Buyer Alliances in Vertically Related Markets

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Figure 1: Buyer alliance in a vertical market

Definition
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Buyer alliances in practice

- **Alliances** formed by buyers to deal with their suppliers is a *widespread phenomenon* in many industries:
  - Pharmaceutical industries: e.g., Numark in the UK, Giphar in France;
  - Health care sector: group purchasing organizations (GPOs);
  - Retail food industries.

- Antitrust concerns of buyer alliances: *strong presumption of legality* (Carstensen, 2010, Wm. & Mary Bus. L. Rev.).


- Do final consumers benefit from buyer alliances? How do they affect manufacturers and industry profits?
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- **Galbraith** (1952, 1954): **Countervailing buyer power**. **No market power effect** unlike downstream concentration.

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  How do they affect manufacturers and industry profits?
Alliances formed by buyers to deal with their suppliers is a widespread phenomenon in many industries:

- Pharmaceutical industries: e.g., Numark in the UK, Giphar in France;
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- Retail food industries.

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No market power effect unlike downstream concentration.

Do final consumers benefit from buyer alliances?
How do they affect manufacturers and industry profits?
Shed light on **3 economic forces** generated by buyer alliances:

- **Status quo effect** (Caprice and Rey, 2015, EJ):
  Deteriorate manufacturers’ status quo payoffs in negotiations.

- **Nondiscrimination effect** (O’Brien, 2014, RAND):
  Impact concessions costs of firms to the detriment of retailers.

Harsanyi (1977)’s joint-bargaining paradox?


The global effect of buyer alliances is an empirical question!
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- **Bargaining ability effect**:

Harsanyi (1977)’s joint-bargaining paradox?

The global effect of buyer alliances is an empirical question!
Contributions

Figure 2: Without Alliance

Figure 3: With Alliance

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The global effect of buyer alliances is an empirical question!
Use a structural model of demand and supply to estimate the bargaining power of firms before and after the formation of 3 buyer alliances that occurred on the French bottled water industry in 2014.

Perform counterfactual scenarios to gain further insights on the economic forces generated by buyer alliances.
Contributions

- Use a structural model of demand and supply to estimate the bargaining power of firms before and after the formation of 3 buyer alliances that occurred on the French bottled water industry in 2014.

- Perform **counterfactual scenarios** to gain further insights on the economic forces generated by buyer alliances.
Relation to literature

- **Buyer power in vertically related markets.**

Outline

1. **Buyer alliances background & Data**

2. **Demand model**
   - Multinomial logit model
   - Identification and estimation of consumer demand
   - Demand results

3. **Supply model**
   - Stage 2: Downstream price competition
   - Stage 1: Manufacturer-retailer bargaining
   - Identification and estimation of bargaining stage
   - Supply results

4. **Counterfactuals**
Buyer alliances in the French food retail sector

In 2014, three buyer alliances have been formed to negotiate wholesale prices of national brands (excluding fresh products and private labels).

Market shares in parenthesis (source: Autorité de la concurrence, 2015).

Producers

- Carrefour (21.8%)
- Cora (3.3%)
- Auchan (11.3%)
- Système U (10.3%)
- ITM (14.4%)
- Casino (11.5%)
- Leclerc (19.9%)
- HD (6.9%)

Consumers
I use household-level scanner data on bottled water purchases (550,059 purchases) in France collected by KANTAR WorldPanel over the year 2013 and 2015 (from March to December).

I consider purchases of bottled water at 8 retailers: Carrefour, Leclerc, ITM, Auchan, Systeme U, Casino, Cora, and an aggregate of hard discounters.

I select the 11 biggest national brands according to the number of purchases in the sample plus all private labels (store brands).

Market definition: All purchases of bottled water for home consumption in France within a month (20 markets).

I define a product as a brand-retailer combination: 111 differentiated products.
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French bottled water market: Micro data

### Table 1: Descriptive statistics by firms (pre-alliances)

<table>
<thead>
<tr>
<th></th>
<th>Market shares (%)</th>
<th>Retail prices (€/liter)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mean</td>
<td>s.d.</td>
</tr>
<tr>
<td><strong>Manufacturers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturer 1</td>
<td>15.74</td>
<td>1.07</td>
</tr>
<tr>
<td>Manufacturer 2</td>
<td>10.87</td>
<td>0.42</td>
</tr>
<tr>
<td>Manufacturer 3</td>
<td>13.08</td>
<td>0.76</td>
</tr>
<tr>
<td>Private labels</td>
<td>23.41</td>
<td>0.53</td>
</tr>
<tr>
<td><strong>Retailers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retailer 1</td>
<td>14.84</td>
<td>0.37</td>
</tr>
<tr>
<td>Retailer 2</td>
<td>1.79</td>
<td>0.16</td>
</tr>
<tr>
<td>Retailer 3</td>
<td>7.32</td>
<td>0.42</td>
</tr>
<tr>
<td>Retailer 4</td>
<td>4.95</td>
<td>0.21</td>
</tr>
<tr>
<td>Retailer 5</td>
<td>9.04</td>
<td>0.81</td>
</tr>
<tr>
<td>Retailer 6</td>
<td>4.61</td>
<td>0.19</td>
</tr>
<tr>
<td>Retailer 7</td>
<td>14.46</td>
<td>0.65</td>
</tr>
<tr>
<td>Retailer 8</td>
<td>6.10</td>
<td>0.09</td>
</tr>
<tr>
<td><strong>Outside good</strong></td>
<td>37.09</td>
<td>1.41</td>
</tr>
</tbody>
</table>

Notes: Standard deviation refers to variation across markets for the year 2013 (pre-alliances).
Market structure in 2013 (pre-alliances)

- Manuf. 1 (15.74%)
- Manuf. 2 (10.87%)
- Manuf. 3 (13.08%)
- Private Labels (23.41%)
- Retailer 1 (14.84%)
- Retailer 2 (1.79%)
- Retailer 3 (7.32%)
- Retailer 4 (4.95%)
- Retailer 5 (9.04%)
- Retailer 6 (4.61%)
- Retailer 7 (14.46%)
- Retailer 8 (6.10%)

Consumers

Notes: Market shares in parenthesis.
Market structure in 2015 (post-alliances)

Notes: Market shares in parenthesis.
Descriptive retail price analysis

Figure 4: Average retail price trend

- National brands of alliances' members
- Rival retailers and private labels
Descriptive retail price analysis

In line with the literature on retrospective merger analysis (e.g., Ashenfelter and Hosken, 2010, JLawEcon):

\[
\log(p_{j,t}) = \beta_1 \text{1}_{\{\text{post-alliances}\}}_t \times \text{1}_{\{\text{national brand}\}}_{j,t} \times \text{1}_{\{\text{alliance}\}}_{j,t} \\
+ \beta_2 \text{1}_{\{\text{post-alliances}\}}_t + \beta_j + \beta_{\text{month}(t)} + u_{j,t}
\]

Table 2: Changes in retail prices

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Value</th>
<th>S.E.</th>
<th>Δ retail price</th>
<th>CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\beta_1$</td>
<td>$-0.056^*$</td>
<td>0.008</td>
<td>-5.40%</td>
<td>[-6.88% ; -3.92%]</td>
</tr>
<tr>
<td>$\beta_2$</td>
<td>$-0.026^*$</td>
<td>0.006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\beta_j$ (not shown)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\beta_{\text{month}(t)}$ (not shown)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$R^2$ adjust.</td>
<td>0.994</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nb. of observations</td>
<td>2,192</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: OLS estimates. * indicates significance at the 5% level. Heteroskedasticity-robust standard errors. 95% confidence intervals computed using the delta method.
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4. Counterfactuals
Multinomial logit model

- Each consumer in the sample chooses among $J_t + 1$ alternatives indexed from $j \in \{0, \ldots, J_t\} = \mathcal{J}_t$ at each shopping trip.

- The utility that consumer $i$ obtains from purchasing product $j \in \mathcal{J}_t \setminus \{0\}$ in market $t$ is specified as follows:

  $$U_{i,j,t} = \beta_0 + \beta_b(j) + \beta_r(j) + \beta_t + \phi x_{\text{spark}}(j) + \psi_i x_{\text{miner}}(j) - \alpha_i p_{j,t} + \xi_{j,t} + e_{i,j,t}$$

  where $\psi_i = \psi + \psi_g(\text{age}_i)$ and $\alpha_i = \alpha + \alpha_g(y_i)$.

- Outside good: $U_{i,0,t} = e_{i,0,t}$.

- $e_{i,j,t}$ is i.i.d. from the standard Gumbel distribution. The probability that consumer $i$ selects product $j \in \mathcal{J}_t$ in market $t$ is:

  $$\delta_{i,j,t} = \frac{\exp(\beta_0 + \beta_b(j) + \beta_r(j) + \beta_t + \phi x_{\text{spark}}(j) + \psi_i x_{\text{miner}}(j) - \alpha_i p_{j,t} + \xi_{j,t})}{1 + \sum_{k=1}^{J_t} \exp(\beta_0 + \beta_b(k) + \beta_r(k) + \beta_t + \phi x_{\text{spark}}(k) + \psi_i x_{\text{miner}}(k) - \alpha_i p_{k,t} + \xi_{k,t})}$$
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- Outside good: $U_{i,0,t} = e_{i,0,t}$.

