

INCLUSIVE GROWTH WITH ZAKAT

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Abstract

Zakat is a religious tax that is imposed on idle wealth, livestock, agricultural produce and commercial assets if their value exceeds a certain limit. Zakat proceeds are disbursed among the poor. Therefore, it refers to an effective mechanism for income redistribution. Indirectly it signifies the role of income distribution for economic growth. On the contrary, in classical economics, supply creates its own demand and the equilibrating variable for both savings and investment is interest rate. This view minimizes economic significance of income distribution. However, it could not explain Great Depression. At that time, Keynes gave his psychological consumption function which highlighted two points; aggregate demand is more important for determination of output of a country and average propensity to consume falls as income rises. The second point has confusing implications; an inequitable income distribution is desirable for a poor country to take off whereas an equitable income distribution is desirable for a country which has abject poverty and excess capacity. The first implication had been so far more popular among policy makers. However, recent worsening of income distribution and sluggish economic growth have attracted attention of academia to rethink about the second implication of inverse relationship between apc and income. Simulation of this research incorporating two other realities that marginal productivity of capital falls as capital concentrates in few hands and the family size varies inversely with income illustrates the growth process without and with zakat. The results show that income redistribution with zakat does not hold back economic growth.

1. INTRODUCTION

Zakat is an annual religious levy that is collected from rich Muslims and its proceeds are disbursed among poor people of the society. It has many spiritual and social merits. For example, it purifies the hearts of zakat-givers as they give away a part of their wealth, the most precious thing in their lives, seeking the pleasure of Allah without requiring any worldly gains whatsoever. It also bridges the social gap between 'haves' and 'have-nots' that is a natural outcome of the theory of 'self-interest.' This study analyses, however, only economic consequences of Zakat particularly for economic growth. They cannot be appreciated duly unless one understands the following concepts of modern economics; various theories of consumption, aggregate demand, stagnation thesis, consumption puzzle, marginal productivity of capital and Kuznets curve.

In classical economics, consumption is a negative function and saving is a positive function of interest rate while investment is a negative function of interest rate. As a result,

in a closed economy at equilibrium interest rate, investment is always equal to saving. In other words, the issue of persistent deficient aggregate demand does not arise in classical framework. Therefore, occurrence and longevity of Great Depression became a puzzle for classical economists as they could not explain it. At that juncture, Keynes (1936) propounded an alternative theory that the main determinant of consumption and saving is current income, not interest rate. An important feature of Keynesian consumption function also known as absolute income hypothesis (AIH) is that average propensity to consume decreases as income increases.¹

An important implication of AIH is the stagnation thesis. It states that as an economy grows over time its overall average propensity to consume falls that signifies the problem of deficient aggregate demand. Consequently, a downturn follows after every spell of economic growth. Another implication of falling average propensity to consume is that income distribution is relevant for economic growth and economic fluctuations. For illustration, suppose that there are two economies having exactly the same average per capita GDP but one is divided into two classes of 'haves' and 'have-nots' and the other has perfect equality. According to AIH, saving rate of the rich class in the former economy must be higher and hence investment and economic growth in that economy must also be faster than that of the latter. A natural policy implication to accelerate economic growth is therefore to create a class of rich businessmen by granting them investment subsidies, tax holidays and easy credit offerings. As a matter of fact, many governments of the world have actually adopted this policy since long. Supporters of this viewpoint contend that accelerated growth of a country has some 'trickle down' effect for the poor as well. Additional investment creates jobs and employment opportunities for the poor; so their economic conditions certainly improve though their relative position compared with the rich class or income inequality in the country may worsen over time. An adverse consequence of having a class system in a society is that if richness and hence investment of upper class keeps on increasing, then excess capacity and deficient aggregate demand emerge in the economy which earmark a downturn in the economy.

