ORGANIZACIÓN INDUSTRIAL EMPÍRICA IN7E0

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Clase 7 - Jueves 16 de Agosto
Primavera - 2018

Outline

Introduction

- Discrete choice models allow us to estimate preference parameters.
- In particular, BLP obtains more realistic patterns of substitutions using heterogenous consumers.
- We will see that these structural parameters are suitable for counterfactual exercises and welfare calculations, providing powerful tools for the applied work in important issues.

Benefits of Structural Approach

Structural Econometrics used large body of assumptions to recover *deep* or structural parameters.

Costs: We have made a bunch of assumptions in terms of behavior of agents (functional forms, information sets, decision variables, environment, timing of the game, distributional assumptions, etc.)

Gains: We are able to estimate preferences and technological parameters. In other words, we know the parameters that govern decisions, not only the statistical relationships between variables.

Counterfactual Exercises

Therefore, we are able to compute counterfactual exercises: *What would happen if.....*

Using the estimates we are able to predict the optimal behavior of agents in different scenarios. We can simulate alternative new market equilibria.

This cannot be performed with pure statistical relationship (that is the standard reduced form approach).

Counterfactual Demand

Recall that predicted market shares are given by:

$$\widehat{s}_j = \frac{1}{R}\sum_{i=1}^{R}\left[\frac{\exp(-\widehat{\alpha}p_{jt} + x_{jt}\widehat{\beta} + \widehat{\xi}_{jt} + [-p_{jt}, x_{jt}]\widehat{\Sigma}v_i)}{1 + \sum_h \exp(-\widehat{\alpha}p_{ht} + x_{ht}\widehat{\beta} + \widehat{\xi}_{ht} + [-p_{ht}, x_{ht}]\widehat{\Sigma}v_i)}\right]$$

Since we have taste parameters, we can simulate counterfactual market shares for:

- New Prices (taxes)
- New Characteristics (regulations)
- New Products: Introduction of a new product $J+1$ or taking out one of the current products.

We will see applications along these lines.

Consumer Welfare Analysis

Consumer surplus for individual i is the best option so

$$CS_i = \frac{1}{\alpha_i} \max_j \{U_{ij}, \forall j\}$$

where α_i is the marginal utility of income. Surplus expressed in money as economists love to measure welfare.

In order to compute the expected consumer surplus we need to compute:

$$\mathbb{E}(CS_i) = \frac{1}{\alpha_i} \mathbb{E}\left(\max_j \{\delta_j + \varepsilon_{ij}, \forall j\} \right)$$

Need distribution of ε_{ij}!

Welfare Analysis

If $\varepsilon_{ij} \sim i.i.d.$ Type I extreme value, and utility is linear in income (α_i is constant with respect to income), Then:

$$\mathbb{E}(CS_i) = \frac{1}{\alpha_i} \ln \left(\sum_{j=1}^{J} e^{\delta_j} \right) + constant$$

Counterfactual experiments can be done using this structural approach to compute Welfare!
For example: Suppose new characteristics! Suppose new products! Suppose new prices! Suppose fewer products! Suppose new prices (say new taxes)!... etc...etc.

Measuring Gains of the New Products

Petrin (JPE 2003) evaluates the welfare consequences of the introduction of a new product in the car market: Introduction of the Mini-Van.

The mini-van was very successful among consumers but cannibalized several competitors models.

Was the introduction of this new product welfare enhancing?

Who were the winners and who were the losers?

Adding Micro Moments

Petrin uses two data set. The first set of moments introduced by BLP based on the standard market shares and characteristics.
Also micro data for a subsample of consumers that allows him to use demographics and pin down individual decisions. The additional micro-moments are the i) $\mathbb{E}$(i purchases new vehicle$|income$),ie, the average probability of new vehicle purchase conditional on income level; ii) the expected family size or age conditional on buying model $j = \{$mini-van, station-wagon, etc$\}$.

