

Timbergen J. *On the theory of economic policy.*

Amsterdam: North-Holland, 1952. 78 p.

[Erasmus University, Rotterdam, and Central Planning Bureau, The Hague, The Netherlands]

Variables are targets, instruments, data, and so on. Relations are structural ones (model) and restrictions. Consistent economic policy requires that the number of instruments equal the number of targets. Otherwise, targets are incompatible or instruments alternative. Instrument effectiveness and complications in reality are examined. [The *Social Sciences Citation Index*® (SSCI)® indicates that this book has been cited in over 220 publications since 1966.]

J. Tinbergen
Haviklaan 31
2566XD Den Haag
The Netherlands

March 10, 1986

In 1952 economic policy had hardly been dealt with as an applied quantitative science. A pioneer document by R. Frisch for the United Nations Employment Commission, *A Memorandum on Price-Wage-Tax-Subsidy Policies as Instruments in Maintaining Optimal Employment*,¹ was the basis of our own booklet, *On the Theory of Economic Policy*. The Employment Commission did not pursue the subject for lack of a consensus.

The booklet used simple examples, illustrated with the aid of two models. One model was used by the Central Planning Bureau of The Netherlands, of which I was the director from 1945 to 1955. In 1969 Frisch and I received the first Nobel Memorial Prize in Economics for this sort of work.

The systematic quantitative treatment of an economic policy problem to attain a set of targets using an appropriate

set of instruments was new to many at that time. The necessary equality of number of instruments to number of targets was the first proposition of the work. In the booklet, I studied the consequences of inequality of these numbers. More targets than instruments makes targets incompatible. More instruments than targets makes instruments alternative; that is, one instrument may be used instead of another or a combination of others. I then clarified such concepts as the effectiveness of an instrument in attaining each of the targets. At the same time, the reliability of the computed values of the necessary instruments could be estimated. Complicated problems of economic policy could thus be solved in stages.

This very simple early work has been elaborated on and generalized by many other econometricians, such as T.C. Koopmans, H. Theil, J. Sandee, and many others. A recent generalization is reference 2.

Among the generalizations are the introduction of welfare functions for policy-makers or nations, the introduction of environmental targets (Nijkamp³), the study of integrated policies (including security policy by Dietrich Fischer and me⁴), and the interaction between policy-makers and model-building counselors (J. Spronk³ and J.A. Hartog⁵).

The booklet was written as one of the texts for courses in planning economic policy, both for university students and for staff members of the Central Planning Bureau and of research institutes in other government departments and in the Central Bank. In other European countries (France, Norway), planning also developed partly as an instrument to organize European cooperation set in motion by the Marshall Plan.

1. Frisch R. *A memorandum on price-wage-tax-subsidy policies as instruments in maintaining optimal employment.* Oslo: University Institute of Economics, 1949.
2. Preston A I & Pagan A R. *The theory of economic policy: statics and dynamics.* Cambridge, England: Cambridge University Press, 1982. 392 p.
3. Nijkamp P. *Environmental policy analysis: operational methods and models.* Chichester, England: Wiley, 1980. 283 p.
4. Fischer D & Tinbergen J. *Warfare and welfare.* Brighton, England: Wheatsheaf. (In press.)
5. Hartog J A. Personal communication.