ABSTRACT

This study incorporates zakāt into a simple macroeconomic model of an Islamic economy and analyzes the role of zakāt in the national income determination. The reduced form aggregate consumption function suggests that the determinants of consumption are: Zakāt expenditure, taxes, income and asset holdings of individuals. Zakāt 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 zakāt to the recipients. During the expansion phase of the business cycle, the government reduces zakāt expenditure to close the inflationary gap. This action helps increase the zakāt surplus, in the Baitul-Mal. Likewise zakāt expenditure could be increased by using the zakāt surplus accumulated during the boom periods, when the economy is in the down-swing to spur aggregate spending and economic activities. Therefore, zakāt could complement taxation and government spending as tools of stabilization policy.

JEL classification: E20, E62, H30

Key words: Fiscal policy, Islamic economy, Zakāt

1. INTRODUCTION

An Islamic economy is one that has established an Islamic economic system based on the Qurʾān 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 nî§Œ, 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 ŠharŒyah 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 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 ZAK system a mechanism of wealth distribution in an Islamic state. ZAK, 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 ZAK, 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. ZAK transfers some of the income and wealth from the haves to the have-nots as the ZAK collection is disbursed to the various categories of people as specified by Islamic laws. The word ZAK is mentioned more than thirty times in the Qur’AN, usually along with §al. Muslims are also encouraged to contribute the voluntary charity called §adaqah. A generous person can pay more than the amount of ZAK, 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 ZAK is an act of sharing of wealth between the contributors with others who are less fortunate. The word ZAK 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, ZAK 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 ZAK fosters goodwill,
brotherhood and warm wishes between the contributor and the recipients. As a Muslim pays zakāt 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'ān, 9:103)

Zakāt 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 zakāt 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 zakāt collection and also reduces the number of eligible zakāt recipients.

2.1 DISTRIBUTION OF ZAKĀT

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 Allāh; and for the wayfarer; (thus it is) ordained by Allāh, and Allāh is full of knowledge and wisdom. (*al-Qur’ān*, 9:60)

Thus, zakāt 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 zakāt administrator, one who is appointed to collect and administer zakāt. 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 zakāt funds. The zakāt administrators must take an accurate account of all transactions and they are to be paid fair wages from the zakāt fund itself, according to the services provided, as Allāh has ordered in the Qur’ān. They should also offer assistance to help individuals do their zakāt 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 Allāh, i.e., striving for the cause of Allāh, and finally one who is stranded in a journey. A detailed discussion on zakāt in Malaysia is found in Hassan (1987).
2.2 GOVERNMENT SPENDING, TAXES AND ZAK\•T

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 zak\•t 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) and Kahf (1998). A just tax system should not burden the tax payers and therefore taxation should be based on the ability to pay principal. In the context of Islam, the tax system has to follow the principles of the zak\•t 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 zak\•t payment is a religious obligation, practically the payment of zak\•t 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 zak\•t. Furthermore, the collection of zak\•t is rather unorganized. The governments may have their agencies to collect zak\•t but as far as an individual Muslim is concerned, he can still fulfill his zak\•t obligation by paying his zak\•t due direct to the target groups; they consider this act as more rewarding and this point is very difficult to challenge. The zak\•t collection is disbursed to the special people who are clearly stated in the Qur\•n and this act is a divine requirement and therefore zak\•t 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 taxpayers’ 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 zakat 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 goods and services produced within an Islamic State during a specific period of time. 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 zakat 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 zakāt disbursed to the recipients may be less or equal to the zakāt fund depending on the economic situation. During the expansion phase of the business cycle, the zakāt collection may be more than the zakāt disbursement as more people are employed and there would be less eligible zakāt recipients, and therefore we would have zakāt surplus. During the recessionary phase, we would expect a fall in zakāt collection and a rise in zakāt disbursement as more people are eligible to receive zakāt. This leads to zakāt deficit and this deficit should be covered by the zakāt surplus accumulated from previous years. However, zakāt disbursement should be at most equal to the zakāt fund available. In this case, we have a balanced zakāt, i.e., although the government can discretely change the amount of zakāt to be disbursed, the total disbursement of zakāt by the zakāt authority in a particular year, should be at most, equal to the zakāt fund available. Zakāt deficit should be discouraged in Islam as it reflects extravagance, but zakāt 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’ān, 25:67)

