CONSISTENT AND EFFICIENT ESTIMATION OF SYSTEM OF SIMULTANEOUS EQUATIONS AND ITS IDENTIFICATION

Muhammad Aman Ullah, G.R. Pasha
Department of Statistics, Bahauddin Zakariya University, Multan.

Zahoor Ahmad
Department of Statistics, Baluchistan University, Quetta.

This paper presents the theoretical development of simultaneous equations, its identification and methods for estimation the parameters of a simultaneous equations model. The parameters of simultaneous system are also estimated and compared by different methods.

INTRODUCTION

There are two alternative lines of attack on the problem of consistent and efficient estimation. First a RF for the system of simultaneous equation can be derived and estimated, possibly subject to constraint. This approach was originated by Haavelmo [1944]. Second the structural form can be estimated without first estimating the FR. This approach was presented by Tinbergon [1939].

Haavelmo's original proposal was to estimate the RF of a system of simultaneous equation by OLS, then to derive estimates for the parameters of the SF by ILS, For exactly identified systems, Haavelmo [1944] showed that this method is equivalent to the method of ML. Kmenta [1971] also showed that 2SLS, 3SLS and 13SL gives identical results on one hand and FIML on the other hand for exactly identified systems.

Anderson and Rubin [1949, 1950] extended Haavelmo's approach to over identified equations introducing the method of LIML. They proposed to estimate the RF, subject to the over identifying restrictions on a single equation and to derive estimates for the

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