- $e_{i,j,t}$ is i.i.d. from the standard Gumbel distribution. The probability that consumer $i$ selects product $j \in \mathcal{J}_t$ in market $t$ is:

$$s_{i,j,t} = \frac{\exp(\beta_0 + \beta_{b(j)} + \beta_{r(j)} + \beta_t + \phi x_{\text{spark}(j)} + \psi_i x_{\text{miner}(j)} - \alpha_i p_{j,t} + \xi_{j,t})}{1 + \sum_{k=1}^{J_t} \exp(\beta_0 + \beta_{b(k)} + \beta_{r(k)} + \beta_t + \phi x_{\text{spark}(k)} + \psi_i x_{\text{miner}(k)} - \alpha_i p_{k,t} + \xi_{k,t})}$$
Identification and estimation of consumer demand

Retail price endogeneity: 2-step procedure of Berry, Levinsohn and Pakes (2004, JPE), also called BLP-micro.

1 GMM with a nested fixed point algorithm: Moments

Define \( \delta_{j,t} = \beta_0 + \beta_b(j) + \beta_r(j) + \beta_t + \phi x_{\text{spark}}(j) + \psi x_{\text{miner}}(j) - \alpha p_{j,t} + \xi_{j,t} \).

Estimate \( \delta = (\delta_{1,1}, \ldots, \delta_{J,T})^T \) and \( \theta_{d}^2 = (\psi_2, \psi_3, \alpha_2, \alpha_3, \alpha_4)^T \) by GMM:

\[
\min_{\theta_{d}^2} g_d(\delta(\theta_{d}^2), \theta_{d}^2)^T A^{-1} g_d(\delta(\theta_{d}^2), \theta_{d}^2)
\]

where \( g_{d,(l)} = \frac{1}{T} \sum_{t=1}^{T} \sum_{i=1}^{I_t} \sum_{j=1}^{J_t} \left( 1_{i,j,t} - \delta_{i,j,t}(\delta_{t}, \theta_{2}^d) \right) X_{j,t}^{(l)} D_i \) and \( \delta \) is “concentrated out” of the objective function (Berry, Levinsohn and Pakes, 1995, ECMTA).

2 TSLS: \( \delta_{j,t}(\hat{\theta}_{2}^d) = \beta_0 + \beta_b(j) + \beta_r(j) + \beta_t + \phi x_{\text{spark}}(j) + \psi x_{\text{miner}}(j) - \alpha p_{j,t} + \xi_{j,t} \)

2 instrumental variables \( Z^d \) that shift supply but not demand for bottled water:

- BLP-type: number of products sold by rival retailers (shift markup).
- Exogenous shifter of the competitive environment (Berry and Haile, 2014, ECMTA): \( 1\{\text{post-alliances}\}_t \times 1\{\text{national brand}\}_{j,t} \times 1\{\text{alliance}\}_{j,t} \)

Identification and estimation of consumer demand

Retail price endogeneity: 2-step procedure of Berry, Levinsohn and Pakes (2004, JPE), also called BLP-micro.

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Estimate \( \delta = (\delta_{1,1}, \ldots, \delta_{J,T})^T \) and \( \theta_d^2 = (\psi_2, \psi_3, \alpha_2, \alpha_3, \alpha_4)^T \) by GMM:

\[
\min_{\theta_d^2} g^d(\delta(\theta_d^2), \theta_d^2)^T A^{-1} g^d(\delta(\theta_d^2), \theta_d^2)
\]

where \( g^{d,(l)} = \frac{1}{I} \sum_{t=1}^T \sum_{i=1}^{I_t} \sum_{j=1}^{J_t} \left( 1_{i,j,t} - \delta_{i,j,t}(\delta_t, \theta_d^2) \right) X_{j,t}^{(l)} D_i \) and \( \delta \) is "concentrated out" of the objective function (Berry, Levinsohn and Pakes, 1995, ECMTA).

2 **TSLS:** \( \delta_{j,t}(\hat{\theta}_d^2) = \beta_0 + \beta_{b(j)} + \beta_{r(j)} + \beta_t + \phi x_{spark(j)} + \psi x_{miner(j)} - \alpha p_{j,t} + \xi_{j,t} \)

2 instrumental variables \( Z^d \) that shift supply but not demand for bottled water:

- BLP-type: number of products sold by rival retailers (shift markup).
- Exogenous shifter of the competitive environment (Berry and Haile, 2014, ECMTA): \( 1 \{ \text{post-alliances} \}_t \times 1 \{ \text{national brand} \}_{j,t} \times 1 \{ \text{alliance} \}_{j,t} \) (see also Miller and Weinberg, 2017, ECMTA).
Identification and estimation of consumer demand

Retail price endogeneity: 2-step procedure of Berry, Levinsohn and Pakes (2004, JPE), also called BLP-micro.

1. **GMM with a nested fixed point algorithm:**
   Define $\delta_j,t = \beta_0 + \beta_{b(j)} + \beta_{r(j)} + \beta_t + \phi x_{spark(j)} + \psi x_{miner}(j) - \alpha p_{j,t} + \xi_{j,t}$.
   Estimate $\delta = (\delta_{1,1}, \ldots, \delta_{J,T})^T$ and $\theta_d^2 = (\psi_2, \psi_3, \alpha_2, \alpha_3, \alpha_4)^T$ by GMM:
   $$\min_{\theta_d^2} g^d(\delta(\theta_d^2), \theta_d^2)^T A^{-1} g^d(\delta(\theta_d^2), \theta_d^2)$$
   where $g^d(l) = \frac{1}{l} \sum_{t=1}^T \sum_{i=1}^{I_t} \sum_{j=1}^{J_t} \left( \mathbb{1}_{i,j,t} - \delta_{i,j,t}(\delta_t, \theta_d^2) \right) X_{j,t}(l) D_i$ and $\delta$ is "concentrated out" of the objective function (Berry, Levinsohn and Pakes, 1995, ECMTA).

2. **TSLS:**
   $\delta_{j,t}(\hat{\theta}_d^2) = \beta_0 + \beta_{b(j)} + \beta_{r(j)} + \beta_t + \phi x_{spark(j)} + \psi x_{miner}(j) - \alpha p_{j,t} + \xi_{j,t}$
   2 instrumental variables $Z_d$ that shift supply but not demand for bottled water:
   - **BLP-type:** number of products sold by rival retailers (shift markup).
   - **Exogenous shifter of the competitive environment** (Berry and Haile, 2014, ECMTA): $\mathbb{1}\{\text{post-alliances}\}_t \times \mathbb{1}\{\text{national brand}\}_{j,t} \times \mathbb{1}\{\text{alliance}\}_{j,t}$
     (see also Miller and Weinberg, 2017, ECMTA).
## Demand results

### Table 3: Estimates of consumer demand

#### (a) Preference heterogeneity

<table>
<thead>
<tr>
<th>Parameters ($\theta^d_2$)</th>
<th>Value</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\alpha_2$: $y_i \in [900; 1,899]$</td>
<td>$-0.09^*$</td>
<td>0.02</td>
</tr>
<tr>
<td>$\alpha_3$: $y_i \in [1,900; 4,449]$</td>
<td>$-0.21^*$</td>
<td>0.01</td>
</tr>
<tr>
<td>$\alpha_4$: $y_i &gt; 4,449$</td>
<td>$-0.26^*$</td>
<td>0.02</td>
</tr>
<tr>
<td>$\psi_2$: $\text{age}_i \in [40; 60]$</td>
<td>$0.39^*$</td>
<td>0.01</td>
</tr>
<tr>
<td>$\psi_3$: $\text{age}_i &gt; 60$</td>
<td>$0.70^*$</td>
<td>0.01</td>
</tr>
</tbody>
</table>

**Nb. of observations**: 550,059

*Notes: GMM estimates. * indicates significance at the 5% level. Heteroskedasticity-robust standard errors.*

#### (b) Mean preferences

<table>
<thead>
<tr>
<th>Parameters ($\theta^d_1$)</th>
<th>Value</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\beta_0$</td>
<td>$-2.48^*$</td>
<td>0.50</td>
</tr>
<tr>
<td>$\alpha$ (retail price)</td>
<td>$15.37^*$</td>
<td>3.12</td>
</tr>
<tr>
<td>$\psi$ (mineral)</td>
<td>$0.64^*$</td>
<td>0.23</td>
</tr>
<tr>
<td>$\phi$ (sparkling)</td>
<td>$-0.23$</td>
<td>0.20</td>
</tr>
</tbody>
</table>

| $\beta_b(j)$ (not shown) | $\beta_r(j)$ (not shown) | $\beta_t$ (not shown) |

**F_{eff}**: 20.73

**Nb. of observations**: 2,192

*Notes: TSLS estimates. * indicates significance at the 5% level. Heteroskedasticity-robust standard errors uncorrected for the sampling error in market shares to estimate $\delta$. $F_{eff}$ indicates the robust F-stat of Montiel Olea and Pflueger (2013, JBES).*
### Table 4: Estimates of own-price elasticity of demand

