An Economics Paper

Oct 10, 2018

Econ 243

Formal Structure

- Title, authors
- Abstract

I. Introduction
II. Theory / hypotheses
III. Background
IV. Empirical strategy
V. Data
VI. Results
VII. Robustness
VIII. Conclusion

Key background information

- Multi-tiered system: AB and InBev (and everyone else) must use a distributor
  - No direct brewery – to – store sales / shipments
  - Brewer cannot control final price, but can market to retailers (and consumers)
- So who stocks store shelves at Kroger?
  - The distributor, ***<u>not</u>*** Kroger!
  - So distributor effort matters
- Kroger buys from multiple distributors
  - Brands carried by single distributor
- AB pushed for exclusive distributors from 1997
  - But those with other strong brands often said “no thanks” ==> mixed system

Generic issues

- Virtually all activity has an economic component
  - Steel / glass for auto companies
  - Very few glass companies (3 major globally?)
  - So GM and Toyota would be very concerned if Ford bought one
- Market power questions
- But also efficiency!

BEER FACINGS

BEER FACINGS


GOOSE ISLAND BEER CO. CHICAGO, IL
BLACK FRIDAY
$9.99
16.9oz. Bottle
STRONGBOW
Artisanal Blend


BEEF JERKY
BUD LIGHT
Budweiser


$7.99
MILLER LITE
12 PACK CANS
Lite
Coors
LIGHT


DOMESTIC
MALTS & BARLEY
IMPORTED
CHOOSE YOUR BREW
CIDERS


BEER.
HERE!
BEER. HERE!

Formal Structure: Hypotheses

- Brand share higher when
  - Moves from shared to exclusive
  - Rivals moved to other distributors
- Market effect stronger when competition more sensitive to distributor effort when retailer has
  - Smaller sales area
  - More brands

How approach

- "The Event" 2007: AB as InBev exclusive distributor
  - AB solo distributors now carried
    - Non-AB distributors lost InBev products
  - AB / InBev mixed distributors
    - no change
  - AB / other distributors
    - other now less central
- So compare before / after
  - controlling for distributor / store level variation
  - "Difference in differences"

Data

- Very detailed store-level (p, q) data
  - weekly x 2 years = 104 observations for each product
    - Budweiser is 7 products: bottles, different can packages
    - Added up sales for each brand, standardized as 6-packs
  - 250 stores in 150 cities

Rank	Brand	Market Share	ABV	Calories	Average Price
		(%)	(%)	(per 12 oz)	(per six-pack)
Domestic Macro					
1	Coors Light	13.12	4.2	102	4.15
2	Bud Light	9.71	4.2	110	3.94
3	Budweiser	9.40	5.0	145	3.98
5	Miller Genuine Draft	4.42	4.7	143	4.30
8	Miller Lite	3.25	4.2	96	4.12
9	Coors Banquet	2.63	5.0	142	3.99
12	Pabst Blue Ribbon	1.45	5.0	153	3.25
15	Keystone Light	1.33	4.1	104	2.91
17	Miller High Life	1.18	4.7	143	3.68
Domestic Specialty					
7	Sierra Nevada Pale Ale	3.26	5.6	190	7.07
19	Fat Tire Amber Ale	0.96	5.2	164	7.66
Imports					
4	Corona Extra	6.21	4.6	148	7.02
6	Heineken	4.15	5.0	150	7.01
10	Tecate	2.38	4.5	142	4.83
11	Corona Light	1.65	3.7	109	7.17
13	Pacifico	1.45	4.8	146	6.47
14	Smirnoff Ice	1.39	5.0	228	7.90
16	Newcastle Brown Ale	1.22	4.7	140	7.45
18	Guinness Draught Ale	1.01	4.2	125	7.91
20	Stella Artois (InBev)	0.88	5.2	145	7.85
26	Beck's (InBev)	0.81	5.0	143	6.93
40	Bass Pale Ale (InBev)	0.45	5.1	150	6.81
70	Boddingtons (InBev)	0.19	4.6	155	7.51
105	Beck's Premier Light (InBev)	0.08	2.3	64	7.00