The above verse clearly indicates that Islam encourages moderation in spending. There are differing views among Muslim economists as to whether zakāt could be used as a fiscal instrument for stabilization policy. Faridi (1983) advocates zakāt to be a fiscal policy tool. He argues that zakāt 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 zakāt disbursement. Ahmed, Iqbal and Khan (1983) point out that there are a group of economists who are in favor of using zakāt as a countercyclical policy as it is not obligatory to disburse all the zakāt collection within a specific period, implying that some zakāt 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 goods and services in an economy. This method measures national income by summing up the expenditures on the currently produced goods and services by the consumers, businesses, government, and foreigners as shown by this identity:

\[ GDP = Y = C_1 + C_Z + I + G + X - M \]

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 zakat and \( C_Z \) is the consumption of zakat 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 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 \((Y_x)\) 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:

\[
(2) \quad Y = Y_w + Y_d + Y_x
\]

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

\[
(3) \quad GDP = Y_w + Y_d + Y_x + TIND + \delta
\]

where \(TIND\) is the indirect taxes and \(\delta\) 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

\[
(4) \quad Y = C_1 + S + Z + T
\]

Thus, the national income \(Y\) is used for consumption, \(C_1\), by the households who pay Zakat, saving by the households and saving by the businesses in the form of undistributed profits, \(S\); \(Z\) is Zakat 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 zakāt can be an instrument of fiscal policy for an Islamic state, there is little literature on macroeconomic models in an Islamic framework which incorporate zakāt as one of the fiscal policy instruments to analyze the efficacy of fiscal policy to stabilize economic performance.

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

Our paper analyzes the impact of zakāt on the determination of national income. We divide the population into two groups: those who pay zakāt and those who receive zakāt 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, zakāt, and taxes and then derive the reduced form consumption equation and the zakāt multipliers from which we infer the impact of zakāt 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 zakāt, $C_i$, is:

\[(5) \quad C_i = C_{0i} + c_i(Y - Z - T), \quad 0 < c_i < 1\]

where $c_i$ is the marginal propensity to consume (MPC$_i$), $C_{0i}$ is the autonomous consumption, $Y$ is the national income, and $T$ is taxes. Thus, $(Y - Z - T)$ is the disposable income after deducting zakāt and tax payments. We would expect $c_i$ to be relatively low.

The desired consumption of the group who receives zakāt, $C_Z$, is:

\[(6) \quad C_Z = C_{0z} + c_z Z_e, \quad 0 < c_z < 1\]

where $c_z$ is the marginal propensity to consume of zakāt 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 zakāt as they may be receiving charitable contributions from the rich in the form of ḥadāqah. $Z_e$ is the amount of zakāt disbursed by the government. To simplify our analysis further, we assume that the zakāt recipients do not have income and assets and therefore they are totally dependent on the zakāt fund allocated to them.$^7$

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

\[(6b) \quad C_Z = C_{0z} + Z_e\]

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

\[(6c) \quad Z_e = C_z + S_z\]
where \( C_z \) and \( S_z \) are the consumption and saving of zakat recipients respectively. Taking total differential of (6c) and dividing both sides by \( dZ_E \), we have:

\[
1 = \frac{dC_z}{dZ_E} + \frac{dS_z}{dZ_E} = MPC_z + MPS_z
\]

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

The aggregate consumption, \( C \), is:

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

If \( c_z = 1 \) then

\[
C = C_{01} + c_1 (Y - Z - T) + C_{0z} + Z_E
\]

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

4.2 ZAK • COLLECTION

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

Zakat from wages and salaries: The zakat collection from individuals’ wages and salaries, \( Z_w \), is

\[
Z_w = z_w (Y_w - C_{0w} - C_{0w})
\]
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 zakat payers to cover the basic needs, while $z_w$ is the zakat 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 zakatable income. To a certain extent, the state can vary the zakat 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 zakat from wages and salaries or income, refer to Kahf (1989).

**Zakat from assets (wealth):** Zakatable wealth or assets consist of savings in financial institutions, properties, equities, Islamic bonds, gold, and silver. A more detailed discussion on zakatable 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 zakat rate be $z_A$. If $r_A \geq z_A$, then the asset has generated at least sufficient income to pay zakat. If $r_A < z_A$, then conceptually the asset’s owner has to liquidate some of the asset to pay zakat. This implies that in order to avoid the wealth from eroding, as a result of zakat payments, individuals who own zakatable 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.

