A = T_{A0} + t_\pi(Y_A - Z_A)$$

where T_{w0}, $T_{\pi 0}$, and T_{A0} are the lump-sum taxes which are taxes that do not depend on income; t_π, t_A, and t_w are the tax rates imposed on income, profits, and income from assets, respectively. The total net tax collection, T, is the sum of the net taxes collected from wages and salaries, income from assets, and profits after deducting the domestic transfer payments and subsidies which is written as:

$$T = T_w + T_\pi + T_A$$

Substituting for T_w, T_π *and* T_A, we have

$$(17) \qquad T = T_0 + t_w[Y_w - Z_w] + t_A[Y_A - Z_A] + t_\pi[Y_\pi - Z_\pi]$$

where $T_0 = T_{w0} + T_{\pi 0} + T_{A0}$. The terms in the brackets are the taxable income which are the income after *zakat* from wages and salaries, asset income, and profits respectively.

Substituting equation (17) for Z_w, Z_A, and Z_π, we obtain:

$$(17b) \quad T = T_0 + t_w[Y_w - z_w(Y_w - C_{0w} - C_{0n})] + t_A[Y_A - z_A (Y_A - C_{0A} - C_{0n})] - t_A zA_0 + t_\pi[Y_\pi - z_\pi(Y_\pi - C_{0\pi} - C_{0n})]$$

Assume now that the tax rates on income, profits and assets income are equal to $t_w = t_A = t_\pi = t$ and that the *Zakat* rates are also equal to $z_w = z_A = z_\pi = z$. Recall that the total national income, Y, is the sum of total wages and salaries, income from assets, and profits, that is $Y = Y_w + Y_\pi + Y_A$. Thus (17b) can be simplified to:

$$(18) \quad T = T_0 + tY - tzY + tzC_{0N} + tzC_{0E} - tzA_0$$

Substituting the tax equation (18) into the consumption equation (7) we obtain:

$$(19) \quad C = C_{01} + C_{0z} + c_1 Y - c_1 Z - c_1 T_0 - c_1 tzC_{0E} - c_1 tzC_{0N} - c_1 tY + c_1 ztY + c_z Z_E + c_1 tzA_0$$

Substituting $Z = z(Y - C_{0E} - C_{0N})$ into (19), we obtain the aggregate consumption function in reduced form as:

$$(20) \quad C = C_{01} + C_{0z} + (c_1 - c_1 z - c_1 t + c_1 xt)Y + (c_1 z - c_1 tz)C_{0E} + (c_1 z - c_1 tz)C_{0N} - c_1 T_0 + c_z Z_E + c_1 tzA_0$$

Equation (20) suggests that the aggregate consumption function in an Islamic economy depends on income, the exemption levels, taxes, *Zakat* expenditure, and asset holdings of individuals.

Taking total differential of (20), we have:

$$(20a) \quad dC = dC_{01} + dC_{0z} + (c_1 - c_1 z - c_1 t + c_1 zt)dY + (c_1 z - c_1 tz) dC_{0E} + (c_1 z - c_1 tz)dC_{0N} - c_1 dT_0 + c_z dZ_E + c_1 tzdA_0$$

Equation (20a) shows the change in consumption as a result of the changes of all of its determinants. The impacts of each of the determinants on consumption are as follows:

$$\partial C / \partial Y = [c_1 - (c_1 z + c_1 t) + c_1 zt] > 0$$

Since $0 < c_1 < 1$, $0 < z < 1$, and $0 < t < 1$, the term $(c_1 t + c_1 z)$ is expected to be smaller than c_1. Thus an increase in income will increase consumption.

$$\partial C / \partial C_{0E} = (C_1 z - c_1 tz) > 0$$

Since $0 < c_1 < 1$, $0 < z < 1$, $0 < t < 1$, therefore $c_1 z > c_1 tz$. An increase in the exemption level will increase consumption. Similarly, we obtain the impact of taxes, *zakŒt* expenditure, and wealth on consumption as follows:

$$\partial C / \partial T_0 = -c_1 < 0$$
$$\partial C / \partial Z_E = c_z > 0$$
$$\partial C / \partial A_{A0} = c_1 tz > 0$$

