

Rockets and Feathers or Efficient Markets?

Evidence from Gasoline Markets

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The Rockets and Feathers Paradigm:

When crude oil prices spike upward, gasoline prices shoot up like a ROCKET.

When crude oil prices tank, gasoline prices drift downward like a FEATHER in the wind.

The Policy Implications:

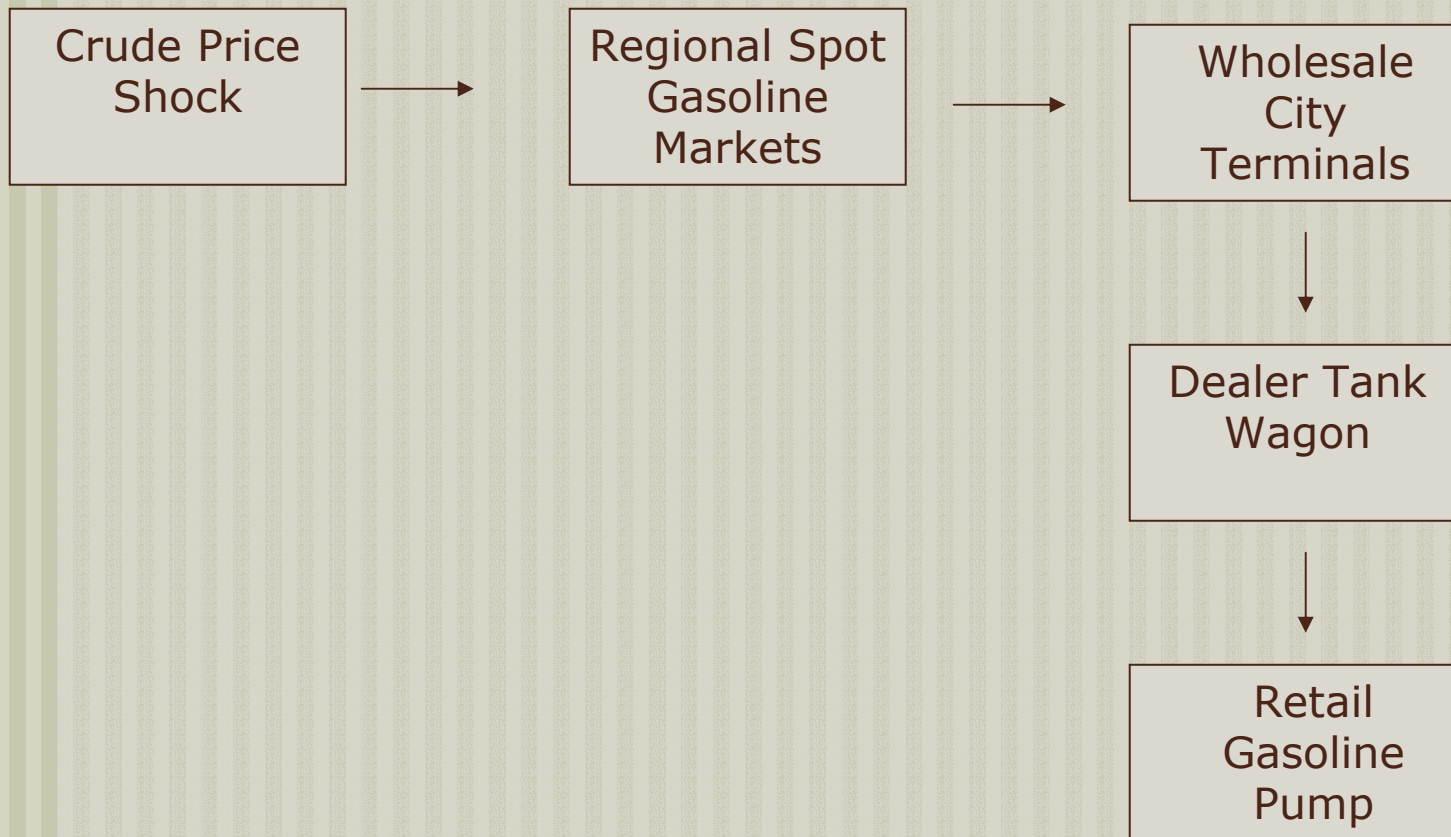
If Paradigm true:

