

Discussion of “A Tractable Income Process for Business Cycle Analysis”

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Viewpoints and conclusions stated in this discussion are the responsibility of the author alone and do not necessarily reflect the viewpoints of the Federal Reserve Board.

Off-the-shelf model with pick-your-own features

- Super practical for heterogeneous-agent modelers
- Captures important features of income previously documented:
 - Income inequality rises linearly with age
 - Income changes have i) very fat tails and ii) are left skewed
- Including business-cycle variation:
 - Acyclical variance
 - Procyclical skewness
 - Effect of recessions on low/middle/high income workers

Familiar permanent/transitory decomposition

State-variable parsimony:

- One to capture an AR(1) persistent income process
- One to capture business cycle position

Can this become *the* benchmark model for HA models?

Two (related) concerns

- 1 Unemployment is acyclical in the model
- 2 Transitory/persistent decomposition misses medium-term dynamics

Concern 1: Unemployment is acyclical in the model

Difficult to map transitory shocks to unemployment

- 40% chance of an unemployment spell every year

Key cyclical fact: Acyclical variance, Procyclical skewness

- My interpretation: Less quits, more unemployment
- The model's interpretation: Persistent income shock becomes left skewed in a recession

Perhaps use $cov(\Delta y_t^2, \Delta y_{t+s})$ to distinguish these two interpretations

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Concern 2: Transitory/persistent decomposition

Almost a pure permanent/transitory decomposition, except:

- Scarring effect of transitory shocks (some correlation between transitory and permanent shocks)
- A version of the model with HIP in which persistent shocks decay with AR(1) coefficient around 0.8.

But: there is evidence that 'transitory' shocks persist more than one year

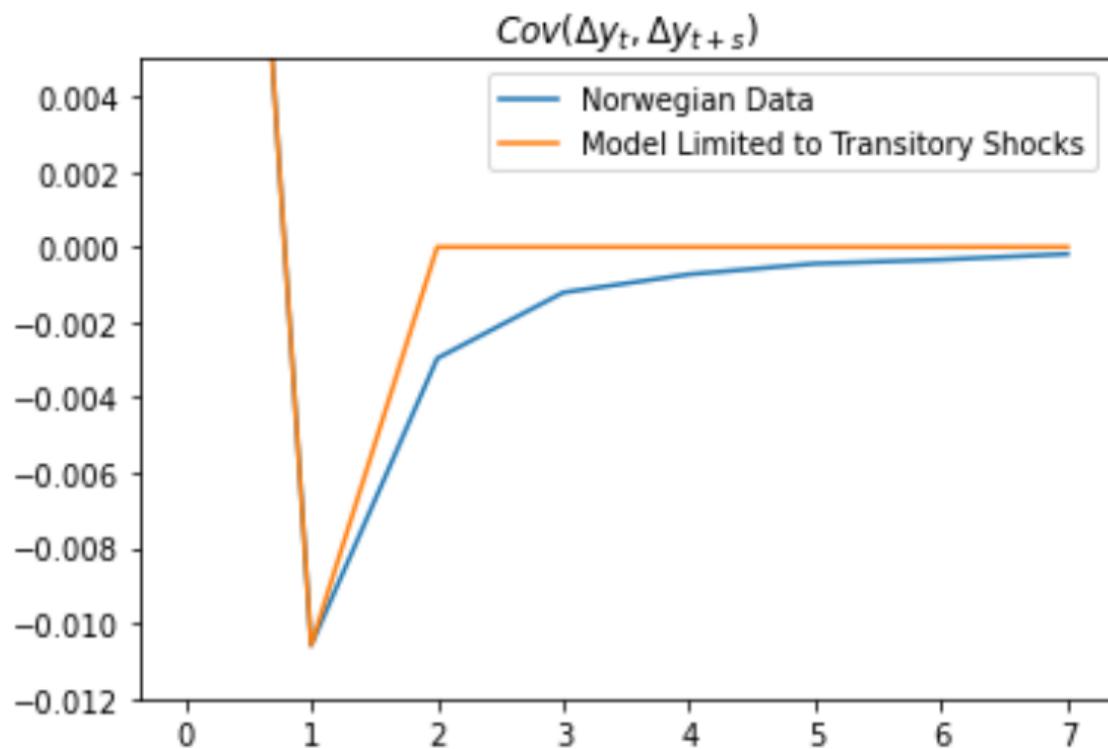
Concern 2: Transitory/persistent decomposition

Most of the moments used do not speak to the duration of 'transitory' shocks.

- Exception is standard deviation of 3 and 5 year income growth.
- But the model misses these moments without HIP addition.

Suggestion: Use $cov(\Delta y_t, \Delta y_{t+s})$ to hone in on shock persistence.

Concern 2: Transitory/persistent decomposition



Crawley, Holm, and Tretvoll (2022) find about half 'transitory' shocks persist for a half life of 2 years.

Best of-the-shelf model suitable to heterogeneous-agent modelers

- A huge improvement on the standard income processes used in most HA models
- Captures key aspects of risk for incomplete market models with limited state variables

However, the model may be improved with:

- Countercyclical unemployment
- More careful identification of shock persistence.