Enhancing Europe's Tobacco Tax Directive for a Healthier Future

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Abstract

Background and objectives

The revision of the European Union's (EU) Tobacco Tax Directive (TTD) provides an opportunity for strengthening the TTD's role as a driver of significant increases in prices for tobacco products in the member states of the EU, as well as in countries that are considering joining and are in the process of harmonizing their fiscal systems with those of the bloc. Although a full draft of the European Commission's proposal for a new TTD has been circulating unofficially since late 2022, there is no timeline for the resumption of administrative and legislative steps necessary to complete the renewal process. The Commission's draft has been evaluated from the perspective of its likely impact on tobacco control in previous research published by the Tobacconomics (now Economics for Health) project. Building on that evaluation's insights, this report proposes several modifications that aim to enhance the TTD's impact and thus contribute to the policy debate surrounding the revision of the TTD.

Methods

The analysis is based on data on prices, taxes, market volumes, and sales of tobacco products in the European Union member states, which are supplemented with data on several other variables such as population, smoking prevalence, purchasing power parities, or inflation. The effects of tax changes are simulated by means of econometric models that produce country-specific estimates of prices, market volumes, market sales, and excise tax revenue.

Results

The proposals in this report would compensate for a portion of the loss of real value of tax rates due to inflation and harmonize the treatment of cigarettes and fine-cut tobacco. They also simplify the architecture of the tax rules, eliminating what is, in effect, a price-tiered system for the minimum excise applicable to all tobacco products except cigarettes. Such measures would reduce the demand for cigarettes and fine-cut tobacco while simultaneously increasing excise revenue beyond what would be expected from the existing draft. In the process, the gap between the prices of fine-cut tobacco and cigarettes would gradually diminish. Also, this report proposes creating a minimum excise floor for all products, both traditional and new, thus limiting the scope for ultra-cheap brands.

Conclusions

The proposals in this report would reinforce the public health impact of Europe's tobacco tax architecture by decreasing smoking prevalence and discouraging the uptake of nicotine products. Furthermore, they would raise public revenue at a time when European treasuries face daunting demands due to ageing populations, geopolitical instability, and climate change. For the sake of the health of Europe's citizens, the European Commission that will be formed after the recent elections to the European Parliament should receive a clear mandate to resume the renewal process placing a priority on public health objectives. Implementing the proposals presented here would ensure those objectives are embedded into the new Directive.

Contents

List of tables and figures

1. Introduction

The revision of the current European Union's (EU) Tobacco Tax Directive (TTD), formally known as Council Directive 2011/64/EU, has come to a halt. The pause has occurred at an advanced stage in the European Commission–led process, as evidenced by the existence of a complete draft for a new TTD circulating unofficially since late 2022 (Smoke Free Partnership, 2022) and despite the crucial role that an updated tax framework for the bloc was expected to play in the original roadmap of Europe's Beating Cancer Plan (Eccles et al., 2024). As of today it is uncertain whether the process will resume after a new European Commission is formed following the European Parliament elections in June 2024 (Andrés et al., 2024).

This is an unfortunate situation, as the European Commission's draft (hereafter referred to as "Draft TTD") addressed some of the shortcomings of the current EU's tobacco tax architecture (hereafter referred to as "Current TTD") in light of recent developments in the market for tobacco products. Ideally, the remaining legislative steps leading to a new TTD should be taken as soon as possible. However, as well-intentioned as the Draft TTD is, it does not correct some important loopholes that diminish its potential impact on tobacco control, as discussed in previous research from the Tobacconomics (now Economics for Health) project (López-Nicolás, 2023, 2024). The goal of this report is to present several modifications to the draft TTD, referred to as the "Enhanced Draft TTD" hereafter, that would improve the impact of the EU fiscal rules for tobacco products on public health outcomes.

Section 2 of this report briefly reviews the aspects of the Draft TTD that merit reconsideration and introduces the modifications proposed in the Enhanced Draft TTD, which is rooted in three well-known guiding principles for the design of tobacco taxes (World Health Organization, 2021):

1. nominal tax rates should be updated to preserve their protective power in the face of inflationary processes;
2. tax rules should not generate tax advantages between substitutive products; and
3. tiered tax structures, where rates depend on retail prices, should be replaced by uniform structures.

Section 3 presents an illustration of the effects of the Enhanced Draft TTD vis-à-vis the Draft TTD and the Current TTD. In the case of cigarettes and fine-cut tobacco (FCT)—still by far the most important tobacco products in the EU—the illustration focuses on product affordability, inter-product price gap, market demand, and excise revenue. For the remaining tobacco and tobacco-related products considered in this report, the illustration focuses on the impact on the excise tax floor for each product class under the three policy scenarios.

The concluding section is followed by an appendix containing information on methods and data sources.

2. Enhancing the Public Health Impact of the Tobacco Tax Directive

The Enhanced Draft TTD proposed in this report preserves the beneficial aspects of the European Commission's Draft TTD, which include the adjustment of fixed minimum rates according to purchasing power parities, periodic inflation updates, and the creation of fiscal categories for new products. The Enhanced Draft TTD improves upon the Draft TTD, however, by incorporating additional proposals that aim to correct for its main public health shortcomings, which have been exposed by previous research (López-Nicolás, 2023, 2024).

The first of such shortcomings concerns the increasing affordability of cigarettes in Europe, which was highlighted in the latest edition of the Tobacconomics Cigarette Tax Scorecard (Drope et al., 2024). Unfortunately, the Commission's plans in this regard, while positive, would have only a limited effect on this important determinant of consumption. A major factor in the rising affordability of cigarettes is the increase in inflation experienced across the bloc in recent years. Therefore, the Enhanced Draft proposes an update for inflation in the nominal minimum rates proposed in the Draft TTD. Such an increase would compensate for the expected growth in consumer prices between 2022—the year when the Draft TTD was circulated—and its planned enactment in 2025.

Second, even if both the European Commission (European Commission, 2020) and the European Council (European Council, 2020) recognize the tax-induced price gaps that promote substitution between cigarettes and fine-cut tobacco (FCT) as causes for concern, the Commission's Draft TTD would unfortunately not address this important issue. In contrast, its implementation would likely result in a widening of the price gap. Consequently, this Enhanced Draft TTD includes measures that both modify the structure and increase the rates of the minimum excise borne by FCT to help bridge these price gaps.

Third, the welcome creation of new fiscal categories for heated tobacco products, liquids for electronic cigarettes, and nicotine pouches in the Draft TTD is not accompanied by an effective design for their minimum taxes. This ineffectiveness mainly results from the adaptation of the structure and rules of minimum rates currently applicable to cigarillos, cigars, or pipe tobacco to the new products. For instance, while the World Health Organization (WHO) recommends treating heated tobacco products and cigarettes equally for tax purposes, the Draft TTD would allow the minimum tax applicable to heated tobacco products to be a fraction of their retail price. This would confer a clear fiscal advantage with respect to cigarettes, whose minimum tax must surpass a fixed minimum regardless of retail price.

By facilitating the marketing of cheap brands, this so-called "relative minimum clause" is arguably the loophole that has encouraged the tobacco industry to market products aimed at substituting cigarettes under a much lighter tax burden, as showcased by the so-called "borderline cigarillos" (that is, products that are classified as cigarillos for tax purposes but are very similar to cigarettes) (Branston et al., 2021; Lindblom et al., 2020). To prevent such tactics, a key component of the Enhanced Draft TTD is the suppression of the relative minimum clause for both the product categories covered by the current TTD and the new categories included in the Draft TTD.

Table 1 provides a detailed comparison of the rules determining the minimum rates applicable to tobacco products in the Current TTD (top panel), the Draft TTD (middle panel), and the Enhanced Draft TTD (bottom panel).

Concerning the first shortcoming discussed above, note that the Enhanced Draft TTD applies an update of 12.8 percent to the fixed minima of the Draft TTD to account for the expected growth in consumer prices across the bloc for the period 2022–2025. Thus, the fixed minimum rate for cigarettes would rise to €203 per 1,000 units.

An important component of the Enhanced TTD, aimed at addressing the second shortcoming, consists of equalizing the rate for the minimum fixed rate for fine-cut tobacco to that of manufactured cigarettes, using an equivalence of 0.7 grams of FCT per rolled cigarette. Considering the fixed minimum rate of €203 per 1,000 units noted above, the fixed minimum rate for fine cut tobacco would increase to €290 per kilogram.

Regarding the structure of minimum taxes, and to address the third shortcoming discussed above, the Enhanced Draft TTD's most prominent difference with respect to the Draft TTD is the removal of the relative minimum clauses for products where they might replace the fixed minimum clause. This applies to all products except cigarettes.