<table>
<thead>
<tr>
<th>Types of water</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>-4.66</td>
</tr>
<tr>
<td>Still spring water</td>
<td>-2.24</td>
</tr>
<tr>
<td>Sparkling spring water</td>
<td>-3.73</td>
</tr>
<tr>
<td>Still mineral water</td>
<td>-5.34</td>
</tr>
<tr>
<td>Sparkling mineral water</td>
<td>-7.72</td>
</tr>
</tbody>
</table>

*Notes: Average own-price elasticity of products are calculated using quantity weights.*

Results for spring water products and mineral water products are in line with Bonnet and Dubois (2015) who find respectively -3.09 and -6.70.
Outline

1. Buyer alliances background & Data

2. Demand model
   - Multinomial logit model
   - Identification and estimation of consumer demand
   - Demand results

3. Supply model
   - Stage 2: Downstream price competition
   - Stage 1: Manufacturer-retailer bargaining
   - Identification and estimation of bargaining stage
   - Supply results

4. Counterfactuals
Bilateral oligopoly setting

- **Timing and information:**
  - **Stage 1:** Manufacturers and retailers engage *simultaneously* and *secretly* in bilateral bargains to determine wholesale prices of each product \( j \in \mathcal{I}_t \setminus \{0\} \).
  - **Stage 2:** Retailers compete in prices on the downstream market with *interim unobservability* (Rey and Vergé, 2004, RAND).

I assume **complete information** about the cost of production and distribution of each product \( j \in \mathcal{I}_t \setminus \{0\} \).

- **Bargaining protocol:** I use the "Nash-in-Nash" bargaining solution (Horn and Wolinsky, 1988, RAND) to determine the division of surplus between up- and downstream firms. [Details]
Stage 2: Downstream price competition

- In each market $t$, retail prices are determined in a **pure-strategy Nash equilibrium**. Retailer $r$ solves the following maximization problem

$$\max_{\{p_{j,t}\}_{j \in I_r,t}} \pi_{r,t} \equiv \sum_{j \in I_r,t} \left( p_{j,t} - w_{j,t} - c_{j,t} \right) M_t \delta_{j,t} (p_{r,t}, p^*_{-r,t}; \delta_t, \Theta_d^2)$$

- The first-order condition w.r.t $k \in I_r,t$

$$\delta_{k,t} (p_{r,t}, p^*_{-r,t}; \delta_t, \Theta_d^2) + \sum_{j \in I_r,t} \left( p_{j,t} - w_{j,t} - c_{j,t} \right) \frac{\partial \delta_{j,t}}{\partial p_{k,t}} (p_{r,t}, p^*_{-r,t}; \delta_t, \Theta_d^2) = 0$$

- $\forall k \in I_r,t$, I obtain the vector of **price-cost margins of retailer $r$ in market $t$**

$$\gamma^*_{r,t} \equiv p^*_{r,t} - w^*_{r,t} - c_{r,t} = - \left( I_r S p_t I_r \right)^+ I_r \delta_t$$

and retailer $r$’s marginal costs: $w^*_{r,t} + c_{r,t} = p^*_{r,t} - \gamma^*_{r,t}$. 

Stage 1: Manufacturer-retailer bargaining

Pre-alliances:
- Negotiation between manufacturer $f$ and retailer $r$ over $w_{j,t}$:
  \[
  \max_{w_{j,t}} \left( \pi_{f,t} - d_{f,t}^{-j} \right)^{\lambda_{f,r}^{\text{pre}}} \left( \pi_{r,t} - d_{r,t}^{-j} \right)^{1-\lambda_{f,r}^{\text{pre}}}
  \]
  \[
  \text{Details}
  \]
- First-order condition and sources of bargaining power:
  \[
  \left( 1 - \lambda_{f,r}^{\text{pre}} \right) \left( \pi_{f,t} - d_{f,t}^{-j} \right) \frac{\partial \pi_{r,t}}{\partial w_{j,t}} + \lambda_{f,r}^{\text{pre}} \left( \pi_{r,t} - d_{r,t}^{-j} \right) \frac{\partial \pi_{f,t}}{\partial w_{j,t}} = 0
  \]
  
  r’s bargaining weight  
  r’s gains from trade  
  r’s concession cost  
  f’s bargaining weight  
  r’s gains from trade  
  r’s concession cost  
  r’s bargaining power  
  r’s bargaining power

Post-alliances:
- Negotiation between manufacturer $f$ and retailers’ alliance $a(j)$ over $w_{a(j),b(j),t}$:
  \[
  \max_{w_{a(j),b(j),t}} \left( \pi_{f,t} - d_{f,t}^{-a(j),b(j)} \right)^{1-\lambda_{f,a(j)}^{\text{post}}} \left( \pi_{a(j),t} - d_{a(j),t}^{-a(j),b(j)} \right)^{\lambda_{f,a(j)}^{\text{post}}}
  \]
  \[
  \text{Details}
  \]
- First-order condition:
  \[
  \left( 1 - \lambda_{f,a(j)}^{\text{post}} \right) \left( \pi_{f,t} - d_{f,t}^{-a(j),b(j)} \right) \frac{\partial \pi_{a(j),t}}{\partial w_{a(j),b(j),t}} + \lambda_{f,a(j)}^{\text{post}} \left( \pi_{a(j),t} - d_{a(j),t}^{-a(j),b(j)} \right) \frac{\partial \pi_{f,t}}{\partial w_{a(j),b(j),t}} = 0
  \]
Stage 1: Manufacturer-retailer bargaining

Pre-alliances:
- Negotiation between manufacturer \( f \) and retailer \( r \) over \( w_{j,t} \):
  \[
  \max_{w_{j,t}} \left( \pi_{f,t} - d_{f,t}^{-j} \right) \lambda_{f,r}^{\text{pre}} \left( \pi_{r,t} - d_{r,t}^{-j} \right)^{1 - \lambda_{f,r}^{\text{pre}}} 
  \]

  First-order condition and sources of bargaining power:
  \[
  \left( 1 - \lambda_{f,r}^{\text{pre}} \right) \left( \pi_{f,t} - d_{f,t}^{-j} \right) \frac{\partial \pi_{r,t}}{\partial w_{j,t}} + \lambda_{f,r}^{\text{pre}} \left( \pi_{r,t} - d_{r,t}^{-j} \right) \frac{\partial \pi_{f,t}}{\partial w_{j,t}} = 0
  \]
  
  - \( r \)'s bargaining weight
  - \( f \)'s gains from trade
  - \( r \)'s concession cost
  - \( f \)'s bargaining weight
  - \( r \)'s gains from trade
  - \( f \)'s concession cost

Post-alliances:
- Negotiation between manufacturer \( f \) and retailers' alliance \( a(j) \) over \( w_{a(j),b(j),t} \):
  \[
  \max_{w_{a(j),b(j),t}} \left( \pi_{f,t} - d_{f,t}^{-a(j),b(j)} \right)^{1 - \lambda_{f,a(j)}^{\text{post}}} \left( \pi_{a(j),t} - d_{a(j),t}^{-a(j),b(j)} \right)^{\lambda_{f,a(j)}^{\text{post}}} 
  \]

  First-order condition:
  \[
  \left( 1 - \lambda_{f,a(j)}^{\text{post}} \right) \left( \pi_{f,t} - d_{f,t}^{-a(j),b(j)} \right) \frac{\partial \pi_{a(j),t}}{\partial w_{a(j),b(j),t}} + \lambda_{f,a(j)}^{\text{post}} \left( \pi_{a(j),t} - d_{a(j),t}^{-a(j),b(j)} \right) \frac{\partial \pi_{f,t}}{\partial w_{a(j),b(j),t}} = 0
  \]
Stage 1: Manufacturer-retailer bargaining

Pre-alliances:
- Negotiation between manufacturer $f$ and retailer $r$ over $w_{j,t}$:
  \[
  \max_{w_{j,t}} \left( \pi_f, t - d_{f,t}^{-j} \right) \lambda_{f,r}^{\text{pre}} \left( \pi_r, t - d_{r,t}^{-j} \right) ^{1 - \lambda_{f,r}^{\text{pre}}}
  \]
  
  First-order condition and sources of bargaining power:
  \[
  (1 - \lambda_{f,r}^{\text{pre}}) \left( \pi_f, t - d_{f,t}^{-j} \right) \frac{\partial \pi_r, t}{\partial w_{j,t}} + \lambda_{f,r}^{\text{pre}} \left( \pi_r, t - d_{r,t}^{-j} \right) \frac{\partial \pi_f, t}{\partial w_{j,t}} = 0
  \]

