KN2. Health Taxes and Inflation[1]

The purpose of this note is to provide policy makers an overview of relevant issues and feasible policy choices in setting health taxes,[2] with a specific focus on taxing tobacco, alcoholic drinks, and sugar-sweetened beverages (SSBs) in the context of rising inflation. It is one in a series of knowledge notes responding to specific questions around health taxes and key issues raised during health tax reforms.

OVERVIEW

After a long period of moderation, just about every country is seeing inflation soar. Median global headline inflation exceeded 9 percent in the second half of 2022, its highest level in decades (World Bank, 2023), reflecting a combination of demand and supply factors (Ha, Kose, and Ohnsorge 2022; Shapiro 2022).

In countries that also have specific or hybrid excise taxes[3] on tobacco, alcohol, and/or SSBs (up to 70 percent of all countries, depending on product type), inflation can erode the real value of these taxes (Lane 2022). Not raising health taxes in line with inflation means that tax receipts on tobacco products, alcohol, and SSBs will fall in real terms and that these harmful products may become more affordable relative to income. This, in turn, reverses efforts to reduce consumption of these products and the associated death and disability from health conditions including high levels of cancer, cardiovascular disease, and obesity.

The effectiveness of health taxes will decline unless efforts are made to adjust specific health taxes to account for inflation. Indexation of specific taxes is a reliable policy response that has been adopted in many developed countries, as well as in various developing countries.

When health taxes are properly structured, increasing their rates will raise prices by design, and in turn, these corrective taxes will help to reduce consumption. Country experience shows these impacts are generally small and narrowly focused, that is, without an impact on other consumer prices. When excise tax increases are part of an overall fiscal consolidation effort- for example, to reduce government borrowing- they will contribute to reduced excess demand and thus reduced pressure on inflation. In addition, central banks do not usually react to the initial inflation impact of changes in excise taxes (or other indirect taxes) because they are one-off increases and do not raise core inflation.

Calculating consumer price inflation excluding indirect taxes, i.e., taxes on goods and services, is also an emerging good practice as it enables assessment of underlying inflation excluding the first-round effects of indirect tax increases. This may be particularly useful in countries with inflation targeting regimes.

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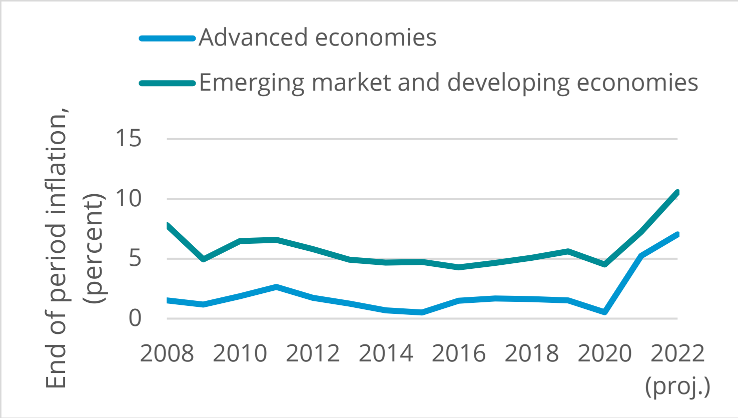
2. Health taxes are excise taxes imposed on products that have a negative public health impact, e.g., taxes on tobacco, alcohol, sugar-sweetened beverages. The term *health taxes* almost always refers to excise taxes. Value added tax or sales taxes, are not health taxes since they do not change relative prices and reduce consumption through increased cessation, reduced initiation, and intensity of use. Differentiated VAT or sales taxes, e.g. an elevated special consumption tax, function like excises, although they are not generally viewed as good practice for administrative reasons. Import tariffs are also not considered health taxes since they influence where something is produced rather than where it is consumed.

