

17 July 2025

Supplementary forecast information release

Tobacco and vaping duty elasticities

- 1.1 The OBR is releasing this information following a request for further detail in respect of the price elasticities used in our tobacco and vaping duty forecasts, which are also used to produce policy costings.
- 1.2 The forecasting models that we use for the major components of tax receipts are maintained and run by teams in HMRC. However, all judgements and assumptions in the forecasts are made by the OBR's Budget Responsibility Committee, which takes full responsibility for the final forecast. The Government is responsible for producing all policy costings, and in the case of tax policies the costings are also typically produced by HMRC. The OBR's role on policy is to provide independent scrutiny and certification of whether the Government's policy costings are reasonable and central.
- 1.3 The tobacco price elasticities used in HMRC's tobacco duty forecast model and policy costings model are estimated using an equation linking industry data on volumes and prices of tobacco, with additional judgements then applied. Tables 1.1 and 1.2 show the own-price and cross-price elasticities used in the forecast and costing models, respectively.
- 1.4 At our October 2024 forecast, a judgement was made to change the elasticities in the costing model to better reflect the growth in vaping prevalence. Therefore, the elasticities underpinning the costings model (Table 1.2) used in October 2024 for the costings of changes to tobacco duties were different to those used in the forecast model (Table 1.1). These elasticities are now being reviewed with an intention to update the elasticities using an improved evidence base for subsequent fiscal events. These updated elasticities will be published once this review is complete.

Table 1.1: Tobacco duty forecast price elasticities

Tobacco product	Elasticity
Own-price elasticity	
Cigarette	-1.2
Hand rolling tobacco	-0.8
Cross-price elasticity¹	
Cigarette	0.01
Hand rolling tobacco	0.5

¹ Cross-price elasticities are between cigarettes and hand rolling tobacco.

Source: HMRC, OBR

Table 1.2: Tobacco duty costings price elasticities

Tobacco product	Elasticity
Own-price elasticity	
Cigarette	-1.5
Hand rolling tobacco	-1.0
Pipe	-0.4
Tobacco for heating	-0.4
Cigars	-0.4
Cross-price elasticity	
Cigarette/hand rolling tobacco	0.01
Hand rolling tobacco/cigarette	0.5
Vapes/cigarette	1.2
Vapes/hand rolling tobacco	1.2
Source: HMRC, OBR	

1.5 Table 1.3 shows the own and cross-price elasticities used in the costing for the introduction of vaping duty. Given that vapes are a relatively new product we applied additional judgement in deciding the elasticities to use in costings of vaping duty, which adds uncertainty to that costing. We will continue to review these elasticity assumptions as more evidence on consumer behaviour becomes available. Our judgement on the price elasticity of vaping products in October 2024 was based on:

- Evidence from academic studies looking at the relationship between demand and price of e-cigarettes (Selya et al., 2023 and Stocklosa et al., 2016), which suggest an elasticity of around -1.15.
- The introduction of vaping duty is expected to result in a high percentage change in the price of some vaping products. Using such a high elasticity would lead to a very sharp fall in demand which we judged unlikely. We therefore made a judgement to reduce the own-price elasticity by 25 per cent to -0.9.

1.6 The cross-price elasticities represent the estimated percentage increase in different types of tobacco clearances due to each percent increase in vaping prices. Our analysis assumes there is a cross-price effect from some vapers consuming more tobacco products in response to introducing vaping duty. These elasticities were estimated from [HMRC survey evidence](#) and by comparing the volume of tobacco which could be purchased for the equivalent average vaping spend.

Table 1.3: Vaping duty price elasticities

Product		
	Prefilled	Refillable
Own-price elasticity		
Vaping only	-0.9	-0.9
Cross-price elasticity²		
Cigarette cross-price	0.0009	0.001
Hand rolling tobacco cross-price	0.004	0.002

² Cross-price elasticities are between vapes and cigarettes/hand rolling tobacco.

Source: HMRC, OBR