

Zakat Expenditure, School Enrollment, and Economic Growth in Malaysia

Mohammed B. Yusoff

International Islamic University Malaysia

P.O Box 10, 50728 Kuala Lumpur, Malaysia

E-mail: mohammed.yusoff@iiu.edu.my, Phone: 603-6196 4637

Abstract

The main objective of this study is to determine the impact of zakat spending and school enrollment on economic growth using panel data represented by the fourteen states of Malaysia. Zakat is collected and disbursed to the eight groups of eligible recipients by each state in Malaysia. Malaysia also has been one of the developing countries that has given a special attention on education to provide the man-power and skills needed by the various sectors of the economy. As a result, there has been a large increase in the enrollment of students in both primary and secondary schools as well as in tertiary education. The results of this study support the hypothesis that zakat spending and school enrollment are important determinants of economic growth in Malaysia. The zakat spending and student enrollment could significantly explain the variation in the growth of real output represented by the growth in real GDP. Therefore, it is suggested that all Muslim countries must improve the efficiency of zakat collection and spend it prudently. A more serious effort has to be made to formulate better strategies, planning, and effective policy actions to provide the needed infrastructure and to increase the stock of human capital in accordance to the need of the nations to generate growth and sustain the development of Muslim society.

Keywords: zakat, school enrollment, growth, panel data, Malaysi

1. Introduction

Many developing nations, including all the Muslim countries since none of them has achieved a developed nation status, have been pushing and formulating development strategies to achieve sustainable economic development and improve their standard of living. One of the challenging tasks is how to plan an effective education strategy to establish and provide human capital according to the need of the nation. In pursuit of an economic transformation toward a developed nation status, a country has to go through the process of industrialization. In this regard, the Muslim developing nations should focus on education in the primary, secondary, and tertiary education in science and technology to improve their capacity in research and development such that they could introduce new innovations and appropriate technologies needed in the process of industrialization of their economies.

Education and training is one of the most important social investment as it will bring benefits to a country in the long run. The roles of education and training are: to produce knowledgeable, trained, and skilled workforce; to mould a disciplined, diligent, and motivated individual; to provide individuals who are innovative and knowledgeable in technology, management, and related skills, especially to the industrial sector. Malaysia introduced a comprehensive national education policy in the Education Act 1961. Among the objectives of national education policy are as follows: to provide individuals greater access to education; to make Bahasa Malaysia as the main medium of instruction; to establish a common curriculum; to provide the teaching of the students' own languages; to emphasize on vocational and technical education; and to provide moral and religious education. To achieve the objectives of the National Education Policy, a number of programs were implemented such as: free education to all children up to upper secondary level; provision of teaching and educational facilities, and trained teachers; and to provide educational aids to assist the poor in the form of text book loans, scholarships, supplementary feeding, health, and dental services.

Malaysia is committed to improve the level of education as it recognizes that education is an important ingredient in development. Malaysia's education system provides free education to students between the ages of 7 to 17 for a total of 11 years of universal education. Admission age to the first year of primary schooling is usually seven and the graduating age for a first bachelor degree is about 22 years old. The primary and secondary school children would also get free textbooks provided by the government. The quality of education, access, and opportunities have improved to all strata of the society to provide manpower requirement to the nation. Recently, human capital formation has received an increased attention from policy makers and scholars interested in promoting economic development in developing countries. Models of endogenous economic growth stress the importance of investment in knowledge, including basic education, as a critical factor in economic growth and therefore education should form a principal component in any development strategy.

During the golden age of Islam, Muslim countries led the world in science, philosophy, culture and prosperity. But as the Muslim empires were defeated, they were invaded, conquered, and colonized by Western world. Although many Muslim countries now have become independent from colonialism and imperialism, they have fallen behind with respect to economic development, job creation, literacy and education, scientific achievement, political freedom as well as human rights. However, this was not always the case in the past as Islamic societies were pioneers in science and economic development. Some argue that the lack of economic progress in Muslim countries is due to the abandonment of Islam as a way of life as they become engrossed with the western ideology of economic development which is based on materialism. Some suggest that Muslims should return to Islamic values under the Islamic economic system. This paper seeks to investigate whether *zakat* expenditure and education have any significant impact on economic activities in a Muslim country, Malaysia. Specifically, we would like to ascertain whether *zakat* spending and education represented by primary and secondary enrollment have contributed to the development of Malaysian economy. The paper begins with an introductory remark about the term development, followed by sections on education and *zakat*. The next section discusses the methodology, model formulation, and estimation techniques, and followed by results and discussion. The final section is the conclusion.