3. Specific taxes have a fixed value by some standard of weight, volume, or measurement, e.g., pesos per unit, per fluid oz, per oz of added sugar content. Ad valorem taxes are a percentage of the product value at a certain stage of the production and distribution chain, e.g., factory gate, wholesale, or retail price. Hybrid or mixed excise structures combine specific and ad valorem rates.

INFLATION ON THE RISE

Consumer price inflation is accelerating in both advanced and emerging market and developing economies after a long period of moderate price increases in most countries.[4] The main drivers are pandemic demand and supply shifts and, in 2022, food and fuel supply disruptions. In emerging and developing economies, consumer price inflation was projected to rise above 10 percent in 2022, exceeding levels during the global financial crisis in 2008 (Figure 1). While inflationary pressures started to decrease in late 2022 and are expected to decline further in 2023, inflation is likely to remain at elevated levels for several years and a number of countries, particularly some emerging and developing economies, are experiencing persistently high core inflation (World Bank 2023).

Figure 1. **Consumer price inflation, 2008–22**



Source: IMF, World Economic Outlook (October 2022).

In response to high energy and food prices, many countries are taking fiscal measures by either cutting taxes on these items or providing subsidies to cushion the increase, at least temporarily. For example, Brazil, India, and South Africa have cut energy taxes; Turkey has raised energy subsidies; Indonesia has placed price caps on some fuels (Bloomberg News 2022); and Bosnia and Herzegovina is considering zero-rating some essential food items from VAT.

HEALTH TAXES AND INFLATION

Health taxes on tobacco, alcohol, and unhealthy diets (notably sugar-sweetened beverages) may have their value eroded by inflation. While ad valorem taxes rise if prices of the taxed products rise, the effective tax rate will fall with inflation for goods with specific taxes; for example, if prices rise 50 percent and nominal taxes are unchanged, the effective tax rate is reduced by one-third (1-100/150). In addition to the reduction of excise revenue, there can be a further effect from inflation since excises often enter into the base for sales tax (or value-added tax), resulting in a decline of sales tax revenue in inflation-adjusted terms.

For several good reasons, a clear majority of countries place specific taxes on alcohol, tobacco, and sugar-sweetened beverages. Specific taxes link the tax burden to the amount of health-harming product consumed (rather than the value of product consumed) and sidestep issues of potential tax avoidance or evasion associated with accurately valuing the product at the stage of production at which excise is due. Specific taxes also reduce product price dispersion which may reduce "trading down" by consumers when prices increase. Also, some countries adopt a hybrid tax system that combines a specific tax with an ad valorem tax to raise additional revenue from high value products, especially when there is a wide dispersion of prices, as is the case, for example, with spirits.[5] While specific taxes are desirable in design of health taxes for all these reasons, their effectiveness will be eroded if they are not regularly increased in line with inflation. This can be remedied through indexation of specific excises (discussed further below).

Overall, taking cigarettes as an example, 70 percent of countries use specific or hybrid specific–ad valorem excises, compared to 22 percent that use ad valorem only. Only one-quarter of the countries with specific cigarette excises have automatic adjustments for inflation (or another price/income measure) (See Box 1 and Annex 1.)

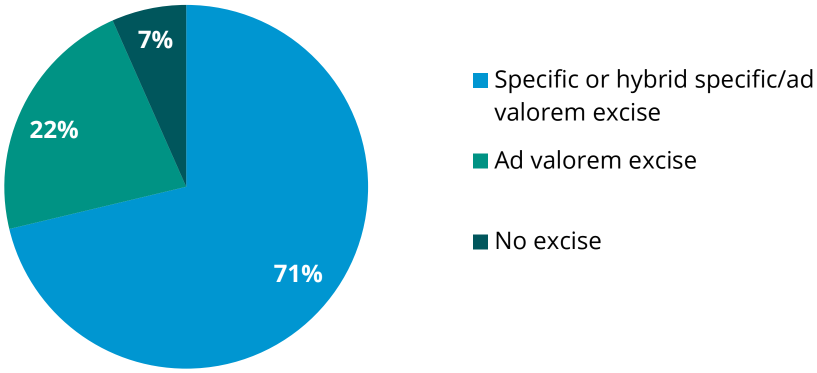
4. Consumer price inflation is measured as the change in the consumer price index, which is a measure of price changes of the goods and services purchased by consumers in their role as consumers (International Monetary Fund et al. 2020).

