# Use of models at central banks: Comments

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#### Monetary Policy Conference at Norges Bank 7 April 2005



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What would you like?



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#### What would you like?

Communication



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#### What would you like?

- Communication
- Reality check



#### What would you like?

- Communication
- Reality check
- Forecasting



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#### What would you like?

- Communication
- Reality check
- Forecasting
- Policy analysis



#### What would you like?

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#### In stock

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#### What would you like?

- Communication
- Reality check
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- Policy analysis

#### In stock

Calibrated theory



#### What would you like?

- Communication
- Reality check
- Forecasting
- Policy analysis

#### In stock

- Calibrated theory
- VAR (Structural & Bayesian)



#### What would you like?

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#### In stock

- Calibrated theory
- VAR (Structural & Bayesian)
- Econometric model



#### What would you like?

- Communication
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#### In stock

- Calibrated theory
- VAR (Structural & Bayesian)
- Econometric model

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DSGE



#### What to take?



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Calibrated theory



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- Calibrated theory
  - non-realistic



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- Calibrated theory
  - non-realistic
- VAR & econometric model



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- Calibrated theory
  - non-realistic
- VAR & econometric model
  - non-constant



- Calibrated theory
  - non-realistic
- VAR & econometric model
  - non-constant
- DSGE



- Calibrated theory
  - non-realistic
- VAR & econometric model
  - non-constant
- DSGE
  - non-robust



- Calibrated theory
  - non-realistic
- VAR & econometric model
  - non-constant
- DSGE
  - non-robust

Winnie the Pooh solution: Yes, please.



Apologies to Ambrose Bierce



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Apologies to Ambrose Bierce

• Aggregate dynamic econometric models



Apologies to Ambrose Bierce

#### • Aggregate dynamic econometric models

Estimates of "something"



Apologies to Ambrose Bierce

#### • Aggregate dynamic econometric models

- Estimates of "something"
- Structural VARs



Apologies to Ambrose Bierce

#### • Aggregate dynamic econometric models

- Estimates of "something"
- Structural VARs
  - How to estimate models inefficiently



Apologies to Ambrose Bierce

- Aggregate dynamic econometric models
  - Estimates of "something"
- Structural VARs
  - How to estimate models inefficiently
- Bayesian estimation



A (1) > A (2) > A

Apologies to Ambrose Bierce

- Aggregate dynamic econometric models
  - Estimates of "something"
- Structural VARs
  - How to estimate models inefficiently
- Bayesian estimation
  - Calibration called estimation



A (1) > A (2) > A

Apologies to Ambrose Bierce

- Aggregate dynamic econometric models
  - Estimates of "something"
- Structural VARs
  - How to estimate models inefficiently
- Bayesian estimation
  - Calibration called estimation
- DSGE & Microfoundations



A (1) > A (2) > A

Apologies to Ambrose Bierce

- Aggregate dynamic econometric models
  - Estimates of "something"
- Structural VARs
  - How to estimate models inefficiently
- Bayesian estimation
  - Calibration called estimation
- DSGE & Microfoundations
  - Sophisticated naivety



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Core" or "suite"



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- "Core" or "suite" Suite
- Why?



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"Core" or "suite"Why?

- Suite
- Competition & diversification



- "Core" or "suite"
- Why?
- Why not core?

- Suite
- Competition & diversification



- "Core" or "suite"
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• Models come...models go...



- "Core" or "suite"
- Why?
- Why not core?
- What suite?

- Suite
- Competition & diversification

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• Models come...models go...



- Core" or "suite"
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Story"-model



- Core" or "suite"
- Why?
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- Suite
- Competition & diversification
- Models come...models go...
- Story"-model
- Data-based forecasting model

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## What to choose

- Core" or "suite"
- Why?
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Must be transparent

## What to choose

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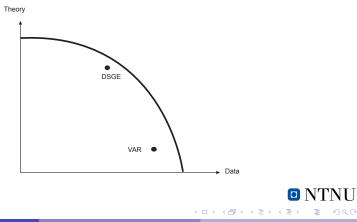
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- Must be transparent
- Laboratory



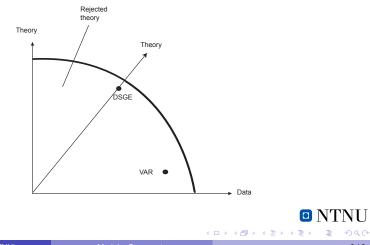
## How much reality?

The Pagan frontier...



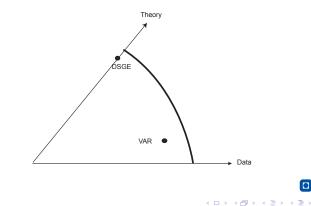
# How much reality?

The Pagan frontier...



## How much reality?

The Pagan frontier...



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## Microfoundations...

The times they are achanging

Behavioural economics



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The times they are achanging

Behavioural economics

• hyperbolic discounting: time inconsistency



The times they are achanging

Behavioural economics

- hyperbolic discounting: time inconsistency
- learning: expectations change



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The times they are achanging

Behavioural economics

- hyperbolic discounting: time inconsistency
- learning: expectations change
- herd behaviour: asset bubbles



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The times they are achanging

Behavioural economics

- hyperbolic discounting: time inconsistency
- learning: expectations change
- herd behaviour: asset bubbles
- fair treatment: backward-looking behaviour (Driscoll & Holden)



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The times they are achanging

Behavioural economics

- hyperbolic discounting: time inconsistency
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- herd behaviour: asset bubbles
- fair treatment: backward-looking behaviour (Driscoll & Holden)

But see Backus, Routledge & Zin: "Exotic preferences for macroeconomists"



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Danger: vested interests



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- Danger: vested interests
  - Any new model is a success by default



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Gunnar Bårdsen (NTNU)

- Danger: vested interests
  - Any new model is a success by default
- Economies are highly non-linear & non-constant



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- Danger: vested interests
  - Any new model is a success by default
- Economies are highly non-linear & non-constant
- Go for robustness & pragmatism:



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- Build in blocks



- Danger: vested interests
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- Pick "best" theory-consistent model for each block

A (1) > A (2) > A

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- If any common framework: steady-state medium term growth

🖸 NTNU

A (10) A (10)

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- Bårdsen, Hurn & Lindsay: approximations imply EqCM

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A (10) A (10)

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- Pick "best" theory-consistent model for each block
- If any common framework: steady-state medium term growth
- Bårdsen, Hurn & Lindsay: approximations imply EqCM
- Cointegration provides the steady-state.

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