

# Sugar-sweetened beverage taxes in Europe: learning for the future

Anne Marie Thow<sup>1</sup>, Holly L. Rippin<sup>2</sup>, Georgina Mulcahy<sup>1</sup>, Keeva Duffey<sup>2</sup>, Kremlin Wickramasinghe<sup>2</sup>

<sup>1</sup> Menzies Centre for Health Policy and Economics, School of Public Health, Charles Perkins Centre, University of Sydney, Sydney, NSW, Australia

<sup>2</sup> WHO European Office for the Prevention and Control of Non-Communicable Diseases (NCD Office), Division of Country Health Programmes, WHO Regional Office for Europe, Moscow, Russia

**Correspondence:** Anne Marie Thow, Menzies Centre for Health Policy and Economics, School of Public Health, Level 2, Charles Perkins Centre (D17), University of Sydney, Sydney, NSW 2006, Australia, Tel: +61 (0) 422568334, e-mail: [annemarie.thow@sydney.edu.au](mailto:annemarie.thow@sydney.edu.au)

**Background:** Sugar-sweetened beverage (SSB) taxes are recommended globally as part of measures to prevent diet-related NCDs. However, their uptake in the World Health Organization (WHO) European Region has been limited. The aim of this study was to inform strategic, cross-sectoral, public health policy engagement to support the uptake and effective implementation of SSB taxation. **Methods:** We conducted a policy analysis of SSB taxes in the WHO European Region, drawing on theories of policy making and diffusion of innovation. Data were collected from policy documents and media, secondary contextual sources and qualitative interview data ( $n = 20$ ) to analyze factors influencing the adoption of taxes in 10 countries. **Results:** Belgium, Finland, France, Hungary, Ireland, Latvia, Monaco, Norway, Portugal and the UK had current SSB taxes, but Monaco was excluded from the findings due to its unique taxation context. All countries were characterized by policy priority for NCD prevention, and in many there was a fiscal imperative to raise revenue. The taxes took the form of excises or levies, and the tax base and rate varied between countries. SSB taxation was fostered by constructive engagement between health and fiscal policy makers, but also influenced by external industry and public health stakeholders. Policy learning from national and international experience was evident in all countries. **Conclusions:** This study points to the value of ongoing policy learning for improving tax design, and the importance of constructive collaboration between finance and health policy makers. It also suggests regional bodies could play a greater role in supporting SSB taxation.

## Introduction

Non-communicable diseases (NCDs) are responsible for 71% of all deaths globally,<sup>1</sup> and the World Health Organization (WHO) European Region is the worst affected by NCD-related morbidity and mortality, which cause almost 90% of all deaths. The social and economic costs of NCDs are significant in the Region; cardiovascular disease cost the European Union (EU) economy €210 billion in 2015, including healthcare costs, productivity losses and informal care.<sup>2</sup>

Sugar-sweetened beverage (SSB) consumption is one of the modifiable risk factors for NCDs. There is a consistent association between high intake of SSB and increased risk of overweight and obesity,<sup>3</sup> cardiovascular events,<sup>4</sup> hypertension<sup>5</sup> and diabetes.<sup>6</sup> The WHO and others have recommended taxes on SSBs as part of a comprehensive package of policy interventions to prevent diet-related NCDs.<sup>7,8</sup> These taxes can both discourage consumption and encourage reformulation, and have found to be effective at the global and regional level.<sup>9</sup> Approximately 50 countries around the world have implemented SSB taxes in various forms, adapting the broad global recommendation for fiscal policy use to their specific context and ‘innovating’ in their implementation of tax policy to achieve health objectives.<sup>10</sup>

However, uptake of SSB taxes in the European Region has been limited. Only 10 of the 53 WHO European Region Member States (19%) had national level taxes as of 2020 (noting Catalonia, Spain

also has a tax).<sup>11</sup> Adoption of taxes in the European Region has been in the face of political challenges,<sup>12</sup> reflecting global experience, such as gaining political will, support from the finance sector and adequate scientific justification to withstand trade challenges.<sup>13–16</sup> Cross-sectoral policies require engagement and collaboration between health and other sectors of government with different priorities and key performance indicators.<sup>17,18</sup> To date, there have been few multi-country case studies examining the international diffusion and adaptation of global recommendations for NCD policy in sectors outside of health, and none focussed on Europe.

Lessons from previous experience can inform future adaptation, adoption and implementation of SSB taxes, as an effective intervention to address a common health policy challenge.<sup>19</sup> Policy recommendations by global actors, such as the WHO, are actively considered, adopted (or resisted) and adapted through complex policy and political processes. In many cases, the final policy represents policy innovation, because adaptation is required to adopt taxes in different contexts. The European Region has been characterized by policy learning between countries, and its policies are also of interest globally.<sup>20,21</sup> This study takes a policy analysis lens to study SSB tax adoption and implementation in the WHO European Region. The aim of the study is to inform strategic, cross-sectoral, public health policy advocacy to support the uptake and effective implementation of SSB taxation, through examining the politico-economic and stakeholder dynamics in cross-sectoral policy making and adaptation in policy design.

## Methods

### Study design

The study design drew on case study research methodology.<sup>22</sup> The design of data collection instruments and the analytical framework were based on political science theories that point to the influence of experiences in other countries, actors, national context and institutions and global recommendations on policy making.<sup>23,24</sup> Complementing these insights from political science, the uptake of best-practice health policies globally can be helpfully considered 'diffusion' of novel policies or regulations, and we thus also integrated 'diffusion of innovation' theory (table 1).<sup>25,26</sup>

### Case study selection

Case study countries were Member States of the WHO European Region with a current, national level SSB tax in place in 2020, that (i) was implemented or significantly changed after 2004 (when the WHO Global Strategy on Diet, Physical Activity and Health made the first WHO recommendation to consider fiscal policy to promote healthy diets) and (ii) included a consideration of health objectives (mention of health in the tax legislation or political commentary regarding consideration of health in formulating the tax evident in media or interviews). Eligible study countries were identified using the WHO Country Capacity Surveys (CCS) in 2017 and 2019 and the WHO Global Nutrition Review in 2018.