Subsequent empirical researches mostly using cross-sectional and household data verified AIH. However, Kuznets' seminal study which used time series and aggregate data refuted AIH. It concluded that apc is constant in the long run.² In other words, income distribution is irrelevant in the long run for economic growth. These contradictory findings of cross-sectional and time series data presented the consumption puzzle as to why apc falls as income of a household rises in the short run and as to why it remains constant at aggregate level as GDP of a country rises over time. Friedman (1957) and Modigliani (1966) though resolved this puzzle by propounding permanent income hypothesis (PIH) and relative income hypothesis (RIH) respectively to a great extent, yet the debate continues whether income distribution matters for economic fluctuations or not.

¹ See Mankiw (2006)

² See Kuznets (1946) and Mankiw (2006).

On one side are those economists who do not see much relevance of income distribution for economic growth.³ They are of the view that any deficiency in aggregate demand may be made up by different methods. For example, an increase in government expenditures, an increase in exports and an increase in bank lending to private sector for consumption and investment purposes push up aggregate demand in the country. Their viewpoint is generally known as Washington consensus. They mainly favor export-led growth. On the other side are those economists who accord much importance to income distribution for economic growth and business cycles. In their view, an equitable income distribution is extremely important to forestall any deficiency in aggregate demand or to avoid possibility of stagnation thesis.⁴ However, they are not so strict against an inequitable functional distribution of income that is between capitalists and wage earners as they are against an inequitable income distribution within wage earners that is between managers and production workers or between supervisory and non-supervisory staff. The reason is that any deterioration in functional distribution disturbs only composition of GDP as a decrease in wages causes a fall in consumption while an increase in profits causes a rise in investment. On the contrary, any deterioration in income distribution within workers curtails aggregate consumption without causing a matching increase in any other component of aggregate demand. Therefore, supporters of this view recommend some sort of income redistribution mainly within working class without being specific about the modus operandi of such redistribution.

Another seminal study by Kuznets (1955) carried out on cross-sectional and panel data showed interesting results; income distribution deteriorates as per capita GDP of a low income country increases but after achieving a certain level of development, then income inequality starts smoothing out along with further increase in per capita GDP. That is Kuznets' curve showing the relationship between economic growth and income distribution is of inverse 'U' shape. Various reasons have been offered to justify this particular shape of Kuznets' curve; the most important one is that when an economy is transformed from an agrarian economy to an industrial one, then marginal productivity of labor starts increasing proportionately faster than the overall growth rate of GDP and so do wages. Accordingly income distribution improves without requiring any deliberate effort of redistribution on the part of government. This finding indirectly mitigated the importance of any deliberate effort of income redistribution. However, many exceptions have been noted to Kuznets' curve. Many developing countries particularly Asian tigers experienced phenomenal growth without damaging their income distribution. Similarly it has also been observed recently that income distribution in highly developed countries like USA have started worsening in past three decades. It means that income redistribution may be needed for a country at any stage of its development.

With this background knowledge, it may be argued that Islamic economics not only sides with those economists who favor an equitable income distribution within wage earners but it also accords equal importance to an equitable functional distribution. Any worsening

³ Schifferes (2008)

⁴ See Palley (2001).

of functional distribution though may not disturb aggregate demand in the short run, as argued, yet it certainly holds back economic growth because marginal productivity of capital falls as capital concentrates in few hands. Zakat is imposed on a wage earner whose saving exceeds a certain amount called nisab and also on a capitalist whose asset holding exceeds nisab. It means that Zakat specifies an exemplary mechanism to achieve an equitable distribution both between capitalists and wage earners and within wage earners. The objective of this research is to highlight important features of zakat and quantify its impact on economic growth of the country through a simulation model. Generally it is argued that any effort to redistribute income at least at the early stage of development jeopardizes economic growth. However, simulation of this research challenges this view mainly by incorporating the fact that marginal productivity of capital goes on decreasing and excess capacity goes on increasing as capital accumulation of rich class increases.