Table 1. Structure of minimum excise rates under the three policy scenarios

				CURRENT TTD	
		Fixed minimum	**Conjunction**	**Relative minimum**	**Base for relative minimum**
Traditional categories	**Cigarettes**	€90 / 1000 units	AND	60%	WAP (average across brands)
	FCT	€60 /kg	OR	50%	WAP (average across brands)
	Cigars and cigarillos	€12 / 1000 OR €12 /kg	OR	5%	RSP (brand specific)
	Other smoking tobacco	€22 /kg	OR	20%	RSP (brand specific)
				DRAFT TTD	
		Fixed minimum*	**Conjunction**	**Relative minimum**	**Base for relative minimum**
Traditional categories	**Cigarettes**	€180 / 1000 units	AND	63%	WAP (average across brands)
	FCT	€180 /kg	OR	62%	WAP (average across brands)
	Cigarillos* **	€120 / 1000 OR €120 /kg	OR	40%	RSP (brand specific)
	Cigars* **	€120 / 1000 OR €120 /kg	OR	40%	RSP (brand specific)
	Water pipe tobacco* **	€90 /kg	OR	50%	RSP (brand specific)
	Other smoking tobacco* **	€120 /kg	OR	50%	RSP (brand specific)
New categories	**Other manufactured tobacco*** **	€120 /kg	OR	50%	RSP (brand specific)
	HTP	€91 / 1000 OR €130 /kg	OR	55%	RSP (brand specific)
	Liquids for electronic cigarettes	€0.10 /ml ; €0.30 / ml**	OR	20%; 40%**	RSP (brand specific)
	Nicotine pouches* **	€120 / kg	OR	50%	RSP (brand specific)
	Other nicotine products* **	0	Not applic.	50%	RSP (brand specific)
				ENHANCED TTD	
		Fixed minimum*†	**Conjunction**	**Relative minimum**	**Base for relative minimum**
Traditional categories	**Cigarettes**	~~€180~~ €203 / 1000 units	AND	63%	WAP (average across brands)
	FCT ††	~~€180~~ €290 / kg	~~OR~~	~~62%~~	~~WAP (average across brands)~~
	Cigarillos* **	~~€120~~ €135 / 1000 ~~OR €120 /kg~~	~~OR~~	~~40%~~	~~RSP (brand specific)~~
	Cigars* **	~~€120~~ €135 / 1000 ~~OR €120 /kg~~	~~OR~~	~~40%~~	~~RSP (brand specific)~~
	Water pipe tobacco* **	~~€90~~ €102 /kg	~~OR~~	~~50%~~	~~RSP (brand specific)~~
	Other smoking tobacco* **	~~€120~~ €135 /kg	~~OR~~	~~50%~~	~~RSP (brand specific)~~
New categories	**Other manufactured tobacco*** **	~~€120~~ €135 /kg	~~OR~~	~~50%~~	~~RSP (brand specific)~~
	HTP	~~€91~~ €103 / 1000 ~~OR €130 /kg~~	~~OR~~	~~55%~~	~~RSP (brand specific)~~
	Liquids for electronic cigarettes	~~€0.10~~ €0.12 /ml ; ~~€0.30~~ €0.34 / ml**	~~OR~~	~~20%; 40%**~~	~~RSP (brand specific)~~
	Nicotine pouches* **	~~€120~~ €135 / kg	~~OR~~	~~50%~~	~~RSP (brand specific)~~
	Other nicotine products* **	0	~~Not applic.~~	~~50%~~	~~RSP (brand specific)~~

*** Adjusted by PPP and periodically updated with inflation**

**** If nicotine concentration > 15mg/ml**

***** Adjustment over 4 years**

† Same rates as in Draft TTD updated by 12.8% to account for average expected inflation across the EU between 2022-2025

†† Equalization of tax burden with that of cigarettes using a 0.7 grams / stick weight equivalence

To reiterate, the rationale for the removal of relative minimum clauses is that they allow for the application of undervaluation strategies that reduce the minimum tax burden per unit of product: either by using the product's weighted average price (WAP) as a base, as is the case for FCT, or using the brand's retail price, as is the case with the rest of products, such clauses give the tobacco industry the possibility of determining the excise applicable to its products. This is particularly problematic when the base is the brand's retail price, because the lowest excise duty (LED) per unit of product—that is, the smallest excise a product class must bear no matter how cheap some of its brands may be[1]—directly depends on the marketer's decision. In effect, this is a perfectly tiered tax system where tiers are based on retail price. In the extreme, this design flaw implies that a brand selling for €0 would bear no excise duty.

[1] See the Appendix for a formal definition of the LED.

3.Effects of the Enhanced Draft TTD

The effects of the reforms that distinguish the Enhanced Draft TTD proposals from those in the Draft TTD are illustrated by estimating the evolution of a series of outcomes until 2030 for three policy scenarios. The first scenario "Current TTD" corresponds to a situation where the current TTD is not reformed. The "Draft TTD" scenario corresponds to the adoption of the proposals in the European Commission's draft. The "Enhanced Draft TTD scenario" in turn represents the adoption of the Commission's proposals with the enhancements discussed in the previous section. The illustration adopts 2025, the year in which a new TTD should start as per the Draft TTD, as the starting year for either the Draft TTD or the Enhanced Draft TTD. The simulations for years beyond 2024 use the tax rates prevailing in 2024 in each of the member states.

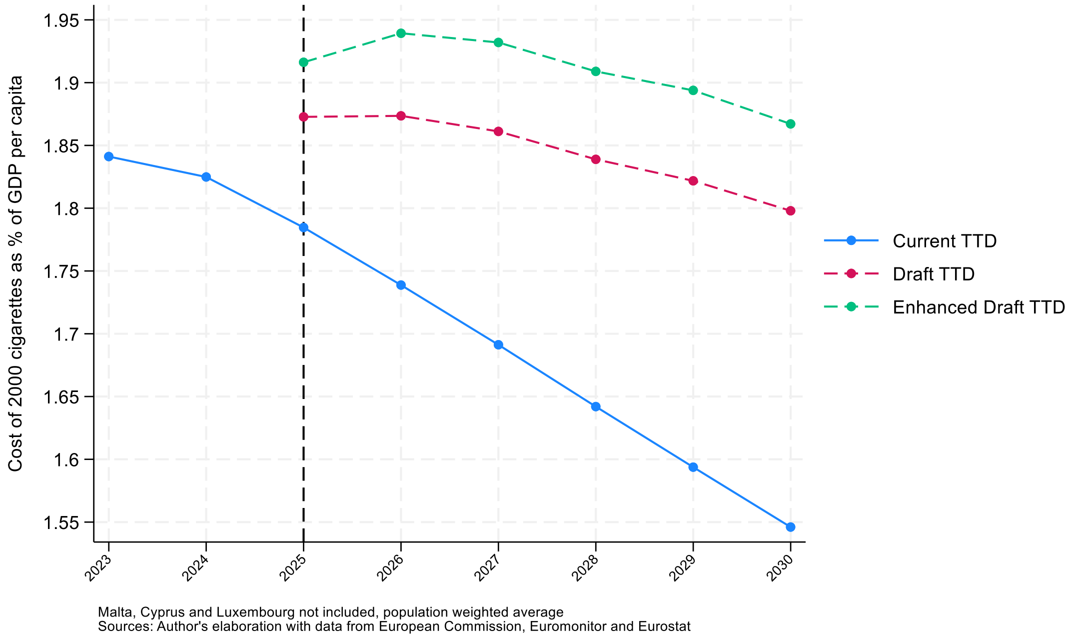
The estimates for product prices, market volumes, and excise revenue under these alternative scenarios are based on econometric models that relate changes in tax rates to changes in product prices and, subsequently, the effects of the latter on product demand. The specifications of such models also include secular trends, inflation, gross domestic product (GDP) growth, and country fixed effects.[2]

3.1 Affordability of cigarettes

Figure 1 shows the evolution of the affordability of cigarettes, measured by the cost of 2,000 average-priced units as a proportion of GDP per capita (Blecher & Walbeek, 2004), in each of the three policy scenarios. Under the Current TTD, the trend of recent years would persist and become even more acute after 2025. The Draft TTD would partly correct this downward slide; however, this policy scenario would lead to cigarettes becoming more affordable by 2030 than they were in 2023.