Micro Moments

Petrin introduces micro moments to the standard BLP estimation. He had individual level data for a subsample of consumers, allowing for income effects.

$$U_{ijt} = \alpha_i \log(y_i - p_{jt}) + x_{jt}\beta_i + \xi_{jt} + \varepsilon_{ijt}$$

TABLE 2
AVERAGE CONSUMER CHARACTERISTICS FOR THE UNITED STATES AND SELECTED SUBPOPULATIONS, 1987–92

	UNITED STATES		PURCHASERS OF				
	Mean	Standard Deviation	New Vehicles	Minivans	Station Wagons	Sport-Utilities	Full-Size Vans
Income	23,728	21,255	36,113	39,476	40,196	41,569	31,164
Family size	2.58	1.53	2.87	3.86	3.17	2.97	3.47
Midage	.55	.49	.64	.78	.73	.74	.65

Minivans killed Station Wagons

TABLE 3
FAMILY VEHICLE SALES AS A PERCENTAGE OF TOTAL VEHICLE SALES: U.S. AUTOMOBILE MARKET, 1981–93

Year	Minivans (1)	Station Wagons (2)	Sport-Utilities (3)	Full-Size Vans (4)	Minivans and Station Wagons (5)	U.S. Auto Sales (Millions) (6)
1981	.00	10.51	.58	.82	10.51	7.58
1982	.00	10.27	.79	1.17	10.27	7.05
1983	.00	10.32	3.51	1.04	10.32	8.48
1984	1.58	8.90	5.51	1.20	10.48	10.66
1985	2.32	7.33	6.11	1.05	9.65	11.87
1986	3.63	6.70	5.73	.85	10.43	12.21
1987	4.86	6.47	6.44	.73	11.33	11.21
1988	5.97	5.14	7.18	.69	11.11	11.76
1989	6.45	4.13	7.47	.61	10.58	11.06
1990	7.95	3.59	7.78	.27	11.54	10.51
1991	8.29	3.05	7.80	.29	11.34	9.75
1992	8.77	3.07	9.33	.39	11.84	10.12
1993	9.93	3.02	11.66	.29	12.95	10.71

TABLE 4
PARAMETER ESTIMATES FOR THE DEMAND-SIDE EQUATION

Variable	OLS Logit (1)	Instrumental Variable Logit (2)	Random Coefficients (3)	Random Coefficients and Microdata (4)
	A. Price Coefficients (α's)			
α_1	.07	.13	4.92	7.52
	(.01)**	(.01)**	(9.78)	(1.24)**
α_2			11.89	31.13
			(21.41)	(4.07)**
α_3			37.92	34.49
			(18.64)**	(2.56)**
	B. Base Coefficients (β's)			
Constant	−10.03	−10.04	−12.74	−15.67
	(.32)**	(.34)**	(5.65)**	(4.39)**
Horsepower/weight	1.48	3.78	3.40	−2.83
	(.34)**	(.44)**	(39.79)	(8.16)
Size	3.17	3.25	4.60	4.80
	(.26)**	(.27)**	(24.64)	(3.57)*
Air conditioning standard	−.20	.21	−1.97	3.88
	(.06)**	(.08)**	(2.23)	(2.21)*
Miles/dollar	.18	.05	−.54	−15.79
	(.06)**	(.07)	(3.40)	(.87)**
Front wheel drive	.32	.15	−5.24	−12.32
	(.05)**	(.06)**	(3.09)	(2.36)**
Minivan	.09	−.10	−4.34	−5.65
	(.14)	(.15)	(13.16)	(.68)**
Station wagon	−1.12	−1.12	−20.52	−1.31
	(.06)**	(.07)**	(36.17)	(.36)**
Sport-utility	−.41	−.61	−3.10	−4.38
	(.09)**	(.10)**	(10.76)	(.41)**
Full-size van	−1.73	−1.89	−28.54	−5.26
	(.16)**	(.17)**	(235.51)	(1.30)**
% change GNP	.03	.03	.08	.24
	(.01)**	(.01)**	(.02)**	(.02)**

Income Effects matter!

Hence, the micro moments were useful to capture the heterogeneity among consumers.

TABLE 5
RANDOM COEFFICIENT PARAMETER ESTIMATES

	RANDOM COEFFICIENTS (γ's)	
VARIABLE	Uses No Microdata (1)	Uses CEX Microdata (2)
Constant	1.46	3.23
	(.87)*	(.72)**
Horsepower/weight	.10	4.43
	(14.15)	(1.60)**
Size	.14	.46
	(8.60)	(1.07)
Air conditioning standard	.95	.01
	(.55)*	(.78)
Miles/dollar	.04	2.58
	(1.22)	(.14)**
Front wheel drive	1.61	4.42
	(.78)**	(.79)**
γ_{mi}	.97	.57
	(2.62)	(.10)**
γ_{mv}	3.43	.28
	(5.39)	(.09)**
γ_{si}	.59	.31
	(2.84)	(.09)**
γ_{pv}	4.24	.42
	(32.23)	(.21)**

Compute Compensating variation, CV

CV is the dollar amount a consumer would need to be just indifferent between the equilibrium with minivans and the one without them.

