



European
Commission

Health Equity Pilot Project (HEPP)

The impact of taxes on 'junk food' in Hungary

Case Study



Health

HEPP CASE STUDY

Title of Policy

The impact of taxes on 'junk food' in Hungary

Policy Reference

Act CIII, The Public Health Product Tax 2011

Country

Hungary

Name of Organisation

The Government of Hungary: The National Tax and Customs Administration

Type of case study

Population-level intervention and evaluation

Thematic focus

Nutrition (fiscal policy)

Date(s)

The policy was passed into legislation in July 2011, implemented nationally in September 2011, and followed in January 2012 with increases in tax levels and a widening of the range of taxable products. The legislation was amended in 2016 to allow manufacturers to retain some tax revenue specifically hypothecated for health education.

Evaluations with relevant material have been published by Biró¹ and WHO-EURO² in 2016, and comments were obtained from national officials in June 2017.

Case study overview

In July 2011, Hungary passed legislation to impose taxes applied on the salt, sugar and stimulant content of various categories of foods and beverages including sugar-sweetened drinks, energy drinks and pre-packaged sugar-sweetened products. The Public Health Product (PHP) tax is applied at varying rates. Soft drinks, for example, are taxed at around €0.02 per litre, and confectionery around €0.40 per kilogram. The tax also applies to products high in salt, including salty snacks with >1g salt per 100g, condiments with >5g salt per 100g and flavourings >15g salt per 100g. See Table 1.

Table 1: Taxable products and tax levels, as of January 2015

Range of product	Tax rate HUF per litre or kilogram		
	01. 09. 2011	01. 01 .2012	01. 01. 2013
Soft drinks with >8g sugar/100ml	5	7	7
Soft drink concentrates and syrups	-	200	200
Energy drinks >1mg methylxanthines/100 ml or >100 mg taurine/100 ml	250	250	250
Energy drinks >15mg methylxanthines/100 ml	-	-	40
Pre-packaged products with added sugar, total sugar >25g/100g	100	130	130
Chocolates >40g sugar/100g and <40g cocoa/100g	100	130	130
Sugar-sweetened cocoa powder	-	70	70
Salted snacks >1g salt/100g	200	250	250
Condiments >5g salt/100g (some exemptions for mustards, ketchups)	200	250	250
Flavoured beer or alcoholic drink with >5g sugar/100ml	-	20	20
Fruit preserves, excluding 'extra' versions	-	500	500

€1 ≈ 300 HUF

Source: WHO-OETI (2013)¹¹ and revisions

The money raised by the tax supports the public-sector health services, and contributes 1% of the service's income¹, and has been used to increase the wages of health workers².

An evaluation of the impact of the PHP tax was published by Biró in 2015¹, based on a panel of 10,000 households sampled annually in the Hungarian Household Budget and Living Conditions Survey.

A second evaluation was published by the Regional Office for Europe of the World Health Organization, in 2016² and based on the Hungarian National Diet and Nutrition Status Survey conducted in late 2014. Both evaluations provided an assessment of the impact of the tax on survey participants according to their socio-economic status.

Theoretical models underpinning the legislation: (i) The economic model is based on the expected impact of price changes to influence consumption, through price elasticities and product substitution. (ii) The commercial model predicts that manufacturers will adjust the product formulation if this gives them a competitive advantage, e.g. avoiding the tax. (iii) Models of state revenue generation predict that the imposition of taxes on popular products will raise revenue (which can be used for social purposes).

Relevance: The justification for the introduction of the tax was for public health purposes by improving dietary patterns in the general population, to encourage reformulation of products to reduce salt, sugar and caffeine content, and to raise revenue to support health services in the public sector. This was amended in 2016 to allow the tax-paying manufacturers to divert 10% of the tax payment towards their own health promotion programmes encouraging better diet and more sport³. The tax was applied universally and not targeted at specific socio-economic groups: however it was expected to have a greater effect among those who consumed 'junk food' at higher levels, based on modelling studies. These consumers tended to be ones with lower educational or income status. Therefore the tax was expected to have a universal and proportional impact with respect to socio-economic status.