The above analysis indicates that taxes have negative effect on consumption, an increase in taxes will reduce consumption expenditure. Both *zakŒt* expenditure and asset holdings have positive impact on consumption, i.e., an increase in *zakŒt* expenditure and asset holdings by households will encourage consumption spending. The effects of taxes and *zakŒt* expenditure on consumption are quite straight forward but in the case of asset holdings, they are not as direct. First, an increase in asset holdings by the *zakŒt* payers implies that they will feel wealthier and therefore they will spend more at every level of income because they can always liquidate these assets when they face liquidity problems or borrow more money using the assets as collateral. Furthermore, as the asset holdings increase, the *zakŒt* payers have to pay more *zakŒt*, affording the *zakŒt* authority to increase its *zakŒt* disbursement which will then increase consumption spending by the *zakŒt* recipients.

5. THE *ZAK•T*, TAXES, INVESTMENT AND GOVERNMENT SPENDING MULTIPLIERS

For simplicity and without loss of generality, we assume a closed economy. Therefore the national income identity is written as

$$Y = C + I + G \tag{21}$$

where $G=G_0$ is government spending from taxes, and $I=I_0$ is gross private investment, all are assumed to be exogenous. Equation (21) says that the equilibrium income is determined when the aggregate supply, *Y*, equals aggregate demand, $C+I+G$. The *zakŒt*, taxes, investment, and government spending multipliers is derived by substituting aggregate private consumption (20) into the national income identity (21) to obtain

$$C_{0E} + (c_1 z - c_1 tz)C_{0N} - c_1 T_0 + c_z Z_E + c_1 tzA_0 + I_0 + G_0$$

Rearranging and simplifying, we have the reduced form

$$Y = [1/(1 - c_1 + c_1 t - c_1 tz + c_1 z)][C_{01} + C_{0z} + (c_1 z - c_1 tz)C_{0E} + (c_1 z - c_1 tz)C_{0N} - c_1 T_0 + c_z Z_E + c_1 tzA_0 + I_0 + G_0 \tag{22}$$

The total differential of (22) is

$$dY = [1/(1 - c_1 + c_1 t - c_1 tz + c_1 z)][dC_{01} + dC_{0z} + (c_1 z - c_1 tz) dC_{0E} + (c_1 z - c_1 tz)dC_{0N} - c_1 dT_0 + c_z dZ_E + c_1 tzdA_0 + dI_0 + dG_0 \tag{23}$$

Equation (23) shows the effects of the changes in each of the exogenous variables on the endogenous variable, *Y*. Since C_{0N} is fixed therefore $dC_{0N} = 0$. The multipliers for C_{01} , C_{0z} , T_0, I_0, G_0 and Z_E are obtained by taking partial derivatives of (23) with respect to each of the variables.

The multiplier for the autonomous consumption for the *zakāt* payers is:

$$(23b) \qquad \partial Y / \partial C_{01} = [1/(1 - c_1 + c_1 t + c_1 z - c_1 tz)] > 0$$

The multiplier for the autonomous consumption for the *zakāt* recipients is:

$$(23c) \qquad \partial Y / \partial C_{0z} = [1/(1 - c_1 + c_1 t + c_1 z - c_1 tz)] > 0$$

implying that an increase in the autonomous consumption from the *zakāt* payers and *zakāt* recipients will increase national income and economic activities.

The multipliers for the exemption levels of wage earners, asset owners, and firms are the same given respectively as follows:

$$(24) \qquad \partial Y / \partial C_{0E} = [1/(1 - c_1 + c_1 t + c_1 z - c_1 tz)][c_1 z - c_1 tz] > 0$$

All these multipliers are positive and therefore economic activities could be increased by raising the exemption levels. During recession, the government may want to increase the exemption levels to encourage private spending whereas during the boom period the government may want to reduce the exemption levels to discourage spending by the household and the business sectors.