### Documentary data

Data from policy documents and media data relevant to the policy content, context, frames and actors were extracted to a pre-determined matrix based on our study frameworks, and also drawing on a corporate political activity framework<sup>27</sup> in Excel<sup>TM</sup> (Supplementary appendix S1). Relevant policy documents were obtained from documentation submitted within the CCS and government websites, including tax legislation, national strategy document and national health and NCD or nutrition policies. Media data in English were obtained from the Factiva media database, one lead English media source and Food Navigator (<https://www.foodnavigator.com/>), using search terms relevant to SSB taxation over a time period from 2 years prior to adoption, up to 2 years post-adoption; up to two articles per month were sampled. (See Supplementary appendix S2 for details on documentary data collection.)

### Secondary data

We extracted qualitative and quantitative data on context, including political participation (EIU Democracy Index 2019<sup>28</sup>) governing regime (Regimes of the World, v-Dem<sup>29</sup>) government contribution to health expenditure (World Bank<sup>30</sup>) Gross National Income (World Bank<sup>30</sup>) inequality (Gini index, World Bank<sup>30</sup>) and the prevalence of NCDs and SSB consumption (World Bank,<sup>30</sup> Global Health Observatory,<sup>31,32</sup> Global Dietary Database<sup>33</sup>).

### Interview data

We conducted qualitative policy analysis interviews with key government and academic stakeholders ( $n = 20$ ) at national level in 10 countries, identified via WHO country contacts and snowball sampling. Four invited interviewees declined and five did not respond. Two key informants were interviewed from Latvia, Norway, Portugal and the UK, three from Finland, France and Hungary and one from Belgium, Ireland and Monaco. A total of 11 interviewees were from the government health sector, 5 from finance and 4 from academia. All interviewees provided informed consent for participation.

The semi-structured interview tool was based on the study frameworks and asked about (i) policy processes, (ii) actor influence, (iii) learnings from other jurisdictions and (iv) cross-sectoral policy dynamics. The interview tool was piloted twice and minor changes

made. Interviews were conducted via an online platform and lasted 1–1.5 h. Detailed interview notes were written up immediately following each interview and were sent to the interviewee for review.

Ethics approval was granted from the University of Sydney Human Research Ethics Committee (Protocol No. 2020/639).

### Analysis of data

Documentary data analysis was aided by the data matrix (Supplementary appendix S1), which was structured based on the study framework. Two researchers examined the data for patterns within variables (across countries) and within countries (across variables). Detailed notes on evident patterns were taken.

Interview data were coded using NVIVO<sup>TM</sup>, based on pre-determined codes drawn from the study frameworks. These included: frames related to the policy 'problem' and 'solution'; references to other countries and regional and international institutions; actors; cross-sectoral engagement; key influences on the policy process and decision; tax design; and what happened post-implementation. Coded data were then thematically analyzed by three members of the research team to examine factors influencing the uptake of the SSB taxes.

The findings of the documentary analysis were integrated with the interview data and analyzed together, informed by the study framework, aim and objectives.

## Results

Taxes that met our inclusion criteria were in place in Belgium, Finland, France, Hungary, Ireland, Latvia, Monaco, Norway, Portugal and the UK (figure 1), but given the unique taxation context in Monaco (Box 1), this case study was excluded from the findings.

### Box 1 The unique case of SSB taxation in Monaco

Monaco adopted an SSB tax in 2012, including fruit juice drinks, but excluding infant and medical milk-based drinks, and soy-based drinks. The tax was amended in 2018 to introduce differentiated rates based on sugar content.

The taxation situation in Monaco was unique, as there is an international tax treaty with France ('la convention fiscale franco-monégasque'), which harmonizes the tax system. National statistics and interview data indicated that the same health policy issues exist as in France, so the health consideration for the tax was relevant to Monaco. However, there was no domestic decision-making process for the adoption of the tax.