- > Oligopolistic Behavior?*
- > Inventory Adjustment Costs?*

If Paradigm false and gasoline price responses are RAPID and SYMMETRIC

- > Support for "Efficient Market Story"*

Asymmetries can Occur at Various Stages



Previous Findings Regarding Regional Bulk Gasoline Markets

	Data	Model	Finding
Borenstein Cameron & Gilbert (QJE '97)	Weekly US	First difference	Asymmetry
Bacon	Bi-weekly UK	Levels	Slight at Retail
Balke, Brown & Yucel	Weekly US	Levels First difference	Symmetry Asymmetry
EIA	Weekly	First difference	Symmetry

Our Approach:

1. To test for asymmetries, must use a first difference specification.
2. Daily Data preferred to weekly data
Feb. 85 – Nov. 98 – Period of Instability
3. Basic Error Correction Model:

Symmetric Version:

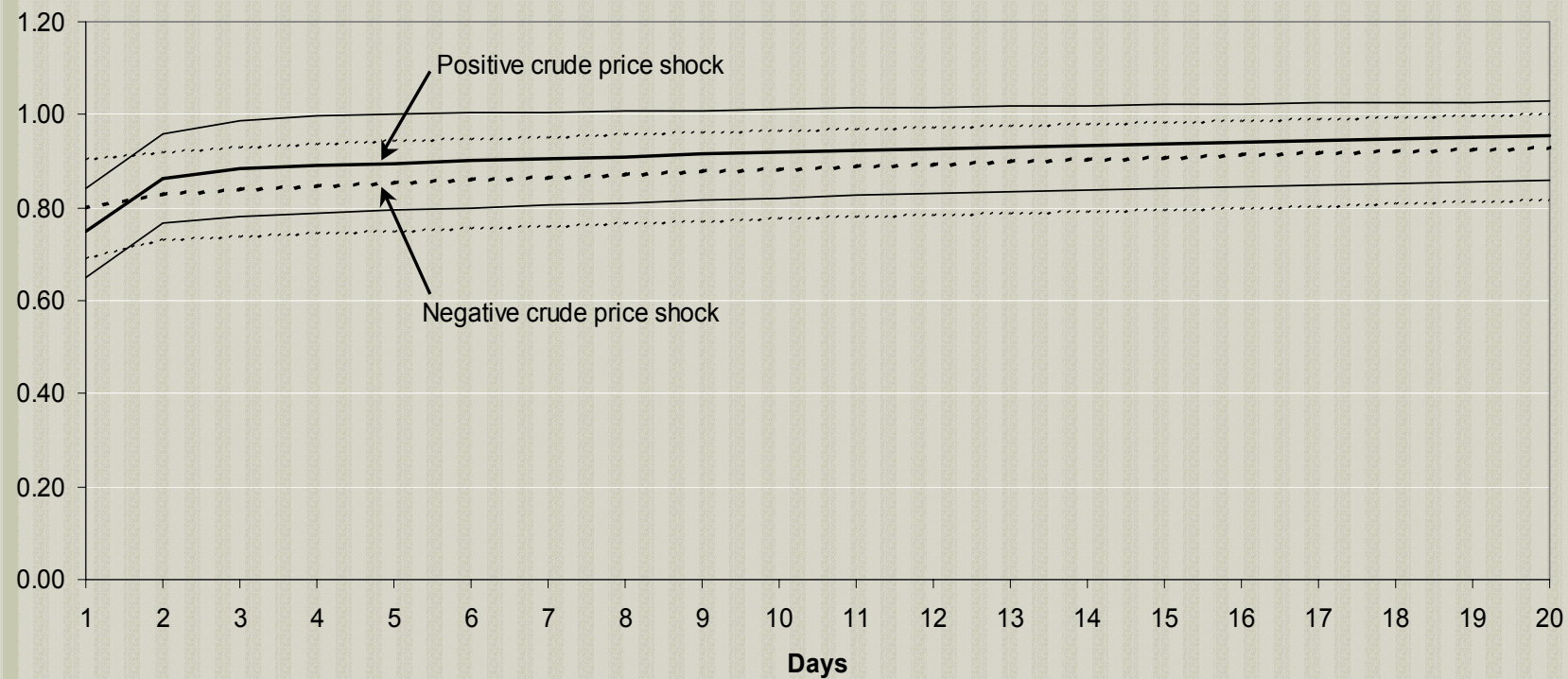
$$\Delta \mathbf{PG}_t = \beta \Delta \mathbf{PC}_t + \theta [\mathbf{PG}_{t-1} - \gamma_0 - \gamma_1 \mathbf{PC}_{t-1}]$$

