Demand for Alcoholic Beverages in Argentina, Chile, Costa Rica, Honduras and Uruguay

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As required by the Alcohol Policy 19 Conference, I/we have signed a disclosure statement and note the following conflict(s) of interest:

None

The problem

- Alcohol consumption in the Americas is well above world averages, with 17.4 gr of pure alcohol (vs 13.9 gr for the world) in 2016.

- There is a scarcity of studies for LAC countries on how taxes/prices affect demand of alcoholic beverages.

- In general, studies (mostly from developed countries) show that own-price elasticity is around -0.7. It's difficult to compare elasticities that are estimated on different beverages/groups of population (heavy drinkers, youths, etc)

The data

- We use publicly available Household Expenditure Surveys (HES) for Argentina (2017-18), Chile (2016-17), Costa Rica (2018-19), Honduras (2004), and Uruguay (2016-17).

- All HES contain information on consumption by type of beverages (in local currency and milliliters), and several sociodemographic variables (HH size and composition, age, gender and education level for HH head, area of residence, etc.).

- Only alcoholic beverages consumed off-premises were considered.

The data

Drinks	Alcoholic Graduation
Spirits Liqueurs	40º
Wines Aperitifs Ciders	12º
Beers	5º

The data

Variable	Argentina	Chile	Costa Rica	Honduras	Uruguay
Rural households (%)	-	-	29.4%	48.7%	-
	-	-	0.46	0.50	-
Age of household head (years)	50.5	51.2	51.0	44.5	51.8
	16.49	15.80	15.52	17.26	16.84
Female household head (%)	42.9%	41.3%	38.5%	24.7%	49.1%
	0.50	0.49	0.49	0.43	0.50
Household members (N)	3.2	3.3	3.2	5.1	2.8
	1.79	1.66	1.61	2.42	1.48
Members aged 18 and above (N)	2.3	2.5	2.4	5.1	2.1
	1.08	1.15	1.09	2.43	0.90
Married or cohabiting household head (%)	60.5%	53.0%	61.5%	73.4%	60.5%
	0.49	0.50	0.49	0.44	0.49
Household head with no education or primary incomplete (%)	9.5%	11.2%	19.4%	58.4%	9.7%
	0.29	0.32	0.40	0.49	0.30
Household head with primary complete/secondary incomplete (%)	37.7%	23.0%	49.0%	28.4%	50.6%
	0.49	0.42	0.50	0.45	0.50
Household head with secondary complete (%)	22.7%	29.3%	11.0%	8.6%	15.4%
	0.42	0.46	0.31	0.28	0.36
Household head with more than secondary complete (%)	30.0%	36.5%	20.6%	4.6%	24.3%
	0.46	0.48	0.41	0.21	0.43
Monthly total expenditure (constant USD of December 2020)	$734	$1,776	$1,476	$413	$1,899
	624	1,649	1,739	394	1,299
Monthly total per capita expenditure (constant USD of December 2020)	$290	$642	$540	$96	$777
	283.83	658.22	758.24	108.17	557.01
Households with positive consumption of alcoholic beverages (%)	26.0%	40.7%	9.7%	5.5%	19.7%
	0.44	0.49	0.30	0.23	0.40
Monthly total household expenditure on alcoholic beverages (constant USD of December	$24.32	$27.25	$41.25	$13.91	$34.15
	23.21	27.47	37.82	20.62	31.12
Budget share of alcoholic beverages (among households with positive expenditures) (%)	3.40%	1.60%	2.50%	3.60%	1.80%
	0.03	0.02	0.03	0.04	0.02
Millilitres of pure alcohol purchased monthly (among households with positive expenditures)	822.73	782.30	689.39	785.89	911.99
	672.78	711.39	597.27	1023.22	745.01
Pure alcohol unit value per millilitre (constant USD of December 2020)	$0.032	$0.042	$0.070	$0.027	$0.043
	0.018	0.033	0.031	0.015	$0.021

The model

- Almost Ideal Demand System is used to estimate own-price and expenditure elasticities for pure alcohol demand:

$$w_{Gic} = \alpha_G^0 + \beta_G^0 lnx_{ic} + \gamma_G^0 z_{ic} + \sum_{h=1}^{N} \theta_{GH} lnp_{hc} + (f_{Gc} + u_{Gic}^0)$$

$$lnv_{Gic} = \alpha_G^1 + \beta_G^1 lnx_{ic} + \gamma_G^1 z_{ic} + \sum_{h=1}^{N} \psi_{GH} lnp_{hc} + u_{Gic}^1$$

- The model assumes that households in the same cluster face the same prices, and choose quantity and "quality" (i.e. unit value) according to observed and unobserved variables.

The results

Estimator	Argentina	Chile	Costa Rica	Honduras	Uruguay
Anova F statistic	2.140 ***	2.300 ***	0.780	1.420 **	1.390 ***
Price elasticity	-0.418 ***	-0.656 ***	-0.608 ***	-0.509 ***	-0.320 ***
	0.030	0.044	0.113	0.012	0.010
Expenditure elasticity	0.865 ***	0.943 ***	1.182 ***	0.874 ***	0.857 ***
	0.039	0.050	0.088	0.012	0.009
Quality elasticity (of total expenditure)	0.194 ***	0.147 ***	0.118 *	0.175 ***	0.304 ***
	0.020	0.028	0.070	0.903	0.004

[1]: Coefficient estimate is upper value; standard error is lower value

*: Significance at 10%; **: Significance at 5%; ***: Significance at 1%

Some implications

- The results clearly show that raising alcohol taxes can have a tremendous impact on public health in many countries in Latin America.