The scheme of this paper is that section two presents theoretical background to appreciate economic significance of zakat that is normally interpreted merely a form of worship to God. Section three highlights important features of zakat to qualify it as an ideal tool for income redistribution. Section four presents a simulation model that compares economic growth with and without zakat. The last section is reserved for conclusion and policy implications, if any.

2. THEORETICAL BACKGROUND

For a long time after the emergence of Economics as a separate discipline of knowledge, Say's law remained the dominant theory to explain aggregate consumption behavior and output of a country. It can simply be stated as supply creates its own demand or a "general glut" (the term used in Say's time for a widespread excess of supply over demand) cannot occur. If certain goods remain unsold, it is because other goods which can be sold immediately are not produced in the country. Technically it implies that the equilibrating variable for both saving and investment is the same variable that is interest rate. Therefore, it is not possible to have deficient aggregate demand and unemployment in the country for a long time. Along with Adam Smith's concept of the 'invisible hand', Say's law has been one of the doctrines used to support the laissez-faire belief that a capitalist economy will naturally tend toward full employment and prosperity without government intervention. However, longevity and severity of Great Depression cast doubts about validity of this view. Classical economists could not offer any appealing reason to justify Great Depression. It created a theoretical vacuum in this otherwise growing discipline of knowledge.⁵

At that point, Keynes (1936) conjectured a new consumption theory that was appealing psychologically but was not tested empirically before its statement. In his theory that is known as absolute income hypothesis (AIH) in the literature, current income is the main determinant of consumption. Although Keynes admitted that interest rate can influence consumption as a matter of theory, yet he concluded on the basis of experience that influence of interest rate on individual consumption in the short run is secondary and relatively unimportant. Keynes contemplated a consumption function based on introspection and

⁵ See Mankiw (2006).

casual observations. It has two main features; marginal propensity to consume (mpc) is less than one and average propensity to consume falls as income rises. The second feature which is more relevant for this research can also be stated as consumption is the function of the poor and saving is the function of the rich.

Subsequently, many empirical researches mostly conducted on cross-sectional micro data on consumption indicated that Keynesian consumption function is a good approximation of how consumers behave. They found that households with higher income saved a larger fraction of their income which confirmed Keynes idea that apc falls as income rises. However, two events discredited Keynes' consumption function a great deal. One was that due to voluminous increase in defense expenditures of the US government during World War II, GDP increased significantly. Therefore, assuming a significant fall in overall apc in the country after the war in accordance with Keynesian consumption theory, many economists predicted secular stagnation or emergence of deficient aggregate demand after the war. But contrary to this prediction, it did not happen to occur. The other is that Kuznets analyzed almost a century-long aggregate data on consumption and concluded that apc was remarkably stable from decade to decade, despite large increases in per capita GDP over that period. This contradiction in Keynesian consumption theory and empirical findings of Kuznets presented the consumption puzzle which could not be resolved by professional economists for some time. Finally, Ando and Modigliani gave life-cycle hypothesis and Friedman gave permanent income hypothesis which justify falling apc for short run and almost constant apc for long run. These consumption hypotheses did not discredit Keynesian consumption theory completely. It means that the debate about relevance of income distribution for economic fluctuations has not ended yet.

An important policy implication of AIH is that to have a sizable amount of savings and thus investment and economic growth, government of a developing country should encourage income inequality by providing investment incentives and tax holidays to business community or at least should not initiate any plan for income redistribution at low levels of economic development. Supporters of this view justify class system with the argument that a sustained increase in investment by rich people of the country has some 'trickle down' effect for poor people as well. As investment increases, they get jobs to augment their meager incomes from the primary sector in which they had been working before the take-off stage of economic development. Accordingly their absolute poverty decreases and their economic conditions improve though their relative poverty may worsen over this period.

