

SUGAR-SWEETENED BEVERAGE TAX INDICATORS IN LATIN AMERICA AND THE CARIBBEAN

Results from a 2019 survey



PAHO



Pan American
Health
Organization



World Health
Organization
REGIONAL OFFICE FOR THE
Americas

Sugar-sweetened Beverage Tax Indicators in Latin America and the Caribbean

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Detailed acknowledgments on the elaboration of the methods are available in the methodological note, from: <https://iris.paho.org/handle/10665.2/54917>.

More information about SSB taxes in the Region of the Americas is available from: <https://iris.paho.org/handle/10665.2/53252>.

More information on other NCD prevention policies is available from the PAHO website: www.paho.org.

INTRODUCTION

Obesity, overweight, and diet-related noncommunicable diseases (NCDs) represent both a major public health challenge and a serious threat to economic and social development in the Region of the Americas. Over the last 20 years, the prevalence of adult overweight and obesity has increased substantially (62.5% overweight and 28.6% obesity in 2016), representing the highest among all World Health Organization (WHO) regions (1). Prevalence rates have also grown significantly among children and adolescents, with available data showing that 20% to 25% are overweight or obese (2).

The scientific evidence is robust on the link between specific dietary intake patterns and the development of obesity, overweight, and related NCDs (3). In particular, sugar-sweetened beverages (SSBs) have been singled out as one of the largest drivers of the obesity epidemic (4). SSBs are all types of nonalcoholic beverages containing free sugars; these include carbonated or non-carbonated soft drinks, fruit or vegetable juices and drinks, liquid and powder concentrates, flavored water, energy and sports drinks, ready-to-drink tea, ready-to-drink coffee, and flavored milk drinks. Their consumption is associated with weight gain in children and adults (5), increased incidence of type 2 diabetes (6), cardiovascular disease (7), dental caries, and osteoporosis (8). In Latin America and the Caribbean, the mortality rate attributable to SSBs is higher than in any other region (9).

WHO recommends reducing sugar consumption through effective taxation of SSBs as part of a menu of cost-effective, evidence-based policies in the WHO Global Action Plan for the Prevention and Control of NCDs 2013–2020 (10, 11). Taxes on SSBs—as well as taxes on tobacco products and alcoholic beverages—represent a triple win for governments because they 1) improve population health, 2) generate revenue, and 3) have the potential to reduce long-term associated healthcare costs and productivity losses (12).

Average daily SSB consumption per adult in Latin America and the Caribbean is the highest in the world (13), and, as in most countries around the globe, SSBs are becoming more affordable (14, 15). Although 21 out of the 33 Latin American and Caribbean Member States of the Pan American Health Organization (PAHO) apply excise taxes on SSBs, there is great heterogeneity in their design and rates, and most could be further leveraged to improve their impact on SSB consumption and health (16, 17).

PAHO is committed to providing Member States with accurate, relevant, and internationally comparable information that they can use to guide the development of policy and to evaluate the impact of measures to prevent overweight and obesity (2). Although WHO calculates and publishes a standardized indicator to compare tobacco tax share levels (proportion of total indirect taxes in

the final retail price) across all Member States and time since 2008 (18), comparable data for SSBs are not currently available. Developing such an indicator is necessary to monitor taxes on SSBs, enable standardized comparisons across countries and over time, establish best practices in tax design, and provide a powerful tool for advocacy (19).

Since 2016, the Department of Noncommunicable Diseases (NMH) at PAHO has been working on developing standardized and comparable indicators of the share of indirect taxes in the retail price of SSBs (20). Building on this experience and the WHO methodology for monitoring tobacco taxes (21), this brochure presents the results of pioneer tax share and complementary price and tax policy indicators for nonalcoholic beverages in 27 Latin American and Caribbean PAHO Member States— including sugar-sweetened carbonated drinks and fruit drinks, which are the two most sold SSB types in Latin America and the Caribbean (22), sugar-sweetened milk drinks and energy drinks, as well as a non-sweetened beverage [comparator] for which bottled waters were used. Data were collected from March to December 2019 through a survey to ministries of finance, including on legislation in effect as of March 2019, and were validated and signed-off between June 2020 and April 2021. Unless otherwise specified, the final data and indicators were reviewed and approved for publication by respective governments.

This brochure is a tool for data dissemination to the different sectors involved in SSB taxation in Latin America and the Caribbean, and likewise, to help countries in designing, planning, and evaluating SSB taxes to reduce SSB consumption.