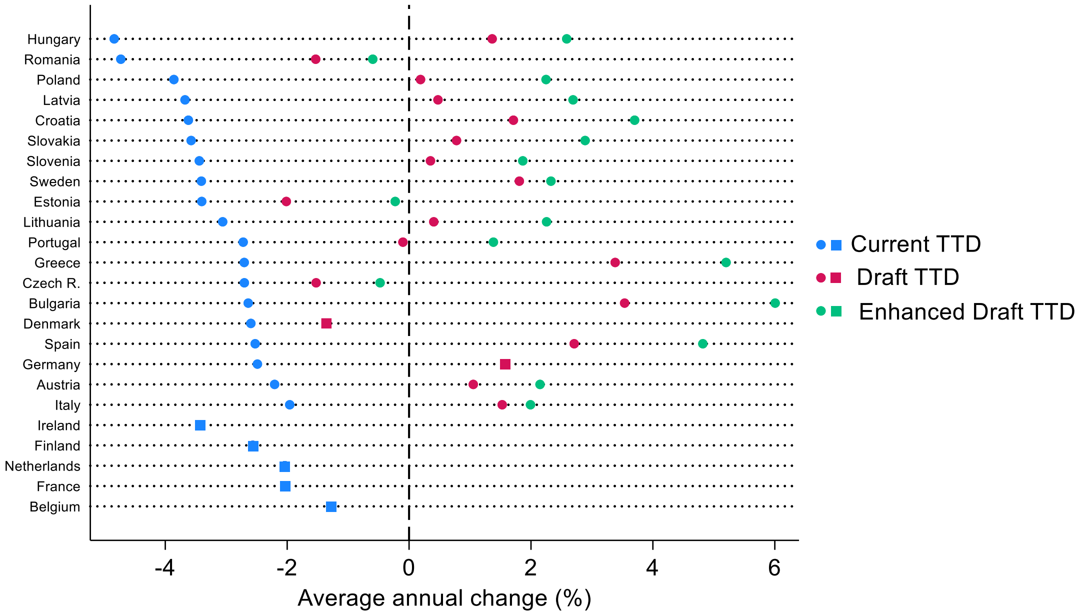
[2] More details on the models, specifications, and estimations are available in the Appendix.

Figure 1. Affordability of cigarettes in the European Union



In contrast, the Enhanced Draft TTD scenario would render cigarettes less affordable than in 2023 throughout the whole of the simulation window. It is worth noting, however, that even this scenario would not be able to correct for the increase in affordability experienced prior to 2023 across the bloc that has been documented elsewhere (Drope et al., 2024; López-Nicolás, 2023).

Figure 2. Change in cigarettes' affordability, 2025–2030

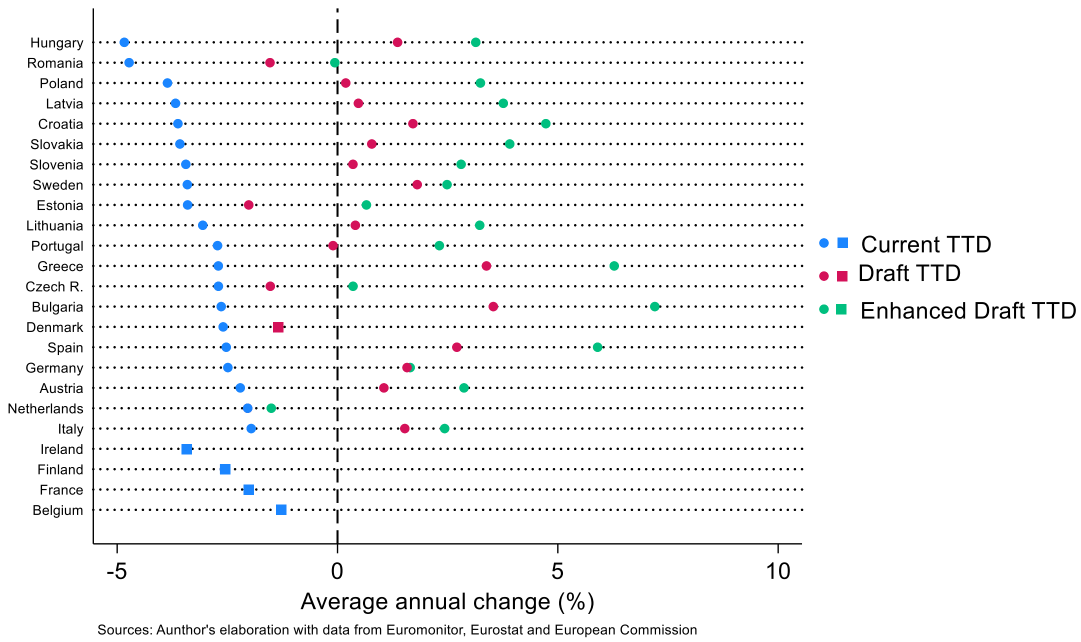


Sources: Author's elaboration with data from Euromonitor, Eurostat and European Commission

Figure 2 presents the expected changes in the affordability of cigarettes over 2025–2030 at the country level, with negative changes representing greater affordability and vice versa. Under the Current TTD, cigarettes would become more affordable in the 24 countries represented therein. In contrast, under the Draft TTD, affordability would increase in 10 countries, while with the Enhanced Draft TTD it would increase in nine: Ireland, Finland, the Netherlands, France, Belgium, Denmark, Romania, Estonia, and the Czech Republic. The first five of these, marked in the graph with a blue square, are countries whose cigarette tax rates are already higher than what either the Draft TTD or the Enhanced Draft TTD would prescribe. Similarly, with the Draft TTD, Denmark would reach a tax level high enough to render the Enhanced Draft TTD not binding as far as cigarettes are concerned. The German case is similar to Denmark in this regard, and both countries are represented with a red square to denote this, although in Germany, the Draft TTD would suffice to reduce affordability in comparison with the Current TTD. The remaining three countries where the price increases induced by either the Draft TTD or the Enhanced Draft TTD are not sufficient to reduce affordability are Romania, Estonia, and the Czech Republic.

That the Enhanced Draft TTD does not lead to reductions in affordability in these three countries suggests a potentially promising variation, whereby, instead of expected inflation, expected GDP growth per capita is used to upgrade both the starting fixed minima and their triannual updates.[3] The impact of such variations on cigarette affordability is shown in Figure 2 (bis).

Figure 3(bis). Change in cigarettes' affordability, 2025–2030; Enhanced Draft TTD using GDP per capita growth to update fixed minimum rates



As seen in Figure 2(bis), an Enhanced Draft TTD using GDP per capita growth to update the fixed minimum rates would guarantee that affordability would not increase in Romania, Estonia, and the Czech Republic, while further reducing affordability in most of the rest of the countries vis-á-vis using inflation as the update factor.[4]

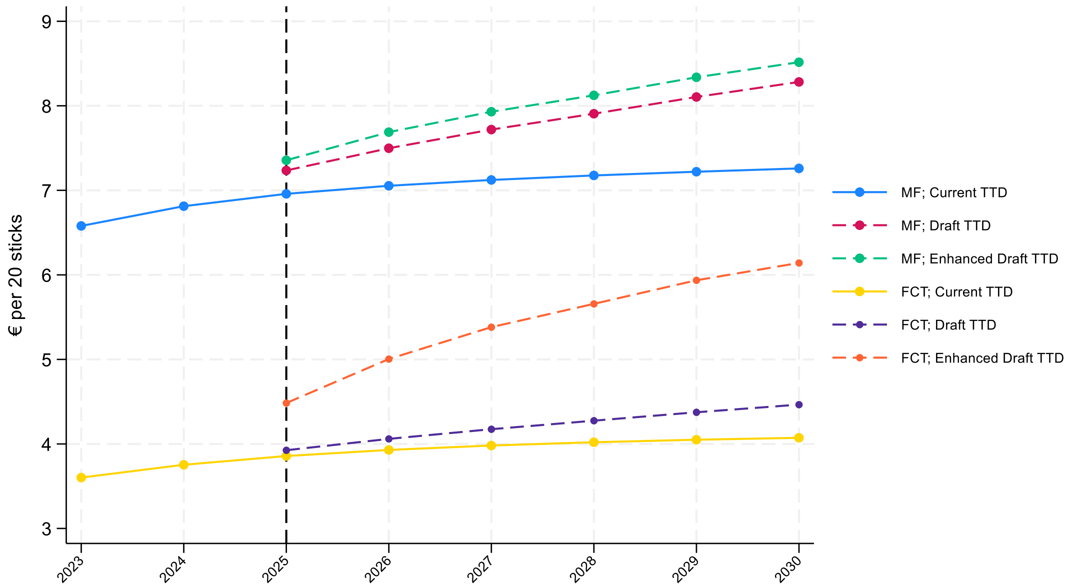
[3] The starting fixed minima would be increased by 15 percent instead of 12.8 percent, while their first triannual update would amount to 12.3 percent instead of 6 percent.

[4] Growth in GDP per capita is perhaps the most obvious alternative to inflation as an updating factor because cigarette affordability typically uses it as reference (Blecher & Walbeek, 2004), but other macroeconomic indicators could be used for periodic updates of minimum tax rates. For instance, growth in household income or wages. Since the World Economic Outlook Database does not include these data among their forecasts, such alternatives cannot be illustrated here.

