

# INTRODUCING A TAX ON SUGAR SWEETENED DRINKS

## HEALTH RATIONALE, OPTIONS AND RECOMMENDATIONS

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## Executive Summary

This is a Department of Health Working Paper prepared to inform consideration of a sugar sweetened drinks levy from a population health perspective.

### What's the policy objective?

To reduce rates of childhood and adult obesity in Ireland by reducing the consumption of sugar sweetened drinks (SSDs) as a contributor to health and dental deterioration, particularly among young people.

### What's the desired outcome?

There are two main outcomes envisaged from this policy intervention:

1. Individuals reduce consumption of sugar sweetened drinks by reducing amount consumed or switching to healthier choices.
2. Industry reformulates products to reduce (not necessarily remove) levels of added sugar in these products.

### What's the policy choice?

Evidence suggests that effective policy interventions to tackle obesity involve multi-sectoral, multi-lever approaches. International evidence shows that tax can be an effective policy lever if used as part of an integrated policy response that utilises a range of additional policy levers and interventions.

### What's the recommendation?

To introduce a graded tax on pre-packaged SSDs on sale in Ireland. To be effective from a health outcomes perspective, key elements of such a measure would include:

- Introducing an additional levy on sugar sweetened drinks (excluding other food or drink products);
- Including all water based drinks with *added* sugar in the scope of the tax;
- Including *all* added sugars in the scope of the tax;
- Rating the tax at a level that will drive individual and industry behaviour change;
- Rating the tax on a graded, volumetric basis (gram per 100ml);
- Applying the levy to pre-packaged products on sale in Ireland;
- Re-investing proceeds of tax toward inter-sectoral actions in support of healthy lifestyles; and
- Evaluating the impact of the levy at key stages to assess the impact in relation to nutrition behaviour in adults and children and reformulation of food and beverage products in industry.

Throughout this paper Sugar Sweetened Drinks are referred to as SSDs and defined as carbonated and un-carbonated water based drinks with added sugar (e.g. fizzy drinks, sports drinks, energy drinks, squash, lemonades, and cordials).

## SUMMARY OF RECOMMENDATIONS

| Key Elements                                                                                            | Rationale                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Introduce an additional tax on SSDs                                                                     | <ul style="list-style-type: none"> <li>• No/Low nutritional or satiating value to SSDs</li> <li>• SSDs not included or recommended in healthy eating guidelines</li> <li>• Policy efficacy higher for tightly scoped tax compared to broadly scoped sugar or fat taxes</li> <li>• Current Irish consumption of SSDs is high among key groups (e.g. young people and children) and increasing</li> <li>• Higher feasibility/implementability for tightly scoped tax</li> </ul> |
| Include <i>all</i> water based drinks with <i>added</i> sugar in the scope of the tax                   | <ul style="list-style-type: none"> <li>• Other sugar sweetened products (e.g. chocolate milk) may have nutritional or satiating components</li> </ul>                                                                                                                                                                                                                                                                                                                         |
| Include all added sugars in the scope of the tax                                                        | <ul style="list-style-type: none"> <li>• Available evidence on health impacts does not make a significant distinction between glucose, fructose, sucrose etc.</li> <li>• Available evidence on health impacts is not currently sufficient to include artificial sweeteners</li> </ul>                                                                                                                                                                                         |
| Rate the tax at a level that will drive individual and industry behaviour change                        | <ul style="list-style-type: none"> <li>• Available evidence suggests smaller levies have been less effective at driving behavioural change and therefore have not created expected health benefits (i.e. changing consumption)</li> </ul>                                                                                                                                                                                                                                     |
| Rate the tax on a graded, volumetric basis (gram per 100ml)                                             | <ul style="list-style-type: none"> <li>• To increase chances of behaviour change in industry through reformulation</li> <li>• To incentivise positive behaviour by applying no additional levy to SSDs below the threshold</li> <li>• To mirror planned UK model, therefore, reducing chances of non-compliant cross-border trade</li> </ul>                                                                                                                                  |
| Apply the levy to pre-packaged products on sale in Ireland                                              | <ul style="list-style-type: none"> <li>• To increase administrative feasibility, thereby increasing chances of compliance</li> <li>• To incentivise reformulation among producers and importers</li> </ul>                                                                                                                                                                                                                                                                    |
| Re-invest proceeds of tax toward health promotion, health prevention, and early intervention activities | <ul style="list-style-type: none"> <li>• Formally link tax to complementary policy interventions to ensure policy lever impacts on overall policy goals</li> <li>• To ameliorate the monetary regressivity of the tax with commensurate health benefits</li> </ul>                                                                                                                                                                                                            |

## 1. CURRENT POLICY INTERVENTIONS TO ADDRESS OBESITY AND SUGAR CONSUMPTION

**A Healthy Weight for Ireland - Obesity Policy and Action Plan** (2016) sets out a range of policy measures and interventions to reduce the number and proportion of overweight adults and children in Ireland. It proposes 60 interdependent and complementary actions to improve nutrition and increase the level of physical activity across the population. These measures aim to prevent and reduce levels of obesity. Each measure is informed by evidence and best international practice.

A key element of the policy framework set out in the Action Plan is an ambition to **modify food consumption patterns in Ireland**. The plan includes multiple measures to promote and support healthy eating. These measures span the full-range of policy levers (See Table 1). **Tax is the only policy lever not currently being utilised to specifically target this policy objective**. This is contrary to international experience, which highlights that the impact of any single measure to tackle obesity is reduced if the full suite of measures is not reflected in a policy framework.<sup>1,2,3</sup>

The new **Healthy Eating Guidelines** (2013) state that foods like SSDs should be consumed only sometimes, not every day and only in very small amounts. It is now a key policy priority in the Department of Health to align food and drink consumption patterns in the country with the Healthy Eating Guidelines.

**Targeting high-sugar products** as part of concurrent activities to modify food consumption patterns is in line with the recommendations in international guidelines from the World Health Organisation (WHO), including targeting high-sugar products specifically through taxation.<sup>4</sup> In addition, **A Programme for a Partnership Government** (2016) indicated that a number of key public health interventions would be introduced including a health levy on SSDs.<sup>5</sup>

Tackling the global challenge of obesity and in particular childhood obesity requires individuals, groups and communities to take responsibility to improve their own and their families' diets and lifestyles. However, Government commitment to implement a range of measures that address environmental (physical, social and economic) causes of overweight and obesity can influence the choice and the information available in the market so that **the healthy choice can be the easy and affordable choice**. Food choices are affected by a range of factors, including price. For this reason, reviewing the role for tax mechanisms as part of the wider policy framework will be important.

