



APPLIES TO ACADEMIC YEAR 2012/2013

DRE 7011 Lecture series on Oil Markets and the Macro Economy

Programme

Elective course

Responsible for the course

Hilde C Bjørnland

Department

Department of Economics

Term

According to study plan

ECTS Credits

3

Language of instruction

English

Introduction

Learning outcome

After taking this course the students should have a solid knowledge of advanced research in oil market models and the link between oil prices, the macroeconomy and monetary policy.

To model and forecast the oil market, the students should master and be able to produce sophisticated research using a variety of linear and non-linear time series methods.

To analyse the link between the oil market, the macroeconomy and monetary policy, the students will be familiar with, among others, structural vector autoregression (VAR) models and Dynamic stochastic general equilibrium (DSGE) models.

Prerequisites

Admission to a PhD program is a general requirement for participation in PhD courses at BI Norwegian Business School.

External candidates are kindly asked to attach confirmation of admission to a PhD programme when signing up for a course with the doctoral administration if they want to take exams. However, candidates can be allowed to sit in on courses by approval of the course leader. Sitting in on courses does not permit registration for courses, handing in exams or gaining credits for the course. Course certificates or conformation letters will not be issued for sitting in on courses

Compulsory reading

Books:

Alquist, R., L. Kilian, and T.J. Vigfusson. 2012. "Forecasting the Price of Oil." Prepared for: G. Elliott and A. Timmermann, eds., Handbook of Economic Forecasting 2. Amsterdam: North Holland.

Articles:

Barsky, R.B., and L. Kilian. "Do We Really Know that Oil Caused the Great Stagflation?. A Monetary Alternative," in: NBER Macroeconomics Annual 2001, B.S. Bernanke and K. Rogoff (eds.), MIT Press: Cambridge, MA, 137-183.. 2002

Bodenstein, M., L. Guerrieri, and L. Kilian. 2012. "Monetary Policy Responses to Oil Price Fluctuations," mimeo, University of Michigan.

Hamilton, J.D. 1983. "Oil and the Macroeconomy Since World War II". Journal of Political Economy. 91, 228-248.

Hamilton, J.D. 2009. "Causes and Consequences of the Oil Shock of 2007-08". Brookings Papers on Economic Activity, 1, Spring. 215-261

Hamilton, J.D. 2011. "Nonlinearities and the Macroeconomic Effects of Oil Prices". Macroeconomic Dynamics, 15. 364-378

Hamilton, J.D., and A.M. Herrera. 2004. "Oil Shocks and Aggregate Economic Behavior: The Role of Monetary Policy". *Journal of Money, Credit and Banking*, 36. 265-286

Kilian, L. 2008b. "A Comparison of the Effects of Exogenous Oil Supply Shocks on Output and Inflation in the G7 Countries". *Journal of the European Economic Association*, 6. 78-121.

Kilian, L. 2009a. "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. (2008a), "Exogenous Oil Supply Shocks: How Big Are They and How Much Do They Matter for the U.S. Economy?". 2008a. "Exogenous Oil Supply Shocks: How Big Are They and How Much Do They Matter for the U.S. Economy?". *Review of Economics and Statistics*, 90. 216-240

Other:

During the course there will be hand-outs and additional articles relevant for the course and the examination

Recommended reading

Course outline

Lecture 1:

Alternative Specifications of the Price of Oil

- Key Oil Price Series
- One Price?
- No Oil Price Series is Perfect for all Purposes
- A Statistically Significant Break in 1973

Traditional Interpretations of Oil Price Shocks

- What is an Oil Price Shock?
- Oil Price Shocks Driven by Oil Supply Shocks
- The Crude Oil Market Becomes a Global Market
- What about the Post-1973 Oil Market?

Hypothesis 1: Wars Cause Oil Price Shocks

Hypothesis 2: The Case for Endogenous Oil Prices

Hypothesis 3: The OPEC Cartel Controls Oil Prices

Synthesis

A Structural Model of the Global Market for Crude Oil

- Competing Views of the Global Market for Crude Oil
- Limitations of Traditional Oil Market Models
- Examples of Forward-Looking Elements in Expectations of Oil Demand and Oil Supply
- Key Insights
- A Structural Model of the Oil Market
- Why Do We Not Include the Oil Futures Spread?
- Historical Decompositions for 1978.6-2010.6
- What Explains the 2003-08 Oil Price Surge
- Three Policy Conclusions
- Speculation without a Change in Oil Inventories?
- Digression: The Short-Run Price Elasticity of Oil Demand

Financial Speculation

- The Masters Hypothesis
- Why Do Policymakers Pay So Much Attention?
- What is the Evidence on this Hypothesis?
- What is Speculation?
- The Role of Speculation in Oil Markets
- Speculation versus Excessive Speculation
- What is Excessive Speculation?