5. Ad valorem taxes combined with specific taxes may also raise taxes on higher priced goods consumed by high-income consumers and be more effective at reducing their consumption than only specific taxes.

Box 1. **Types of excise taxes on cigarettes, alcohol, and sugar-sweetened beverages**

More than 70 percent of countries have specific excises or a hybrid specific and ad valorem tax on cigarettes, according to a regular survey conducted by the World Health Organization, making tax collection vulnerable to rising inflation if taxes are not indexed to prices or incomes (Figure 1.1).

Figure 1.1. Cigarette excise taxes by type, 181 countries (2020)



Source: World Health Organization 2021.

Of these, 32 countries have automatic adjustments for inflation (or other macroeconomic variables); 44 countries have specific excises on cigarettes with no indexation, including major consuming countries (Indonesia, Japan, Pakistan, and the US); and another 49 countries have hybrid cigarette excises and no indexation, including China, Ethiopia, India, Thailand (World Health Organization 2021).

In many countries, the excises on alcohol have a structure similar to that on cigarettes, with the specific excise set in relation to the volume of alcohol in the beverage, and face similar revenue vulnerabilities from high inflation in the absence of indexation.

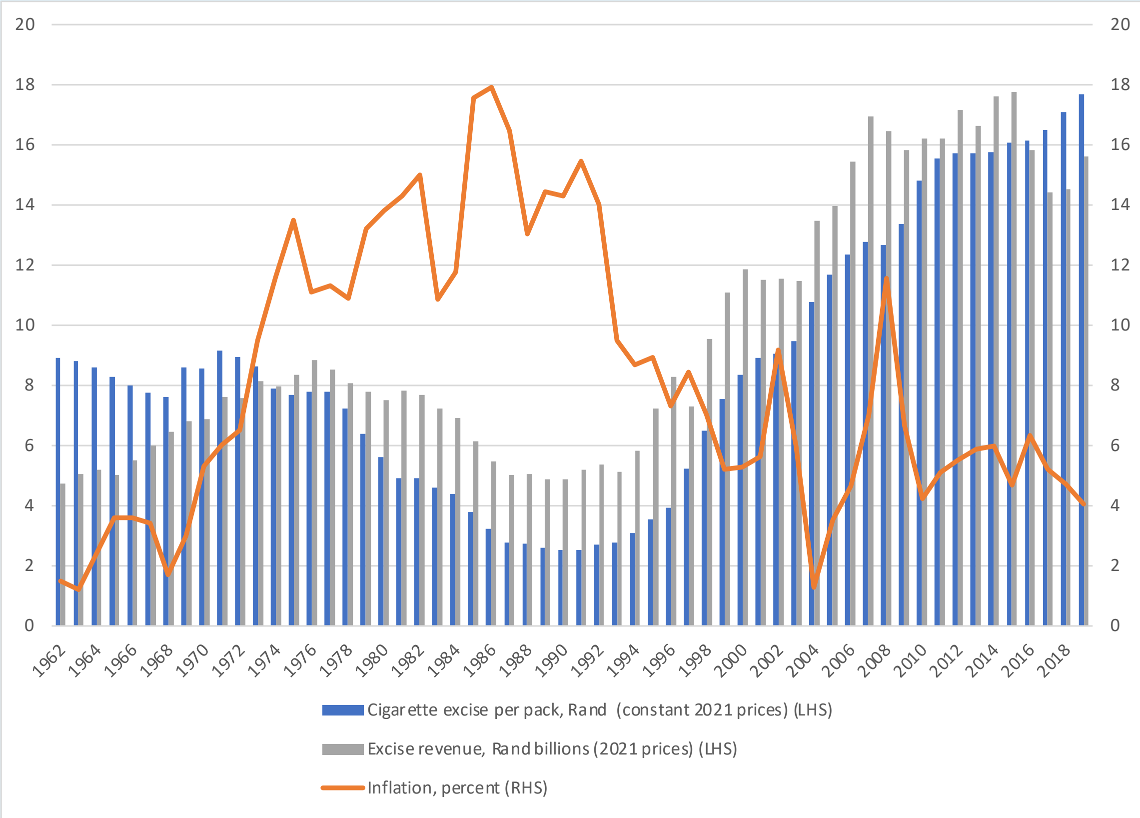
More than half (58 percent) of the 43 countries with SSB taxes in 2019 had specific taxes typically levied on the volume or sugar content of beverages (World Bank 2020).