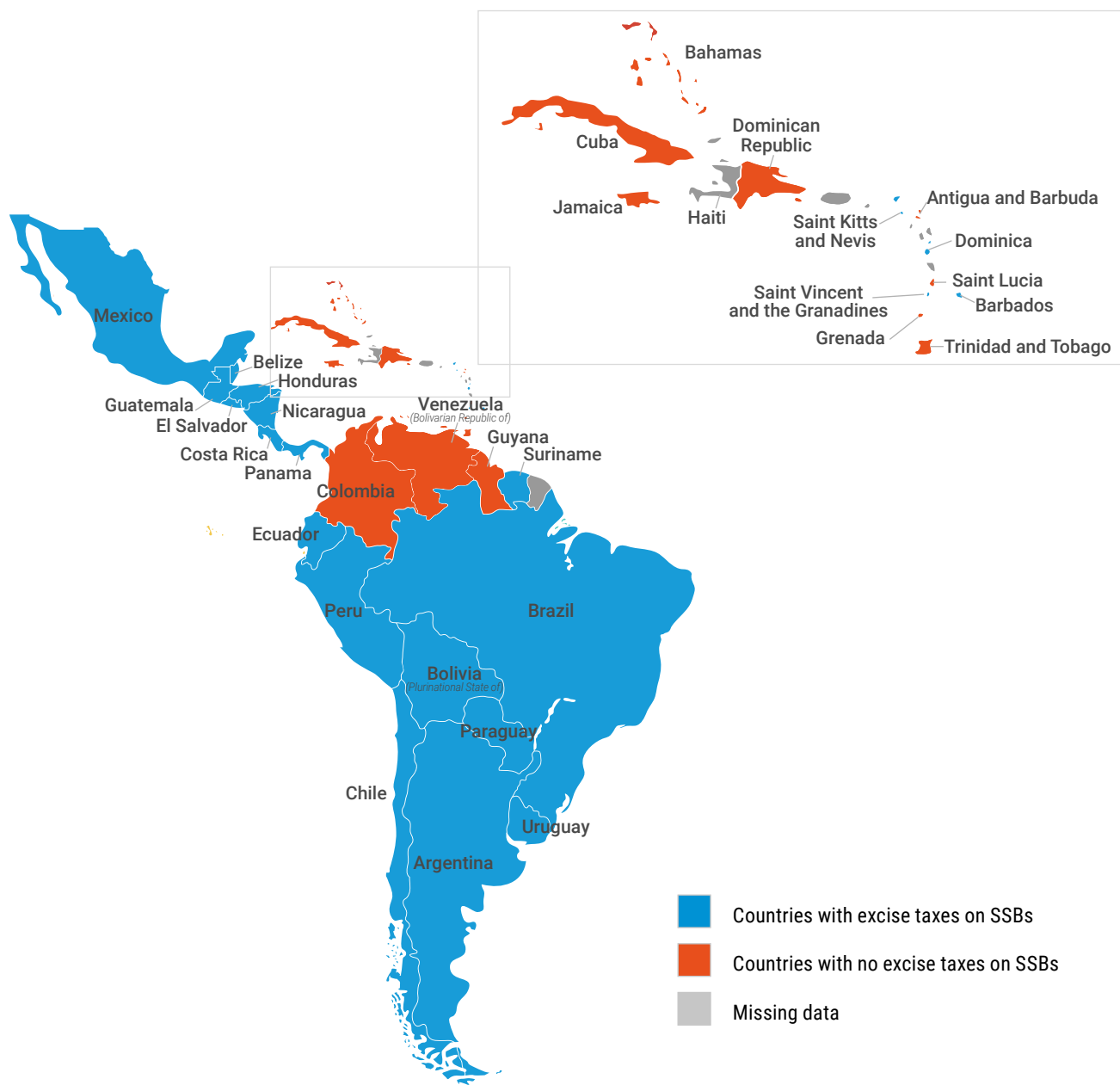
The data collected, methods used, and definition of indicators are described in the technical notes. More detailed methodological notes are available from: <https://iris.paho.org/handle/10665.2/54917> (23).

Additionally, detailed analyses and discussions of the results contained in this brochure have been published:

- on the design of excise taxes on SSBs, in the Pan American Journal of Public Health, available from: <https://iris.paho.org/handle/10665.2/53331> (16)
- on SSB price and tax level indicators, in The Lancet Regional Health - Americas, available from: <https://doi.org/10.1016/j.lana.2022.100257> (24)

EXCISE TAXES ON SSBs

As of March 2019, in Latin America and the Caribbean, 21 PAHO Member States apply excise taxes on SSBs, with 6/14 countries in the Caribbean (data missing for Haiti) and 15/19 in Latin America. Eleven countries do not apply excise taxes on SSBs, including Colombia, Cuba, the Dominican Republic, the Bolivarian Republic of Venezuela, and the majority of Caribbean countries.



Country	Sugar-sweetened carbonated drink, internationally comparable brand*, 355 ml			Sugar-sweetened carbonated drink, internationally comparable brand*, 1 000 ml		
	Retail price in international dollars (at PPP)	Excise tax share	Total tax share	Retail price in international dollars (at PPP)	Excise tax share	Total tax share
Antigua and Barbuda	1.24	0.0%	38.0%	2.43	0.0%	39.9%
Barbados	0.70	6.5%	21.4%	1.23	6.5%	21.4%
Belize	0.57	18.2%	29.3%	1.77	16.5%	27.6%
Brazil ¹	1.33	2.3%	29.7%	1.53	2.4%	27.8%
Chile	1.30	15.1%	31.1%	2.27	15.1%	31.1%
Colombia	1.36	0.0%	16.0%	1.53	0.0%	16.0%
Cuba	...	0.0%	9.9%	...	...	...
Dominica ²	1.04	4.0%	24.7%	...	...	...
Dominican Republic	0.81	0.0%	15.3%	4.30	0.0%	15.3%
Ecuador	0.99	12.7%	27.2%	1.59	22.4%	35.5%
El Salvador	1.20	8.0%	19.5%	1.75	8.0%	19.5%
Grenada	0.99	0.0%	13.0%	5.26	0.0%	13.0%
Guatemala	1.05	1.5%	12.3%	2.47	1.8%	12.6%
Guyana	1.19	0.0%	20.6%	2.58	0.0%	16.1%
Honduras	1.01	2.6%	15.7%	1.64	4.5%	17.6%
Jamaica	0.71	0.0%	14.5%	1.52	0.0%	14.5%
Mexico	0.84	5.3%	19.1%	1.94	6.5%	20.3%
Panama	1.40	5.0%	5.0%	3.06	5.0%	5.0%
Paraguay	1.35	3.6%	12.7%	2.11	3.6%	12.7%
Peru	1.09	16.9%	32.2%	2.30	16.9%	32.2%
Saint Kitts and Nevis	1.52	1.3%	2.9%	1.52	2.0%	4.3%
Saint Lucia	0.46	...	...	1.54	...	...
Saint Vincent and the Grenadines	1.77	4.3%	38.3%	3.77	5.6%	30.7%
Suriname	1.66	4.0%	9.8%	2.66	7.1%	16.2%
Trinidad and Tobago	0.90	0.0%	11.1%	1.19	0.0%	11.1%
Uruguay	1.20	6.2%	24.3%	2.15	9.8%	27.8%
Venezuela (Bolivarian Republic of) ³	7.73	0.0%	13.8%	17.83	0.0%	13.8%