TABLE 8
AVERAGE COMPENSATING VARIATION CONDITIONAL ON MINIVAN PURCHASE, 1984: 1982–84 CPI-ADJUSTED DOLLARS

	OLS Logit	Instrumental Variable Logit	Random Coefficients	Random Coefficients and Microdata
Compensating variation:				
Median	9,573	5,130	1,217	783
Mean	13,652	7,414	3,171	1,247
Welfare change from difference in:				
Observed characteristics $(\delta_j+\mu_{ij})$	−81,469	−44,249	−820	851
Logit Error (ϵ_{ij})	95,121	51,663	3,991	396
Income of minivan purchasers:				
Estimate from model	23,728	23,728	99,018	36,091
Difference from actual (CEX)	−15,748	−15,748	59,542	−3,385

NOTE.—Compensating variation is evaluated at equilibrium prices without minivans. Decomposition of compensation is the average difference in the value of observed and unobserved characteristics between first and second choices. For logit models, the purchase decision is independent of income, so mean purchaser income is mean U.S. household income.

Social Welfare

- Overall, buyers of cars were obviously better off.
- Producers of Minivans were also better off.
- Producers of Station Wagons were really worse off.

Aggregating winners and losers, What was the final effect on Social Welfare?

TABLE 13
CHANGE IN U.S. WELFARE FROM THE MINIVAN INNOVATION, 1984–88 ($ Millions)

Year	Compensating Variation	Change in Producer Profits	Welfare Change
1984	367.29	−36.68	330.61
1985	625.04	−25.07	599.97
1986	439.93	27.30	467.23
1987	596.59	29.75	626.34
1988	775.70	110.24	885.94
Total	2,804.55	105.54	2,910.09

NOTE.—Computations were done using 1982–84 CPI-adjusted dollars.

Dubois, Griffith and Nevo (AER 2015)

- Obesity rates: US 30.0%, UK 23.6%, France 14.5%.
- The authors use household data on food purchases and nutrient content for the 3 countries.
- US households purchase more calories then Europe (mainly carbohydrates, and a lower share in the form of proteins).
- A higher share of expenditure is on drinks and prepared foods, and a lower share is on fruits and vegetables.
- There are substantial price differences in prices and nutritional characteristics across the 3 countries.

Purchasing Patterns

Table 2 : Mean Consumption Across Countries

	FR	UK	US
calories	1776.6	1928.9	2102.7
from carbohydrates	667.4 (38%)	890.5 (47%)	1019.3 (49%)
from protein	287.9 (16%)	293.3 (16%)	264.9 (13%)
from fats	821.0 (46%)	694.5 (37%)	781.6 (37%)
carbohydrates (g)	178.0	237.5	271.8
proteins (g)	72.0	73.3	66.2
fats (g)	91.2	77.2	86.8
expenditure ($)	5.03	4.71	4.59

Price Differences

Table 4: Mean Prices by Category

	FR	UK	US
Fruits	2.09	3.21	2.12
Vegetables	2.53	2.32	2.64
Grain	3.89	2.63	3.73
Dairy	3.26	2.22	2.48
Meats	10.33	7.29	5.88
Oils	5.19	3.97	4.47
Sweeteners	2.79	2.38	4.61
Drinks	0.89	2.50	1.56
Prepared	6.04	5.43	5.13

Note, that nutrient contents of categories also vary across countries.

Estimation Equation

$$w_{ijt} = \sum_c \beta_c z_{ijct} + \delta_{ij} + \xi_{jrt} + \varepsilon_{ijt}$$

where $w_{ijt} = \sum_k p_{ikjt} y_{ikjt}$ is the expenditure of food group j by household i at period t, and $z_{ijct} = \sum_k a_{kjct} y_{ikjt}$ is the amount of nutrient c household i gets from group j at t.

