



EUROPEAN
FEDERATION OF
THE ASSOCIATIONS
OF DIETITIANS

European Federation of Associations of Dietitians (EFAD)

FISCAL (AND OTHER) MEASURES WHICH INFLUENCE FOOD AND NON-ALCOHOLIC DRINK CONSUMPTION IN EUROPE

A large, abstract graphic at the bottom of the page consists of several overlapping, semi-transparent geometric shapes in shades of blue and grey, creating a layered, architectural effect.

2016

INDEX

EXECUTIVE SUMMARY	3
Introduction.....	5
Current evidence assessing the effectiveness of fiscal measures.....	7
Low income groups.....	9
Food and Drink prices and availability	10
Substitution.....	11
Current EU Case Studies.....	11
Subsidies	12
Reformulation	13
Marketing	13
Conclusion.....	14

This is an EFAD discussion paper developed by the European Specialist Dietetic Network for Public Health (ESDN-PH)

EXECUTIVE SUMMARY

Fiscal measures offer an opportunity to influence subconscious food choice through placing greater taxes on foods with either a high energy density and/or a low nutrient density, examples being foods high in refined sugars and saturated fats. Some innovative work has advocated interventions such as fiscal measures to try and reverse the increasing trend in obesity prevalence and other non-communicable diseases. Some examples are "Action Plan for implementation of the European Strategy for the Prevention and Control of non-communicable diseases 2012–2016"¹, "European Food and Nutrition Action Plan 2015–2020"², "The European Observatory on Health Systems and Policies"³, or "Using price policies to promote healthier diets. WHO 2015"⁴.

An example of how governments are following some of the recommendations given in the proposed policies is the Hungarian Public Health Product Tax. The health impact assessment of the tax affecting sugar-sweetened beverages, energy drinks, confectionery, salted snacks, condiments, flavoured alcohol and fruit jams, was conducted with the support of the WHO Regional Office for Europe in 2013. According to this impact assessment, sales of products subject to the public health tax have fallen by 27%, with a 20–35% decrease in consumption observed. An additional benefit observed has been the response of manufacturers in removing entirely, or substantially reducing, the taxed ingredient in their products through reformulation. Also in France, tax on sugar- and artificially-sweetened beverages, was adopted in 2011. The tax generates revenues of almost €280 million per year and its alignment with the goals of reducing overweight and obesity have been noted, particularly with regard to childhood and adolescent obesity. Sugar-sweetened beverage sales have decreased by 3.3% due to the tax⁵.

Assessing the effectiveness of fiscal measures is difficult, given uncertainties over product substitution and compensatory behaviours, which nutrients to tax, the size of the tax to be implemented and calculation of resulting health outcomes. Levied taxes could motivate industry to reformulate. A specific tax (sugar, salt etc.) provides a stronger incentive to reformulate products as manufacturers can lower the impact a tax has on their cost by reducing or removing the taxed ingredient.

The systematic review by Eyles (2012) "Food Pricing Strategies, Population Diets, and Non-Communicable Diseases: A Systematic Review of Simulation Studies", found that a 10% increase in the price of soft drinks could decrease consumption anywhere from 1% to 24%, and that for foods high in saturated fat, for every 1% increase in price, energy intake from saturated fat could fall by 0.02%, but concluded that given the

¹ Action Plan for implementation of the European Strategy for the Prevention and Control of Noncommunicable Diseases 2012–2016. http://www.euro.who.int/_data/assets/pdf_file/0003/147729/wd12E_NCDs_111360_revision.pdf

² European Food and Nutrition Action Plan 2015–2020. REGIONAL COMMITTEE FOR EUROPE 64th SESSION Copenhagen, Denmark, 15–18 September 2014.

http://www.euro.who.int/_data/assets/pdf_file/0008/253727/64wd14e_FoodNutAP_140426.pdf

³ Promoting Health, Preventing Disease The Economic Case. The European Observatory on Health Systems and Policies. Executive summary 2015. http://www.euro.who.int/_data/assets/pdf_file/0006/283695/Promoting-Health-Preventing-Disease-Economic-Case-Executive-Summary.pdf?ua=1

⁴ Using price policies to promote healthier diets. World Health Organization 2015.

<http://www.euro.who.int/en/publications/abstracts/using-price-policies-to-promote-healthier-diets>

⁵ Interventions to change relative prices of food through taxes and subsidies. Evaluation of the implementation of the Strategy for Europe on Nutrition, Overweight and Obesity related health issues CASE STUDY REPORTS. http://ec.europa.eu/health/nutrition_physical_activity/docs/pheiac_nutrition_strategy_evaluation_case_study_en.pdf

limitations of the current evidence, robust evaluations must be planned when food pricing policies are implemented by governments⁶.

The European Commission Evaluation of the implementation of the Strategy for Europe on Nutrition, Overweight and Obesity related health issues - CASE STUDY REPORTS⁷, suggests that any alterations in consumption patterns, taking into consideration industry responses and the impact of product substitution, may potentially have an impact on public health.

As health motivated food taxes are a relatively recent policy initiative and public health studies require long-term data to assess effects on diet, obesity and non-communicable diseases, impacts of food taxes on public health will need to be further researched and assessed over the longer term.