The dark side of this standpoint is the stagnation thesis; as the income in a county grows over time, households consume a smaller and smaller fraction of their incomes or overall apc in the country falls. Consequently aggregate consumption may not be sufficient to absorb all output that is generated from profitable investment projects. In other words, the rich class may grow in size to such an extent that it overshadows the poor class. As a result, on one hand, excess capacity on the supply side of the economy starts increasing and, on the other hand, aggregate demand on the demand side of the economy starts squeezing that

threatens economic downturn.⁶ The other seminal study by Kuznets (1955) concluded that the relationship between economic growth and income inequality if plotted on a graph looks like inverse 'U'. That is, at initial stages of economic growth, income inequality worsens and after crossing a certain benchmark, income inequality starts improving without any deliberate effort of income redistribution on the part of government. Many economists believe that the benchmark growth rate is achieved when a basically agrarian or primary products' producing economy is transformed to an industrial or manufacturing products' producing economy.⁷ Kuznets' findings, in fact, mitigated the importance of stagnation thesis as they imply that secular stagnation may not occur after an economy transforms itself from agrarian economy to industrial one.

Although stagnation thesis sounds good theoretically, yet it has not occurred practically as feared in any developed country so far. Actually there are various government options and uncontrollable economic events to postpone it for a long time. One such option is an increase in budget deficit either through an increase in government expenditures or through a cut in taxes. It raises aggregate demand that may counter any fall in aggregate demand due to falling overall apc in the country. Another option is an expansionary monetary policy that mostly results in an increase in bank lending to households, businessmen and corporate sector that may cover up any deficiency in aggregate consumption due to falling apc. Yet another option is initiation of an export promotion scheme as an increase in a country's exports offsets any deficiency in aggregate demand domestically. One such uncontrollable economic event is onset of a boom either in stock market or in real estate or in both. It raises the value of wealth of ongoing businesses and households which, in turn, pushes up their investment and consumption demands. Another such event is that households change their preferences; they start consuming more and saving less. It also adds to aggregate demand of a country.⁸

All these options have been exercised and events have occurred, so far, either one after the other or in some combination or all together in many countries particularly in USA. Therefore, USA that is the citadel of capitalism has never experienced the brunt of stagnation thesis in its true form except in Great Depression. However, two developments, the widening income inequality in USA in last three decades in face of continuous economic growth and sluggish economic recovery after the global financial crisis in 2007-08 have drawn the attention of academia again toward stagnation thesis. These developments have brought home two ideas which Keynesian consumption function implies; income distribution has serious consequences for economic growth and income distribution gets worse in a decentralized economy as it grows over time.

Having understood the relevance of income distribution for economic growth in conventional economics, one can appreciate the wisdom of God Who made zakat a fundamental part of a Muslim's faith. It shows that long before the introduction of

⁶ See Wikipedia (not dated) for excess capacity.

⁷ See Acemoglu and Robinson (2002).

⁸ See Palley (2002a and 2002b).

Economics as a distinct branch of knowledge and, of course, long before the conception of economic theories in general and consumption theories in particular, God knew that income distribution is important for economic growth and it gets worse after uninterrupted economic activity of a society. It also indicates that background conception of economic relations in Islamic religion resembles more with Keynesian worldview than that of classical one. It may further be argued that Islamic view of economics goes a step further than Keynesian one as it obligates its believers to pay zakat annually. It means that in Islamic context, a year of economic activity, irrespective of the fact whether the growth level crosses a certain benchmark in it or not, is sufficient to upset or derail income distribution from its minimum desirable level. To put it differently, a year of economic activity is not sufficient to alleviate poverty and hunger which, in Islamic perspective, is as much necessary for economic growth as is investment. It may also be contemplated that in Islamic economics, an equitable income distribution and alleviation of poverty takes precedence over economic growth whereas in Keynesian economics in general and in classical economics in particular, economic growth takes precedence over an equitable income distribution. Moreover, an equitable income distribution in Keynesian framework focuses on income distribution within wage earners whereas in Islamic framework it focuses both on functional distribution and income distribution within wage earners. It means that zakat which was introduced for a primitive Muslim society 14th centuries ago; its economic significance can be truly understood only in a well-functioning capitalistic system like the current one.