### Characteristics of the case study countries

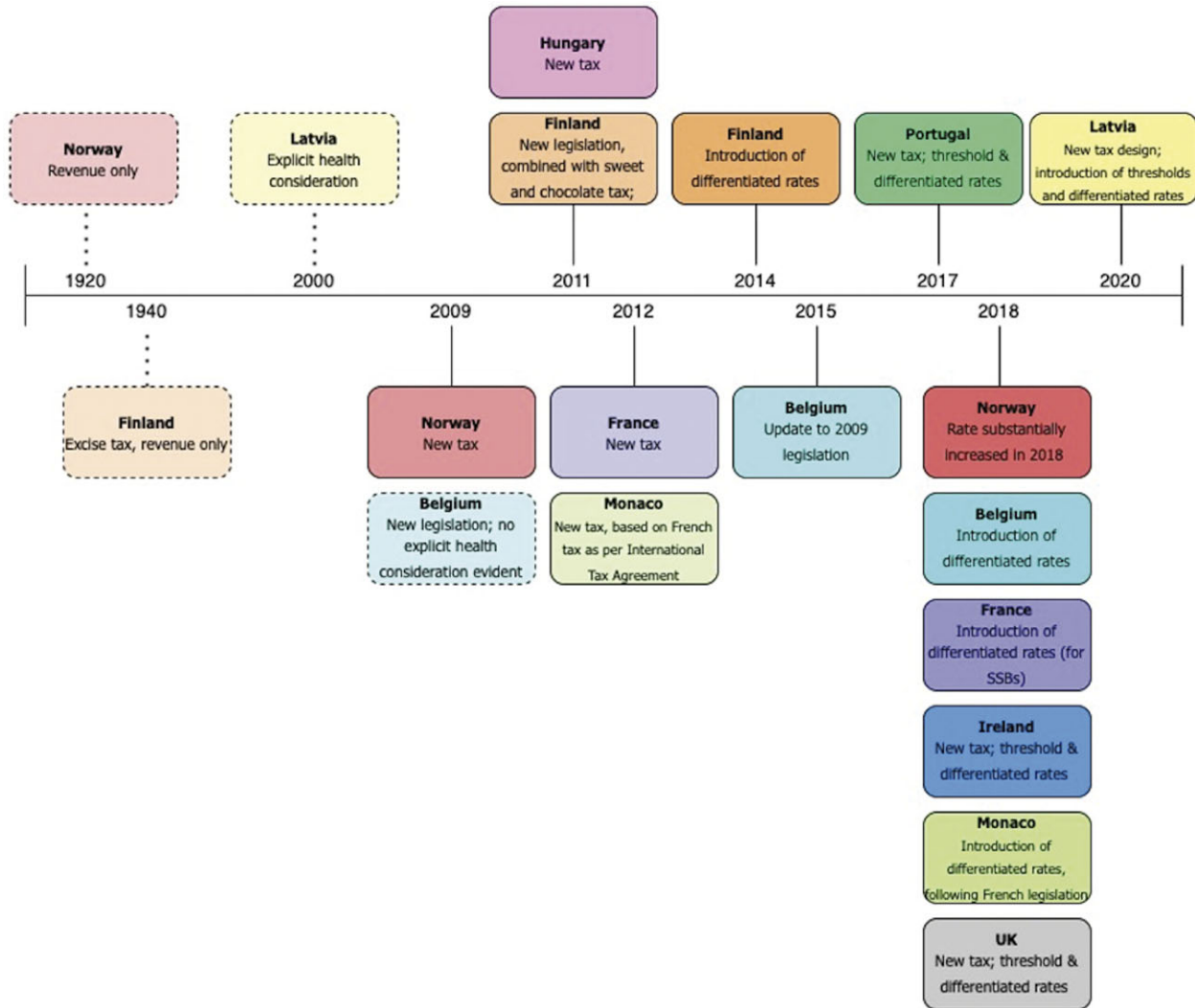
In all study countries, the burden of NCDs and obesity were identified within policy documents and by interviewees as major health policy issues. The prevalence of obesity in the case study countries increased between 2006 and 2016, while diabetes prevalence remained steady or declined slightly (Global Health Observatory). Interviewees in four countries noted the cost of health systems or health insurance as a fiscal challenge at the time of the tax. In all study countries, government health expenditure was over 60% of total health expenditure (World Bank). Consumption of SSBs was recognized as a contributor to poor health outcomes in all countries (interview and media data).

NCDs and/or nutrition were identified in seven whole-of-government strategy at the time of the adoption of the taxes. SSB taxation was explicitly noted as a potential strategy in Finland,

**Table 1** Key elements of study framework: a political science perspective on ‘Diffusion of Innovation’

Conceptual element	Description
Characteristics of the innovating country/government itself	Perceptions of the extent of the problem to be addressed, underlying paradigms, politico-economic context
Characteristics of the policy innovation (i.e. the SSB tax)	Policy instruments; policy paradigms; perceived benefits for the host state
The networks and external influences on SSB tax adoption	International learning through state–state interactions, transnational bodies
Influential actors or ‘change agents’	Actors who have influenced SSB tax adoption at a national level (both supportive and opposing)

Sources: References 23–26.



**Figure 1** Timeline of SSB taxes in the European Region. Notes: (i) the tax changes shown in the figure are those aligning with study inclusion criteria (i.e. changes to design); (ii) the dotted lines signify pre-existing, continuing, taxes, outside our inclusion criteria and therefore not analyzed in the study (we have noted the adoption point, only); and (iii) darker colours indicate subsequent taxes in a given country. Sources: Policy documents, media and interview data

Ireland and Portugal. NCDs and multisectoral approaches were a stated health policy priority in all countries. Interviewees in several countries noted the influence of pre-existing SSB taxes and other similar taxes (e.g. on sugar and alcohol) in facilitating the adoption (or redesign) of taxes.

In all countries, we found high level political interest in both health and fiscal aspects of taxation. In some countries, there was also an interest in fiscal innovation, driven by significant budget deficits, agricultural sector crisis or a medical workforce crisis. The taxes were adopted in all countries in the context of a strong and consistent

whole-of-government priority for economic growth (and in some cases recovery; e.g. following the global financial crisis in 2008–09). Interviewees noted the ‘co-benefits’ of achieving both health and economic objectives for increasing political will for the tax.

Several interviewees also commented on the ability of majority governments to make policy changes. This was reported irrespective of political participation; all case study countries were classed as either liberal or electoral democracies (‘Democratic Regimes of the World’ Index). Eight of the countries were EU members at the time of tax adoption.

## The tax design

The tax design was influenced by both health and economic considerations in all countries, and in several countries there was also a ‘third’ issue, in relation to revenue use. The rationale for the taxes differed between countries—ranging from fiscal (revenue) with limited (implicit) health considerations, to very explicit health objectives (e.g. reducing SSB and/or sugar consumption and incentivizing reformulation).

## Health considerations in tax design

The health considerations underpinning the taxes were all related to healthy diets in the context of the health burden presented by NCDs (interview and media data). The taxes in Hungary, Ireland, Latvia,

Portugal and the UK were explicitly designed to reduce SSB and/or sugar consumption. This was linked to an explicit reformulation objective, and taxes were designed with differential rates and thresholds based on sugar content in Hungary, Latvia and the UK, as well as France and Finland (revised taxes, 2018 and 2014, respectively—see [table 2](#) and [figure 1](#)). Incentivizing reformulation was described as enabling industry to change (to reduce the tax burden), but it was also noted that there was a trade off with revenue generation.