Addressing health inequalities is of great importance and thus it is important to fully understand the impact that fiscal measures on food and drinks would have on people/families with lower incomes. OECD published a report in 2010, which found that fiscal measures are the only intervention producing consistently larger health gains in low socioeconomic status groups⁸. Although there is much controversy over this issue, the evidence available suggests that diets and diet-related health might improve by changing the relative price of superfluous foods by improving the affordability of healthy food.

The introduction of fiscal measures on certain nutrients should be introduced alongside other initiatives which aim to reduce the consumption of foods and drinks high in sugars and saturated fat. For example there should be better regulation on the aggressive marketing and promotion of foods and drinks high in sugars and saturated fat – particularly where the marketing targets children as well as an increasing guidance and counseling behavior patterns of the public.

Since the food choices don't depend solely on the will of the citizen, the food and nutrition policies should be able to establish a compromise between strategies promoting the empowerment of citizens for healthy food choices and promoting thus the autonomy of individuals, in which the participation of public health dietitians is key.

All dietitians and especially Public health dietitians also have a role to play in ensuring that fiscal measures achieve their potential in promoting healthier diets through the provision of strong educational strategies to ensure compensatory behaviours do not occur which limit the beneficial impact. Also the profession strongly supports the use of revenues generated to subsidise healthier foods, particularly fruit and vegetables, and the provision of clean drinking water for all school children. Revenues generated could also be spent on national public health programmes which aim to reduce the prevalence of obesity and other non-communicable diseases.

It is acknowledged that all relevant stakeholders in advance of their introduction should have discussed all fiscal measures and that National Dietetic Associations and higher educational institutions should be included as key stakeholders, alongside other NGOs and the food industry, although they may have divergent positions.

⁶Eyles, H. et al: Food Pricing Strategies, Population Diets, and Non-Communicable Diseases: A Systematic Review of Simulation Studies. PLOS Medicine, December 2012.

⁷Interventions to change relative prices of food through taxes and subsidies. Evaluation of the implementation of the Strategy for Europe on Nutrition, Overweight and Obesity related health issues CASE STUDY REPORTS. http://ec.europa.eu/health/nutrition_physical_activity/docs/pheiac_nutrition_strategy_evaluation_case_study_en.pdf

⁸Sassi, F.: Obesity and the Economics of Prevention: Fit not Fat. OECD, 2010, p. 206

Introduction

There has been significant growth in political, public, media, and academic interest in taxes and subsidies to encourage healthy food consumption. The Global Burden of Disease Study⁹ and related studies report an unhealthy diet is the leading risk for death and disability globally. Given the evidence associating diet and non-communicable diseases (NCDs), international and national health bodies including the World Health Organization and United Nations have called for population health interventions to improve diet as a means to reduce NCDs. One of the proposed interventions is to ensure healthy foods/beverages are more accessible and more affordable to purchasers and unhealthy ones less accessible and affordable via a fiscal policy, namely taxation and subsidies. An unhealthy diet is described as one that is high in salt, sugars, saturated and trans fats, low fibre foods and high-sugar drinks as such foods contribute to NCDs and other health problems. For a healthier diet, less of our energy intake should come from saturated and trans fats, less from sugar and salt but an increased consumption of vegetables, fruits, legumes, whole-grains and nuts¹⁰. As a proportionate response to the current economic crisis in diet-related ill health, the application of additional taxes on foods known to be 'unhealthy' and subsidies on foods which contribute to a healthy diet could be part of a package of public health policies to reverse the current rates of obesity and NCDs^{11, 12}.

A combination of measures involving food-related policies, regulation and improved access to health-relevant information are likely to be more cost-effective than any one measure in isolation¹³. Food-related policy measures, besides fiscal measures dependent on particular food components, include restriction of food-related marketing practices, nutrition education, reformulation strategies, information campaigns and food and nutrition labelling.¹⁴ What is likely to determine the public acceptance of any fiscal measures introduced is clearly related to communication of the purpose of a tax and its potential benefits – including how revenues may be used to support health services or health programmes or to subsidise healthy foods¹⁵.

Whilst fiscal measures are refuted by the food industry, some parts of civil society are claiming that food taxes could improve health and revenues raised could be used to support important public health policies. Taxes on food and drinks are a cost-effective policy intervention as they are relatively easy to implement and are able to influence people's behaviour in the shortest time¹⁶. However, there is much controversy over this issue. The scientific evidence, showing that taxes and subsidies have enough potential power to influence the consumers' decisions and may be used to incentivize healthy

⁹Forouzanfar MH, Alexander L, Anderson HR, Bachman VF, Biryukov S, Brauer M, Global, regional, and national comparative risk assessment of 79 behavioral, environmental and occupational, and metabolic risks or clusters of risks in 188 countries, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013. *The Lancet*. 2015 Sep 11. doi: 10.1016/S0140-6736(15)61455-6.

