MSc/PhD course: Applied Time Series with Applications

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Topics to be covered

1) Motivation and preliminaries
2) Time series, moving average (MA) processes, Autoregressive (AR) processes
3) Non-stationary time series I: Unit roots and stochastic trends
4) Non-stationary time series II: Business cycles. Trend/cycle decomposition, Filters
5) Vector autoregression: Specification, estimation, Impulse responses
6) Structural vector autoregression I: SVAR Identification - Cholesky decomposition
7) Structural vector autoregression II: Alternative Restrictions + evaluations
8) Structural vector autoregression III: Proxy-SVAR

Reading list

Book:

- **BT2014**: Bjørnland, Hilde & Thorsrud, Leif Anders 2014. ``**Applied time series for macroeconomics**," Gyldendal Akademisk (Oslo). Order it here: https://www.amazon.com/Applied-Time-Macroeconomics-Hilde-Bj%C3%B8rnland/dp/8205480893/

Articles (more articles will be suggested before the course):

- Bjørnland, Hilde C., Cross, Jamie and Jonas Holz (2025). "Re-thinking the relationship between oil prices and monetary policy" Mimeo

- Aastveit, Knut Are, Bjørnland, Hilde C, Cross, Jamie L. and Helene O. Kalstad: "Unveiling Inflation: Oil Shocks, Supply Chain Pressure, and Expectations". Norges Bank Working Paper 12/2024

- Bjørnland, Hilde C., 2000. "Detrending Methods and Stylized Facts of Business Cycles in Norway - An international comparison". *Empirical Economics*, 25, 369-392. http://home.bi.no/a0310125/empirical.pdf

- Bjørnland, Hilde C., 2009. "Monetary policy and exchange rate overshooting: Dornbusch was right after all". *Journal of International Economics*, 79(1), 64-77.

http://www.sciencedirect.com/science/article/pii/S0022199609000841

- Bjørnland, Hilde C. & Leitemo, Kai, 2009. "Identifying the Interdependence between US Monetary Policy and the Stock Market". *Journal of Monetary Economics*, 56, 275-282. http://www.sciencedirect.com/science/article/B6VBW-4V42JCT-1/2/3bb9a80c156a6f16602f5d580bceaf58