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THE PROOF OF THE PUDDING

Denmark's fat tax fiasco

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Summary

- Denmark's tax on saturated fat was hailed as a world-leading public health policy when it was introduced in October 2011, but it was abandoned fifteen months later when the unintended consequences became clear. This paper examines how a policy went from having almost unanimous parliamentary support to becoming 'an unbearable burden' on the Danish people.

- The economic effects of the fat tax were almost invariably negative. It was blamed for helping inflation rise to 4.7 per cent in a year in which real wages fell by 0.8 per cent. Many Danes switched to cheaper brands or went over the border to Sweden and Germany to do their shopping. At least ten per cent of fat tax revenues were swallowed up in administrative costs and it was estimated to have cost 1,300 Danish jobs.

- The fat tax had a very limited impact on the consumption of 'unhealthy' foods. One survey found that only seven per cent of the population reduced the amount of butter, cream and cheese they bought and another survey found that 80 per cent of Danes did not change their shopping habits at all.

- The fat tax was always controversial and it became increasingly unpopular as time went on. Objections came not just from business owners, but also from trade unions, politicians, journalists and the general public. It was widely criticised across the political spectrum for making the poor poorer. By October 2012, 70 per cent of Danes considered the tax to be 'bad' or 'very bad' and newspapers routinely described it as 'infamous', 'maligned' and 'hated'. Mette Gjerskov, the minister for food, agriculture and fisheries, admitted in late 2012: 'The fat tax is one of the most criticised policies we have had in a long time.' [1]

[1] http://online.wsj.com/article/SB10001424127887323894704578113120622763136.html

- Denmark’s fat tax remains the leading example of an ambitious anti-obesity policy being tested in the real world. The results failed to match the predictions of the health lobby’s computer models and the failed experiment has since been largely swept under the carpet in public health circles. Ultimately, Danish politicians weighed the negligible health benefits against the demonstrable social and economic costs and swiftly abandoned it. Few mourn its passing.

- The economic and political failure of the fat tax provides important lessons for policy-makers who are considering ‘health-related’ taxes on fat, sugar, ‘junk food’ and fizzy drinks in the UK and elsewhere. As other studies have concluded, the effect of such policies on calorie consumption and obesity is likely to be minimal. These taxes are highly regressive, economically inefficient and widely unpopular. Although they remain popular with many health campaigners, this may be because, as one Danish journalist noted, ‘doctors don’t need to get re-elected.’

Introduction

> *'It's the first ever fat tax. It's very interesting. We haven't had any practical examples before. Now we will be able to see the effects for real.'*
>
> Mike Rayner, Director of Oxford University's Health Promotion Research Group[2]

In October 2011, Denmark introduced a tax on saturated fat with the expectation that it would nudge consumers towards healthier food products and improve the health of the nation.[3] The idea was not new. There have been calls to levy 'health-related taxes' on food and drink since the 1990s (Brownell, 1994). Several countries place 'sin taxes' on fizzy drinks and confectionery, including Denmark, which has taxed sweets for ninety years and has been levying VAT at 25 per cent on all food products since 1992 (Denmark is the only EU country which does not have some form of reduced VAT on food). However, the Danish fat tax was unique in taxing a specific nutrient in food, rather than a particular product, and it was heralded around the world as an exciting precedent. The eyes of the world were on Denmark and numerous politicians expressed an interest in following the Danes' lead. Fifteen months later the tax was scrapped. It had been 'an unbearable burden', according to the *Copenhagen Post*.

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[2] Quoted in 'Denmark taxes fatty products', Daily Telegraph, 29 September 2011, http://www.telegraph.co.uk/health/healthnews/8796522/Denmark-taxes-fatty-products.html

[3] Denmark's obesity rate in 2009 was 13.4 per cent of the population. This is significantly lower than the OECD average of 16.9 per cent (OECD, 2012: 6).

Tax reform

Unlike most ‘sin taxes’, the Danish fat tax was not intended to raise additional revenue by stealth. It was part of broader reforms to the tax system which had been ongoing since 2004, aimed at improving the country’s economic competitiveness by shifting the burden from direct to indirect taxation. Under Denmark’s centre-right coalition government, the traditional Scandinavian temptation to tax income at source was tempered by ‘concerns for international competitiveness’ (Jensen and Smed, 2012: 1). Instead, the government opted to reduce marginal rates of income tax while increasing various sales taxes, notably on fuel, tobacco and food. ‘Health related taxes’ on food and tobacco were expected to raise 2.75 billion kroner (approximately £300 million) in 2012. Of this, the tax on saturated fat was expected to raise 1 billion kroner (£110 million) (Danish Ministry of Taxation, 2010: 11-12). A tax on sugar, planned for January 2013, was expected to raise a further 1.3 billion kroner (£150 million).

Fat taxes as a health measure

The public health justification for fat taxes rests on the simple assumption that raising the price of high calorie food will lead to lower consumption and therefore less obesity. Basic economic theory suggests that increasing the price of a product reduces rates of consumption (the law of demand), although there are exceptions ('Veblen goods' and 'Giffen goods'). Basic biology suggests that reducing calorie consumption will, ceteris paribus, reduce the probability of gaining body weight.

In Denmark, the fat tax was portrayed as a classic Pigouvian tax designed to discourage unhealthy eating habits and help pay towards the putative costs of obesity. The money raised was originally earmarked for the health service, although this was dropped within weeks of its introduction on the grounds that such taxes are an unstable and fluctuating source of income. Instead, and in common with most other countries which enact 'health-related' sin taxes, the money was directed towards general government expenditure.