The tax multiplier is:

$$(25) \qquad \partial Y / \partial T_0 = [-c_1 /(1 - c_1 + c_1 t + c_1 z - c_1 tz)] > 0$$

indicating that a reduction in taxes will increase national income and vice-versa.

The autonomous investment multiplier is:

$$(26) \qquad \partial Y / \partial I_0 = [1/(1 - c_1 + c_1 t + c_1 z - c_1 tz)] > 0$$

implying that national income can be increased through increasing domestic private investment.

The multiplier for government spending, G_0, is:

$$(27) \qquad \partial Y / \partial G_0 = [1/(1 - c_1 + c_1 t + c_1 z - c_1 tz)] > 0$$

meaning that economic activities could also be increased by raising government spending.

The multiplier for assets, A_0, is:

$$(27b) \qquad \partial Y / \partial A_0 = [1/(1 - c_1 + c_1 t + c_1 z - c_1 tz)] > 0$$

suggesting that an increase in asset holdings will increase income. This occurs, firstly through the fact that assets themselves generate income as discussed earlier. Secondly, an increase in asset holdings will increase the individual capacity to borrow money for consumption purposes which generate more economic activities and income.

Our particular interest is the multiplier for *zakĒt*, Z_E, which is obtained as:

$$(28) \qquad \partial Y / \partial Z_E = [c_z /(1 - c_1 + c_1 t + c_1 z - c_1 tz)] > 0$$

The *zakĒt* multiplier depends on the marginal propensity to consume of *zakĒt* recipients, c_z. Since c_z>0, therefore the *zakĒt* multiplier is positive, implying that an increase in *zakĒt* expenditure will increase economic activities, wages, and employment. The *zakĒt* expenditure, Z_E, is at the disposal of the government or the *zakĒt* authority.

In a special case where c_z = 1, the *zakĒt* multiplier is:

$$(29) \qquad \partial Y / \partial Z_E = [1/(1 - c_1 + c_1 t + c_1 z - c_1 tz)] > 0$$

showing that, in this special case, the *zakĒt* multiplier is the same as the other multipliers of other exogenous variables in the model, such as *I*, *G*, and C_{0E}, but its impact on income is higher than the case where $c_z < 1$.

6. THE CASE OF BALANCED *ZAK•T*

In the following section we shall analyze the case where *zakāt* collection is equal to *zakāt* disbursement, that is when $Z_E = Z$, here termed as a balanced *zakāt*.

6.1 AGGREGATE CONSUMPTION

Recall equation (19) which is the aggregate consumption function when *zakāt* collection is not equal to *zakāt* disbursement given as:

$$(19) \quad C = C_{01} + C_{0z} + c_1 Y - c_1 Z - c_1 T_0 - c_1 tzC_{0E} - c_1 tzC_{0N} - c_1 tY + c_1 ztY + c_z Z_E + c_1 tzA_0$$

If all the *zakāt* fund is spent then $Z = Z_E$, we have:

$$C = C_{01} + C_{0z} + c_1 Y - c_1 Z_E - c_1 T_0 - c_1 tzC_{0E} - c_1 tzC_{0N} - c_1 tY + c_1 ztY + c_z Z_E + c_1 tzA_0$$

Simplifying, we obtain:

$$(19b) \quad C = C_{01} + C_{0z} + (c_1 - c_1 t - c_1 zt)Y + (c_z - c_1)Z_E - c_1 T_0 - c_1 tzC_{oE} - c_1 tzC_{0N} + c_1 tzA_0$$