Methodology

The evaluation by Biró¹ used data collected a little more than year after the introduction of the PHP tax, and compared the pattern of household purchases of 'processed' (including taxed) foods and 'unprocessed' (not including taxed foods) during the previous five years. Beverages were excluded from the analysis as the consumption data could not distinguish sufficiently the taxed from the untaxed types of product.

The evaluation published by the World Health Organization², using research coordinated by the Hungarian National Institute for Food and Nutrition Science, was based on a sub-sample of the 2014 Hungarian National Diet and Nutritional Status Survey of adults.

Data were collected by interview, which included items on product consumption frequency, changes in consumption patterns since the PHP tax, the reasons for changing consumption, what products were being substituted, as well as knowledge about the PHP tax and the products taxed. Interviewee background variables included educational level and anthropometric measures (height, weight and waist circumference).

Results and key findings

Biró reports small but significant changes in the patterns of consumption following the introduction of the PHP tax:

- Purchased quantities of processed foods declined after the tax (3.4%) not only in the categories that were subject to tax but other categories too (e.g. processed meat and dairy products);
- Expenditure on processed foods increased after the tax (6.5%);
- There was no change in the purchased quantities of unprocessed foods and weak evidence of an increase in expenditure on unprocessed foods;
- The increased range and size of the tax imposed in January 2012 led to a stronger rise in the purchase of unprocessed foods;
- For households in the lowest income quartile, expenditure on and quantities purchased of both processed and unprocessed foods declined, especially expenditure on processed foods;
- Households in the top two income quartiles showed the greatest increase in expenditure on processed foods.

From these findings Biró concluded that the tax had the desired effect of improving the healthfulness of the diet primarily among lower income households, probably because lower income families were likely to have a higher sensitivity to food prices, while better-off households tended to absorb the extra costs of the tax.

The World Health Organization report cites the following main findings:

- The majority of consumers maintained a lower consumption of the taxed products, with a significant minority showing lower consumption in 2014 than a previous study found in 2012;
- A significant number of participants stated that they cut their consumption due to awareness of the unhealthfulness of the products. A second reason for reducing consumption (especially for sugary drinks) was the increased price;
- Reduced consumption of unhealthy products was more common among adults with overweight and obesity compared with adults with normal weight or underweight.

Socio-economic differentials were found (see Table 2):

- In every product group, a greater proportion of adults with lower (primary) education than with higher education changed their consumption in one way or another;

- A change to lower-priced products and to different (cheaper) brands was found among those adults with lower levels of education compared those with higher levels of education;
- Among lower-educated adults who reduced consumption, only a small proportion stated the reason was based on discovering that the product was unhealthy whereas price was a reason cited by a large proportion.

Table 2: 2014 survey results by product and educational levels

	Sugar-sweetened beverages			Confectionery			Salty snacks		
	Pri Ed	Sec Ed	High Ed	Pri Ed	Sec Ed	High Ed	Pri Ed	Sec Ed	High Ed
Daily consumption in 2014, %	19	12	2	24	15	15	7	5	3
% changed consumption after PHP tax	25	20	12	15	15	8	25	15	11
% bought cheaper products	24	10	4	13	7	3	22	6	3
% changed brand	16	8	4	8	6	1	13	6	3
% reduced absolute consumption	10	10	7	5	9	4	9	10	7
... of which, % reduced because of price	85	37	68	100	67	34	87	53	49
... of which, % reduced because learnt unhealthy	15	74	35	21	49	53	13	62	43

Pri Ed = Primary education, Sec Ed = Secondary education, High Ed = Higher education

Source: adapted from WHO 2016²

The evidence in both evaluations supports the modelling studies which predict that people in lower socio-economic groups are particularly sensitive to price and will find cheaper products and brands and reduce overall consumption following price rises. Because people in lower socio-economic groups tend to be higher consumers of unhealthy foods, the PHP tax is generally regressive (affecting lower income consumers more than higher income) but the fact that higher income groups tended to continue their original consumption patterns and to

pay the tax indicates that the tax's regressive impact is reduced by the different price elasticities and behavioural responses across socio-economic groups.

