

KEYNES' „SIMPLEST MODEL”

The following example stems from Lawrence R. Klein: **Economic Fluctuations in the United States. 1921-1941. New York / London 1950.** pp.7-8.

“A very simple example will enable us to clarify many of these ideas. In the simplest Keynesian model of economic behaviour, consumption is a linear function of income[,] and investment (private and public) is entirely exogenous.” “Our system of structural equations now becomes

$$(1.1.5) C = \alpha + \beta Y + u$$

$$(1.1.6) C + I = Y$$

$$(1.1.7) I = \text{exogenous}$$

where C = consumption, Y = income, I = investment.”

“The reduced form of the simple model is obtained by solving for either of the endogenous variables, C or Y , in terms of the exogenous variable I . The reduced forms are

$$(1.1.8) Y = \frac{\alpha}{1 - \beta} + \frac{1}{1 - \beta} I + \frac{u}{1 - \beta}$$

$$(1.1.9) C = \frac{\alpha}{1 - \beta} + \frac{\beta}{1 - \beta} I + \frac{u}{1 - \beta}$$

p.8: “In equations (1.1.8) and (1.1.9), all the statistical hypotheses of the Markoff theorem on least squares hold,... and we can estimate the parameters of the reduced forms without bias. ... If we are interested only in forecasting C and Y , we can stop at this point. If, however, we are interested in structural estimation, we must go another step. Knowing an estimate of $1/(1 - \beta)$, we can obtain an estimate of β , a structural parameter, and, knowing also an estimate of $\alpha/(1 - \beta)$, we can obtain an estimate of α , the other structural parameter. The method of maximum likelihood will give exactly the same results in this model whether applied directly or through the equivalent (in this case) procedure of the reduced form method.”

Of course, the last statement can be proved by theoretical reasons alone. But, as an exercise, we produce the estimates (i) by E-Views and (ii) by LISREL. See the other files.