

(25) See Tintner, *opere citato*, pages 53, 55–56, 91–132, 303–304, and other studies cited in his notes.

(26) See Tintner, *opere citato*, pages 134–143; Robert M. Solow, "Technical Change and the Aggregate Production Function" in *The Review of Economics and Statistics*, August 1957, volume XXXIX, No. 3, pages 312–320.

(27) For a convenient survey of the theory of production and production functions, see Paul H. Douglas, *opere citato*, and Sune Carlson, "A Study on the Pure Theory of Production," Kelly & Millman, Inc., 1956.

(28) Douglas, *opere citato* the reprint of his address, "Are There Laws of Production?"

(29) The series used was taken from "U.S. Income and Output," a supplement to the Survey of Current Business, table I-2, pages 118–119, and table I-16, pages 138–139.

(30) For employment and hours of work, the figures used were preliminary data prepared by Dr. John Kendrick in his study for the National Bureau of Economic Research entitled "Productivity Trends in the United States" (in preparation), a summary of which was presented by Dr. Solomon Fabricant in his statement before the Joint Economic Committee at hearings in connection with the Study of Employment, Growth, and Price Levels (pt. 2, "Historical and Comparative Rates of Production, Productivity, and Prices," p. 281). We are indebted to the National Bureau for permission to use these preliminary data in our study prior to completion and publication of Dr. Kendrick's volume.

(24) *Derivation of potential labor input (L_p)*.—The potential labor input variable (L_p) measures the total amount of man-hours potentially available for economic activity during the calendar year. It is, conceptually speaking, equal to the potential labor force multiplied by the average of the potential annual hours of each employee. The labor force was assumed to be 96 percent employed, that is, an arbitrary level of 4 percent unemployment was postulated for the model. This figure was selected because there was the self-imposed constraint that the model would be built within the existing institutional framework, one characteristic of which is an amount of frictional unemployment. On the basis of past experience, 4 percent seemed to be representative of unstrained full employment. It is underlined, however, that this figure intends no policy recommendations or value judgments.

For purposes of the model, the figure is unimportant because the mathematical technique used—that is, correlation analysis in logarithms—turns this percent into a constant that is absorbed in the constant of the equation without effecting the regression coefficients or the forecast. With the assumption of a constant level of unemployment, movement within the labor input series reduces to changes in the labor force and changes in the average annual hours. The final data used for both of these series is a smoothed aggregation of individually derived subseries. The procedure was different for each series.

Potential labor force (M_p).—The derivation of a potential labor force faces both conceptual and technical problems. On the one hand there is the difficulty of reconciling the pre-1940 definitions of gainfully employed with the subsequent labor force concept, which itself