Zakat collection from the assets from all individuals, $Z_A$, is:

$$Z_A = z_A (A_1 - C_{0A} - C_{0a})$$
Substituting $A_1 = A_0 (1 + r_A)$ and letting $Y_A = r_A A_0$, equation (9) can be written as:

\[
(10) \quad Z_A = z_A A_0 + z_A Y_A - z_A (C_{0A} + C_{0n})
\]

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.

**Zakat from profits:** Zakat collection on profits of all firms, $Z_{\pi}$, is:

\[
(11) \quad Z_{\pi} = z_{\pi} (\pi - C_{0\pi} - C_{0n})
\]

where $\pi$ 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 ZAKAT COLLECTION

The total zakat collection, $Z$, is the sum of the zakat 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 $Z_{\pi}$, we have:

\[
(12) \quad Z = z_w (Y_w - C_{0w} - C_{0x}) + z_A (Y_A - C_{0A} - C_{0n}) + z_{\pi} (Y_{\pi} - C_{0\pi} - C_{0n}) + z_A A_0
\]
For simplicity let the zakat rates be equal, then equation (12) reduces to:

\[(13) \quad Z = z(Y - C_{0E} - C_{0N}) + zA_0\]

where \(Y = Y_w + Y_p + Y_A; \quad C_{0E} = C_{0w} + C_{0A} + C_{0\pi}; \quad\) and \(C_{0N} = C_{0n} + C_{0w} + C_{0n}^*\).

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:

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

Net tax collection from profits, \(T_\pi\), is:

\[(15) \quad T_\pi = T_{\pi0} + t_\pi [Y_\pi - Z_\pi]\]

Net tax collection from asset income, \(T_A\), is:

\[(16) \quad T_A = T_{A0} + t_A (Y_A - Z_A)\]

where \(T_{w0}, T_{\pi0}\), and \(T_{A0}\) are the lump-sum taxes which are taxes that do not depend on income; \(t_\pi, \ t_A\), 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 \(T_w, \ T_\pi \ and \ T_A\) we have

\[(17) \quad T = T_0 + t_w [Y_w - Z_w] + t_A [Y_A - Z_A] + t_\pi [Y_\pi - Z_\pi]\]
where $T_0 = T_w + T_\pi + T_A$. 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 $Z_\pi$, we obtain:

\[(17b) \quad T = T_0 + t_w [Y_w - z_w (Y_w - C_{0w} - C_{0w})] + t_A [Y_A - z_A (Y_A - C_{0A} - C_{0A})] + t_\pi [Y_\pi - z_\pi (Y_\pi - C_{0\pi} - C_{0\pi})] + t_\pi A_0 \]

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:

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

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

\[(19) \quad C = C_{01} + C_{02} + c_1Y - c_1Z - c_1T_0 - c_1tzC_{0E} - c_1tzC_{0N} + c_1tY + c_1ztY + c_1zE + c_1tzA_0 \]

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

\[(20) \quad C = C_{01} + C_{02} + (c_1 - c_1z - c_1t + c_1zt)Y + (c_1z - c_1tz)C_{0E} + (c_1z - c_1tz)C_{0N} - c_1T_0 + c_1Z_{0E} + c_1tzA_0 \]

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:

\[(20a) \quad dC = dC_{01} + dC_{02} + (c_1 - c_1z - c_1t + c_1zt) dY + (c_1z - c_1tz) dC_{0E} + (c_1z - c_1tz) dC_{0N} - c_1 dT_0 + c_1 dZ_{0E} + c_1 dZ_{0N} + c_1tz dA_0 \]
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:

\[
\frac{\partial C}{\partial Y} = [c_i - (c_i z + c_i t) + c_i z t] > 0
\]

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

\[
\frac{\partial C}{\partial C_{ ze}} = (C_i z - c_i t z) > 0
\]