6.2 MULTIPLIERS FOR *ZAK•T*, TAXES, AND GOVERNMENT SPENDING

Substituting for *C* of (19b) in national income identity (21) and taking the total differential, we obtain:

$$(30) \quad dY = [1/1 - c_1 + c_1 t - c_1 tz)][dC_{01} + c_1 tzdC_{0E} + dC_{0z} - c_1 dT_0 + (c_z - c_1)dZ_E + dI_0 + dG_0]$$

The multiplier for the autonomous consumption for the *zakat* payers is:

$$(31) \qquad \partial Y / \partial C_{01} = [1/(1 - c_1 + c_1 t - c_1 tz)] > 0$$

The multiplier for the autonomous consumption for the *zakat* recipients is:

$$(32) \qquad \partial Y / \partial C_{0z} = [1/(1 - c_1 + c_1 t + c_1 tz)] > 0$$

The multipliers of exemption levels for wage earners, asset owners, and firms are the same, given respectively as follows:

$$(33) \qquad \partial Y / \partial C_{0E} = [1/(1 - c_1 + c_1 t - c_1 tz)][c_1 tz] > 0$$

The tax multiplier is:

$$(34) \qquad \partial Y / \partial T_0 = [-c_1 /(1 - c_1 + c_1 t - c_1 tz)] < 0$$

The investment multiplier is:

$$(35) \qquad \partial Y / \partial I_0 = [1/(1 - c_1 + c_1 t + c_1 tz)] > 0$$

The multiplier for government spending, $G_{0,}$ is

$$(36) \qquad \partial Y / \partial G_0 = [1/(1 - c_1 + c_1 t - c_1 tz)] > 0$$

The balanced *zakat* multiplier is given as:

$$(37) \qquad \partial Y / \partial Z_E = [(c_z - c_1)/(1 - c_1 + c_1 t - c_1 tz)] > 0$$

The balanced *zakat* multiplier is more sophisticated where its magnitude depends on the values of c_z and c_1. If $c_z > c_1$ then $(c_z - c_1) > 0$, therefore the *zakat* multiplier is positive, implying that an increase in *zakat* collection and the subsequent disbursement and spending by the recipients will increase economic activities, wages,

and employment. It is very clear from the above equation that the effect of an increase in *zakat* depends crucially on the differential between the marginal propensity to consume by the *zakat* payers, c_1, and the *zakat* recipients, c_z; the higher the value of c_z and the lower the value of c_1 the higher the value of multiplier and therefore the more effective is the effect of *zakat* on economic activities. Notice that the balanced *zakat* multiplier is smaller than the endogenous *zakat* multiplier. It is also smaller than the investment and government spending multipliers.

In the special case where $c_z = 1$, the *zakat* multiplier is:

$$(38) \qquad \partial Y / \partial Z_E = [(1 - c_1)/(1 - c_1 + c_1 t - c_1 tz)] > 0$$

Since $0 < c_1 < 1$, the *zakat* multiplier for this special case is positive; an increase in *zakat* spending will be unambiguously raising the economic activities. The multiplier is larger than the case of $c_z < 1$.

7. FISCAL POLICY AND *ZAK•T* AS STABILIZATION POLICY

In the analysis of the previous sections, we have discussed the relationship of *zakat*, government spending and taxes with national income or economic activities. In this section we shall explain the discretionary and non-discretionary (automatic) aspects of fiscal policy and see how the policy helps improve the performance of the economy. The findings from this study support the general conclusions of the previous studies in that *zakat* could play an important role in the determination of equilibrium national income and employment.

Discretionary fiscal policy, as argued by Faridi (1983), means the government will make the decision to change or not to change *zakat* expenditure, taxes, and government spending. During the expansion phase of the business cycle, the economy may face inflationary pressures due to the increase in aggregate demand, especially when the economy is approaching the full-employment level. The inflationary gap can be reduced by decreasing government spending and disbursement of *zakat*; decreasing exemption levels and increasing

taxes. Likewise, the economy may be facing high levels of unemployment during the contractionary phase of the business cycle, caused by insufficient aggregate demand. The government could reduce this recessionary gap by increasing government spending, disbursement of *zakŒt*, the exemption levels and decreasing taxes. This discretionary fiscal policy will help to dampen the macroeconomic fluctuations. The government may also increase the expected rate of profits by giving tax credit to the business sector to spur private investment and increase economic activities when the economy is experiencing a down-turn.