2. Education in Islam

Islam recognizes the importance of education. Knowledge or *'ilm* occupies a significant position in Islam. Islamic scholarship in rational sciences, art, and literature was relatively advanced during the golden age of the Islamic empire, a period between the tenth and thirteenth centuries, while the Western Europe was intellectually backward and stagnant. During this period, the Islamic scientists regarded scientific truths as a means to find religious truth and as a result they made excellent progress and contributions in areas of chemistry, botany, physics, mineralogy, mathematics, and astronomy. In the context of Islam, education is a process that involves the complete person, including the rational, spiritual, and social dimensions. Specifically, education in Islam entails the acquiring of intellectual knowledge through the application of reasoning and logic and developing of spiritual knowledge based on the divine revelation and spiritual experience. From the Islamic world view, an Islamic education must strike a balance between the above-mentioned two aspects, as acquiring knowledge in Islam is a means to elevate moral and spiritual consciousness leading to faith and righteous actions. The major source of knowledge in Islam is the *al-Qur'an*. In fact, the first verse revealed by *Allah* in the *al-Qur'an* is on education:

“Read! In the name of the Lord and the cherisher, Who created - created man, out of a (mere) clot of congealed blood. Read! And the Lord is the most Bountiful, - He who taught (the use of) the pen, taught the man that which he knew not.” *Surah Al-Alaq* :1-7. These verses remind Muslims that we must remember *Allah*, read the *al-Qur'an*, and seek knowledge. It is the responsibility of all Muslims to seek knowledge and discover facts through research and development to improve their standard of living. And indeed those who have knowledge will be exalted by *Allah* to high rank as the *al-Qur'an* says:

“*Allah* will exalt those who believe among you, and those who have knowledge, to high rank. *Allah* is informed of what you do.” *Surah Al-Mujadilah* :11.

The importance of those people who have knowledge is explained further by the Prophet(*pbuh*). He says:

“The learned ones are the heirs of the Prophets – they leave knowledge as their inheritance: he who inherits, inherits a great fortune.” Abu Daud.

This verse and *hadith* are evidences that the *ulama* or teachers are exalted describing them the heirs of the Prophets. It is important to teach knowledge to others as this knowledge is a great fortune because of its potential to create innovations and new technologies to increase production capacity, income, and the standard of living. Indeed the history of Muslim education goes back to the Prophet(*pbuh*) himself who taught his companions the *al-Qur'an* and its meanings as well as the foundation of Islamic jurisprudence. Even before the establishment of the Islamic state of *Medina*, he invited the literate from the prisoners of war captured during the battle of *Badr*, to teach the children of *Medina* to read and write. The mosque in *Medina* became the centre of Muslim education and other activities related religion and social works. The Prophet(*pbuh*) also established a group of learned men to teach and study the *al-Qur'an*. Subsequently, the mosques became the primary centres of educational activities of Muslims. The *da'wah* activities were then further intensified when the Prophet(*pbuh*) sent missions of preachers to various regions of the country and abroad to teach and preach Islam. In fact the Prophet(*pbuh*) himself was an excellent example of an educator and teacher. As a result, education and teaching had inevitably become the most pious act of his followers, his caliphs and rulers.

The rulers regarded the building of mosques and schools in their kingdoms as their divine responsibility. They also opened pious trusts (*awqaf*) as a means to provide a sustained physical and financial assistance to the teachers and scholars. Education is the process of increasing knowledge, the skills, and the capacities of all the people in a society or the accumulation of human capital for economic progress. The stock of human capital could be accumulated in a number of ways. First, it could be accumulated through formal education, beginning with primary education, followed by secondary education, and tertiary education in colleges and universities. Second, human capital is accumulated through on the job-training programs by the employers. A third process is through self-development where an individual takes an initiative to acquire more knowledge, skills, and capacities by reading, and learning by doing. Fourth, is the capital accumulation through the improvements in the health of the working population because of the existence of better medical and public health facilities and services. And fifth is the capital accumulation as result of better nutrition which increases the working efficiency of the workers. The accumulation of human capital may start with formal education and continues on; it is a lifetime process as we have to up-date our knowledge and skills.