	Control Group	Treatment Group 1	Treatment Group 2
Store Characteristics			
Number of stores	35	135	37
Weekly store sales (six-pack)	2048	1837	2351
	(711.15)	(634.66)	(634.18)
Average store price ($per six-pack)	5.59	5.44	5.33
	(0.28)	(0.26)	(0.35)
Size (100,000 square footage)	0.27	0.30	0.32
	(0.14)	(0.10)	(0.08)
Number of brands	121.66	127.51	134.76
	(19.56)	(14.69)	(9.88)
Population (100,000)	0.36	0.34	0.28
	(0.17)	(0.17)	(0.12)
Median household income ($10,000)	6.63	6.70	4.99
	(1.74)	(2.42)	(1.80)
Male population ratio	0.50	0.50	0.49
	(0.04)	(0.02)	(0.02)
White population ratio	0.62	0.67	0.83
	(0.15)	(0.17)	(0.08)
Distributor Characteristics (AB)			
Number of distributors	5	9	3
Market shares	41.89	42.09	24.58
	(3.13)	(9.47)	(5.03)
Number of brands carried	37.17	37.48	22.01
	(5.31)	(8.66)	(2.31)
Distributor Characteristics (Non-AB)			
Number of distributors	6	10	7
Market shares	36.94	24.50	43.89
	(15.07)	(18.97)	(19.28)
Number of brands	36.98	27.33	51.39
	(14.47)	(19.40)	(21.27)

	Full Sample			Using Observations from the Restricted Sample		
	(1)	(2)	(3)	(4)	(5)	(6)
InBev moved to AB exclusive	0.159**	0.159**	0.593**	0.136*	0.136*	0.439*
	(0.041)	(0.041)	(0.168)	(0.059)	(0.060)	(0.192)
InBev moved to AB	−0.071	−0.071	−0.617**	0.074	0.074	−0.630**
	(0.103)	(0.103)	(0.128)	(0.041)	(0.042)	(0.083)
Post	−0.315**			−0.459**		
	(0.097)			(0.019)		
InBev moved to AB exclusive × AB market share			−0.017*			-0.013^{+}
			(0.006)			(0.006)
InBev moved to AB × AB market share			0.021**			0.027**
			(0.003)			(0.002)
Constant	2.687**	2.567**	2.567**	2.676**	2.597**	2.597**
	(0.017)	(0.044)	(0.043)	(0.018)	(0.051)	(0.043)
Weekly fixed effects	No	Yes	Yes	No	Yes	Yes
Observations	21528	21528	21528	11232	11232	11232
Adjusted R^2	0.043	0.252	0.254	0.047	0.245	0.250

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Store Size, Number Of Brands And InBev Shares