INFLATION'S IMPACT ON HEALTH TAXES

Depending on the duration and magnitude of inflation, the cumulative impact of inflation on real excise tax and revenues can be very significant, as shown in the cases of South Africa and Brazil.

South Africa levies a specific excise on cigarettes. During the 1970s and 1980s, tobacco control was not on the public agenda; and tobacco industry was consulted about possible tax increases (Walbeek 2003). Double-digit inflation alongside modest excise tax increases led to a 72 percent fall in the real value of the cigarette excise per pack between 1972 and 1990 and a 36 percent decline in real revenue as declining real retail prices led to higher consumption (as shown in Figure 2 in the period up to 1990). A change in tobacco tax policy in 1994 led to excise increases significantly higher than the rate of inflation, and the real excise value per pack trebled in less than a decade. Over this period cigarette consumption fell by 40 percent and smoking prevalence fell from 33 percent in the early 1990s to 27 percent in 2001. The real value of cigarette excise per pack continued to increase in the 2000s, as did real excise revenue until recently (also shown in Figure 2).

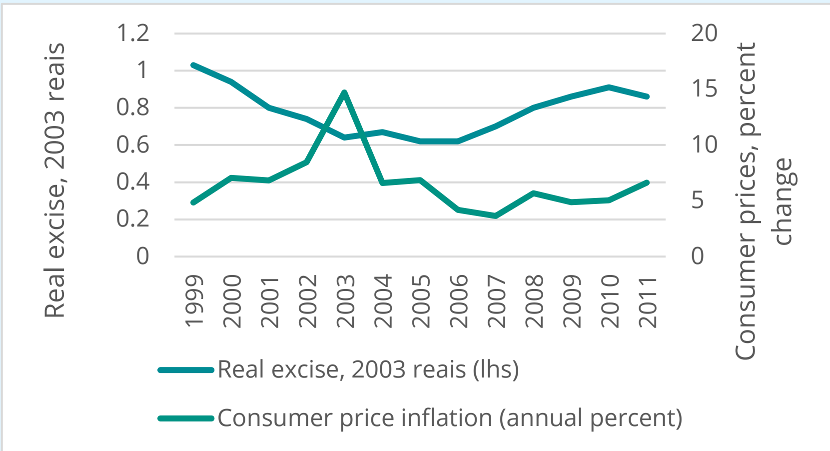
Figure 2. Cigarette excises and inflation in South Africa, 1961–2019



Source: South Africa Treasury and StatSA.

In Brazil, concerns about smuggled cigarettes led tax authorities in 1999 to reduce cigarette excises and then hold them constant in nominal terms through 2003. With annual inflation averaging 8 percent, this led to an erosion of the real value of the excise by 38 percent (Figure 3). However, concerns about smuggling did not prevent producers from raising net of tax prices by 46 percent, slightly in excess of price inflation over the same period. In this case, the erosion of excises likely gave producers room to increase cigarette net of tax prices by more than the rate of inflation.