3. BASIC FEATURES OF ZAKAT⁹

- i) State Tax: Zakat is one of the five pillars of Islam. It is enjoined upon Muslims like an act of worship. However, in economic terminology, it can be translated as a wealth tax that is collected annually by the state from the wealth of a Muslim if it exceeds a certain limit called nisab and its proceeds are expended for the benefit of the poor. If the state does not collect zakat, then a rich Muslim is obligated to pay it directly to the poor.
- ii) Items subject to Zakat: Zakat is unanimously levied on gold, silver, cash or bank deposits, pasturing cattle, agricultural produce, mines and treasure troves. Regarding business assets and property held for commercial purposes, there are two opinions. One is that zakat is levied on their value and the other is that it is levied on the income generated from them. Any property and durable goods possessed for personal use like dwelling houses, furniture and fixture, clothing, household utensils, books and intermediate goods used for production of final goods like tools and machinery, and animals used for agriculture are exempted from zakat irrespective of their value.
- iii) Nisab or Exemption Limit: The nisab is fixed in terms of gold, 7.5 tola equal to approximately 84 grams, and in terms of silver, 52.5 tola equal to approximately 612 grams. In case of cash and bank deposits, it is equivalent

⁹ See Moududi (1990) and Shafi (1963).

to the value of 84 grams of gold or the value of 612 grams of silver whichever is less. The nisab for agricultural produce is 5 wasaq equal to approximately 948 kilo grams and for pasturing cattle it depends upon the type of cattle. For example, in case of goats and sheep, it is 40 heads and in case of cows and buffalos, it is 30 heads. If the quantity or number of one zakatable item possessed by a Muslim falls short of its nisab but their sum exceeds the nisab, then the person is liable to pay zakat. For illustration, a Muslim having 20 grams of gold, 20 sheep and 15 cows has to pay zakat.

- iv) Rate of Zakat: Zakat rate is not the same for all zakatable items. It is 2.5 percent for gold, silver, cash and bank deposits. It ranges from 1 to 2.5 percent for pasturing cattle. It is 5 percent on the produce of irrigated land and 10 percent on the produce of non-irrigated land. It is 20 percent on treasure troves.
- v) Observable and Non-Observable Wealth: Observable wealth like pasturing cattle and agricultural produce cannot be easily hidden whereas non-observable wealth like gold, silver and cash can easily be hidden from the state to avoid zakat. Therefore, Muslim jurists suggest that the state should collect zakat on observable wealth compulsorily even by force, if necessary, whereas it should leave payment of zakat on non-observable items upon the will of their holders.
- vi) Usage of Zakat Proceeds: Zakat revenue can be spent only on 8 heads mentioned in Quran; poor, needy, state officials appointed for collection and disbursement of zakat, those whose hearts are to be made inclined and polite toward Islam, ransoming of captives, debtors, way farers and in the way of God. Currently fourth and fifth heads are not much relevant. Regarding the remaining heads except the thirds one, Muslim jurists have agreed that the poor should be given preference.
- v) Miscellaneous: Zakat is imposed if a Muslim possesses a zakatable item exceeding its nisab for the whole year. Zakat is calculated on the average or year-end value irrespective of fluctuations in its value over the year. Zakat may be paid in kind or in equivalent cash on a single day or over a period of time. It may be spent on a single head or on some of them or on all of them proportionately or discretionally. Zakat is preferably given in the possession of its recipient and is not donated to an institution from which a zakat recipient derives some benefits. The amount of zakat paid to a recipient should neither be less than a full day's normal meals, nor be greater than the value of nisab.

It is evident from basic features of zakat that it is levied on idle wealth and on that wealth which has the potential to grow over time. The rate of zakat on a wealth item depends on the extent to which its growth depends on nature. For example, rate of zakat is minimum on pasturing cattle and maximum on non-irrigated land and treasure troves. Finally its

beneficiaries are mostly down trodden people of the society. With these characteristics, zakat can be claimed as an ideal mechanism to discourage idle holding of wealth and concentration of wealth in few hands and an ideal tool to redistribute income from the rich to the poor.