Post-alliances:
- Negotiation between manufacturer $f$ and retailers’ alliance $a(j)$ over $w_{a(j), b(j), t}$:
  \[
  \max_{w_{a(j), b(j), t}} \left( \pi_f, t - d_{f,t}^{-a(j), b(j)} \right) ^{1 - \lambda_{f,a(j)}^{\text{post}}} \left( \pi_{a(j)}, t - d_{a(j), b(j)}^{-a(j), b(j)} \right) ^{\lambda_{f,a(j)}^{\text{post}}}
  \]
  
  First-order condition:
  \[
  (1 - \lambda_{f,a(j)}^{\text{post}}) \left( \pi_f, t - d_{f,t}^{-a(j), b(j)} \right) \frac{\partial \pi_{a(j)}, t}{\partial w_{a(j), b(j), t}} + \lambda_{f,a(j)}^{\text{post}} \left( \pi_{a(j)}, t - d_{a(j), b(j)}^{-a(j), b(j)} \right) \frac{\partial \pi_f, t}{\partial w_{a(j), b(j), t}} = 0
  \]
Stage 1: Manufacturer-retailer bargaining

From the first-order conditions of each Nash bargaining problem involving manufacturer $f$, it is possible to formulate its **price-cost margins** in vector-matrix form:

$$w^*_f,t - \mu_{f,t} = \Gamma_{f,t}^{\text{pre}} (\mathcal{J}_t; \lambda^{\text{pre}}) \times 1\{\text{pre-alliance}\}_t + \Gamma_{f,t}^{\text{post}} (\mathcal{J}_t; \lambda^{\text{post}}) \times 1\{\text{post-alliance}\}_t$$

where $\lambda^{\text{pre}}$ and $\lambda^{\text{post}}$ are two $J_t$-dimensional vectors with $\lambda^{\text{pre}}[j,1] = \lambda^{\text{pre}}_{f,r}$ if $j \in \mathcal{J}_f,t \cap \mathcal{J}_r,t$ and $\lambda^{\text{post}}[j,1] = \lambda^{\text{post}}_{f,a(j)}$ if $j \in \mathcal{J}_f,t \cap \mathcal{J}_a(j),t$. 

Details
Identification and estimation of bargaining stage

- To estimate $\lambda^\text{pre}$ and $\lambda^\text{post}$, exploit the variation in retailers’ marginal costs for each product recovered in stage 2 ($w_{j,t} + c_{j,t} = p_{jt} - \gamma_{j,t}$).

Decompose retailers’ marginal costs as follows

$$w_{j,t} + c_{j,t} = \left( w_{j,t} - \mu_{j,t} \right) + \left( c_{j,t} + \mu_{j,t} \right)$$

upstream market power  
operational costs

- $w_{j,t} - \mu_{j,t}$ has an expression implied by the FOC of the ”Nash-in-Nash” bargaining model (pre- and post-alliances).

Total marginal cost specification:

$$c_{jt} + \mu_{j,t} = \kappa_0 + \kappa_{b(j)} + \kappa_t + \kappa_m x_{\text{miner}(j)} + \kappa_s x_{\text{spark}(j)} + \omega_{j,t}$$

(e.g., Gowrisankaran, Nevo and Town, 2015, AER)

Supply-side equation:

$$w_t + c_t = \Gamma^{\text{pre}}(\mathbf{s}_t; \lambda^{\text{pre}}) \times 1\{\text{pre-al.}\}_t + \Gamma^{\text{post}}(\mathbf{s}_t; \lambda^{\text{post}}) \times 1\{\text{post-al.}\}_t$$

$$+ v_t \kappa + \omega_t$$
Identification and estimation of bargaining stage

- To estimate $\lambda^{\text{pre}}$ and $\lambda^{\text{post}}$, exploit the variation in retailers’ marginal costs for each product recovered in stage 2 ($w_{j,t} + c_{j,t} = p_{jt} - \gamma_{j,t}$).

  Decompose retailers’ marginal costs as follows:

  $$w_{j,t} + c_{j,t} = (w_{j,t} - \mu_{j,t}) + (c_{j,t} + \mu_{j,t})$$

  - upstream market power
  - operational costs

- $w_{j,t} - \mu_{j,t}$ has an expression implied by the FOC of the "Nash-in-Nash" bargaining model (pre- and post-alliances).

- Total marginal cost specification:

  $$c_{jt} + \mu_{j,t} = \kappa_0 + \kappa_{b(j)} + \kappa_t + \kappa_m x_{\text{miner}(j)} + \kappa_s x_{\text{spark}(j)} + \omega_{j,t}$$

  (e.g., Gowrisankaran, Nevo and Town, 2015, AER)

- Supply-side equation:

  $$w_t + c_t = \Gamma^{\text{pre}}(\mu_t; \lambda^{\text{pre}}) \times 1\{\text{pre-al.}\}_t + \Gamma^{\text{post}}(\mu_t; \lambda^{\text{post}}) \times 1\{\text{post-al.}\}_t + v_t \kappa + \omega_t$$
Identification and estimation of bargaining stage

- To estimate $\lambda^{\text{pre}}$ and $\lambda^{\text{post}}$, exploit the variation in retailers’ marginal costs for each product recovered in stage 2 ($w_{j,t} + c_{j,t} = p_{jt} - \gamma_{j,t}$).

  Decompose retailers’ marginal costs as follows

  $$w_{j,t} + c_{j,t} = (w_{j,t} - \mu_{j,t}) + (c_{j,t} + \mu_{j,t})$$

  upstream market power  operational costs

- $w_{j,t} - \mu_{j,t}$ has an expression implied by the FOC of the ”Nash-in-Nash” bargaining model (pre- and post-alliances).

- Total marginal cost specification:

  $$c_{jt} + \mu_{j,t} = \kappa_0 + \kappa_{b(j)} + \kappa_t + \kappa_{m}x_{\text{miner}(j)} + \kappa_{s}x_{\text{spark}(j)} + \omega_{j,t}$$

  (e.g., Gowrisankaran, Nevo and Town, 2015, AER)

- Supply-side equation:

  $$w_t + c_t = \Gamma^{\text{pre}}(\delta_t; \lambda^{\text{pre}}) \times 1\{\text{pre-al.}\}_t + \Gamma^{\text{post}}(\delta_t; \lambda^{\text{post}}) \times 1\{\text{post-al.}\}_t + \nu_t \kappa + \omega_t$$
Identification and estimation of bargaining stage

To estimate $\lambda^{\text{pre}}$ and $\lambda^{\text{post}}$, exploit the variation in retailers’ marginal costs for each product recovered in stage 2 ($w_{j,t} + c_{j,t} = p_{jt} - \gamma_{j,t}$). Decompose retailers’ marginal costs as follows

$$w_{j,t} + c_{j,t} = (w_{j,t} - \mu_{j,t}) + (c_{j,t} + \mu_{j,t})$$

upstream market power operational costs

$w_{j,t} - \mu_{j,t}$ has an expression implied by the FOC of the “Nash-in-Nash” bargaining model (pre- and post-alliances).

Total marginal cost specification:

$$c_{jt} + \mu_{j,t} = \kappa_0 + \kappa_{b(j)} + \kappa_t + \kappa_m x_{\text{miner}(j)} + \kappa_s x_{\text{spark}(j)} + \omega_{j,t}$$

(e.g., Gowrisankaran, Nevo and Town, 2015, AER)

Supply-side equation:

$$w_t + c_t = \Gamma^{\text{pre}}(s_t; \lambda^{\text{pre}}) \times 1\{\text{pre-al.}\}_t + \Gamma^{\text{post}}(s_t; \lambda^{\text{post}}) \times 1\{\text{post-al.}\}_t + \nu_t \kappa + \omega_t$$
Identification and estimation of bargaining stage

\[ w_t + c_t = \Gamma^{\text{pre}}(s_t; \lambda^{\text{pre}}) \times 1\{\text{pre-al.}\}_t + \Gamma^{\text{post}}(s_t; \lambda^{\text{post}}) \times 1\{\text{post-al.}\}_t + v_t \kappa + \omega_t \]

**Endogeneity problem:** correlation of \( s_{j,t} \) with \( \omega_{j,t} \).

Reduce the number of bargaining parameters to 6 instead of 24. 
Retailers not in any alliance: \( \lambda_{\text{na}}^{\text{pre}} = \lambda_{\text{na}}^{\text{post}} = \lambda_{\text{na}} \) (R7, R8).
Retailers in an alliance:
- with high market shares and low retail costs: \( \lambda_{1}^{\text{pre}} \) (R1, R3, R5),
- with low market shares and high retail costs: \( \lambda_{2}^{\text{pre}} \) (R2, R4, R6),
- \( \lambda_{a}^{\text{post}} \) for each alliance \( a \) (R1-R2, R3-R4, R4-R6).