Figure 3. Cigarette excises and inflation Brazil, 1999–2011



Sources: Iglesias (2016); World Bank, World Development Indicators.

TO INDEX OR NOT TO INDEX SPECIFIC HEALTH TAXES?

The real value of an excise tax can be maintained by indexation to prices or incomes. To maintain the excise tax constant as a share of income, indexation should be in relation to a broad income definition, such as nominal GDP or wages per capita (Blecher and van Walbeek 2009), while recognizing that the change in income will vary across individuals and so may undershoot or overshoot the desired tax burden. For example, if inequality rises and taxes are indexed to average incomes, excisable goods will become less affordable for low-income earners and more affordable for high-income earners. In practice, indexation to consumer prices is more common in developing countries as consumer price inflation (CPI) data is more readily available and less susceptible to revisions than income or wages data. Indexing to CPI will lead product affordability to increase in countries where nominal incomes are growing more rapidly than the CPI. In the current global context of per capita income growth lagging behind inflation, indexation to income, if feasible, may be a more politically palatable approach. A few countries index to other indicators, including Turkey, which indexes alcohol, tobacco, and SSB excises to producer price inflation.

In practice, the indexation of specific excises to address the risk of tax erosion by inflation is not widespread. For cigarettes, just over a quarter of countries have automatic indexation (33 countries out of 126 countries that have specific or hybrid specific–ad valorem cigarette excises), including Mexico, the Philippines, South Africa, and Turkey (World Health Organization 2021a). In the Southern African Customs Union (Botswana, Eswatini, Lesotho, Namibia, and South Africa), specific tobacco and alcohol excises increase at minimum in line with CPI inflation and may be raised by more than the CPI increase to ensure that the tax share of retail price meets a benchmark (e.g., 70 percent of retail price) (World Health Organization 2021b). Indexation can also be used to raise real taxes by indexing to CPI plus a certain percentage; for example, Colombia instituted legislation, effective beginning 2018, to increase tobacco excises annually by CPI plus 4 percent (Marquez and Moreno-Dodson 2017) and in New Zealand by inflation plus 10 percent annually from 2017 to 2020 (World Health Organization 2021b).

The type of indexation and its frequency is normally specified in tax legislation, with any discretion on the application exercised by the executive branch. Indexation is usually on an annual basis, although practice varies: Kenya makes an annual inflation adjustment to specific excises using the annual average inflation rate during the previous financial year; Argentina and Dominican Republic index to inflation on a quarterly basis (World Health Organization 2021b), Chile indexes specific tobacco excises monthly to the projected monthly inflation rate (World Bank 2019); and Australia indexes beer and spirits excises to the CPI twice a year (Australian Taxation Office 2023). More frequent indexation reduces the amount that inflation erodes tax collections, although it may raise administrative costs. Comprehensive data is not available for automatic indexation of alcohol and SSB excises, but it is unlikely to significantly differ from the treatment of cigarette excises.

Some countries, including Turkey (USDA 2022), have an escape clause that permits an override of automatic indexation by administrative order for potential exceptional circumstances when indexation might not be warranted (Box 2). Kenya holds a public consultation for requests to exempt products from annual indexation on account of economic conditions.

Box 2. Indexation of Tobacco and Alcohol Excise Taxes in Turkey

Since 2002, Turkey has levied a special consumption tax (OTV) on alcohol, tobacco products, and sugar-sweetened beverages. For alcohol (except beer), the excises are specific and account for about 65 percent of retail prices, while tobacco has a mixed ad valorem and specific excise weighted toward ad valorem excises. SSB excises are ad valorem.

Specific alcohol and tobacco excises are automatically indexed in January and July for the increase in the producer price index over the previous six months unless a Presidential Decree is issued to adjust the automatic indexation. This provision was used in June 2021 to suspend the automatic indexation for a large producer price increase during January-June 2021 arising in part from a currency depreciation.