- The variation over time and across households in the underlying available products (and their nutritional components) is the source of identification.
- Endogeneity problem: ε_{ijt} might be correlated with the quantity of nutrients purchased.
- Use variation in the nutritional content of products available, which we assume is exogenous (similar to using variation in product attributes as in BLP 95)

Demand Estimates

Table 6: Demand Estimates: preferences for nutrients

	OLS - Fixed Effects			IV - Fixed Effects		
	FR	UK	US	FR	UK	US
Carbohydrates	3.483***	2.919***	1.313***	1.213**	1.716***	1.517***
	(0.209)	(0.170)	(0.261)	(0.508)	(0.216)	(0.284)
Proteins						
Dairy and Meat	37.09***	27.20***	26.67***	24.78***	18.37***	19.64***
	(1.001)	(0.375)	(1.729)	(3.357)	(1.401)	(3.035)
Prepared	46.96***	46.12***	59.18***	16.38*	19.20***	51.77***
	(1.897)	(0.958)	(2.394)	(9.380)	(4.927)	(2.816)
Other	19.88***	18.13***	19.42***	2.243	2.887*	-1.088
	(2.335)	(1.648)	(4.880)	(4.482)	(1.474)	(1.884)
Fats						
Dairy and Meat	8.377***	6.431***	-1.736	1.942	1.312*	1.113
	(0.648)	(0.334)	(2.368)	(2.695)	(0.715)	(0.980)
Prepared	12.74***	8.802***	1.548	9.237***	10.36***	-2.357***
	(0.596)	(0.538)	(1.167)	(2.720)	(1.232)	(1.155)
Other	4.511***	5.838***	3.364***	1.495***	3.750***	1.640***
	(0.119)	(0.179)	(0.213)	(0.503)	(0.385)	(0.240)
Weak IV				9.417	21.85	46.49
Observations	657,822	654,736	423,976	657,822	654,736	423,976
R-squared	0.669	0.616	0.532			

Preferences for Categories

$$\delta_{ij} + \widehat{\xi_{jrt}} + \varepsilon_{ijt} = \frac{1}{IT} \sum_{it} \left(w_{ijt} - \sum_{c} \widehat{\beta}_c z_{ijct} \right)$$

Table 7: Demand Estimates: preferences for categories

	OLS - Fixed Effects			IV - Fixed Effects		
	FR	UK	US	FR	UK	US
Fruits	21.78	35.08	29.39	27.44	38.81	31.06
Vegetables	31.03	31.83	28.48	41.45	41.00	32.88
Grains	-3.62	-7.89	7.15	18.17	18.35	23.26
Dairy	-8.42	5.55	10.18	26.90	25.05	15.02
Meat	28.40	10.57	18.48	74.26	37.66	29.40
Oils	3.08	0.05	2.74	11.37	3.05	5.42
Sweeteners	-1.98	-2.32	2.14	3.13	0.57	1.62
Drinks	20.86	21.05	36.90	24.72	22.70	37.05
Prepared	15.58	29.09	50.94	59.01	73.30	71.38

Dubois, Griffith and Nevo (AER 2015)

- If faced with French prices and product attributes, the average US household would purchase substantially fewer calories.
- However, the composition of these calories would differ.
- The simulated change is mostly due to price differences. Only changing nutrient characteristics has little impact on the amount of calories the average US household obtains.
- Total calories might be constant but the composition can change substantially, shifting them away from carbohydrates and towards proteins and fats.

Conclusions DGN

- Price differences mostly explain the large difference in caloric intake between the average French and US household.
- However, nutrient characteristics are important when comparing to the UK, and differences in preferences and eating habits are generally quite important, and in some cases can offset the influences of prices and choice set.
- For example, UK households have healthier purchasing patterns than US households despite the prices and choice set they face, not because of them.

Multi-Product Firm

Assume **multi-product firm** competing a la Nash-Bertrand with differentiated goods. Suppose constant marginal costs, mc_j, and market size M. Profits of firm f are given by:

$$\Pi_f = \sum_{j \in \mathcal{F}_f} (p_j - mc_j) \underbrace{M s_j(\mathbf{p}, \theta)}_{Q_j} = M(p_j - mc_j) s_j(\mathbf{p}, \theta) - \underbrace{C_f}_{\text{fixed costs}}$$

where $\mathbf{p}$ is the vector of all prices.
The first order condition with respect to price j yields:

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

This **set of J equations** implies price and margins for each good.