TAX SHARE	Fruit drink, most sold brand, 1 000 ml			Energy drink, most sold brand, 250 ml			
	Country	Retail price in international dollars (at PPP)	Excise tax share	Total tax share	Retail price in international dollars (at PPP)	Excise tax share	Total tax share
EXCISE TAX SHARE	Antigua and Barbuda	2.89	0.0%	19.2%	1.97	0.0%	25.5%
	Barbados	2.69	6.5%	21.4%	3.93	0.8%	17.2%
	Belize	2.24	0.0%	11.1%	1.71	4.3%	34.1%
	Brazil ¹	1.31	0.0%	0.0%	3.06	2.3%	31.1%
TAX POLICY INDICATORS	Chile	3.35	15.1%	31.1%	3.38	7.0%	23.0%
	Colombia	1.70	0.0%	16.0%	1.01	0.0%	16.0%
	Cuba	...	...	...	...	...	...
	Dominica ²	4.01	0.0%	17.2%	1.46	0.7%	14.2%
	Dominican Republic	1.43	0.0%	15.3%	1.43	0.0%	15.3%
	Ecuador	4.35	5.9%	16.6%	0.86	8.1%	23.3%
	El Salvador	1.27	4.2%	15.7%	0.73	21.7%	33.2%
	Grenada	...	...	...	...	...	...
	Guatemala	1.80	1.4%	13.0%	0.81	0.9%	12.2%
	Guyana	3.90	0.0%	12.3%	1.91	0.0%	25.3%
EXCISE TAX REVENUE AND EARMARKING	Honduras	2.06	3.6%	16.6%	3.24	0.6%	13.6%
	Jamaica	7.89	0.0%	23.9%	0.78	0.0%	14.5%
	Mexico	1.93	6.5%	6.5%	1.11	2.8%	16.6%
	Panama	2.66	0.0%	0.0%	3.08	1.7%	1.7%
	Paraguay	2.52	3.6%	12.7%	4.70	1.1%	13.7%
	Peru	2.29	16.9%	32.2%	0.95	16.9%	32.2%
	Saint Kitts and Nevis	2.78	0.0%	3.8%	3.34	2.2%	11.5%
	Saint Lucia	3.59	0.0%	13.9%	1.58	0.0%	12.8%
	Saint Vincent and the Grenadines	4.03	0.0%	16.7%	1.84	8.6%	39.9%
	Suriname	4.36	4.3%	13.4%	1.91	2.5%	18.7%
Trinidad and Tobago	2.39	0.0%	11.1%	1.87	0.0%	14.9%	
Uruguay	3.56	3.4%	21.4%	2.87	1.8%	19.9%	
Venezuela (Bolivarian Republic of) ³	28.71	0.0%	13.8%	32.69	...	...

Sugar-sweetened milk drink, most sold brand, 1 000 ml			Bottled water (non sweetened beverage comparison), most sold brand, 500 ml			Country
Retail price in international dollars (at PPP)	Excise tax share	Total tax share	Retail price in international dollars (at PPP)	Excise tax share	Total tax share	
4.03	0.0%	21.5%	0.48	0.0%	9.1%	Antigua and Barbuda
2.82	6.5%	21.4%	0.88	0.0%	17.8%	Barbados
1.72	0.0%	12.5%	0.76	19.2%	30.4%	Belize
3.05	0.0%	0.0%	0.36	0.0%	40.1%	Brazil ¹
2.84	0.0%	16.0%	0.53	0.0%	16.0%	Chile
7.61	0.0%	16.0%	1.09	0.0%	16.0%	Colombia
...	0.0%	42.0%	...	0.0%	42.0%	Cuba
16.11	0.0%	16.4%	1.12	0.0%	13.0%	Dominica ²
3.30	0.0%	15.3%	0.34	0.0%	0.0%	Dominican Republic
3.98	0.0%	10.7%	0.43	0.0%	19.6%	Ecuador
2.65	0.0%	11.5%	0.64	0.0%	11.5%	El Salvador
...	...	...	...	...	...	Grenada
3.61	0.0%	10.7%	0.56	1.8%	12.5%	Guatemala
7.58	0.0%	12.3%	0.54	0.0%	30.5%	Guyana
2.80	0.0%	13.0%	0.76	0.0%	13.0%	Honduras
9.18	0.0%	18.3%	0.64	0.0%	14.5%	Jamaica
2.57	0.0%	0.0%	0.38	0.0%	0.0%	Mexico
3.77	5.0%	5.0%	0.94	0.0%	0.0%	Panama
2.91	0.0%	9.1%	0.76	0.0%	9.1%	Paraguay
2.76	16.9%	32.2%	0.69	0.0%	15.3%	Peru
3.01	0.0%	4.1%	0.57	0.0%	0.0%	Saint Kitts and Nevis
...	...	...	0.42	0.0%	11.1%	Saint Lucia
3.77	...	...	1.62	0.0%	33.6%	Saint Vincent and the Grenadines
5.04	0.0%	0.0%	1.02	9.2%	9.2%	Suriname
5.82	0.0%	11.7%	0.73	0.0%	0.0%	Trinidad and Tobago
1.95	0.0%	18.0%	1.28	2.0%	20.0%	Uruguay
71.62	0.0%	13.8%	6.69	0.0%	13.8%	Venezuela (Bolivarian Republic of) ³

TAX SHARE

EXCISE TAX SHARE

TAX POLICY INDICATORS

EXCISE TAX REVENUE AND EARMARKING

	Sugar-sweetened carbonated drink, internationally comparable brand+, small, 355 ml	Sugar-sweetened carbonated drink, internationally comparable brand+, large, 1 000 ml	Fruit drink, most sold brand, 1 000 ml
Antigua and Barbuda	0.0%	0.0%	0.0%
Barbados	6.5%	6.5%	6.5%
Belize	18.2%	16.5%	0.0%
Brazil ¹	2.3%	2.4%	0.0%
Chile	15.1%	15.1%	15.1%
Colombia	0.0%	0.0%	0.0%
Cuba	0.0%	...	...
Dominica ²	4.0%	...	0.0%
Dominican Republic	0.0%	0.0%	0.0%
Ecuador	12.7%	22.4%	5.9%
El Salvador	8.0%	8.0%	4.2%
Grenada	0.0%	0.0%	...
Guatemala	1.5%	1.8%	1.4%
Guyana	0.0%	0.0%	0.0%
Honduras	2.6%	4.5%	3.6%
Jamaica	0.0%	0.0%	0.0%
Mexico	5.3%	6.5%	6.5%
Panama	5.0%	5.0%	0.0%
Paraguay	3.6%	3.6%	3.6%
Peru	16.9%	16.9%	16.9%
Saint Kitts and Nevis	1.3%	2.0%	0.0%
Saint Lucia	...	...	0.0%
Saint Vincent and the Grenadines	4.3%	5.6%	0.0%
Suriname	4.0%	7.1%	4.3%
Trinidad and Tobago	0.0%	0.0%	0.0%
Uruguay	6.2%	9.8%	3.4%
Venezuela (Bolivarian Republic of) ³	0.0%	0.0%	0.0%

