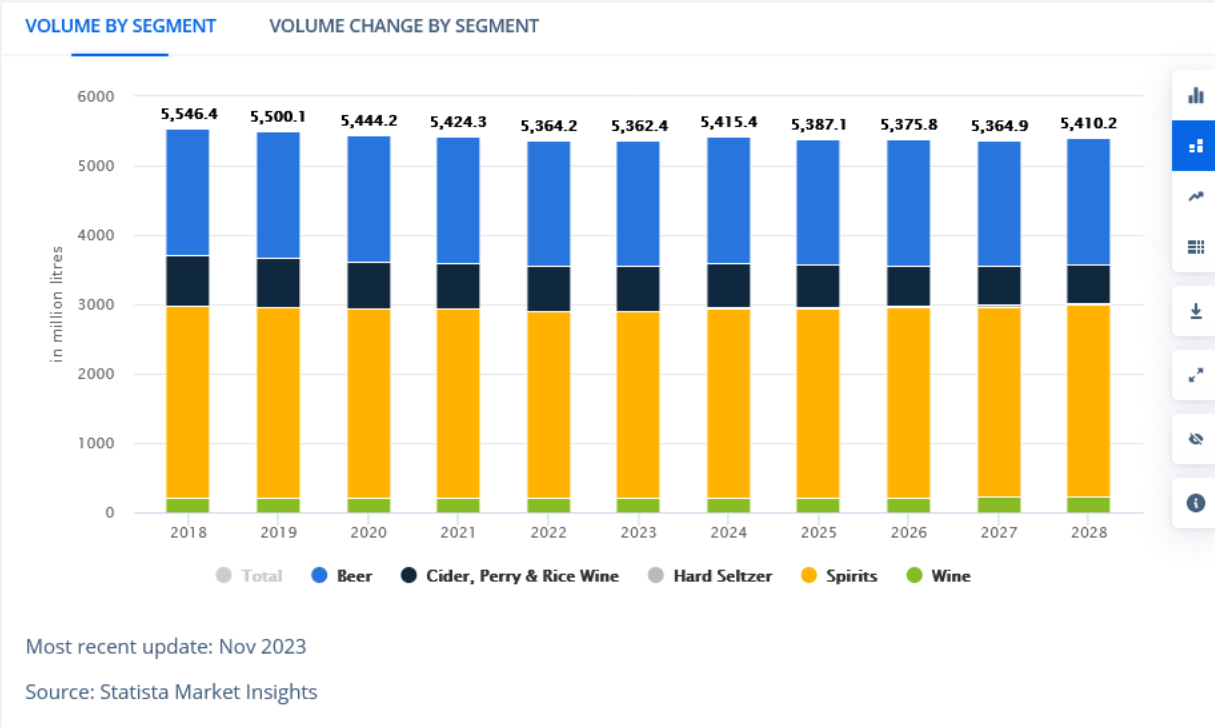


Japanese Beer Tax

Presenter: Kosuke Uetake
Discussant: Emily Wang





Important Question + Sophisticated Model

Table 1 Summary Statistics at the Household-level

Variable	Mean	Median	Std. Dev.	Min	Max
Demographics (ID-level)					
Income (1,000 JPY)	614.0	625	281.5	< 200.0	1,000 < .
Age	45.7	42	14.8	19.0	72 < .
Family Size	3.0	3	1.2	1.0	6 < .
Car Owned	0.8	1	0.4	0.0	1
Married	0.7	1	0.4	0.0	1
Purchase (ID-day-level)					
# of Category Purchased	1.1	1	0.4	1.0	5
Quantity Purchased (1 unit of can)	5.6	2	9.7	0.7	216
Expenditure for the Third-Beer (JPY)	275.8	0	799.6	0.0	28,350
Expenditure for the RTD (JPY)	81.9	0	244.6	0.0	11,526
Expenditure for Non-Alcohol (JPY)	33.8	0	218.2	0.0	9,910
Expenditure for Happoshu (JPY)	89.2	0	508.0	0.0	19,795
Expenditure for Beer (JPY)	257.9	0	887.0	0.0	34,128
Inter-Purchase Time (days)	16.4	5	52.3	1.0	2,156
Store visit (ID-week-level)					
# of Store Visited per week	1.1	1	0.4	1.0	5
Advertising exposure (ID-week-level)					
# of exposure per week	12.1	7	13.7	1.0	211

Important Question + Sophisticated Model

Methodological Contributions

Literature on Rational Addiction

- Gordon and Sun (2015)
 - Dynamic Structural Model of Rational Addiction
 - Chen and Rao (2020)
 - Rational Addiction + Stockpiling + Learning.
 - Kim and Ishihara (2021)
 - Rational Addiction and Stockpiling
 - **Current Paper: consumer behavior modeled in substantial detail**
 - **Rational Addiction**
 - **Stockpiling**
 - **Present Bias**
-

Behavioral Evidence: Rational Addiction

Suggestion:

For the alcohol category, break analysis up by product category

Rationale:

Not enough purchases of non-alcoholic beverages to shown rational addiction

Table 3 Testing Addiction

	Quantity-Based						Consumption-Based (mg)		
	Alcohol			Non-Alcohol			All	High	Low
	All	High	Low	All	High	Low			
Same	0.472	0.415	0.530	0.897	0.807	1	0.307	0.288	0.325
Increasing	0.266	0.295	0.237	0.052	0.097	0	0.349	0.359	0.340
Decreasing	0.262	0.290	0.233	0.051	0.095	0	0.344	0.353	0.335
t-stat	1.713	1.615	0.972	0.479	0.573	0	1.950	1.812	1.060
Std. error	0.003	0.003	0.004	0.002	0.003	0	0.003	0.003	0.004
N	3,128	1,565	1,563	3,128	1,678	1,450	3,128	1,564	1,564

Note: The unit of observation used to calculate each probability is ID-date-level. The High (Low) is from the households that have higher (lower) consumption than the household at the median. The t-stat shows the test statistic under the null hypothesis that increasing is equal to decreasing, and the alternative that increasing > decreasing.

Rational Addiction: A Note

Rational Addiction

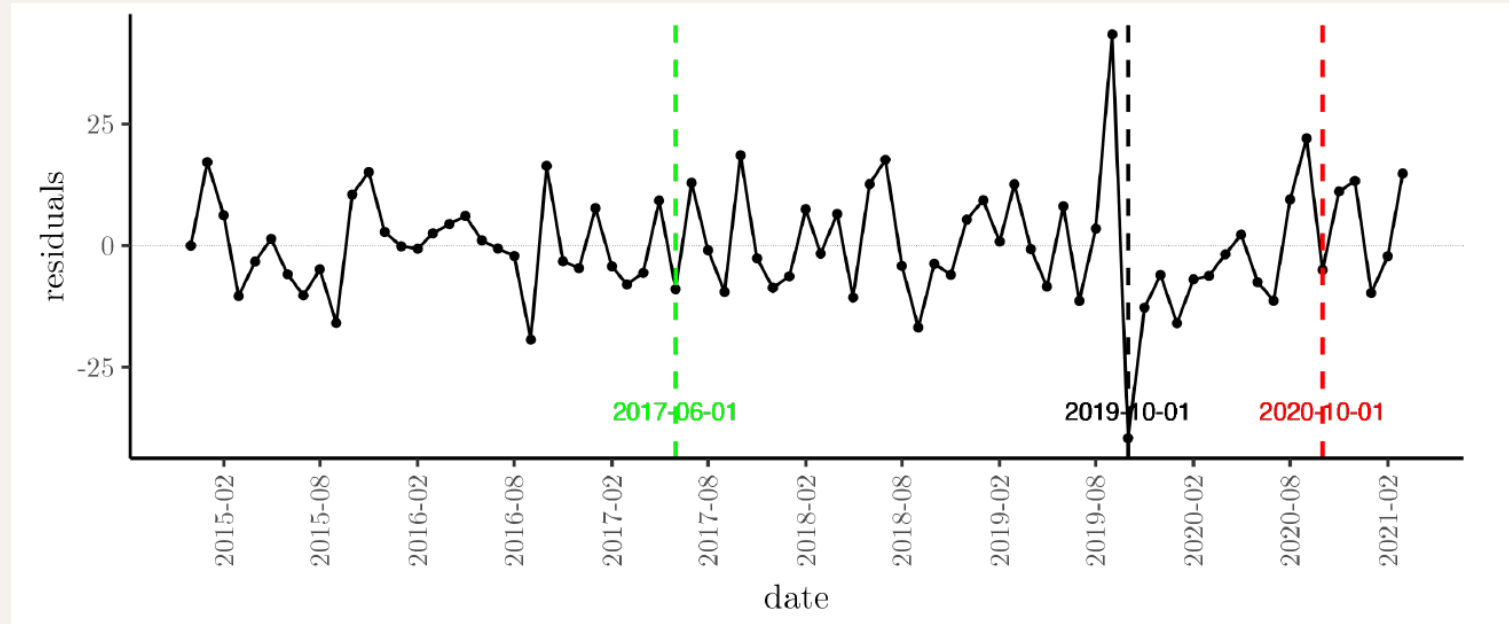
- Current consumption depends:
 - Past Consumption
 - Future Price
- Examples:
 - Cigarette, Beer, Soda

Addiction

- Current consumption depends:
 - Past Consumption
 - ~~Future Price~~
- Examples:
 - Cocaine, Opioids

- Current Results: “alcohol consumption is addictive.”
- Recommendation: Careful Framing of Results.

Behavioral Evidence: Stockpiling



- Evidence of Stockpiling: Very Clear
- Quick Question: How much do people stockpile?