FOC for Multi-Product Firm

Define

$$\Omega_{jr}(p) \begin{cases} -\frac{\partial s_j(\mathbf{p})}{\partial p_r}, & \text{if } \exists f : (r,j) \subset \mathcal{F}_f; \\ 0, & \text{Otherwise.} \end{cases}$$

The first order conditions of all J products in vectorial notation can be written as:

$$\mathbf{s}(\mathbf{p}) - \Omega(\mathbf{p})(\mathbf{p} - \mathbf{mc}) = 0 \quad \Leftrightarrow \quad \mathbf{p} - \mathbf{mc} = \Omega^{-1}(\mathbf{p}) s(\mathbf{p})$$

where $\mathbf{p}$ is the vector of J prices, $\mathbf{s}$ is the J vector of market shares and $\mathbf{c}$ is the J vector of marginal costs.
This **set of J equations** hold in equilibrium. A price change in one product may imply a change in all prices.

Counterfactual Prices

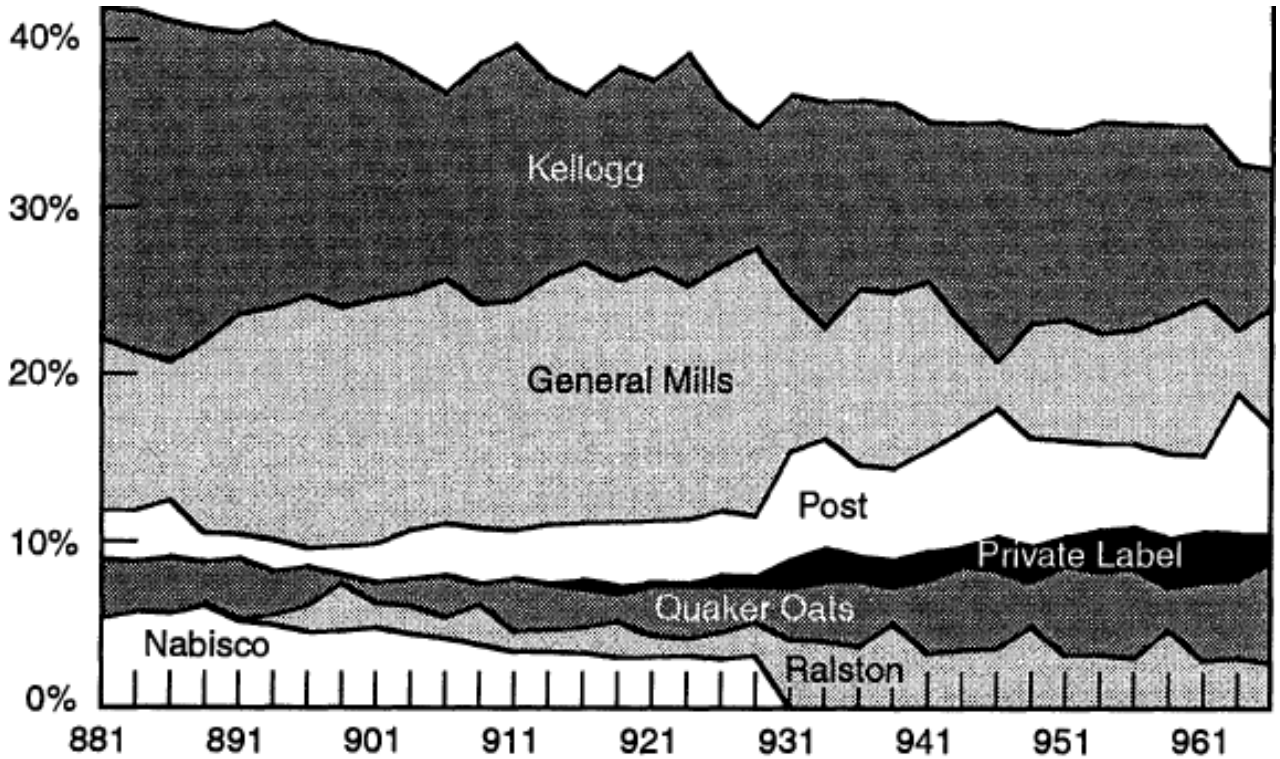
Once we have estimated the vector of marginal costs, **mc**, we could simulate the prices under different market conditions.