TAX SHARE

EXCISE TAX SHARE

TAX POLICY INDICATORS

EXCISE TAX REVENUE AND EARMARKING

Energy drink, most sold brand, 250 ml	Sugar-sweetened milk drink, most sold brand, 1 000 ml	Bottled water (non sweetened beverage comparison), most sold brand, 500 ml	
0.0%	0.0%	0.0%	Antigua and Barbuda
0.8%	6.5%	0.0%	Barbados
4.3%	0.0%	19.2%	Belize
2.3%	0.0%	0.0%	Brazil ¹
7.0%	0.0%	0.0%	Chile
0.0%	0.0%	0.0%	Colombia
...	0.0%	0.0%	Cuba
0.7%	0.0%	0.0%	Dominica ²
0.0%	0.0%	0.0%	Dominican Republic
8.1%	0.0%	0.0%	Ecuador
21.7%	0.0%	0.0%	El Salvador
...	...	...	Grenada
0.9%	0.0%	1.8%	Guatemala
0.0%	0.0%	0.0%	Guyana
0.6%	0.0%	0.0%	Honduras
0.0%	0.0%	0.0%	Jamaica
2.8%	0.0%	0.0%	Mexico
1.7%	5.0%	0.0%	Panama
1.1%	0.0%	0.0%	Paraguay
16.9%	16.9%	0.0%	Peru
2.2%	0.0%	0.0%	Saint Kitts and Nevis
0.0%	...	0.0%	Saint Lucia
8.6%	...	0.0%	Saint Vincent and the Grenadines
2.5%	0.0%	9.2%	Suriname
0.0%	0.0%	0.0%	Trinidad and Tobago
1.8%	0.0%	2.0%	Uruguay
...	0.0%	0.0%	Venezuela (Bolivarian Republic of) ³

Region
■ Caribbean
■ Latin America

TAX SHARE	Country	Type of excise tax applied	Uniform excise tax applied (Yes (uniform) No (tiered/ varying rates))	Excise tax based on sugar content	Retail price used as base of ad valorem component for locally produced beverages in ad valorem or mixed or combined excise regime (or retail price exclusive of VAT and/or excise)	Amount-specific tax component automatically adjusted for inflation (or other economic indicator) on a periodic basis
	Antigua and Barbuda	No excise	-	-	-	-
	Barbados	Ad valorem	Yes	No	No	-
	Belize	Amount-specific	Yes	No	-	No
	Brazil ¹	Ad valorem	Yes	No	No	-
	Chile	Ad valorem	No	Yes ⁷	Yes	-
	Colombia	No excise	-	-	-	-
	Cuba	No excise	-	-	-	-
	Dominica ²	Combined ⁴	No	No	No	No
	Dominican Republic	No excise	-	-	-	-
	Ecuador	Combined ⁴	No	Yes	Yes	Yes
	El Salvador	Ad valorem ⁵	No	No	Yes	No ⁹
	Grenada	No excise	-	-	-	-
	Guatemala	Amount-specific	No	No	-	No
	Guyana	No excise	-	-	-	-
	Honduras	Amount-specific	Yes	No	-	Yes
	Jamaica	No excise	-	-	-	-
	Mexico	Amount-specific ⁵	Yes	No	No ⁸	Yes
	Panama	Ad valorem	Yes	No	Yes	-
	Paraguay	Ad valorem	Yes	No	No	-
	Peru	Ad valorem	No	Yes ⁷	Yes	-
	Saint Kitts and Nevis	Ad valorem	Yes	No	Yes	-
	Saint Lucia	No excise	-	-	-	-
	Saint Vincent and the Grenadines	Ad valorem	Yes	No	Yes	-
	Suriname	Amount-specific	Yes	No	-	No
	Trinidad and Tobago	No excise	-	-	-	-
	Uruguay	Amount-specific ⁶	No	No	No ⁶	No ¹⁰
	Venezuela (Bolivarian Republic of) ³	No excise	-	-	-	-

Minimum amount-specific tax applied in ad valorem or mixed or combined excise regime	Excise tax applied on powders, concentrates, or syrups	Price dispersion: Share of cheapest brand price in internationally comparable brand price, sugar-sweetened carbonated drink, 355 ml	Price dispersion: Share of cheapest brand price in internationally comparable brand price, sugar-sweetened carbonated drink, 1 000 ml	A minimum price policy is implemented	Country
-	-	...	73%	No	Antigua and Barbuda
No	Yes	...	...	No	Barbados
-	No	...	...	No	Belize
Yes	Yes	63%	51%	No	Brazil ¹
No	Yes	...	...	No	Chile
-	-	35%	71%	...	Colombia
-	-	40%	...	...	Cuba
No	...	...	...	No	Dominica ²
-	-	67%	50%	...	Dominican Republic
No	Yes	77%	66%	No	Ecuador
No	Yes	47%	75%	No	El Salvador
-	-	...	...	No	Grenada
-	Yes	70%	82%	No	Guatemala
-	-	90%	91%	...	Guyana
-	No	78%	87%	...	Honduras
-	-	71%	...	No	Jamaica
-	Yes	75%	44%	No	Mexico
No	Yes	50%	39%	No	Panama
No	No	73%	...	No	Paraguay
No	No	63%	75%	No	Peru
No	No	40%	...	No	Saint Kitts and Nevis
-	-	...	...	...	Saint Lucia
No	No	62%	76%	No	Saint Vincent and the Grenadines
-	Yes	100%	100%	No	Suriname
-	-	51%	90%	...	Trinidad and Tobago
Yes	Yes	48%	77%	No	Uruguay
-	-	...	68%	No	Venezuela (Bolivarian Republic of) ³

