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A TECHNICAL NOTE ON THE DERIVATION OF ZAKAT EFFECTIVENESS INDEX (ZEIN)

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ABSTRACT

Effectiveness of policies is very much dependent upon the quality of the measures used to guide the formulation of those policies. Thus, methodological and practical issues surrounding poverty and inequality indices are of paramount importance in poverty alleviation efforts. This paper attempts to propose a Zakat Effectiveness Index (ZEIN) to address some of those issues. The strength of the index is as follows: 1) it can be used to verify and compare how effective is the expenditures on poverty alleviation by the government as represented by the amount of zakat distributed to the eligible zakat recipients; 2) it is flexible enough to incorporate different sub-groups analysis such as types of employment, sectors or ethnic groups; and, 3) unlike other indices that use the GNP and GDP as denominator, ZEIN introduces zakat recipients as the denominator to improve the effectiveness of the poverty index. Lumped together, ZEIN measures more directly the shortfall of zakat distribution vis-à-vis the total expenditure on basic needs required for the poor to sustain a decent minimum livelihood. Finally, we assert that ZEIN is potentially a very useful tool to measure the performance of all Muslim countries' provision

of minimum basic needs through zakat to further promote the achievement of the *maqasid al-shari'ah*.

JEL Classification: I38, P41, O29

Key words: Zakat, Effectiveness, Poverty index, Government spending, Basic needs.

1. INTRODUCTION

Poverty knows no boundary. It affects East and West, Muslims and non-Muslims. The teachings of Islam, through the Holy Quran and ahadith(1), stresses on the importance of eradicating poverty through zakat which is considered to be the most effective social tool to bridge the differences between the rich Muslims and poor Muslims. Zakat is the name given in Islam to that portion of money or wealth which, as per Allah's command, is given to the identified eligible recipients (*asnaf*) that include the poor and the needy so that they become the owners of it. In other words, while fasting and prayers are forms of bodily worship (*unquantifiable*), zakat is a form of worship which is pecuniary (*quantifiable*) in nature. Zakat is neither a tax levied by government, nor a voluntary contribution. Instead, it is first and foremost a duty enjoined by Allah on all Muslim men and women who possess enough means to distribute a certain percentage of their capital in goods or money among the poor and needy. In all Muslim countries, zakat is collected officially at the rate of 2.5 percent on several assets like income, savings and jewelry. In brief, if zakat is managed properly, it could become a powerful tool to address issues relating to Muslim countries' socio-economic development.

The measurement of poverty and inequality is closely linked to both, methodological and practical issues. On the former issue, such measurement requires choosing a dimension in which poverty is defined. The concern on definitions renders the following choices: should it be based on households' income or consumption; should it be confined to the consumption/expenditure on basic needs or the whole range of goods and services consumed by the households; should we use the national poverty line or the United Nations Millennium Development Goals poverty line of $1 per day; and ultimately, given so many poverty indexes which one is the most appropriate index to be adopted to measure poverty. On the practical side of the issue, it requires the researchers to decide on which

dataset fits well to the methodological issue alluded above. More specifically, it has to address matters pertaining to the accessibility, reliability and consistency of the data to be used to measure poverty in a country, region, sector or a poverty stricken group.

The complexity of these issues is reflected in the large body of literature on poverty and inequality indices. Perhaps, a cursory example may help us to comprehend fully the issue raised here. In many parts of the world, Asia included, poverty and inequality are measured based on monetary incomes reported in household surveys. [(2)] However, the results are subject to potential biases coming from non-monetary income (i.e., incomes received in kind), and non-reporting and misreported income. Another problem is generated by the fact that the items included in household income differ across countries, and sometimes even within a country over time. Since in practice also, household surveys in these countries are constantly evolving, it has added a significant problem of comparability and reliability. Hence, if all of these issues are not properly addressed, the results and findings of those surveys might lose its value to the policymakers.

In the past, many indices were formulated and applied to the study of poverty in various countries, Muslim countries included. To name a few, Kakwani (2000) introduced the poverty reform index, Kakwani and Son (2001) established an improvised version of Kakwani (2000) index, UNDP (1995) calculated the well-known Human Development Index, and Sen (1976) coined the concept and method to compute composite poverty index. Next, while Foster, Greer and Thorbecke (1984)[(3)] have formulated a useful general index that measures the level of welfare, UNDP (1997) has introduced the Human Poverty Index (HPI).[(4)] In 2007, the United Nations Development Program (UNDP) and Oxford University have launched a new index to measure poverty levels. The new measure, the Multidimensional Poverty Index or 'MPI', was developed and applied by the Oxford Poverty and Human Development Initiative (OPHI) with UNDP support to replace the Human Poverty Index. As will be outlined in Sections 2, 3 and 4 below, the Zakat Effectiveness Index (ZEIN); which is derived in this paper, differs in several respects from the existing ones.