**TABLE 1**

| <b>Available Levers</b>   | <b>Policy</b> | <b>Current policy interventions to tackle obesity by reducing sugar consumption</b>                                                                                                                                                                 |
|---------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Legislate                 |               | <ul style="list-style-type: none"><li>• Food Labelling (in line with EU directives)</li></ul>                                                                                                                                                       |
| Tax                       |               |                                                                                                                                                                                                                                                     |
| Regulate                  |               | <ul style="list-style-type: none"><li>• Calorie posting in restaurants</li></ul>                                                                                                                                                                    |
| Spend/Incentivise         |               | <ul style="list-style-type: none"><li>• Industry initiatives to incentivise reformulation to reduce the levels of sugar, fat and salt in food and beverages</li></ul>                                                                               |
| Provide (Directly)        |               | <ul style="list-style-type: none"><li>• Health services at primary and secondary level, including nutritionists support</li></ul>                                                                                                                   |
| Provide (Indirectly)      |               | <ul style="list-style-type: none"><li>• Health services at primary and secondary level</li></ul>                                                                                                                                                    |
| Inform                    |               | <ul style="list-style-type: none"><li>• New Healthy Ireland Guidelines</li><li>• New Physical Activity Guidelines</li><li>• Media campaigns to promote healthy eating</li><li>• Training of healthcare staff</li></ul>                              |
| Nudge/Choice Architecture |               | <ul style="list-style-type: none"><li>• Healthy eating initiatives in the health and education sectors including guidance on vending machines</li><li>• A voluntary code of practice on food marketing, sponsorship and product placement</li></ul> |

## 2. THE ROLE FOR ADDITIONAL POLICY INTERVENTIONS TO ADDRESS OBESITY AND SUGAR CONSUMPTION – HEALTH RATIONALE

The available evidence suggests, and a strong medical consensus supports the association between obesity and the consumption of sugar and SSDs. Combined, this makes a strong case that supporting a reduction in sugar consumption has a high probability of benefitting population health in Ireland.

### 1. Obesity and Chronic Disease in Ireland – Key Facts

- 1 in 4 children in Ireland today are overweight or obese at age of 3.<sup>6</sup>
- This trend is mirrored nationally in children and teenagers.<sup>7,8,9</sup>
- For the majority, childhood obesity tracks into adulthood.<sup>10</sup> It is estimated that approximately 55% of obese children go on to be obese in adolescence, around 80% of obese adolescents will still be obese in adulthood and around 70% will be obese over age 30.<sup>11</sup>
- Children from disadvantaged areas are 6% to 7% more likely to be obese.<sup>12</sup>
- Childhood obesity is high in Ireland by international standards, with Irish 7 year old boys and girls ranked as having the 5th and 3<sup>rd</sup> highest BMI respectively, in a cohort of European countries in 2010.<sup>13</sup> In a 2012 follow-up study of Irish children, over 20% of children are still recorded as overweight or obese. While the rate at 7 years old shows a slight decrease and the rate at 9 years old remains the same, there are no reductions in rates evident in any age group in DEIS or disadvantages schools.<sup>14</sup>
- The majority of all adults in Ireland (60%) are either overweight or obese.<sup>15,16</sup>
- According to recent projections by the WHO Regional Office for Europe, collaborating with the UK Health Forum, levels of obesity are forecast to increase globally and Ireland could have one of the highest rates of obesity in Europe by 2030<sup>17</sup> – early estimates suggest the proportion of overweight or obese in Ireland could be as high as 90% by then.<sup>18,19</sup>
- These projections are in line with another recent comprehensive analysis of the global, regional, and national BMI data for adults, where participant data from previous studies conducted between 1975-2014 was pooled from across 186 countries giving a total of almost 19.2 million participants (men and women aged 18 years or older) for analysis. Based on this analysis, if current trends continue, Ireland is set to have the second highest levels of obesity in women in Europe (37%), only one percentage point behind the UK (38%). Men in Ireland already have the highest BMI in Europe along with Cyprus and Malta.<sup>20</sup>
- An obese individual is likely to earn 18% less than an individual of normal weight and can incur 25% higher healthcare expenditures.<sup>21,22</sup>

- Conservative estimates suggest, the cost of obesity in 2009 in Ireland was €1.13 Billion in adults.<sup>23</sup>

Obesity is not just about the shape and size of individuals – it is a major public health challenge. Becoming overweight or obese is a clinical condition that can contribute to the risk of developing a *preventable* long term chronic disease. The multiple medical complications can include, for example: heart and circulatory diseases<sup>24</sup>; pulmonary diseases<sup>25</sup>; gallbladder disease<sup>26</sup>; Alzheimer's disease<sup>27</sup>; infertility<sup>28</sup>; Type 2 Diabetes<sup>29</sup>; gout<sup>30</sup>; osteoarthritis<sup>31</sup>; several types of cancers<sup>32</sup>; tooth decay as well as all-cause mortality<sup>33</sup>.

A closer look at tooth decay is also informative. According to the Irish Dental Association, tooth decay is a major health concern in most western countries.<sup>34</sup> In Ireland half of all 12 year olds and 75% of all 15 year olds have suffered tooth decay.<sup>35</sup> While there are multiple factors that affect dental health, and these confounding factors make it difficult to examine any causal link between sugar and tooth decay, the most recent and comprehensive reviews of the research evidence show that there is consistent evidence that tooth decay is lower when sugar intake is low.<sup>36</sup>

## **2. The Link between 'Free Sugar' and Obesity – Key Facts**

Free sugar is defined by the WHO as monosaccharides (simple sugars including glucose, fructose and galactose) and disaccharides (the combination of 2 simple sugars like sucrose, lactose and maltose) added to foods.<sup>37</sup> The term is used to distinguish between sugars naturally present in unrefined carbohydrates like brown rice, wheat, natural fruit juice and those sugars that are refined.

- Research demonstrates that liquid carbohydrate, rather than in the solid form, contributes disproportionately to weight gain. The association between SSD consumption and weight gain has been found to be stronger than for any other food or beverage.<sup>38</sup> The prevailing mechanisms linking SSD intake to weight gain are thought to include low satiety associated with liquid calories and incomplete compensatory reduction in energy intake at subsequent meals.<sup>39</sup> The shift from water to SSDs for hydration adds extra calories and sugars into the diet and there appears to be no dietary reduction of food intake for these 'empty' calories consumed. Others have suggested that consumption of SSDs may alter long term preferences towards increases in intake of sugary food.<sup>40</sup> There is also emerging evidence that liquid calories may interfere with insulin regulation of hunger.<sup>41,42</sup>
- There is recent and compelling scientific evidence that consumption of free sugars through SSDs is related to increased risk of obesity. After many years of divergent and contradictory results and complications in interpreting results due to method-related

issues, a recent WHO-commissioned systematic review involving a meta-analysis of randomised controlled trials and well-powered prospective cohort studies has concluded that intake of sugars is a determinant of body weight, with a clear positive association between higher intake of sugars, body fat and long term weight gain in adults.<sup>43</sup> The findings are highly consistent with another recently conducted systematic review and meta-analysis<sup>44</sup> which also concluded that there is strong evidence that intake of added sugars is associated with unfavourable weight status in adults and children. While the first study considered free sugars, the second study specifically focused on SSD consumption.

