Information Problems & the Phillips Curve

Two models derive a Phillips curve,
not by imposing constraints on price adjustment,
but by imposing constraints on information
available to agents.

"Sticky information" [Mankiw & Reis, QJE 2002)

Monopolist pricesetter, $p_i^* = p + \phi y$ & $y = m - p$
but cannot (or chooses not to) observe current
p, y, m (macroeconomic, aggregate variables)

Pricesetter observes these only at intervals,
when random bell rings as in Calvo model.
At that time, observe macroeconomy &
write down a planned path for p_i which
will be followed until bell rings again,
info updated, new plan made.

Planned path can allow p_i to vary from
period to period.

Given constraint on info (or wilful ignorance), use
rational expectations.

INFO PROBLEMS (cont.)

Lucas Supply Function (Lucas, JET 1972)

Perfect competition in product markets

Goods produced by "yeomen barbers" who take price as given, want to produce more when $(p_i - p) \uparrow$

But all a producer can see is p_i — can't see price level p (or m).

When $m \uparrow$, all prices rise so $(p_i - p)$ unaffected, but barber sees $p_i \uparrow$, says, "this might be $(p_i - p) \uparrow$," & produces more.

Resulting Phillips Curves

LSF $\quad \pi_t = E_{t-1} \pi_t + \beta y_t$

SI $\quad \pi_t = \lambda \sum_{j=0}^{\infty} (1-\lambda)^j \underbrace{E_{t-1-j}(\pi_t + \alpha \Delta y_t)}_{\text{past expectations of current conditions}} + \beta y_t$