The non-discretionary fiscal stabilizing process occurs automatically during the phases of a business cycle. The *zakŒt* and tax collections increase during the phase of economic expansion and fall during an economic down-turn. This point is also clearly pointed out by Faridi (1976). During the expansionary phase of the business cycle, the unemployment rate falls, wages and salaries increase, rental income and profits increase, therefore raising the *zakŒt* and tax collections. As more *zakŒt* and taxes are collected by the government, the household and business sectors will have less funds to spend; this reduces the aggregate demand which will then dampen the extent of the expansionary phase preventing the economy from overheating. Furthermore, the number of eligible *zakŒt* recipients falls during the boom period. All these will help increase the *zakŒt* surplus in the *Baitul-MŒl* and the government also may experience budget surplus when its total revenues are more than its expenditures. The reverse is true when the economy is experiencing a down-swing. The *zakŒt* and tax collections fall, and therefore the household and business sectors will have more money to spend; this increases the aggregate demand which help to dampen the extent of the economic down-turn.

8. CONCLUSION

This study incorporates *zakŒt* into a simple macroeconomic model of an Islamic economy to analyze the impact of *zakŒt* on the determination of equilibrium income and how *zakŒt* plays its role in the demand management policy. We then derived the aggregate consumption function in reduced form and found that the determinants of consumption are *zakŒt* expenditure, taxes, income, and asset holdings of individuals.

Since the *zakāt* rate is fixed, we cannot change the *zakāt* rate to dampen macroeconomic fluctuations. The role of *zakāt* in the demand management policy is through the non-discretionary (built-in stabilizer) and discretionary policy tools. The built-in stabilizer mechanism occurs when *zakāt* collection is automatically reduced during recession, giving more money to people to spend which tends to stimulate the economy; during the boom period, more *zakāt* is collected, reducing the ability of the people to spend which tends to dampen economic activities. These reduce macroeconomic fluctuations.

In the case of discretionary fiscal policy, the government varies the disbursement of *zakāt* to the recipients and the exemption levels to the *zakāt* payers whenever necessary during the phases of the business cycle. During the expansion phase of a business cycle the government may want to decrease *zakāt* disbursement and exemption levels to reduce aggregate spending of *zakāt* payers and thus prevent the economy from overheating. This action coupled with the fall in the number of eligible *zakāt* recipients will help increase the *zakāt* surplus in the *Baitul-Māl*. Likewise *zakāt* disbursement and exemption levels could be increased when the economy is in the downswing to spur aggregate spending and economic activities. Since the number of eligible *zakāt* recipients increases during recession, the government could disburse more *zakāt* by using the *zakāt* surplus accumulated from the boom periods. The *ʿulamāʾ* have unanimously agreed that an Islamic state may impose taxes when its revenues are insufficient to cover its spending implying that taxation and government spending are compatible with Islam. Therefore, *zakāt*, government spending, and taxation complement each other as stabilization policy tools.

ENDNOTES

1. He argues that Islamic fiscal theory does not preclude the use of modern techniques of raising revenue per se.

2. Kahf has noted that in a contemporary context, many Muslim scholars consider taxation as indispensable in many Muslim countries except those countries with huge natural resources and small populations.

3. The ability to pay principal of taxation states that taxes should be paid by citizens who can most afford them regardless of any benefit they receive. It is based on the premise that taxes only reduce the consumption of luxuries by the rich but taxes on the lower income groups reduce their consumption of basic necessities.