- A systematic review of evidence for early-life (from conception to 5 years of age) determinants of obesity also found that consumption of SSDs was a factor associated with later overweight and obesity.<sup>45</sup>
- Experimental studies of SSDs have shown regular consumption of SSDs in children result in larger weight gain compared to children who consume SSDs less often or rarely.<sup>46,47</sup> Similarly, masking (i.e. hiding) replacement of SSDs with non-caloric beverages has been found to reduce weight gain in children.<sup>48</sup>
- Although a dose response relationship between sugar consumption and obesity cannot be definitively determined at this time, the evidence was of sufficient strength and consistency for the WHO to officially launch guidelines in 2015 for sugar intake in adults and children. In these, they recommend adults and children reduce their daily intake of free sugars to less than 10% of their total energy intake and they suggest that a further reduction to below 5% or roughly 25 grams (6 teaspoons) per day would provide additional health benefits.<sup>49</sup>
- Globally, there has been a steady upward trend in consumption of SSDs from 2005 to 2011.<sup>50</sup>
- For each extra glass of a SSD product consumed per day, the likelihood of a child becoming obese increases by 60%.<sup>51</sup>

### **3. Free Sugar Consumption through SSDs in Ireland – Key Facts**

- SSDs are widely available for sale without restriction in almost all food service premises throughout Ireland.
- SSDs are a source of energy with little or no other nutritional contribution to the diet.<sup>52</sup>
- The Intake of ‘free sugars’ (SSDs are a prime example) is a determinant of body weight.<sup>53,54</sup>
- Drinking one single can of an SSD (104kcl) every day for 18 months could add one extra kilo of weight in comparison to those who drink unsweetened drinks.<sup>55</sup>
- Internationally, consumption of SSDs is increasing, particularly among young people.<sup>56</sup>

- The WHO recommends that the total energy intake from free sugars should be less than 5%.<sup>57</sup> However, in Ireland, SSDs alone contribute approximately 5% of total energy in the diet of children.<sup>58</sup>
- This 5% of total energy that young people in Ireland are consuming represents an average of 83 Kcal per day in 5-12 year olds from SSDs alone and 96 Kcal per day in 13-17 year olds.
- More than 75% of 5-18 year olds consume SSDs daily.<sup>59</sup>
- One in 5 (21%) one year olds and more than half (53%) of 4 year olds consume SSDs.<sup>60</sup>
- However, the high consumers of SSDs (95<sup>th</sup> percentile) consume as much as 13-14% of total daily energy (225 Kcal per day for 5-12 year olds and 264 Kcal per day for 13-17 year olds) from SSDs.<sup>61</sup>
- Those who report drinking SSDs daily are more likely to be male, in younger age categories and from lower socio-economic backgrounds.<sup>62</sup>
- SSDs are marketed extensively to children and adolescents, who are shown to be the largest consumers.<sup>63</sup>
- A recent school-based study showed that 82% of children aged 8-10 years reported consuming SSDs and this is highest in children from lower socio-economic backgrounds. Mean calories from SSDs constituted 90 kcal for those children classified as overweight and 123 kcal for those classified as obese.<sup>64</sup>
- In the Irish Health Behaviour in School Aged Children survey<sup>65</sup>, 21% of children aged 10-17 years report drinking soft drinks that contain sugar once daily. Again, this is highest in children from lower socio-economic backgrounds.
- The results from the first wave of the Healthy Ireland Survey show 15% of individuals aged 15 years and over consume SSDs on a daily basis, with highest consumption in males aged 15-24yrs. Consumption was highest in the most deprived areas and among lower socio-economic background.<sup>66</sup>

The Irish Healthy Eating Guidelines and Food Pyramid states that foods high in fat, sugar and salt are not needed for good health and can be consumed only sometimes and not every day.<sup>67</sup> Limiting consumption of SSDs as an obesity strategy is recommended by a number of health authorities including the WHO,<sup>68</sup> UK Academy of Medical Royal Colleges,<sup>69</sup> Office of the US Surgeon General,<sup>70</sup> and the Australian National Preventive Health Agency,<sup>71</sup>

### 3. THE ROLE FOR A TAX BASED POLICY INTERVENTION TO ADDRESS OBESITY AND SUGAR CONSUMPTION – ECONOMIC RATIONALE

The rationale for government intervention to curb SSD consumption is comparable to existing taxation policy addressing market failures associated with alcohol and tobacco consumption.<sup>72</sup> A number of market failures can be identified in relation to consumption of SSDs.<sup>73</sup>

#### 1. Social Costs

In economic theory a ‘market failure’ refers to a situation where an imperfection in the market mechanism prevents the achievement of economic efficiency.<sup>74</sup> This can occur when the individual does not bear the costs imposed on society from their consumption so they do not take them into account when deciding on their level of SSD consumption. They also occur because of the challenges individuals face making complex decisions. These market imperfections can lead to excess consumption. This behaviour imposes costs on society, including increased medical costs, and social welfare expenditure as well as the risk of lost tax revenue due to reduced labour market participation of excessive consumers.<sup>75</sup>

#### 2. Future Costs, Information and Decision Making

Excessive SSD consumption can occur for many reasons: availability; affordability; the challenges of complex decision-making; the challenges of sufficiently comprehending the future costs and health, social and economic repercussions of SSD over-consumption.<sup>76</sup> The large amount of technical and complex nutritional information now available, as well as challenges relating to decision-making when making long term lifestyle choices may also have an impact in this regard.<sup>77</sup>

Additionally, the long time lag between when consumption occurs and when the individual’s future costs are borne may lead the individual to underestimate the known costs of SSD over-consumption in the decision-making process. This situation is likely to be the case for children who may not have the capacity to consider and weigh the relevant information when facing the choice between SSD consumption now and potential future health, economic and social costs or consequences.<sup>78</sup> Evidence suggests that young adults are particularly sensitive to taxes on tobacco and so represent a potentially high impact target group for an SSD tax.<sup>79</sup>

While information campaigns can go some way towards addressing the information gap individuals face when buying SSDs, it is not a solution on its own. The market failure caused by a lack of information may not be resolved by simply providing more information as people may have difficulties incorporating it all into their decision-making process.<sup>80</sup> Again this case is strongest for children.

### **3. Rationale for Government Intervention**

The use of fiscal policies to improve public health outcomes is not new and has been extensively used by the Irish Government (e.g. tobacco, alcohol, emissions). While consumers are best placed to know their own preferences and make choices about what drinks to consume and in what quantities to satisfy these preferences, evidence indicates that individuals may consume excessive amounts of some goods, above what is societally optimal. In economic theory, the existence of market failures creates a role for Government intervention to try to bring the actual consumption of goods and services into line with what the level of consumption would be if consumers adequately took into account all costs associated with consumption. A critical requirement for Government intervention is that the outcome of the intervention needs to be a better one than would exist in the absence of the intervention. Addressing these market failures will be key to achieving national policy objectives to reduce levels of obesity.

### **4. Rationale for a New Tax**

Taxation already exists on SSDs in the form of VAT. This taxation does not address the market failures as outlined above as VAT is, in the main, a revenue raising measure where most goods are taxed at a standard rate of 23%.<sup>81</sup> The need for an additional tax on SSDs is to specifically reduce consumption of these goods to address the market failures outlined above. Beyond the different rationale for the two taxes, VAT applies the same rate of 23% to water and high-sugar drinks. The value of the SSD tax is that it creates a greater relative price difference between taxed drinks, which are bad for your health, and non-taxed drinks, which are good for your health, incentivising switching.

#### 4. THE ROLE FOR A TAX BASED POLICY INTERVENTION TO ADDRESS OBESITY AND SUGAR CONSUMPTION – INTERNATIONAL EVIDENCE

A tax on SSDs would not be a new phenomenon in an Irish context. A similar mechanism operated from 1916 until 1992 as an excise duty on “table water”. This was the equivalent of 2.2p on a 33cl can of cola. This was abolished in 1992 as part of the reform of the tax code undertaken in anticipation of the full application of single market rules on 1 January 1993. However this tax was not motivated by health concerns as the proposed SSD tax is. For example, it included bottled water which is excluded from the proposed SSD tax based on its nutritional value.

