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# Economic models at central banks: An alternative assessment

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# Rise & fall of "Big models"

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- Huge initial success: forecasted no new depression after WWII
  - Second wave (10000 eqn): failure
    - Lucas critique
    - Hard to know what's going on
    - Require "håndspålegging"
    - A simple VAR is better for simple forecasting
    - After failing to forecast stagflation in the 1970: needed new paradigm
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# Real Business Cycle models

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- Fresh start: Kydland, Lucas, Prescott:
    - Micro-founded w/rational expectations
    - No frictions => representative agent
    - Cycles driven by technology shocks
  - Huge theoretical progress but limited empirical success:
    - No role for money (since no frictions)
    - What are these technology shocks?
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# “New-Keyensian” models

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- Inspired by Kydland-Prescott
  - Add price- and wage-rigidities
    - Calvo trick: firms are allowed to change prices and wages only at some exogenous points in time
  - Cycles are driven by demand shocks
  - Models not intended for forecasting
    - Production side (capital and real shocks) downplayed
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# Synthesis: Dynamic CGE models = RBC with nominal frictions

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- Use VAR analysis (or cointegration) to establish "stylized facts"
  - Estimate parameters of theoretical model so it matches stylized facts
  - Involves adding theoretical features and "shocks" to explain facts
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# Strengths of DCGE

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- Models are consistent with empirical facts *and* theoretically consistent
    - Estimated parameters can be estimated as "deep" (robust to Lucas' critique)
  - The models are simple enough to be challenged
  - Communication of results is alleviated when using simple and theoretically consistent models
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# Weaknesses of DCGE

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- The models are typically assumed to be subjected to *many* shocks
    - How should these shocks be interpreted?
  - Stylized facts are established using VAR analysis, but these VARs are not necessarily consistent with DCGE model
  - Over-fitting?
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# What if the model fails?

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- What if a rich and sound theoretical model fails to match certain “stylized facts”?
  - Add *ad-hoc* elements to theoretical model
    - Lose deep interpretation of parameters
    - Loose on ability to communicate model
    - Lucas’ critique pops up again!
  - Add “shocks” or “structural breaks”
    - *ad-hoc* way of incorporating stuff outside of model
    - requires clear interpretation of shocks
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# What if the model fails? (cont.)

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## □ Live with it!

- “Facts” can be wrong – danger of over-fitting
  - Fear that DCGE program is being hijacked by forecasters – cost of adding ad-hoc elements is perhaps too low!
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# What is the right friction?

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- The big question: what is the “right” way to model nominal frictions?
    - New-Keynesian models: sticky prices
    - Academic interpretation: fruitful stand-in for the true friction
    - Calvo-model has shortcomings: firms will increase frequency of price changes if costs of rigid prices go up
    - Alternatives: cost of info-acquisition?
  - Caution with literal interpretation of Calvo-model, must be open to alternatives!
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# Was it a right decision to abandon RIMINI and og for NEMO?

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- Yes!
  - Don't look back!
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