Briefly, ZEIN that has zakat as one of the determinants can be used to measure the basic needs status of the population of a country. The reason for zakat being treated as one of the determinants is as follow: *one*, it is an amount of money that is made compulsory upon the zakat collector to extend it to zakat recipients

as mentioned in the holy Quran (At-Tawbah: 34-35); and, *two*, the amount itself is specifically cited in ahadith narrated by Ali ibn AbuTalib:

> *Al-Harith al-A'war reported from Ali. Zuhayr said: I think, the Prophet (peace be upon him) said: "Pay a fortieth. A dirham is payable on every forty, but you are not liable for payment until you have accumulated two hundred dirhams. When you have two hundred dirhams, five dirhams are payable, and that proportion is applicable to larger amounts* (Abu Dawud: 1567).

Accordingly, we strongly believe that ZEIN is potentially useful for Muslim countries to design a comprehensive poverty alleviation plan to eliminate the deficiency, if any.

1.1 SIGNIFICANCE OF ZEIN

The proposed index, referred to as ZEIN, is significant because it enables us to verify and subsequently compare how effective is the government spending (or any government-authorized institutions) in terms of zakat in bridging the households' expenditure on basic needs between countries, states, regions or various sub-groups of the population; for instance, types of employment, sectors or ethnic groups. Such comparisons are considered important mainly because an overall assessment of a country's progress in poverty alleviation reflects the level of its economic development. Moreover, a representative profile of ZEIN can help to reveal a variety of aspects that may offer more refined basic needs-expansion policies; like in specific regions, sectors or ethnic groups. To sum up, the index is formulated with the aim of being an improved measure on the effectiveness, as well as the impact of zakat on household expenditure.

1.2 CONSUMPTION-AND GOVERNMENT SPENDING-BASED MEASURE

At this juncture, it is worth noting that an important concept to keep in mind while formulating the ZEIN is that the computed index will lead us to identify a single unequivocal number or value. This can be used to measure and compare levels of poverty not only for a

particular place and time, but also across subgroups in the population, over time, and under different policy circumstances.

1.2.1 CONSUMPTION-BASED MEASURE [5]

Consumption, rather than income is preferable in measuring ZEIN for three reasons: *First*, it is difficult to measure the income of those working in the informal sector like self-employed workers, and those who receive in-kind payments such as food or housing; *second*, consumption is considered to more accurately represent long-term living standards because income may fluctuate over short periods; and *third*, household consumption has been generally measured in the same way in each country where household survey data are available with only slight country specific differences.

1.2.2 GOVERNMENT SPENDING-BASED MEASURE

Meanwhile, government/public spending in terms of zakat is used to compute ZEIN because it constitutes expenditures on poverty alleviation, among others.[6] Specifically, this portion of government spending may increase/improve both the level and distribution of consumption of the poor. Data on this is not only accessible and available, but also in numerous cases reliable in many Muslim countries.

In practice, however, there are three approaches to reduce the basic needs deficiency of the poor with public spending. *First*, the approach involves targeting types of spending. Under this approach, no "serious" attempt is made to reach the poor directly as individuals. Examples are spending on basic social services such as primary education and primary health care. Rural development is another. *Second*, the approach entails targeting specific categories of people. The basic idea in this approach is that, benefits are designed to directly cater to the needs of the poor. Policies like food stamp schemes targeted at poor mothers, innovative micro-credit schemes aimed at rural landless women and development programs that focus on poor ethnic groups or geographical areas, are but a few noteworthy applications of this approach. *Third*, the approach combines both, the first and second approaches.[7] Under this approach, public spending consists of programs that are targeted to simultaneously benefit the specified (i.e., the poor) and non-specified (i.e., the poor and non-poor) groups. Examples of the specified program are price-support programs, food subsidies, and micro-

credit schemes that are extended to specific regions, ethnic groups, sectors or types of employment. For the non-specified program, the examples are rural infrastructure, primary education, and primary health-care.

We note in passing that the consumption aggregate represents the sum of the value of total household expenditures on basic needs such as various foods, clothing, housing (including the rental value of owner-occupied housing), health and education. Also, for the computation of ZEIN, the **second approach** of public spending for poverty alleviation is strongly advocated.

