# MODEL

---

MODEL (FILE=*filename*,PRINT,SILENT) *equation list* [*endogenous variable list*]
*ordered model name* ;

---

**Function:**

MODEL determines the order in which the equations of a model should be solved and saves this order under a collected model name. It must be used before a SOLVE command invokes the model simulation procedure.

**Usage:**

MODEL takes as its arguments the name of a list of equations in the model, and produces a collected and ordered model which is stored under the name supplied by the user. Each of the endogenous variables in the list must appear on the left hand side of one and only one of the equations. For compatibility with older versions of TSP, you may supply the endogenous variable list, but for the current version this is optional.

**Options:**

**FILE=***filename* writes a file containing input for the CAUSOR program. CAUSOR provides detailed information on model structure, such as essential feedback sets. When FILE= is used, the equations do not have to be uniquely normalized, as long as the endogenous variable list is supplied. CAUSOR may be obtained from Manfred Gilli, Departement d'Econometrie, Universite de Geneve.

PRINT/**NOPRINT** specifies whether the older (more voluminous) output format is to be used.

SILENT/**NOSILENT** suppresses printing completely.

**Example:**

This example shows how to set up the well-known Klein Model I for simulation:

```
INST CX C W P(-1) INVR C P(-1) K(-1) E(-1) TM W2 G TX ;
FORM CONS ;
INST I C P P(-1) K(-1) INVR C P(-1) K(-1) E(-1) TM W2 G TX ;
FORM INV ;
INST W1 C E E(-1) TM INVR C P(-1) K(-1) E(-1) TM W2 G TX ;
FORM WAGES ;
IDENT WAGE W = W1+W2 ;
IDENT BALANCE E=E+CX+I+G-(TX+W+P) ;
IDENT PPROD P = E-TX-W1 ;
IDENT CAPSTK K=K(-1)+I ;
LIST KLEIN CONS WAGES BALANCE PPROD INV WAGE CAPSTK ;
MODEL KLEIN KLEINC ;
SOLVE (TAG=S,TOL=.0001,METHOD=FLPOW) KLEINC ;
```

# MODEL

This model solves for CX (consumption), I (investment), W1 (wages in the private sector), W (total wage bill), E (production of the private sector), P (profits), and K (capital stock) using TM (time), W2 (government wage bill), TX (taxes), and G (government expenditures) as exogenous variables.

At the end of this simulation, the solved variables are stored under the names CXS, IS, etc.

**Output:**

MODEL prints information about the ordering of the model, the number of simultaneous and recursive blocks, and whether or not the simultaneous blocks are linear in the variables for which they are to be solved. This information is also stored as part of the collected model. A table is printed which shows for each equation in the model the number of its block, whether the block is simultaneous (S) or recursive (R), and which endogenous variables appear in that equation.

See the example output in the **User's Guide.**

**Reference:**

Gilli, Manfred, "Causal Ordering and Beyond," **International Economic Review**, November 1992, pp. 957-971.

Gilli, Manfred, "Graph-theory based tools in the practice of macroeconometric modeling," in **Methods and Applications of Economic Dynamics**, S.K. Kuipers, L. Schoonbeek, and E. Sterken (eds), North Holland, Amsterdam.

Steward, D.V., "On an Approach to Techniques for the Analysis of the Structure of Large Systems of Equations," **SIAM Review,** Volume 4, pp. 321- 342.