The definition of the products taxed was influenced by the Ministry of Health, in line with health considerations ([table 2](#)), even where health was not an explicit objective. The taxes consistently applied to SSBs, but the inclusion of beverages containing non-sugar sweeteners, fruit juice and milk-based drinks varied ([table 2](#)).

**Table 2** Details of SSB taxes, at time of adoption, WHO European region

Country	Tax type (name)	Tax design	Tax base at time of adoption	Tax rates at time of adoption	Objective/rationale for the tax	Earmarking
Belgium <sup>a</sup> 2015	Excise tax	Specific (volumetric), flat rate (product type)	Non-alcoholic beverages (sugar sweetened or other sweeteners) Substances intended for preparation	6.8133€/hectolitre for all non-alcoholic beverages (sugar sweetened or other sweeteners)	Fiscal; Implicit health consideration (public and parliamentary discussion)	
Finland <sup>b</sup> 2011	Excise tax (The Soft Drinks Tax Act)	Specific (sugar content), flat rate (product type)	Non-alcoholic beverages—including soy and oat drinks, sports drinks (unsweetened <0.5% sugar, sugar sweetened >0.5% sugar) Fruit and vegetable juices Substances intended for preparation	75 cents/kg or 7.5 cents/l for liquids. 75 cents/kg for solid ingredients of soft drinks	Fiscal; Implicit health consideration, with inclusion in sugary product tax and public discussion	
France <sup>c</sup> 2012	Levy (‘contribution’)	Specific (volumetric), flat rate	SSB include soft drinks, fruit beverages, vitamin water, flavoured milk; tax also applies to non-alcoholic beverages with artificial sweeteners	7.16€/hectolitre	Fiscal; Explicit health considerations	Social security including health care and (initially) support to the agriculture sector (formal)
Hungary <sup>d</sup> 2011	Excise tax (public health product tax)	Specific (volumetric), flat rate (product type)	Non-alcoholic beverages (such as soft drinks, energy drinks) Substances intended for preparation Flavoured alcoholic beverages (sugar sweetened or sweeteners)	5HUF/l for >8 g sugar/100 ml 250HUF/l for energy drinks	Fiscal; Explicit health considerations	Public health fund (formal) Health workers wages (informal)
Ireland <sup>e</sup> 2018	Excise tax (sugar-sweetened drinks tax)	Specific (sugar content), tiered/differentiated rates	Non-alcoholic beverages (sugar sweetened); substances intended for preparation	16.26€/hectolitre for 5–8 g sugar/100 ml; 24.39€/hectolitre for >8 g sugar/100 ml	Reformulation; Explicit health considerations	
Latvia <sup>f</sup> 2020	Excise tax	Specific (sugar content), tiered rate	Non-alcoholic beverages (unsweetened and sugar sweetened)	7.4€/hectolitre for <8 g/100 ml 14€/hectolitre for ≥8 g/100 ml	Fiscal; Reformulation; Explicit health considerations from pre-existing tax	
Monaco <sup>g</sup> 2012	Specific tax	Specific (volumetric), flat rate	Non-alcoholic beverages, water or fruit and vegetable juices with added sugar	7.16€/hectolitre	No country-specific policy decision (International Tax Agreement)	
Norway <sup>h</sup> 2009	Excise tax (non-alcoholic beverage tax)	Specific (volumetric), flat rate (product type)	Non-alcoholic beverages (sugar sweetened or other sweetener) Substances intended for preparation	NOK2.71/l for non-alcoholic beverages NOK16.53/l for syrups	Fiscal; Explicit health consideration (health policy)	

(continued)

Table 2 Continued

Country	Tax type (name)	Tax design	Tax base at time of adoption	Tax rates at time of adoption	Objective/rationale for the tax	Earmarking
Portugal <sup>l</sup> 2017	Excise tax	Specific (sugar content), tiered/differentiated rates	Non-alcoholic beverages (sugar sweetened or other sweeteners); substances intended for preparation	8.22€/hectolitre for <80 g sugar/l 16.46€/hectolitre for ≥80 g sugar/l	Fiscal; Explicit health considerations	National Health Service (formal)
UK <sup>i</sup> 2018	Levy (soft drinks industry levy)	Specific (sugar content), tiered/differentiated rates	Non-alcoholic beverages (sugar sweetened and unsweetened)	18p for 5–8 g of total sugar/100 ml; 24p for >8 g of total sugar/100 ml	Reformulation; Explicit health considerations	Commitment to support school-based health programmes (informal) <sup>k</sup>

Sources: Policy documents, interview data and media articles (tax legislation footnoted).