¹⁰World Heart Federation. Unhealthy Diet. www.worldheart.org

¹¹What is the role of health-related food duties? A report of a National Heart Forum meeting held on 29 June 2012

¹²Overcoming obesity: An initial economic analysis. Discussion paper. McKinsey Global Institute. November 2014

¹³Promoting Health, Preventing Disease The Economic Case. The European Observatory on Health Systems and Policies. Executive summary 2015. http://www.euro.who.int/_data/assets/pdf_file/0006/283695/Promoting-Health-Preventing-Disease-Economic-Case-Executive-Summary.pdf?ua=1

¹⁴Research priorities towards 2050. Towards healthier eating: integrated policy-making. Provide a framework to design, monitor and evaluate policies in J R C F O R E S I G H T S T U D Y. Tomorrow's Healthy Society. Research Priorities for Foods and Diets. 2014. Final Report. <https://ec.europa.eu/jrc/sites/default/files/jrc-study-tomorrow-healthy-society.pdf>

¹⁵Thow et al. (2010) *Bull World Health Org*. 88: 609-614

¹⁶A Children's Future Fund - How food duties could provide the money to protect children's health and the world they grow up in. <http://www.sustainweb.org/publications/?id=263>

eating at the population level, is mainly based on studies using predictive modelling techniques.

As health motivated food taxes are a relatively recent policy initiative and public health studies require long-term data to assess effects on diet, obesity and non-communicable diseases, impacts of such fiscal measures on public health nutrition will need to be further researched and assessed over the longer term.

Health policies encouraging the use of fiscal measures in Europe.

The WHO and other groups monitoring systems and health policies in Europe have posed strategies and action plans that include the use of fiscal measures (taxes and subsidies). Fiscal measures can form part of a broader package of measures that can help to contain and prevent obesity and NCDs are shown below:

- **Action Plan for implementation of the European Strategy for the Prevention and Control of Non-Communicable Diseases 2012–2016**¹⁷. Priority interventions: Promoting healthy consumption via fiscal and marketing policies. **Goal:** *To use fiscal policies and marketing controls to full effect to influence demand for tobacco, alcohol and foods high in saturated fats, trans fats, salt and sugar.* **Outcome measures:** *reduced obesity and other Non-Communicable Diseases.* **Process measures:** *promotion of healthier diets via food pricing, labelling and marketing controls.* **Rationale:** *Marketing of processed food, with its “hidden” sugars, salt and excessive saturated fats, especially to children, and their increased availability are contributing to the alarming increase in the prevalence of overweight and obesity among children and adults reported in Europe, particularly for those with a lower socioeconomic status (SES).* **Actions.** *Build the case for fiscal mechanisms to support healthy choices and explore the use of revenues from these taxes to funding sustainable structures for health promotion.*
- **European Food and Nutrition Action Plan 2015–2020.** Create healthy food and drink environments. Consider economic tools, including supply chain incentives, targeted subsidies and taxes, to promote healthy eating, with due consideration to the overall impact on vulnerable groups¹⁸.
- **The European Observatory on Health Systems and Policies.** Promoting Health, Preventing Disease: The Economic Case. 2015. Governments can have a major impact on making people’s behaviours healthier by raising the price of unhealthy choices and making them less affordable, by regulating business conduct in ways that would limit commercial influences on individual choices and ensure that healthier products are placed on the market and by informing and educating people about healthier lifestyles.¹⁹
- **Using price policies to promote healthier diets. WHO 2015.** The costs to society (external costs) of frequent consumption of products rich in energy,

¹⁷ Action Plan for implementation of the European Strategy for the Prevention and Control of Non-communicable Diseases 2012–2016. http://www.euro.who.int/_data/assets/pdf_file/0003/147729/wd12E_NCDs_111360_revision.pdf

¹⁸ European Food and Nutrition Action Plan 2015–2020. REGIONAL COMMITTEE FOR EUROPE 64th SESSION Copenhagen, Denmark, 15–18 September 2014.

http://www.euro.who.int/_data/assets/pdf_file/0008/253727/64wd14e_FoodNutAP_140426.pdf

¹⁹ Promoting Health, Preventing Disease The Economic Case. The European Observatory on Health Systems and Policies. Executive summary 2015. http://www.euro.who.int/_data/assets/pdf_file/0006/283695/Promoting-Health-Preventing-Disease-Economic-Case-Executive-Summary.pdf?ua=1

sugar, salt, trans fatty acids or saturated fat may be significant but not reflected in either the private costs of producing the product or the price that the consumer pays. Such “market failure”, provides economic justification for government intervention in order to increase the price of the product through taxation to reduce demand. It seems reasonable to infer that diets and diet-related health and well-being might be improved by changing the relative price of non-core foods by improving the affordability of core foods such as fruit and vegetables and whole grain products²⁰.

Current evidence assessing the effectiveness of fiscal measures.

Assessing effectiveness of fiscal measures is difficult in the absence of relevant data. The findings on health effects of the modelling / simulation literature are not conclusive. There are two key reasons why results from academic literature are diverse and inconclusive: uncertainties over product substitution and calculation method of health effects and perhaps also the fact that the size of the tax makes a difference to the results reported.

A review undertaken as part of the EATWELL project²¹ suggests that the impact would depend on a number of factors including, how the tax is imposed (e.g. on single nutrients or simultaneously on several nutrients), the structure of the market, and potential for substitution (which tends to happen within, rather than between food groups). The review also suggests that taxation rates need to be sufficiently high (at least 20%) to have a significant impact on consumption²². In another review²³ undertaken as part of the EATWELL project the main conclusion is that while many fiscal measures have been accompanied by some quantitative evaluation of their effectiveness, in most cases these evaluations have been limited to addressing changes in attitudes, which do not necessarily translate into healthier eating and improved nutritional status. The actual behavioural responses have rarely been monitored for a period long enough to establish the success or failure of the interventions. Even if comprehensive simulation studies exist, these are often based on fragmented evidence and inadequate data. Thus, there is a growing demand for studies that provide a systematic assessment of different types of interventions, where the policy outcome is evaluated in relation to a counterfactual benchmark²⁴.