TAX SHARE

EXCISE TAX SHARE

TAX POLICY INDICATORS

EXCISE TAX REVENUE AND EARMARKING

	TAX SHARE			TAX POLICY INDICATORS		
	Country	Year	Currency*	Excise tax revenue from SSBs in local currency	Excise tax revenue (total or portion) earmarked for health purposes	Reported use of earmarked excise tax revenue from SSBs
	Antigua and Barbuda	-	-	-	-	-
	Barbados	2018	BBD	3 463 191	No	-
	Belize	2018	BZD	151 741	No	-
	Brazil ¹	2017	BRL	728 042 274	No	-
	Chile	2018	CLP	135 726 000 000	No	-
	Colombia	-	-	-	-	-
	Cuba	-	-	-	-	-
	Dominica ²	2018	XCD	1 985 472	Yes	The law states that revenue is to be allocated to the national "Get Healthy" campaign. However, to date, all the revenues have been placed in the Government's Consolidated Fund with no specific programs implemented.
	Dominican Republic	-	-	-	-	-
	Ecuador	2018	USD	104 450 244	No	-
	El Salvador	2018	USD	49 011 000	No	-
	Grenada	-	-	-	-	-
	Guatemala	2018	GTQ	364 880 000	No	-
	Guyana	-	-	-	-	-
	Honduras	2017	HNL	34 083 464	No	-
	Jamaica	-	-	-	-	-
	Mexico	2018	MXN	25 916 200 000	Yes	The law states that once federal entities' participations are discounted, revenue is to be allocated for programs for the promotion, prevention, detection, treatment, control, and fight against malnutrition, overweight, obesity, and related NCDs, as well as increasing access to potable water in rural areas, and providing potable water fountains in schools with lower educational outcomes.
	Panama	2018	PAB	4 489 896	No	-
	Paraguay	2017	PYG	67 196 982 809	No	-
	Peru	2018	PEN	699 000 000	No	-
	Saint Kitts and Nevis	2018	XCD	491 298	No	-
	Saint Lucia	-	-	-	-	-
	Saint Vincent and the Grenadines	...	...	...	No	-
	Suriname	2018	SRD	16 968 976	No	-
	Trinidad and Tobago	-	-	-	-	-
	Uruguay	...	...	...	No	-
	Venezuela (Bolivarian Republic of) ³	-	-	-	-	-

TECHNICAL NOTES

NOTES FOR TABLES AND FIGURES

SSBs: sugar-sweetened beverages

PPP: purchasing power parity

ml: milliliters

. . . data not reported/not available

- data not required/not applicable

* Data were collected on Coca-Cola® original.

* According to International Organization for Standardization ISO 4217 currency names and code elements (<https://www.iso.org/iso-4217-currency-codes.html>).

¹ **Brazil:** Retail price and tax data and tax information represent only the State of Rio de Janeiro. However, all indirect taxes applied on sugar-sweetened beverages in Brazil are applied at federal level, except the value added tax, which rate varies by state. Data, estimates, and information published could not be approved by national authorities.

² **Dominica:** Data, estimates, and information published could not be approved by national authorities.

³ **Venezuela (Bolivarian Republic of):** Tax data and information were approved by national authorities. However, retail price data could not be approved by national authorities.

⁴ **Combined:** At least one category of SSBs is taxed by an ad valorem excise tax and at least one other category is taxed by

an amount-specific excise tax. No beverage category is taxed by both. Dominica applies an ad valorem excise tax except for sugar-sweetened carbonated drinks, which are subject to an amount-specific tax (volume-based). Ecuador imposes an amount-specific tax (sugar-content-based) on SSBs with a sugar concentration above a specified threshold, and an ad valorem excise tax on SSBs below this threshold. All energy drinks (regardless of their sugar concentration) are taxed by the ad valorem tax.

⁵ **El Salvador and Mexico:** Energy drinks are subject to a mixed excise tax system; i.e., taxed by both an ad valorem and an amount-specific component.

⁶ **Uruguay:** The excise tax on SSBs is structured as an ad valorem tax applied on fixed tax base amounts—“*precios fictos*”—per volume varying per beverage type, effectively operating as an amount-specific tax (volume-based) and classified as such in this brochure.

⁷ **Chile and Peru:** Tiered design with different ad valorem tax rates defined by sugar concentration thresholds.

⁸ **Mexico:** Additionally, an ad valorem component applies only to energy drinks.

⁹ **El Salvador:** Additionally, an amount-specific (volume-based) component applies only to energy drinks.

¹⁰ **Uruguay:** The fixed tax base amounts—“*precios fictos*”—are usually adjusted annually; however, it is not mandated by law.

ABOUT THE SURVEY

The PAHO SSB tax survey was conducted online between March and December 2019 as part of the PAHO NCD Country Capacity Survey 2019. It was completed by officially nominated ministry of finance practitioners from 27 Latin American and Caribbean PAHO Member States (all except Argentina, the Bahamas, the Plurinational State of Bolivia, Costa Rica, Haiti, and Nicaragua).

Data collected

Survey respondents were asked to provide information on tax structures, bases, rates, and supporting legislation, as well as nominal retail price data, and products information (volume size, sugar content, and country of origin). The cutoff date for the tax information and legislation was 31 March 2019.

Other data sources

- Tax legislation already collected through existing PAHO/WHO monitoring tools were also analyzed, as well as legislation obtained through searches on websites of parliaments, ministries of finance, and legal databases.
- International Monetary Fund World Economic Outlook database for implied purchasing power parity conversion rates for 2019 (25).
- International Monetary Fund International Financial Statistics database for exchange rates for March 2019 (26).
- United Nations Comtrade database for the latest available cost, insurance, and freight (CIF) values (27).

Validation process

Final estimates and indicators were sent to the respective governments for review and sign-off between June 2020 and April 2021. In cases where national authorities requested changes, the requests were assessed according to both the legislation and the clarification shared by national authorities, and data were updated or left unchanged. In cases where national authorities explicitly did not approve the publication of the data, this is specified in the notes.