3. Zakat

The conventional approaches to poverty reduction tend to focus on public sector activities. But in Muslim countries, there exists the *zakat* system and *saddaqa* as a means to distribute wealth to the poor. These are the approaches to eradicate poverty which provides important social safety nets for the poor, especially in times of significant economic adversities such as during recession. The Islamic economic order has introduced a comprehensive system of *zakat* and *sadaqa*. *Zakat* is an obligatory contribution of a Muslim to be spent on a specified activities as spelt out in the *al-Qur'an*. *Sadaqa*, on the other hand, is a voluntary contributions to be spent in the path of *Allah* for the poor, donations for the charitable causes, and *waqf*. *Saddaqa* is encouraged in Islam and the contributors will be rewarded by *Allah* in the Hereafter. Islam has clearly stated that, in fact, the poor and destitute have their shares in the wealth of the rich. The existence of the system of *zakat* and *sadaqa* is to ensure that wealth will be equitably distributed in the Islamic economy and that the wealth should not be in the hands of a few greedy individuals. Islam guarantees the provision of basic needs: food, clothing, shelter, education, and healthcare to all. It has its own built-in mechanism to promote an equitable income and wealth distribution by eliminating the concentration of wealth in a few hands through the *zakat* and *sadaqa* system, the laws of inheritance and bequest, abolition of interest, prohibition of earning of wealth through *haram* means, and prohibition of hoarding and speculation.

One of the most basic principles of Islam is that everything belongs to *Allah* and human beings are given the trust on behalf of *Allah* to manage His wealth. *Zakat*, as the third pillar of Islam, is an obligatory religious tax imposed on various categories of assets, either physical assets or financial assets, notably on income, saving and financial investments, produce, inventory of goods, salable crops and livestock, and precious metals. The *zakat* collections are to be disbursed to the various categories of people as specified in the *al-Qur'an*. The word *zakat* means purification and growth and our assets are purified when we set aside a portion of the assets to those in need. *Zakat* became mandatory on Muslims from the second year after the *Hijrah*. It is an important part of Islam and therefore Muslims must fulfill this divine obligation, as *Allah* says:

"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." *Surah Al-Taubah*: 103.

Zakat payment is *fard* or compulsory in Islam. It is levied on most valuables and savings held for a full year if their total value is more than a basic minimum level known as *nisab*. At present, the *nisab* is the equivalence of 85 gram of gold. For most purposes *zakat* payment is 2.5% of one's wealth each year, provided that the wealth reaches a certain minimum amount that is not consumed by its owner. The *zakat* on income is paid on the net balance after paying personal expenses, and family expenses. Muslims males or females, who at the end of the year is in possession in excess of the equivalence of 85 grams of gold in cash or articles of trade, must pay *zakat*. The *al-Qur'an* has clearly stated the eight categories of *zakat* recipients: the poor, one who has neither material assets nor means of livelihood; the needy, one with insufficient means of livelihood to meet basic needs; *zakat* administrator, one who is appointed to collect and administer *zakat*; new convert, one who has converted to Islam; slave, one who wants to free himself from bondage or the shackles of slavery; debtor, individual who is in debt when he/she borrows money to buy basic needs consisting of *halal* expenditure; path of *Allah*, one who fights for the cause of *Allah*; and finally, a wayfarer, one who is stranded in a journey.

4. Zakat and Education as the Determinants of Economic Growth

The debate concerning the various determinants of economic growth has attracted considerable attention, especially the argument pertaining to endogenous growth models to explain the long-term economic growth.

