

Mabid Ali Al- Jarhi

**Towards an Islamic Macro Model of Distribution:
A Comparative Approach**

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Mabid Ali Al-Jarhi makes some perceptible improvements over the work of his precursor Ahmad. For example his regrouping of the income recipients into rich and poor on the basis of *nisab* (p. 15) is more appropriate than maintaining intact their traditional division between capitalists' and labourers', which he understandably thinks redundant to Islam (p. 1).

Also, Jarhi does well to clarify that his work is only a preliminary step that may help ultimately in evolving a more comprehensive Islamic model of distribution (p, 16). This tends to mitigate in his case the criticism one might legitimately make that mere introduction of *zakah* into the Kaldor-Pasinette framework cannot convert the Western models into a real Islamic one⁽¹⁾.

Nevertheless, these and the other valid points one may find in Jarhi are largely overshadowed by the mathematical and inferential weaknesses of his work. Some of these have already been indicated by late Prof, K.A. Naqvi in his instructive comments⁽²⁾, A few more are briefly discussed in the following sections.

(1) Indeed, one maybe sceptical of such attempts made recently, and for three main reasons. First, they could not go beyond showing that *zakah* payments reduce distributive inequality (Ahmad, p.19). But to prove just that does not require much of ingenuity (Naqvi, p.71).

Second, even in the limited sphere of distributive equality, *zakah* alone and in isolation of the other elements of the Islamic system can do little more than income transfers from the rich to the poor that characterize all modern economies. If economic science has chosen to deal with after the transfer income categories for constructing its distribution models that is more a matter of form than principle. It neither makes transfers non-existent in the non-Islamic economies, nor precludes their incorporation like *zakah* in the post-Keynesian theoretical Structures.

Third, a macro distribution model can do little to bring out the equity promoting nature of *zakah* unless one can design it to demonstrate that incorporation of *zakah* would change also the functional distribution so as to improve the personal income distribution still further

(2) However, eyebrows may be raised on his 'suggestion' that "*Zakah* could be treated as a tax on wage and profit income but it is also a levy on stock" (p.71 emphasis ours). But he could have made it clearer what the suggestion has to do with Jarhi's model?

I

To begin with, let us have a look at Jarhi's analytical frame. It has definitional inaccuracies, tries to accommodate some incompatible assumptions, and is not free from derivational errors.

First, consider for example the concept of *zakah* rate symbolised by z in Jarhi's equations. *Zakah* is levied according to him not only on (i) all financial and real assets (say A_c) but on (ii) current income above *nisab* i.e. on $W_N + P_N$ as well (pp.17, 26). However, it is paid by implication only out of current income (eq. 4, p.22). Thus the estimation base for *zakah* Z is $A_c + W_N + P_N$, and δ being the average rate we must have:

$$Z = \delta (A_c + W_N + P_N) \quad (1)$$

Substituting for Z in Jarhi's eq. 25 (p.17) we get:

$$z = \delta \left(1 + \frac{A_c}{W_N + P_N}\right) \quad (2)$$

for $z < 1$, $\frac{W_N + P_N}{A_c + W_N + P_N} > \delta$

It follows from (2) that z must be greater than δ . Hence Jarhi's understanding that $z = \delta$ of Ahmad (p. 17) is dubious, and his subsequent assumption $z = \delta = 0.025$ (p.19) is misleading. In fact, his z is akin to $\delta \frac{A_c}{P_c}$ in Ahmad (Appendix 1, eq. 2).

Second, assuming $s_c = s_N$ and $g = n$, Jarhi attempts to demonstrate that the rate of return on capital is greater in his Islamic model than that in the Kaldor-Pasinette frame (p.19). But he fails to see that the two assumptions just cannot coexist on his own terms - if one holds good the other will not.

