

## MATTHEW CHESNES

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### EDUCATION

Ph.D. Economics, University of Maryland, College Park, MD, 2009

M.Sc. Economics, London School of Economics, London, England, 2002

B.A. Economics & Statistics, Kenyon College, Gambier, OH, 2001

### DISSERTATION

*Part I. "Capacity and Utilization Choice in the US Oil Refining Industry"*

*Part II. "The Market for Online Drug Information"*

Committee: Prof. John Rust (Co-Chair), Prof. Ginger Jin (Co-Chair), Prof. Peter Cramton

### FIELDS OF SPECIALIZATION

Primary: Industrial Organization, Applied Microeconomics; Secondary: Econometrics

### PAPERS

"Capacity and Utilization Choice in the US Oil Refining Industry" (*Job Market Paper*)

Revise and resubmit at the *Journal of Applied Econometrics*

Presented at La Pietra-Mondragone Economics Workshop, Florence, Italy, July 2008

Presented at the Federal Reserve Board of Governors, Washington, DC, June 2007

"Consumer Search for Online Drug Information"

Joint with Ginger Jin (*Work in Progress*)

"Drug Information via Online Search Engines"

Joint with Ginger Jin (*Work in Progress*)

### TEACHING EXPERIENCE

*Instructor*, Game Theory, University of Maryland

Spring and Fall 2006; Spring, Summer and Fall 2007; Spring 2008.

*Teaching Assistant*, Intermediate Microeconomics, University of Maryland

Fall 2005.

### RESEARCH/WORK EXPERIENCE

*Graduate Research Assistant*, for Prof. John Rust, University of Maryland, 2008-present

*Graduate Research Assistant*, for Prof. Ginger Jin, University of Maryland, 2005-present

*Dissertation Intern*, Federal Reserve Board of Governors, Washington, DC, Summer 2007

Researched and presented continuing work on capacity choice in the oil refining industry.

*Research Intern*, Department of Justice, Antitrust Division, Washington, DC, Summer 2006

Researched the potential for price and capacity collusion among firms in the oil refining industry for an ongoing DOJ case. Attended a joint DOJ/FTC hearing on prosecuting *Refusals to Deal* under section 2 of the Sherman Act and wrote a memo contrasting various positions.

*Research Assistant*, Federal Reserve Board of Governors, Washington, DC, 2002-2004

Provided analytical assistance to economists on various research projects by organizing large datasets and estimating models using statistical software including SAS and Matlab. Major projects included "Assessing the Ability to Predict Future Stock Market Volatility using Option Implied Volatility."

*Referee*, The International Journal of Industrial Organization.

### AWARDS

*Dissertation Prize*, Journal of Applied Econometrics, 2008

*Doctoral Research Fellowship*, Economic Club of Washington, 2008-present

*Departmental Teaching Award*, Game Theory, University of Maryland, Fall 2006 & Spring 2008

*Graduate Fellowship*, University of Maryland, 2004-2005

*Degree with Merit*, London School of Economics, London, England, 2002

## REFERENCES

Prof. John Rust	University of Maryland	<a href="mailto:rust@econ.umd.edu">rust@econ.umd.edu</a>	(301) 405-3489
Prof. Ginger Jin	University of Maryland	<a href="mailto:jin@econ.umd.edu">jin@econ.umd.edu</a>	(301) 405-3484
Prof. Peter Cramton	University of Maryland	<a href="mailto:cramton@umd.edu">cramton@umd.edu</a>	(301) 405-6987

## THESIS ABSTRACT

### *Part I. "Capacity and Utilization Choice in the US Oil Refining Industry"* (Job market paper)

This paper presents a new dynamic model of the operating and investment decisions of US oil refiners. The model enables me to predict how shocks to crude oil prices and refinery shutdowns (e.g., in response to hurricanes) affect the price of gasoline, refinery profits, and overall welfare. There have been no new refineries built in the last 32 years, and although existing refineries have expanded their capacity by almost 13% since 1995, the demand for refinery products has grown even faster. As a result, capacity utilization rates are now near their maximum sustainable levels, and combined with record high crude oil prices, this creates a volatile environment for energy markets. Shocks to the price of crude oil and even minor disruptions to refining capacity can have a large effect on the downstream prices of refined products. Due to the extraordinary dependence by other industries on petroleum products, this can have a large effect on the US economy as a whole.

I use the method of moments to estimate a dynamic model of capacity and utilization choice by US oil refiners. Plants make short-run utilization rate choices to maximize their expected stream of profits and may make costly long-term investments in capacity to meet the growing demand and reduce the potential for breaking down. I show that the model fits the data well, in both in-sample and out-of-sample predictive tests, and I use the model to conduct a number of counterfactual experiments. My model predicts that a 20% increase in the price of crude oil is only partially passed on to consumers, resulting in higher gasoline prices, lower profits for the refinery, and a 45% decrease in total welfare. A disruption to refining capacity, such as the one caused by Hurricane Katrina in 2005, raises gasoline prices by almost 16% and has a small negative effect on overall welfare: the higher profits of refineries partially offsets the reduction in consumer surplus. As the theory predicts, these shocks have a smaller effect on downstream prices when consumer demand is more elastic, resulting in a larger share of total welfare going to the consumer.

### *Part II. "The Market for Online Drug Information"*

Consumers are increasingly turning to the internet and using search engines to find information on prescription drugs. In addition to standard organic search results, consumers are now faced with a growing and competitive alternative source of information: sponsored links. Understanding how consumers use the internet to search for drug information and what information is provided is an important economic and public health question.

I utilize a database of organic and sponsored search results for a selection of drug-related queries and click-through data from America Online to study the supply and demand for drug information on the internet. Preliminary results indicate that the information available on the internet varies significantly across search engines, domain extensions, and between organic and sponsored links. Compared with other queries, users are more likely to click on more than one result in a search session, and when they do, they click more rapidly through the results and tend to migrate away from dot-com sites and toward those ending in dot-org and dot-net. Offline advertising on a drug serves to increase the frequency and intensity of these searches.

## PERSONAL INFORMATION

Nationality: USA  
Gender: Male