Besides consumer responses to the tax, the food industry also responded by reformulating products, particularly beverages, to bring their content below taxable thresholds⁴. This increases the public health impact of the measure, especially among higher consuming groups.

Opposition to the measure by the industry included arguments that the tax was being applied to products in a discriminatory manner, and that the changes in consumption would lead to losses of income and jobs⁴.

The tax was introduced with three objectives: to promote healthier nutrition, to encourage reformulation and to generate revenue. It is reported that consumers were generally under the impression that the purpose of the tax was to raise revenues for the health services rather than improve their dietary patterns⁴.

Timeliness

There is interest in several European Member States in the application of fiscal measures to help tackle non-communicable diseases^{7,9,12} and this approach is endorsed in the European regional WHO Food and Nutrition Action Plan 2015-2020¹³. Similar interest is being shown by governments at global level, with the taxation of sugar-sweetened beverages included in a set of recommended interventions to tackle NCDs, in a document welcomed by the World Health Assembly in May 2017⁵.

What makes this case study interesting/important?

The evidence base for using taxation in nutrition policies has depended primarily on modelling using price elasticities^{8, 14} and very recently on the few examples of real-life imposition of taxes, focussing on Mexico¹⁵ and Hungary. In Europe, only Hungary appears to have published a detailed review of the policy's impact, including its impact on lower socio-economic consumers.

Generalisability

As Sassi (2016)²⁰ notes, "Fiscal measures have a legitimate place in the public health policy toolkit, and several countries have chosen to use taxes on foods and non-alcoholic beverages in an attempt to improve the quality of people's diets and curb the spread of obesity." Earlier modelling work at the OECD²¹ on the use of taxation and economic

incentives demonstrated how price interventions and regulation can produce the largest health gains in the shortest timeframe, and should be considered in all governments' policy portfolios to influence health behaviour.

With respect to the impact of food or beverage taxes on different socio-economic groups, a systematic review of 11 studies (including 2 in the European Union) found that taxation of sugar-sweetened beverages would be expected to lead to similar reductions in bodyweight across all socio-economic groups with some studies showing greater bodyweight benefits in lower socio-economic groups (higher consumers)⁶.

Studies of the impact of soft drink and snack taxes in Mexico found that taxation had a greater impact on higher level consumers, and reduced the socio-economic gradient in consumption^{7, 15}.

A third paper reviewed 12 studies (including one in the EU) and concluded that taxation reduced consumption among those who consumed most, and that health benefits were therefore likely to be distributed similarly⁸.

A modelling study in Denmark which specifically examined how households in different socioeconomic groups would respond to fluctuation in food prices showed that even small changes in value-added taxes could differentially improve the diet of poorer people¹².

A survey of adults' attitudes following the imposition of a beverages tax in France⁹ found general approval, but with a social gradient: higher approval was found among more educated adults.

Lastly, a modelling study in Australia¹⁶ showed a strong net benefit for lower income households would follow from a 20% tax imposed on sugar-sweetened beverages, and that the savings on health care costs for those households would more than offset any extra costs they faced due to the tax.

Sustainability

The PHP tax in Hungary has been in operation since September 2011, with some adjustments in subsequent years to both the scale of the tax and the products included. Data collected in 2014¹⁰ showed widespread effectiveness of the tax in maintaining reduced consumption: for example, of those who reduced their consumption of sugar-sweetened beverages in 2012, 12% had reverted to previous levels of consumption by 2014, 68% maintained their lower level of consumption, and 19%

reduced their consumption further. For confectionery the figures were 7%, 63% and 30% respectively, and for salty snacks the figures were 6%, 59% and 35% respectively. Figures are not available for socio-economic groups separately, but the high levels of maintenance and further reduction of consumption imply that all groups show sustained changes in behaviour.

Concerns that the tax might significantly reduce manufacturers' revenue and increase unemployment were addressed in the study by the WHO in 2013¹¹ which found that, of the 35 companies paying the most (over 80%) tax, net sales revenue and number of employees increased from 2010 to 2011, the years before and after introduction of the tax¹¹.

