DISCUSSION

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I BELIEVE this paper is serving a useful purpose and I am glad to see the material presented. The principal suggestion I wish to make is that considerably more of such information is needed and should, I believe, be published regularly along with the various estimates that the Bureau of Agricultural Economics publishes.

In the early part of the paper it is pointed out that the production information services of the Department of Agriculture were initially undertaken to protect farmers from "false and misleading reports." Nothing further is said about the purposes served by such information. It seems to me that there are four principal groups vitally interested in the production information gathering services of the BAE. These are farmers, dealers and processors of agricultural products, action and legislative agencies of the government, and agricultural research workers. I am better acquainted with research workers than with the other groups so my suggestions are offered primarily with their needs in mind.

The worker who is basing research on production data always needs some indication of the reliability of the data. It would be a useful practice if these data were regularly accompanied by indications of reliability. If a particular estimate has been obtained by a sampling process, a standard error of estimate can be calculated. If a published estimate is based largely upon subjective judgments then a standard error in the usual statistical sense is ordinarily not possible. However, those persons who are able to exercise sound judgment in formulating an estimate should also have some judgments as to the reliability of the estimate and their judgments as to reliability would be of great help to the research worker. The Census Bureau has been furnishing estimated standard errors along with its estimates of various magnitudes for several years.

In addition to the data-gathering agency's own estimates of reliability the research worker should have ready access to a fairly complete description of the information gathering and estimation processes. This would serve two useful purposes—it would enable the research worker to form an independent judgment as to reliability of the data and it would enable him to offer suggestions for improvement in the processes.

To illustrate these notions I should like to mention several matters treated in the paper that I believe are of interest to research workers and on which I think the research worker needs considerably more information before he can form a judgment as to the desirability of the practices now being followed. This is not intended to mean that I believe the needed material should have been included in the present paper but is offered as a suggestion for supplementing the information given in the paper.

In comparing mail sampling to interview sampling the paper states that mail sampling is generally less expensive and yields results more quickly than interview sampling. I do not see why results cannot be obtained

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quickly when speed is an important consideration and when this is taken into account in the design of the survey. There are instances in which interviewing surveys have yielded results very quickly. It is true that interviewing surveys generally cost more than mail surveys; however it is possible that some relevant items in the cost comparison are sometimes overlooked. In a mail survey part of the cost to the public does not appear as a BAE expenditure but is borne through the postal deficit. Also extended use of interview surveying would generally improve the reliability of survey results and this should make possible some reductions in the costs of non-survey estimation activities. It is probable, however, that these adjustments still leave interviewing as the more expensive survey technique. The extra cost must be balanced against the additional information that can be obtained from an interview as compared to a mail questionnaire and the increased reliability of the results of a well-conducted interview survey.

The technique that was called controlled mail sampling in the paper may be the preferred alternative in many cases. It has been developed from a sound theoretical base by Hansen and Hurwitz who have provided methods for estimation of magnitudes, methods for estimation of error, and the principles to be considered in designing an efficient survey. I know of no comparable work for semi-controlled mail sampling and am somewhat more doubtful regarding its general value. In particular its use seems to depend upon making corrections from regression equations estimated from the sample. These regression estimates will ordinarily be subject to an unknown bias making it impossible to estimate the errors of the various “corrected” estimates of magnitudes.

Another process in which the research worker is interested and which he cannot evaluate without rather detailed information is the formation of Final Revised Estimates after Census data are available. These estimates will be used in any attempt to recover information from past history. The appropriate revision will depend on hypotheses held regarding the composition and relative size of errors in the unrevised estimates and in the Census data. For example, if it were held that errors in unrevised estimates were independent from year to year but were large relative to errors in Census data, the appropriate adjustment would be to substitute Census data for unrevised estimates for Census years and to leave unrevised estimates for other years unchanged. Other hypotheses would lead to other appropriate adjustments.

It was indicated that when regressions are used in making forecasts or estimates the regressions are obtained by a visual fitting process and it was pointed out that this permitted allowances to be made for changes in the relationship over time and permitted greater weights to be attached to more nearly comparable seasons. Both these things can, of course, be done with computed regression equations. If regressions are computed the investigator must make explicit his assumptions about changes in relationships and weights to be applied. This, I believe, is an advantage. Too often in visual fitting assumptions that affect the result are hidden, and appraisal and criticism of the work becomes very difficult.

The above topics are cited as examples of some concerning which the useful information given in the present paper needs to be supplemented.