4. ECONOMIC GROWTH WITH AND WITHOUT ZAKAT

For the following simulation, first of all population has been divided into three groups; the rich class in which each member has idle saving or owns wealth in excess of the nisab, the middle class in which each member has idle saving or owns wealth that is less than the nisab and the poor class in which each member has little savings or lives below the poverty line. Zakat is imposed on the rich and its proceeds are disbursed among the poor. The middle class neither pays zakat nor receives it. Then capital stock of each class has been approximated that has been used to determine aggregate supply of output in the country. For this purpose, Horrod-Domer growth model or a fixed output capital ratio has been used.¹⁰ However, keeping in line with decreasing marginal productivity of capital, the output capital ratio for capital stock of rich class has been assumed the lowest and that for capital stock of the poor class the highest. With regard to functional distribution of income, it is assumed that a big part of output generated from capital stock of each class is retained by it in the form of profits. It is also assumed that wage earners of a lower class get a part of output generated from capital stock of a higher class in the form of wages but not the vice versa. Capital stock of each class has been augmented by its annual saving and in accordance with AIH, saving rate for the rich class has been assumed the highest and that for the poor class the lowest. The simulation has been carried out just for 8 years because the difference in growth rate of per capita income without and with zakat becomes quite vivid over this period.

More specifically, to divide population into three classes, data on idle savings and capital stock is required that is not reported as such in any data source. Therefore, data from HIES 2011-12 reproduced in table 1 and estimates of poverty line have been used for this purpose.

Table 1: Household Size and Saving, and Monthly Per Capita Income by Quintiles 2011-12

Quintile	Income (Rs.)	Expenditures (Rs.)	Size	Per capita income (Rs.)	Saving (Rs.)
bottom	13307	13123	8.16	1631	184
2 nd	16815	16413	7.40	2272	402
3 rd	19928	18901	6.77	2944	1027
4 th	24531	21741	5.96	4116	2790
top	43858	34774	4.84	9062	9984

Source: HIES 2011-12; tables 2.2 and 12.

The estimated poverty line on the basis of average calorie consumption per adult that is Rs.2013 per month for the year 2010-11. The estimated inflation rate for 2011-12 is 10.8

¹⁰ For more details, see Ahluwalia et al. (1979), Arif (1979), Chenery and Ahluwalia (1975) and Dagdeviren et al. (2000).

percent. Hence, the poverty line for 2011-12 comes out Rs. 2230 per month that is very close to average monthly per capita income of second quintile in table 1 above. Therefore the bottom and second quintiles have been assumed to represent the poor class in our simulation. The nisab for cash holdings and bank deposits is the price of 84 gm gold or 514 gm silver whichever is less. It comes out very close to annual household saving of the top quintile. Therefore, the top quintile of population represents the rich class in our simulation. Capital stock for each class has been approximated from household saving as given in table 1; it is 12 times the annual saving of each class. As a result, five quintiles in table 1 are reduced to three classes in table 2.

Table 1: Household Size and Saving, and Annual Per Capita Income by Class 2011-12

Class	Income (Rs.)	Expenditures (Rs.)	Size	Per capita income (Rs.)	Saving (Rs.)
poor	180732	177216	7.78	23418	3516
middle	266754	243852	6.365	42360	22902
rich	526296	417288	4.84	108744	119808

Source: HIES 2011-12; tables 2.2 and 12 and calculations by the author.