8 instrumental variables for the endogenous market shares \( s_{j,t} \):
- \( 1\{\text{post-alliances}\}_t \times 1\{\text{national brand}\}_{j,t} \times 1\{\text{alliance}\}_{j,t} \) (Miller and Weinberg, 2017, ECMTA),
- \( 1\{\text{post-alliances}\}_t \times 1\{\text{national brand}\}_{j,t} \times 1\{\text{no alliance}\}_{j,t} \),
- nb. of rival products in each bottled water segment (mineral, sparkling), interacted with a dummy for each type of retailers list.
Identification and estimation of bargaining stage

\[ w_t + c_t = \Gamma^\text{pre}(s_t; \lambda^\text{pre}) \times 1\{\text{pre-al.}\}_t + \Gamma^\text{post}(s_t; \lambda^\text{post}) \times 1\{\text{post-al.}\}_t + v_t \kappa + \omega_t \]

- **Endogeneity problem**: correlation of \( s_{j,t} \) with \( \omega_{j,t} \).

- **Reduce the number of bargaining parameters** to 6 instead of 24.
  Retailers not in any alliance: \( \lambda^\text{pre}_{na} = \lambda^\text{post}_{na} = \lambda_{na} \) (R7, R8).
  Retailers in an alliance:
  - with high market shares and low retail costs: \( \lambda^\text{pre}_1 \) (R1, R3, R5),
  - with low market shares and high retail costs: \( \lambda^\text{pre}_2 \) (R2, R4, R6),
  - \( \lambda^\text{post}_a \) for each alliance \( a \) (R1-R2, R3-R4, R4-R6).

- **8 instrumental variables** for the endogenous market shares \( s_{j,t} \):
  - \( 1\{\text{post-alliances}\}_t \times 1\{\text{national brand}\}_{j,t} \times 1\{\text{alliance}\}_{j,t} \) (Miller and Weinberg, 2017, ECMTA),
  - \( 1\{\text{post-alliances}\}_t \times 1\{\text{national brand}\}_{j,t} \times 1\{\text{no alliance}\}_{j,t} \),
  - nb. of rival products in each bottled water segment (mineral, sparkling), interacted with a dummy for each type of retailers list.
Identification and estimation of bargaining stage

\[ w_t + c_t = \Gamma^{\text{pre}}(s_t; \lambda^{\text{pre}}) \times 1\{\text{pre-al.}\}_t + \Gamma^{\text{post}}(s_t; \lambda^{\text{post}}) \times 1\{\text{post-al.}\}_t + v_t \kappa + \omega_t \]

Endogeneity problem: correlation of \( s_{j,t} \) with \( \omega_{j,t} \).

Reduce the number of bargaining parameters to 6 instead of 24.
Retailers not in any alliance: \( \lambda^{\text{pre}}_{\text{na}} = \lambda^{\text{post}}_{\text{na}} = \lambda_{\text{na}} \) (R7, R8).
Retailers in an alliance:
- with high market shares and low retail costs: \( \lambda^{\text{pre}}_1 \) (R1, R3, R5),
- with low market shares and high retail costs: \( \lambda^{\text{pre}}_2 \) (R2, R4, R6),
- \( \lambda^{\text{post}}_a \) for each alliance \( a \) (R1-R2, R3-R4, R4-R6).

8 instrumental variables for the endogenous market shares \( s_{j,t} \):
- \( 1\{\text{post-alliances}\}_t \times 1\{\text{national brand}\}_{j,t} \times 1\{\text{alliance}\}_{j,t} \) (Miller and Weinberg, 2017, ECMTA),
- \( 1\{\text{post-alliances}\}_t \times 1\{\text{national brand}\}_{j,t} \times 1\{\text{no alliance}\}_{j,t} \),
- nb. of rival products in each bottled water segment (mineral, sparkling), interacted with a dummy for each type of retailers list.

## Supply results

### Table 5: Bargaining Estimates

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>S.E.</th>
<th>CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bargaining parameters</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturers vs. Retailers 1, 3, 5: $\lambda_{1}^{pre}$</td>
<td>0.541</td>
<td>0.058</td>
<td>[0.428 ; 0.651]</td>
</tr>
<tr>
<td>Manufacturers vs. Retailers 2, 4, 6: $\lambda_{2}^{pre}$</td>
<td>0.731</td>
<td>0.061</td>
<td>[0.598 ; 0.833]</td>
</tr>
<tr>
<td>Manufacturers vs. Retailers 1, 2: $\lambda_{1}^{post}$</td>
<td>0.242</td>
<td>0.127</td>
<td>[0.076 ; 0.555]</td>
</tr>
<tr>
<td>Manufacturers vs. Retailers 3, 4: $\lambda_{2}^{post}$</td>
<td>0.380</td>
<td>0.067</td>
<td>[0.260 ; 0.517]</td>
</tr>
<tr>
<td>Manufacturers vs. Retailers 5, 6: $\lambda_{3}^{post}$</td>
<td>0.268</td>
<td>0.067</td>
<td>[0.158 ; 0.417]</td>
</tr>
<tr>
<td>Manufacturers vs. Retailers 7, 8: $\lambda_{na}$</td>
<td>0.000</td>
<td>0.003</td>
<td>[0 ; 1]</td>
</tr>
<tr>
<td><strong>Cost parameters</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\kappa_0$</td>
<td>0.139</td>
<td>0.007</td>
<td></td>
</tr>
<tr>
<td>$\kappa_m$ (mineral)</td>
<td>0.066</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>$\kappa_s$ (sparkling)</td>
<td>0.048</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>Brand fixed effect (not shown)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market fixed effect (not shown)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GMM objective function value</td>
<td>14.452</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nb. of observations</td>
<td>2,192</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Notes: Continuously updated GMM estimates. Heteroskedasticity-robust standard errors uncorrected for the demand estimates. 95% confidence intervals.*
Supply results

Table 6: Margins, marginal costs, and surplus division

<table>
<thead>
<tr>
<th></th>
<th>Alliance Pre</th>
<th>Alliance Post</th>
<th>No Alliance Pre</th>
<th>No Alliance Post</th>
<th>Total Pre</th>
<th>Total Post</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Price-cost margins:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail margins: $\gamma$</td>
<td>29.40</td>
<td>30.51</td>
<td>39.28</td>
<td>40.80</td>
<td>32.62</td>
<td>33.81</td>
</tr>
<tr>
<td>Upstream margins: $\Gamma$</td>
<td>16.87</td>
<td>9.15</td>
<td>0.85</td>
<td>0.53</td>
<td>12.88</td>
<td>7.10</td>
</tr>
<tr>
<td><strong>Marginal cost:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail mc: $w + c$</td>
<td>0.28</td>
<td>0.25</td>
<td>0.20</td>
<td>0.18</td>
<td>0.25</td>
<td>0.23</td>
</tr>
<tr>
<td>Total mc: $c + \mu$</td>
<td>0.24</td>
<td>0.23</td>
<td>0.19</td>
<td>0.18</td>
<td>0.22</td>
<td>0.21</td>
</tr>
<tr>
<td><strong>Division of surplus:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retailers’ share</td>
<td>62.48</td>
<td>76.74</td>
<td>97.27</td>
<td>98.43</td>
<td>68.86</td>
<td>81.18</td>
</tr>
</tbody>
</table>

*Notes: Average price-cost margins in percentage of retail prices and average marginal costs are calculated using quantity weights. Average share captured by retailers in bilateral contracts.*
Outline

1. Buyer alliances background & Data

2. Demand model
   - Multinomial logit model
   - Identification and estimation of consumer demand
   - Demand results

3. Supply model
   - Stage 2: Downstream price competition
   - Stage 1: Manufacturer-retailer bargaining
   - Identification and estimation of bargaining stage
   - Supply results

4. Counterfactuals
I consider 4 counterfactual scenarios to further analyze the effects of buyer alliances:

- No buyer alliances: 

- Joint-bargaining paradox: (nondiscrimination vs status quo)

- Status quo effect:

- Bargaining ability effect:
**Counterfactual 1: No buyer alliances**

**Figure 5: "No buyer alliances" scenario**

![Graph showing retail price trends from 2013 to 2015 with Data and No Alliance lines.](image)

Notes: Counterfactual retail prices calculated using quantity weights.

**Table 7: Results of the "no buyer alliances" scenario**

<table>
<thead>
<tr>
<th></th>
<th>∆ Retail price</th>
<th>∆ Margins</th>
<th>∆ Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Retailers</td>
<td>Manuf.</td>
<td>Retailers</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>4.37%</td>
<td>-0.39%</td>
<td>99.10%</td>
</tr>
</tbody>
</table>

Notes: Percentage changes in retail prices and margins are calculated using quantity weights.
Counterfactual 2: Joint-bargaining paradox (Harsanyi, 1977)

Figure 6: Joint-bargaining paradox

Notes: Counterfactual retail prices calculated using quantity weights.