- a: European Commission. (2016). 'Indirect taxes—Other Indirect'. Retrieved 19/05/2021, from [https://ec.europa.eu/taxation\\_customs/tedb/taxDetails.html?id=32/1451606401](https://ec.europa.eu/taxation_customs/tedb/taxDetails.html?id=32/1451606401).; Service public fédéral chancellerie du premier ministre [Federal Public Service—Chancellery of the Prime Minister] (2015). Loi relative aux mesures concernant le renforcement de la création d'emplois et du pouvoir d'achat [Law on Measures Concerning the Strengthening of Job Creation and Power Purchase]. Brussels, Belgium, Belgian Official Gazette.
- b: European Commission. (2011). 'Excise Duty—Sweets, Ice-Cream and Soft Drinks'. Retrieved 19/05/2021, from [https://ec.europa.eu/taxation\\_customs/tedb/legacy/taxDetail.html?id=250/1313712000&taxType=Other%20indirect%20tax](https://ec.europa.eu/taxation_customs/tedb/legacy/taxDetail.html?id=250/1313712000&taxType=Other%20indirect%20tax).; justitieministeriet [Ministry of Justice] (2010). Lag om punktskatt på sötsaker, glass och läskedrycker [Law on excise duty on sweets, ice cream and soft drinks]. Helsinki, Finland, Finlex.
- c: République française (French Republic). Code général des impôts: Article 1613 ter (General Tax Code: Article 1613). Paris, France. Retrieved 20/05/2021 from [https://www.legifrance.gouv.fr/codes/article\\_lc/LEGIARTI000025051331/2011-12-30](https://www.legifrance.gouv.fr/codes/article_lc/LEGIARTI000025051331/2011-12-30).
- d: MHK Jogszabály szolgáltatás [MHK Legislation service] (2018). 2011. évi CIII. törvény a népegészségügyi termékadóról [2011 CIII. law on the public health product tax]. Budapest, Hungary, MHK Jogszabály szolgáltatás [MHK Legislation service]. National Institute of Pharmacy and Nutrition. (2019). 'The Hungarian Public Health Product Tax'. Retrieved 19/05/2021, from [https://ec.europa.eu/health/sites/default/files/non\\_communicable\\_diseases/docs/ev\\_201906201\\_co012\\_en.pdf](https://ec.europa.eu/health/sites/default/files/non_communicable_diseases/docs/ev_201906201_co012_en.pdf).
- e: Office of the Attorney General (2017). Finance Act 2017. Number 41 of 2017. Dublin, Ireland, Government of Ireland. Revenue (2020). Sugar Sweetened Drinks Tax (SSDT) Compliance Procedures Manual. Dublin, Ireland, Government of Ireland.
- f: Saeima [Parliament of Latvia] (2020). Grozījumi likuma 'Parakšizesnodokli' [Amendments to the Law 'On Excise Tax']. Rīga, Latvia, Republic of Latvia.; Saeima Press Service. (2020). 'Saeima increases excise duty for sweetened non-alcoholic beverages'. Retrieved 19/05/2021, from <https://www.saeima.lv/en/news/saeima-news/28716-saeima-increases-excise-duty-for-sweetened-non-alcoholic-beverages>.
- g: Légimonaco—Codes et Lois Monégasque [Monaco Codes and Laws]. (2012). 'Ordonnance n. 3.652 du 30/01/2012 portant création d'une taxe perçue sur certaines boissons contenant des sucres ajoutés [Ordinance n. 3.652 of 01/30/2012 creating a tax levied on certain drinks containing added sugars]'. Retrieved 19/05/2021, from <https://en.service-public-entreprises.gouv.mc/Tax/Other-taxes-and-duties/Excise-duties/How-to-pay-taxes-on-non-alcoholic-beverages>.
- h: Toll- Og Avgiftsdirektoratet [Customs and the Directory of Taxes] (2009). Avgift På Alkoholfrie Drikkevarer Mv. [Fee on Alcohol Free Beverages etc.]. Oslo, Norway, Toll- Og Avgiftsdirektoratet [Customs and the Directory of Taxes]. The Norwegian Tax Administration. (2021). 'Non-alcoholic beverage tax'. Retrieved 19/05/2021, from <https://www.skatteetaten.no/en/business-and-organisation/vat-and-duties/excise-duties/about-the-excise-duties/non-alcoholic-beverage/>.
- i: Diário da República Eletrónico. (2020). 'Special Excise Tax Code (CIEC) Decree-Law No. 73/2010'. Retrieved from <https://dre.pt/web/guest/legislacao-consolidada/-/lc/131765975/202103162336/73811181/diploma/indice>.
- j: Her Majesty's Revenue and Customs (2018). Soft Drinks Industry Levy: The Soft Drinks Industry Levy Regulations 2018. London, United Kingdom, Her Majesty's Revenue and Customs. 2018 No. 41.; Her Majesty's Revenue and Customs. (2018). 'Check if your drink is liable for the Soft Drinks Industry Levy'. Retrieved 2/03/2020, from <https://www.gov.uk/guidance/check-if-your-drink-is-liable-for-the-soft-drinks-industry-levy>.
- k: Informal earmarking refers to commitments for expenditure from general revenue that are conceptually/informally linked to health tax revenue.

Reasons for exclusion of juices and milk-based drinks included the impacts on agriculture and related small businesses, as well as health considerations related to the presence of vitamins and/or minerals, while inclusion in one country was informed by WHO guidelines on sugar.

### Finance considerations in tax design

Ministries of Finance tended to 'own' the tax design process and lead on administrative and technical roles. The tax design was influenced by the economic context, including a desire to minimize economic impacts and current tax reform in France, Hungary and Portugal. As indirect taxes, excise taxes applied to industry rather than consumers, and enabled revenue generation without raising income taxes. Interviewees in six countries also noted consideration of employment impacts, including design features that effectively

exempted small (domestic) industry sectors in Finland, Hungary, Norway and the UK.

A key economic consideration in tax design was revenue. This was explicit in the tax policy objectives and media in eight countries, and linked to addressing a budget deficit in six. Taxes were formally and informally earmarked in four countries (table 2), which interviewees noted increased their political and public acceptability. In contrast, health sector interviewees identified the lack of earmarking for preventive health intervention as a limitation in Belgium and France.

Subsequent changes to the taxes were relatively common, with regular increases in tax rates noted in most countries, decreases in tax rates and changes to the tax base in Norway, and the introduction of differentiated tax rates following an initial flat-rate tax in Belgium, France and Norway (figure 1). Interviewees in four countries also noted that the speed of adoption was a consideration in enabling the adoption of the tax; faster process meant less opposition.