In January 2022, however, the indexation was applied and special consumption taxes increased by 47.4 percent, in line with the six-month producer prices increase, although falling short of the 12-month producer prices increase of 77.9 percent. Specific taxes increased by a higher percentage than retail price inflation in 2021, which was 36.1 percent, despite the temporary halt to automatic indexation, thereby preventing excise tax erosion.

If indexation is regular and predictable, producers may try to reduce tax liabilities by forestalling, for example by distributing large quantities of production prior to an excise tax increase or purchasing an excess number of excise tax stamps. Excise legislation should prevent forestalling, accumulation, and sale of stocks using earlier, lower-value tax stamps (Petit and Nagy 2016), and regulations should limit the quantities and/or time allowed for the sale of such stock (Pederson et al. 2014).

In summary, and as demonstrated by the country examples cited, the type of indexation should be tailored to country circumstances. At minimum, however, specific taxes should be indexed, or If indexation is not feasible, adjusted regularly in line with consumer price inflation. If possible, one may also leave room for discretion to raise by more than inflation where incomes are growing faster than inflation. Where income or wages data is available on a timely basis, indexation to incomes can be considered good practice as a means of raising relatively low health taxes. A simple indexation formula also has merit so that it is clearly understood by producers and consumers.

DOES RAISING HEALTH TAXES IMPACT INFLATION?

From tax revenue and public health viewpoints it makes sense to raise excises at least in line with inflation or incomes. Nevertheless, country authorities may have legitimate questions on the potential impact of health tax increases on inflation Several points are relevant:

- Raising health taxes would generally not be a significant contributor to overall inflation as tobacco, alcohol, and SSBs are a small share of the total consumption basket. For example, a 10 percent increase in excise taxes on alcohol, tobacco would translate to an increase in annual inflation of between 0.06 and 0.36 percent across a sample group of countries for which data is available (Table 1).

Table 1. Simulation of the impact of raising excise taxes on inflation, 2020

	Weight of alcohol and tobacco, in CPI (percent)1/	Inflation change from 10 percent increase in excise (percent) 2/	Automatic adjustment of specific taxes
Brazil	1.3	0.08	NO
Chile	4.8	0.27	YES
Colombia	1.7	0.10	YES
India	2.4	0.14	NO
Kenya	3.3	0.19	YES
Pakistan	1.0	0.06	NO
Poland	6.3	0.36	NO
South Africa	6.3	0.36	YES
Türkiye	4.3	0.25	YES

Notes: 1/ This CPI category also includes legal narcotics which are typically a very small weight in the CPI.
2/ Assumes excises are 50 percent of price, VAT is 15 percent of price, excise increase is fully passed through to prices.
Sources: OECD, WHO for automatic adjustment, national statistical publications (for Brazil, India, Pakistan, and Kenya weights) and author's calculations.

- If additional health taxes were introduced to offset tax reductions on other items, the inflationary impact would be dampened.
- More broadly, in the context of the annual budget, the overall fiscal stance (expansionary or contractionary) is a more important indicator of its impact on inflation than increases in one or more indirect taxes (taxes on goods and services).
- Similarly, central banks do not usually react to first-round effects of changes in indirect taxes (or administered and regulated prices), as these are not signals of increases in underlying inflationary pressures (Patel and Villar 2016). Accordingly, some central banks have measures of core inflation adjusted for the effects of indirect taxes (Hungary) or excisable goods (Turkey).

INFLATION TARGETING AND HEALTH TAXES

A total of 45 countries, including many middle-income countries, had inflation targeting monetary policy frameworks in 2021 (International Monetary Fund 2022b).[6] Policy makers implementing inflation targeting may seek to reduce inflationary pressures by reducing excises, most notably for fuel, because it has a much larger weight in the inflation basket than do alcohol and tobacco and because fuel prices have a high level of volatility.