Conclusion

- Increased Financialization of Oil Futures Markets
- Do Index Funds Cause Oil Price Increases?
- Do Oil Futures Prices Predict Oil Spot Prices
- Is there a Theoretical Link from Inflows into Index Funds to Higher Spot Prices?
- Did Index Funds Cause the Oil Price-Inventory Relationship to Collapse?
- What Do Structural Oil Markets Tell Us?
- The Role of Time-Varying Risk Premia
- Index Funds and Oil Price Volatility
- What is the Consensus?

Lecture 2:

Forecasting the Real Price of Oil and Quantifying Oil Price Risks

- Background
- Why Real-Time Data Matter

- The Baumeister-Kilian Real-Time Data Set
- Key Parameters for the Forecasting Horserace
- Candidate Models
- Results
- Limitations of Standard Oil Price Forecasts
- Forecast Scenarios
- Examples of Scenarios
- Probability Weighted Real-Time Density Forecasts
- Real-Time Risk Analysis
- Case Study: December 2010.

Lecture 3:

A Review of the Channels of Transmission of Exogenous Oil Price Shocks

Production Channels

- Direct Effects
- Indirect Effects

Consumption Channels

- Direct Effects
- Indirect Effects

Summary of the Demand-Side Channels of Transmission

Summary of the Supply-Side Channels of Transmission

Are Macroeconomic Responses Asymmetric in Oil Price Increases and Decreases?

- The Literature on Oil Prices and the Economy
- Asymmetric Models of the Transmission of Oil Price Shocks
- Two Types of Studies in the Literature
- Censored Oil Price VAR Models
- Problems with Estimates of Asymmetric Responses from Censored VAR Models
- A Stylized Static Model
- What if the DGP is a Linear Symmetric VAR?
- What if the DGP Is an Asymmetric Dynamic Model?
- A General Model of the Oil Price-Economy Link
- Computing Asymmetric Responses Properly
- The Standard Approach to Constructing Asymmetric Responses
- How Different is the Traditional Response from the Correctly Computed Response?

Summary

- Testing for Symmetry in the Responses
- Testing Models of Net Energy Price Increases
- Testing Symmetry in Models of Net Energy Price Increases
- Implications for the Literature on the Transmission of Oil Price Shocks

Evidence from (Pseudo) Linear VAR Models

- Two Seeming Puzzles

Summary

- Why Structural Oil Market Models Are Important

Do Oil Prices Forecast Real GDP?

- Using Oil Prices to Forecast Real GDP Growth
- Possible Explanations of the Limited Success of Linear Forecasting Models
- Nonlinear Forecasting Models

Lecture 4:

Monetary Policy Responses to Oil Price Fluctuations

- The Central Message
- This Insight is Not New
- Policy Makers Have Been Slow to Accept This Point

Oil Prices and Monetary Policy: A Review

- The Monetary Policy Regime Shifts Hypothesis
- The Monetary Policy Reaction Hypothesis

The Bernanke, Gertler, and Watson (1997) Model

Towards a New Class of Structural Models

An Open Economy DSGE Analysis of Policy Responses with Endogenous Oil Prices

Empirical Results

Welfare Analysis

Conclusions

Extensions

Computer-based tools

It's learning/homepage

Learning process and workload

A course of 3 ECTS credits corresponds to a workload of 80-90 hours.
Lectures: 15 h.

Please note that while attendance is not compulsory in all courses, it is the student's own responsibility to obtain any information provided in class that is not included on the course homepage/It's learning or text book.

Examination

Course paper.
Graded pass/fail

Examination code(s)

DRE 70111 course paper counts for 100% of the final grade in the course. The gradescale is pass/fail

Examination support materials

Exam aids at written examinations are explained under exam information in our web-based Student handbook. Please note use of calculator and dictionary.
<http://www.bi.edu/studenthandbook/examaids>

Re-sit examination

It is only possible to retake an examination when the course is next taught.
The assessment in some courses is based on more than one exam code.
Where this is the case, you may retake only the assessed components of one of these exam codes.
Where this is not the case, all of the assessed components of the course must be retaken.

Additional information**Honor Code**

Academic honesty and trust are important to all of us as individuals, and represent values that are encouraged and promoted by the honor code system. This is a most significant university tradition. Students are responsible for familiarizing themselves with the ideals of the honor code system, to which the faculty are also deeply committed.

Any violation of the honor code will be dealt with in accordance with BI's procedures for cheating. These issues are a serious matter to everyone associated with the programs at BI and are at the heart of the honor code and academic integrity. If you have any questions about your responsibilities under the honor code, please ask.