Table 8: Joint-bargaining paradox

<table>
<thead>
<tr>
<th></th>
<th>∆ Retail price</th>
<th>∆ Margins</th>
<th>∆ Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Retailers</td>
<td>Manuf.</td>
</tr>
<tr>
<td>Total</td>
<td>0.23%</td>
<td>0.05%</td>
<td>0.86%</td>
</tr>
</tbody>
</table>

Notes: Percentage changes in retail prices and margins with respect to the “no buyer alliance” scenario are calculated using quantity weights.
Counterfactual 3: Status quo effects

Figure 7: Status quo effects

Table 9: Status quo effects

<table>
<thead>
<tr>
<th></th>
<th>∆ Retail price</th>
<th>∆ Margins</th>
<th>∆ Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Retailers</td>
<td>Manuf.</td>
</tr>
<tr>
<td>Total</td>
<td>-0.76%</td>
<td>-0.06%</td>
<td>-5.90%</td>
</tr>
</tbody>
</table>

Notes: Percentage changes in retail prices and margins with respect to the "no buyer alliance" scenario are calculated using quantity weights.
Counterfactual 4: Bargaining ability effects

Figure 8: Bargaining ability effect

Table 10: Bargaining ability effect

<table>
<thead>
<tr>
<th></th>
<th>∆ Retail price</th>
<th>∆ Margins</th>
<th>∆ Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Retailers</td>
<td>Manuf.</td>
</tr>
<tr>
<td></td>
<td>-4.25%</td>
<td>-0.04%</td>
<td>-34.41%</td>
</tr>
</tbody>
</table>

Notes: Counterfactual retail prices calculated using quantity weights.

Notes: Percentage changes in retail prices and margins with respect to the "no buyer alliance" scenario are calculated using quantity weights.
I study the economic effects of buyer alliances formed by retailers to negotiate wholesale prices with manufacturers.

Using data on the French bottled water market, I find evidence that buyer alliances formed in 2014 generate a price decrease of:

- $-7.97\%$ for the concerned products using a structural model of bargaining.

The bargaining ability effect plays an important role in this price decrease.

Although buyer alliances benefit retailers ($+5.46\%$), they generate a drop in manufacturers’ profit by more than $50\%$, thereby destroying the total industry profit by $3\%$.

Welfare effect: TO BE COMPLETED.
I study the economic effects of buyer alliances formed by retailers to negotiate wholesale prices with manufacturers.

Using data on the French bottled water market, I find evidence that buyer alliances formed in 2014 generate a price decrease of:

- $-7.97\%$ for the concerned products using a structural model of bargaining.

The bargaining ability effect plays an important role in this price decrease.

Although buyer alliances benefit retailers ($+5.46\%$), they generate a drop in manufacturers’ profit by more than 50%, thereby destroying the total industry profit by 3%.

Welfare effect: TO BE COMPLETED.
I study the economic effects of buyer alliances formed by retailers to negotiate wholesale prices with manufacturers.

Using data on the French bottled water market, I find evidence that buyer alliances formed in 2014 generate a price decrease of:

- [−6.88%; −3.92%] for the concerned products using a diff-in-diff.
- −7.97% for the concerned products using a structural model of bargaining.

The bargaining ability effect plays an important role in this price decrease.

Although buyer alliances benefit retailers (+5.46%), they generate a drop in manufacturers’ profit by more than 50%, thereby destroying the total industry profit by 3%.

Welfare effect: TO BE COMPLETED.
I study the economic effects of buyer alliances formed by retailers to negotiate wholesale prices with manufacturers.

Using data on the French bottled water market, I find evidence that buyer alliances formed in 2014 generate a price decrease of:

- $-7.97\%$ for the concerned products using a structural model of bargaining.

The bargaining ability effect plays an important role in this price decrease.

Although buyer alliances benefit retailers ($+5.46\%$), they generate a drop in manufacturers’ profit by more than 50%, thereby destroying the total industry profit by 3%.

Welfare effect: TO BE COMPLETED.
I study the economic effects of buyer alliances formed by retailers to negotiate wholesale prices with manufacturers.

Using data on the French bottled water market, I find evidence that buyer alliances formed in 2014 generate a price decrease of:

- $[-6.88\% ; -3.92\%]$ for the concerned products using a diff-in-diff.
- $-7.97\%$ for the concerned products using a structural model of bargaining.

The bargaining ability effect plays an important role in this price decrease.

Although buyer alliances benefit retailers ($+5.46\%$), they generate a drop in manufacturers’ profit by more than $50\%$, thereby destroying the total industry profit by $3\%$.

Welfare effect: TO BE COMPLETED.
Autorité de la concurrence (2015):

“On 10 September 2014, Système U gave Auchan a mandate to negotiate the purchase of products sold under national brands common to the two retailers (around 300), excluding small enterprises and companies providing traditional fresh products (e.g., fruit and vegetables)”.

“On 7 November 2014, Intermarché and Casino entered into a cooperation agreement aimed at negotiating the purchase of some goods under national brands (excluding retailers’ branded products and traditional fresh products). [...] The two distributors set up a joint undertaking (INCAA) that negotiates exclusively with the suppliers covered by the agreement.”

“On 22 December 2014, Carrefour and Cora in turn entered into a partnership agreement, providing Cora with access to Carrefour’s listing offices. The cooperation agreement expressly excludes products from the agricultural sector, traditional fresh products and private label products.”
### Table 11: Statistics by brands (before buyer alliances)

<table>
<thead>
<tr>
<th></th>
<th>Mineral</th>
<th>Sparkling</th>
<th>Market shares (%)</th>
<th>Retail prices (€/liter)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>mean</td>
<td>s.d.</td>
</tr>
<tr>
<td><strong>Types of water</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type 1</td>
<td>No</td>
<td>No</td>
<td>25.47</td>
<td>0.92</td>
</tr>
<tr>
<td>Type 2</td>
<td>No</td>
<td>Yes</td>
<td>0.67</td>
<td>0.06</td>
</tr>
<tr>
<td>Type 3</td>
<td>Yes</td>
<td>No</td>
<td>20.89</td>
<td>1.13</td>
</tr>
<tr>
<td>Type 4</td>
<td>Yes</td>
<td>Yes</td>
<td>16.10</td>
<td>1.06</td>
</tr>
<tr>
<td><strong>National brands</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brand 1</td>
<td>Yes</td>
<td>Yes</td>
<td>4.49</td>
<td>0.65</td>
</tr>
<tr>
<td>Brand 2</td>
<td>Yes</td>
<td>No</td>
<td>3.47</td>
<td>0.28</td>
</tr>
<tr>
<td>Brand 3</td>
<td>Yes</td>
<td>No</td>
<td>3.22</td>
<td>0.30</td>
</tr>
<tr>
<td>Brand 4</td>
<td>Yes</td>
<td>No</td>
<td>3.36</td>
<td>0.33</td>
</tr>
<tr>
<td>Brand 5</td>
<td>Yes</td>
<td>Yes</td>
<td>1.50</td>
<td>0.36</td>
</tr>
<tr>
<td>Brand 6</td>
<td>Yes</td>
<td>No</td>
<td>3.47</td>
<td>0.24</td>
</tr>
<tr>
<td>Brand 7</td>
<td>Yes</td>
<td>No</td>
<td>2.56</td>
<td>0.35</td>
</tr>
<tr>
<td>Brand 8</td>
<td>Yes</td>
<td>Yes</td>
<td>2.53</td>
<td>0.18</td>
</tr>
<tr>
<td>Brand 9</td>
<td>Yes</td>
<td>Yes</td>
<td>2.40</td>
<td>0.28</td>
</tr>
<tr>
<td>Brand 10</td>
<td>No</td>
<td>No</td>
<td>11.61</td>
<td>0.66</td>
</tr>
<tr>
<td>Brand 11</td>
<td>Yes</td>
<td>No</td>
<td>1.48</td>
<td>0.15</td>
</tr>
<tr>
<td><strong>Private labels</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PL 1</td>
<td>No</td>
<td>No</td>
<td>13.88</td>
<td>0.51</td>
</tr>
<tr>
<td>PL 2</td>
<td>No</td>
<td>Yes</td>
<td>0.67</td>
<td>0.06</td>
</tr>
<tr>
<td>PL 3</td>
<td>Yes</td>
<td>No</td>
<td>3.54</td>
<td>0.19</td>
</tr>
<tr>
<td>PL 4</td>
<td>Yes</td>
<td>Yes</td>
<td>5.35</td>
<td>0.26</td>
</tr>
</tbody>
</table>

**Notes:** Standard deviation depicts variation across markets.
Figure 9: Average retail price trend

Notes: Average retail price weighted by the number of household purchases in the sample.
Figure 10: Average (log) retail price trend

Log retail prices (€/L)

Month

2013

2015

National brands of alliances' members
Rival retailers and private labels

Alliances 2014
The retail price of product $j$ in market $t$ is constructed as follows:

$$p_{j,t} = \frac{\sum_i 1_{i,j,t} p_{i,j,t} q_{i,j,t}}{\sum_i 1_{i,j,t} q_{i,j,t}}$$

where $1_{i,j,t}$ is an indicator equal to 1 if consumer $i$ buys product $j$ in market $t$ and $q_{i,j,t}$ stands for the volume bought (in liter).
\[
\log(p_{j,t}) = \beta_a^{\text{month}(t)} \times \mathbb{1}\{\text{national brand}\}_{j,t} \times \mathbb{1}\{\text{alliance}\}_{j,t} + \beta_j + \beta_{\text{month}(t)} + u_{j,t}
\]

