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Objectives of Proposed Project

by

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The main objective is to construct a model that will predict, in the broadest sense of the term. At the national level, this means that practical policies aimed at controlling inflationary or deflationary gaps will be served. A good model should be one that will eventually enable us to forecast, within five percent error margins roughly eighty percent of the time, such things as national production, employment, the price level, the wage level, and the distribution of the major shares of national income — wages, industrial profits, and agricultural income.

Related objectives are the testing of alternative business cycle theories and the description of history. There is something to be said for a scholarly attitude that looks upon econometric model building as a challenging problem in itself aside from its application to any particular policies.

Sector studies might be developed more gradually than the work on the most aggregative models. Agriculture, however, seems to be such an important sector that it should be studied in the first instance either as a separate part or as a major subdivision of an aggregative model. In the latter event, a particularly interesting sector, say construction, should be singled out for separate, detailed study to serve as something of a pilot investigation.

Quarterly data are in need of extensive reworking as raw materials for future investigations; moreover, there will have to be a large amount of experimental work

on the treatment of seasonal variation and serial correlation. For these reasons, the first analysis may not deal with the problem of constructing quarterly models.

The use of survey data is something on which research resources may well be allocated from the beginning. Conditions have obviously changed much in recent months since the original project memorandum was written. It appears now that we may be experiencing, for some time, economic situations in which there is substantial structural change. Samples drawn from very recent history will be helpful in detecting structural changes. Much theoretical work on the treatment of survey data needs to be done, and the proposed project ought to allocate resources to this end as soon as possible. There is, however, considerable expense involved in collecting survey data and in making calculations for large samples of observations. Empirical work with survey data depends, to a large extent, on the relations that can be established with research organizations in this field.

The main objectives, as stated above, seem to preclude large scale studies of international models in the initial stages, unless resources of manpower and funds happen to become available for this type of work specifically.

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Comments on Macro-economic Model Construction

by

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1. The following remarks are intended to stimulate the discussion of a renewed endeavor toward macro-economic model construction. The remarks are only loosely connected, the common element being an attempt to indicate ways in which ideas and discussions that took form since the conclusion of Monograph 11 can be used in renewed model-construction.

2. The objective of enabling accurate forecasting envisages one method of social organization, more or less that embodied in the full-employment legislation: Experts forecast what would happen in the event of various possible actions, thus the Executive and/or Congress take actions. The study might also take into account the possibility of various automatisms, sometimes inaccurately referred to as built-in flexibilities, which would make the action a function of the observations. (Tinbergen's discussions of business cycle policy, Simon on servomechanisms). This reinforces the case for the use of quarterly data.

3. The concern with the inflationary or deflationary gap emphasizes two objectives of economic activity: full utilization of resources and the avoidance of a change in the income distribution toward greater non-functional inequality. Other objectives include efficient utilization of resources, equality of opportunity, etc. The objective of efficient utilization reinforces the case for disaggregation by sectors and, alternatively, by geographical areas.

4. The work on allocation and programming may be useful in introducing a concern with efficiency into the model.

5. The measurement of production functions can probably be given a firmer theoretical basis by further elaborations of microeconomic models of production that introduce physical capital (enabling commodities) and capacity concepts.

6. The concept of a system of macro-economic equations represents one possible way of aggregating microeconomic equations. Suggestions toward alternative principles of aggregation are contained in the work of Arrow (studying the frequency distribution of individual behavior parameters) and of Debreu (measure of inefficiency).

7. The work on behavior under uncertainty (Marschak, Markowitz) would be useful particularly with respect to the asset-holding behavior.

8. Statistical work on specification error (Hurwicz) and on serial correlation or regression (Gurland), will after further extensions and generalizations have a definite bearing on the proposed research. There is an urgent need for statistical

work on "decomposition" of estimation methods by subsystems of equations.

9. Can we meet the Friedman criticism: That Christ's experiments have shown that the information contained in the data so far processed have been insufficient for good forecasting?