

Size of Holdings and Productivity

A Reply

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I READ with interest Shri Ramgopal Agarwala's thoughtful comments (The Economic Weekly, April 11, 1964) on my note on the inverse relation between the size of holdings and productivity per acre (Annual Number, 1964), which was a follow up of an earlier paper (Annual Number, 1962). My reactions are the following.

(1) Agarwala finds my explanation of the relation between size of holdings and productivity per acre in terms of cheaper labour cost of the family based farms to be 'quite sound,' and he takes me to task for accepting in principle Dr Dipak Mazumdar's criticism of the explanation (Special Number, 1963). I do not think I accepted Mazumdar's criticism; all I said was that while Mazumdar made it sound like criticism, his own theory was much the same as my own explanation. Mazumdar's theory was, I claimed, "really an extension of the cheap-family-labour line of explanation rather than a new kind of explanation". (Annual, 1964, p 325).

Agarwala, in his interesting exercise, takes cases of fixed "distribution of labour over the agricultural year" which is "rigidly determined by technological consideration", and what is varied is the amount of total labour over the year. If there is use of hired labour in some seasons but not in others, Agarwala shows that "the marginal cost curve of labour facing the family farm is lower than that facing the capitalistic farm". So he finds that the explanation in terms of differential labour cost remains valid in this case also. This, incidentally, corresponds to my conclusion that "since there is complementarity between labour applied in different seasons, the lower opportunity cost of labour in the "slack" season (compared with the corresponding wage rate) makes the cost of a composite unit of labour less than the average wage." I think in all this we are in agreement and what Agarwala's analysis does is to clarify how exactly to calculate the cost of a composite unit of labour. (By the way, I wonder whether I can induce Agar-

wala to take a more indulgent view of Mazumdar's point by suggesting that Mazumdar's theory corresponds to a special case of this when only two units of labour are taken, one from the busy season and another from the slack season.)

Use of Size Class Averages

(2) Agarwala is critical of my dislike of the assumption that the average amount of hired labour used in each size group can be assumed to be equally divided among all acres of land in that size group. Particularly he finds this odd since I am ready to use size class averages for establishing relation between size and productivity per acre. I have two things to say on this. Firstly, I did make some reservations about the use of size class averages for deriving the relation between size and productivity. In fact I started my last paper expressing caution about taking this average relation too seriously. Secondly, averaging is not equally misleading for every problem, and I would like to point out that it is relatively very much more difficult to use the average figure in the context of the hired labour point. Mazumdar, who brought up this piece of statistics of hired labour, used an argument where the amount of hired labour per farm did not matter, and what mattered was whether hired labour was being used at all in these farms. Now even if a very small number of farms used hired labour, the assumption of spreading the average over all farms would make it look as if every farm was using some hired labour, however small the amount. For this particular exercise, therefore, the assumption of spreading the average is exceptionally misleading, much more so than in the case of the quantitatively significant inverse relation between size averages and productivity averages of wide classes of farms based on size-wise stratification.

(3) Agarwala also takes me to task for confining myself to the labour-cost-based explanation, which was the only explanation I considered

in my 1962 nete Agarwala is particularly worried about my bringing in the "fertility-based explanation". If farms of the same size, to start with, have different degrees of natural fertility, the more fertile farms will tend to subdivide faster, due to greater income (and the consequent tendency of the size of the families to expand faster). Thus a correlation may be indirectly established between smallness of size and natural fertility. Agarwala asks, "Is it true that higher income necessarily leads to bigger family?" I agree that it does not necessarily in every case, but I think it does so significantly on an average, and that is all that is necessary for this argument. The ability of a family to withstand famines, floods droughts, etc, that periodically visit this country, is greater for families with larger income per head. Agarwala also brings in the possibility of non-agricultural employment and the possibility of decline of natural fertility of soil through over-use, which are both relevant; but one does not have to rule these things out altogether to assume that higher income leads, by and large to an expansion of the family size. Finally in this context Agarwala makes a point, which I think is erroneous. He argues that "above all" if the process "has been working long enough and or rapidly enough to explain the fertility differences, it should have by the same logic brought about a near equalisation of per capita income of farmen and that seems to be far from the facts." This is not correct, because the fertility argument is only claiming that if Y is income and N the number of people being supported by it, there is a tendency for N to change in the same direction as Y , which means

$\frac{dN}{dY} > 0$. This certainly does not imply

that $\left(\frac{N}{Y}\right)$ must be the same, or even

nearly the same, everywhere. Agarwala is misled, I believe, by the Malthusian special case. In the simplest Malthusian model, we have $N = Y \cdot a$, where a is the inverse of the

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subsistence level. Since $a > 0$, we do not, by any means, imply that the Malthusian equation holds. Thus this argument of Agarwala seems to be ill-conceived.

In spite of these differences, Agar-

wala and I have much in common in our approach to this problem of size and productivity, since both of us are favourably disposed towards the labour-cost-based explanations. Our main difference is on the question whether to rule out other explanations altogether. I feel, for example, that the fertility-based explanation can possibly supplement the labour-

cost-based approach; Agarwala does not agree. I have discussed above why I think Agarwala's dismissal of this explanation or, more or less a priori grounds is hasty. Of course, the possibility remains that a detailed empirical enquiry will show this factor to be completely unimportant. But at this stage I do not see any reason for presuming that it definitely will