Discussion of: *Price dispersion in maritime transportation: Evidence from the container shipping market* by Pierre Cariou, Jia Haiying and François-Charles Wolff

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Quick summary

Context.

- $\approx 80\%$ of the volume of international trade in goods is carried by sea
- Container ships now carry most seagoing non-bulk cargo.
- Understanding the market for container ship freigh is important.

This paper.

- Use detailed transaction level data on one million spot contracts on ocean freight-rate.
- Documents a large degree of price dispersion at the transaction level, within-trade route on a given month.
- Evidence is incompatible with the law of one price.

Comment 1 : Estimation with heterogeneity

- Heterogeneity controled estimation:

$$\ln P_{\text{irt}} = \theta_r + \mu_c + \gamma_t + \varepsilon_{irt}, \text{ where}$$

  - θ_r: Route fixed effect
  - μ_c: Carrier fixed effect
  - γ_t: Month fixed effect
- AKM analogy : firm + worker fixed effect, why no client fixed effect here?
  – Evidence cited in the current paper suggests firm-size explains a lot of the cross-sectional variation in prices.
  – Very common in firm-to-firm trade: temp work agencies offer large discount to large clients.
  – The size distribution of clients might vary across each route and may explain part of the persistence of discrimination.

Comment 1 : Estimation with heterogeneity

- Heterogeneity controled estimation:

$$\ln P_{\text{irt}} = \theta_r + \mu_c + \gamma_t + \varepsilon_{irt}$$

- Wage dispersion analogy: similar workers are paid different wages : Can we see if similar customers pay very different rates?
- The importance of client FE would be suggestive of within-client persistance in rate heterogeneity (see Fagareng, Guiso, Malacrino, Pistaferri, section 4).
- It would be interesting to look at dynamics of prices within and across relationships. Are prices being renegotiated downwards within a client-to-carrier relationship? Do they reflect quantity discounts? Across relationships, do we see clients switching towards carriers with lower rates?
- Is persistence in dispersion driven by different shippers alternating between high and low price across time? Or is it the same shippers paying consistently high and low prices?

Comment 2 : Decomposition

- Heterogeneity controled estimation:

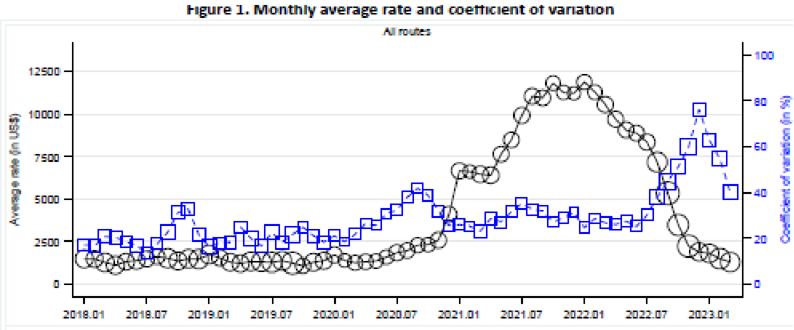
$$\ln P_{\text{irt}} = \theta_r + \mu_c + \gamma_t + \varepsilon_{irt},$$

- Decomposition:

$$V(\ln P_{\text{irt}}) = V(\theta_r) + V(\mu_c) + V(\gamma_t) + 2 \times \text{cov}(\theta_r, \mu_c) + 2 \times \text{cov}(\theta_r, \gamma_t) + 2 \times \text{cov}(\mu_c, \gamma_t) + V(\varepsilon_{irt})$$

- $V(\gamma_t) / V(\ln P_{\text{irt}}) = 83\%$: very high !!! I find that this hard to reconcile with the fact that there is a lot of dispersion in a given period. Between-period variance seems to be very dominant.

Comment 3 : is there a relationship between change in average price and price dispersion?



- After the Covid induced increase in rates, there's an interesting increase in CV toward the end of the period.
- It'd be very interesting to see whether that a persistent increase or not?
- Models of price setting with sticky price imply (I think) that inflation is positively correlated with price dispersion.

Set of open questions

- Price dispersion may reflect search friction, ex-ante heterogeneity in information set among consumers etc.
- Could a form of yield management generate some price dispersion? It seems reasonable to suppose that freigh companies adjust container rates in order to maximize profits and that might involve last minutes discounts etc.
- This process can result in price discrimination, in which customers consuming identical goods or services are charged different prices, simply because they ordered it at different times.
- This would be compatible with weak explanatory power of Carrier FE and persistence of price dispersion.
- If price dispersion is driven by dispersion in the marginal cost of providing freight shipping services (due to the opportunity costs of returning empty), then different implications than dispersion in price due to different markups across clients.

Conclusion

- Super interesting new facts, using novel data set about a key sector.
- Diving into the between / within client dimension of price dispersion would be relevant to understand if price discrimination or other factors drive the dispersion.