*Final exam topics, Econ 674*

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*Fall semester, 2014. Version 0.7.0*

| | Exam topic | Suggsested reading |
|---|---|---|
| 1. | The “Lucas Critique” | [LJ76], [Nob11], [Sim12] |
| 2. | Stationary univariate ARMA models | [Ham94] Ch 3 – 5 |
| 3. | Identification in SVARs | [Sim80], [Kil13] |
| 4. | Statistical aspects of stationary VARs | [Ham94] Ch 10 and 11 |
| 5. | Spectral representation | [Ham94] Ch 6 |
| 6. | Filtering | [Ham94] Ch 6, [BK99] |
| 7. | HAC Estimation | [Ham94] 10.5, [NW87], [And91] |
| 8. | Testing using fixed bandwidth asymptotics | [KV05], [Sun14] |
| 9. | Univariate ARMA processes with stochastic and non-stochastic trends | [Ham94] Ch 15 – 17 |
| 10. | Testing for a break in the simple regression model with i.i.d. errors | [Sto94, Sec 5] |
| 11. | Testing for breaks in realistic time series models | [And03], [Bai97], [BP98] |
| 12. | Bootstrapping i.i.d. data | [Han14] Ch 10 |
| 13. | Bootstrapping time series data | Bühlmann (1999) research report (on Box), [HHK03] (more theory than covered in class; on Box) |
| 14. | Determining the trend structure of univariate time series | [AB00], [HLT07] |
| 15. | Nonstationary VARs (without cointegration) | [Ham94] Ch 18 |
| 16. | Estimating and testing cointegrating relationships | [Ham94] Ch 19, [Joh14] |
| 17. | Error Correction Models (estimation and inference) | [Ham94] Ch 20, [Dav13], [Joh14] |
| 18. | Multiple hypothesis testing | [RW05], [Ros08] |
| 19. | Bayesian inference | [Ham94] Ch 12, [Chi12] |
| 20. | State space models (focusing on Bayesian estimation) | [Ham94] Ch 12 and 13, [Fea11], [Chi12] |

A reminder: you’ll be given two random topics from this list and must pick one of them. You’ll then have $\tilde{3}0$ minutes to prepare a 20 minute presentation on the whiteboard that you’ll give to the instructors (Helle and Gray). You may use notes during your presentation (but style counts).

The recommended resources listed on the syllabus — [Lüt06], [Can07], [Mik13], and [SW08] — also have a lot of useful material on these topics. You also own several econometrics books from the core sequence and they cover some of this material as well.

The “suggested reading” is meant to be an *exhaustive* and *comprehensive* list: we could not imagine any student reading all of it in detail. (Feel free to take that as a challenge!) You are expected to pick out a subset or overview that you find interesting and/or important and prepare to present that material.

## *References*


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[Can07] Fabio Canova. *Methods for Applied Macroeconomic Research*. Princeton University Press, 2007.

[Chi12] Siddhartha Chib. Markov Chain Monte Carlo technology. In *Handbook of Computational Statistics*, pages 73–104. Springer, 2012.

[Dav13] James Davidson. Cointegration and error correction. In Nigar Hashimzade and Michael A. Thornton, editors, *Handbook of Research Methods and Applications in Empirical Macroeconomics*, pages 165–188. Edward Elgar Publishing, 2013.

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[Ham94] James D. Hamilton. *Time Series Analysis*. Princeton University Press, 1994.

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[HHK03] Wolfgang Härdle, Joel Horowitz, and Jens-Peter Kreiss. Bootstrap methods for time series. *International Statistical Review*, 71(2):435–459, 2003.

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[KV05] Nicholas M Kiefer and Timothy J Vogelsang. A new asymptotic theory for heteroskedasticity-autocorrelation robust tests. *Econometric Theory*, 21(6):1130–1164, 2005.

[LJ76] Robert E. Lucas Jr. Econometric policy evaluation: A critique. In *Carnegie-Rochester Conference Series on Public Policy*, volume 1, pages 19–46. Elsevier, 1976.

[Lüt06] Helmut Lütkepohl. *New Introduction to Multiple Time Series Analysis*. Springer, 2006.

[Mik13] Anna Mikusheva. Lecture notes for time series analysis (MIT 14.384), 2013. Available at «ocw.mit.edu/courses/economics/14-384-time-series-analysis-fall-2013». Licensed under Creative Commons BY-NC-SA.

[Nob11] Nobel Prize Committee. The prize in economic sciences 2011 — advanced information. *Nobelprize.org*, 2011. Available at «www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2011/advanced-economicsciences2011.pdf».

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[SW08] James Stock and Mark Watson. NBER Summer Institute Lectures: What's new in econometrics — time series. Video and slides available at «www.nber.org/minicourse_2008.html», July 2008.