6. Albania, Armenia, Australia, Brazil, Canada, Chile, Colombia, Costa Rica, Czech Republic, Dominican Republic, Georgia, Ghana, Guatemala, Hungary, Iceland, India, Indonesia, Israel, Jamaica, Japan, Kazakhstan, Kenya, Republic of Korea, Mexico, Moldova, New Zealand, Norway, Paraguay, Peru, the Philippines, Poland, Romania, Russian Federation, Serbia, Seychelles, South Africa, Sri Lanka, Sweden, Thailand, Uganda, the United Kingdom, Uruguay, and Uzbekistan.

Most countries that target inflation set a band or ceiling to inflation, using the consumer price index as the variable to measure inflation, as this is a well-known and understood indicator. In assessing the monetary policy stance and deviations from the inflation target, however, most central banks will use a range of other indicators, including various definitions of core inflation, to strip out some volatile price elements: food, fuel, and indirect taxes (which includes health taxes). In practice, increased health taxes may contribute to missing an inflation target. However, central banks will draw a distinction between transitory contributors to inflation, such as indirect taxes including health taxes, which do not require a monetary policy response, and longer-term or underlying imbalances (e.g., excess demand), that do require a monetary policy response. Nonetheless, central banks will wish to avoid continual breaches of inflation targets, even if they can be rationalized as transitory, to maintain the credibility of the inflation targeting regime.

Some countries report various CPI measures, including ones that calculate inflation excluding tobacco and/or alcohol prices. The CPI excluding tobacco and alcohol is published in the United Kingdom (UK Office for National Statistics n.d.) and CPI excluding tobacco is also published for European Union member countries (European Central Bank n.d.). While not widely adopted, the practice of calculating inflation excluding the effect of indirect taxes (fuel, alcohol, tobacco, and any SSB excise taxes) has merit and can be useful in countries with an inflation targeting regime to assess the monetary policy stance.

HEALTH TAXES ON THE GROUND IN 2022-23

Countries with automatic indexation of excises have broadly maintained the real value of their health taxes despite rising inflation. In 2022, for example, Mexico, the Philippines, South Africa, and Turkey increased their tobacco taxes by 7 percent, 9 percent, 5.5 percent, and 47 percent, respectively, to compensate for 2021 inflation (Martell 2021; Vera 2022; South Africa Treasury 2022; Sozcu 2022). Mexico and Turkey indexed tobacco taxes for 2022 inflation in January 2023 (Tobacconomics 2023) and Colombia implemented a 16 percent tobacco tax increase of inflation plus 4 percent (Government of Colombia 2022). In these cases, the limited scope for policy-making discretion has likely contributed to reducing the effectiveness of lobbying.

However, in a few cases automatic indexation has faced implementation challenges. The January 2023 application of Ecuador's indexation of health taxes on tobacco, alcohol, and SSBs (by 3.64 percent) was reversed by Presidential Decree effective February 2023 (Republic of Ecuador 2023) and in Peru the planned indexation of tobacco taxes for January 2023 was delayed to June 2023 by Ministerial Decree (Peru Ministry of Finance 2023).

A few countries without automatic indexation of excises increased tobacco excises by more than past inflation in 2022, including Indonesia, Lithuania, Nigeria, and Turkmenistan (Tobacconomics 2022; Lithuania Finance Ministry n.d.; Sherifat 2022; Tobacconomics 2023). In January 2023, Nicaragua increased alcohol and tobacco taxes by 11 percent, just above 2022 inflation estimates of 10 percent (Biz 2022) and Morocco also raised tobacco taxes in line with 2022 inflation (Tobacco Reporter 2023). In many countries, however, inflation is eroding the value and effectiveness of health taxes. In India in 2022,

POLICY CONSIDERATIONS

Several good practices emerge from country experiences in managing health taxes in the context of high or rising inflation:

