Causal Inference, Time Series and Economic History

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Course content

The course will provide an overview of time series analysis in economic history. The methods covered include filters, local projections, vector autoregressions, narrative identification, and instrumental variables. For each method, theory, applications in the historiography and practical exercises are covered.

Preparation

All students should come to class having read the class discussion paper.

Assessment

The course is examined through a 2,500 word essay (100%). Write a referee report that critically discusses a paper in economic history, focusing on the strengths and weaknesses of the research design. If you think there is a way of addressing a specific weakness with the available data, you may modify or extend the analysis. Choose a paper, not covered as a class discussion paper, that uses one of the quantitative techniques that we have discussed in class. The essay should be emailed to me by Monday 5 September 2022.

Indicative reading

- Stock, J. H., and Watson, M. W., *Introduction to econometrics* (2020).
- Wooldridge, J. M., *Introductory econometrics: A modern approach* (2009).

Class plan

Class 1. Introduction to time series analysis

Wednesday 11 May, 9:30-12:30, Alfa1:1104
Overview: This class will introduce the course and the fundamentals of time series analysis.
Additional material:
1. Wooldridge, J. M., *Introductory econometrics: A modern approach* (2009), chapters 2 and 10.
2. Stock, J. H., and Watson, M. W., *Introduction to econometrics* (2020), chapter 4.

Class 2. Stationarity, filtering and seasonal adjustment

Wednesday 11 May, 14:30-17:30, Alfa1:1104
Overview: This class will cover the problem and detection of non-stationarity, filtering and seasonal adjustment.
Class discussion paper: Edvinsson, R., 'New annual estimates of Swedish GDP, 1800-2010', *Economic History Review*, 66 (2013), pp. 1101-26.
Additional material:
1. Wooldridge, J. M., *Introductory econometrics: A modern approach* (2009), chapters 10 and 18.
2. Hamilton, J. D., 'Why you should never use the Hodrick-Prescott filter', *Review of Economics and Statistics*, 100 (2018), pp. 831-43.
3. Kenny, S., and Lennard, J., 'Monetary aggregates for Ireland, 1840-1921', *Economic History Review*, 71 (2018), pp. 1249-69.

Class 3. Single-equation models

Thursday 12 May, 9:30-12:30, Alfa1:1104
Overview: This class will cover distributed lag models, autoregressive distributed lag models and local projections.
Class discussion paper: Kelly, M. and Ó Gráda, C., 'Numerare est errare: Agricultural output and food supply in England before and during the Industrial Revolution', *Journal of Economic History*, 73 (2013), pp. 1132-63.
Additional material:
1. Stock, J. H., and Watson, M. W., *Introduction to econometrics* (2020), chapters 15 and 16.
2. Koudijs, P., 'The boats that did not sail: Asset price volatility in a natural experiment', *Journal of Finance*, 71 (2016), pp. 1185-226.
3. Steinwender, C., 'Real effects of information frictions: When the States and the Kingdom became United', *American Economic Review*, 108 (2018), pp. 657-96.
4. Fochesato, M., 'Origins of Europe's north-south divide: Population changes, real wages and the "little divergence" in early modern Europe', *Explorations in Economic History*, 70 (2018), pp. 91-131.

Class 4. Vector autoregressions

Thursday 12 May, 14:30-17:30, Alfa1:1104
Overview: This class will cover vector autoregressions, including impulse response functions, forecast error variance decompositions and historical decompositions.
Class discussion paper: Nicolini, E. A., 'Was Malthus right? A VAR analysis of economic and demographic interactions in pre-industrial England', *European Review of Economic History*, 11 (2007), pp. 99-121.
Additional material:
1. Stock, J. H., and Watson, M. W., *Introduction to econometrics* (2020), chapter 17.
2. Crafts, N., and Mills, T. C., 'From Malthus to Solow: How did the Malthusian economy really evolve?', *Journal of Macroeconomics*, 31 (2009), pp. 68-93.
3. Groote, P., Jacobs, J., and Sturm, J-E., 'Output effects of infrastructure investment in the Netherlands, 1853-1913', *Journal of Macroeconomics*, 21 (1999), pp. 355-80.

Class 5. Narrative methods

Friday 13 May, 9:30-12:30, Alfa1:1104
Overview: This class will cover narrative methods.
Class discussion paper: Cloyne, J., 'Discretionary tax changes and the macroeconomy: New narrative evidence from the United Kingdom', *American Economic Review*, 103 (2013), pp. 1507-28.
Additional material:
1. Romer, C., 'The narrative approach to establishing causation in macroeconomics', *Keynes Lecture*.
2. Crafts, N., and Mills, T. C., 'Rearmament to the rescue? New estimates of the impact of "Keynesian" policies in 1930s' Britain', *Journal of Economic History*, 73 (2013), pp. 1077-104.
3. Kenny, S., Lennard, J., and Turner, J. D., 'The macroeconomic effects of banking crises: Evidence from the United Kingdom, 1750-1938', *Explorations in Economic History*, 79 (2021).
4. Lennard, J., 'Did monetary policy matter? Narrative evidence from the classical gold standard', *Explorations in Economic History*, 68 (2018), pp. 16-36.

Class 6. Instrumental variables and natural experiments

Friday 13 March, 14:30-17:30, Alfa1:1104
Overview: This class will cover instrumental variables and natural experiments.
Class discussion paper: Velde, F. R., 'Chronicle of a deflation unforetold', *Journal of Political Economy*, 117 (2009), pp. 591-634.
Additional material:
1. Stock, J. H., and Watson, M. W., *Introduction to econometrics* (2020), chapters 12 and 13.
2. Velde, F. R., 'Experiments with money and people', *Economic History Podcast*.
3. Ramey, V. A., 'Macroeconomic shocks and their propagation', in J. B. Taylor and H. Uhlig, eds., *Handbook of macroeconomics*, Vol. 2A (Amsterdam, 2016), pp. 71-162.
4. Nakamura, E., and Steinsson, J., 'Identification in macroeconomics', *Journal of Economic Perspectives*, 32 (2018), pp. 59-86.
5. Stock, J. H., and Watson, M. W., 'Identification and estimation of dynamic causal effects in macroeconomics using external instruments', *Economic Journal*, 128 (2018), pp. 917-48.