While the Table Waters Tax in Ireland provides both precedent and insight into possible taxation measures relating to SSDs, recent international experience is also illustrative. Although, the introduction of additional tax measures beyond the existing mechanisms such as excise<sup>82</sup> or VAT<sup>83</sup> to influence consumption and affect health status improvements is a relatively new concept in its application abroad, there is emerging evidence in a number of countries in relation to policy efficacy and impact. However, as these types of policy measures have only been introduced in recent history, there is low availability of: reported data and data that has been analysed; reviewed; or evaluated. Countries with a tax on SSDs include Hungary, France, Belgium, Finland, Mexico and in a number of states and cities in the USA. The UK also plans and is working with industry to introduce a similar tax in 2018.

Different forms of taxes targeting sugar consumption have been introduced in different countries depending on the policy objective and the wider, political, social and economic environment in each country. In general, SSD taxes which exist in other countries can be defined as the following:

*A soda tax, sugar tax or soft drink tax is a tax or surcharge on soft drinks specific to the promotion of reduced overall sugar consumption. Sometimes this form of tax is described as a category by the Sugar Sweetened Drinks or SSDs ‘umbrella’, term. In most forms the tax is designed to discourage the production, importation and purchase of carbonated, un-carbonated, sports and energy drinks, with high levels of added sugar.*

This section outlines, for four comparator countries, the structure of the SSD taxes as well as evidence on the consumption impact of the taxes in each country. For each evaluation, the consumption impact is discussed in terms of the percentage price and consumption impact. The evaluation methodology and data available for Mexico was such that it demonstrates causality. Evaluation of French, Hungarian and Finnish studies rely on trend analysis of prices and demand reductions at national level. This section also includes an evaluation of the consumption impact of the Irish Table Waters tax and outlines the proposed SSD tax in the UK.

## **1. Mexico**

In January 2014, Mexico introduced a tax on SSDs to combat obesity and diabetes. The tax targeted SSDs (one Peso/L equivalent 10%) and high energy drinks.

The evaluation of the Mexican SSD tax by Colchero et al (2015)<sup>84</sup>, looked at the impact of the SSD tax one year on from its implementation observing data on approximately 50,000 individuals from January 2012, before implementation of the tax until December 2014, one year on from its implementation.<sup>85</sup> The authors use pre-implementation data from January 2012 until December 2013 to predict what consumption of SSDs would have been in the absence of the SSD tax. Critically, the data available for the authors allows them to control for both macroeconomic variables that can affect the purchase of beverages over time, and pre-existing trends in consumption. This allows them to test whether the consumption of SSDs after the implementation of the tax was different from what would have been the case in the absence of the tax.

The authors demonstrate in a previous paper from Colchero et al (2015) that the tax was wholly passed through to final retail prices in the first month of the year and maintained this price gain throughout 2014.<sup>86</sup>

By end 2014, the authors note that the actual consumption of SSDs was 12% below what the predicted trend in consumption would have been in the absence of the SSD tax. This implies that the elasticity of SSD consumption one year on from the implementation of the SSD tax in Mexico is 1.2.<sup>87</sup>

Importantly, the authors note that consumption fell most in the lowest socio-economic group with a fall in consumption of 17% relative to the predicted trend. Where this reduced consumption leads to reduced health inequalities, this result ameliorates the regressive economic impact the tax has on those in lower socio-economic groups.

The authors also note that the purchase of other beverages not in the scope of the tax increased by 4% (mainly driven by increased bottle water consumption) relative to the predicted trend. As discussed in the economic impact section, where these goods are manufactured by the same companies who produce the taxed goods, this behaviour could reduce disruptions or diminish possible economic or industry impacts caused to the economy by the tax.

## **2. Ecory's Evaluation of Finland, France, Hungary**

The evaluations for France, Hungary and Finland come from the Ecory (2014) paper which was commissioned by DG Enterprise and Industry to analyse food and beverage taxes and their impact on competitiveness in the agri-food sector.<sup>88</sup> A part of this analysis looked at the consumption impact in each country.

Due to limitations in available data in each country, the authors were not able to statistically address causation as in the Mexican study. However, the paper reports extensive data on prices of taxed goods and their substitutes and the consumption of taxed goods per capita before and after the implementation of the tax. They are unfortunately not able to report how much the final retail price increased by as a result of the tax. They only report prices including inflation, which could be influenced by other factors like input costs. These issues limit the extent to which inferences about the taxes' exact impact in reducing consumption of SSDs can be made.

### **Finland**

Finland's tax on soft drinks, including all soft drinks that are ready-to-drink as well as bottled water, has been in place since 1940. In 2001, mineral waters were excluded from the tax base. In 2011, upon reintroduction of the tax on sweets, the tax on soft drinks was combined with the tax on sweets to form one tax – an excise duty on sweets, ice-cream and soft drinks. At this time, the tariff was increased from €0.045/litre to €0.075/litre and the tax base was changed again to include mineral waters, juices and nectars. In 2012, the tariff was further increased to €0.11/litre. On 1 January 2014, this rate was doubled to €0.220/litre for sugary and sweetened beverages and juices (containing more than 0.5% sugar), while it remained unchanged for sweetener-based soft drinks and waters.

The Ecory's analysis indicates that the tax, if wholly passed through to final retail prices, should have increased prices 1.5% and 0.9% in 2011 and 2012, respectively.<sup>89</sup> Observed retail prices show that price increased by 7.3% in 2011, by 7.3% in 2012, and by 2.7% in 2013. While it is possible that there was overshifting in the tax as it was passed through to consumers it seems likely that there were other factors influencing price increase in Finland at the time.

In terms of trends in demand there was a 0.7% fall observed in 2011, 3.1% fall observed in 2012 and 0.9% fall observed in 2013. However, the paper notes that there had been a decline in the demand of SSDs from 2007 until the introduction of the tax in 2011 as such this may be a continuation of the pre-existing trend.

### **France**

In 2010, France introduced measures targeting beverages containing sugar and/or artificial sweetener. In 2012, a tax on all sugar-sweetened and non-sugar-sweetened beverages was also introduced. The tax rate was set at €7.16/hectolitre. The tax rate was raised to €7.31/hectolitre in 2013 and a year after it was set at €7.45/hectolitre. This included a tax on French manufacturers, importers and food outlets that serve their own prepared drinks containing added sugar or added sweeteners, including sodas, fruit drinks, flavoured waters and 'light' drinks. The tax measure has exceeded its annual target (to raise €150 million per annum) now raising over €300 million a year.

The Ecory's analysis looks at cola prices and consumption in its analysis. However it notes that the demand for both regular cola and low calorie cola had steadily been increasing until 2011. For low calorie cola the increase over those years has been on average 4.3%, and for regular cola 1.1%.

If wholly passed through to final retail prices, the price should have increased by 4.5% for regular cola and 4.7% for low calorie cola on the average prices of the year before. Both types of cola increased in price by around 5.5% in 2012 and 3.9% in 2013.

With the introduction of the tax on sugared beverages, this trend seems to have been turned. As from 2011, both beverages show a decline in demand per capita. Both types of cola have been decreasing by around 3% annually in 2012 and 2013.