The systematic review of modelling studies, ‘Food Pricing Strategies, Population Diets, and Non-Communicable Diseases: A Systematic Review of Simulation Studies’, predicts that a 10% increase in the price of soft drinks could decrease consumption anywhere from 1% to 24%, and that for foods high in saturated fat, for every 1% increase in price, energy intake from saturated fat could fall by 0.02%, but concluded that given the limitations of the current evidence, robust evaluations must be planned

²⁰ Using price policies to promote healthier diets. World Health Organization 2015.

<http://www.euro.who.int/en/publications/abstracts/using-price-policies-to-promote-healthier-diets>

²¹ Pérez-Cueto FJ, Aschemann-Witzel J, Shankar B, Brambila-Macias J, Bech-Larsen T, Mazzocchi M. et al. Assessment of evaluations made to healthy eating policies in Europe: a review within the EATWELL Project. *Public Health Nutrition* / Volume 15 / Issue 08 / August 2012, pp 1489-1496

²² Mytton, O., Clarke, D., Rayner, M.: Taxing unhealthy food and drinks to improve health, *BMJ* 2012; 344:e2931

²³ Cornelson L, Carriedo, A. (2013) health-related taxes on food and beverages. *Food research Collaboration*.

²⁴ Capacci, S., Mazzocchi, M., Shankar, B., BrambilaMacias, J., Verbeke, W., Pérez-Cueto, F. J., Koziol-Kozakowska, A., Piórecka, B., Niedzwiedzka, B., D'Addesa, D., Saba, A., Turrini, A., Aschemann-Witzel, J., Bech-Larsen, T., Strand, M., Smillie, L., Wills, J. and Traill, W. B. (2012), Policies to promote healthy eating in Europe: a structured review of policies and their effectiveness. *Nutrition Reviews*, 70: 188–200. doi: 10.1111/j.1753-4887.2011.00442

when food pricing policies are implemented by governments²⁵. To maximize success and effect, a recent review suggests that food taxes and subsidies should be a minimum of 10 to 15% and preferably used in tandem²⁶.

Regarding health outcomes resulting from food taxes the European Commission Evaluation of the implementation of the Strategy for Europe on Nutrition, Overweight and Obesity related health issues - CASE STUDY REPORTS²⁷, gave real examples from different countries and suggests that any alterations in consumption patterns, taking into consideration industry responses and the impact of product substitution, may potentially have an impact on public health.

The report "Impact of food taxes on consumption. How do food taxes impact the consumption of foods with a high percentage in fat, salt and sugar? Food taxes and their impact on competitiveness in the agri-food sector²⁸", found that food taxes in general achieve a reduction in the consumption of the taxed products and as a result, consumers may instead purchase similar non-taxed or less heavily taxed items. It also shows that consumers may simply buy cheaper brands of the taxed products, thus potentially not lowering their consumption of the ingredient the tax aims to target (i.e. salt, sugar or fat). However, the report has not focused on public health implications as a primary objective, which could influence the results, and further show trends that have been proved by simulation model studies, that taxes could play a role in health policies, such as the increase in vegetables oils in DK replacing solid fats.

Although the predictive value of modelling is limited, it helps to bridge the gap from economic theory and experimental settings to forecast potential outcomes in real-world settings and can highlight key considerations for policy design. When considered collectively the evidence available shows, with reasonable levels of confidence, that both individual consumers and population groups respond as predicted, and that targeted taxes and subsidies have the potential to influence the decisions that consumers make and can be used to incentivize healthy eating at the population level. The size and nature of the effect varies significantly, however, depending on the size and target of the price change²⁹.

In the case of sugar-sweetened beverages (SSB), it is suggested that three factors are considered in the implementation of a tax: 1. obesity prevalence, which would determine the size of the policy's target population; 2. SSB consumption levels in the general population, as the taxes would mainly affect those who consume SSBs regularly; and 3. any existing baseline taxes on SSBs. In a comparison made with data from 19 countries, it was reported that fiscal measures may be more effective in reducing obesity prevalence where existing obesity prevalence and SSB consumption levels are high³⁰. In Mexico, a country leading in the consumption of SSB (163L/person/year) and with high rates of obesity (up to 70% of the adult population), after the implementation of a 10% tax, the purchase of SSBs in lowest SES groups was

²⁵Eyles, H. et al: Food Pricing Strategies, Population Diets, and Non-Communicable Diseases: A Systematic Review of Simulation Studies. PLOS Medicine, December 2012.

²⁶Niebylski ML et al. Healthy food subsidies and unhealthy food taxation: A systematic review of the evidence. Nutrition. 2015 Jun;31(6):787-95.

