[Summary]

Simultaneous Equations Model

Subject:	Business Economics
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Unit No. & Title:	Unit – 2 Simultaneous Equation Models
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Summary

This study is specially related to system of simultaneous equations system models. An interesting feature for such model is that that there are a numbers of equations in the model. Also a variable which occurs as endogenous variable in one equation may occurs as exogenous variable in another equation. Hence, it may not be proper to take any equation separately and then apply OLS method .In fact, OLS estimation for simultaneous equations system model give biased and inconsistent estimators.

Here a very important concept of identification is to be studied. An equation of the model may be just (or exact) identified or over identified or unidentified. From the structural equations of the model, we can arrive at reduced form equations with reduced form coefficients .These coefficients are some functions of the structural parameters. If we get unique solutions for estimating structural parameters, the particular equation is called just identified. If we get alternate solutions for the same parameters, then the equation is called over identified.

There is a very interesting method for identification by means of order and rank conditions. They very quickly decide about identifiability of equation. Order condition is a necessary condition, whereas rank condition is a necessary and sufficient condition. Both of them together can give a clear picture for identification.

For just identified equation, we use indirect least squares method and obtain ILSE for the parameters based upon estimation of reduced form coefficients. ILSE for small samples are biased. However large samples can give consistent ILSE.

For over identified equations, we use two stage least squares method which gives consistent estimators. We do not use here very rigorous mathematical methods and advanced results.