1.3 DATA REQUIREMENTS AND VARIABLES

In order to construct the ZEIN several data that are related to variables associated with poverty are gathered. They are:

1. Total population and total number of households whose incomes are below poverty line in a period. The poverty line may refer to the one used by the government or international entities like the World Bank or the UNDP in their definition of poor households.

2. Total expenditure of the poor households on basic needs. The basic needs refer to an amount of money used by a poor household, which can be confined to Quintile 1 (*Q1*=the poorest/destitute) and Quintile 2 (*Q2*=second poor/the poor)[8] to maintain a minimum livelihood of its members. This will include, among others, expenditures on food, shelter (rental), clothing, health care and education.

3. Government spending on poverty alleviation programs, i.e., the safety nets, and its sources. Foremost, is the source of fund used to alleviate the poverty; which in our case is the amount of zakat collected by and deposited at any government authorized religious institutions like the State Bank of Pakistan and States Zakat Board in Malaysia, to name a few.[9] The amount collected in turn will be distributed to the zakat recipients.

Assuming that all data mentioned above are at our disposal, the ZEIN can be computed, as shown in Section 2 below.

2. MATHEMATICAL EXPOSITIONS OF ZEIN

To begin with, ZEIN is derived on the following assumptions: *one*, that zakat is collected and disbursed by a designated or authorized government institution; *two*, that the zakat is disbursed to zakat recipients who fall into the eight *asnaf* (heads), as vividly enumerated in the holy Quran (At-Tawbah: 60); and, *three*, the zakat is used to cover partially or wholly the zakat recipients' expenditure on the basic needs.

Meanwhile, the mathematical derivation of the ZEIN is shown as follows: *First*, the expenditures on basic needs (E_B) of the poorest population of a Muslim country, Quintile 1 (*Q1*=the poorest/destitute) and Quintile 2 (*Q2*=second poor/the poor), are mathematically expressed as:

$$E_B = \sum_{i=1}^{m} \sum_{j=1}^{n} E_{Bit} E_{Q1jQ2j} \quad (1)$$

where: i = (1, 2,…, m) are the basic needs (B), which in this study include food, clothing, shelter, medical and education; j = (1, 2,…, n) are provinces or regions in the country; and, t = time period.

Second, Government spending on safety nets (G), which in this study is confined to zakat disbursement (Z), to the poorest population of the country who are made up of *Q1* and *Q2* groups of people, can be computed as follow[8]:

$$G_Z = \sum_{j=1}^{n} G_{Q1jQ2jZt} \quad (2)$$

where: j = (1,2,…, n) and t remained as in (1).

Third, the number of zakat recipients (Z_R) associated with *Q1*and *Q2* can be expressed as:

$$Z_R = \sum_{j=1}^{n} Z_{Q1jQ2jRt} \quad (3)$$

where: j = (1,2,…, n) and t remained as in (1).

Fourth, Zakat Effectiveness (*ZE*) is obtained by subtracting (2) from (1) and then dividing with (3), as shown below.

$$(4) \qquad ZE = \frac{E_B}{Z_R} - \frac{G_Z}{Z_R}$$

where: all the notations remained as in (1), (2) and (3). While, the first term of the right side of (4) implies the average expenditures of the zakat recipients associated with *Q1* and *Q2* on basic needs, the second term implies the average government spending in terms of zakat to *Q1* and *Q2*.

Finally, the ZEIN is derived by dividing through (4) with the first term of the right side of the equation. Specifically,

$$(5) \qquad \text{ZEIN} = \frac{E_B / Z_R}{E_B / Z_R} - \frac{G_Z / Z_R}{E_B / Z_R}$$

A further refinement to equation (5) will give rise to Equation (6), the final equation:[10]

$$(6) \qquad \text{ZEIN} = 1 - (G_Z / E_Z)$$

In general G_Z is smaller than E_Z, otherwise poverty would not be a problem or there is no basic needs deficiency. As such, the index measures the shortfall of the amount of *G* devoted to zakat as compared to the total consumption/expenditure on basic needs that is required for people in poverty to have a decent minimum livelihood. As in the case of other indices, ZEIN has a 0-1 scale. While a large index implies poor performance, a small index indicates the opposite. Perhaps, a simple example using three different hypothetical cases may illustrate the point at hand more distinctly.

> **Case 1**: If $G_Z = 0$, and $E_Z = 1$, then ZEIN is 1, which implies that the basic needs deficiency has reached its maximum. This is the worst scenario.
>
> **Case 2**: If $G_Z = 1$, and $E_Z = 1$, then ZEIN is 0, which implies that there is no deficiency in basic needs. This is the best scenario.
>
> **Case 3**: If $G_Z = 0.5$, and $E_Z = 1$, then ZEIN is 0.5, which implies that a basic needs deficiency exists, but is tolerable.