### **Hungary**

The tax on soft drinks in Hungary was introduced in September 2011 as part of the Public Health Product Tax. This tax was imposed as an indirect tax on pre-packed products in categories where products with lower levels of the targeted ingredients (sugar, fat, salt, caffeine) are available. The tax rate was 5 HUF/litre if the content of added sugar was more than 8g/100ml. In 2012, the base of the rate and the rate itself were not changed but the range of exceptions has become wider. The tax rate became 200 HUF/litre for syrups or concentrates for soft drinks and 7HUF/litre for other soft drinks. Drinks that contain more than 25% of fruit and vegetable are exempted. The tax is payable by volume on products produced in Hungary for the domestic market by manufacturers, and on imported products by the first domestic seller (whether or not this is to the final consumer).

The two tax increases combined correspond to a mark-up of prices from 2010 of 3.1% for regular cola. Cola prices increased by 3.4% in 2011, 1.2% in 2012 and 0.7% in 2013 however these price increases were not above average price inflation at the time. In the same years, demand for cola fell by -2.7%, -7.5%, and -6.0% however, this is a continuation of a downward trend. The authors do not consider demand changes following the tax to be out of the ordinary.

## **UK**

In March 2016, the UK announced that they would be introducing a Soft Drinks Industry Levy from April 2018. The stated aim of the levy is to reduce childhood obesity by incentivising drinks companies to reformulate their products so as to reduce the sugar content. The liability arises at the point beverages are packaged for sale and will rely on producers and importers to report volumes each quarterly accounting period. It will be designed to provide a relief or exemption for the smallest operators, or low volumes of production or imports. It will apply to pre-packaged soft drinks with added sugar where the total sugar content is 5 grams or more per 100 millilitres (g/100ml). There will be a higher rate for drinks with 8g/100ml or more. Fruit and milk based drinks will be excluded from the remit of the tax. The Office for Budget Responsibility (OBR) estimates that it will raise £520 million in the second year of its implementation which currently implies levy rates of 18 pence and 24 pence per litre unit. Some of the revenue from the tax is planned to go towards funding for school initiatives like sports and breakfast programmes.<sup>90,91,92</sup>

## **Ireland**

In the case of Ireland, Bahl, Bird and Walker (2003) investigate the consumption response of the Table Waters tax in Ireland. The Table Waters tax is discussed in Section 4 above.

It includes many of the goods outlined for taxation in the SSD tax proposed in this policy paper. This tax fell on aerated waters and any beverages (including syrups and other liquids intended to be consumed only in a diluted form) put up for sale, in bottles, cans, casks, or other closed containers or receptacles. As such it would have included drinks not proposed in the SSD tax such as diet drinks though it did not include milk drinks. The paper also notes that “exceptions were made for fruit and vegetable juices that, in the opinion of the Revenue Commissioners, have not lost their original character through the addition of water or of other substances for sweetening, preservative or other purposes”.

The goal in their empirical analysis is to measure the response of soft drink consumption to changes in the Table Waters tax that occurred in 1980 and 1990 as well as its abolition in 1992. From 1975 through 1979, this excise tax was levied at a rate of IR£0.10 per gallon. In 1980, the rate was increased to IR£0.37 per gallon and held at that level until July 1990 when it was reduced to IR£0.29 per gallon; the tax was finally abolished in November 1992.

The 1980 rate change occurred due to policy imperatives at the time to raise revenue. The abolition occurred as part of the reform of the tax code undertaken in anticipation of the full application of Single Market rules on 1 January 1993. These instances of tax policy change provide useful natural experiments for understanding the consumption impact of tax changes such as would be the case for the SSD tax.

The authors observe the quantity of drinks consumed over the period 1975 to 1996 and statistically estimate the impact changes in prices had on the consumption of these drinks. In estimating the consumption impact they control for the impact of changes in income, producer costs, the weather, the standard VAT rate, population changes and food prices to sift out the impact of the Table Waters tax itself. In their model, price is defined as a function of, amongst other things, the excise rate on Table Waters.

They estimate a price elasticity of demand of 1.1. This implies that where a 10% reduction in Table Waters tax reduced prices by 10% this would have led to an increase in consumption of 11%.<sup>93</sup>

### **3. Summary**

Following a review of available international evidence in 2015, the WHO recently concluded that **'collectively, the evidence suggests that price policies applied to food can influence what consumers buy and could contribute to improving health by shifting consumption in the desired direction and supporting healthier diets'**.<sup>94</sup>

## 5. THE SHAPE OF A TAX BASED POLICY INTERVENTION TO ADDRESS OBESITY AND SUGAR CONSUMPTION – POLICY OPTIONS

### 1. How Should the Tax be Targeted?

The recommended scope of the tax is shaped by 3 guiding principles/criteria informed by the evidence presented in Sections 2, 3 and 4:

- That only products which have high-levels of added (as opposed to naturally occurring) sugar should be covered by the tax;
- That products which have no nutritional value or satiety should be covered by the tax; and
- That industry should have an incentive to reformulate products to reduce added-sugar content.

Of all the unhealthy foods and beverages available to consumers, the first criterion refers to those which have levels of sugar which are so high that they are beyond what could be considered necessary for good health. This however leaves many goods which have high levels of sugar but also have nutritional value to the consumer. For example, flavoured milk drinks have high sugar but also contain nutrients essential to good health, such as calcium and protein while also contributing to satiation which minimises excess consumption. Therefore, the second rationale excludes these milk based products on these grounds. Some unprocessed fruit juices have high natural sugars, nutritional value, and satiety (e.g. vitamins, fibre) and these should still be available for producers to make and consumers to ingest as part of a balanced diet in accordance with the national Healthy Eating Guidelines.<sup>95</sup> The third rationale offers industry freedom to produce products such as natural fruit juices with high natural sugars while dis-incentivising the behaviour of adding sugar through graded rates. This incentive will also motivate industry to reduce sugar levels in other products such as soft drinks.

From a health perspective, it could be argued that the tax should target high levels of fat, sugar and salt across a range of food and drink products. However, informed by the evidence presented in Sections 2, 3 and 4 this may not be implementable and it may not be desirable. It is recommended that the scope of the tax be limited in a number of ways:

#### The rationale for targeting SSDs

- SSDs provide no/low nutritional or satiating value and are not included in Healthy Eating Guidelines,<sup>96</sup> which state that SSD consumption should be limited to sometimes, not every day and only in small amounts. This argument is less robust for other food and drink products that contain high levels of sugar, fat or salt (Section 2).
- The international evidence has demonstrated mixed results for taxes that have a more encompassing scope, with removal of the tax in some cases. The evidence

suggests that staging implementation of any tax measures by targeting SSDs may increase effectiveness in the long term (Section 3).

- The consumption rate of ‘free sugars’ through SSDs is high and increasing. Rates are particularly concerning for young people, especially young males. Given that Ireland is now behind international comparators on this measure a swift and targeted policy intervention in relation to SSDs may be desirable. Tax could be particularly efficacious in this regard (Section 2).

#### The rationale for targeting all water based drinks with added sugar

- Although other food and drink products may contain high levels of sugar, it is not possible to argue that these products have no nutritional value due to the fact that they likely contain other recommended nutritional components (for example, dairy products).
- In order to incentivise reformulation, it is necessary to target industry behaviour of adding unnecessary levels of sugar.
- We recommend the exclusion of all liquid medicinal products.
- Although the evidence is mixed, we recommend the exclusion of fruit juices with naturally occurring sugar given their nutritional value, as highlighted in the Healthy Eating Guidelines. In order for this to be implementable, however, there may be a requirement for food labelling changes or an industry declaration.