TAX SHARE INDICATOR

The following definition and methods are based on and adapted from WHO's monitoring of tobacco taxes (21).

Definition

The total tax share is the estimated share of all indirect taxes in the final retail price of a beverage. It is calculated by aggregating the proportion of the final retail price that corresponds to each type of indirect tax, as follows:

$$\text{Total tax share} = S_{VAT} + S_{as} + S_{av} + S_{id} + S_o \quad (1)$$

S_{VAT} , S_{as} , S_{av} , S_{id} , and S_o represent respectively the share of value added taxes (VAT) or sales taxes, amount-specific excise taxes, ad valorem excise taxes, import duties, and other taxes in the final retail price.

Methods of estimation

- **Valued added tax (VAT) or sales tax**

In most countries, the VAT rate is applied on the VAT-exclusive retail price.

$$S_{VAT} = \frac{VAT \%}{1 + VAT \%} \quad (2)$$

- **Amount-specific excise tax**

The amount-specific excise tax T_{as} is applied:

- *per beverage volume (volume-based)*

$$T_{as} = \frac{\text{Volume beverage} \times \text{Tax per taxable unit volume}}{\text{Taxable unit volume}} \quad (3)$$

- *per sugar content (sugar-content-based)*

$$T_{as} = \frac{\text{Sugar content} \times \text{Volume beverage} \times \text{Tax per gram sugar per tax unit volume}}{\text{Taxable unit volume}} \quad (4)$$

In both cases, the share of amount-specific excise taxes in the final retail price can be expressed as follows:

$$S_{as} = \frac{T_{as}}{\text{Final retail price}} \quad (5)$$

- **Ad valorem excise tax**

The ad valorem excise tax rate $T_{av} \%$ is applied on a tax base, which varies per country and between locally produced and imported beverages. The share of ad valorem excise taxes in the final retail price can be expressed as follows:

$$S_{av} = \frac{T_{av} \% * M}{\text{Final retail price}} \quad (6)$$

- *Locally produced beverages*

In most cases, the tax base M is the final retail price, the final retail price excluding VAT, the final retail price excluding VAT and excise, and it is relatively straightforward to estimate it. However, when the tax base is set earlier in the value chain, such as the producer price (as in Barbados, Brazil, Dominica,¹ Mexico,² and Paraguay), it can be expressed as follows:

$$M = \frac{\frac{\text{Final retail price}}{1 + \text{VAT} \%} - T_{as} - \pi}{1 + T_{av} \%} \quad (7)$$

With π representing the retailer's and wholesaler's profits, which are unknown in most cases. Due to lack of market data, we arbitrarily assume total distribution margins to be equal to 20% for all countries using the producer price as tax base.

- *Imported beverages*

In most countries, the base consists of the CIF value and import duties and other taxes, if applicable.

- **Import duty**

In most countries, import duties are ad valorem and applied on the CIF value. In the case of preferential trade agreements, if import duties information is not provided by survey respondents, the lowest possible import duties are assumed.

$$S_{id} = \frac{T_{id} \% * \text{CIF}}{\text{Final retail price}} \quad (8)$$

1 In Dominica, the ad valorem component is not applied on sugar-sweetened carbonated drinks. Also, no excise taxes apply on fruit drinks, sugar-sweetened milk drinks, and bottled waters.

2 In Mexico, the ad valorem component is only applied on energy drinks.

- **Other taxes**

Other taxes are either applied as an amount-specific or ad valorem tax. Amount-specific other taxes are calculated by volume or the quantity of a certain type of container. Their share of the final retail price is estimated in a similar way as amount-specific excise taxes (see Equations 3 and 5). Ad valorem other taxes are generally applied on a base equal to the final retail price or the final retail price excluding some or all taxes for locally produced beverages and to the CIF value for imported beverages. Their share of the final retail price is estimated in a similar way as ad valorem excise taxes (see Equation 6).

DEFINITION OF INDICATORS

Price in international dollars (at PPP)

Prices are converted into international dollars (at PPP). This hypothetical currency is used to compare prices between countries with different currencies and purchasing power. One international dollar would buy in a given country a comparable amount of goods and services one United States dollar would buy in the United States.

Excise tax share

Sum of ad valorem and amount-specific excise tax shares.

Total tax share

Sum of all tax shares, including excise taxes, VAT or sales taxes, import duties, and other indirect taxes as applicable.

Type of excise tax applied

This indicator informs if excise taxes are amount-specific, ad valorem, a mix of the two, a combination of the two, or if no excise taxes are applied.

Uniform excise tax applied

This indicator informs whether a uniform excise tax system is in place, consisting of a unique excise tax rate for all taxed beverages, or a tiered excise tax system, where variable rates apply based on selected criteria of beverages.

Excise tax based on sugar content

This indicator informs whether excise taxes are applied based on sugar content (e.g., applied only on beverages over a particular

sugar concentration threshold or applied proportionally to beverages' sugar content). This is recommended in countries with strong tax administration.

Retail price used as base for ad valorem component

This indicator informs whether or not ad valorem excise taxes are applied on the retail price (or the retail price excluding VAT or the retail price excluding VAT and excise). Ad valorem excise taxes applied on a base set earlier in the value chain (e.g., producer price) are applied on a lower tax base. In addition, a base set closer to the retail price is easier to determine.

Amount-specific tax component automatically adjusted for inflation

This indicator captures whether the legislation mandates that amount-specific excise taxes be periodically automatically adjusted for inflation (or another economic indicator). Periodic automatic adjustments provide protection against erosion of the real value of amount-specific excise taxes.

Minimum amount-specific tax applied

This indicator informs whether there is a minimum amount-specific excise tax applied in excise tax regimes relying on an ad valorem component. A minimum amount-specific excise tax provides protection against unhealthy products being underpriced.

Excise tax applied on powders, concentrates, or syrups

This indicator captures whether excise taxes apply on at least one of the following products: powders, concentrates, and syrups used to produce SSBs by mixing them with water or carbonated water. All forms of free sugars are considered a risk factor as indicated in the WHO *Guideline: Sugars Intake for Adults and Children (28)*, therefore it is recommended to include such products in the list of taxed products.

