

Adaptive models :

Phillips curve example:

- First, we pretended that α was fixed & known,
- Solve a govt control problem

$$x_k = h(\alpha) \quad , \quad h(\alpha) = \frac{-\alpha_0 \alpha_1}{1 + \alpha_1^2}$$

dynamic version

$$x_t = h(x) X_{t-1} \leftarrow$$

2. In fact, x is unknown, what to do -

$$x_t = x_{t-1} + \text{ls}(\text{news at } t)$$

→ $h(x_t)$ where h is the same one as above

Prescott's PhD thesis.

Problem: is this two step procedure
a "good" one.

Call this two step procedure
"anticipated utility approach"

Kreps, Schwartz Lecture, 1999.

I pose a control problem for the
managing authority to solve "Pontryagin's
problem". - study the "two step"
procedure $(h(\hat{x}_t))$ as
an approximation to the full solution.

• "intentional experimentation".

Curse of dimensionality.

II. Talk about a "Lucas"
anticipated utility model.

Note: in the CCS paper:

it is easier to learn when high
prob is attached to SS model because
the policy maker moves V_t all over the
map. — The Lucas policy maker sets
 $V_t = 0 \implies$ no information that

would spread the models. - the two models are
observationally equivalent under the
lucas policy.