QuantNet 2.0 @ GitHub

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Outline

Reversible Jump Markov Chain Monte Carlo

Modern Scientific Practice

QuantNet 2.0

GitHub

GitHub and QuantNet 2.0

Reversible Jump MCMC

Standard practice for approximation of posterior distributions for model parameters: Metropolis-Hastings samplers

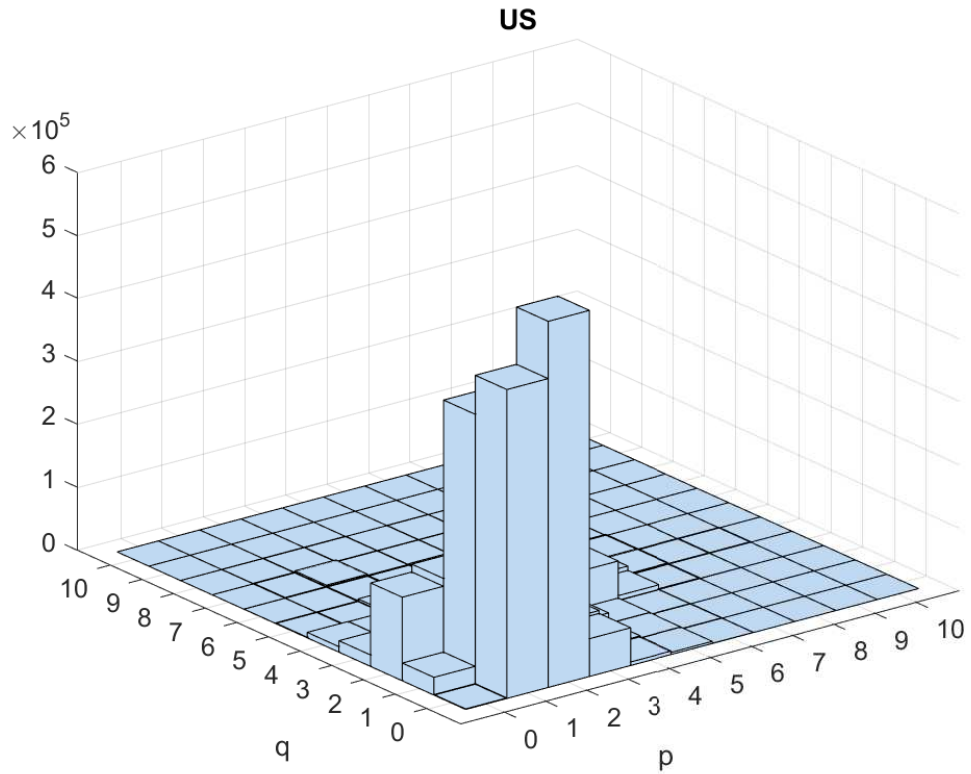
Problem: Want to analyze posterior distribution also spanning model space
$\Rightarrow$ Dimensionality of parameter space varies

Solution: Reversible Jump Markov Chain Monte Carlo

- Generalization of Metropolis-Hastings samplers
- Samples from a joint posterior distribution across different models and their corresponding parameter spaces