3.2 Price gap between cigarettes and FCT

Figure 3 presents the expected evolution of the average retail prices[5] of cigarettes and FCT in the bloc under the Current TTD, Draft TTD, and Enhanced Draft TTD. The figure suggests a modest increase in prices for both products under the Current TTD. The effects of the Draft TTD scenario on the price of FCT are small, both in absolute terms and in relation to the corresponding effects on the price of cigarettes. In the Enhanced Draft TTD scenario, the prices of FCT would rise by a noticeable margin, contributing to a progressive reduction in the price gap between the two products.

Figure 4. Average retail prices of cigarettes and FCT in the European Union



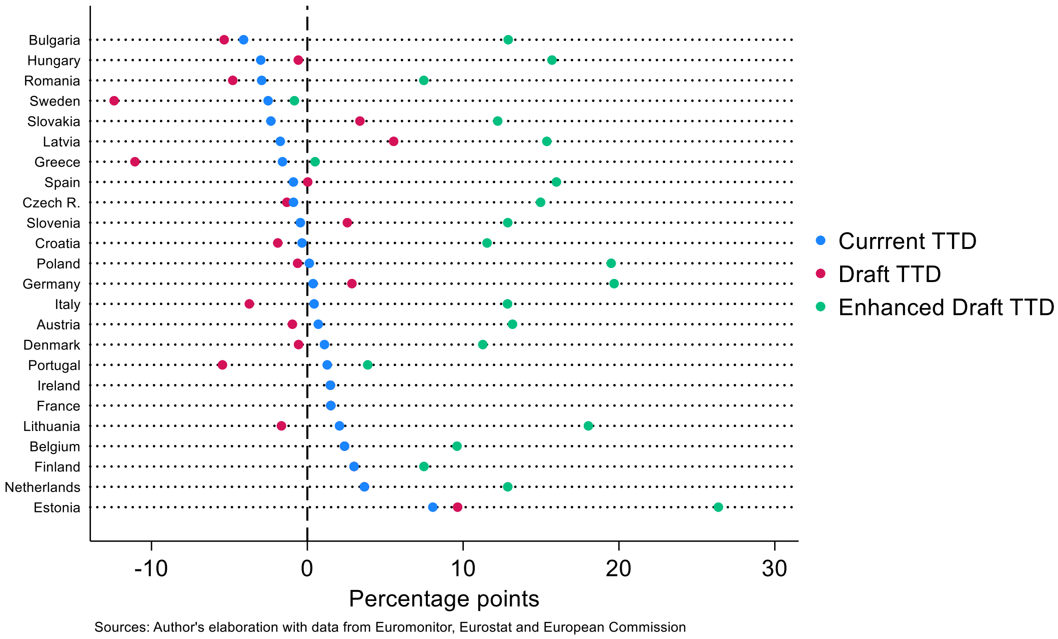
Malta, Cyprus and Luxembourg not included, population weighted average
Sources: Author's elaboration with data from European Commission, Euromonitor and Eurostat

Figure 4 presents the expected change in the ratio of the price of FCT to the price of cigarettes over 2025–2030 at the national level. It suggests that the price gap would decrease in all countries but Sweden under the Enhanced Draft scenario. On the other hand, under the Draft TTD some countries would experience a greater widening of the price gap than with the Current

[5] All monetary figures are expressed in current prices unless otherwise stated.

TTD. This attests to the importance of removing the relative minimum clause and equalizing the fiscal burdens for FCT prices to approach those of cigarettes.

Figure 5. Change in ratio of price of FCT to price of cigarettes, 2025–2030

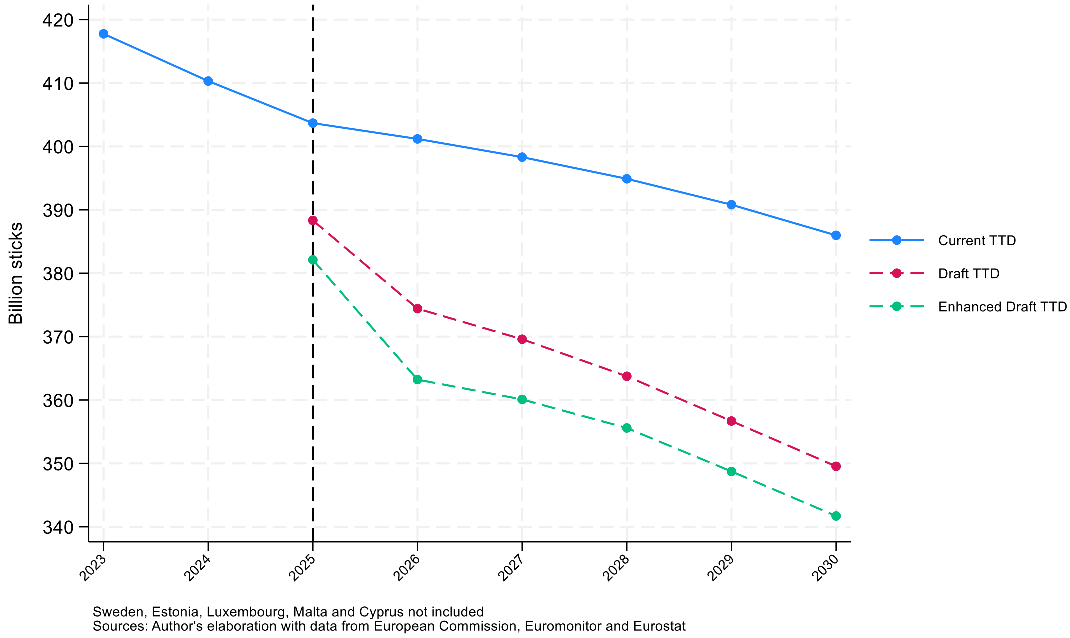


3.3 Effects on market volumes and excise revenue from cigarettes and FCT

Figures 5 and 6 present, respectively, the evolution of the market volumes of cigarettes and FCT in the bloc[6]. By 2030, the Draft TTD scenario is expected to lead to a reduction in market demand for cigarettes of about 36 billion sticks with respect to the Current Draft. The Enhanced Draft TTD would add about 8 billion sticks to that reduction.

[6] The volume of FCT in terms of sticks is calculated assuming a weight equivalence of 0.7 grams per stick.

Figure 6. Evolution of cigarettes volume in the European Union



Note however that, as shown in Figure 6, under the Draft TTD scenario the market volume of FCT would remain practically unchanged with respect to its expected path under the Current TTD. In fact, the volume of FCT would slightly increase in 2025 and 2026 in the Draft TTD scenario, suggesting that a fraction of the decline in demand for cigarettes in that scenario would be absorbed by increases in the demand for FCT. In contrast, the expected path of FCT volume under the Enhanced Draft TTD scenario would lead to a reduction of about 27 billion sticks with respect to either the Current TTD or the Draft TTD scenarios by 2030.

Figure 7 presents, at the country level and over the six years comprised in the 2025–2030 period, the expected changes in market volumes for cigarettes and FCT under the Draft TTD and Enhanced Draft TTD scenarios, each with reference to the path of demand under the Current TTD. The Draft TTD would reduce volumes in all countries except the Netherlands, Belgium, Finland, Ireland, and France (all marked with squares). The Enhanced Draft TTD would lead to larger volume reductions in the countries affected by the Draft TTD and would also induce volume declines in three of the five countries singled out above (red squares). The Enhanced Draft TTD would not affect volumes in Ireland and France only (green squares), as these countries currently apply tax rates higher than what either the Draft TTD or the Enhanced Draft TTD would prescribe for either cigarettes or fine-cut tobacco.