Since \(0 < c_i < 1\), \(0 < z < 1\), \(0 < t < 1\), therefore \(c_i z > c_i t z\). An increase in the exemption level will increase consumption. Similarly, we obtain the impact of taxes, zakat expenditure, and wealth on consumption as follows:

\[
\frac{\partial C}{\partial T_0} = -c_i < 0
\]
\[
\frac{\partial C}{\partial Z_e} = c_z > 0
\]
\[
\frac{\partial C}{\partial A_{mz}} = c_i t z > 0
\]

The above analysis indicates that taxes have negative effect on consumption, an increase in taxes will reduce consumption expenditure. Both zakat expenditure and asset holdings have positive impact on consumption, i.e., an increase in zakat expenditure and asset holdings by households will encourage consumption spending. The effects of taxes and zakat 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 zakat 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 zakat payers have to pay more zakat, affording the zakat authority to increase its zakat disbursement which will then increase consumption spending by the zakat 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

\[ Y = C + I + G \]

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

\[ C_{0E} + (c_1z - c_1tz)C_{0N} - c_1T_0 + c_2Z_E + c_1tzA_0 + I_0 + G_0 \]

Rearranging and simplifying, we have the reduced form

\[ Y = \frac{1}{1 - c_1 + c_1t - c_1tz + c_1z} \left[ C_{01} + C_{02} + (c_1z - c_1tz)C_{0E} + (c_1z - c_1tz)C_{0N} - c_1T_0 + c_2Z_E + c_1tzA_0 + I_0 + G_0 \right] \]

The total differential of (22) is

\[ dY = \frac{1}{1 - c_1 + c_1t - c_1tz + c_1z} \left[ dC_{01} + dC_{02} + (c_1z - c_1tz)dC_{0E} + (c_1z - c_1tz)dC_{0N} - c_1dT_0 + c_2dZ_E + c_1tzdA_0 + dI_0 + dG_0 \right] \]

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 \( C_{01} \), \( C_{0E} \), \( T_0 \), \( I_0 \), \( G_0 \) 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:

\[(23b) \quad \frac{\partial Y}{\partial C_{oz}} = \frac{1}{1 - c_i + c_i t + c_i z - c_i t z} > 0\]

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

\[(23c) \quad \frac{\partial Y}{\partial C_{oz}} = \frac{1}{1 - c_i + c_i t + c_i z - c_i t z} > 0\]

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:

\[(24) \quad \frac{\partial Y}{\partial C_{oE}} = \frac{1}{1 - c_i + c_i t + c_i z - c_i t z} [c_i z - c_i t z] > 0\]

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:

\[(25) \quad \frac{\partial Y}{\partial T} = \frac{-c_i}{1 - c_i + c_i t + c_i z - c_i t z} > 0\]

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

The autonomous investment multiplier is:

\[(26) \quad \frac{\partial Y}{\partial I_o} = \frac{1}{1 - c_i + c_i t + c_i z - c_i t z} > 0\]

implying that national income can be increased through increasing domestic private investment.
The multiplier for government spending, $G_0$, is:

\[ \frac{\partial Y}{\partial G_0} = \left[ \frac{1}{1 - c_i + c_i t + c_i z - c_i tz} \right] > 0 \]

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

The multiplier for assets, $A_0$, is:

\[ \frac{\partial Y}{\partial A_0} = \left[ \frac{1}{1 - c_i + c_i t + c_i z - c_i tz} \right] > 0 \]

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 zakat, $Z_E$, which is obtained as:

\[ \frac{\partial Y}{\partial Z_E} = \left[ c_z (1 - c_i + c_i t + c_i z - c_i tz) \right] > 0 \]

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

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

\[ \frac{\partial Y}{\partial Z_E} = \left[ 1/(1 - c_i + c_i t + c_i z - c_i tz) \right] > 0 \]

showing that, in this special case, the zakat 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 •Ṭ

In the following section we shall analyze the case where zakat collection is equal to zakat disbursement, that is when \( Z_E = Z \), here termed as a balanced zakat.

