

Discussion of

“Benefits from U.S. Monetary Policy Experimentation in the Days
of Samuelson and Solow and Lucas”

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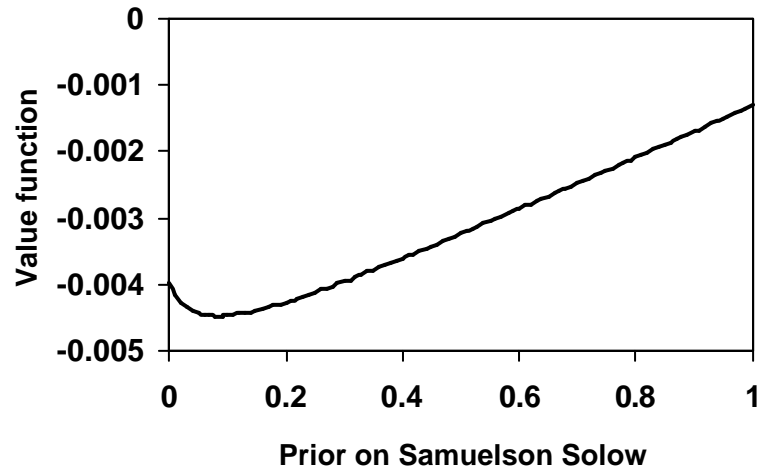
Unpacking the incentives to experiment

Incentive to experiment depends on

1. Value of improved information
2. Amount and efficacy of unintentional experiments
3. Efficacy of intentional experiments

Value of improved information

Value of information depends on convexity of value function with no experimentation, De Groot (1962)



Not much convexity ? little value to better information

Convexity more pronounced when $a_{t-1} \approx 0.1$

Amount and efficacy of unintentional experiments

Policy if believe Samuelson-Solow is true: $v_{t-1} = 0.007 + 1.50U_{t-1}$

If Samuelson-Solow is true

$$U_t = .0004 + .38U_{t-1} - .0015\mathbf{h}_{3,t} + .0054\mathbf{h}_{1,t}$$

If Lucas is true

$$U_t = .0007 + .85U_{t-1} - .0014\mathbf{h}_{4,t} + .0055\mathbf{h}_{2,t}$$

Unintentional experiments work most through unemployment disturbances and unemployment persistence, not control errors

Policy if believe Lucas is true: $v_{t-1} = 0$

If Samuelson-Solow is true

$$U_t = .0023 + .80U_{t-1} - .0015\mathbf{h}_{3,t} + .0054\mathbf{h}_{1,t}$$

If Lucas is true

$$U_t = .0007 + .85U_{t-1} - .0014\mathbf{h}_{4,t} + .0055\mathbf{h}_{2,t}$$

Unintentional experiments work the same way but with reduced efficacy, models are almost *observationally equivalent*

Efficacy of intentional experiments

Learning is determined by Bayes rule

Bayesian updating means efficacy of experiments highest when $\mathbf{a}_{t-1} \approx 0.5$

Efficacy of experiments lowest when $\mathbf{a}_{t-1} \approx 0$ or $\mathbf{a}_{t-1} \approx 1$

Same problem with unintentional experiments

Reasons behind conclusion of paper

1. Gains to improved information are small
2. Unintentional experiments help you learn anyway
3. Most gains available when $\mathbf{a}_{t-1} \approx 0.1$
4. Experiments have least efficacy when $\mathbf{a}_{t-1} \approx 0$

An alternative “parameterisation”

Samuelson-Solow

$$U_t = .0023 + .80U_{t-1} - .28\mathbf{p}_t + .0054\mathbf{h}_{1,t}$$

$$U_t = .0022 + .86U_{t-1} - .12\mathbf{p}_t + .0054\mathbf{h}_{1,t}$$

Lucas

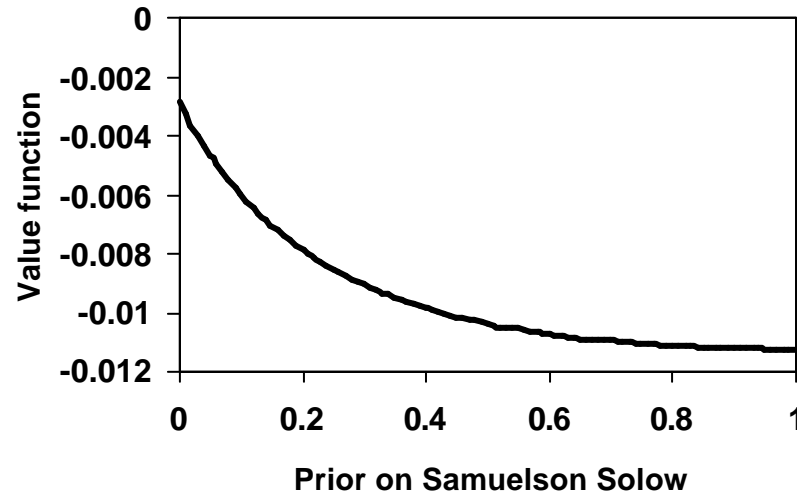
$$U_t = .0007 + .85U_{t-1} - .25(\mathbf{p}_t - v_{t-1}) + .0055\mathbf{h}_{2,t}$$

$$U_t = .0010 + .74U_{t-1} - .12(\mathbf{p}_t - v_{t-1}) + .0055\mathbf{h}_{2,t}$$

Distaste for inflation $\mathbf{l} = .1$ $\mathbf{l} = .22$

Alternative parameters are all within 2 se of central estimates

Value of improved information



Value function is more convex ? greater incentives

Information still more valuable for lower a_{t-1}

Amount and efficacy of unintentional experiments

Policy if believe Samuelson-Solow is true: $v_{t-1} = 0.01 + 1.04U_{t-1}$

If Samuelson-Solow is true

$$U_t = .001 + .73U_{t-1} - .0007\mathbf{h}_{3,t} + .0054\mathbf{h}_{1,t}$$

If Lucas is true

$$U_t = .001 + .74U_{t-1} - .0007\mathbf{h}_{4,t} + .0055\mathbf{h}_{2,t}$$

Unintentional experiments are practically useless!

Models are almost *observationally equivalent*

Policy if believe Lucas is true: $v_{t-1} = 0$

If Samuelson-Solow is true

$$U_t = .002 + .86U_{t-1} - .0009\mathbf{h}_{3,t} + .0054\mathbf{h}_{1,t}$$

If Lucas is true

$$U_t = .001 + .74U_{t-1} - .0007\mathbf{h}_{4,t} + .0055\mathbf{h}_{2,t}$$

Unintentional experiments work but with reduced efficacy,
models are *almost observationally equivalent*

Need change in monetary regime to distinguish model

Efficacy of intentional experiments

Still have problem that experiments have less efficacy when you need them

But, models are almost *observationally equivalent*

Intentional experiments are only way to learn which model is correct – they are equivalent to changes in regime

This is exactly what Lucas (and Sargent) taught us!

An alternative conclusion

1. Gains to improved information are fairly small
2. Unintentional experiments cannot be relied on to help you learn
3. Most gains available when $\mathbf{a}_{t-1} \approx 0.1$
4. Experiments have least efficacy when $\mathbf{a}_{t-1} \approx 0$
5. *But* intentional experiments may be the only option to distinguish between models