

IOWA STATE UNIVERSITY

RINs: An Economic Perspective

Gabriel Lade

Assistant Professor, Economics

Iowa State University and the

Center for Agricultural and Rural Development

A Market Gone Wild?

ENERGY & ENVIRONMENT

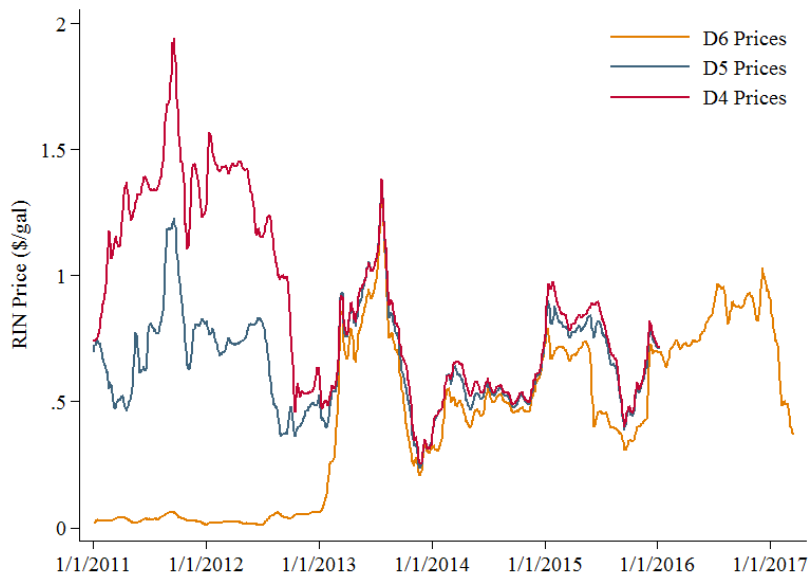
U.S. Struggles to Rescue Green Program Hit by Fraud

By MATTHEW L. WALD OCT. 11, 2012

BUSINESS DAY | THE HOUSE EDGE

Wall St. Exploits Ethanol Credits, and Prices Spike

By GRETCHEN MORGENSON and ROBERT GEBELOFF SEPT. 14, 2013



Bloomberg Markets Tech Pursuits Politics Opinion Businessweek

Icahn Calls on EPA to Fix 'Mother of All Short Squeezes'

By **Laura Blewitt** and **Zachary Mider**
 August 15, 2016, 2:21 PM CDT Updated on August 16, 2016, 2:31 PM CDT

Bloomberg Markets Tech Pursuits Politics Opinion Businessweek

Biggest U.S. East Coast Oil Refinery Files for Bankruptcy

By **Barbara J Powell** and **Tiffany Kary**
 January 22, 2018, 12:26 AM CST Updated on January 22, 2018, 10:46 AM CST

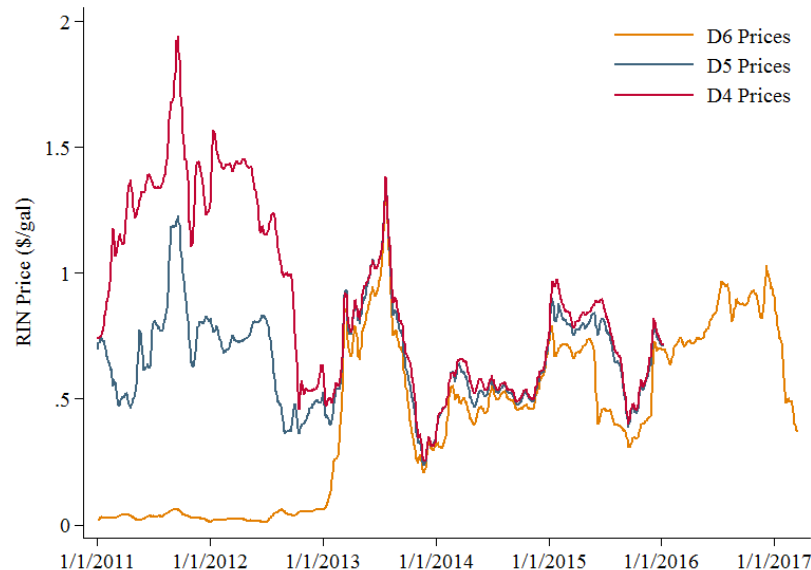
→ Expenses tied to renewable fuels spur Chapter 11 filing

A Tale of Fundamentals

What factors determine RIN prices?