6.1 AGGREGATE CONSUMPTION

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

\[
C = C_{o1} + C_{o2} + c_{i}Y - c_{i}Z - c_{i}T_{o} - c_{i}tzC_{oE} - c_{i}tzC_{oN} - c_{i}tY + c_{i}ztY + c_{i}Z_{E} + c_{i}tzA_{o}
\]

If all the zakat fund is spent then \( Z = Z_{E} \), we have:

\[
C = C_{o1} + C_{o2} + c_{i}Y - c_{i}Z_{E} - c_{i}T_{o} - c_{i}tzC_{oE} - c_{i}tzC_{oN} - c_{i}tY + c_{i}ztY + c_{i}Z_{E} + c_{i}tzA_{o}
\]

Simplifying, we obtain:

\[
C = C_{o1} + C_{o2} + (c_{i} - c_{i}t - c_{i}zt)Y + (c_{z} - c_{i})Z_{E} - c_{i}T_{o} - c_{i}tzC_{oE} - c_{i}tzC_{oN} + c_{i}tzA_{o}
\]

6.2 MULTIPLIERS FOR ZAK •Ṭ, TAXES, AND GOVERNMENT SPENDING

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

\[
dY = [1/1 - c_{i} + c_{i}t - c_{i}tz)j]dC_{o1} + c_{i}tzdC_{oE} + dC_{o2} - c_{i}dT_{o} + (c_{z} - c_{i})dZ_{E} + dI_{o} + dG_{o}
\]
The multiplier for the autonomous consumption for the zakāt payers is:

\[
\frac{\partial Y}{\partial C_{o1}} = \left[ \frac{1}{(1 - c_1 + c_i t - c_i tz)} \right] > 0
\]

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

\[
\frac{\partial Y}{\partial C_{o2}} = \left[ \frac{1}{(1 - c_1 + c_i t + c_i tz)} \right] > 0
\]

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

\[
\frac{\partial Y}{\partial C_{oE}} = \left[ \frac{1}{(1 - c_1 + c_i t - c_i tz)} \right] [c_i tz] > 0
\]

The tax multiplier is:

\[
\frac{\partial Y}{\partial T_o} = \left[ -c_i \left( \frac{1}{1 - c_1 + c_i t - c_i tz} \right) \right] < 0
\]

The investment multiplier is:

\[
\frac{\partial Y}{\partial I_o} = \left[ \frac{1}{1 - c_i + c_i t + c_i tz} \right] > 0
\]

The multiplier for government spending, \( G_o \) is

\[
\frac{\partial Y}{\partial G_o} = \left[ \frac{1}{1 - c_i + c_i t - c_i tz} \right] > 0
\]

The balanced zakāt multiplier is given as:

\[
\frac{\partial Y}{\partial Z_k} = \left[ \frac{c_i - c_i}{1 - c_i + c_i t - c_i tz} \right] > 0
\]

The balanced zakāt multiplier is more sophisticated where its magnitude depends on the values of \( c_z \) and \( c_i \). If \( c_z > c_i \) then \( c_z - c_i > 0 \), therefore the zakāt multiplier is positive, implying that an increase in zakāt 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:

\[
(38) \quad \frac{\partial Y}{\partial Z_e} = \left[ (1 - c_1) / (1 - c_1 + c_t - c_z) \right] > 0
\]

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 ZAKAT 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 zakāt, 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 zakāt 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 zakāt and tax collections. As more zakāt 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 zakāt recipients falls during the boom period. All these will help increase the zakāt surplus in the Baitul-Mal 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 zakāt 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 zakāt into a simple macroeconomic model of an Islamic economy to analyze the impact of zakāt on the determination of equilibrium income and how zakāt 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 zakāt expenditure, taxes, income, and asset holdings of individuals.
Since the zakat rate is fixed, we cannot change the zakat rate to dampen macroeconomic fluctuations. The role of zakat in the demand management policy is through the non-discretionary (built-in stabilizer) and discretionary policy tools. The built-in stabilizer mechanism occurs when zakat collection is automatically reduced during recession, giving more money to people to spend which tends to stimulate the economy; during the boom period, more zakat 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 zakat to the recipients and the exemption levels to the zakat payers whenever necessary during the phases of the business cycle. During the expansion phase of a business cycle the government may want to decrease zakat disbursement and exemption levels to reduce aggregate spending of zakat payers and thus prevent the economy from overheating. This action coupled with the fall in the number of eligible zakat recipients will help increase the zakat surplus in the Baitul-Mal. Likewise zakat 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 zakat recipients increases during recession, the government could disburse more zakat by using the zakat surplus accumulated from the boom periods. The ulam 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, zakat, 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 úáľŒ goods and úáľŒ 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