In the Western model we are given:

$$\frac{P}{K} = \frac{n}{s_c} \quad (\text{eq. 18, p.10}) \quad (3)$$

Introducing *zakah* in the above expression one gets:⁽³⁾

$$\frac{P}{K} = \left(1 - \delta \frac{A_c}{P_c}\right) \frac{g}{s_N} \quad (\text{From eq. 20, p.11})^{(3)} \quad (4)$$

$$\text{Clearly } \frac{g}{s_N} > \frac{n}{s_c} \text{ because } \left(1 - \delta \frac{A_c}{P_c}\right) < 1 \quad (5)$$

(3) Evidently the term on the right hand side of eq. (20) in Jarhi should be less than $\frac{n}{s_c}$ (given) if it has to remain consistent with eq. (18). Hence it is replaced by $\frac{g}{s_N}$ which really ought to have been there.

Therefore, if $S_N = S_C^{(4)}$, $g < n$ (6)

and if $g = n$, $S_C < S_N$ (8)

Thus the assumptions $n = g$ and $S_N = S_C$ cannot go together⁽⁵⁾, and no valid conclusions can be arrived at on that presumption. Even when each is made in isolation of the other the consequences are difficult to predict as a number of other complex factors are involved in the situation.

Again, it is not clear how "the rate of growth g is greater than one" (p.19) when it is less than one by definition, For $n = g$ and equation (32, p.19) yield:

$$g = n = \frac{P}{K} s_c < 1 \quad (9)$$

Furthermore, g is a constant in eqs. (39) and (40) but becomes by implication a variable in eqs. (41) to (46) of Appendix II (Naqvi, p.70).

Third, not many of the derivations in Jarhi are found to be correct-almost half of his equations are inaccurate. Some illustrations with reference to Appendix II are provided⁽⁶⁾.

(4) If we ignore the term $(1-a)^Z$ as an income component (eq. 1, p. 22) and merge it with Y_R i.e, keep

$Y = Y_R + Y_N$ we have:

$$s_c P = (P_N + W_N - Z) s_N + (P_R + W_R + Z) s_R = \bar{S} \quad (7)$$

Now, if $S_N = S_c$ we must have:

(i) $P_R = W_N - Z$ with $S_R = 0$, or (ii) $P_R > W_N - Z$ with $0 < s_R < s_N$

However, equating s_N with s_c obscures the role of s_R in generating the savings required to equal the full employment investment. To us, $s_N < s_c$ seems to be the normal case in an Islamic model of Kaldor-Pasinette type. This is confirmed by our illustration in n.6 below where $s_N (= 1/7)$ is less than s_c (61/300).

Incidentally, it is not clear why Jarhi ignores the role of $s_c(1-a)^Z$ in arriving at his growth rate g (eqs. (41) and (42) Appendix II) when this part of savings is essential to finance investment I in his scheme. This creates a discrepancy between $n (= 4 \text{ } 1/15\%)$ and $g (= 4\%)$ in the above mentioned illustration.

(5) Unless profit rate in an Islamic economy is appropriately higher than that in a non-Islamic economy. But this higher profit rate is then a *condition* for the consistency of the two assumptions, not a fact they *prove*.

(6) The author is grateful to Dr. Sameena Zubair who helped in verifying Jarhi's derivations by the following illustration where figures are purely imaginary. The values provided are sufficient to deduce all other values needed to satisfy Jarhi's equations, they are also mutually consistent.

$$Y = 100 \quad P = 60 \quad P_N = 40 \quad W_N = 30 \quad K_N = 200 \quad K_R = 100 \quad A_c = 560 \quad \bar{I} = 12 \text{ } 1/5$$

$$s_N = 1/7 \quad s_R = 1/10 \quad s_o = 1/20 \quad a = 5/7 \quad \delta = .025$$

$$z = \frac{1}{5} = \delta \frac{A_c}{W_N + P_N} \bar{S} = 12 \text{ } 1/5$$

Notice that z is defined here differently from that in (2) above for the position that *zakah* is payable also on the current income $W_N + P_N$ is not acceptable. However, the deviation does not affect verifications.