To reflect the fact that marginal productivity of capital falls as capital accumulation of a household or a class increases, the output capital ratios for capital stocks of the poor, middle and rich classes have been assumed as 0.7, 0.55 and 0.45 respectively. Regarding the distribution of output produced, it is assumed that the poor class receives all the output generated from its capital stock in the form of wages and profits. In addition, the poor class receives 20 percent and 12 percent of the outputs of middle and rich classes as wages. The middle class receives 80 percent of its output and 6 percent of the output generated from the capital stock of rich class as wages. The proportion of wages from the output of rich class going to the poor class has been kept higher than that going to the middle class because capital stock of middle class is good enough to absorb most of the wage earners of its class. The rich class receives 82 percent of its output as wages and profits. These figures have been chosen though arbitrarily, yet the resulting growth rate in per capita income comes out very close to the actual one that is in the range of 4 to 6 percent without zakat. The initial capital stock of each class increases in every subsequent year by its annual savings.

Since it is evident from table 1 that average family size of a household falls as its income rises and average saving rate of a household rises as its income rises, therefore the family size of a class in our simulation decreases yearly by the formula: -

$$fs_{p(t+1)} = fs_{pt} + [(fs_{mt} - fs_{pt})(hy_{p(t+1)} \cdot hy_{p1}) / (hy_{mt} \cdot hy_{p1})]$$

where fs denotes family size and hy denotes household income; the first subscript denotes the class such as p for the poor and m for the middle class and the second subscript denotes the period. For the rich class, the minimum household size has been assumed to be 4 and maximum household income to be Rs.800000. Similarly the saving rate of a class denoted by hs increases yearly by the formula: -

$$hs_{p(t+1)} = hs_{pt} + [(hs_{mt} - hs_{pt})(hy_{p(t+1)} \cdot hy_{p1}) / (hy_{mt} \cdot hy_{p1})]$$

The maximum saving rate for the rich class has been assumed to be 0.3 that is 7 percentage points above the actual one for this class in 2011-12.

On same lines, the output capital ratio of a class, denoted by a , falls by the formula –

$$a_{p(t+1)} = a_{pt} + [(a_{mt} - a_{pt})(hy_{p(t+1)} \cdot hy_{p1}) / (hy_{mt} \cdot hy_{p1})]$$

The minimum output capital ratio for the rich class has been assumed arbitrarily to be 0.35. It may be pertinent to point out here that marginal productivity of capital unanimously decreases as more and more capital is placed at the disposal of same management team without changing its size and structure. On the contrary, efficiency of capital increases to a certain extent as more and more capital is placed at the disposal of a management team that increases in size though under the same chief executive officer.

The results of our simulation are presented in table 3. The upper part of the table shows per capita income for each class in a conventional economy in which zakat is not introduced, whereas the lower part shows the results when 2.5 percent of household income of the rich class is transferred to that of the poor class. As explained in its features, zakat is imposed on idle savings and commercial assets of the rich class. However, due to lack of data on these variables, it is assumed that zakat is imposed on the household income of the rich class.

Table 3: Per Capita Annual Income without and with Zakat

class\year		1	2	3	4	5	6	7	8
Without zakat	poor	23418	26255	28278	30456	33304	36537	40505	45195
	middle	42360	44668	47149	49773	52836	56194	60017	64311
	rich	10874 4	10990 3	12209 6	13070 5	14223 7	15360 2	166503	179987
	average	48060	50350	54590	58232	62903	67813	73509	79800
	growth		4.76	8.42	6.67	8.02	7.80	8.40	8.36
with zakat	poor	23418	28859	31304	34031	37730	41887	47069	53186
	middle	42360	44668	47215	49798	52879	56226	60053	64345
	rich	10874 4	10626 0	11917 3	12674 7	13789 8	14850 3	160735	173417
	average	48060	50663	55242	58881	63823	68946	74995. 8	81695. 9
	growth		5.42	9.04	6.59	8.39	8.03	8.78	8.93

Source: Calculations by the author.