4. In our discussion, goods and services always refer to *úalŒl* goods and *úalŒl* services.

5. Malaysia, for example, has been practicing a *zakŒt* surplus policy.

6. Notice that *S*, *Z* and *T* on the left hand side of the equation are leakages.

7. This assumption does not affect the general conclusions of the study that is the prediction of the direction of causation by exogenous variables on endogenous variables. Adding income and assets of *zakŒt* recipients to the model will only change the size of the multipliers.

REFERENCES

Ahmad, Ausaf. *Income Determination in an Islamic Economy.* Jeddah: International Centre for Research in Islamic Economics, King Abdul Aziz University, 1987.

Ahmed, Ziauddin, Munawar Iqbal, and M. Fahim Khan. "Introduction." In *Fiscal Policy and Resource Allocation in Islam*, edited by Ziauddin Ahmed and Munawar Iqbal. Jeddah: International Centre for Research in Islamic Economics, King Abdul Aziz University, 1983.

Ali, A. Yusuff. *The Holy Qur'an: Text, Translation, and Commentary.* Brentwood, Maryland: Amana Corp., 1983.

Ali, Sultan Abu. "Islamic Economic System." In *Lectures in Islamic Economics*, edited by Ausaf Ahmad, and Kazim Raza Awan. Jeddah: Islamic Research and Training Institute, Islamic Development Bank, 1992.

Faridi, F. R. "*ZakŒt* and Fiscal Policy." In *Studies in Islamic Economics*, edited by Kurshid Ahmad. Jeddah: International Centre for Research in Islamic Economics, King Abdul Aziz University, 1976.

Faridi, F. R. "A Theory of Fiscal Policy in an Islamic State." In *Fiscal Policy and Resource Allocation in Islam*, edited by Ziauddin Ahmed, and Munawar Iqbal. Jeddah: International Centre for Research in Islamic Economics, King Abdul Aziz University, 1983.

Hassan, Nik Mustapha. "*Zakāt* in Malaysia: Present and Future Status." In *Development & Finance in Islam*, edited by Abul Hassan Sadeq, Ataul Huq Pramanik, and Nik Mustapha Hassan. Kuala Lumpur: International Islamic University Press, 1987.

Kahf, Monzer. "*Zakāt*: Unresolved Issues in Contemporary *Fiqh*." *IIUM Journal of Economics and Management* 2, no. 1 (1989): 1-22.

Kahf, Monzer. "Introduction to the Study of *Zakāh*." In *Economics of Zakāh: A Book of Readings*, edited by Monzer Kahf. Jeddah: Islamic Development Bank & Islamic Research & Training Institute, 1997.

Metwally, M. M. "Fiscal Policy in Islamic Economy." In *Fiscal Policy and Resource Allocation in Islam*, edited by Ziauddin Ahmed, and Munawar Iqbal. Jeddah: International Centre for Research in Islamic Economics, King Abdul Aziz University, 1983.

Siddiqi, Muhammad Nejatullah. "Muslim Economic Thinking: A Survey of Contemporary Literature." In *Studies in Islamic Economics*, edited by Khurshid Ahmad. Jeddah: Islamic Centre for Research in Islamic Economics, King Abdul Aziz University, 1980.

Tahir, Sayyid. "Towards a Theory of Aggregate Output, Income, and Economic Inequalities Determination in an Islamic Economy." *IIUM Journal of Economics and Management* 2, no. 2 (1989): 95-108.

Zakāt Collection Centre (Pusat Pungutan *Zakāt*). *Zakāt Report 2001*. Federal Territory, Kuala Lumpur, Malaysia.

Zangeneh, Hamid. "Macroeconomic Model of an Interest Free System." *The Pakistan Development Review* 34, no.1 (1995): 55-68.

Zarqa, Muhammad Anaz. "Distributive Justice in Islam." In *Lectures on Islamic Economics*, edited by Ausaf Ahmad, and Kazim Raza Awan. Jeddah: Islamic Research and Training Institute, Islamic Development Bank, 1992.