Raising revenue for tobacco control and public health interventions: the role of a ‘polluter pays’ levy on tobacco manufacturers and importers

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Introduction

The recent Prevention Green Paper proposed the option of a ‘polluter pays’ approach to raise revenue for tobacco control.¹ This report calculates the potential impact of such an approach on the public finances.

Smoking imposes substantial costs on the National Health Service in England (estimated at £2.4bn per year in 2018)² as well as a range of other costs to the public finances including reduced revenue from income tax and National Insurance Contributions³, increased spending on disability and incapacity related benefits and increased costs to the social care system⁴.

The report is structured as follows. Section 1 looks at the potential revenue yield from a ‘polluter pays’ charge or levy on the tobacco manufacturers and importers based on assumptions regarding the elasticity of demand for consumption of tobacco products. Section 2 assesses the impact of a levy on the rate of smoking prevalence in England and the potential improvements in the public finances due to reductions in smoking prevalence (via indirect effects such as reduced costs to the NHS, increased tax revenue due to productivity improvements and reduced expenditure on incapacity-related benefits).

Section 3 rounds off the report with the conclusions from the analysis.

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1 Raising Revenue for tobacco control

1.1 The mechanism

There are several potential options for raising additional funding for tobacco control interventions. This report focuses on raising extra revenue using a levy on tobacco companies rather than a tax instrument (e.g. an increase in tobacco excise duty) for the following reasons:

1. A levy for a specific amount from the tobacco industry provides a certain revenue stream, which makes it easier to ensure that tobacco control interventions are fully and reliably funded. By contrast, an increase in tobacco excise duties (for example) will raise a greater or smaller amount of revenue depending on the elasticity of demand for tobacco products, and so the actual amount of revenue raised may be different from the amount the Government intends to raise.

2. Because the levy is a new form of revenue-raising process, it can be a public health fund creating a specific ringfenced fund for tobacco control interventions. This avoids the danger that the revenue raised is diverted away from tobacco control interventions into other activities. This is particularly important in the post-2010 climate of austerity and tight limits on public spending. This is in line with the options set out in the Green Paper on prevention for a ‘polluter pays’ approach, using mechanisms set out in the Health Act 2006, to establish a public health levy rather than a tax.¹

3. Recent analysis of the profitability of tobacco companies by academics at the University of Bath has shown that the two major transnational tobacco companies that are based in the UK play very little profit-based taxation in the UK despite high levels of reported profits, both in the domestic market and globally⁵. The clear implication is that tobacco companies are undertaxed in the UK and have been successful in evading profits-based tax mechanisms.

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1.2 Impact of tobacco control policies

A recent paper by Feliu et al analyses the impact of tobacco control policies on smoking prevalence and quit rates in 27 EU countries from 2006 to 2014\(^6\). The researchers use the Tobacco Control Scale (TCS) developed by Joossens and Raw which ranks countries according to the extent to which they have implemented six dimensions of tobacco control policy (shown below, together with the weighting used in developing the TCS – with policies with a larger impact on smoking prevalence being allocated a higher weighting):

- Tobacco taxation (30 points)
- Bans on smoking in public places (22 points)
- Public information campaigns spending (15 points)
- Advertising bans (13 points)
- Health warnings (10 points)
- Access to treatment (10 points)

In 2007, the UK had the highest TCS of any EU member state with a score of 93 out of 100. It is likely that if the UK TCS were measured in 2019 it would be somewhat lower, primarily because of the reduction in spending on public information campaigns and access to treatment over the last decade. Unfortunately the study by Feliu et al does not examine changes in the TCS for each EU member state between 2007 and 2014; rather, it looks at changes in smoking prevalence between 2006 and 2014 and relates these to the TCS at one point in time – 2007. Nonetheless the results are interesting, with a clear association (based on regression modelling) where countries with a higher TCS in 2007 experienced greater falls in smoking prevalence between 2006 and 2014.

1.3 How much should the levy raise?

A key consideration for the design of a levy on the tobacco industry is how much revenue the levy should be designed to raise.

