

# User guidance on the UCB Tobacco Tax Simulator



**What is the UCB Tobacco Tax Simulator?** The UCB Tobacco Tax Simulator simulates the impact of different tobacco tax reform scenarios. It compares different outcomes under the current indirect tax system (PIS/COFINS, ICMS and IPI) with estimated outcomes derived from different reform scenarios under the new dual VAT system (CBS and IBS) and the new selective tobacco tax that consists of an ad valorem and a specific tax component.<sup>1</sup> The impact of alternative cigarette tax reform scenarios is simulated with respect to 1) the price of cigarettes, for both cheaper and premium brands, 2) the total indirect tax burden on cigarettes, 3) the consumption of cigarettes and 4) tax revenue. The tax reform scenarios are modelled in a post-transition period.

**Where to find the simulator?** The UCB Tobacco tax simulator can be found online at the following address: <https://sim-brasil.koalab.art/>

**What is the objective of the simulator?** The objective of the tobacco tax simulator is to provide policymakers with a tool that allows setting different tax rates and, as a result, evaluate the impact of the tobacco tax reform and identify the interactions between the different tax parameters.

**How to use the simulator?** The user is allowed to set the parameters located at the top-left of the tool:

- **ST %:** Ad valorem component of the selective tax.
- **Fixed ST (BRL):** Specific component of the selective tax, defined over a 20-cigarette pack.
- **CBS:** CBS rate applied to the retail price of a 20-cigarette pack, net of the CBS and the IBS.
- **IBS:** IBS rate applied to the retail price of a 20-cigarette pack, net of the CBS and the IBS.
- **Min. legal price:** minimum legal retail price for a 20-cigarette pack.

## Tobacco tax design guidance when using the simulator

The Tobacco Tax Simulator allows the user to select different rates for the specific tax (fixed ST – BRL) and the ad valorem tax component (ST %) of the selective tax levied on tobacco products as well as the minimum legal price.

**The specific component of the selective tax** (i.e. a fixed tax amount per pack of cigarettes) **has a higher impact on cheaper brand prices**. Because the cigarette market share is higher for cheaper brands, the specific component will usually allow to **achieve a higher reduction in consumption**. Moreover, a high specific tax helps ensuring that the price of cigarettes is sufficiently high even for the cheapest brands. This will in turn reduce price dispersion and prevent smokers to switch to cheaper brands rather than quitting or reducing tobacco use.

**The ad valorem component of the selective tax is levied on a cigarette price; the law refers to a reference value that takes into account the retail price. As a result, tobacco tax revenues will follow cigarette sale values, which can grow above inflation.** Ideally, the reference value

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<sup>1</sup> The tax scenarios are based on the indirect tax reform legislated in [Lcp 214](#).

should be set as close as possible to the retail price (net of CBS, IBS and the Selective Tax) and should not be equal or similar to the ex-factory price. The ex-factory price is significantly lower than the pre-tax retail price as it does not include the margins that tobacco companies, wholesalers and retailers earn. It may induce firms to set low ex-factory prices in order to minimise the impact of the tobacco tax. Because they are levied on prices, ad valorem taxes are in general more costly to administer in contrast to specific taxes.

**An ad valorem tax will result in higher price increases for the premium brands, in absolute terms. However, a tobacco selective tax that relies on an ad valorem component only will result in low cigarette prices for the cheaper brands,** as the tax base is low. The different price increases between premium and cheaper brands, in absolute terms, derived from ad valorem designs could encourage smokers to shift from premium to cheaper brands to avoid the higher tobacco excise tax from the premium brands.

**Two different policy options would allow avoiding too low cigarette prices and its consequences on consumption.** First, setting a high specific selective tax. Second, setting a sufficiently high minimum price floor (minimum legal price of cigarettes). Depending on the tax rates and bases that are set, one option might be preferred over the other in terms of revenue collection. For example, if the ad valorem rates are low and/or the ad valorem tax base is narrow, setting a high specific selective tax will involve higher revenue collection in comparison to the use of a minimum legal price.

While the new Brazilian selective tax applied to cigarettes must have both ad valorem and specific components, it is **recommended that the specific component has a higher relative importance in the overall tax burden than the ad valorem component**, for the reasons indicated above.

### Simulation examples to guide the user

The goal of the Plano Nacional de DANT is to achieve a 40% reduction in tobacco use prevalence by 2030. A Selective Tax on tobacco products that effectively reduces consumption by **at least 30%** will significantly contribute to reaching the targeted reduction in prevalence. This goal can be achieved, for instance, when the ad valorem rate is set at 90%, the specific tax at 4.1 BRL and the minimum legal price at 6.5 BRL. The simulator allows the user to change these rates and to evaluate the effect of the chosen parameters. The sum of the CBS and IBS is set at 28%, but these rates can be changed by the user as well.

#### Cheaper brands

	BASELINE	USER SCENARIO
Price of the cheaper brands	6.81	9.61 (▲ 41.22%)
Total consumption	124.52	86.36 (▼ -30.65%)
Tax revenue (month)	621.88	680.40
IPI (Baseline)/ST (Scenarios)	273.71	494.39
PIS/COFINS (Baseline)/CBS (Scenarios)	95.34	61.98
ICMS (Baseline)/IBS (Scenarios)	252.83	124.03
Tax burden	72.61%	80.57% (▲ 10.97%)
IPI (Baseline)/ST (Scenarios)	32.04%	58.69%
PIS/COFINS (Baseline)/CBS (Scenarios)	10.97%	7.29%
ICMS (Baseline)/IBS (Scenarios)	29.59%	14.59%

#### Premium brands

	BASELINE	USER SCENARIO
Price of the premium brands	10.96	14.40 (▲ 31.33%)
Total consumption	55.40	39.31 (▼ -29.03%)
Tax revenue (month)	380.09	399.49
IPI (Baseline)/ST (Scenarios)	141.54	280.49
PIS/COFINS (Baseline)/CBS (Scenarios)	64.11	39.65
ICMS (Baseline)/IBS (Scenarios)	174.44	79.34
Tax burden	64.26%	72.81% (▲ 13.31%)
IPI (Baseline)/ST (Scenarios)	23.69%	50.93%
PIS/COFINS (Baseline)/CBS (Scenarios)	10.97%	7.29%
ICMS (Baseline)/IBS (Scenarios)	29.59%	14.59%

## Additional Information

### Key modelling decisions and assumptions:

To be completed

### Key parameters:

To be completed

### References & data sources

**Cigarette prices and consumption:** National Health Survey (PNS), 2019.

**Tobacco tax revenue collection:** Official data from Receita Federal.

**Tax structures:** Laws legislating IPI, PIS/COFINS, ICMS, CBS, IBS and the selective tax IS.

Divino, J. A., Ehrl, P., Candido, O., Valadão, M. & Iglesias, G. (2024), "Tax Reform and Selective Tax on Tobacco in Brazil", Institute for Health Research and Policy, Tobacconomics Working Paper 24/2/3

Divino, J. A., Ehrl, P., Candido, O., & Valadão, M. (2022), "Tobacco Tax Reform and Demand-Switching Effects Between the Licit and Illicit Markets in Brazil", Institute for Health Research and Policy, Tobacconomics Working Paper 22/8/1