Figure 7. Change in volume of cigarettes and FCT with respect to Current TTD, 2025–2030

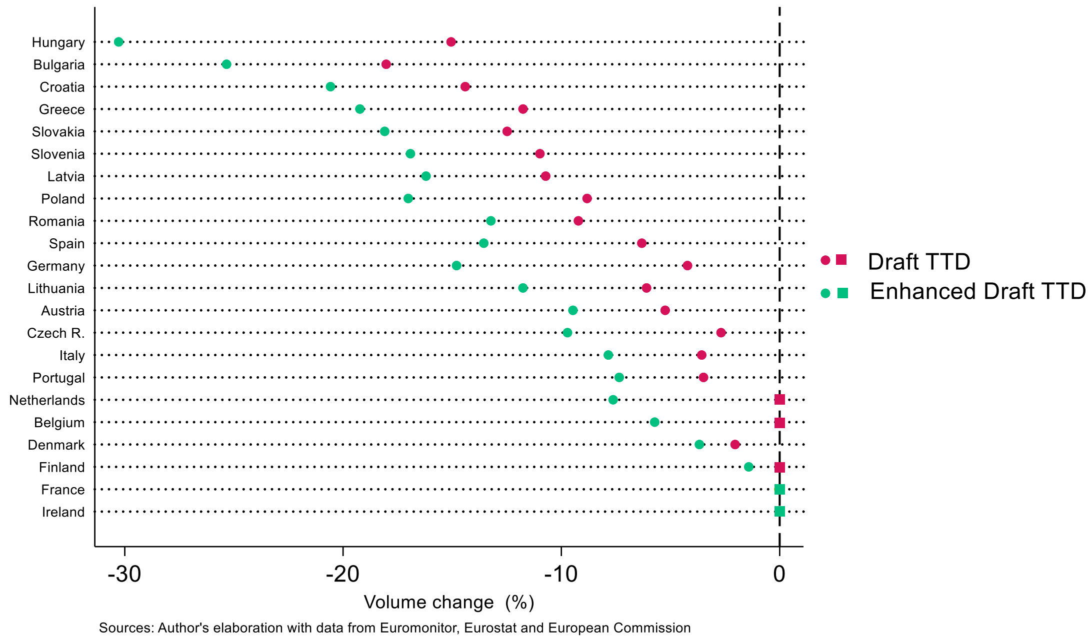
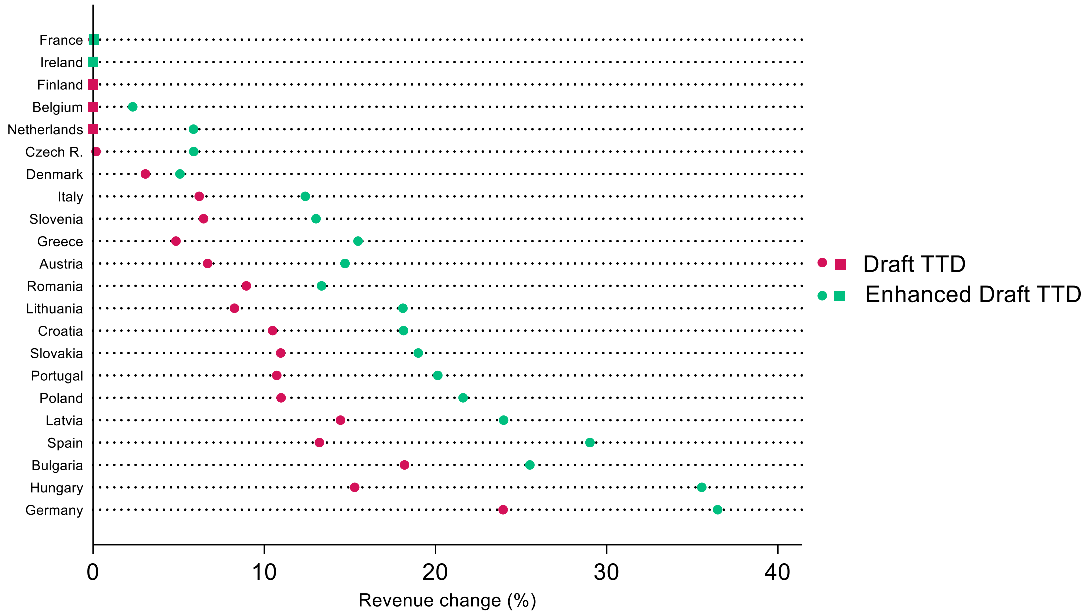


Figure 8 presents the corresponding expected change in excise revenue from cigarettes and fine-cut tobacco. Note that, reflecting the price-inelastic nature of the demand for these products, the expected volume reductions shown in Figure 7 are mirrored by increases in revenue for national treasuries in Figure 8. Again, the only countries where the Enhanced Draft TTD would not affect revenue are France and Ireland.

Figure 8. Change in excise revenue with respect to current TTD, 2025–2030



Sources: Author's elaboration with data from Euromonitor, Eurostat and European Commission

3.4 Effects on other tobacco and tobacco-related products

For products other than cigarettes and FCT, the Enhanced Draft TTD proposals consist of: i) removing the relative minimum clauses that permit setting the applicable minimum excise duty as a fraction the brand’s price; ii) the removal of the “by units” or “by weight” option applicable to the fixed minimum excise on cigarillos, cigars, and heated tobacco; and iii) the inflation update of the nominal minimum excises to account for the expected increase in consumer prices between 2022 and 2025.

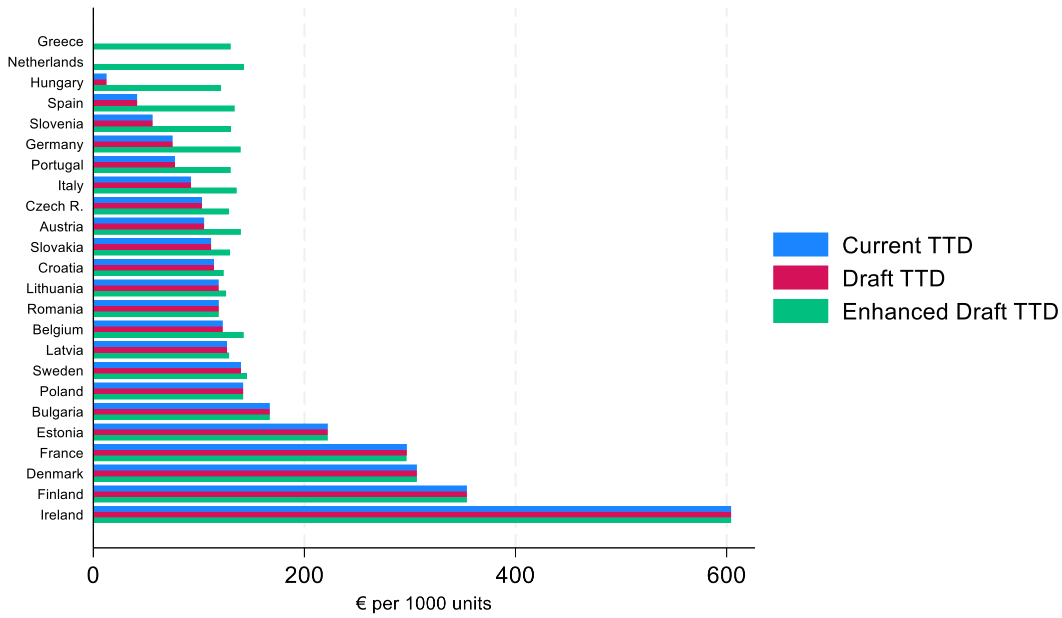
The illustration of the effects of such measures is based on a comparison of the product’s class lowest excise duty (LED) across the three scenarios considered herein. For cigarillos, cigars, and pipe tobacco, the effects are shown as of year 2028 to allow for a four-year adaptation period, as prescribed in the Draft TTD. For the rest of the products, the comparison year is 2025.

Cigarillos

As seen in Figure 9, the Draft TTD would not modify the LED for this product class in any of the member states, neither in countries that have not introduced fixed minimum excise taxes (Greece and Netherlands, where the LED under the Current TTD is zero) nor in countries that have done so, no matter how small such a fixed minimum excise tax may be (for example, Hungary or Spain). Even if the Draft TTD scenario envisages substantial increases in the nominal fixed minimum excise, from the €12 per 1,000 units in the Current TTD to €120 per 1,000 (adjusted by PPP), the relative minimum clause would clearly permit the overruling of this new larger fixed minimum excise.

In contrast, the Enhanced Draft TTD, with a fixed minimum of €135 per 1,000 units (adjusted by PPP) and absent the relative minimum clause, would create an effective minimum excise floor in the countries that currently do not have one as well as raise it in those where the existing one is small. The Enhanced Draft TTD would not affect the LED in countries where domestic policies already reach or surpass the level established by this fixed minimum clause.