Price dispersion

Share of the final retail price of the cheapest brand of sugar-sweetened carbonated drink in the final retail price of the internationally comparable brand of sugar-sweetened carbonated drink, for the same volume size. The higher the proportion, the smaller the gap between both prices.

Minimum price policy implemented

This indicator captures whether a policy mandating the lowest price at which specific beverages can be sold is applied.

Excise tax revenue

This indicator reports the annual amount of excise tax revenue from SSBs in local currency units.

Earmarked excise tax revenue

This indicator captures whether a portion or the totality of excise tax revenue is earmarked for health purposes.

Reported use of earmarked excise tax revenue

Detailed information reported by survey respondents on how the earmarked excise tax revenue for health purposes is used.

PRODUCTS

Sugar-sweetened carbonated drink

Beverage containing carbonated water, free sugars added by the manufacturer, and natural or artificial flavoring. A sugar-sweetened carbonated drink may also contain caffeine, colorings, preservatives, and/or other ingredients.

Fruit drink

Processed sugar-sweetened juice or nectar (<100% concentration). Beverage containing water, unpasteurized or pasteurized juice, free sugars (both naturally present in fruit juices and fruit juice concentrates and/or added by the manufacturer), and may also contain artificial or natural flavorings, preservatives, and/or additives.

Energy drink

Beverage containing large amounts of caffeine, added sugars, other additives, and legal stimulants such as guarana, taurine, and L-carnitine.

Sugar-sweetened milk drink

Beverage containing dairy milk and added sugars, usually flavored and it may also contain thickeners.

Bottled water

Packaged water, used as the non sweetened beverage comparison.

TAXES

From a public health perspective, the objective of taxation policies on NCD risk factor commodities (tobacco products, alcoholic beverages, and SSBs) is to reduce their consumption; for this reason, the tax share indicator is limited to indirect taxes.

Value added tax (VAT) or sales tax

Tax on all goods and services applied proportionally to the price the consumer pays for a product or service.

Excise tax

Tax on a selected good produced for sale within a country or imported and sold in that country. In general, the tax is generally collected from the manufacturer or wholesaler or at the point of entry into the country by the importer, in addition to import duties.

- *Amount-specific excise tax*
Comes in the form of an amount based on volume or sugar content (e.g., \$1 per liter or \$1 per 10 g of sugar).
- *Ad valorem excise tax*
Comes in the form of a percentage of the value of a transaction between two independent entities at some point of the production/distribution chain (e.g., 10% of producer price).

Import duty

Tax on a selected good imported into a country to be consumed in that country. In general, this tax is collected from the importer at the point of entry into the country.

Other indirect taxes

Tax that is not an excise tax, import duty, VAT or sales tax, but that applies to either the quantity of a product or to the value of a transaction of a product (e.g., environment levy).

More detailed methodological notes are available from: <https://iris.paho.org/handle/10665.2/54917> (23).

LIMITATIONS

The analysis presented in this brochure is subject to some limitations, which are largely due to data availability constraints and the necessity to have standardized and comparable indicators across countries and beverage types.

Standardization of volumes

Beverage volume sizes collected were not always equal to the sizes requested (nevertheless, the mode of their distribution was). For comparison purposes, volume sizes were standardized to the volume size requested assuming a linear transformation of retail prices. However, as the container size of a beverage increases, its price per milliliter tends to decrease. Therefore, the tax share and other price indicators estimations may have been altered.

National representativeness of prices

In countries where national market share data were not available, survey respondents were instructed to consult vendors to select the most sold brand. This could have potentially led to the selection of most sold brands that may not be nationally representative. In addition, the final retail price data used were collected from one supermarket or hypermarket usually in the capital city of the country, therefore potentially not nationally representative. Finally, retail prices from other store types were not taken into account in this analysis, even though such store types may represent a significant market share in some countries.

CIF value

The definition of some of the tariff codes used is broad and could contain other beverage types (e.g., HS code 2009,

which contains fruit drinks but may also contain fruit juices). In addition, the brand of interest may not be the only one traded between two given countries under a given tariff code for a given year. The total value and volume traded may contain trade information for other brands. However, as the brand selected for each beverage type for which the tax share indicator is calculated is the most sold brand, the CIF value obtained by dividing total traded value by total traded volume should be representative of the selected brand.

Distribution margins assumption

The estimation of the share of ad valorem excise taxes in the final retail price for locally produced beverages requires making an assumption on the total distribution margins for countries using the producer price as tax base. Due to lack of market data, such assumption was made arbitrarily and may lead to overestimation or underestimation of tax share estimates. However, based on our analysis, total tax share estimates are only slightly sensitive to different levels of distribution margins mark-up assumption. In addition, this assumption is applied to all countries using the producer price as tax base, therefore allowing for comparisons of tax share estimates among them.

Tax legislation cutoff date

Data and information presented in this analysis are based on legislation that was in effect as of 31 March 2019. Legislation that could have been replaced, amended, or repealed since this cutoff date are not analyzed to maintain comparability of data at the same point in time in all countries.