#### The rationale for targeting all added sugars

- There is strong clinical consensus that excessive consumption of all ‘free sugars’ increases risk of overweight and obesity (Section 2).

## 2. How Should the Tax be Rated and Applied?

#### Rate the tax on a graded, volumetric basis

It is proposed that the levy will be charged at two rates namely: SSDs with a total sugar content > 5g/100ml (equivalent to 10%) and SSDs with a total sugar content > 8g/100ml (equivalent to 20%). SSDs that contain less than 5g/100ml will be at 0% in order to incentivise positive behaviour.

- This will allow the tax to mirror the tax planned in the UK and, therefore, minimise cross-border trading.
- This should incentivise industry reformulation and allow the continuation of constructive engagement with industry focussed on sugar reduction to within acceptable levels.

#### Rate the tax at a level that will drive behaviour change

- The relative newness of SSD taxes internationally limits the potential evidence base demonstrating the impact on SSD consumption (Section 4). This means that it is not

possible to clearly argue that a specific rate change will drive a certain behaviour change based on examples of taxes in other countries.

- Clearly a sufficiently large SSD tax would ultimately have an impact on consumption. The relevant question, however, is whether the range of reasonable price increases could have a consumption (and eventually health) impact necessary to justify a tax. With this in mind, the argument of this paper is that the average price increase should be 20% on the taxed goods.
- A tax rate aiming for this price increase would reduce the risks associated with implementing a small tax which goes unnoticed by the consumer and does not impact consumption. It also minimises the risk that producers would absorb the tax entirely and therefore reduce the price to the consumer and consumption impact (although it could still encourage producers to reduce the sugar content of drinks).
- Bearing these unknowns in mind; evaluating the tax regularly and adjusting it over time is recommended in order to develop more robust evidence on the relationship between the tax, consumption and price.

#### Apply the levy to pre-packaged products on sale in Ireland

- This will enable the tax to target producers by incentivising reformulation, without an undue burden on retailers.
- This should facilitate more effective implementation (for example, oversight is more straightforward on pre-packaged products).

## 6. THE LIKELY IMPACT OF INTRODUCING A TAX MEASURE TO ADDRESS OBESITY AND SUGAR CONSUMPTION

### 1. Estimated Health Impact of an SSD Tax

The Institute of Public Health's Health Impact Assessment (2012) concluded that the causes of overweight and obesity are multiple and complex and that there is a need to continue the research in this area.<sup>97</sup> The Health Impact Assessment also concluded that the introduction of additional taxes on food, as a public health measure, is more complex than products like tobacco or alcohol. However, it found evidence that 'taxation could work to reduce overweight and obesity' depending on the level of tax imposed. The report concluded that a 10% tax on the price of SSDs, using an own-price elasticity of 0.9 for SSDs, would reduce obesity by 1.25% among adults in Ireland.

### 2. Estimated Economic Impact of an SSD Tax – Short Term

While the debate around an SSD tax should focus on its importance in improving public health, taxes necessarily affect the economy and as such it is appropriate that an analysis of the economic impact of an SSD tax be discussed when considering its implementation.

The tax would directly take money out of the economy to the value of the tax revenue collected. Beyond this impact, the tax could reduce demand for inputs into the production process. There could be small negative impacts on firms' profits and/or in demand for labour and non-labour inputs to the production process (e.g. plastic).

As the goal of the tax is to change consumption behaviour there could be, if designed and implemented effectively, a switching away from SSDs by the consumer to other goods and services. When considering the impact of demand shifting away from SSDs it is useful to consider two separate types of goods/services which consumers may switch to.

1. Goods that are produced by firms which also produce SSDs. Examples of these depend on the firm in question but are likely to include products not covered by the SSD tax such as diet versions of SSDs, milk-based products, and fruit juices without added sugar or other food products.
2. Goods and services that are not produced by firms which produce SSDs. Examples are again firm dependent but could include anything from fruit to clothes.<sup>98</sup>

Where consumers switch demand to the first category of goods the jobs, profit and non-labour input demand impact is likely to be minimal as firms will be able to shift production activities towards producing non-SSDs goods.

The Central Statistics Office (CSO) shows that 852 persons were engaged in 2012 in the "NACE sector 1107" which covers firms that also manufacture beverages such as soft drinks,

bottled water, fruit drinks, flavoured milk drinks and cordials.<sup>99</sup> This sector includes products not covered under the proposed tax such as flavoured milk drinks, bottled water, diet soft drinks. Therefore, this represents an overestimate of those involved in the manufacture of SSDs.

There is high concentration of market share among soft drinks producers in Ireland. Bord Bia indicates that in 2014, the soft drinks sector in Ireland was dominated by four companies with their market share reaching over 50%.<sup>100</sup> Similarly there are a small number of manufacturers in Ireland. The CSO indicate that only 11 enterprises were classified under “NACE sector 1107”. As discussed above, it is likely that some of the consumption of SSDs which is reduced by the tax will switch to other products (e.g. diet soft drinks) within these companies, thereby, minimising disruption to these firms and the people they employ, allowing for recovery of lost revenue across diversified product ranges.

Where consumption shifts to the second type of goods - that is, goods and services not produced by firms currently producing SSDs then the economic impact on this sector could be more damaging. On the other hand, the sectors to which demand switches will see benefits such as increased jobs and profits. This could ameliorate the negative impact on the economy as a whole.

OECD evidence shows that relative to other forms of taxation such as corporation tax, consumption taxes are less harmful to economic growth. This is because, unlike corporation taxes, taxes on consumption are less distortive of people’s decisions to grow the economy by investing and engaging in enterprise.

### **3. Estimated Economic Impact of an SSD Tax – Medium Term**

Long term data on the health impact of SSDs does not exist, however, a reduction in consumption of SSDs as a result of the tax will achieve better population health. This would not only reduce costs to the State in terms of health expenditure but also boost economic growth through greater labour force participation and productivity. These medium term impacts would also benefit the economy and exchequer through increased taxation resulting from greater labour supply and reduced need for taxation for publicly-funded medical expenditure. As the tax will only be applied to SSDs produced or imported for consumption in Ireland, the tax would not apply to exports of SSDs and, as such, would not be an important factor in the decision of foreign direct investment initiatives that encourage companies to set up in Ireland as an export base.

#### 4. Estimated Social Impact of an SSD Tax

In appraising the SSD tax, as with any tax, it is important to understand where the burden of this tax will fall most heavily to determine the regressivity of the tax. A tax is classified as regressive where the burden of the tax falls as someone’s ability to pay it rises.

**Figure 1** shows soft drinks expenditure as a proportion of total weekly expenditure by household income decile.<sup>101</sup> This shows that households in the lower income deciles tend to spend a greater proportion of their overall expenditure on soft drinks implying that a tax on SSDs could be regressive.<sup>102</sup> Total expenditure on SSDs as a share of household spending, however, is small which limits the likely distributional impact of the tax.