**Table 12: Testing for retail price common trend (pre-alliances)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
<th>S.E.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(\beta_1^a)</td>
<td>-0.013</td>
<td>0.024</td>
<td>0.58</td>
</tr>
<tr>
<td>(\beta_2^a)</td>
<td>-0.010</td>
<td>0.025</td>
<td>0.68</td>
</tr>
<tr>
<td>(\beta_3^a)</td>
<td>-0.008</td>
<td>0.024</td>
<td>0.75</td>
</tr>
<tr>
<td>(\beta_4^a)</td>
<td>-0.012</td>
<td>0.022</td>
<td>0.59</td>
</tr>
<tr>
<td>(\beta_5^a)</td>
<td>-0.001</td>
<td>0.022</td>
<td>0.96</td>
</tr>
<tr>
<td>(\beta_6^a)</td>
<td>-0.019</td>
<td>0.023</td>
<td>0.41</td>
</tr>
<tr>
<td>(\beta_7^a)</td>
<td>-0.010</td>
<td>0.023</td>
<td>0.66</td>
</tr>
<tr>
<td>(\beta_8^a)</td>
<td>-0.022</td>
<td>0.025</td>
<td>0.37</td>
</tr>
<tr>
<td>(\beta_9^a)</td>
<td>-0.009</td>
<td>0.022</td>
<td>0.69</td>
</tr>
<tr>
<td>(\beta_j) (not shown)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(\beta_{\text{month}(t)}) (not shown)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(R^2\) adjusted 0.995
Nb. of observations 1,097

Notes: OLS estimates. * indicates significance at the 5% level. Heteroskedasticity-robust standard errors.
Table 13: Changes in retail prices

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Value</th>
<th>S.E.</th>
<th>Δ retail price</th>
<th>CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\beta_1$</td>
<td>$-0.038^*$</td>
<td>0.000</td>
<td>-3.68%</td>
<td>[-3.77% ; -3.59%]</td>
</tr>
<tr>
<td>$\beta_2$</td>
<td>$-0.019^*$</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\beta_j$ (not shown)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\beta_{month(t)}$ (not shown)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$R^2$ adjust. 0.997
Nb. of observations 2,192

Notes: OLS estimates with observations weighted by the number of household purchases. * indicates significance at the 5% level. Heteroskedasticity-robust standard errors. 95% confidence intervals computed using the delta method.
First set of moments: system of market shares
Match the observed aggregated market shares of products with those predicted by the demand model

\[ s_{j,t} - \delta_{j,t}(\delta_t, \theta^d_2) = 0 \]  \hspace{1cm} (1)

where \( \delta_t = (\delta_{1,t}, \ldots, \delta_{J,t})^\top \) is a \( J_t \)-dimensional vector. Use the contraction procedure of Berry, Levinsohn and Pakes (1995, ECMTA) to recover \( \delta_t \).

Second set of moments: micro-moments
Defined \( L \) moments as follows

\[
\frac{1}{T} \sum_{t=1}^{T} \sum_{i=1}^{I_t} \sum_{j=1}^{J_t} \left( 1_{i,j,t} - \delta_{i,j,t}(\delta_t, \theta^d_2) \right) X_{i,j,t}^{d,(l)} = 0
\]
<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nb. products of rival retailers</td>
<td>−0.004</td>
<td>0.004</td>
</tr>
<tr>
<td>(1{\text{post-alliances}}<em>t \times 1{\text{national brand}}</em>{j,t})</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(\times 1{\text{alliance}}_{j,t})</td>
<td>−0.025*</td>
<td>0.004</td>
</tr>
<tr>
<td>(\beta_{b(j)}) (not shown)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(\beta_{r(j)}) (not shown)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(\beta_{t}) (not shown)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(F_{\text{eff}})</td>
<td>20.73</td>
<td></td>
</tr>
<tr>
<td>(R^2) adjusted</td>
<td>0.986</td>
<td></td>
</tr>
<tr>
<td>Nb. of observations</td>
<td>2,192</td>
<td></td>
</tr>
</tbody>
</table>

Notes: * indicates significance at the 5% level. \(F_{\text{eff}}\) is the robust F-stat of Montiel Olea and Pflueger (2013, JBES). The critical value for testing that the TSLS bias exceeds 10% of the OLS bias is 6.363.
Figure 12: Own-price Elasticity of Demand

Figure 13: Delegated agents model
Bilateral bargaining between manufacturer $f$ and retailer $r$
over $w_{j,t}$ (pre-alliances).

**Agreement payoffs (pre-alliances).**

$$\pi_{f,t} = (w_{j,t} - \mu_{j,t}) M_t \delta_{j,t}\left(p_{r,t}(w_{j,t}, w_{-j,t}), p^*_{-r,t}; \delta_t, \theta^d_2\right)$$

$$+ \sum_{k \in J_f,t \setminus \{j\}} \left(w^*_{k,t} - \mu_{k,t}\right) M_t \delta_{k,t}\left(p_{r,t}(w_{j,t}, w^*_{-j,t}), p^*_{-r,t}; \delta_t, \theta^d_2\right)$$

$$\pi_{r,t} = \left(p_{j,t}(w_{j,t}, w^*_{-j,t}) - w_{j,t} - c_{j,t}\right) M_t \delta_{j,t}\left(p_{r,t}(w_{j,t}, w^*_{-j,t}), p^*_{-r,t}; \delta_t, \theta^d_2\right)$$

$$+ \sum_{k \in J_r,t \setminus \{j\}} \left(p_{k,t}(w_{j,t}, w^*_{-j,t}) - w^*_{k,t} - c_{k,t}\right) M_t \delta_{k,t}\left(p_{r,t}(w_{j,t}, w^*_{-j,t}), p^*_{-r,t}; \delta_t, \theta^d_2\right)$$

**Status quo payoffs (pre-alliances).**

$$d_{f,t}^j = \sum_{k \in J_f,t \setminus \{j\}} \left(w^*_{k,t} - \mu_{k,t}\right) M_t \tilde{\delta}_{j,k,t}\left(\tilde{p}_{k,t}^j; \delta_t, \theta^d_2\right)$$

$$d_{r,t}^j = \sum_{k \in J_r,t \setminus \{j\}} \left(\tilde{p}_{k,t}^j(w^*_{-j,t}) - w^*_{k,t} - c_{k,t}\right) M_t \tilde{\delta}_{j,k,t}\left(\tilde{p}_{k,t}^j; \delta_t, \theta^d_2\right)$$

with $\tilde{p}_{t}^j[k, 1] = \begin{cases} +\infty & \text{if } k = j \\ \tilde{p}_{k,t}^j & \text{if } j \neq k \text{ and } j, k \in J_r,t \\ p_{k,t}^* & \text{otherwise} \end{cases}$
Bilateral bargaining between manufacturer $f$ and alliance $a(j)$ over $w_{a(j),b(j),t}$ (post-alliances).

**Agreement payoffs (post-alliances).**

$$\pi_{f,t} = \sum_{h \in J_{a(j)} \cap J_{b(j)}} (w_{a(j),b(j),t} - \mu_h,t) M_{t \delta_h,t} (p_{a(j),t} (w_{a(j),b(j),t}, w^*_{a(j),b(j),t}), p^*_{-a(j),t}) \quad \ldots$$

$$+ \sum_{k \in J_f \setminus J_{a(j)} \cap J_{b(j)}} (w^*_{a(k),b(k),t} - \mu_k,t) M_{t \delta_k,t} (p_{a(j),t} (w_{a(j),b(j),t}, w^*_{a(j),b(j),t}), p^*_{-a(j),t}) \quad \ldots$$

$$\pi_{a(j),t} = \sum_{h \in J_{a(j)} \cap J_{b(j)}} \left( p_{h,t} (w_{a(j),b(j),t}, w^*_{a(j),b(j),t}) - w_{a(j),b(j),t} - c_{h,t} \right) M_{t \delta_h,t} (p_{a(j),t} (w_{a(j),b(j),t}, w^*_{a(j),b(j),t}), p^*_{-a(j),t}) \quad \ldots$$

$$+ \sum_{k \in J_{a(j)} \setminus J_{b(j)}} \left( p_{k,t} (w_{a(j),b(j),t}, w^*_{a(j),b(j),t}) - w^*_{a(j),b(k),t} - c_{k,t} \right) M_{t \delta_k,t} (p_{a(j),t} (w_{a(j),b(j),t}, w^*_{a(j),b(j),t}), p^*_{-a(j),t}) \quad \ldots$$