Take for example the two income shares as expressed in eqs. (18) and (21). The sum of the left hand sides of these equations is obviously one. But the same condition is not fulfilled by the sum of their right hand sides because eq. (21), which should be as under, is wrong⁽⁷⁾.

$$\frac{W_R + P_R}{\bar{Y}} = \frac{S_N - Z[(S_N - aS_R - S_O(1-a)) - \bar{I}/\bar{Y}]}{(S_N - S_R) - Z(S_N - aS_R) + S_O Z(1-a)} \quad (10)$$

Also, the conditions that would keep the two ratios $\frac{W_N + P_N}{\bar{Y}}$ and $\frac{W_R + P_R}{\bar{Y}}$ between zero and one must be identical as their sum equals one. These conditions are correctly given in Jarhi's equations (22-a to 22-c). Clearly, his equations (23-a to 23-c) are both incorrect and redundant.

Again, in the case of factor shares both derivations (35) and (38) are wrong⁽⁸⁾. Their corrected versions are:

$$\frac{W}{\bar{Y}} = \frac{S_P - \bar{I}/\bar{Y} - [(S_P - S_O(1-a) + S_N - aS_R)]Z/\bar{Y}}{(S_P - S_W)(1 + aZ_W - Z_W)} \quad (11)$$

$$\text{and } \frac{P}{\bar{Y}} = \frac{\bar{I}/\bar{Y} - S_W + [(S_W - S_O(1-a) + S_N - aS_R)]Z/\bar{Y}}{(S_P - S_W)(1 + aZ_P - Z_P)} \quad (12)$$

These and other blemishes⁽⁹⁾ in Jarhi's mathematics may have played their part in leading him to conclusions which, even if granted, do not follow from his proposed model and are apparently incompatible with one another. This we demonstrate below.

II

Jarhi claims that in an Islamic setting of his design the pre-redistribution income shares depend inter alia on the *zakah* and redistribution rates i.e. 'z' and 'a', (ii) distribution of wealth⁽¹⁰⁾ is more equitable, and (iii) profit and growth rates are higher⁽¹¹⁾ as compared to a Kaldor-Pasinette type of Western economy (p 18-20)

(7) This is so because a term (- S_NZ) is missing on the right hand side of eq. (19) which makes eq. (20) also erroneous.

(8) The reason is that in eq. (32) there must be two more terms on the right hand side i.e. (- S_NZ) and (+ S_RaZ). Their omission from eq. (32) renders all equations from (33) to (38) incorrect.

(9) For example $\frac{K_R}{K_R}$ in eq. (39) and $\frac{K_N}{K_N}$ in eq. (40) of Appendix II should be $\frac{\Delta K_R}{K_R}$ and $\frac{\Delta K_N}{K_N}$ respectively. Eq. (34, p.2(1) should read as under

$$S_R \left(\frac{P}{K} + \frac{W_R + aZ}{K_R} \right) > \frac{P}{K} \cdot S_C \quad (13)$$

and Z must be z in eqs. (35) and (36) on the same page.

(10) Jarhi does not seem to distinguish between income and wealth for the purpose of distribution. His discussion mentions wealth while his equations deal with income.

(11) Interestingly, Ahmad is at once non-committal on the relative magnitude of these rates (Ahmed, p. 19).

An examination of these claims may be prefaced with some brief observations on the nature of the exercise under review.

Jarhi starts with a set of definitional equations. Through an elaborate process of their inter-substitution and algebraic maneuverings, he obtains another set of equations to draw his inferences. But these latter equations remain essentially definitional because Jarhi seldom attempts to transform them into the required functional relationships by specifying his variables and constants. His is, like Ahmad's, an entirely static frame.

Now, take the issue of income shares. Consider Jarhi's equation:

$$\frac{W_N + P_N}{\bar{Y}} = \frac{\bar{I}/\bar{Y} - S_R}{(S_N - S_R) - Z(S_N - aS_R) + S_O Z(1 - a)} \quad (18 \text{ p.23})$$

Assuming 'z' as a variable and all other symbols constant on the right hand side of the equation, simple algebraic manipulations will establish a positive relationship between Z and the income share $\frac{W_N + P_N}{\bar{Y}}$. The relationship can be interpreted Y in two different ways:

(i) An increase in z increases the share of the rich in Y before redistribution and reduces that of the poor as $\frac{W_R + P_R}{\bar{Y}} = 1 - \frac{W_N + P_N}{\bar{Y}}$

or

(ii) The higher is the share of the rich in Y the higher will tend to be the *zakah* collection and redistribution in favour of the poor.

