Sirius-XM merger - how to define markets.
How to estimate market power here?

Nevo: "any paper worth writing once is worth publishing at least twice," Rose

Demand structure: use BLP
J - brands
T - markets
i - consumers
- observable and unobservable characteristics.

$$U_{ijt} = x_{jt}\beta_i^* + \alpha_i^* p_{jt} + \xi_{jt} + \varepsilon_{ijt} = V_{ijt} + \varepsilon_{ijt}$$

- Dubels model
- (*) Could get a much better handle on the distribution of the coefficients if had data on repeat purchases.
- ε_{ijt} mean zero stochastic error term
- $\xi_{jt} = \xi_j + \xi_t + \Delta\xi_{jt}$
- $\begin{pmatrix}\alpha_i^* \\ \beta_i^*\end{pmatrix} = \begin{pmatrix}\alpha \\ \beta\end{pmatrix} + \Pi D_i + \Sigma \nu_i \quad \nu_i \sim N(0, I_{K+1})$
- Outside good: $U_{iot} = \xi_o + \pi_o D_t + \sigma_o \nu_{io} + \varepsilon_{iot}$
  - depending how broad the outside good is, might over- or underestimate elasticities. (small outside good $\Rightarrow$ underestimate)

Cost side:

$$\Pi_f = \sum_{j \in J_f} (p_j - mc_j) M s_j(p) - C_f$$

Bertrand-Nash eq:

$$s_j(p) + \sum_{r \in J_f} (p_r - mc_r) \frac{\partial s_r(p)}{\partial p_j} = 0$$

- Do FOCs before and after merger.

$$\Rightarrow \quad s(p) - \Omega^{pre}(p)[p - mc) = 0$$

$$\Rightarrow \quad p = mc + (\Omega^{pre})^{-1} s(p)$$

Data are from IRI scanner data. (panel data)
- only accounts for 42% to 63%

Demographics are from CPS
Use prices in other cities as instruments for price.
Identification comes from city-specific promotional activity.
- ie coupons.
- Must believe these are not national promotions.
- Regional transportation costs

Doesn't use data on input costs.

Many firms have multiple products
The paper gives implied premerger price and implied marginal costs.

Looks at several mergers that took place.
- computes price effects
- High movements upward imply that the two merging firms are close competitors.

These simulations do not account for product positioning

- What is being estimated here are the retail price elasticities. It is assumed that these are equal to wholesale price elasticities. Strong assumption
- Do people "stock-up" on stuff that is on sale? This will affect elasticity estimates. (more price elasticity)
- Opportunity cost of shelving. If you have one type of good on a shelf, cannot put others on the shelf. This can affect costs.

- $E_M = E_R \left(\frac{w}{p}\right)(\text{pass-through rate}) = E_R \cdot E_{wp}$, with $\text{pass-through rate} = \frac{dp}{dw}$

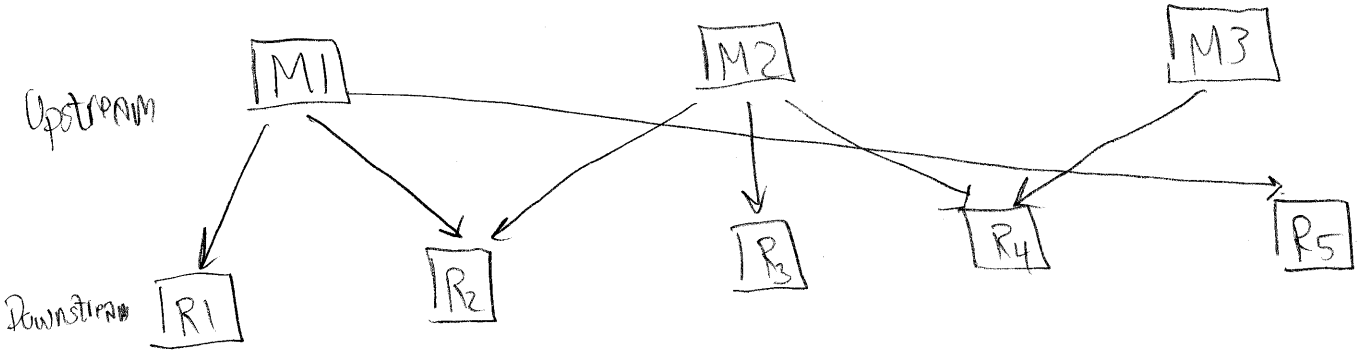
  E_M: elast. facing manufacturer; E_R: elast. facing retailer; E_{wp}: elast. of retail price wrt wholesale price

$\Rightarrow E_M = E_R$ iff $E_{wp} = 1$. This is an implicit assumption of the literature. This happens when:

- perfectly competitive retail mkt, all retail costs are fixed
  - inconsistent with fixed costs
- constant percentage markup over wholesale price with no retail marginal costs. Need constant elasticity of demand function for this to hold

- Wholesale-retail pricing is very complex. Nonlinear pricing (volume discounts, rebates, advertising and promotion support)

Vertical relationships



Imperfect competition leads to inefficiencies, which can lead to incentives for vertical integration.

Read Tirole, chapter 4.

"Better to have one monopoly than a string of monopolies."

Vertical foreclosure - raising rival's cost by setting up an arrangement
- e.g. exclusive territories
- Ordover, Salop, Saloner

Transactions costs, property rights, hold-up problems
- asset specificity

Vertical control
- third degree price discrimination.