Based on a 1992 UK Government report on the effect of advertising on tobacco consumption\(^7\), which estimated that the tobacco industry was spending around £100 million per year on advertising (money it can no longer spend), this report initially assumes a target figure of £100m (uprated by inflation to today’s prices) as a

\(^6\) Feliu et al (2019), “Impact of tobacco control policies on smoking prevalence and quit ratios in 27 EU countries from 2006 to 2014”, Tobacco Control, January 2019. [https://tobaccocontrol.bmj.com/content/28/1/101](https://tobaccocontrol.bmj.com/content/28/1/101)

benchmark minimum for the amount that should be raised by the levy in the UK as a whole. This results in a figure in today’s prices of between £170m and £205m depending on which price index (the Consumer Price Index or the Retail Price Index) is used to uprate from 1992 to the present day. **£200m** therefore seems a reasonable benchmark minimum figure in today’s prices.

However, a more relevant figure, given the significant increase in rates of decline required is peak funding for tobacco control measures at national, regional and local level uprated to 2019 prices. An assessment was made of the spend on the recurring costs of tobacco control in England, including smoking cessation and wider tobacco control such as enforcement and public education at local, regional and national level. Taking spend prior to cuts in the public health budget as a baseline it was estimated that uprated at current prices this would require **£265.5 million** for England and **£315.2 million** if the devolved nations were included in the levy.\(^8\)

Previous work by Landman Economics for ASH on a tobacco levy\(^9\) in 2015 suggested a target revenue yield of **£500 million**, on the grounds that “this would be more than sufficient to fund a comprehensive strategy to reduce youth uptake [of smoking] and encourage adult smokers to quit.” This suggested revenue yield is the highest of the options considered here.

The analysis in Chapter 2 below presents figures for four options based on the above: Option 1 (raising £200m), Option 2 (raising £300m) Option 3 (raising £400m) and Option 4 (raising £500m).

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2 Impacts on smoking prevalence and benefits to the NHS and public finances

This section uses a model of the impacts of reduced smoking maintained by Landman Economics for Action on Smoking and Health (ASH)\textsuperscript{10} to estimate the effect of the levy on smoking prevalence and the benefits to the public finances.

2.1 The elasticity of demand for tobacco consumption

The elasticity of demand for consumption of tobacco products is a statistic which summarises the extent of the fall in tobacco consumption as a result of introducing a levy (assuming that tobacco companies pass the costs of the levy through to smokers rather than absorbing the cost by reducing profitability while leaving tobacco prices unchanged). The most recent analysis by HMRC estimated that the short-run elasticity of consumption for cigarettes was -0.57; that is, a 1 per cent increase in the price of cigarettes results in a fall in consumption of 0.57 per cent\textsuperscript{11}. The analysis in this report uses this HMRC short-run estimate as the best available estimate of the initial consumption response to a tobacco levy\textsuperscript{12}. This analysis uses the same elasticity estimate for cigarettes and for hand-rolling tobacco (HRT).

As well as using a realistic estimate for the price elasticity of tobacco consumption, in order to estimate the impact of an increase in the consumer price of tobacco on smoking prevalence the ASH public finances model also requires an assumption concerning the relationship between the price elasticity and smoking prevalence in the adult population in England. The standard assumption is that the elasticity of smoking prevalence is equal to half the consumption elasticity, i.e. -0.285\textsuperscript{13}. This is the assumption used in this report.

\textsuperscript{10} Details of the ASH public finances model of the effects of tobacco taxation are given in Reed, H (2010), \textit{The Effects of Increasing Tobacco Taxation: A Cost Benefit and Public Finances Analysis}, ASH. http://ash.org.uk/information-and-resources/taxation-illicit-trade/taxation/the-effects-of-increasing-tobacco-taxation/


\textsuperscript{12} Because HMRC do not publish a separate elasticity for hand-rolling tobacco or other tobacco products, we assume that the elasticity for HRT is the same as for cigarettes in the analysis in this report.

2.2 Public finance impacts of the levy

Using the tobacco consumption and smoking prevalence elasticity assumptions above, the estimates from the ASH public finances model suggest that a levy designed to raise a target amount of £200m per year would – if passed on fully to consumers – raise the price of a typical pack of 20 cigarettes by around 23 pence and the price of a typical 30g pack of hand-rolling tobacco by around 30 pence. This would reduce tobacco consumption by around 1.2% and smoking prevalence by around 0.1 percentage points.