**Table 3** Industry arguments against SSB taxation

Argument	Countries in which argument was evident
The SSB tax will have a negative economic impact on industry, particularly in relation to employment	All countries
Criticized the selected tax base and/or rate as not aligned to health objective, too high, etc.	All countries
The taxes would be ineffective in achieving their health objectives	Belgium, Finland, France, Hungary, Ireland, Portugal and the UK
Future problems with implementation in, such as the likelihood of cross-border shopping or difficulties in attaining full compliance	Belgium, Finland, Ireland, Portugal and the UK
The tax would be regressive and thus have a negative impact on consumers	Finland, France, Hungary, Ireland and Portugal
The tax singled out beverages and/or the beverage industry for differential taxation, and would imply (explicitly in France and Hungary) that these products were 'worse' than others	Belgium, Finland, France and Hungary (notably, these were earlier taxes)
As the tax revenue was not earmarked, the tax was not a valid health intervention	Belgium and France

Source: Interview and media data.

## *Influential actors*

### Opposition

The taxes were strongly opposed by food and beverage industry actors (both multinational and domestic) in all study countries, before and after implementation. There was opposition from local fruit producers in Finland and Norway, but farmers in France supported the tax due to revenue allocation.

The main mechanisms for industry influence were: strong public opposition via media; targeted communication/lobbying to Ministers; and threats to withdraw or reduce investment, initiate legal action or cease participation in public health initiatives. Food and beverage industry actors used consistent arguments across all countries related to the impact of the tax as well as the design of the tax (table 3). Media reports indicated minimal economic impact of taxes on industry in Finland, France, Portugal and the UK.

Interviewees attributed the lack of industry success in opposing taxation to strong government interest in SSB taxation, effective cross-sectoral engagement between health and finance, and external support for the taxes [including non-governmental organizations (NGOs) and international institutions]. However, industry did influence tax design in a range of ways; notably exclusion of: beverages containing non-sugar sweeteners; small-medium enterprises; and domestic fruit producers. Industry actors appeared more likely to support the tax if their product portfolio included beverages containing non-sugar sweeteners, they were involved in the design process, and they used the adoption of SSB taxation to launch product innovations and promote beverages containing non-sugar sweeteners (the latter was evident in five countries).

### Supportive actors

Supportive actors in all countries included political and government actors, NGOs and academics (media and interview data). The main arguments evident in support of the taxes in all countries focussed on the significance of the policy 'problem'; both the health problem presented by obesity, diet-related NCDs and consumption of SSBs (with four also explicitly identifying the impact on children), and the fiscal problem in terms of the need for revenue. SSB taxation was also identified as a (cost) effective intervention to address these health problems, and a means for raising revenue.

Political and government actors publicly supported the taxes in eight of the case study countries; usually the Minister of Health, but the Minister of Finance in two countries. In line with the multiple objectives that many of the taxes served, there was also government support evident in the UK and Portugal from the Treasury; in France from the Minister for Agriculture; and in Ireland from the Department of Children. NGOs were particularly influential in Finland, Ireland, Norway and the UK. The key mechanisms of influence evident were: engaging with public consultation; direct lobbying

to government Ministers; supporting effective communication to the general public and key groups (e.g. parents), including through social media; and acting as an alliance or coalition. Academics were supportive in Belgium, Finland, France, Hungary, Ireland and the UK, particularly through generation and dissemination of data on the health burden and possible health benefits of SSB taxation.

### Cross-sectoral engagement

Constructive cross-sectoral engagement between the Ministry of Finance and Ministry of Health was raised by interviewees in all countries as influential in the adoption of SSB taxes. This tended to be characterized by responsibilities for different components of tax design. Interviewees in five countries noted that cooperation was enhanced by processes for informal consultation and communication during the tax development stage. In at least six countries, the establishment of steering committees or advisory groups with multi-sectoral representation supported adoption as well as subsequent changes to the tax design. Interviewees in three countries noted that limiting engagement with industry during the planning for and development of the tax also facilitated adoption.

### *External influences and policy learning*

We found indication of policy learning from other countries with SSB taxes, and over time within countries. Key reference countries included Mexico, states and cities in the USA, Denmark, Hungary, the UK and France. Policy learning from the health side tended to focus on effectiveness, whereas for finance actors, policy learning focussed more on tax design. Interviewees in five countries noted adaptation and innovation in tax design. For example, Finland and France had pioneered taxes in the region, Hungary had developed a unique approach with a comprehensive tax base, and the UK had developed a unique tiered structure in their tax design.

Policy innovation within the Region also seemed to prompt on-going learning; e.g. the change to a tiered tax structure in France and Norway followed the development of the UK tax. Policymakers in the case study countries considered tax design and experiences in other countries in the European Region in planning tax adoption or changes, particularly with respect to both alignment and cross-border shopping implications of the tax rate. EU membership was repeatedly identified as an influence on tax design and policy processes, although not on the decision to adopt an SSB tax. Interviewees in more than half of the countries noted that the EU could be restrictive in terms of implementing taxes, and presented barriers to avoid, such as State Aid restrictions.

The WHO was the most common international body mentioned (six countries) as influencing tax adoption, including through reporting on the health consequences of SSB consumption and providing information on tax design. Interviewees in five countries

noted that published guidance and scientific evidence from international institutions, including WHO, the World Cancer Research Fund and Organization for Economic Cooperation and Development, were helpful in tax design and development.

## Discussion

This analysis of the SSB taxes adopted in 10 countries in the WHO European Region highlights the innovation, adaptation and political-economic dynamics in the adoption of this global health policy recommendation. Five of the case study countries were relatively early adopters globally, introducing health-oriented SSB taxes during or following the 2008–10 global financial crisis. In contrast, Ireland, Portugal and the UK were more recent adopters, with taxes designed with more explicit health considerations and tiered structures to foster reformulation, and a number of the earlier adopters subsequently similarly redesigned their taxes. Although outside the scope of this study, it is notable that Latvia adopted a health-oriented tax in 2000, representing an early innovation in SSB taxation. Another unique case study was the adoption of France's SSB tax in Monaco, which highlights the role of international tax agreements in constraining domestic tax policy as an important consideration for global SSB tax policy.