²⁷Interventions to change relative prices of food through taxes and subsidies. Evaluation of the implementation of the Strategy for Europe on Nutrition, Overweight and Obesity related health issues CASE STUDY REPORTS. http://ec.europa.eu/health/nutrition_physical_activity/docs/pheiac_nutrition_strategy_evaluation_case_study_en.pdf

²⁸Impact of food taxes on consumption. How do food taxes impact the consumption of foods with a high percentage in fat, salt and sugar? Food taxes and their impact on competitiveness in the agri food sector.

²⁹Using price policies to promote healthier diets. World Health Organization 2015.

<http://www.euro.who.int/en/publications/abstracts/using-price-policies-to-promote-healthier-diets>

³⁰J.Jou, W.Techakehakitj. International application of sugar-sweetened beverage (SSB) taxation in obesity reduction: Factors that may influence policy effectiveness in country-specific contexts. Health Policy 107 (2012) 83– 90

reduced by an average of 9% and 17% in December 2014, just one year after. The average decline in total population purchasing was 6%³¹.

Despite the evidence for interventions that improve the quality of people's diets through taxes on foods high in salt, sugar and fat, actions may need to be designed carefully to avoid undesirable substitution effects – for instance, by coupling them with subsidies targeting healthy food and drinks³².

Low income groups

It is recognised that there is an increasing health inequality among the European population with widening social and economic gaps. In fact, obesity and NCDs are clearly linked to economic and social inequality: in the UK, people with lower incomes are 2.5 times more likely to have diabetes³³, whilst in Spain childhood obesity rate is 11.4 points higher in families with lower incomes³⁴.

The easy access and affordability of high energy-dense foods in combination with lower availability and higher prices of fruit and vegetables, fish and lean meats, could be determining factors in the increasing global prevalence of obesity especially in lower income groups. This is an unfair situation with the most disadvantaged groups unable to adopt healthy eating patterns promoted by public health³⁵.

There is strong evidence emphasising the relationship between diet quality and food prices, where cheaper foods are associated with a diet of poorer quality³⁶. The low socioeconomic (SES) groups would be affected by increasing food prices. Food price is a strong determinant of food choice, and an increase in prices could result in consumers purchasing less expensive but also less healthy diets^{37, 38}, thus increasing difficulties in accessing healthy diets³⁹. Measures targeting low SES groups could have an important impact on reducing health inequalities, since increasing pricing of unhealthy foods could reduce access and consumption and if this policy was complemented by subsidies on healthier foods overall diet quality may increase.

An important issue for policy makers to consider is the likely effect of a tax on poorer consumers. Taxes on foods high in salt, sugar and fat are consistently cost saving, but tend to be regressive⁴⁰ (affects more to people with lower incomes), since the poor spend a greater proportion of their income on food, and in particular on unhealthy cheaper food. While the available evidence suggests that this is indeed the case to

³¹REDUCTION IN CONSUMPTION OF TAXED BEVERAGES AFTER THE IMPLEMENTATION OF THE TAX IN MEXICO. <http://www.insp.mx/epppo/blog/3666-reduccion-consumo-bebidas.html> // <http://uncfoodresearchprogram.web.unc.edu/822/>

³²Promoting Health, Preventing Disease The Economic Case. The European Observatory on Health Systems and Policies. Executive summary 2015. http://www.euro.who.int/_data/assets/pdf_file/0006/283695/Promoting-Health-Preventing-Disease-Economic-Case-Executive-Summary.pdf?ua=1

³³MG Marmot et al., "Fair Society, Healthy Lives: Strategic Review of Health Inequalities in England Post-2010" (2010). <http://tinyurl.com/cgt2cxv>.

³⁴http://www.aesan.mspsi.gob.es/AESAN/web/notas_prensa/estudio_aladino.shtml

³⁵A. Drewnowski, "Obesity and the Food Environment: Dietary Energy Density and Diet Costs," *American Journal of Preventive Medicine* 27, no. 3 (2004): 154–162.

³⁶Devaux M. et al. Income-related inequalities and inequities in health care services utilisation in 18 selected OECD countries. *Eur J Health Econ* December 2013.

³⁷Griffith R, O'Connell M and Smith K. Food expenditure and nutritional quality over the Great Recession.

Institute for Fiscal Studies. 2013. <http://www.ifs.org.uk/bns/bn143.pdf>

³⁸Impact of food taxes on consumption. How do food taxes impact the consumption of foods with a high percentage in fat, salt and sugar? Food taxes and their impact on competitiveness in the agri food sector.

<http://ec.europa.eu/enterprise/newsroom/press/detail.cfm?id=7668&tpa=0&tk=&lang=en>

³⁹World Heart Federation factsheet (2013) Global dietary changes threaten health. http://www.world-heart-federation.org/fileadmin/user_upload/children/documents/factsheets/Factsheet_Unhealthy_diet.pdf

⁴⁰Promoting Health, Preventing Disease The Economic Case. The European Observatory on Health Systems and Policies. Executive summary 2015. http://www.euro.who.int/_data/assets/pdf_file/0006/283695/Promoting-Health-Preventing-Disease-Economic-Case-Executive-Summary.pdf?ua=1

some extent, the relatively greater financial impact on the poor, and the subsequent expected reduction of the consumption of the taxed products, actually means that such taxes are likely to have a disproportionately higher positive health impact on these groups⁴¹.