For example, suppose different characteristics or set of products. The new equilibrium price $\widetilde{\mathbf{p}}$ should satisfy:

$$\widetilde{\mathbf{p}} = \mathbf{mc} + \Omega^{-1}(\widetilde{\mathbf{p}})s(\widetilde{\mathbf{p}})$$

We will see applications for welfare evaluation of mergers and the introduction of new products.

Applications: Introduction of the Cereal Industry



The cereal industry is a highly profitable industry with few important players. In the early 90's, US market saw large increases in cereal prices and also the introduction of several new products.

Measuring Market Power in the Cereal Industry using BLP

Two stylized facts:

- Aggregate Estimation of Costs implies markup of 64% (huge markups!!)
- Evidence of large expenditure in advertising that might dissipate profits

In this market with very differentiated products, Nevo (Econometrica 2001) raises the question:

Is the profits coming from collusion or product differentiation?
Can we disentangle the two different reasons for high prices and high profits?

Also, Nevo innovates in the standard BLP, introducing a 2nd stage where he runs an IV regression of brand dummies on product

Computing collusive prices...

Nevo computed several equilibrium prices under different levels of competition. Current situation VS collusion of some players VS full collusion among all players.

For each scenario, there is a new ownership matrix that gives us the counterfactual prices in equilibrium, based on demand estimates that account for brand loyalty and the degree of differentiation.

In a given scenario x, the new equilibrium price vector, $\widetilde{\mathbf{p}_x}$, should satisfy:

$$\widetilde{\mathbf{p}_x} = \mathbf{mc} + \Omega_x^{-1}(\widetilde{\mathbf{p}_x})s(\widetilde{\mathbf{p}_x})$$

For example, *full collusion* considers an Ω_x full of ones (players behave as a single player or monopolist). Intermediate level of collusion, considers as a single producer all players who are supposed to be part of the cartel.

TABLE VI

RESULTS FROM THE FULL MODEL[a]

Variable	Means (β's)	Standard Deviations (σ's)	Interactions with Demographic Variables: Income	Income Sq	Age	Child
Price	−27.198	2.453	315.894	−18.200	—	7.634
	(5.248)	(2.978)	(110.385)	(5.914)		(2.238)
Advertising	0.020	—	—	—	—	—
	(0.005)					
Constant	−3.592[b]	0.330	5.482	—	0.204	—
	(0.138)	(0.609)	(1.504)		(0.341)	
Cal from Fat	1.146[b]	1.624	—	—	—	—
	(0.128)	(2.809)				
Sugar	5.742[b]	1.661	−24.931	—	5.105	—
	(0.581)	(5.866)	(9.167)		(3.418)	
Mushy	−0.565[b]	0.244	1.265	—	0.809	—
	(0.052)	(0.623)	(0.737)		(0.385)	
Fiber	1.627[b]	0.195	—	—	—	−0.110
	(0.263)	(3.541)				(0.0513)
All-family	0.781[b]	0.1330	—	—	—	
	(0.075)	(1.365)				
Kids	1.021[b]	2.031	—	—	—	
	(0.168)	(0.448)				
Adults	1.972[b]	0.247	—	—	—	
	(0.186)	(1.636)				
GMM Objective (degrees of freedom)			5.05 (8)			
MD χ^2			3472.3			
% of Price Coefficients > 0			0.7			

Which model of competition fits the data better? Recall that the estimated margins were about 40-60 percent.

TABLE VIII

MEDIAN MARGINS[a]

	Logit (Table V column ix)	Full Model (Table VI)
Single Product Firms	33.6% (31.8%–35.6%)	35.8% (24.4%–46.4%)
Current Ownership of 25 Brands	35.8% (33.9%–38.0%)	42.2% (29.1%–55.8%)
Joint Ownership of 25 Brands	41.9% (39.7%–44.4%)	72.6% (62.2%–97.2%)
Current Ownership of All Brands	37.2% (35.2%–39.4%)	—
Monopoly/Perfect Price Collusion	54.0% (51.1%–57.3%)	—

Nevo concludes that is product differentiation the main force behind the large profits in this industry.

The methodological contribution of the paper is to empirically disentangle collusive behavior from market power due to differentiation.