Prices driven by *marginal* compliance costs

How much does *last* gallon of biofuel cost relative to gas/diesel



A Tale of Fundamentals

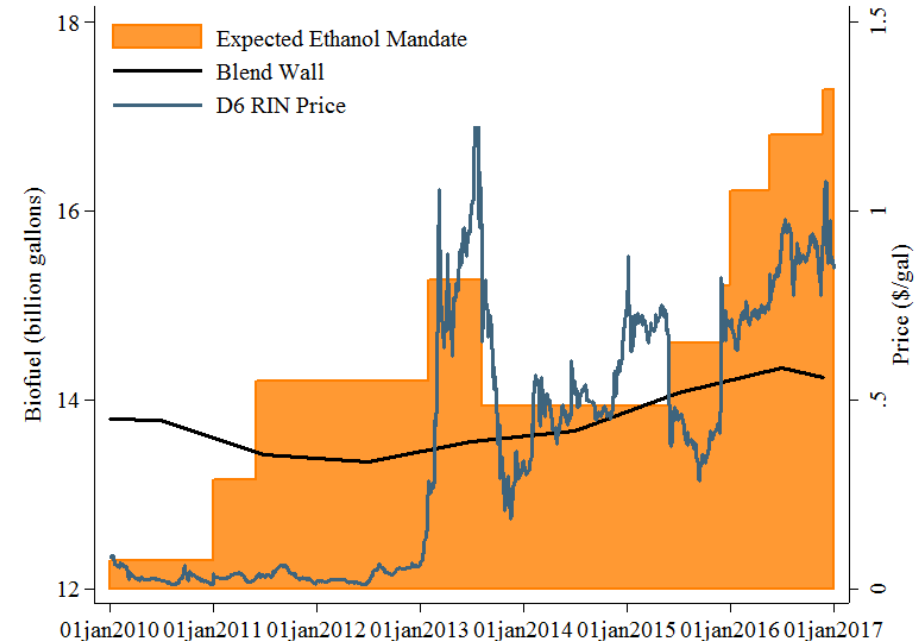
What Determines D6 Prices?

Blend wall!

- Cheap to roll out E10 nation-wide

Compliance beyond the blend wall requires:

1. High-blend ethanol fuels (E85/E15)
2. Biodiesel

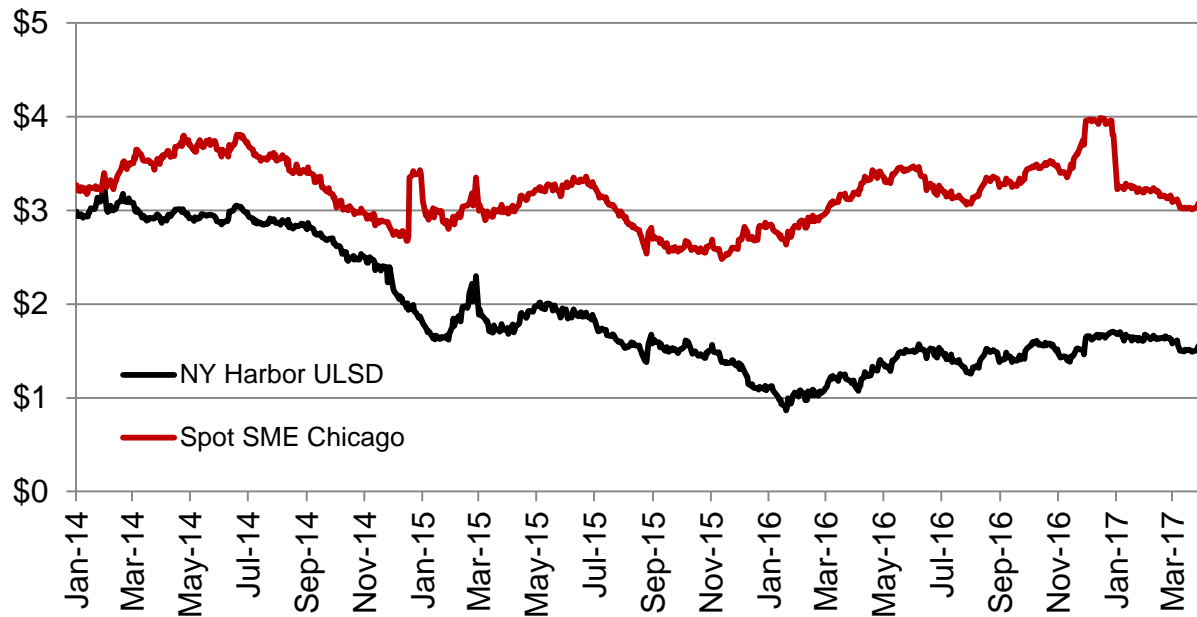


A Tale of Fundamentals

What Determines D4 Prices?

No substantive blending issues

BUT, production costs much higher

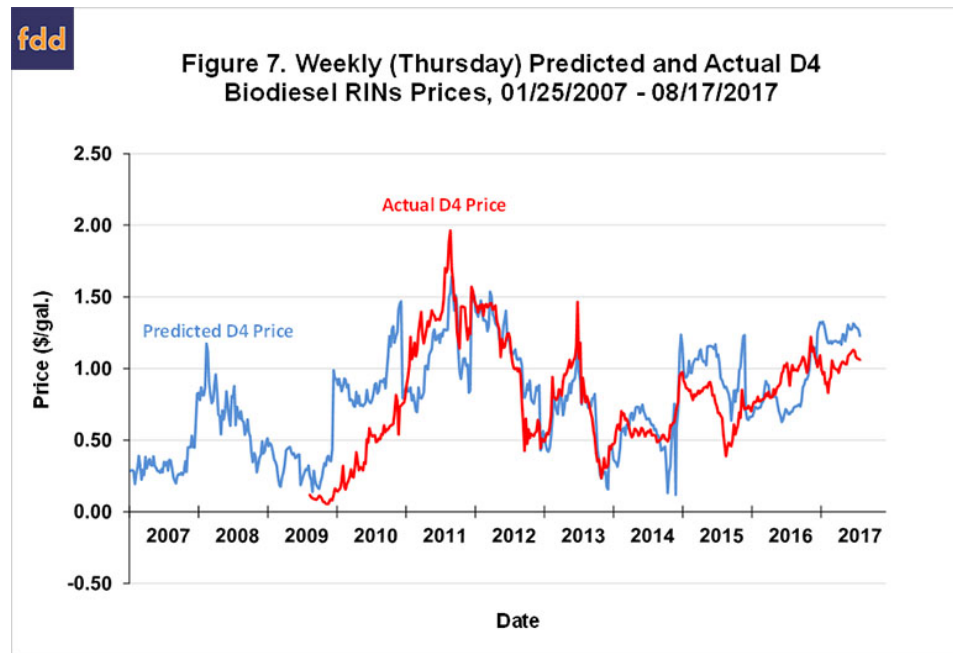


A Tale of Fundamentals

What Determines D4 Prices?

No substantive blending issues

BUT, production costs much higher



A Tale of Fundamentals

How do RINs impact gas/diesel prices?