Evidence from tobacco and alcohol taxation shows that health gains among poorer groups are higher because the health impacts of smoking and excess drinking affect these groups disproportionately. In the same way, health-related food taxes are likely to yield progressive health gains because people on lower incomes generally consume poorer diets and suffer higher rates of diet-related disease⁴². This point of view is shared by OECD in a report which found that fiscal measures are the only intervention producing consistently larger health gains in low socioeconomic groups⁴³.

Recent interest has focused on vouchers for low-income consumers. Revenue collected from taxes on unhealthy foods and drinks could be used to expand such initiatives. In the United Kingdom, “Healthy Start” is explicitly targeted at improving nutritional habits in disadvantaged households with young children, whose parents or guardians receive free vouchers that can be swapped for healthy foods or free vitamin supplements. A similar scheme supporting children’s nutrition in disadvantaged families has existed in Poland since 2005. In the United States, the Women, Infants, and Children program was started in 1974 and provides supplemental foods designed to meet the special nutritional needs of low-income pregnant women, postpartum women, infants, and children up to 5 years of age who are at nutritional risk. The program has been evaluated extensively and shown to be highly cost-effective in protecting or improving the health and nutritional status of target subjects⁴⁴.

Food and Drink prices and availability

Access to healthy foods and drinks not only depends on their physical availability at the place of purchase or consumption, but also on the affordability of a product. Fiscal measures are very sensitive tools to act on consumption, especially when price increases of some foods are combined with the reduction of those that are healthier alternatives.

Industry studies, have reported a 7.8% decrease in sales in response to a 6.8% rise in prices and a 14.6% sales decrease when price rises by 12%⁴⁵. It is estimated that a penny-per-ounce excise tax on soft drinks causes a 15–20% decrease in the amount consumed. This translates to a 10% net decrease in energy consumption, or 20 kcal per day for a daily consumer⁴⁶.

The decline in prices in certain foods has a direct effect on its purchase, especially in populations with lower income. It is estimated that a 1% reduction in the price of fruit and vegetable could increase its consumption by half a portion daily. It has been calculated that an additional half a portion of fruit per day in the US population would

⁴¹ Alemanno, A. and Carreño, I.: Fat taxes in the EU between fiscal austerity and the fight against obesity. *European Journal of Risk Regulation*, 4/2011

⁴² What is the role of health-related food duties? A report of a National Heart Forum meeting held on 29 June 2012

⁴³ Sassi, F.: Obesity and the Economics of Prevention: Fit not Fat. OECD, 2010, p. 206

⁴⁴ USDA Food and Nutrition Service. How WIC Helps. 2009; Available at:

<http://www.fns.usda.gov/wic/aboutwic/howwichehelps.htm#diet%20outcomes>.

⁴⁵ Brownell KD, Frieden TR. Ounces of prevention—the public policy case for taxes on sugared beverages. *The New England Journal of Medicine* 2009;360:1805.

⁴⁶ Brownell KD, Farley T, Willett WC, Popkin BM, Chaloupka FJ, Thompson JW, et al. The public health and economic benefits of taxing sugar-sweetened beverages. *The New England Journal of Medicine* 2009.

reduce up to 7,000 cases of coronary heart disease and 3,000 strokes per year, with health savings of about \$ 1.5 billion⁴⁷.

Substitution

In the case of a decline in demand, consumers may move to cheaper versions of the taxed product (brand substitution), to non-taxed products or to less heavily taxed products (product substitution). Substitution to products outside the product category upon which the tax is levied has been identified but remains hard to evaluate:

- Product substitution occurs where less-taxed or non-taxed substitutes are readily available. Tax design, in terms of the scope of products on which the tax is levied, therefore greatly influences consumer product preferences;
- Brand substitution in the form of moving to cheaper brands is found to occur, more so in product categories where the brand of the product is less connected to the perceived taste of the product⁴⁸. An increase in the intake of high-fat milk and fruit juices have been suggested as a result of decreased SSB consumption in the event of a 20% tax on SSBs⁴⁹. But in the case of Mexico SSB taxation, the substitution was mainly of plain water⁵⁰.

To ensure that either product or brand substitution does not reduced the desired effects of any fiscal measures introduced, it is important that these measures are complimented by on-going nutrition education.

Current EU Case Studies

The fat taxes impact assessment of the Hungarian Public Health Product Tax (NETA or crisps tax affecting sugar-sweetened beverages, energy drinks, confectionery, salted snacks, condiments, flavoured alcohol and fruit jams) was published in March 2013^e and concludes that the tax has achieved its public health aims, as: (1) the supply and sales of products containing ingredient(s) proved to be harmful to health decreased; (2) The population reduced the consumption of products containing ingredient(s) proved to be harmful to health; and (3) The decrease in the consumption of “unhealthy” food was not only caused by the price increase, but also by positive changes in the population’s attitude. The revenues between January 2013 and December 2013 were €61.5 million.

A health and financial impact assessment of NETA was conducted with the support of the WHO Regional Office for Europe in 2013. According to this impact assessment, sales of products subject to the public health tax have fallen by 27%, with a 20–35% decrease in consumption observed. An additional benefit observed has been the response of manufacturers in removing entirely, or substantially reducing, the taxed ingredient in their products through reformulation.⁵¹

⁴⁷Sean B. Cash, David L. Sunding, and David Zilberman, “Fat Taxes and Thin Subsidies: Prices, Diet, and Health Outcomes,” *Food Economics - Acta Agriculturae Scandinavica*, Section C 2, no. 3–4 (2005): 167–174.