It is argued that the production of knowledge by education induces self-sustained growth. In spite of numerous theoretical developments, attempts to empirically verify the hypothesis have given mixed conclusions. New economic growth theory advocates the role of human capital in explaining economic growth. Lucas (1993) argues that the main engine of growth is the accumulation of human capital or knowledge and the main source of differences in living standards among nations is the difference in human capital while the physical capital plays a supplementary role. This new growth theory has refined the neoclassical growth model by allowing increasing returns to scale through endogenous technological progress linked to human capital accumulation. The development of human capital depends on a strong foundation of an education system. Education directly benefits the individual worker and has positive spill-over effects for the society in terms of increased productivity, higher rates of innovation and invention, and adaptation of new technologies. In many countries, including Malaysia, government plays an important role in human capital accumulation by providing funds for formal schooling.

A number of studies have also been done to formalize the relationship between government education spending and growth by building endogenous growth models where public education expenditures directly influence human capital accumulation and consequently affect long-run growth. Vidal & Bruninger (2000) examine the interactions between education policy and growth. They find that an increase in public education spending reduces private costs of education, increases the proportion of skilled individuals, and tends to promote growth. But education spending crowds out physical capital and reduces learning-by-doing. It is also shown that pure public education maximizes the long-run growth rate. Blankenau, Simpson & Tomljanovich (2007) examine the links between public education expenditures and long-run growth. They develop a theoretical model and derive a specific growth equation to be estimated. The results suggest that there exists a positive relationship between public education expenditures and growth for developed countries. Thanasis Stengos & Aurangzeb Aurangzeb (2008) attempt to determine the relationship between education and growth in Pakistan. Education, measured as gross enrollments, is broken down into primary, secondary and tertiary as well as by gender in each of the above categories.

They find that secondary and higher education have strong and robust impact on growth, while at the primary level only female enrollments show a causal relationship although not a robust impact on growth. The literature on *zakat* in general is voluminous. Unfortunately, there have not been many empirical studies on *zakat*, especially its effect on the economic development of *ummah* at macro and micro-levels. We shall briefly review some of the previous empirical works on *zakat* done by a number of researchers and other research papers on education and growth related to the present study. Patmawati (2008) argues that *zakat* distribution has the ability to improve the economic well-being of *ummah* based on the evidences by a number of empirical studies on *zakat*. Specifically, a study by Ismail Salleh & Rugayah Ngah (1980) finds that *zakat* disbursed to the rice farmers in Perak, Kedah, Kelantan, and Trengganu were able to improve the distribution of income. Likewise, Jehle (1994) also concludes that *zakat* has the ability to improve the distribution of income in Pakistan. A more specific study on the impact of *zakat* on distribution of income for two categories of *zakat* recipients, the needy and the poor in a state in Malaysia, Selangor was carried out by Patmawati (2006). She finds that *zakat* has reduced the income inequality and poverty.

Yusoff (2006) analyzes the potential of *zakat* as the major fiscal policy instrument in an Islamic State. *Zakat* plays its role in the macroeconomic stabilization policy through the non-discretionary and discretionary policy. The built-in stabilizer mechanism occurs when *zakat* collection is automatically reduced during recession giving more money to people to spend which tends stimulate the economy; while 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. As a discretionary fiscal policy, the government varies the disbursement of *zakat* to the recipients whenever necessary during the phases of the business cycle. During the expansion phase of a business cycle, the government decreases *zakat* disbursement to reduce aggregate spending. Likewise *zakat* disbursement is increased when the economy is in the downswing to increase aggregate spending. Then Yusoff(2010) provides a concrete empirical evidence in support of *zakat* as a fiscal tool in an Islamic state. Specifically, his empirical evidence using Malaysian panel data supports the hypothesis that *zakat* spending is a potent fiscal instrument to stabilize macroeconomic fluctuations. He suggests that Muslim countries must make all effort to establish *zakat* as the major tool for stabilization policy. In order to make this a success, the *zakat* collection and *zakat* spending have to be carried out in the most effective and efficient manner. As long as *zakat* collection and spending are disorganized we can never achieve the potential of *zakat* as an effective fiscal instrument.

5. Empirical Model and Estimation Techniques

The basic model used to estimate the impact of *zakat* on the growth of real income is derived in Yusoff (2006) and (2009).