Figure 9. Lowest excise duty for cigarillos

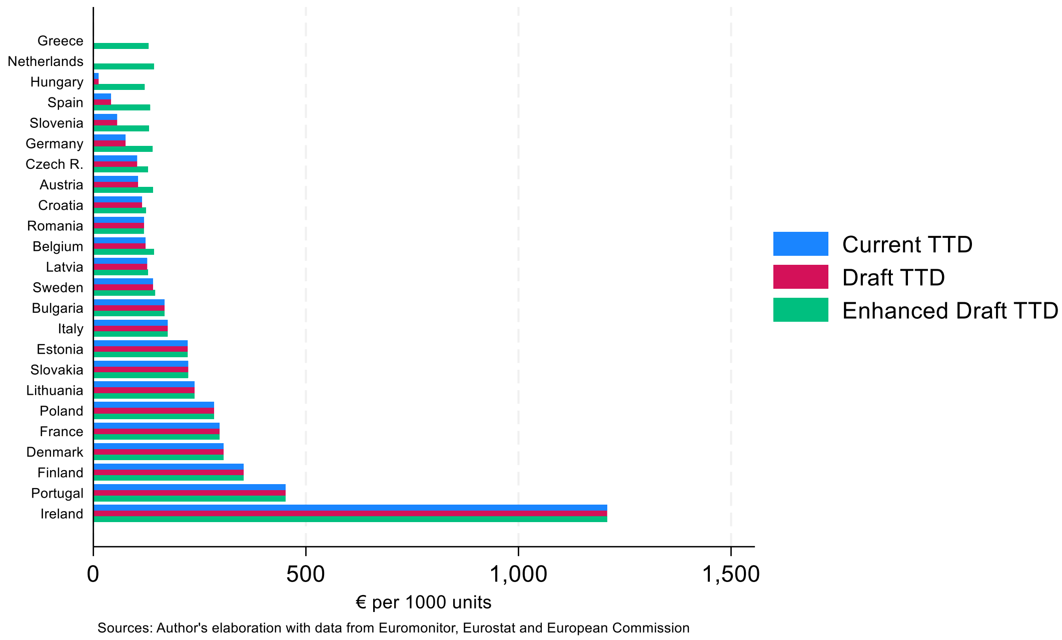


Sources: Author's elaboration with data from Euromonitor, Eurostat and European Commission

Cigars

The case of cigarillos discussed above is representative of the effects of the Enhanced TTD draft on the rest of products considered in this section, in the sense that this scenario would establish a manipulation-free minimum excise tax floor. The case of cigars in shown in Figure 10. For countries such as the Netherlands or Greece, the Enhanced Draft TTD would correct for the absence of a domestic fixed minimum excise. In other countries, the existing small LED would be surpassed by the €135 (adjusted by PPP) per 1,000 units prescribed by the fixed minimum clause in this scenario.

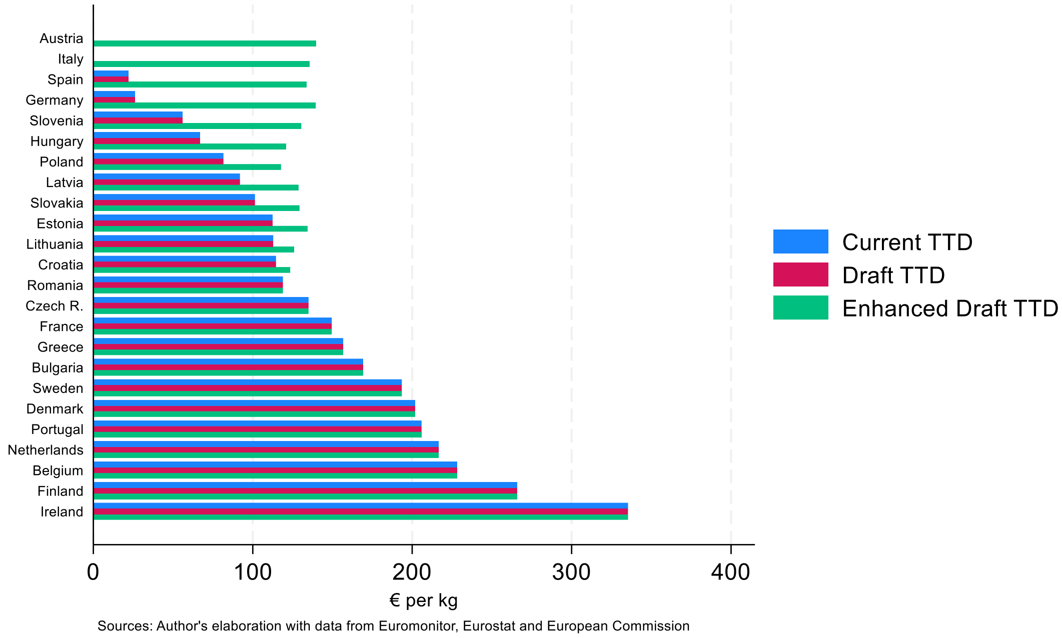
Figure 10. Lowest excise duty for cigars



Pipe tobacco

Figure 11 presents the case of pipe tobacco, for which the Enhanced Draft TTD prescribes a fixed minimum excise of €135 per kilogram.

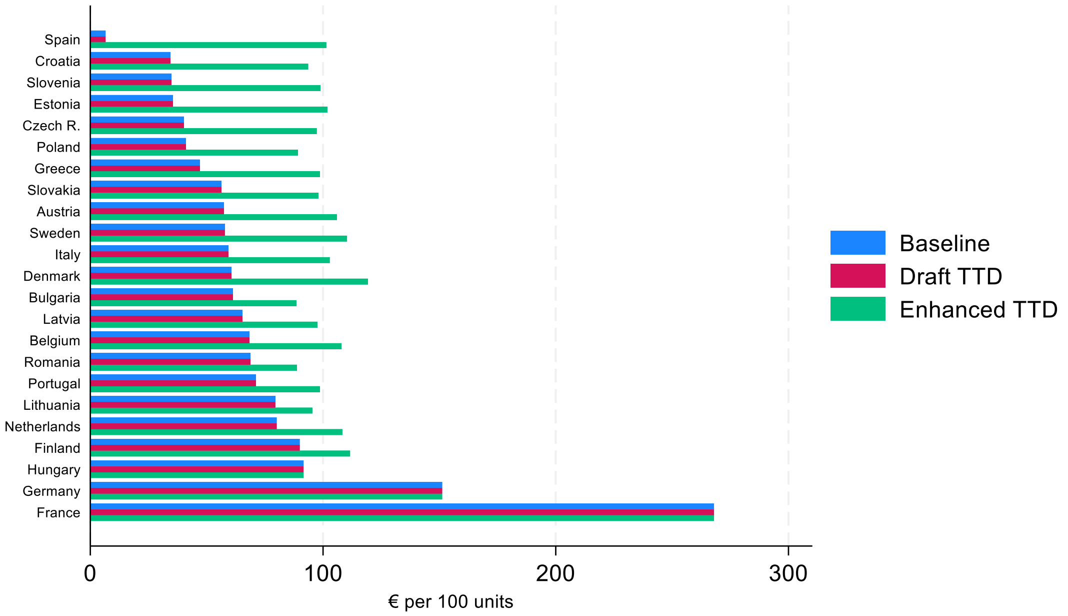
Figure 11. Lowest excise duty for pipe tobacco



Heated tobacco products

Figure 12 presents the case of heated tobacco products, for which the Enhanced Draft TTD would establish a fixed minimum excise of €103 (adjusted by PPP). This would raise the LED for this product's class in most member states. The remarkable exceptions are Germany and France, which have advanced towards the WHO prescription to tax heated tobacco products in the same way as cigarettes. Among the countries where the LED for this product would experience a substantial increase, there are cases that to date treat heated tobacco products as "other smoking tobacco" for tax purposes, which is clearly an inadequate approach from the point of view of public health.

Figure 12. Lowest excise duty for heated tobacco products

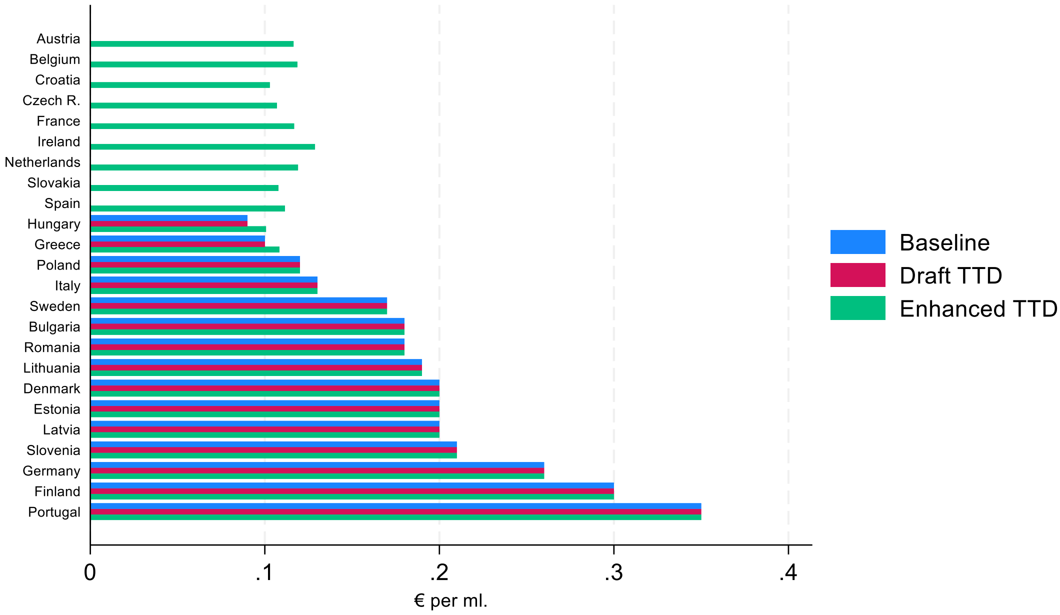


Sources: Author's elaboration with data from Euromonitor, Eurostat and European Commission

Liquid for electronic cigarettes

Figure 13 shows how the Enhanced Draft TTD would be able to establish an effective minimum tax floor on liquids for electronic cigarettes in countries that currently do not excise this product. It is important to note, again, that the Draft TTD would not accomplish such an effect due to its retention of the relative minimum clause.