The ASH public finance model shows the following calculations for the overall public finance impacts of the levy, comprising the following impacts arising from lower smoking prevalence:

- The savings to the NHS
- Increased revenue from income tax and National Insurance Contributions arising from a higher working-age employment rate (due to lower incidence of incapacity for work caused by smoking) and lower absenteeism from work
- Reduced spending on incapacity-related benefits\(^{14}\)

The results from the model are shown in Table 3.1 below. These are annual averages over the years 2020-24, expressed at April 2019 price levels.

\(^{14}\) The model also predicts increased spending on pensions due to longer life expectancy for non-smokers compared to smokers; the figure for reduced spending on benefits is shown net of increased pensions spending.
Table 2.1. Overall public finance impacts of introducing a tobacco levy

<table>
<thead>
<tr>
<th>Option</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target revenue yield (£million)</strong></td>
<td>200</td>
<td>300</td>
<td>400</td>
<td>500</td>
</tr>
<tr>
<td>Increase in price of tobacco products (%)</td>
<td>2.1%</td>
<td>3.2%</td>
<td>4.3%</td>
<td>5.5%</td>
</tr>
<tr>
<td>Increase in cigarette pack price (pence, 2019-20)</td>
<td>23</td>
<td>35</td>
<td>46</td>
<td>59</td>
</tr>
<tr>
<td>Increase in HRT price (pence, 2019-20)</td>
<td>30</td>
<td>45</td>
<td>60</td>
<td>77</td>
</tr>
<tr>
<td>change in consumption (%)</td>
<td>-1.2%</td>
<td>-1.8%</td>
<td>-2.5%</td>
<td>-3.1%</td>
</tr>
<tr>
<td>change in smoking prevalence (% pts)</td>
<td>-0.1</td>
<td>-0.1</td>
<td>-0.2</td>
<td>-0.2</td>
</tr>
<tr>
<td><strong>Other impacts (average, 2019-23), (£m)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NHS cost savings</td>
<td>8</td>
<td>12</td>
<td>16</td>
<td>21</td>
</tr>
<tr>
<td>Additional income tax and NICs: healthier workforce and less absenteeism</td>
<td>14</td>
<td>23</td>
<td>33</td>
<td>43</td>
</tr>
<tr>
<td>Reduced benefit spending</td>
<td>5</td>
<td>8</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>Total additional public finances benefit</td>
<td>27</td>
<td>43</td>
<td>60</td>
<td>77</td>
</tr>
</tbody>
</table>

Source: Calculations by Landman Economics using the ASH model of the public finances impacts of changes in tobacco taxation
These results suggest that the overall public finances impact of a levy is between 13.5% and 16% greater than the headline impact of the levy. The additional public finances impact of the levy is relatively low compared to the amount raised by the levy itself for two principal reasons. One is that the HMRC short-run elasticity of tobacco consumption is relatively small. If the long-run HMRC estimate (approximately -1.1) is used instead, the additional public finances benefits would be approximately double those shown here. However, it should be noted that long-run elasticities are considered to be much more variable and less reliable than short-run elasticities and “thus one should be very cautious about using the long-run price elasticity estimates”.15

The other reason the additional public finance benefits are small is that smoking prevalence in the UK adult population is relatively low, at around 14.7 per cent.16 This means that even an increase in cigarette prices of around 5.5 per cent – which is the amount required to raise £500m in the right-hand column of Table 2.1 – results only in a small reduction in prevalence (0.2 percentage points).

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15 Nguyen L, Rosenqvist G, Pekurinen M. Demand for Tobacco in Europe. An Econometric Analysis of 11 countries for the PPACTE project. PPACTE 2012 p.89
16 Adult smoking habits in the UK: 2018
3 Conclusions

This report shows that the introduction of a levy or charge raised from the tobacco manufacturers and importers has the potential to reduce tobacco consumption and prevalence both directly and indirectly. Directly the increases in price assuming full pass through will help continue the decline in consumption and prevalence. Indirectly using the ringfenced revenue to fund a comprehensive programme of public health and tobacco control interventions could reduce smoking prevalence still further. The levy itself is likely to induce price increases for cigarettes and other tobacco products which should lead to additional benefits to the public finances equal to between 13.5 and 15.5 per cent of the initial revenue yield.