- A key assumption for this is that alcohol manufacturers pass to consumers the increase in tax. On this, the evidence for developed countries is mixed and would point towards producers under shifting or fully passing taxes of relatively cheaper beverages while shifting them for more expensive one.

- It is likely that the market concentration, which tends to be higher in developing countries, increases the pass-through rate.

Some implications

- In terms of expenditure elasticities (or income elasticities) there is much less evidence though a systematic review found that such elasticity is around 0.5.

- The results presented here are all statistically significant and higher, pointing towards alcohol being a normal good (expenditure elasticity is positive) and with a demand that would increase almost proportionally to the increase in households' budgets.

- In a context of economic growth (i.e., increasing salaries and incomes) this would imply higher demand for alcohol even if prices, advertisement, availability, etc. do not change. In the case of Latin American countries there is evidence that this is what happened recently (pre-pandemic).

The case of Chile

Real price and affordability of alcohol in Chile
(April 1993=100)
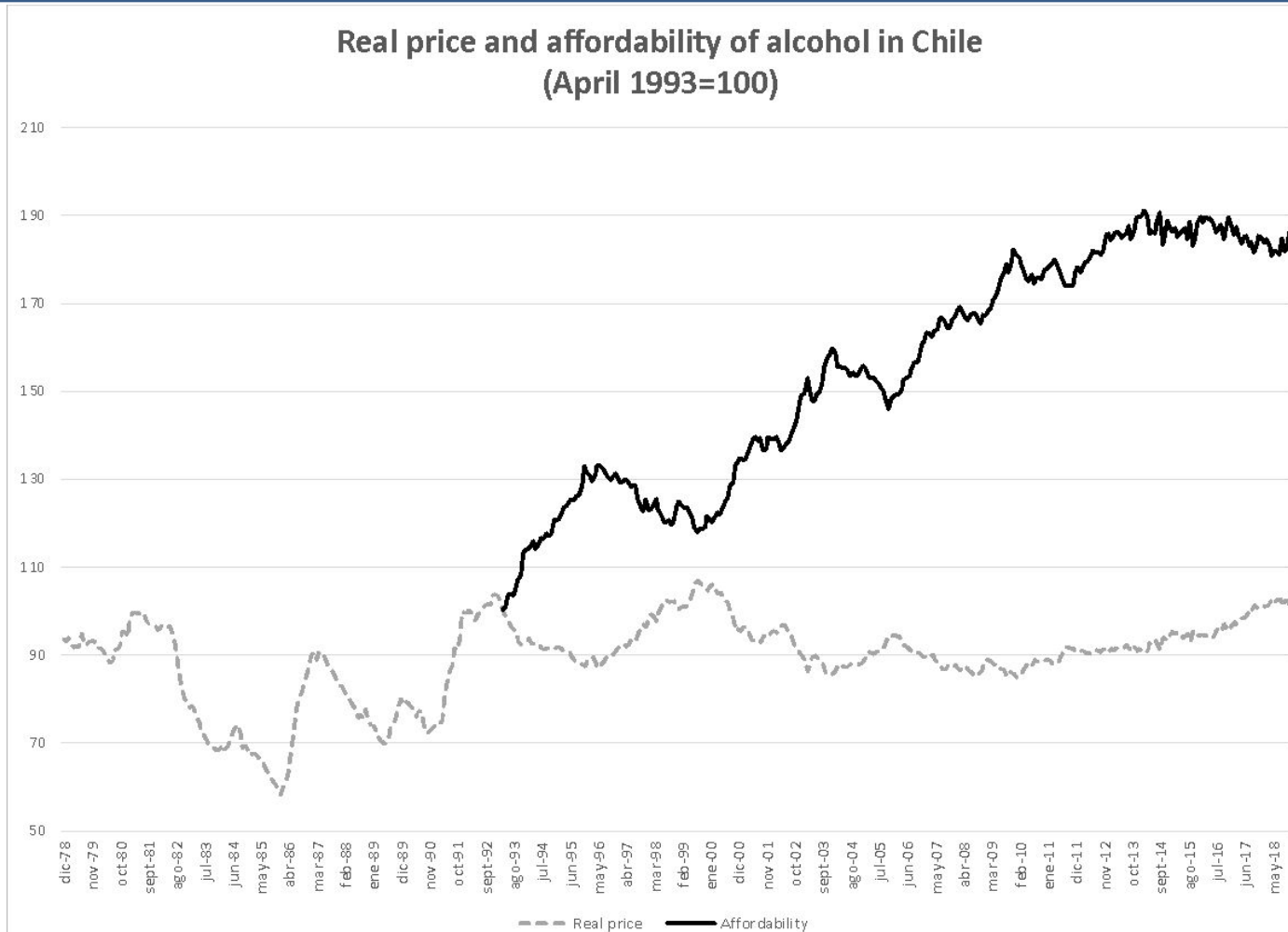
Thank you!

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