In this current study, the empirical model, in log form, is written as

$$\Delta Y_t = \beta_0 + \beta_1 GZ_t + \beta_2 ENROL_t + \mu_t \quad (1)$$

where Y is the real output, represented by real GDP, GZ is the *zakat* expenditure, $ENROL$ is the ratio of total enrollment in primary and secondary schools to the total population of the respective state, Δ is the difference operator and $\beta_0, \beta_1, \beta_2$ are the parameters to be estimated, while u is the disturbance term. We expect the *zakat* expenditure and enrollment ratio to be positively related to the growth in the real GDP; an increase in *zakat* spending and enrollment ratio would raise the growth of real income. This present study uses panel data since panel data analysis has the ability to exploit the rich information inherent in the cross-section and time series analyses. It also takes into account the heterogeneity of individual cross-sectional units by allowing for individual-specific effects and give more variability and degrees of freedom. An empirical study using panel data with fixed effect model could generally be written as

$$\Delta y_{it} = X'_{it}\beta + \delta_i + \mu_{it} \quad (2)$$

where y_i and X_i are observations, $i = 1, 2, \dots, T$; δ_i are the group specific effects which do not vary over time. For estimation purpose, equation (1) now is rewritten as

$$\Delta Y_t = \beta_0 + \beta_1 GZ_t + \beta_2 ENROL_t + \delta_i + \mu_t \quad (3)$$

where i now denotes the cross-section units represented by the fourteen states of Malaysia, β_0 is the overall intercept, and δ is the fixed effect. The fixed effects model (FEM) assumes that the slope coefficients β_1 and β_2 are constant for all cross-section units while the intercept varies over individual cross-section units but does not vary over time. The intercept, δ_i , takes into account of the heterogeneity influence from unobserved variables which may differ across the cross-section units.

5.1 Estimation Methods

Since we are using the panel data, the least squares estimation may be inappropriate as the errors are likely to be correlated across time and across-section units. The least squares estimators are still unbiased, consistent, and asymptotically normally distributed but not efficient. In this study we use the Generalized Methods of Moments (GMM) technique estimation on the GLS transformed data using the lagged dependent and independent variables as instruments.

5.2 Sources of Data and Definition of Variables

The study uses Malaysian panel data from 2001 to 2006 as the published data on *zakat* expenditure are only available in recent years while a few states having missing values. The cross-section units are the 14 states in Malaysia. The annual data on *zakat* expenditure and real GDP were obtained from the Pusat Pungutan *Zakat*, Majlis Agama Islam Wilayah Persekutuan (*Zakat* Collection Centre, Islamic Religious Council of Federal Territory) and Economic Planning Unit of Malaysia (EPU) respectively. The data on enrollment were obtained from the Department of Statistics Malaysia.

6. Results and Discussion

Since we use panel data, we then test for cross-section fixed effect. The calculated F-statistic is $F(12,23) = 1160.28(0.0000)$ which turns out to be highly significant and therefore we reject the null hypothesis that the fixed effect is zero. We also report the results of the panel data least squares regression with fixed effect of equation (3), in log form, as given in Table 1. The results suggest that both *zakat* spending and student enrollment have the ability to influence the growth in real GDP where they are significant at 1 percent level, but the D-W statistic is highly significant suggesting that the error terms are correlated across time. The goodness of fit is high at about 81.5 percent. The F-statistic is also very high, rejecting the null that the effects of *zakat* spending and enrollment on real GDP are zero. The D-W statistic is 0.32 suggesting that there exists autocorrelation, while the Jarque-Bera statistic is 0.04 and insignificant indicating that the error terms are normally distributed.

The results of the panel least squares indicate that a 10 percent increase in *zakat* spending would increase the growth in real GDP by 0.138 percent while a 10 percent increase in student enrollment would increase real GDP growth by 0.023 percent. The small but significant impact of *zakat* on real GDP is within expectations because we are measuring the impact of *zakat* spending and enrollment on the growth of GDP, not on the level of GDP. And therefore the significance of *zakat* spending in explaining the variations in the real GDP of various states in Malaysia is indeed very encouraging. It augurs well with the future of *zakat* as an important tool of fiscal policy to invigorate economic development of *ummah*.