Figure 13. Lowest excise duty for liquids for electronic cigarettes



Sources: Author's elaboration with data from Euromonitor, Eurostat and European Commission

4. Conclusions

The renewal of the TTD provides an opportunity to reinforce its role as a driver of significant increases in prices for tobacco products in the member states of the European Union, as well as in states that opt for accession and are in the process of harmonizing their fiscal systems with those of the bloc. Although a full draft of the European Commission's proposal for a new TTD has been circulating unofficially since late 2022, there is no timeline for a resumption of the administrative and legislative steps necessary to complete this renewal process. The Commission's Draft TTD has been evaluated from the perspective of its likely impact on tobacco control in previous research within the Tobacconomics (now Economics for Health) project. Building on the evaluation's insights, this paper proposes several modifications to the Draft TTD that aim to enhance its impact and thus contribute to the policy debate surrounding the revision of the TTD.

The modifications in the Enhanced Draft TTD compensate for a portion of the loss of real value of tax rates due to inflation and harmonize the treatment of cigarettes and fine-cut tobacco while also, and perhaps most significantly, simplifying the architecture of the tax rules. By removing the so-called "relative minimum clause," the Enhanced TTD would eliminate what is, in effect, a price-tiered system for the minimum excise applicable to all tobacco products except cigarettes. The Enhanced Draft TTD would increase the reduction in demand for cigarettes and FCT and simultaneously would lead to excise revenue increases beyond what may be expected of the Draft TTD. In the process, the gap between the prices of FCT and cigarettes would gradually diminish. Additionally, the Enhanced Draft TTD would create a minimum excise floor for all products, thus limiting the scope for ultra-cheap brands. Considering the rapid growth in the sales of novel tobacco and tobacco-related products, this is a long-overdue measure.

The Enhanced Draft TTD would strengthen the public health impact of Europe's tobacco tax architecture by reducing smoking prevalence and discouraging the uptake of nicotine products. Simultaneously, it would raise public revenue at a time when European treasuries face daunting demands due to ageing populations, geopolitical instability, and climate change. The fate of the TTD renewal process will surely serve as an indicator of the direction in which the European Project will advance in the coming years. If it is definitively archived or ends up yielding a text of little impact, the entire burden of the fight against smoking will be placed on the individual governments of member states. This would not bode well for the future of other areas of public policies that require greater coordination and critical mass to, among other things, become impervious to supranational lobbies including the tobacco industry. For the sake of the health of Europe's citizens, the European Commission that emerges after the recent elections to the European Parliament should receive a clear mandate to resume the renewal process placing a priority on public health objectives. The adoption and implementation of the fiscal measures presented herein would ensure those objectives are embedded into the new Directive.

Appendix

Data

The results presented in this study are based on data on tobacco tax rates and value-added tax rates; data on the market volumes and sales of tobacco and tobacco-related products; a general consumption price index and an index reflecting purchasing power differences across countries; and data on population, inflation, and GDP per capita. The analysis is carried out at the EU's member states level, from which EU aggregates and/or population weighted averages are computed. Results are not available for Malta and Cyprus due to lack of data. Incomplete data or data inconsistencies for Sweden, Estonia, and Luxembourg preclude their inclusion in the analysis of the demand and revenue effects of the tax reforms and, only in the case of Estonia, the effects of tax reforms on the price of FCT.

The sources for these data are:

The European Commission's Taxes in Europe Database (European Commission, 2024a)

- Excise tax rates and VAT rates for all EU member countries for cigarettes, FCT, cigarillos, cigars, and pipe tobacco. Yearly data for period 2011–2024.

Eurostat (*Eurostat*, 2023)

- Harmonized Index of Consumer Prices for all EU member states. Yearly data for period 2011–2023.
- Comparative Price Levels for all EU member countries. Yearly data for 2011–2022.
- Gross Domestic Product per capita for all EU member countries. Yearly data for 2011–2022.

Euromonitor International Passport Database (Euromonitor International, 2023)

- Legal market volumes and sales of cigarettes, fine-cut tobacco, cigarillos, cigars, pipe tobacco, and heated tobacco products for all EU member states except Malta, Cyprus, and Luxembourg. Yearly data for period 2011–2022.

- Population for all member states. Yearly data for period 2011–2022.
- Values for the weighted average price of tobacco (WAP) products are computed by dividing sales by market volumes. In the case of both cigarettes and FCT, market volumes are expressed in terms of sticks. For the latter, one stick is assumed to contain 0.7 grams of FCT.

Campaign for Tobacco Free Kids (Campaign for Tobacco-Free Kids, 2024b, 2024a)

- Excise tax rates on heated tobacco products for all member states where these products are marketed. Years 2023–2024.
- Excise tax rates on liquids for electronic cigarettes all member states. Years 2023–2024.

Forecasts of macroeconomic variables

The latest available values for Comparative Price Levels (year 2022) are used for simulations over 2023–2030, implicitly assuming that the relative differences in purchasing power between the member states in the EU remain stable over this period.

Values for the Harmonized Index of Consumer Prices for all member states over period 2024–2030 are forecast using estimated rates of yearly inflation. For the subperiod 2024–2025, such estimates are obtained from the European Commission’s Winter 2024 Economic Forecast (European Commission, 2024b). For the subperiod 2026–2029, forecasts are taken from the International Monetary Fund’s World Economic Outlook database. Year 2030 is assumed to have the same value as 2029.

Likewise, values for Gross Domestic Product per capita for all member states over 2023–2030 are forecast using estimates of yearly growth of GDP from the European Commission’s Winter 2024 forecast (subperiod 2023–2025) and the International Monetary Fund’s World Economic Outlook database (subperiod 2026–2030, with 2030 using the same value as 2029).

Modelling of tax structure

The retail price *P* for a tobacco product in the EU is modelled as follows (Agencia Tributaria, 2015):

$$P = q + e + aP + i\,(q + e + aP) + cP,$$

where:

q = producer's price

e = specific tax rate

a = ad valorem tax rate

i = VAT rate

c = retailer's margin.

For a given minimum excise tax of *D* monetary units per unit of product, the following condition must hold:

$$e + aP \geq D.$$

From these expressions, the lowest viable price is defined by setting q = c = 0 to obtain:

$$P = e\,(1 + i) / (1 - a\,(1 + i));\ \text{if } e + aP > D$$

$$P = D + iD \qquad ;\ \text{otherwise.}$$

Therefore, the lowest (viable) excise duty (LED) is given by:

$$LED = e\,(1 + (a\,(1 + i) / (1 - a\,(1 + i)));\ \text{if } e + aP > D$$

$$LED = D \qquad ;\ \text{otherwise.}$$

Modelling the effect of taxes on retail prices

The effect of taxes on retail prices is modelled by means of autoregressive distributed lag models (ARDL) of the form $y(t)=a+b*y(t-1)+c_1*x_1(t)+....+c_k*x_k(y)+u(t)$ where y is the price variable of interest, $x_1...x_k$ are independent explanatory variables (in this case the products' LEDs, the rate of inflation, a linear time trend, and country fixed effects), u is a random error, and t refers to a yearly subscript.

These specifications build on the results of similar earlier models used in López-Nicolás (2023). Such models suggested that changes in tax rates impact retail prices both currently and in future periods. On this occasion, the ARDL structure allows for a flexible pattern in the dynamics of these effects. In particular, the effect on *y(t)* of a one-unit permanent change in *x* at time *p* (with $t \geq p$) is given by:

$\delta y(t)/ \delta x(p)= \Sigma_p^t \, cb^{(t-p)}$

Provided that $-1 < b < 1$ the expression above converges to $c/(1-b)$ as the number of periods ahead of the change in *x* increases. In a model for the effects of changes in taxes on retail prices, this structure permits the degree of shifting of a permanent tax increase to adjust progressively towards its long-run value without a priori imposing a given number of periods for such adjustment.

Table 2-A presents the model coefficients for the (weighted average) prices of cigarettes and of FCT. They are estimated on a panel of yearly observations for 25 member states (EU27 except Malta and Cyprus) from 2012–2022 (Croatia since 2015). The model for FCT excludes Estonia due to inconsistencies in the series on the price of this product.