Posterior Distribution Across Models

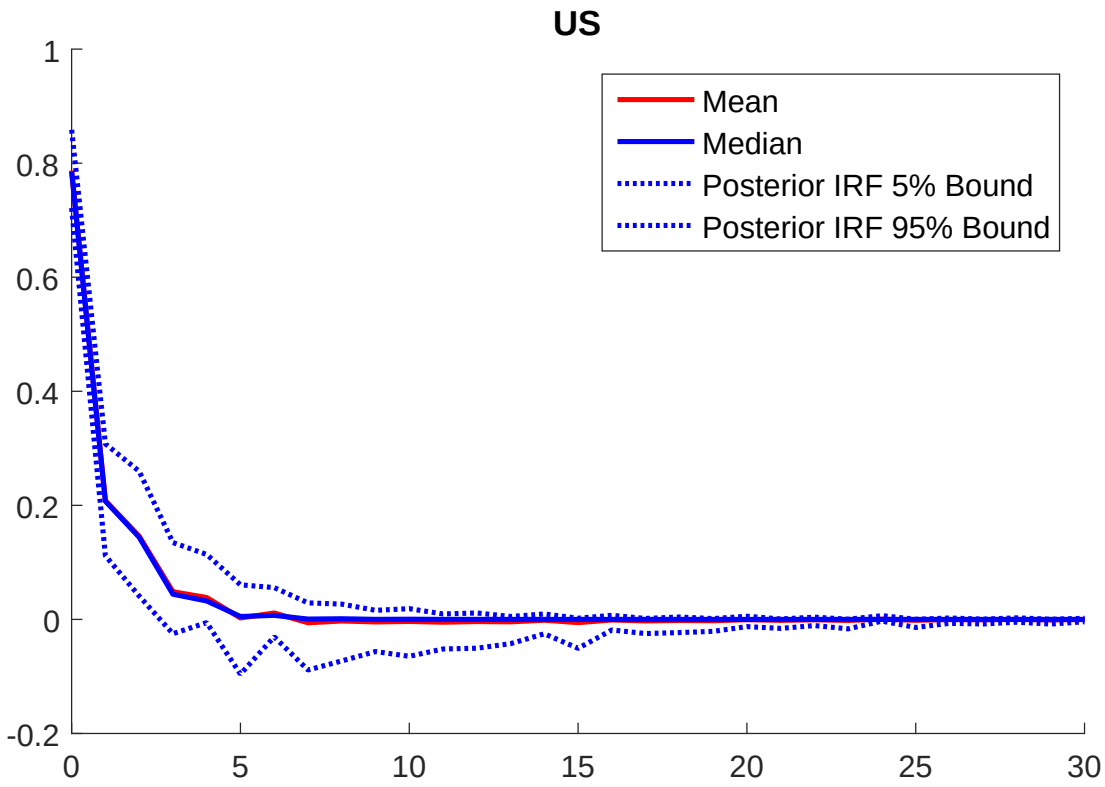
Posterior distribution across ARMA(p,q) models:



⇒ Posterior model probabilities

Posterior Distribution: Impulse Responses

Can analyze posterior distribution for any statistic while accounting for model uncertainty!



Modern Scientific Practice

Modern scientific practice:

- Transparency
- Reproducibility

Also: Want to publicize new technologies!

Problem: Need and want to publish our technologies and data!

The Solution

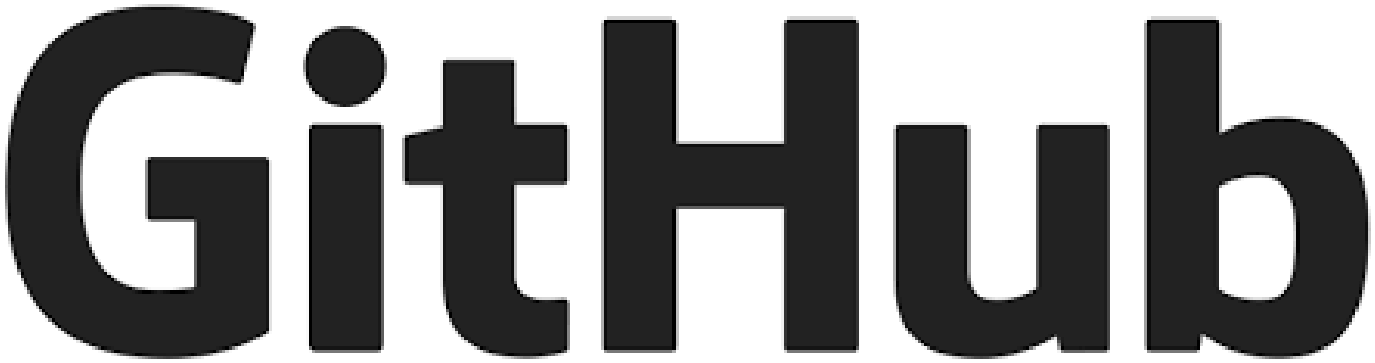
QuantNet 2.0

The Solution

QuantNet 2.0

- is open access
- already hosts more than 2000 Quantlets
- provides technology to easily share data and programs
- makes technology searchable
- enhances and encourages collaboration through seamless GitHub integration
- visualizes connections between technologies

What is GitHub?



- A distributed version control system (Git)
- A collaboration platform (Hub)

Advantages

- QuantNet is fully integrated with GitHub
- Ease of discovery and use of your technology
- Audit of your technology

Reproducible and transparent science!

What I did

1. **Start:** Create GitHub repository with my code
2. **Develop:** Create technology following style guide
3. **Publish:** Audit and publish

Your Technology: Easily found, used, and improved!

Thank you for your attention!