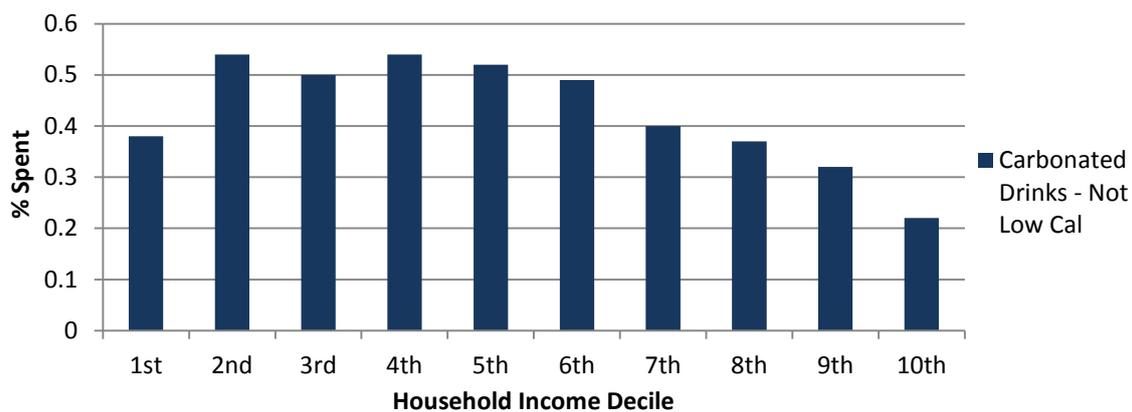


Figure 1: Soft Drinks Expenditure as Percentage of Total Weekly Expenditure by Gross Household Income Decile in euro (CSO,2012)<sup>103</sup>

**Figure 2** shows average absolute expenditure of those in each income decile on soft drinks. It shows that absolute expenditure rises by income decile. This implies that most of total tax revenue raised by the SSD tax will be paid by those in the higher income deciles.<sup>104</sup>

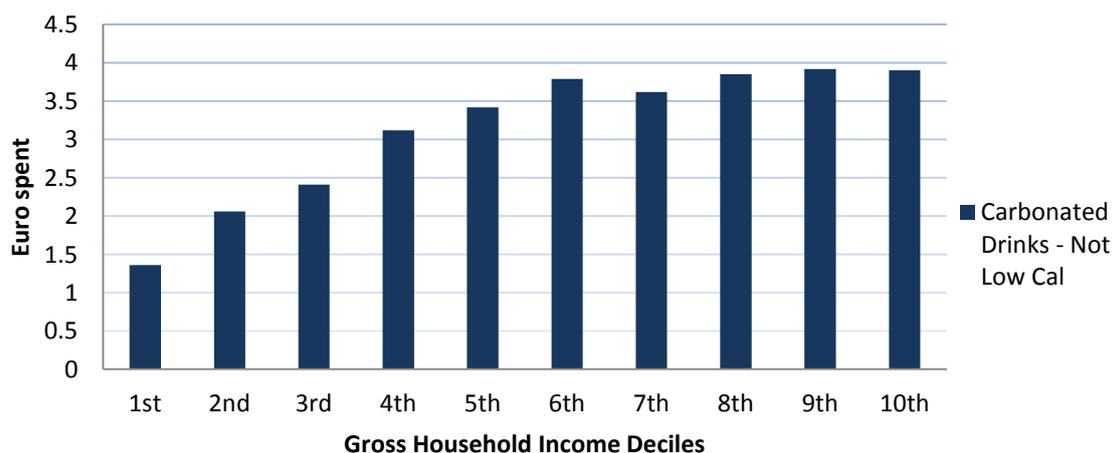


Figure 2: Weekly Soft Drinks Expenditure by Gross Household Income Decile in Euro (CSO,2012)<sup>105</sup>

Therefore, the impact of the tax would be largest, as a proportion of expenditure, on those in the lower deciles. However, regardless of where someone lies on the income distribution, the health impacts of excessive SSD consumption remain the same. The tax is well placed to incentivise a reduction in consumption of SSDs in those who most need to reduce their consumption. An evaluation of the consumption impact of the Mexican SSD tax indicated that consumption fell in response to the tax, and fell more sharply for those in lower socio-economic groups.<sup>106</sup> In the Irish case, the regressivity and negative income impact on those in lower deciles could be counter balanced by reduced sugar consumption and associated health benefits.

An Irish analysis suggests that the impact of a 10% tax on SSDs (of a different form than that proposed here) is about €3.9 million on lower income groups which is the equivalent of €2.67 per individual (assuming that the number of people with less than 60% of average income is 1,461,579).<sup>107</sup> In practice, this is the price of 3 cans of an SSD per annum. Thus, the impact of an SSD tax on the overall progressivity of the tax system would not be significant.

Public acceptability is also relevant. Robust research into the acceptability of health related food taxes vary widely and there is a lack of research identifying an acceptable level of taxation.<sup>108</sup> Support for SSD taxation in the US ranges from 37%-72%, however, support was shown to be greater when the health benefits of the tax are clearly emphasised.<sup>109</sup> Taxes are more likely to receive public support when revenues are designated to promote the health of key groups, such as children and underserved populations, or tied to improving school nutrition and physical activity programmes. This approach has been taken in numerous countries where a tax was introduced to tackle obesity. Algeria uses the fund to tackle cancer prevention, France invests the revenue generated from SSD tax into National Health Insurance and agriculture and Hungary invests the revenue generated into obesity prevention.<sup>110</sup>

A number of organisations have expressed either their support for or concern about the introduction of a tax on SSDs. For instance, Food and Drink Industry Ireland<sup>111</sup> as well as the Irish Beverage Council<sup>112</sup>, which represents the manufacturers and distributors of soft drinks have criticised the measure as placing an unwarranted additional cost on the consumer and that other measures e.g. product reformulation or providing low-sugar or sugar-free alternatives would be more effective. In contrast, the Irish Heart Foundation,<sup>113</sup> the HSE,<sup>114</sup> the Institute of Public Health, Faculty of Public Health,<sup>115</sup> Safefood,<sup>116</sup> and the Royal College of Physicians in Ireland's policy group on obesity,<sup>117</sup> in principle, support the introduction of a tax on SSDs in a bid to tackle Ireland's rising overweight and obesity rates and associated health challenges. Both the Food Safety Authority in Ireland (FSAI)<sup>118</sup> and the Irish Dental Association (IDA)<sup>119</sup> have cautiously welcomed the plan but both organisations emphasise

that a tax of this sort should form part of a suite of measures (including education and health promotion). Both organisations have also indicated their wish that the revenue raised would be ring-fenced and used to tackle the social inequalities that lead to health inequalities (FSAI) and programmes to promote oral health (IDA).

## 7. THE RISKS AND BENEFITS OF A TAX BASED POLICY INTERVENTION TO ADDRESS OBESITY AND SUGAR CONSUMPTION

### 1. Potential Risks of a Tax on SSDs

- As the analysis in Section 6 states, those in lower socio-economic groups spend a higher proportion of their overall expenditure on soft drinks meaning that a tax on SSDs could be regressive. However, the total proportion of household spending on SSDs is small and the negative economic impacts would be outweighed by the potential health benefits associated with reduced consumption of SSDs - namely a reduction in overweight, obesity and obesity-related diseases. Therefore, where reduced consumption leads to a reduction in health inequalities the regressive economic impact the tax has on those in lower socio-economic groups could be ameliorated.
- As it is proposed that the tax will encourage consumers to switch from SSDs to other products/services, there is a risk that **single product firms** whose product portfolio does not include non-SSDs could be disproportionately affected. However, as previously noted the sector to which consumers switch will accrue benefits in terms of profits, job figures etc., thus potentially ameliorating the overall negative economic impact.
- Similarly the proposed tax on SSDs could pose a potential risk to employment in the sector.<sup>120</sup> Given that a number of firms producing SSDs also produce non-SSDs, it is expected that the risk to jobs in the sector could be minimised.