Direct benefits of the tax hypothecated for the health services averaged around HUF 20bn per year for 2012, 2013 and 2014². Estimates for the indirect benefits from the improved health status of the population are not available. Costs of implementation for the state are not available.

Transferability to other countries

As noted above, the use of taxation as a means of influencing health behaviour has been urged by public health specialists and advocacy organisations, and international bodies such as the OECD and WHO. However, the Hungarian model may not be the most appropriate means of achieving the desired effect in other political and economic contexts.

The imposition of taxes is a politically costly measure, facing resistance from commercial interests and requiring coordination between Departments of Health, Trade and Treasury. Proposals may differ, such as an industry levy based on production quantities, a sales tax based on sales volumes or sales values, or a minimum pricing regulation to ensure that the effect on prices is passed through to the consumer and not absorbed by producers or retailers. Each would have its own regulatory issues.

At the time of writing (2017) several countries and sub-national authorities have introduced taxes on sugar-sweetened beverages, and some have also included other forms of snack food or sugary product. The UK is introducing an industry levy on sugar-sweetened beverages in 2018, France has a soft drinks tax on both sugary and 'diet' drinks, Mexico has a tax on sugary beverages and snacks, South Africa a tax on sugar-sweetened beverages, several US states and cities have a 'soda tax' at various levels, and Chile is reportedly raising to 18% the tax imposed on sugar-sweetened beverages introduced at 13% in 2016¹⁷.

Justification for imposing taxes can be based on health improvement (for example Hungary, France initially) or on the use of the taxes raised (for example health services expenditure (Hungary) or school sports (UK)). The WHO 2016 report on the use of fiscal measures for improving nutrition¹⁸ lists the following potential justifications:

- Health benefits to consumer (including dental caries and obesity)
- Reduced health service costs
- Use of taxation revenue for general health promotion or physical activity promotion, or for subsidising healthier food products
- Improved health equity

The experience of Hungary indicates that fiscal policies can:

- achieve a primary public health goal in both the short and the long term: consumption of the taxed products has decreased, and the decrease has been maintained;
- benefit overweight people: over 60% of Hungarian adults are overweight or obese, and people in these groups were more likely to reduce their consumption of the taxed products;
- reduce the social gradient in health behaviour: the tax has had greatest behavioural effects in lower educated groups;
- generate an improvement in health literacy in the population;
- achieve public economic benefits: the planned revenue has been realized each year;
- achieve specific hypothecation goals: the revenue from the PHP tax has increased the wages of 95,000 health sector workers by 25%;
- can be introduced while avoiding significant lost revenues for manufacturers and avoiding significant lost employment in the labour market.

Next steps and recommendations

In Hungary

The WHO evaluation of the PHP tax² recommends:

- (i) targeted health promotion programmes to amplify the impact of the tax, especially to lower educated population groups;
- (ii) consideration of price subsidy programmes, e.g. for fruit and vegetables;
- (iii) further increases in PHP tax levels, especially for sugar-sweetened beverages;
- (iv) continued monitoring of the impact of the tax.

Elsewhere

There is increasing pressure from civil society and public health bodies and from inter-governmental agencies such as the WHO, to utilise fiscal

policies for reducing NCDs. Various models are available to Member States' treasuries (taxes, levies, minimum prices). Several larger manufacturers are now accepting the need to adapt to changing markets¹⁹.

The World Health Organization's 2016 report¹⁸ recommends member nations to introduce fiscal policies and offers WHO technical support for countries seeking to introduce such measures, including assistance in the development of nutrient profiling schemes to define the products to be taxed or subsidised.

Initial conclusion

The PHP tax had an impact on food consumption and dietary patterns, led to health-enhancing reformulation and increased the funding available for health services. The impact was greater on lower educated and lower income groups and strengthens the evidence from other countries' experience (e.g. Mexico) and from modelling studies which indicate a health benefit for lower income groups and a consequent reduction of the social gradient in health.

Sources of funding/sponsors

The intervention was sponsored by the Hungarian state.

References / sources / respondents

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