- Tax authorities should regularly monitor the impact of inflation, wages, and income growth on the affordability of harmful products and on excise tax revenue.
- Specific taxes link the tax burden to the amount of health-harming product consumed (rather than the value of product consumed) and sidestep issues of potential tax avoidance or evasion associated with determining the tax base for ad valorem taxes.
- Specific taxes on unhealthy products should be regularly adjusted or, preferably, automatically indexed to consumer price inflation. If timely data is available, indexation to nominal per capita GDP or nominal wage growth can be considered good practice to counter increased affordability of harmful products as incomes rise. These policies will prevent the erosion of tax rates, deter unhealthy product consumption, promote improved population health, and protect health spending where taxes are earmarked to health budgets.
- Governments should not reduce or postpone tax payments for producers of harmful products when these products become more affordable relative to income. This will simply create space for producers to increase their pre-tax prices and raise margins (Chaloupka et al. 2021).
- Calculating consumer price inflation excluding indirect taxes, i.e. excise taxes, sales tax, value added tax, is also an emerging good practice as it enables an assessment of underlying inflation excluding the first-round effects of indirect tax increases including health taxes. This may be particularly useful in countries with inflation targeting regimes.

no tobacco excise tax increases took place for the second consecutive year (Mukherjee 2022). In Pakistan, while the 2022 budget includes significant tobacco tax increases of 25 percent, this lags behind inflation of over 30 percent since the last tax increase in 2019 (Social Policy and Development Center 2022). Similarly, In 2023, Ukraine increased tobacco taxes by 20 percent and Moldova by 25 percent (Tobacconomics 2023) but in both cases these increases are below 2022 inflation estimates of 30 percent in both countries (International Monetary Fund 2022a).

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ANNEX 1

Indexation to Inflation (or Other Variable) Provisions for Specific Cigarette Excise Taxes, 2020

No automatic adjustment—specific tax only (44 countries)

Andorra	Kazakhstan	
		St. Lucia
	Kiribati	
Azerbaijan	Korea, Republic of	St. Vincent and the Grenadines
Bahamas, The	Malawi	Suriname
		Tajikistan
Belarus	Malaysia	Tanzania
Belize	Mauritius	Timor-Leste
Bolivia	Mongolia	Tonga
Burundi	Nepal	Trinidad and Tobago
Dominica	Norway	Uganda
Fiji	Pakistan	United Republic of Tanzania
Gambia, The	Palau	United States of America
Guyana	Papua New Guinea	Uruguay
Iceland	Samoa	Vanuatu
Indonesia	Seychelles	Zambia
Jamaica	Singapore	
Japan	Sri Lanka	

No automatic adjustment—hybrid specific and ad valorem tax (48 countries)

Algeria	Ethiopia	North Macedonia
Austria	Finland	Poland
Belgium	Georgia	Portugal
Brazil	Germany	Republic of Moldova
Bulgaria	Greece	Romania
Cabo Verde	Hungary	Rwanda
Cameroon	India	São Tomé and Principe
Chad	Ireland	Slovakia Republic
China	Israel	Slovenia
Croatia	Latvia	Spain
Cyprus	Lebanon	Switzerland
Czech Republic	Liberia	Thailand
Denmark	Lithuania	Tunisia
Egypt, Arab Republic of	Luxembourg	West Bank and Gaza
El Salvador	Malta	Zimbabwe
Estonia	Morocco	

Automatic adjustment—specific tax only and hybrid specific/ad valorem		
Albania	Eswatini	Peru
Armenia	France	Philippines
Australia	Honduras	Russian Federation
Bosnia and Herzegovina	Italy	Serbia
Botswana	Kyrgyz Republic	South Africa
Canada	Lesotho	Sweden
Chile	Mexico	Turkey
Colombia	Montenegro	Ukraine
Costa Rica	Mozambique	United Kingdom
Dominican Republic	Namibia	Uzbekistan
Ecuador	New Zealand	

Source: World Health Organization, https://www.who.int/publications/i/item/WHO-HEP-HPR-TFI-2021.9.5

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