

DIW Lecture Series on Oil Markets and the Macro Economy  
August 4-5, 2015

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Lecture 1:

Understanding Oil Price Fluctuations

Alternative Definitions of the Price of Oil

Alternative Oil Price Series

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?

An Explanation of the Pre-1973 Oil Price Jumps

The Crude Oil Market Becomes a Global Market

What about the Post-1973 Oil Market?

Hypothesis 1: Wars Cause Oil Price Shocks

Exogenous Shocks to Global Oil Production

Measuring Exogenous Oil Supply Shocks

Two Problems with Hamilton's War Hypothesis

Explanatory Power of Exogenous Flow Supply Disruptions in 1973/74

The Role of Flow Demand in 1972-73

Hypothesis 2: The Global Economy Drives Oil Prices

Hypothesis 3: The OPEC Cartel Controls Oil Prices

Synthesis

Structural Models of the Global Market for Crude Oil

The Role of Expectations

Speculative Demand in the Physical Oil Market

Why Does the Model Not Include the Oil Futures Spread?

Four Demand and Supply Shocks in the Model

Identifying Assumptions

How Many Dollars of the Price of Oil Must Be Attributed to Each Shock?

The 2003-08 Oil Price Surge in Review

A Summary of the Causes of Earlier Oil Price Shock Episodes

Lecture 2:

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

Production Channels

Direct Effects

Indirect Effects

Consumption Channels

Direct Effects

Indirect Effects

The Relative Importance of Demand vs. Supply Channels

- Summary of the Demand-Side Channels of Transmission
- Summary of the Supply-Side Channels of Transmission
- Are the Responses of the U.S. Economy Asymmetric in Oil Price Increases and Decreases?
  - The Literature on Oil Prices and the U.S. 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
  - Testing for Symmetry in the Impulse Responses
  - Testing Models of Net Oil Price Increases
  - Implications for the Literature on the Transmission of Oil Price Shocks
- Evidence from Pseudo-Linear Models
- Two Seeming Puzzles
  - Why Structural Oil Market Models are Important
  - Implications for DSGE Models of the Transmission of Oil Price Shocks
- 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
- The Effect of Oil Price Uncertainty on Real GDP

Lecture 3:

- Recovering Oil Price Expectations from Oil Futures Prices
  - Motivation
  - Our Methodological Contribution
  - Key Advantages of Our Approach
  - Our Substantive Contribution
  - Outline of the Presentation
- Why We Care about Oil Price Expectations
  - The Traditional Consensus
  - The Emerging New Consensus
  - Five Reasons Why a More Systematic Study is Needed
  - Our Approach
- Empirical Models of Time-Varying Risk Premia
  - Approach 1: Basis Regressions
  - Approach 2: Futures Return Regressions
  - Approach 3: Term Structure Models
  - Evidence on the Time-Varying Risk Premium
- A Selection Criterion for Risk Premium Estimates
  - Empirical Results for the Basis Regression
  - Other Empirical Results

Generalized Return Regressions  
What Does the Market Think?  
How Our Approach Differs from Earlier Studies  
Implications for Real-Time Oil Price Forecasts  
Sensitivity Analysis  
Summary  
Conclusions

Lecture 4:

The Impact of the Shale Oil Revolution  
What is Shale Oil?  
Why is Shale Oil Production a U.S. Phenomenon?  
Why Now?  
EIA Estimates of Shale Oil Production  
Popular Visions of the Future  
The World's Largest Oil Producers  
What's So Great about Being the Largest Oil Producer?  
The Importance of Shale Oil for the U.S. Economy  
The Outlook for U.S. Crude Oil Production  
Caveats about Projections of Shale Oil Production  
The Role of Refineries  
The Refining Industry in Transition  
The Glut that No One Saw Coming  
The Fragmentation of the Market for Oil  
Causes of the Decline in U.S. Oil Prices  
Oil Exports from Canada?  
Oil Exports from the United States?  
Market Responses  
Implications for the U.S. Price of Gasoline  
Implications for the U.S. Political Economy  
Implications for the Global Oil Market  
Implications for the U.S. Economy  
Conclusions

Lecture 5:

Causes and Consequences of the Decline in the Price of Oil after June 2014  
What Happened?  
Two Key Questions  
A Simple Thought Experiment  
Could the Predictive Success of the VAR Model Be Just Luck?  
The Role of Past Shocks  
What Did the June 2014 Forecast Miss?  
What Explains the July Forecast Errors?  
What Explains the December Forecast Errors?  
Summary of What Explains the Oil Price Declines  
The Real-Time Outlook for the First Half of 2015

No Response from Oil Producers?  
Why is the Response of Oil Production so Sluggish?  
Analogy: The Chinese Iron Ore Market  
The Effects of Lower Oil Prices on the Economy  
Effects on Growth in Oil-Importing Economies  
What about Deflation?

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1. Kilian, L. (2014), "Oil Price Shocks: Causes and Consequences," *Annual Review of Resource Economics*, 6, 133-154.  
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2. Baumeister, C., and L. Kilian (2014), "A General Approach to Recovering Market Expectations from Futures Prices with an Application to Crude Oil," manuscript, University of Michigan.  
[http://www-personal.umich.edu/~lkilian/bk4\\_022015withappendix.pdf](http://www-personal.umich.edu/~lkilian/bk4_022015withappendix.pdf)
3. Kilian, L. (2014), "The Impact of the Shale Oil Revolution on U.S. Oil and Gas Prices," manuscript, University of Michigan.  
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4. Baumeister, C., and L. Kilian (2015), "Understanding the Decline in the Price of Oil since June 2014," manuscript, University of Michigan.  
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