<http://www.ualberta.ca/~scash/thin subsidy.pdf>

⁴⁸Eyles, H. et al: Food Pricing Strategies, Population Diets, and Non-Communicable Diseases: A Systematic Review of Simulation Studies. *PLOS Medicine*, December 2012.

⁴⁹Dharmasena S, Capps O. Intended and unintended consequences of a proposed national tax on sugar-sweetened beverages to combat the U.S. obesity problem. *Health Economics* 2011.

⁵⁰REDUCCION IN CONSUMPTION OF TAXED BEVERAGES AFTER THE IMPLEMENTATION OF THE TAX IN MEXICO. <http://www.insp.mx/epppo/blog/3666-reduccion-consumo-bebidas.html>

<http://uncfoodresearchprogram.web.unc.edu/822/>

⁵¹Interventions to change relative prices of food through taxes and subsidies. Evaluation of the implementation of the Strategy for Europe on Nutrition, Overweight and Obesity related health issues CASE STUDY REPORTS.

http://ec.europa.eu/health/nutrition_physical_activity/docs/pheiac_nutrition_strategy_evaluation_case_study_en.pdf

Danish tax on saturated fat, although currently abandoned, resulted in decreased consumption of the taxed products and increased consumption of lesser-taxed product substitutes (lower in fat) such as olive oil and vegetable oil and the consumption of total fats decreased by between 10 and 15%. Between November 2011 and August 2012, the tax on saturated fats raised around €134 million in revenue⁵². The evidence base is not sufficient to arrive at a definitive judgment of whether food taxes work or not. The Danish experience obviously casts doubts over whether such taxes work, but it also needs to be kept in mind that it was only in effect for one year. Direct impact of non-harmonised national food taxes on consumption is uncertain, although there is agreement that the consumption of certain tax levied products has dropped.

In Finland, taxes on confectionery, ice cream and chocolate and soft drinks, has led to a reduced consumption of confectionery and ice cream, but it is not clear how much consumers have lowered their overall consumption of sweet and sugary products due to increased consumption in a number of substitute products that are not liable to taxation. In 2011 the revenues were €134 million (€35 million from non-alcoholic beverages, plus €100 million from sweets and ice-cream). In 2012 this increased to €197 million, exceeding revenue forecasts.

Food taxes on only carbonated soft drinks seems to result in product substitution to other high sugar drinks such as energy drinks and flavoured waters, or to diet varieties of carbonated soft drinks. Food taxes on the full sugar-sweetened beverage category (including 'light drinks') result in substitution to juice, milk and diet varieties but are less effective overall in reducing consumption of the taxed products. This is because diet and low calorie substitutes are also taxed and do not become relatively more attractive substitutes.

In France, tax on sugar- and artificially-sweetened beverages, was adopted in 2011. The tax generates revenues of almost €280 million per year and its alignment with the goals of reducing overweight and obesity have been noted, particularly with regard to childhood and adolescent obesity. Sugar-sweetened beverage sales have decreased by 3.3% due the tax.

Subsidies

Whilst there have been significant developments in a number of EU countries on the issue of taxes, in particular on "fat and sugar taxes", there is considerably less movement on subsidies for healthy eating programs or healthy food price reduction. Simulations of subsidies for healthy foods and nutrients are fewer than those of taxations, although there is some evidence that subsidies tend to be more effective (and cost-effective) than taxes¹². One of the most relevant is the School Fruit Scheme. "The available evidence suggests that these do work in terms of increasing short-term consumption. However, some doubts remain regarding the longer-term effects". There are indications that the design of such programmes (in terms of the frequency and types of products distributed, and perhaps most importantly, accompanying educational measures) is a key determinant of this, and need to be defined taking into account the national / regional context and the characteristics of the target group(s).

Evidence from Norway (where a free school fruit programme had been operating before the introduction of the European School Fruit Scheme) has demonstrated that a

⁵²Indtægtslisterfo2012 [Tax revenue for 2012] Copenhagen: Ministry of Taxation; 2012 <http://89.233.45.21/skatteomraadet/talogstatistik/menu/9571.html> .

free school fruit programme resulted in a statistically significant decrease in the consumption of unhealthy snacks⁵³.

Lower fruit and vegetable prices have been associated with lower body weight outcomes among both low-income children and adults suggesting that subsidies that would reduce the cost of fruits and vegetables for lower-socioeconomic populations may be effective in reducing obesity⁵⁴.

But some simulation studies⁵⁵ show that subsidies may also lead to an increase in intakes of unhealthy nutrients, generated by the income effect, as budget saved from subsidies can be allocated to unhealthy foods.

Reformulation

The levied taxes could motivate industry to product reformulation. This could also occur if under the Regulation 1924/2006 nutrient profiles were established⁵⁶ or were applied using models as suggested by WHO, which describes a regional nutrient profile model for use and adaptation by Member States of the WHO European Region when developing policies to restrict food marketing to children⁵⁷.