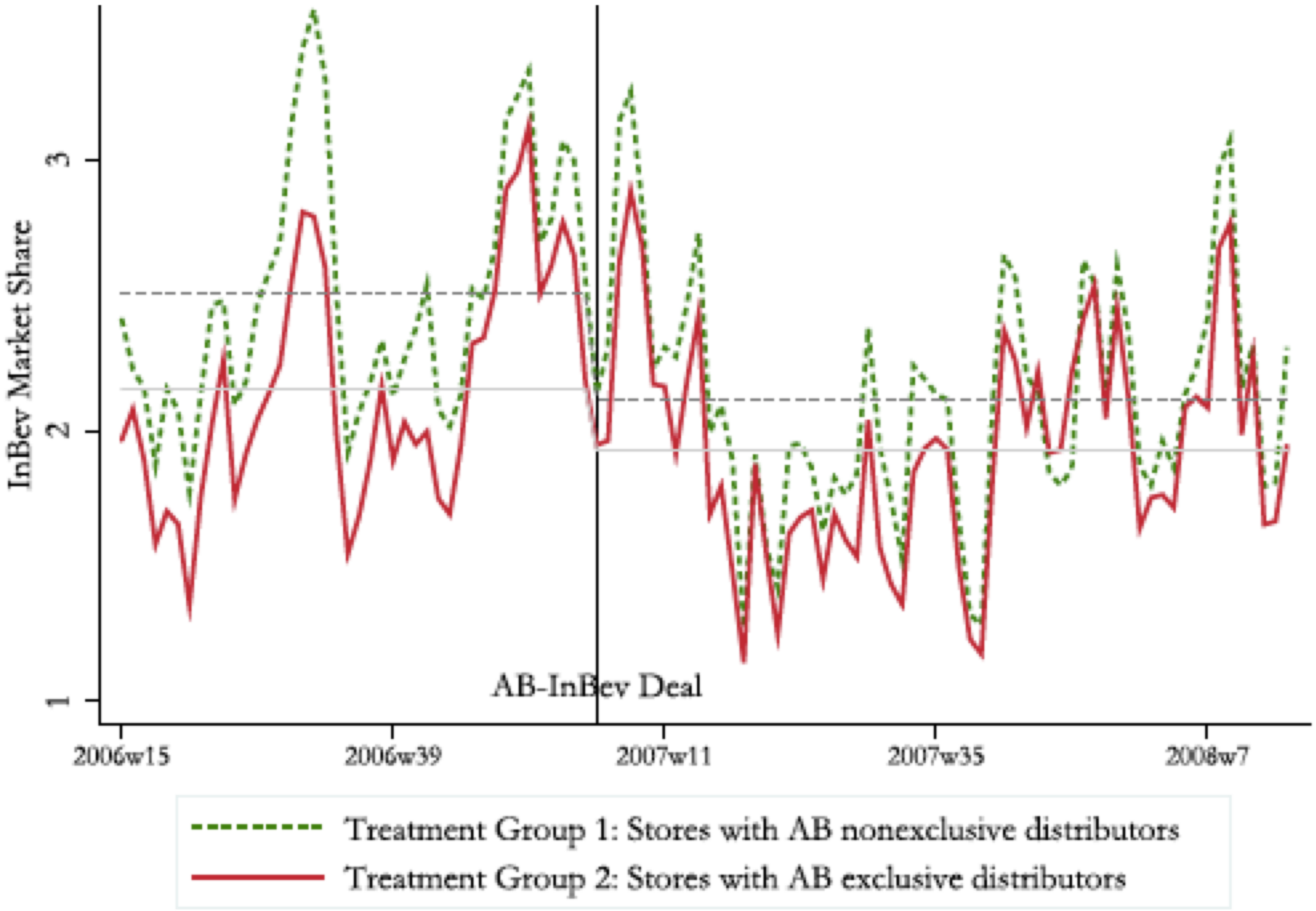
	Panel A: Store Size (s)			
	$0 \leq p^s < 25$ (1)	$25 \leq p^s < 50$ (2)	$50 \leq p^s < 75$ (3)	$75 \leq p^s \leq 100$ (4)
InBev moved to AB exclusive	0.305**	0.147^{+}	0.081	0.142
	(0.075)	(0.073)	(0.070)	(0.102)
Observations	5304	5408	5408	5408

	All Stores	$0 \leq p^s < 50$	$50 \leq p^n \leq 100$
	(1)	(2)	(3)
InBev in	−0.023	−0.033	−0.052
	(0.057)	(0.060)	(0.053)
InBev out	0.119*	0.101	0.088
	(0.056)	(0.060)	(0.055)
Constant	1.625**	1.701**	1.456**
	(0.021)	(0.024)	(0.020)
Observations	399419	214741	231124
Adjusted R^2	0.006	0.006	0.006

Data are noisy

- Weekly variation
- Probable seasonal variation
- Highly likely regional and store-level variation
  - Basic beer markets
  - Stores that emphasize microbrews
- So want to have other variables that control for local market share and across time
  - Example
    - "weekly fixed effects" OR "post-2007"
    - but not both

The Effect of Reallocation to the Anheuser-Busch (AB) Exclusive Distribution Network on InBev's Market Share