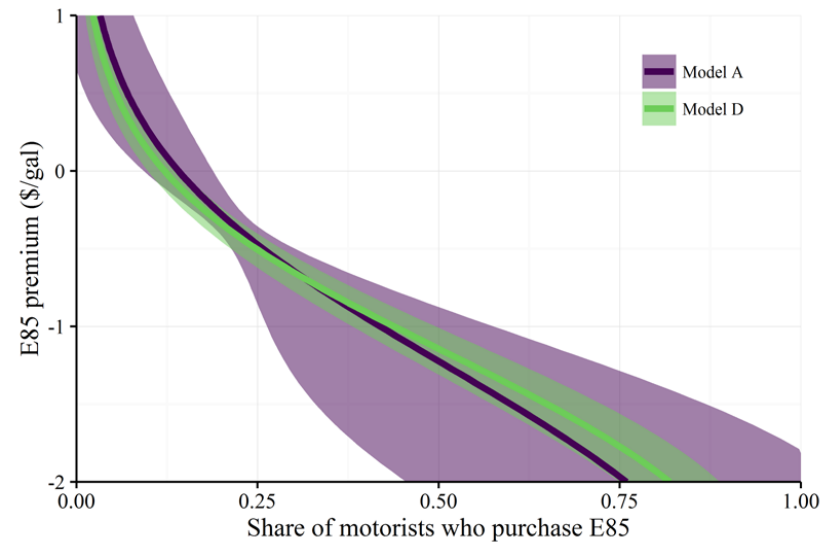
Increases refiner costs

- Similar impact as oil price increase
- Wholesale gasoline prices increase
 - Evidence to date shows refiners likely fully compensated for cost changes
 - Important to distinguish between accounting versus economic costs!

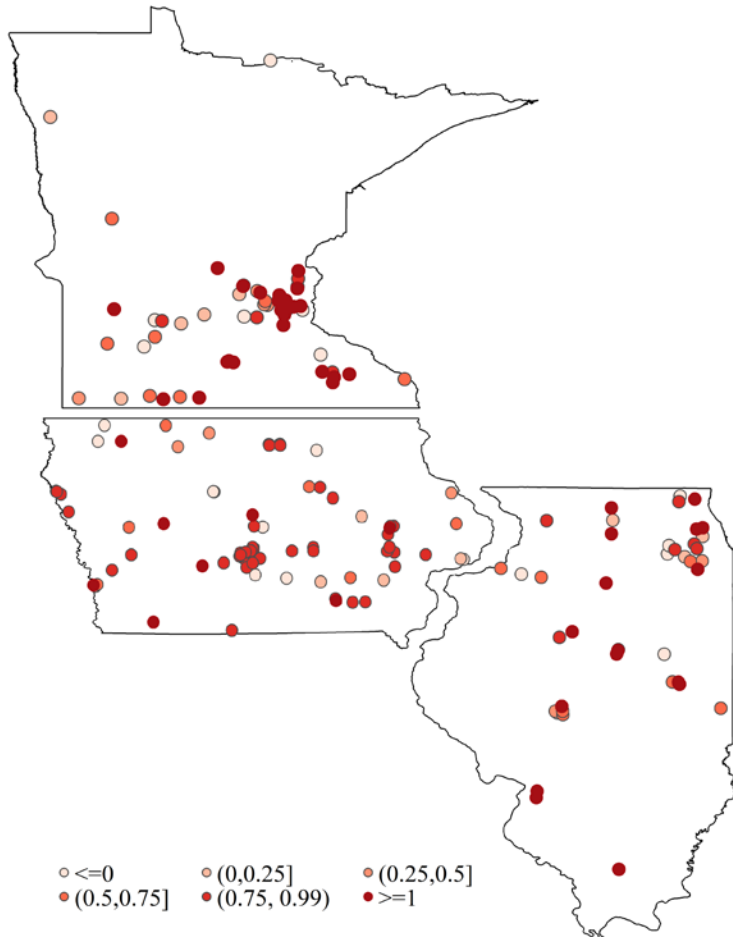
Looking Forward: E15/E85 Markets

Requirements for fuels to scale

- Consumers switch from E10 to E85 when E85 is cheaper ✓
 - BUT need large discounts and increased awareness ✗