Product reformulation is more likely where the design of the tax is based on the level of certain ingredients (sugar, salt etc.) in the final product. As such, a specific tax provides a stronger incentive (compared to an ad valorem tax) to reformulate products as manufacturers may be able to lower the impact a tax has on their cost by reducing or removing the taxed ingredient. Currently, we don't know how fiscal interventions will affect the choices made by food producers, manufacturers and retailers about the inputs they use and the outputs they produce and more research is required in this area to explore the added potential of fiscal measures to promote healthier diets⁵⁸.

Marketing

Excessive and continuous exposure to advertising and aggressive marketing strategies, especially those focused on food prices can lead to excessive energy intake. Regulating this kind of strategy when it is based on promoting the consumption of a foodstuff rich in free sugars, salt or saturated fat, would be another way to reduce the desirability of unhealthy foods. No measures have been implemented in Europe to restrict advertising to adults in general or to specific vulnerable adult population groups. However, food-advertising regulations have been commonly used to protect minors through restrictions on the timing and the content of television advertising to children. Outside Europe, the Quebec ban on advertising to children (dating back to 1980) is especially interesting from an evaluation perspective: it constitutes an ideal natural

⁵³ Øverby NC, Klepp K, Bere E. Introduction of a school fruit program is associated with reduced frequency of consumption of unhealthy snacks. *Am J Clin Nutr*. 2012;96:1100–3.

⁵⁴ LM Powell et al. Assessing the Potential Effectiveness of Food and Beverage Taxes and Subsidies for Improving Public Health: A Systematic Review of Prices, Demand and Body Weight Outcomes. *Obes Rev*. 2013 February ; 14(2): 110–128.

⁵⁵ Nordstrom J, Thunstrom L. The impact of tax reforms designed to encourage healthier grain consumption. *J Health Econ*. 2009;28:622–634.

⁵⁶ WORKING DOCUMENT ON THE SETTING OF NUTRIENT PROFILES Preliminary draft Legal proposal 13/02/2009 http://aesan.msssi.gob.es/AESAN/docs/docs/cadena_alimentaria/gestion_de_aspectos_nutricionales/perfiles_nutricionales.pdf

⁵⁷ WHO Regional Office for Europe nutrient profile model http://www.euro.who.int/_data/assets/pdf_file/0005/270716/Nutrient-Prof

⁵⁸ Hawkes C. Food taxes: what type of evidence is available to inform policy development? *Nutrition Bulletin*, 2012, 37: 51–56

experiment for testing the policy effects, since the neighbouring province of Ontario has not been subject to restrictions and can be used to estimate counterfactual outcomes. The result was a 7.1-9.3% decrease in the probability of purchasing fast food (in terms of number of fast-food meals: annual decrease of between 11 million and 22 million fast-food meals imputable to the ban on advertising to children in Quebec, 1980⁵⁹).

In European countries, restrictions to the food marketing to children have been found in the United Kingdom, France, Ireland, Portugal, and Spain (the Spanish and the Portuguese ones are self-regulatory codes). A recent French law on food advertising is an example of generic advertising control and stipulates that each food advertisement must be accompanied by a public health message. Existing evaluations of advertising controls reveal some weakness in their approach. For example, the recent Ofcom evaluation of the UK ban on advertising to children⁶⁰ assesses the change in children's exposure to the advertising messages. The result was that children aged 4–9 saw 52% less and those aged 10–15 saw 22% less advertisement on unhealthy food, with respect to the same period before introduction of the ban (ban on advertising to children, UK, 2008). While this may be useful information for monitoring purposes, it does not measure change in the relevant outcome variables, i.e., health and dietary behaviours. Ideal public health nutrition policies should consider both fiscal measures alongside marketing policies which prohibit the advertising of unhealthy foods.

Conclusion

To conclude, fiscal measures offer an opportunity to influence subconscious food choice through placing greater taxes on foods with a high energy density and/or a low nutrient density, examples being foods high in refined sugars, salt and saturated fats. Some innovative work has already taken place, where interventions have used fiscal measures to try and reverse the increasing trend in obesity prevalence and other non-communicable diseases. Assessing the effectiveness of fiscal measures is difficult, given uncertainties over product substitution and compensatory behaviours, which nutrients to tax, the size of the tax to be implemented and calculation of resulting health outcomes. Levied taxes could motivate industry to reformulate. A specific tax (sugar, salt etc.) provides a stronger incentive to reformulate products as manufacturers can lower the impact a tax has on their cost by reducing or removing the taxed ingredient.

Taxes and subsidies on foods and non-alcoholic drinks are an opportunity to be considered by governments as part of a multi-faceted approach that could contain and reverse the high rates of obesity and NCDs in Europe, especially in lower socioeconomic status groups. The evidence available allows to infer that diets and diet-related health might improve by changing the relative price of superfluous foods by improving the affordability of healthy food, although future research using prospective study methods are needed to determine the effect of food and drinks taxation in conjunction with other interventions, like nutrition education and better marketing strategies, as part of a multi-sectoral strategy to improve diets and health.

⁵⁹Baylis K, Dhar T. Effect of the Quebec Advertising Ban on Junk Food Expenditure. Vancouver: University of British Columbia; 2007.

⁶⁰Ofcom. HFSS Advertising Restrictions – Final Review. 2010; Available at: <http://stakeholders.ofcom.org.uk/binaries/research/tv-research/hfss-review-final.pdf>.