Table 1. Panel Least Squares Results(unbalanced data)

$$\Delta \text{LGDP}_t = -350.0700 + 0.0138 \text{LGZ}_t + 0.0023 \text{LENROL}_t + \delta_i$$

(2.7848) (6.77434) (7.6257)

State	Fixed effect (δ_i)
JH	0.004427
KD	0.002187
KN	0.006727
MK	0.005667
NS	0.000745
PL	0.008594
PP	-0.002776
PR	0.002868
SB	-0.005848
SL	-0.015153
SR	0.016156
TR	0.002902
WP	-0.026153

Adjusted-R² = 0.8152, D -W statistic = 0.3239, F= 82.6179(0.0000), Jarque-Bera = 0.0400(0.9801),

Notes: The values in the parentheses below each coefficients are t-statistics, the values in parentheses beside each test statistics are the probabilities. The cross section units are JH = Johor, KD = Kedah, KN = Kelantan, MK = Melaka, NS = Negeri Sembilan, P = Pinang, PR= Perak, SB= Sabah, SL= Selangor, SR = Sarawak, TR = Terengganu, and WP = Wilayah Persekutuan (Federal Territory Malaysia).

In order to obtain efficient estimates and minimize the biasness of the estimated coefficients due to the endogeneity problem of the regressors, we estimate the model using GMM procedure. The instruments used are the first lag of the variables in the equation, including the intercept. Specifically we estimate the model using: the panel GMM on the GLS transformed data with the cross-section weights instrument weighting matrix, and the cross-section weights standard errors and covariance corrected for the degree of freedom.

Table 2: Panel GMM Regression Results (unbalanced data)

Fixed effect model:

$$\Delta \text{LGDP}_t = -0.0120 + 0.0011 \text{LGZ}_t + 0.0082 \text{LENROL}_t + \delta_i$$

(-2.9660) (2.8815) (48.0192)

Adjusted-R² = 0.9652, D-W = 3.573, Jarque Bera = 1.3864(0.4999)

State	Fixed Effect (δ_i)
JH	0.227747
KD	-0.475332
KN	-1.032589
MK	-0.384047
NS	-0.434403
PP	0.369067
PR	0.069716
SB	0.183912
SL	0.549576
SR	0.321037
TR	-0.075058
WP	0.519855

Notes: values in parentheses below each coefficient are the standard errors, values in the parentheses on the RHS are the probabilities. The cross section units are JH = Johor, KD = Kedah, KN =Kelantan, MK= Melaka, NS = Negeri Sembilan, P = Pinang, PR = Perak, SB= Sabah, SL= Selangor, SR = Sarawak, TR = Terengganu, and WP = Wilayah Persekutuan (Federal Territory Malaysia).

The results shown in Table 2 suggest that both of the coefficients of *zakat* spending and enrollment ratio have positive effects on the growth of real GDP where they are significant at 1.5 and 1 percent level respectively. In particular, the coefficients of *zakat* expenditure is 0.0011 which means that a 10 percent increase in *zakat* expenditure results in 0.011 percent increase in the growth of real GDP. The enrollment coefficient is 0.0082 which implies that a 10 percent increase in enrollment-real GDP ratio would increase the growth of real GDP by 0.082 percent. The results suggest that both the *zakat* spending and enrollment ratio have the ability to positively influence the rate of real GDP growth. The adjusted R-squared is 0.9652 suggesting that the fixed effects, *zakat* spending, and enrollment ratio could explain 96 percent of the variations in the growth of real GDP. The Durbin-Watson statistic is 3.573 indicating that there is no statistical evidence to suggest that the estimation suffers from autocorrelation problem.

7. Conclusion

This study examines the impact of *zakat* spending and education on economic growth using panel data where the cross-section units are the fourteen states of Malaysia. Education and economic growth are represented by student enrollment ratio and growth of real GDP of each state. Empirical evidence supports the hypothesis that *zakat* spending and education are important determinants of real GDP growth suggesting that they are essential ingredients to be considered in formulating economic development programs in the Muslim countries. Therefore, Muslim countries must make all effort to establish *zakat* and education as the major ingredients in the development policy. In order to make this a success, every Muslim country must organize *zakat* collection and *zakat* spending in the most effective and efficient manner. Muslim countries must also give priority to education in their development strategy to increase the stock of human capital needed to achieve a sustained economic development.

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