We note here that all the values used in these three cases, where it ranges from 0 to 1, are merely for description purposes; while the empirical use of the numbers and the rankings of ZEIN are explained in the subsequent sections. In general, the ZEIN lies within this scale: $0 \leq ZEIN \leq 1$.

3. EMPIRICAL USE OF ZEIN

Unlike the index used by Kipanga (2007) where the denominator is the GNP, our ZEIN is derived with zakat recipients as the denominator. The advantage of using the ZEIN is that it is more direct and precise. A slightly different version of the ZEIN has been applied by Abdullah, Mat Derus and Al-Malkawi (2011) to appraise the effectiveness of zakat in alleviating poverty and inequality in Pakistan.

4. SUMMARY AND CONCLUDING REMARKS

This paper makes two major contributions. First, it develops a new methodology to measure poverty reduction, focusing on consumption and government spending in terms of zakat as two of the three main determinants; the third determinant is the number of zakat recipients. Second, as to the denominator of the index, it provides a new dimension because unlike others who used the GNP or the GDP as the denominator to derive the index, this paper uses the number of zakat recipients as the denominator. The ZEIN, as derived here, is a very useful tool to measure the performance of all Muslim countries' provision of minimum basic needs through zakat. The performance can in turn be normalized (that is by taking the highest performer's index as the benchmark), ranked, and classified into three groups: Relatively Less Needy (ZEIN < 0.50); Moderately Needy (0.75 > ZEIN > 0.50); and, Very Needy (ZEIN > 0.75). Finally, the ZEIN is especially important for Muslim countries to measure their "degree of Islamicity" for basic needs are the integral part of the so-called *maqasid al-shari'ah*.[11]

ENDNOTES

1. See for example, At-Tawbah: 60 and Kitab-al Zakat, Book 3, Number 1577, Sunan Abu Dawud.

2. See for example, Poverty in Asia: Measurement, Estimates, and Prospects, http://www.bing.com/search?q=examples+of+survey+using+income+and+consumption+in+Asia&form=MSNH14&qs=n&sk=&x=130&y=11, retrieved May 5, 2011.

3. The index combines information on the extent of poverty (as measured by the Headcount ratio), the intensity of poverty (as measured by the Total Poverty Gap) and inequality among the poor (as measured by the Gini and the coefficient of variation for the poor).

4. HPI is very similar to the HDI. The only real difference is the variables each uses to compute the final Index. The HDI examines positive signs of development, such as life expectancy, while the HPI looks at negatives. In a nutshell, the HDI increases the more GOOD things a country has, while the HPI decreases the less BAD things a country has.

5. Taking into consideration data availability in many countries, only the consumption-based measure provides sufficient information for detailed analysis. Indeed, it is for this reason that the ZEIN is a consumption-based measure.

6. Expenditures on poverty alleviation using zakat as a medium are unique to Muslim countries only.

7. Weiss (2005) adopts the first two approaches in his study of poverty in selected Asian countries, while the second approach is ours.

8. In Al-Quran surah At-Tawbah verse 60, Allah said: "*As-sadaqaat* (here means zakah) *are only for the fuqaraa* (poor), *and al-masaakin* (destitute) *and those employed to collect* (the funds) *and to attract the hearts of those who have been inclined* (towards Islam), *and to free captives, and for those in debt, and for Allah's cause* (i.e. for mujahiduun - those fighting in a holy battle) *and for the wayfarer* (a traveler who is cut off from everything); *a duty imposed by Allah. And Allah is All-Knower, All-Wiser*". Other parties than these 8 groups are not qualified as the recipients of zakat. However, they can be recipients of *infaq*.

9. More often than not there always is a discrepancy between the amount of zakat collected and disbursed. The difference could be attributed to the cost of administering zakat, among others. It is for this reason that in the computation of ZEIN, the disbursement amount is highly advocated.

10. With small manipulations, equations (1-6) can be used to compute the expenditures on basic needs, government spending and zakat recipients of the poor population associated with six other *asnaf*; *amileen*, wayfarers, etc., as stipulated in the previously quoted verse from the holy Quran.

11. *Maqasid* is the Arabic word for *goals* or *purposes*. In Islamic context, it can refer to the purposes of Islamic faith, zakat (charity tax), pilgrimage or even of the Quran's and Sunnah's text. In terms of Shariah, there are five *maqasid* (foundational goals). These are the preservation of: Religion, Life, Intellect, Honor, and Property.

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