1st ARGE Masterclass
"Econometrics of Energy Markets"
July 4-5, 2023

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NBER and CEPR

Structural vector autoregressions are the workhorse models in empirical macroeconomics. The goal of this course is to equip participants with state-of-the art Bayesian methods for empirical research and policy analysis. The first part of the course challenges the current practice of identification of VAR models by introducing a more general Bayesian framework that encompasses standard identification approaches as special cases. Drawing structural inference from VAR models requires making use of prior information. This course provides formal tools of Bayesian analysis that allow to incorporate prior beliefs about both the structural coefficients and the impacts of shocks in a flexible way and to characterize the contribution of prior information. The second part of the course applies this framework to modeling the global oil market to study the determinants of oil price fluctuations and the macroeconomic consequences of oil price shocks.

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Accommodation

We recommend Motel One at Potsdamer Platz. Single rooms can be booked for 89 euros during the conference period. Motel One is about a 10-minute walk from DIW Berlin. Travelling expenses should be covered by your institutions.

Venue

Deutsches Institut für Wirtschaftsforschung (DIW Berlin), Mohrenstraße 58 in 10117 Berlin
Public transport: U Stadtmitte/ U Mohrenstraße
Registration und Catering: Arthur Atkinson-Lounge, 1st floor
Lecture and Presentations: Elinor Ostrom-Hall, 1st floor (1.2.019)
Ostrom Hall is equipped with a Laptop und Beamer, please bring your presentation on USB-Stick

Wi-Fi DIW Berlin

ssid-name DIW-Gast
psk-phrase Beitha7pheec

Local Organizer

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AGENDA

July 4, 2023

Identification in Structural VAR Models with an Application to the Global Oil Market

9.30 – 11.00 a.m.	Lecture Day 1
11.00 – 11.15 a.m.	Coffee Break
11.15 – 12.45 a.m.	Lecture Day 1
12.45 – 1.30 p.m.	Lunch Break
1.30 – 3.00 p.m.	Lecture Day 1
3.00 – 3.15 p.m.	Coffee Break
3.15 – 4.45 p.m.	Lecture Day 1
5.30 p.m.	Get Together (Dinner) at DIW Berlin, Lounge 1st floor

July 5, 2023

Sources of Oil Price Fluctuations

9.30 – 11.00 a.m.	Lecture Day 2
11.00 – 11.15 a.m.	Coffee Break
11.15 – 12.45 a.m.	Lecture Day 2
12.45 – 1.30 p.m.	Lunch Break
1.30 – 3.30 p.m.	Presentations
	Jonathan Berrisch, University of Duisburg Essen
	"Modeling volatility and dependence of European carbon and energy prices"
	Adelina Garamow, DIW Berlin
	"Global Commodity Markets and Sovereign Risk across 150 Years"
	Ider Gökhan/Frederik Paul Kurcz/ Ben Schumann, DIW Berlin
	„The Energy-Price Channel of (European) Monetary Policy"
3.30 p.m.	End

Day 1: Identification in Structural VAR Models with an Application to the Global Oil Market
We revisit the identification problem in structural VAR models and introduce a general Bayesian framework that nests traditional identification schemes. In particular, we challenge the current practice of identification in global oil market VAR models and provide a more flexible approach for estimation and inference.

- Baumeister, C. and J.D. Hamilton (2015), "Sign Restrictions, Structural Vector Autoregressions, and Useful Prior Information," *Econometrica*, 83(5), 1963-1999.

- Baumeister, C. and J.D. Hamilton (2020), "Drawing Conclusions from Structural Vector Autoregressions Identified on the Basis of Sign Restrictions," *Journal of International Money and Finance*, 109, article 102250.

- Baumeister, C., and J.D. Hamilton (2022), "Advances in Using Vector Autoregressions to Estimate Structural Magnitudes," *Econometric Theory*, forthcoming.

- Rubio-Ramirez, J.F., D.F. Waggoner, and T. Zha (2010), "Structural Vector Autoregressions: Theory of Identification and Algorithms for Inference," *Review of Economic Studies*, 77(2), 665-696.

Day 2: Sources of Oil Price Fluctuations
We illustrate this new method for identification by revisiting the role of oil supply and demand shocks in generating historical fluctuations in the price of oil and show how to implement those in practice. We highlight several shortcomings of traditional approaches to identification of oil supply and demand shocks with a particular focus on the estimation of behavioral elasticities.

- Baumeister, C. and J.D. Hamilton (2019), "Structural Interpretation of Vector Autoregressions with Incomplete Identification: Revisiting the Role of Oil Supply and Demand Shocks," *American Economic Review*, 109(5), 1873-1910.

- Baumeister, C. and J.D. Hamilton (2022), "Structural Vector Autoregressions with Imperfect Identifying Information," *AEA Papers and Proceedings*, 112, 466-470.

- Caldara, D., M. Cavallo, and M. Iacoviello (2016), "Oil Price Elasticities and Oil Price Fluctuations," *Journal of Monetary Economics*, 103, 1-20.

- Kilian, L. (2009). "Not all Oil Price Shocks Are Alike: Disentangling Demand and Supply Shocks in the Crude Oil Market," *American Economic Review*, 99, 1053-1069.

- Kilian, L., and D.P. Murphy (2012), "Why Agnostic Sign Restrictions Are Not Enough: Understanding the Dynamics of Oil Market VAR Models," *Journal of the European Economic Association*, 10(5), 1166-1188.