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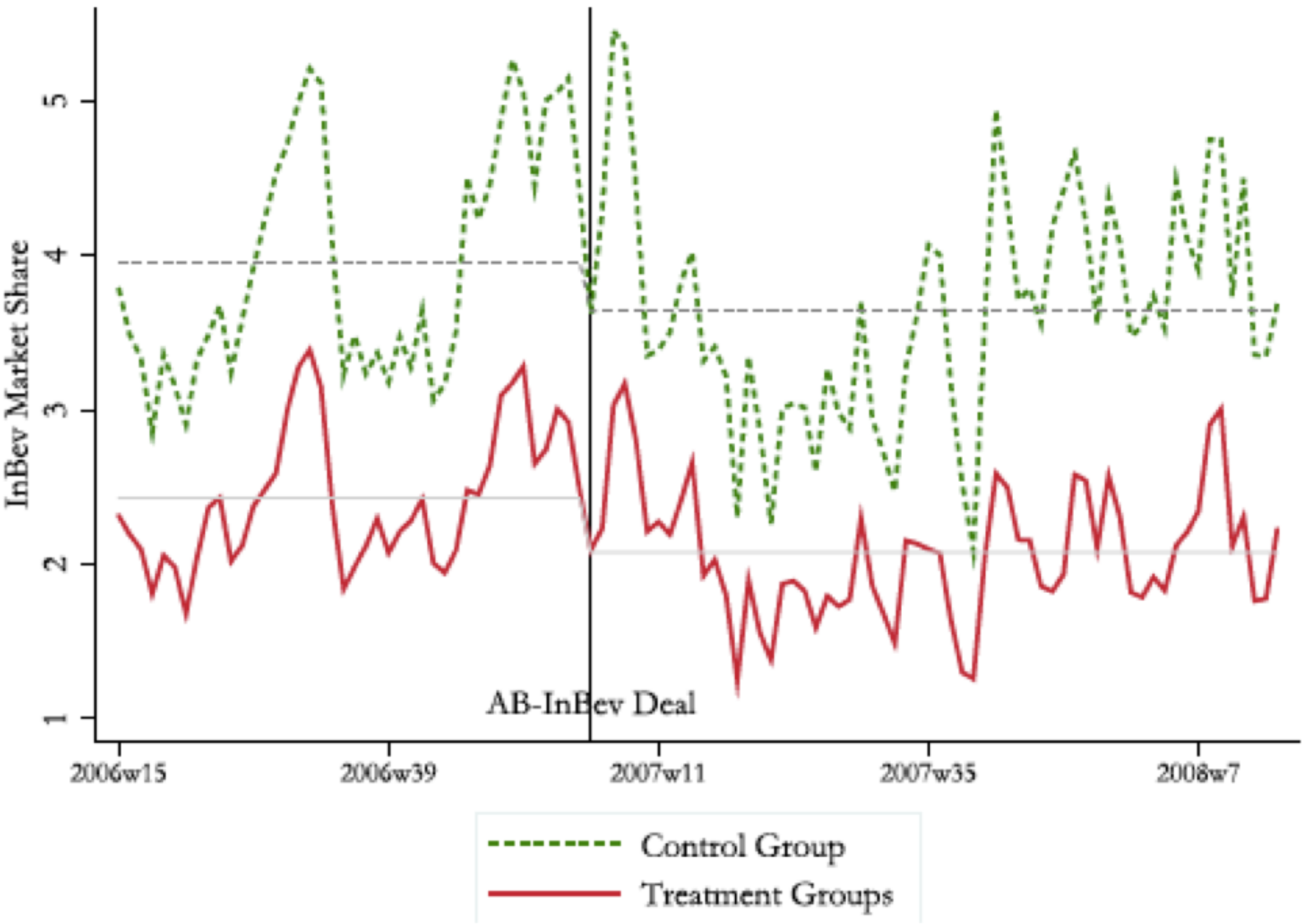

Conclusion

- Market share changes
  - Small (+0.16 pct points) but not for InBev (6% increase)
- Prices don’t change
- **ENHANCES EFFICIENCY NOT MARKET POWER**