Price Coordination with Asymmetric Information Sharing: Theory and Evidence

Data and Code

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Below, we describe the data and code files used in creating the figures and calculations in our paper, "Price Coordination with Asymmetric Information Sharing: Theory and Evidence." If assistance is required in accessing proprietary data via the contacts provided below, please contact David Byrne via email at byrned@unimelb.edu.au.

1 Data Source and Access

- Price data (**proprietary**)
  - We use the dataset from "Asymmetric Information Sharing in Oligopoly: A Natural Experiment in Retail Gasoline." For additional details on data construction and validation, please refer to Byrne et al. (2025).
  - The dataset is constructed from raw data acquired from Informed Sources and contains the complete set of daily station-level retail gasoline prices available on their platform for Victoria, Australia.
  - Contact for data access at Informed Sources: Mr. Nick Ferris nferris@informedsources.com

2 Key Variables

`id`: Unique identifier for each retail petrol station.

`t`: Calendar date.

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`bid`: Brand identifier (1 = BP, 2 = Caltex, 3 = Coles, 4 = Woolworths, 5 = 7-Eleven).

`p`: Daily average retail price in cents per litre at each station.

`c`: Marginal cost of retail gasoline in cents per litre, measured by the Terminal Gate Price (TGP).

`dp`: Daily price change, defined as $\Delta p_t = p_t - p_{t-1}$.

`marg`: Retail margin, calculated as $p - c$.

`coles_off`: Indicator equal to 1 after Coles exited the Informed Sources platform.

`cyc_peak`: Indicator equal to 1 if the market-average price reaches a local maximum, as defined in Definition 2 of the paper; 0 otherwise.

`cyc_bttm`: Indicator equal to 1 if the market-average price reaches a local minimum, as defined in Definition 2; 0 otherwise.

`st_peak`: Indicator equal to 1 if the station-level price reaches a local maximum, as defined in Definition 3; 0 otherwise.

`st_bttm`: Indicator equal to 1 if the station-level price reaches a local minimum, as defined in Definition 3; 0 otherwise.

`cyc_id`: Market-cycle identifier defined from the peak of each cycle.

`cyc_id_bttm`: Market-cycle identifier defined from the bottom (trough) of the previous cycle.

`cyc_prd_resto`: Indicator equal to 1 for days between the previous market-cycle bottom and the current cycle peak (the restoration phase).

`cyc_day_bttm`: Day index within each cycle after the most recent market-level cycle bottom. The variable equals 0 on the trough day, 1 on the first day after the trough, and increases sequentially thereafter.

`drop_coles`: Indicator equal to 1 for Coles stations where Informed Sources did not manually collect data after Coles exited the platform.

`is_cyc_drop`: Indicator equal to 1 for irregular station-level cycles with durations shorter than 10 days or longer than 130 days, typically due to anomalous pricing or missing observations; 0 otherwise.

3 Run the Code

The `./Code` directory contains the scripts used to generate all tables and figures in the paper. All code has been verified to run using Stata/SE 19.0 for Mac.

To reproduce the results, open a terminal, navigate to this directory, and run:

```
$ ./0_rundirectory.sh
```

This command sequentially executes all scripts listed below. Each script reads the proprietary dataset `is_mel_p_2005_2019.dta` and produces the corresponding figure or table reported in the paper.

1. `tab1.do`
    - Produces Table 1: Melbourne Station Counts and Shares in the Informed Sources Data.
    - Output:
        - `./Output/tab1.dta`
2. `fig1_example.do`
    - Produces Figure 1: Price Cycle Examples from 2015.
    - Output:
        - `./Output/fig1_example.pdf`
3. `fig2_prices.do`
    - Produces Figure 2: Daily Retail Prices Before and After Coles Exits the Informed Sources Platform.
    - Output:
        - `./Output/fig2_prices.pdf`
4. `fig3_speed.do`
    - Produces Figure 3: Restoration Speed Before and After Coles Exits the Platform.
    - Output:
        - `./Output/fig3_speed.pdf`
5. `fig4_timing.do`

- Produces Figure 4: Restoration Timing Before and After Coles Exits the Informed Sources Platform.
- Outputs:
  - `./Output/fig4a_timing_coles.pdf`
  - `./Output/fig4b_timing_riv.pdf`

References

BYRNE, D. P., N. DE ROOS, M. S. LEWIS, L. M. MARX, AND X. WU (2025): "Asymmetric Information Sharing in Oligopoly: A Natural Experiment in Retail Gasoline," *Journal of Political Economy*, 133, 2031–2088.