Econ 311: Definition of Identification Problem

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January, 2001

Model space M : Class of all models worthy of consideration

$m \in M$ possible theoretical models.

2 Attributes of a Model:

(a) What one can observe about the model in given set of data

(b) What one would like to know about model.

$g : M \longrightarrow T$ (target space) $g(M) = T$

$h : M \longrightarrow S$ (source space) $h(M) = S$

For any specific model $m \in M$,

$h(m) = s \in S$ characteristics of model

that can be observed in data

$g(m) = t \in T$ characteristics we want

to identify (some sub aspect of the model)

S may be consistent with many model m.

$\therefore h$ is not $1 - 1$.

Identification Problem:

Can elts of T be determined from elts in

S?

elts in T and S related: how

$f = g \circ h^{-1}$ correspondence

$f(s)$ may have more than one elt.

Goal is to put restrictions R to modify f

to f^R so

$f^R(s)$ has at most one elt in T.

Restrictions: $R \subseteq M$ if for each $s \in S$,

$f^R(s)$ has at most one elt in T, R forms set of

identifying restrictions.

$\therefore R \subseteq M$ identifies g from h when for