Ostensibly, the second is the sensible interpretation - it says that the rates of zakrih and redistribution are a function of the ratio of the rich persons' income to total in come. Jarhi's counter claim that pre-redistribution income shares depend among other things on 'z' and 'a' is naive, to say the least. It is like claiming that pre-tax in come is an increasing function of the tax rate!

It is significant that Jarhi does not - as he cannot - claim on the basis of his income share equations a greater distributional levelling ensured in his model. Rather, he re lies on the explanation: "It is obvious that *zakah* receipts will raise the income of the recipients in two ways... consequently a degree of distributive equity is maintained". (p.19). What useful purpose do these equations then serve?

The temptation to strike a parallel with models assuming profits to be the only or almost exclusive source of savings must be resisted. For in their case an increase in the income share of the capitalists can be shown as promotive of growth. But once we change the classification of income recipients from that into capitalists and labourers to the one between the rich and the poor as Jarhi has done, and introduce several saving propensities into the picture, the relevance of deriving the recomposed income shares has to be demonstrated⁽¹²⁾.

(12) One appropriate objective - especially in the Context of today's developing Muslim economies - can be to demonstrate the positive role of *zakah* mechanism in the progressive reduction of poverty. But for that one requires a different, dynamic analysis frame in place of the present static mould.

As regards a higher rate of return on capital in the proposed Islamic model we have already shown it to be an algebraic consequence of assuming $S_N = S_C$ and $g = n$ simultaneously (n.5). Jarhi fails to establish it as an independent characteristic of a *zakah*-based distribution system.

It brings us to the last but vital issue -the relationship between equity and growth. This relationship remains among the least explored ones in economic science. Still, the dominant view in current literature seems to be that there is an inherent conflict between the two, The broad argument is that pursuit of equity involves levelling of incomes which tends to reduce savings because of the higher consumption propensities of the lower income groups, thus reducing investment and therefore the pace of economic growth.

The validity of this argument may be questioned, but it is entirely applicable to Jarhi's framework where the level of savings and investment are the sole factors determining the income level. For him it was imperative to demonstrate that the rate of saving and investment will remain at least unimpaired in his scheme despite income levelling brought about by the *zakah* mechanism. Instead, he claims harmony between equity and growth on the basis of false simplifications.

The snag lies in the full employment income peg provided for the economy. It implies that the system continues to generate necessary savings for investment even after the incorporation of *zakah* in the Western model, the saving propensities of different income groups adjusting appropriately. But one is tempted to ask: Why should the peg itself not break under the adjustment pressure letting the economy slip into a less than full employment equilibrium with smaller savings, investment, and income (growth)? Unless this crucial explanation is provided mere introduction of *zakah* into the system cannot be expected to resolve one of the most complex riddles of modern economics⁽¹³⁾.

III

Mathematics simplifies complex ideas but can never be a substitute for hard core economic analysis. Its uncritical use in economics may produce, as in Jarhi, more confusion than light. Yet Jarhi's work may be appreciated for the light that it creates.

References

- Ahmad, Ausaf.** 'A Macro Model of Distribution in an Islamic Economy'. *JRIE*, Vol. 2, No. 1, (Summer 1404/1984): 1-20.
- Naqvi, K.A.** Comments on Mabid All Al-Jarhi 'Towards an Islamic Macro Model of Distribution: A Comparative Approach' *JRIE*, Vol. 2, No. 2, (Winter 1405/1985): 67-71.

(13) Assuming equality between saving propensities ($S_N = S_C$ and growth rates ($g = n$) Jarhi claims profit to be higher in his Islamic model (eq. 33, p. 19). Then he uses the same equations (30-31, p. 18) implying higher profit rates to unprove his second assumption and show $g > n$ through eqs. 34-35 (p. 21). where profit rate $\frac{P}{K}$ is the same in the two Systems! This is confusion par excellence.