Mergers in the Cereal Industry

Nevo (RAND, 2000) is able to evaluate the welfare implications of approved mergers in the cereal industry. Moreover, he can evaluate some proposal that have not taken place yet.
Once again, the entire trick relies on using different ownership matrix Ω and finding the counterfactual prices *post*-merger.
The change in welfare (compensating variation) of consumer i due to the merger is:

$$CV_i = \mathbb{E}(CS_i^{post}) - \mathbb{E}(CS_i^{pre}) = \frac{\log\left(\sum_{j=1}^{J} e^{\delta_j^{post}}\right) - \log\left(\sum_{j=1}^{J} e^{\delta_j^{pre}}\right)}{\alpha_i}$$

and aggregating the heterogenous consumers is $CV = \int CV_i dF_D dF_v$, that is obtained using simulated consumers.

TABLE 4 Predicted Marginal Costs

	Median Premerger Price (¢ per serving)	Median Marginal Cost (¢ per serving)		Margin $(p - mc)/p$	
		Logit	Mixed Logit	Logit	Mixed Logit
K Corn Flakes	9.8	3.1	6.5	68.5%	34.8%
K Raisin Bran	17.3	10.7	7.4	38.1%	57.4%
K Frosted Flakes	14.8	8.3	9.8	44.2%	31.9%
K Rice Krispies	13.1	6.5	1.8	50.4%	85.8%
K Frosted Mini Wheats	28.0	21.4	14.7	23.7%	46.7%
K Froot Loops	18.3	11.7	8.7	36.4%	52.4%
K Special K	20.7	14.1	14.5	31.7%	32.5%
K NutriGrain	18.0	11.4	12.0	36.4%	33.4%
K Crispix	19.3	12.6	5.8	34.3%	68.1%
K Cracklin Oat Bran	37.0	30.3	23.4	18.0%	36.7%
GM Cheerios	18.8	12.5	6.7	34.0%	63.9%
GM Honey Nut Cheerios	17.4	11.0	5.9	36.7%	64.9%
GM Wheaties	15.6	9.3	11.8	40.9%	24.0%
GM Total	22.2	15.8	16.4	28.7%	25.9%
GM Lucky Charms	20.2	13.8	8.5	31.8%	56.9%
GM Trix	23.0	16.7	9.9	27.8%	56.6%
GM Raisin Nut	32.8	26.4	21.3	19.6%	36.3%
P Raisin Bran	17.8	11.7	9.0	34.3%	48.9%
P Grape Nuts	23.6	17.5	13.5	25.8%	43.8%
Q 100% Natural	26.1	19.9	14.4	23.6%	46.1%

TABLE 7 **Change in Variable Profits and Consumer Surplus as a Result of Mergers (millions of dollars per year)**

	Post and Nabisco		General Mills and Nabisco	
Consumer surplus	−13.98		−26.79	
Profits/revenues (total)	6.20	−4.77	10.66	−12.33
Kellogg	2.56	3.77	5.54	7.57
General Mills	2.34	3.65	2.63	−7.50
Post	.60	−5.17	1.54	2.94
Quaker Oats	.54	.84	1.43	2.07
Ralston	.14	.25	.30	.52
Nabisco	.01	−8.11	−.77	−17.93
Total Welfare	−7.78		−16.13	
Cost reduction (so total welfare is unchanged)	1.5%		10.8%	
Profits/revenues (total)	8.29	−1.81	16.89	−3.36
Kellogg	1.39	1.90	3.77	4.93
General Mills	1.35	1.92	.47	−13.46
Post	3.73	−.57	.65	1.18
Quaker Oats	.31	.43	1.12	1.58
Ralston	.09	.15	.20	.36
Nabisco	1.42	−5.65	10.68	2.07

Results

Nevo simulated some mergers that did not happen. And also evaluates some merger that were approved by the Antitrust authorities.

- General Mills and Nabisco quit on a merger that seemed very bad for consumers (-27% in consumer surplus). Consistent with products being closed substitutes.
- Post acquired Nabisco afterwards. Approved merger with one a long trial (-14% in consumer surplus).

The main methodological contribution of the paper is to provide econometric tools to evaluate mergers in differentiated product markets.

Conclusions

- Structural econometrics allows us to estimate preferences parameters obtaining economic grounded substitution patterns.
- Combining demand parameters and behavioral assumptions of producers, we can have the optimality conditions for pricing in equilibrium.
- Hence estimated structural parameters are suitable for counterfactual exercises and welfare calculations, allowing to address hot topics such as mergers and welfare consequences of changes in the choice set.