**Status quo payoffs (post-alliances).**

$$d_{-a(j),b(j)} = \sum_{k \in J_f \cap J_{a(j)} \setminus J_{b(j)}} (w^*_{a(k),b(k),t} - \mu_k,t) M_{t \delta_k,t} (\tilde{p}_{-a(j),b(j)}, \tilde{p}_t)$$

$$d_{-a(j),b(j)} = \sum_{k \in J_{a(j)} \setminus J_{b(j)}} \left( \tilde{p}_{-a(j),b(j)} - w^*_{a(j),b(k),t} - c_{k,t} \right) M_{t \delta_k,t} (\tilde{p}_{-a(j),b(j)}, \tilde{p}_t)$$

with $\tilde{p}_{-a(j),b(j)}[k,1] = \begin{cases} +\infty & \text{if } k \in J_{a(j)} \cap J_{b(j)} \\ \tilde{p}_{k,t} & \text{if } k \in J_{a(j)} \setminus J_{b(j)} \\ p^*_k & \text{otherwise} \end{cases}$
FOC of the "Nash-in-Nash" (pre-alliances):

\[
\lambda_{f,r}^{\text{pre}} \left( \pi_{f,t} - d_{f,t}^{-j} \right) \frac{\partial \pi_{r,t}}{\partial w_{j,t}} + \left( 1 - \lambda_{f,r}^{\text{pre}} \right) \left( \pi_{r,t} - d_{r,t}^{-j} \right) \frac{\partial \pi_{f,t}}{\partial w_{j,t}} = 0
\]

\[
\Rightarrow \left( \gamma_{j,t} \frac{\partial \pi_{a,t}}{\partial w_{j,t}} + \sum_{k \in \mathcal{J}_{f} \setminus \{j\}} \Gamma_{k,t} \left( \delta_{k,t} - \tilde{\delta}_{j,k,t} \tilde{\mathbf{p}}_{t}^{-j} \right) \frac{\partial \pi_{f,t}}{\partial w_{j,t}} \right) \left( \sum_{k \in \mathcal{J}_{f,t}} \frac{\partial p_{k,t}}{\partial w_{j,t}} \right) \left( \delta_{j,t} + \sum_{k \in \mathcal{J}_{f,t}} \gamma_{k,t} \sum_{l \in \mathcal{J}_{f,t}} \frac{\partial \gamma_{j,t}}{\partial p_{l,t}} \frac{\partial p_{l,t}}{\partial w_{j,t}} \right) = 0
\]

where \( \gamma_{j,t} = p_{j,t} - w_{j,t} - c_{j,t} ; \quad \gamma_{k,t} = \tilde{p}_{k,t} - w_{k,t} - c_{k,t} \).

FOC of the "Nash-in-Nash" (post-alliances):

\[
\lambda_{f,a(j)}^{\text{post}} \left( \pi_{f,t} - d_{f,t}^{-a(j),b(j)} \right) \frac{\partial \pi_{a(t),b(j)}}{\partial w_{a(j),b(j)}} + \left( 1 - \lambda_{f,a(j)}^{\text{post}} \right) \left( \pi_{a(t),b(j)} - d_{a(j),t}^{-a(j),b(j)} \right) \frac{\partial \pi_{f,t}}{\partial w_{a(j),b(j)}} = 0
\]

\[
\Rightarrow \left( \sum_{h \in \mathcal{J}_{a(j)} \cap \mathcal{J}_{b(j)}} \Gamma_{a(j),b(j),t} \delta_{h,t} + \sum_{k \in \mathcal{J}_{f} \setminus \mathcal{J}_{a(j)} \cap \mathcal{J}_{b(j)}} \Gamma_{a(k),b(k),t} \left( \delta_{k,t} - \tilde{\delta}_{k,t} \tilde{\mathbf{p}}_{t}^{-a(j),b(j)} \right) \right) \ldots
\]

\[
\left( \sum_{h \in \mathcal{J}_{a(j)}} \frac{\partial p_{h,t}}{\partial w_{a(j),b(j)}} \delta_{h,t} - \sum_{k \in \mathcal{J}_{a(j)} \cap \mathcal{J}_{b(j)}} \delta_{k,t} \sum_{l \in \mathcal{J}_{a(j)}} \gamma_{k,t} \sum_{l \in \mathcal{J}_{a(j)}} \frac{\partial \gamma_{k,t}}{\partial p_{l,t}} \frac{\partial p_{l,t}}{\partial w_{a(j),b(j)}} \right) \ldots
\]

\[
\left( \sum_{h \in \mathcal{J}_{a(j)} \cap \mathcal{J}_{b(j)}} \delta_{h,t} + \sum_{k \in \mathcal{J}_{f}} \Gamma_{a(k),b(k),t} \sum_{l \in \mathcal{J}_{a(j)}} \frac{\partial \gamma_{k,t}}{\partial p_{l,t}} \frac{\partial p_{l,t}}{\partial w_{a(j),b(j)}} \right) = 0
\]
8 supply-side instruments.

nb. of rival products in each bottled water segment (mineral, sparkling)
\[ \times 1 \{\text{pre-alliances}\} r(j) = \{1,3,5\} \]
\[ \times 1 \{\text{pre-alliances}\} r(j) = \{2,4,6\} \]
\[ \times 1 \{\text{post-alliances}\} r(j) = \{7,8\} \]

\[ 1 \{\text{post-alliances}\} t \times 1 \{\text{national brand}\} j, t \times 1 \{\text{alliance}\} j, t \]
\[ \times 1 a(j) = \{1\} \]
\[ \times 1 a(j) = \{2\} \]
\[ \times 1 a(j) = \{3\} \]

\[ 1 \{\text{post-alliances}\} t \times 1 \{\text{national brand}\} j, t \times 1 \{\text{no alliance}\} j, t \]
\[ \times 1 r(j) = \{7\} \]
\[ \times 1 r(j) = \{8\} \]
Gandhi and Houde (2017) test. (Gauss-Newton regression)
From a first-order Taylor expansion of $\omega(\theta^s)$ around the true parameters $\theta^s_0$, we can linearize the structural bargaining model as follows: $\omega(\hat{\theta}^s) = \frac{\partial \omega(\hat{\theta}^s)}{\partial \theta^s} \theta^{GN} + u$.
Because we have a linear model with multiple endogenous variables (i.e., $\frac{\partial \omega(\hat{\theta}^s)}{\partial \lambda}$), we can estimate the model by TSLS in which first-stage equations correspond to $\frac{\partial \omega(\hat{\theta}^s)}{\partial \lambda} = Z^s \beta + e$.

Table 15: First-stage diagnostics for the bargaining model

<table>
<thead>
<tr>
<th>Test</th>
<th>$\frac{\partial \omega}{\partial \lambda_1}^{pre}$</th>
<th>$\frac{\partial \omega}{\partial \lambda_2}^{pre}$</th>
<th>$\frac{\partial \omega}{\partial \lambda_1}^{post}$</th>
<th>$\frac{\partial \omega}{\partial \lambda_2}^{post}$</th>
<th>$\frac{\partial \omega}{\partial \lambda_3}^{post}$</th>
<th>$\frac{\partial \omega}{\partial \lambda_{na}}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$F_{eff}$</td>
<td>1,835.96</td>
<td>1,872.96</td>
<td>253.19</td>
<td>3,976.30</td>
<td>1,707.16</td>
<td>6.82</td>
</tr>
<tr>
<td>SW-F</td>
<td>211.91</td>
<td>30.91</td>
<td>174.09</td>
<td>705.10</td>
<td>83.21</td>
<td>1.21</td>
</tr>
</tbody>
</table>

Notes: $F_{eff}$ is the robust F-stat of Montiel Olea and Pflueger (2013, JBES). The critical value for testing that the TSLS bias exceeds 10% of the OLS bias is around 20.
Figure 14: "No buyer alliances" scenario

Notes: Counterfactual retail prices for national brands of alliances’ members. Average retail prices calculated using quantity weights.

Table 16: Retail price effect of buyer alliances

<table>
<thead>
<tr>
<th></th>
<th>Diff-in-Diff</th>
<th>Simulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alliances’ members (treatment)</td>
<td>[-6.88% ; -3.92%]</td>
<td>-7.97%</td>
</tr>
<tr>
<td>No Alliances (control)</td>
<td>0%</td>
<td>-0.15%</td>
</tr>
</tbody>
</table>
Notes: Counterfactual retail prices for national brands of alliances’ members. Average retail prices using quantity weights.

\(\Delta \) retail prices: -1.43% with respect to the ”no buyer alliance” scenario.
Figure 16: Bargaining ability effect

Notes: Counterfactual retail prices for national brands of alliances’ members. Average retail prices using quantity weights.

\( \Delta \) retail prices: -8.00% with respect to the "no buyer alliance" scenario.
Notes: Counterfactual retail prices for national brands of alliances’ members. Average retail prices using quantity weights.

\( \Delta \) retail prices: 0.45\% with respect to the ”no buyer alliance” scenario.


Bonnet, Céline, and Pierre Dubois. 2015. “Non Linear Contracting and Endogenous Buyer Power between Manufacturers and
Retailers: Empirical Evidence on Food Retailing in France.” Unpublished.