Zakat definitely improves income distribution as a fraction of wealth of the rich class is transferred annually to the poor class but it does not hold back growth rate in average per capita income as can be seen from the last row of each portion of table 3. The reason is that the pronounced negative effect of zakat in the form of reduction in overall saving rate is offset by two least discussed positive effects; an increase in overall productivity of capital and a fall in overall household size. Overall saving rate falls as income of the rich class which has the highest saving rate is transferred to the poor class which has the lowest saving rate in the economy. Overall productivity of capital increases because, after payment of zakat, saving and thus addition to existing capital stock of the rich class which has the lowest

output capital ratio and which is usually subject to excess capacity decreases whereas, after receiving zakat, saving and thus addition to existing capital stock of the poor class which has the highest output capital ratio and which is hardly subject to excess capacity increases. The negative relationship between household income and family size as noted in HIES data given in table 1 further enhances economic relevance of zakat. An increase in family income of the poor class due to zakat helps them control their family size and thus their per capita income, saving and capital formation also increases.

5. CONCLUSION

In Economics, the original view about functioning of markets was that supply creates its own demand. It was challenged seriously over Great Depression because it could not explain it. Keynes gave the alternative view that aggregate demand plays the dominant role in determination of a country's income and output. His consumption function, AIH, implies that income distribution has a role in determination of aggregate demand; an economy having an equitable income distribution generates more aggregate demand than that economy having an inequitable income distribution provided that the other variables of two economies which affect aggregate demand are same. Keynesian view sounded well on theoretical grounds and was confirmed on the basis of cross-sectional household data. However, time series aggregate data analyzed by Kuznets did not confirm Keynesian standpoint that apc falls as income rises. It revived the classical view that income distribution does not matter for economic activity and growth.

The subsequent theories of consumption, particularly LCH and PIH, reconciled findings of both cross-sectional micro data and time series aggregate data. Keynesian consumption function better explains short term consumption behavior and classical view better explains long term consumption behavior of individuals. Moreover, Kuznets discovered that income distribution worsens at initial stages of economic development of a developing country but it smoothes out as soon as the country transforms itself from an primary products; producing country to a manufacturing products' producing country. After these theories, one implication of Keynesian consumption function that is aggregate demand matters more in determination of equilibrium income and output was remembered very well and its other implication that is an equitable income distribution is inevitable to ensure sustainable growth in aggregate demand was almost forgotten by academia in general and by policy makers in particular. Since then, governments of all market economies including USA have used extensive demand management policies both fiscal and monetary, whereas they have hardly introduced any income redistribution scheme in their respective countries.

However, incidence of recent global financial crisis, sluggish growth since its ending and worsening income distribution in last few decades in many market economies along with rising per capita income particularly in USA have brought the debate about relevance of income distribution for economic growth to limelight again. The attitude is, however, cautious as currently only inequitable income distribution within wage earners is targeted and no issue is taken with worsening of functional income distribution that is between capitalists and wage earners. After browsing the main arguments regarding the logic of income

distribution for economic activity in conventional economics, one can understand very well the theory behind the institution of zakat in Islamic framework. Islamic economics takes up Keynesian standpoint in its entirety that an equitable income distribution, may it be functional or within wage earners, is a prerequisite for a regular and smooth expansion of aggregate demand in an economy and thus for sustainable economic growth. Zakat specifies an effective mechanism of income redistribution that may not function so efficiently if a sitting government is allowed to tinker with items subject to zakat, with its rate, with its exemption limit and with its recipients.

To investigate implications of zakat for economic growth, a simulation model about functioning of a market economy has been carried out. It incorporates three important functions of income. One that is supported by empirical data is that aps increases as income rises. The other that is accepted theoretically though not verified empirically is that marginal productivity of capital falls as capital concentrates in few hands whereas formation of capital is a positive function of saving and thus of income. The last one that is also supported by empirical data is that family size is a negative function of income. In literature, the first of these three functions is given more attention whereas the last two are accorded less. It means that an expected decrease in aggregate savings and thus in capital stock due to any income redistribution scheme is exaggerated whereas its possible effect on maintaining aggregate demand, improving productivity of capital in the country and reducing the family size is ignored to a great extent. The results of our simulation that gives equal importance to these functions clearly indicate that zakat and any other income redistribution scheme for that matter are not detrimental to economic growth; rather they are congenial for economic growth.

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