Behavioral Evidence: Time Inconsistency

Observed Behavior

- Purchases made on consecutive days:
 - Current Interpretation: Consumers exhibit time inconsistent preferences.
 - Rationale: Consumers who bought two drinks on two separate days should have bought them on the same day with, potentially, a lower price.
 - Alternative Explanations:
 - Taste for Variety: Purchase different products, or even just different third beers.
 - Commitment Device: If I only buy one today, I will only drink one today.

Policy Evaluation

“There is strong evidence to support recommendations on alcohol consumption varying by age and location. Stronger interventions, particularly those tailored towards younger individuals, are needed to reduce the substantial global health loss attributable to alcohol.”

—The Lancet
Bill and Melinda Gates Foundation

Policy Study: Suggestion 1

Proportion of Young People Aged 15-39 Consuming Harmful Amounts of Alcohol

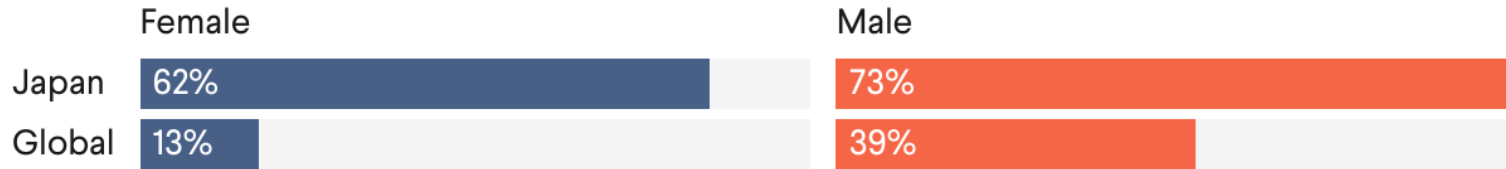


Chart: Based on IHME/Annie Chan • Source: IHME

Think Global Health

- Institute for Health Metrics and Evaluation (IHME) Recommend:
“... need tailored guidelines that discourage alcohol consumption among young people.”
- Policy Suggestion:
Implications of the current tax scheme on young consumers.

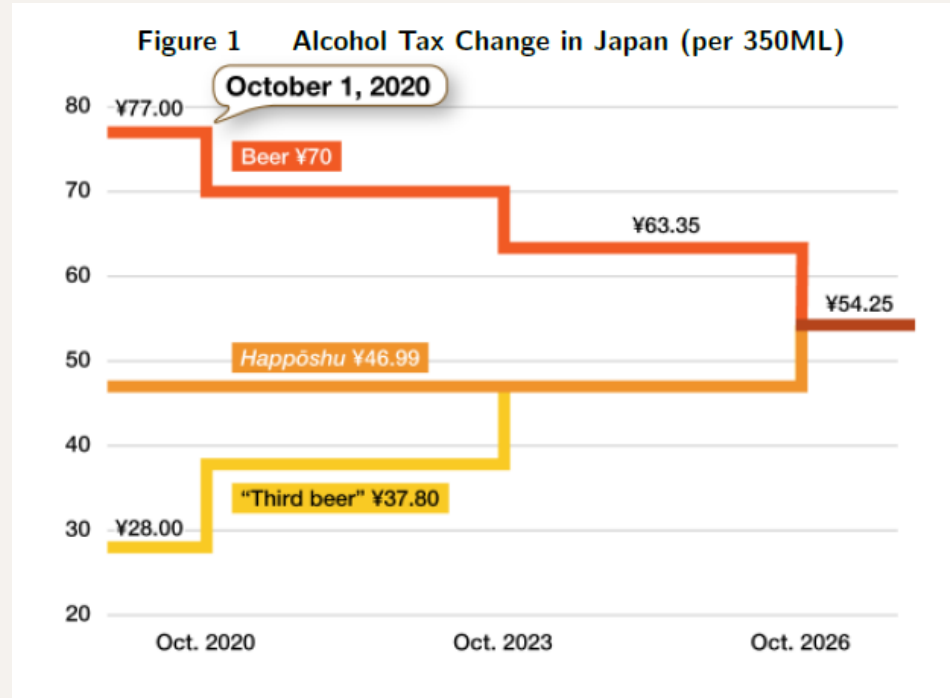
Policy Study: Suggestion 2

Question:

What if tax raised to the beer pre-2020 level?

- Inelastic Demand:
More Revenue
- Elastic Demand:
Curb More Consumption

Japan's National Tax Agency (NTA) wants increase tax revenue



Thank You

Other Thoughts

1. Inventory is pinned down by using electricity prices and prices of other items needed in the fridge
 - Evidence showing that these work could be helpful.
2. Pass-Throughs
 - Pinning down the right level?

Questions

“In general, consumers do not see alcohol tax rates in price tags when they purchase alcoholic beverages, while they do see general sales taxes due to government regulation.”

– pp.8

- Is this price or price plus tax?
- If just price, then is this a selection story? That is, the residual demand for the third beer has really high willingness to pay? And the opposite becomes true for beer?