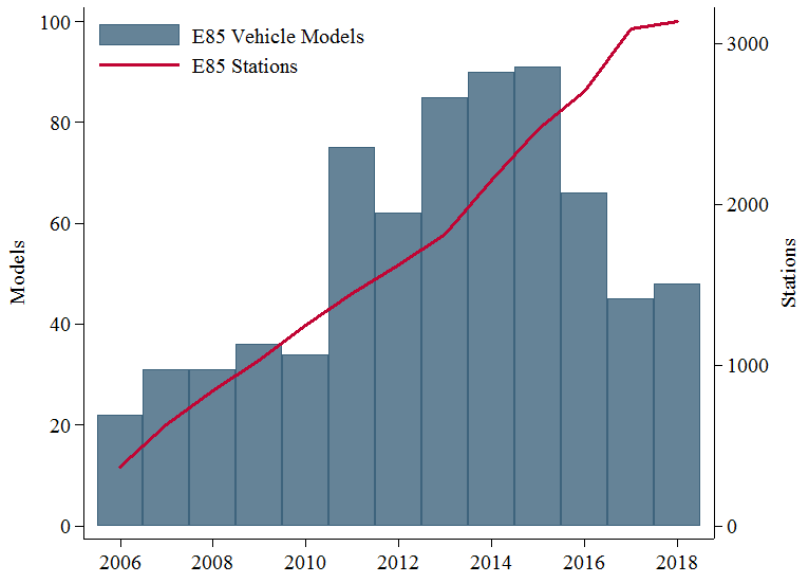
Looking Forward: E15/E85 Markets



Requirements for fuels to scale

- Consumers switch from E10 to E85 when E85 is cheaper ✓
 - BUT need large discounts and increased awareness ✗
- RINs subsidies passed through to retail E85 prices ✓

Looking Forward: E15/E85 Markets



Requirements for fuels to scale

- Consumers switch from E10 to E85 when E85 is cheaper ✓
 - BUT need large discounts and increased awareness ✗
- RINs subsidies passed through to retail E85 prices ✓

Mixed prospects looking forward

- E85 stations up ✓
- BUT, FFVs down ✗

Looking Forward: E15/E85 Markets



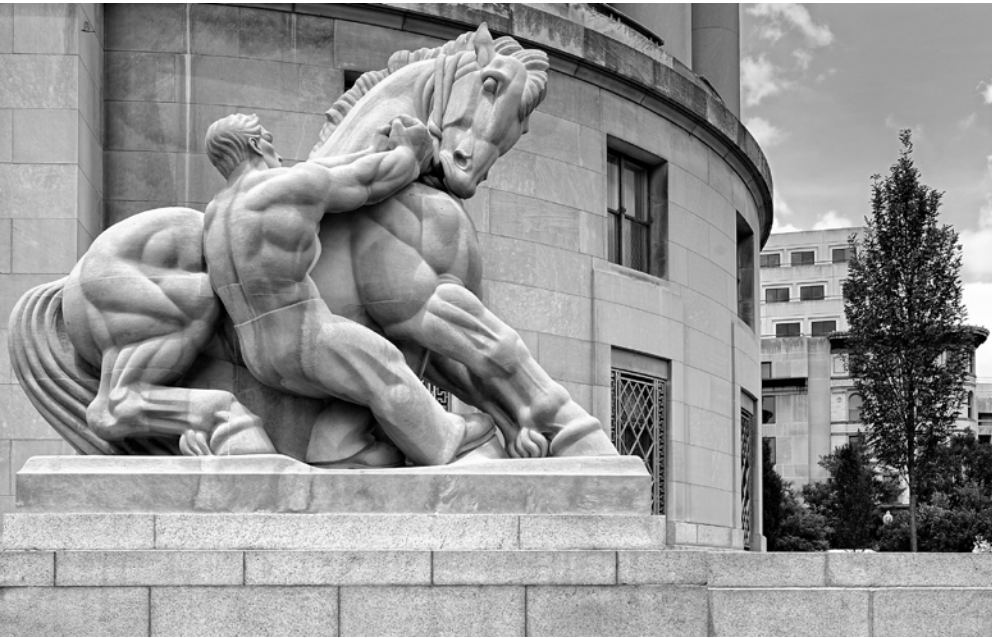
Requirements for fuels to scale

- Consumers switch from E10 to E85 when E85 is cheaper ✓
 - BUT need large discounts and increased awareness ✗
- RIN subsidies passed through to retail E85 prices ✓

Mixed prospects looking forward

- E85 stations up ✓
- BUT, FFVs down ✗
- E15 (?)

Challenge with ‘Technology-Forcing’ Policies



Historically, environmental *restrained* industry pollution

- E.g., lead phase down
- Programs largely viewed as successful

Newer policies seek to *incentivize and promote* new technologies

- Must still ensure environmental integrity of programs AND balance competing industries' interests
- Successful with respect to existing technologies
- Success less apparent with new technologies (to date)

Thank you!

Gabriel E. Lade
Iowa State University & CARD
gelade@iastate.edu