REFERENCES

1. World Health Organization [Internet]. Geneva: WHO; 2017 [accessed 29 August 2021]. Global Health Estimates. Available from: <https://www.who.int/data/global-health-estimates>.
2. Pan American Health Organization. Plan of Action for the Prevention of Obesity in Children and Adolescents. 53rd Directing Council, 66th Session of the Regional Committee of WHO for the Americas, 3 October 2014. Washington, DC: PAHO; 2014. Available from: <https://iris.paho.org/handle/10665.2/49138> [accessed 29 August 2021].
3. World Health Organization. Diet, nutrition and the prevention of chronic diseases: report of a joint WHO/FAO expert consultation. Geneva, Switzerland. 28 January - 1 February 2002. WHO technical report series 916. Geneva: WHO; 2003. Available from: <https://apps.who.int/iris/handle/10665/42665> [accessed 29 August 2021].
4. Brownell KD, Frieden TR. Ounces of prevention—the public policy case for taxes on sugared beverages. *N Engl J Med*. 2009;360(18):1805–8.
5. Malik VS, Pan A, Willett WC, Hu FB. Sugar-sweetened beverages and weight gain in children and adults: a systematic review and meta-analysis. *Am J Clin Nutr*. 2013;98(4):1084–102.
6. Imamura F, O'Connor L, Ye Z, Mursu J, Hayashino Y, Bhupathiraju SN, et al. Consumption of sugar sweetened beverages, artificially sweetened beverages, and fruit juice and incidence of type 2 diabetes: systematic review, meta-analysis, and estimation of population attributable fraction. *BMJ*. 2015;351:h3576.
7. Xi B, Huang Y, Reilly KH, Li S, Zheng R, Barrio-Lopez MT, et al. Sugar-sweetened beverages and risk of hypertension and CVD: a dose–response meta-analysis. *Br J Nutr*. 2015;113(5):709–17.
8. Vartanian LR, Schwartz MB, Brownell KD. Effects of soft drink consumption on nutrition and health: a systematic review and meta-analysis. *Am J Public Health*. 2007;97(4):667–75.
9. Singh GM, Micha R, Khatibzadeh S, Lim S, Ezzati M, Mozaffarian D. Estimated global, regional, and national disease burdens related to sugar-sweetened beverage consumption in 2010. *Circulation*. 2015;132(8):639–66.
10. World Health Organization. Tackling NCDs: 'Best buys' and other recommended interventions for the prevention and control of noncommunicable diseases. Geneva: WHO; 2017. Available from: <https://apps.who.int/iris/handle/10665/259232> [accessed 29 August 2021].
11. World Health Organization. Technical Annex: Updated Appendix 3 of the WHO Global NCD Action Plan 2013-2020. Geneva: WHO; 2017. Available from: https://www.who.int/ncds/governance/technical_annex.pdf [accessed 29 August 2021].
12. World Health Organization. Health taxes: a primer (a WHO policy brief). Geneva: WHO; 2019. (WHO/UHC/HGF/ Policy brief 19.7). Available from: <https://www.who.int/publications/i/item/health-taxes-a-primer> [accessed 29 August 2021].
13. Singh GM, Micha R, Khatibzadeh S, Shi P, Lim S, Andrews KG, et al. Global, regional, and national consumption of sugar-sweetened beverages, fruit juices, and milk: a systematic assessment of beverage intake in 187 countries. *PLoS One*. 2015;10(8):e0124845.

14. Blecher E, Liber AC, Drope JM, Nguyen B, Stoklosa M. Global Trends in the Affordability of Sugar-Sweetened Beverages, 1990–2016. *Prev Chronic Dis.* 2017;14:160406.
15. Paraje G, Pincheira P. Affordability of beer and sugar-sweetened beverages in 15 Latin American countries. *Rev Panam Salud Publica* 2018;42:e49.
16. Sandoval RC, Roche M, Belausteguigoitia I, Alvarado M, Galicia L, Gomes FS, et al. Excise taxes on sugar-sweetened beverages in Latin America and the Caribbean. *Rev Panam Salud Publica.* 2021;45:e21.
17. Pan American Health Organization. Sugar-sweetened beverage taxation in the Region of the Americas. Washington, DC: PAHO; 2020. Available from: <https://iris.paho.org/handle/10665.2/53252> [accessed 29 August 2021].
18. World Health Organization. WHO report on the global tobacco epidemic 2021: addressing new and emerging products. Geneva: WHO; 2021. Available from: <https://www.who.int/publications/i/item/9789240032095> [accessed 29 August 2021].
19. Sandoval RC, Roche M, Perucic AM, Alvarado M, Belausteguigoitia I, Galicia L, et al. Monitoring and measuring health taxes: lessons learned from tobacco and a proposed approach for alcoholic and sugar-sweetened beverages. In: Lauer JA, Sassi F, Soucat A, Vigo A, editors. *Health Taxes: Policy and Practice*. Singapore: World Scientific; forthcoming 2022.
20. Pan American Health Organization. Meeting to Develop a Standardized Tax Share Indicator for Alcoholic and Sugar-Sweetened Beverages (Washington, D.C., 24-25 July, 2018). Washington DC: PAHO; 2019. Available from: <https://iris.paho.org/handle/10665.2/51715> [accessed 1 September 2021].
21. World Health Organization. Report on the Global Tobacco Epidemic, 2019: Offer help to quit tobacco use. Technical Note III: Tobacco taxes in WHO Member States. Geneva: WHO; 2019. Available from: <https://www.who.int/teams/health-promotion/tobacco-control/who-report-on-the-global-tobacco-epidemic-2019> [accessed 31 August 2021].
22. GlobalData [Internet]. London: GlobalData; 2018 [accessed 31 August 2021]. Consumer goods database. Market Data. Available from: <https://www.globaldata.com>.
23. Pan American Health Organization. Calculating Standardized Tax Share and Other Price and Tax Policy Indicators for Sugar-Sweetened Beverages in Latin America and the Caribbean: Methodological Note. Washington DC: PAHO; 2021. Available from: <https://iris.paho.org/handle/10665.2/54917> [accessed 10 February 2022].
24. Roche M, Alvarado M, Sandoval RC, Gomes FS, Paraje G. Comparing taxes as a percentage of sugar-sweetened beverage prices in Latin America and the Caribbean. *The Lancet Regional Health - Americas* 2022;11:100257.
25. International Monetary Fund. World Economic Outlook. Washington, DC: IMF; 2020. Available from: <https://www.imf.org/en/publications/weo> [accessed 31 August 2021].
26. International Monetary Fund [Internet]. Washington, DC: IMF; 2020 [accessed 31 August 2021]. International Financial Statistics (IFS). Available from: <https://data.imf.org/?sk=4C514D48-B6BA-49ED-8AB9-52B0C1A0179B>.
27. United Nations [Internet]. New York: UN; 2020 [accessed 31 August 2021]. UN Comtrade Database. Available from: <https://comtrade.un.org>.
28. World Health Organization. Guideline: Sugars intake for adults and children. Geneva: WHO; 2015. Available from: <https://apps.who.int/iris/handle/10665/149782> [accessed 2 September 2021].

SUGAR-SWEETENED BEVERAGE TAX INDICATORS IN LATIN AMERICA AND THE CARIBBEAN

Results from a 2019 survey