Asymmetric Version:

$$\begin{aligned} \Delta \mathbf{PG}_t = & \beta^+ \Delta \mathbf{PC}_t + \theta^+ [\mathbf{PG}_{t-1} - \gamma_0 - \gamma_1 \mathbf{PC}_{t-1}] \\ & + \beta^- \Delta \mathbf{PC}_t + \theta^- [\mathbf{PG}_{t-1} - \gamma_0 - \gamma_1 \mathbf{PC}_{t-1}] \end{aligned}$$

Impulse Responses for 1985 – 98 (Daily Data)

Impulse Responses for 1985-1998 (Daily Data)



— (+1) Crude Price Shock — (+1) 95% CI - - - (-1) Crude Price Shock (-1) 95% CI

Figure 1

Figure 1
BCG Specification vs. Standard ECM Specification

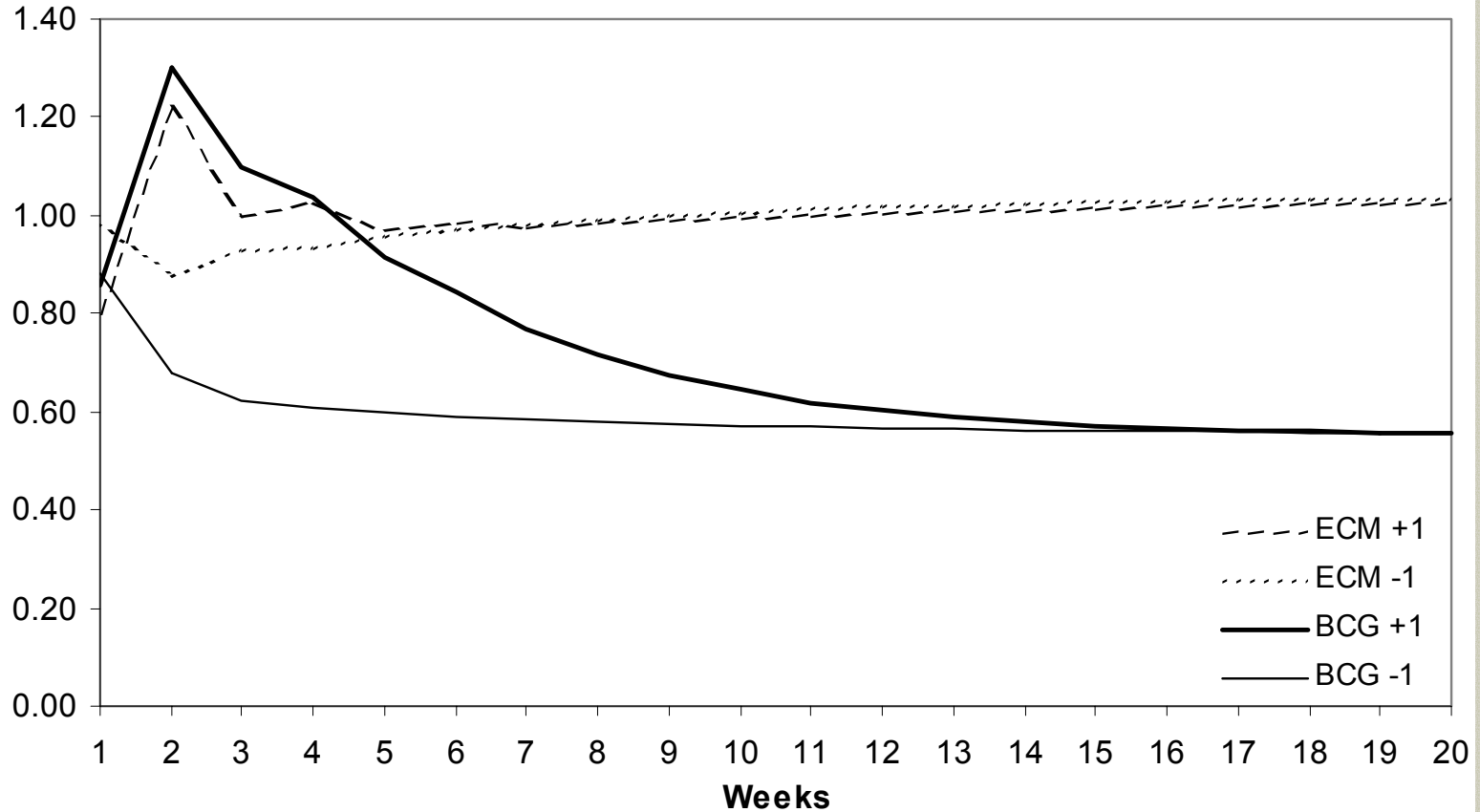


Figure 2

Figure 2
BCG Specification With Weekly vs. Daily Data