Table 2-A. Models for the effects of taxes on retail prices

	WAP of cigarettes (t)	WAP of FCT (t)
WAP of cigarettes (t-1)	0.596***	
	(0.050)	
LED of cigarettes (t)	0.568***	0.058
	(0.058)	(0.047)
WAP of FCT (t-1)		0.716***
		(0.040)
LED of FCT (t)		0.219***
		(0.054)
Inflation rate (t)	1.043***	1.216***
	(0.328)	(0.309)
Trend	0.012**	0.002
	(0.005)	(0.004)
Intercept	0.381***	0.180**
	(0.088)	(0.080)
R2	0.993	0.987
N	261	250
*** p<.01, ** p<.05, * p<.1		
Note: Coefficients on country fixed effects not shown		

As shown in Table 2-A, the coefficients on the lagged values of the prices of cigarettes and FCT are positive, statistically significant, and smaller than one in absolute value. Likewise, the table shows that taxes have a statistically significant effect on the price of the corresponding product. The estimate for the effect of the LED of cigarettes on the price of FCT is positive, although it is not significant at the conventional levels of significance (p-value 0.22). This is in contrast with the results in López Nicolás (2023), where the effect was significant, and suggests that the more flexible ARDL specification used herein might suffice to capture the dynamics of the effects of FCT minimum taxes on its price. Alternately, the lack of significance might result from the relatively small sample size used in the estimation.

As per the formulae above, the dynamic structure of the effects of a permanent tax increase of €1 per 20 sticks on the price of 20 sticks of the corresponding product is shown in Figure A1.

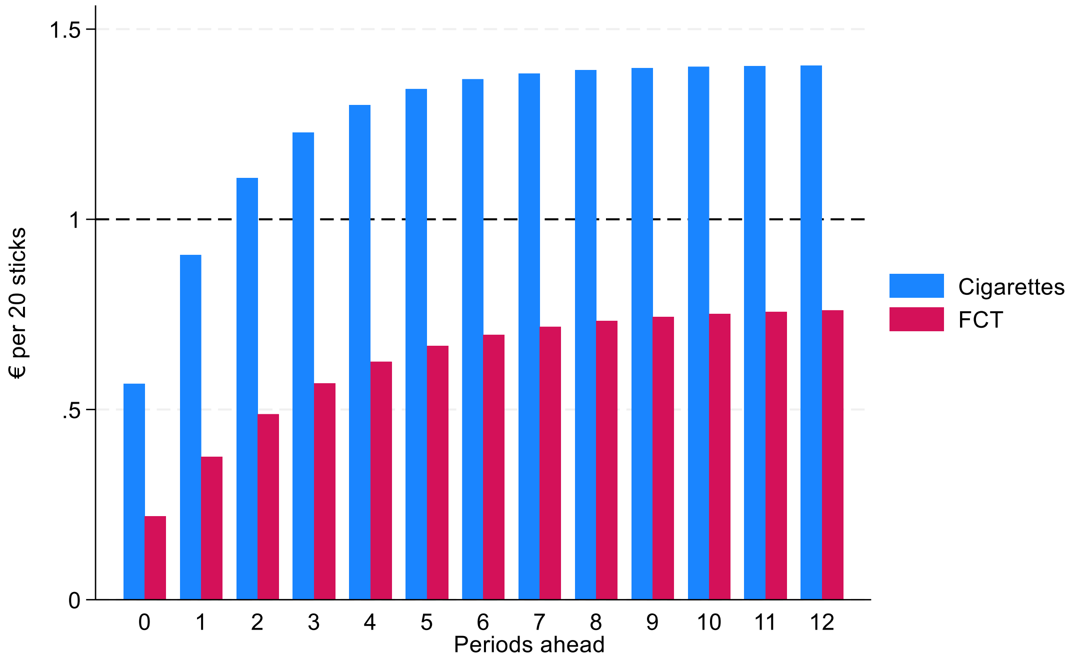


Figure A14. Dynamic structure for the effect of a permanent increase of €1 per 20 sticks in minimum taxes on retail prices

Note that the long-run effect in the case of cigarettes shows that an increase of €1 per 20 sticks will eventually lead to an increase of €1.40 in its retail price, although for the current and one-year-ahead periods the tax is not fully shifted. In the case of FCT, the long run rate of shifting is €0.77 per €1. Thus, while the minimum taxes on cigarettes are overshifted, those on FCT are undershifted.

Modelling the effects of price changes on demand and excise revenue

The effects of the tax reforms on the demand for cigarettes and FCT are analyzed by means of a flexible demand model able to capture both expenditure and own- and cross-price effects. The model assumes a two-stage budgeting approach, whereby, first, expenditure on combustible tobacco products (cigarettes, FCT, cigarillos, cigars, and pipe tobacco) is determined as a function of total expenditure and the relative price of this product class, as well as country fixed effects, a time trend, and additional controls for the COVID-19 pandemic period. In a second stage, the expenditure on combustible products determined in the first stage is divided into three separate products—cigarettes, FCT, and the rest of combustible tobacco—as a function of their relative prices, country fixed effects, and a time trend. The functional form adopted for both stages is the almost ideal demand system of Deaton and Muellbauer (Deaton & Muellbauer, 1980), which is a popular choice in studies of differentiated products' markets (Davis & Garcés, 2009).

To account for the endogeneity of prices in both stages, contemporaneous and lagged tax rates are used as instruments in an iterated least squares estimator (Blundell & Robin, 1999) implemented in the *aidsills* command of Stata™, developed by Lecocq and Robin (Lecocq & Robin, 2015). The estimation sample comprises of 22 member states (the current bloc except Luxembourg, Malta, Cyprus, Sweden, and Estonia) from 2012–2022.

First stage results

Table 3-A presents a summary of results for the first stage of the model estimates in the form of predicted expenditure shares and budget and own- (compensated-) price elasticities for combustible tobacco products. These statistics are computed at the estimation sample mean values, and asterisks are used to denote the level of statistical significance.

Table 3-A. First stage predicted shares, budget, and own-price elasticities

FIRST STAGE; PREDICTED SHARE, BUDGET AND OWN-PRICE ELASTICITIES

	Shares	Budget Elast.	Price Elast.
Combustible Tobacco	0.023***	0.559***	-0.665***

* p<0.1, ** p<0.05, *** p<0.01

As shown in the table, expenditure on combustible tobacco products represents on average 2.3 percent of total consumer expenditure. The budget elasticity of 0.55 is in accordance with the character of necessity goods of tobacco products (that is, normal goods whose demand changes less than proportionally with total expenditure). Likewise, the estimates for the own-price elasticity of combustible tobacco, -0.66, confirms their price-inelastic nature.

Second stage results

Table 4-A contains the corresponding summary for the second stage of the model. Cigarettes on average absorb 87.7 percent of expenditure in combustible products, while FCT represent 8.2

percent. The budget elasticities show that cigarettes are a normal good with an elasticity close to one, implying that the demand for cigarettes changes proportionally with expenditure on combustibles. FCT, on the contrary, has a smaller budget elasticity, implying less than proportional changes in its demand when expenditure on combustibles changes. The price elasticities show that the demand for cigarettes is less price-elastic than combustibles, but FCT on the other hand is very price-elastic.

Table 4-A. Second stage predicted shares, budget, and own-price elasticities

SECOND STAGE; PREDICTED SHARES, BUDGET AND OWN-PRICE ELASTICITIES

	Shares	Budget Elast.	Price Elast.
Cigarettes	0.877***	1.062***	-0.298***
FCT	0.082***	0.606***	-2.057***

* p<0.1, ** p<0.05, *** p<0.01

Next, Table 5-A shows the compensated cross-price elasticities for these two products, along with their elasticity with respect to the price of the rest of combustibles. Cigarettes and FCT are clearly substitute goods, but cigarettes are much less responsive to changes in the price of FCT than the other way around. Changes in the price of the rest of combustibles affect the demand for cigarettes, with a small but significant positive cross-price elasticity.

Table 5-A. Second stage compensated cross-price elasticities

SECOND STAGE: COMPENSATED CROSS-PRICE ELASTICITIES

	Cigarettes	FCT	Rest of combustibles
Cigarettes	-0.298***	0.183***	0.115***
FCT	2.459***	-2.057***	-0.402

* p<0.1, ** p<0.05, *** p<0.01

For all three scenarios (Current TTD, Draft TTD, and Enhanced Draft TTD), the estimates for the first stage of the model are used to predict expenditure on combustible products. Conditional on such expenditures, the estimates for the second stage are used to predict the share of the former spent on each of the subproducts. And given these new shares for the second stage of the model, the market volumes and excise revenues are retrieved for each of the scenarios.

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