### 2. Benefits of a Tax on SSDs

If implemented, based on the evidence presented, a number of benefits might be expected to derive specifically from a tax intervention of this kind on SSDs.

- If passed on to the consumer, a levy on the quantity of sugar in SSDs could reduce levels of **consumption**. This would have a positive public health impact.
- Irrespective of price impacts, the introduction of a new tax in itself would send a clear signal of the Government's position on the quantity of added sugar in SSDs and this, combined with the possible price effects, could assist individuals to switch to non-sugary drinks.
- As Department of Finance (DoF) analysis has shown<sup>121</sup>, the introduction of a new tax is likely to **raise additional Government revenues**, which could be utilised to tackle a wide range of public policy objectives, including obesity and investing in child and family health policies.
- By introducing a new tax on producers, it could **stimulate reformulation** to reduce the level of sugar in products.
- By **stimulating behaviour change** in one area, it could stimulate a range of serendipitous outcomes. Raising consumer awareness of the negative effects of

exceeding sugar guidelines and consuming excessive 'free sugars' could stimulate other health producing activity for example, switching to healthier food and drink options and increasing physical activity etc.

## 8. THE CASE FOR RE-INVESTMENT

The re-investment of the proceeds of a tax i.e. the “hypothecation” of a tax is the earmarking of the revenue raised for a specific purpose. It is considered “strong” if the revenues are used only for the specific programme and there is no other funding source and “weak” if the programme has other sources of funding. Hypothecated taxes have been used in many countries across a variety of sectors including environmental protection, tobacco control and road safety. Specific Irish examples include the hypothecation of additional tobacco tax revenues following Budget 2000. The price of a packet of 20 cigarettes was increased by 50 pence (16%) and the Government of the day decided that the extra yield from this increase would be paid by the Revenue Commissioners by way of an appropriation-in-aid to the then Department of Health and Children to help fund the increasing cost of health provision, in particular the national cardiovascular health strategy.<sup>122</sup> Since that time, on an annual basis, Revenue has directly paid over to the Department of Health/HSE an annual amount of €168 million. This is recorded in the Annual Report of the Revenue Commissioners.<sup>123</sup>

In the same way, the creation of an inter-sectoral “Healthy Lifestyle Fund” to support healthy lifestyles and behaviours could be considered to ensure the proceeds of a sugar tax contribute to population health initiatives. This is consistent with the recently published Obesity Policy which recommended that proposals be developed with relevant Departments on measures to incentivise healthier behaviours. International experience shows that there is stronger public support for an SSD tax when it is known that either all or part of the proceeds contributes to obesity prevention. Market research commissioned by the Irish Heart Foundation and conducted by Ipsos/MRBI found that public support for an SSD levy went from 52% in 2014 to 58% in 2015, with 78% supporting the levy when it was to be used for obesity prevention in children.<sup>124</sup>

Some element of hypothecation could also provide greater policy accountability in that a portion of the tax would now be dedicated to a specific commitment. It would also protect a revenue stream for healthy lifestyles and disease prevention, the absence of which could result in a large and increasing incidence of overweight and obesity and associated diseases. It would also increase awareness of the impact of unhealthy behaviours, the costs for the health system and contribute to healthier behaviours.

Healthy Ireland represents the Government’s commitments to promote and protect health across the population. Many of the health determinants and the solutions to address societal challenges such as obesity lie in many of the sectors outside the traditional health sector. The establishment of an inter-sectoral fund would foster greater cooperation and collaboration to promote health. In particular, projects aimed at children, young people and their families and supporting vulnerable communities and reducing inequalities could be

prioritised. The fund could be available to all sectors that play a role in the determinants of health including education, environment, transport, social protection, health, agriculture etc.

## 9. MEASURING AND EVALUATING IMPACT

It will be necessary to evaluate the impact of the tax regularly to monitor the achievement of the policy objectives. Several sources of information will be critical to achieve this:

- The international evidence reviewed in this paper tells us that study design significantly influences results and the ability to draw conclusions around impact; larger effects sizes are yielded where stronger methods such as longitudinal and experimental studies are utilised (rather than cross-sectional studies examining consumption isolated at one specific point in time). Ideally, this would be delivered in the form of a high quality, robust and transparent evaluation with a natural experiment-type study design as this is necessary if a causal effect between taxation and behaviour change is to be determined. Attention should be paid to ensure that the design delivers large enough sample sizes and a long enough time frame to examine the sustainability of any impact examined.
- A high quality evaluation should seek to examine the impact of the tax on purchasing, consumption and associated health outcomes such as BMI.
- Reviewing sales data on all SSD classified products will inform how the tax is shaped in future years.
- Reviewing ongoing population-based nutrition surveillance data, building on the Healthy Ireland survey, where additional data relating to SSD consumption and consumption of other food and beverage items will be included, and other nutrition surveillance datasets such as the Childhood Obesity Surveillance Initiative (COSI) and Irish Universities Nutrition Alliance (IUNA) and Growing Up in Ireland (GUI). It will be important in designing these surveys to be able to move beyond household data and move to individual-level consumption data. One needs to take into account the heterogeneity of consumption and distinguish individuals according to characteristics such as age, gender and BMI.
- It will be essential to regularly review and report on the levels and trends in the population and population subgroups of overweight and obesity. This can be achieved as part of the Obesity Policy.

In addition to the data above, further research tracking public reaction and acceptability will be important, as evidenced internationally. Furthermore, an evaluation programme should also examine the impact of the tax on inequalities, compensatory behaviours and substitution effects.

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<sup>81</sup> There are reduced rates available for goods which are seen as essential goods such as basic foods and medicines as well as rates aiming to stimulate economic growth however these rates are exceptions to the standard rate.

<sup>82</sup> Excise Taxes – are taxes paid when purchases are made on a specific good, such as petrol. Excise taxes are often included in the price of the product. There are also excise taxes on activities, such as on motorway usage by trucks.

<sup>83</sup> Value Added Tax – a tax on the amount by which the value of an article has been increased, at each stage of its production.

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<sup>98</sup> Within this latter category it's possible that consumers don't switch to any goods or services immediately but save it for later.

<sup>99</sup> Data is taken from the CSOs Census of Industrial production which covers enterprises with 3 or more persons engaged. For definitions of products covered in NACE sector 1107 see here: <http://www.cso.ie/px/u/NACECoder/Naceltems/1107.asp>

<sup>100</sup> <http://www.bordbiavantage.ie/market-information/sector-overviews/beverages/non-alcoholic-beverages/>

<sup>101</sup> A decile is formed by ordering individuals based on income from lowest to highest and breaking them into groups of equalling ten per cent of the population. So the first income decile is the 10% of the population who have the lowest income and vice versa for the 10th decile.

<sup>102</sup> This inference relies on the assumption that consumption response would be uniform across deciles.

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<sup>104</sup> This inference rests on the assumption that the demand response of consumers would be uniform across deciles.

<sup>105</sup> Household Budget Survey, 2009-2010 First Results. Central Statistics Office data and Department of Health calculations (March 2012), <http://www.cso.ie/en/media/csoie/releasespublications/documents/housing/2010/0910first.pdf>

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