### Influences on SSB taxation

Key factors contributing to successful adoption of SSB taxes included strong government interest in taxation in relation to both fiscal and health concerns, effective cross-sectoral engagement between health and finance and external support for the taxes (both domestically and internationally). This reflects findings from other studies of 'successful' SSB taxation, in which high level political support for taxation has been identified as a key factor.<sup>12,14–16,34</sup> As elsewhere, industry actors consistently opposed these taxes in the European Region on the basis of potential adverse economic impacts—particularly on employment.<sup>35,36</sup> However, research shows that such impacts are likely to be negligible.<sup>37</sup> The tax design in all countries was influenced by ongoing policy learning from national and international experience, often resulting in adjustments to the taxes following initial adoption. Our data suggest that policy learning took two main forms—one regarding the potential effectiveness of taxes for health, and the other, noted among tax policymakers, related to efficient tax design and administration.

### Strengths and limitations

This study has drawn on multiple data sources and was successfully conducted during the COVID-19 pandemic using online platforms for interviews. The main limitation of the study was the small number of interviewees (1–3) in each country, although this was mitigated by triangulating the interview data with documentary data from policies and media. The conduct of the research largely in English, and the length of time since adoption of the taxes (up to 11 years), also presented a limitation in terms of obtaining media data, and there was a risk of recall bias. In addition, the fact that this study was a collaboration with the WHO European Regional Office seemed to facilitate the identification and recruitment of interviewees, but also may have prompted or influenced the reflection of interviewees on the role of WHO.

### Insights into 'best practice' for SSB taxation

The findings of this study provide three insights into conceptualizing 'best practice' for SSB taxation. First, design and implementation of successful SSB taxes are characterized by constructive collaboration between finance and health policymakers, which can be enabled by institutional structures that facilitate consultation and ongoing engagement with health regarding design features. Second, health sector input can ensure the tax base reflects the health burden, as well as cultural patterns in consumption, and can be

supported by international or regional guidance. Third, good design of SSB taxes involves strategic consideration of the revenue generated, particularly during times of economic crisis.<sup>12</sup> Formal or informal earmarking can enhance political support for taxes, offset economic impacts and maximize health and social benefits.

### The role of regional bodies

There is potential for regional institutional structures and technical support to foster SSB taxes, and potentially other NCD policy measures. Most of the case study countries were EU members, and it was evident that regional structures could both inhibit and foster the adoption of taxation. The strict EU rules regarding the application of taxation and State Aid were repeatedly identified as a limitation on tax policy making; at times with direct industry involvement via legal challenges. Cooperation and mechanisms at the regional level may be an opportunity to reduce the risk of legal challenge through developing consistent guidance on tax bases and rates, which would also limit cross-border price differentials. In the European Region, e.g. the Eurasian Economic Union has recently introduced standards to facilitate trans-fat legislation within member countries.<sup>38</sup>

## Supplementary data

Supplementary data are available at *EURPUB* online.

## Acknowledgements

The authors are grateful for the time and expertise of the interviewees, and also acknowledge João Breda for his assistance in the planning and conceptualizing of the study. The authors also acknowledge the constructive reviews of the two anonymous reviewers. This research also forms the basis of a report by the WHO European Regional Office.

## Funding

This work was partially funded under an Agreed Programme of Work between the WHO European Regional Office and the University of Sydney, and by an internal SOAR Fellowship from the University of Sydney, held by A.M.T.

*Conflicts of interest:* None declared.

## Key points

- Sugar-sweetened beverage taxation is recommended as part of global efforts to prevent diet-related non-communicable diseases, but implementation remains limited.
- Sugar-sweetened beverage taxation in the European Region reflected successful cross-sectoral engagement between health and finance sectors, with each playing complementary roles in the policy process, as well as strategic advocacy by stakeholders.
- Industry consistently opposed sugar-sweetened beverage taxation, and in some cases this led to changes in policy design.
- There is an opportunity for regional bodies to support sugar-sweetened beverage taxation.

## References

- 1 World Health Organization. *Noncommunicable Diseases*. Geneva: World Health Organization, 2018.
- 2 Timmis A, Townsend N, Gale CP, et al. European Society of Cardiology. European Society of Cardiology: cardiovascular disease statistics 2019. *Eur Heart J* 2020;41: 12–85.

- 3 Ruanpeng D, Thongprayoon C, Cheungpasitporn W, Harindhanavudhi T. Sugar and artificially sweetened beverages linked to obesity: a systematic review and meta-analysis. *QJM* 2017;110:513–20.
- 4 Narain A, Kwok C, Mamas M. Soft drinks and sweetened beverages and the risk of cardiovascular disease and mortality: a systematic review and meta-analysis. *Int J Clin Pract* 2016;70:791–805.
- 5 Kim Y, Je Y. Prospective association of sugar-sweetened and artificially sweetened beverage intake with risk of hypertension. *Arch Cardiovasc Dis* 2016;109:242–53.
- 6 Greenwood DC, Threapleton DE, Evans CEL, et al. Association between sugar-sweetened and artificially sweetened soft drinks and type 2 diabetes: systematic review and dose–response meta-analysis of prospective studies. *Br J Nutr* 2014;112:725–34.
- 7 World Bank. *Taxes on Sugar-Sweetened Beverages: Summary of International Evidence and Experiences*. Washington, DC: World Bank Group, 2020.
- 8 World Health Organization. *Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020*. Geneva, Switzerland, 2013.
- 9 Cawley J, Thow AM, Wen K, Frisvold D. The economics of taxes on sugar-sweetened beverages: a review of the effects on prices, sales, cross-border shopping, and consumption. *Annu Rev Nutr* 2019;39:317–38.
- 10 World Cancer Research Fund. Available at: <http://www.wcrf.org/int/policy/nourishing-framework> (8 December 2019, date last accessed).
- 11 World Health Organization. *Global Nutrition Policy Review 2016–2017: Country Progress in Creating Enabling Policy Environments for Promoting Healthy Diets and Nutrition*. Geneva: World Health Organization, 2018.
- 12 Le Bodo Y, Etilé F, Gagnon F, De Wals P. Conditions influencing the adoption of a soda tax for public health: analysis of the French case (2005–2012). *Food Policy* 2019;88:101765.
- 13 Alsukait R, Bleich S, Wilde P, et al. Sugary drink excise tax policy process and implementation: case study from Saudi Arabia. *Food Policy* 2020;90:101789.
- 14 Onagan FCC, Ho BLC, Chua KKT. Development of a sweetened beverage tax, Philippines. *Bull World Health Organ* 2019;97:154–9.
- 15 Fuster M, Burrowes S, Cuadrado C, et al. Understanding policy change for obesity prevention: learning from sugar-sweetened beverages taxes in Mexico and Chile. *Health Promot Int* 2021;36:155–64.
- 16 Thow AM, Quedsted C, Juventin L, et al. Taxing soft drinks in the Pacific: implementation lessons for improving health. *Health Promot Int* 2011;26:55–64.
- 17 Khayatzadeh-Mahani A, Ruckert A, Labonté R. Obesity prevention: co-framing for intersectoral 'buy-in'. *Crit Public Health* 2018;28:4–8.
- 18 de Leeuw E. Engagement of sectors other than health in integrated health governance, policy, and action. *Annu Rev Public Health* 2017;38:329–49.
- 19 WHO. *A Guide to Implementation Research in the Prevention and Control of Noncommunicable Diseases*. Geneva: World Health Organization; 2016.
- 20 Hassenteufel P, Benamouzig D, Minonzio J, Robelet M. Policy diffusion and translation: the case of evidence-based health agencies in Europe. *Novos Estud CEBRAP* 2017;36:77–96.
- 21 Arbolino R, Carlucci F, De Simone L, et al. The policy diffusion of environmental performance in the European countries. *Ecol Indic* 2018;89:130–8.
- 22 Yin RK. *Case Study Research: Design and Methods*. Thousand Oaks: Sage Publications, 2003.
- 23 Rose R. *Lesson-Drawing in Public Policy: A Guide to Learning across Time and Space*. Chatham, New Jersey: Chatham House Publishers, Inc., 1993.
- 24 Stone D, Porto de Oliveira O, Pal L. Transnational policy transfer: the circulation of ideas, power and development models. *Policy Soc* 2020;39:1–18.
- 25 Black J. Chapter 1: what is regulatory innovation? In: Black J, Lodge M, Thatcher M, editors. *Regulatory Innovation: A Comparative Analysis*. USA: Edward Elgar Publishing, 2006;1–15.
- 26 Rogers EM. *Diffusion of Innovations*, 5th edn. New York: Free Press, 2003.
- 27 Mialon M, Swinburn B, Sacks G. A proposed approach to systematically identify and monitor the corporate political activity of the food industry with respect to public health using publicly available information. *Obes Rev* 2015;16:519–30.
- 28 The Economist Intelligence Unit. *Democracy Index 2019 - A Year of Democratic Setbacks and Popular Protest*. London, UK: The Economist Intelligence Unit Limited, 2020.
- 29 Coppedge M, Gerring J, Knutsen CH, et al. V-Dem Dataset V10. Varieties of Democracy (V-Dem) Project, 2020.
- 30 The World Bank. Available at: <https://data.worldbank.org> (3 February 2021, date last accessed).
- 31 The Global Health Observatory. Available at: [https://www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-obesity-among-adults-bmi-30-\(age-standardized-estimate\)-\(-\)](https://www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-obesity-among-adults-bmi-30-(age-standardized-estimate)-(-)) (27 January 2021, date last accessed).
- 32 The Global Health Observatory. Available at: [https://www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-overweight-among-children-and-adolescents-bmi-1-standard-deviations-above-the-median-\(crude-estimate\)-\(-\)](https://www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-overweight-among-children-and-adolescents-bmi-1-standard-deviations-above-the-median-(crude-estimate)-(-)) (27 January 2021, date last accessed).
- 33 Tufts Friedman School of Nutrition Science and Policy. *Global Dietary Database*. Medford, United States: Tufts University, 2019.
- 34 Hageaars LL, Jeurissen PPT, Klazinga NS. The taxation of unhealthy energy-dense foods (EDFs) and sugar-sweetened beverages (SSBs): an overview of patterns observed in the policy content and policy context of 13 case studies. *Health Policy* 2017;121:887–94.
- 35 Ahaibwe G, Abdool Karim S, Thow A-M, et al. Barriers to, and facilitators of, the adoption of a sugar sweetened beverage tax to prevent non-communicable diseases in Uganda: a policy landscape analysis. *Glob Health Action* 2021;14:1892307.
- 36 Thow A-M, Erzse A, Asiki G, et al. Study design: policy landscape analysis for sugar-sweetened beverage taxation in seven sub-Saharan African countries. *Glob Health Action* 2021;14:1856469.
- 37 Mounsey S, Veerman L, Jan S, Thow AM. The macroeconomic impacts of diet-related fiscal policy for NCD prevention: a systematic review. *Econ Hum Biol* 2020;37:100854.
- 38 Demin A, Løge B, Zhiteneva O, et al. Trans fatty acid elimination policy in member states of the Eurasian Economic Union: implementation challenges and capacity for enforcement. *J Clin Hypertens* 2020;22:1328–37.