Advocates of fat taxes frequently cite tobacco duty as an example of taxation being used to reduce rates of harmful consumption and associated diseases. There are, however, important differences between cigarettes and food which make taxation an unlikely panacea for the obesity 'epidemic'. Nicotine is a mild recreational drug while food is essential for survival. Consequently, as Mytton et al. (2012) acknowledge, 'food consumption is relatively insensitive to price changes'. While anti-smoking campaigners aim for total abstinence from tobacco, obesity campaigners can only hope to shift consumers away from their preferred choice of food and towards ‘healthier’ alternatives. Not only is demand for tasty food rather inelastic, but food prices fluctuate naturally, often without people noticing, and price rises can easily be absorbed in wealthy countries where food shopping makes up a relatively small part of the household budget. Those who feel the impact of higher prices can often downgrade to budget brands or shop in cheaper stores.

Furthermore, obesity is the result of consuming too many calories from any source. While cigarettes can reasonably be classified as ‘unhealthy’ per se, particularly since they tend to be consumed immoderately, items of food do not lend themselves to a good/evil dichotomy. It is the overall diet, rather than particular products, that should be termed unhealthy, and medical opinion about the best diet has shifted over the last few decades, with controversy about the so-called Mediterranean diet and the ‘French paradox’, as well as mixed views about the role of carbohydrates, meat, butter, fat and sugar. [4] Finally, there is the question of proportionality. While sin taxes on tobacco only affect the ‘sinner’, taxes on food and soft drinks drain the wallets of healthy, moderate consumers and heavy, obese overeaters alike.

The scientific case for Denmark’s fat tax was made by the country’s Prevention Commission, which claimed that the policy would give Danes an extra 3,800 years of life - or, more prosaically, an extra five and a half days per person. However, the Commission’s estimate was based on evidence that was eleven years old and did not take into account the recent shift in the medical consensus. Although saturated fat was fingered as a major cause of obesity and ill health in the late twentieth century, more recent research has found the relationship to be more nuanced. Today, it is generally agreed that saturated fat should be replaced by unsaturated fat if obesity is to be prevented and there is considerable evidence that saturated fat is not a major cause of heart disease (Siri-Tarino et al., 2010; Jakobsen et al. 2009).

[4] The ‘French Paradox’ refers to the observation that the French have traditionally had low rates of cardiovascular disease despite consuming large amounts of saturated fat. The Mediterranean diet, high in fruit, vegetables, fish and olive oil, became a model for many in the medical establishment in the 1990s.

Fat taxes in theory

Theoretical models have provided mixed evidence about the effect of fat taxes, with several studies suggesting that the impact on population health is likely to be marginal (e.g. Tiffin and Arnoult, 2011; Gelbach et al., 2007; Chouinard et al., 2007; Allais et al., 2010). Based on a computer model, Mytton et al. reported that a tax on saturated fat 'could produce modest but meaningful changes in food consumption and a reduction in cardiovascular disease' (Mytton et al., 2007). However, in the semi-realistic environment of an artificial retail store, an experiment conducted by Waterlander et al. found that 'price increases did not significantly limit the total number of products or calories bought. Within specific food categories, including soda, dairy drinks, or desserts, no significant effects of the price increases on unhealthier food purchases were found either' (Waterlander et al., 2012).

A systematic review of the literature by Eyles et al. (2012) identified five relevant studies, all of which suggested that fat taxes reduced fat consumption, albeit with only very modest effects on body weight. They estimated that a one per cent increase in price leads to a 0.02 per cent reduction in energy consumed from saturated fat (Eyles et al., 2012: 5). However, they also found evidence that taxes on saturated fat lead to increased consumption of energy from other sources, notably sugar. Some studies have concluded that taxes on saturated fat, dairy and 'junk food' may produce worse health outcomes as a result of compensatory purchasing of substitute foods (Eyles et al., 2012: 7).[5]

Until 2011, much of the evidence for and against fat taxes was based on assumptions and computer modelling. The Danish experiment offered an opportunity to test these conclusions in the real world. As the timeline below shows, the experiment turned out to be short-lived.

[5] Evidence is mixed when it comes to subsidies for ‘healthy’ foods, but Eyles et al. estimate that a one per cent reduction in the price of fruit and vegetables leads to a 0.35 per cent increase in consumption (Eyles et al., 2012: 6).

Timeline

2009: Idea of implementing a fat tax ('fedtafgift') in Denmark is proposed by the centre-right Venstre-Konservative coalition government.

January 2010: Romanian government considers tax on food that is high in sugar or fat but ultimately rejects it.

January 2011: Finland reintroduces its tax on sweets, chocolate, ice cream and other sugary products at the rate of 75 cents per kilogram. The tax had been abolished in 1999 and the decision to bring it back was made in 2009, ostensibly for health reasons.

March 2011: Danish politicians vote overwhelmingly to introduce a tax on saturated fat, to be introduced in October. They also agree to levy a tax on sugar from January 2013. Only the free-market Liberal Alliance party voted against. The far-left Enhedslisten party abstained.

12 July 2011: The Hungarian parliament votes to introduce taxes on various sugary drinks, salty snacks, sweets and condiments. Hungarian Prime Minister Viktor Orban says, 'Those who live unhealthily have to contribute more' (Cheney, 2011). Tax on biscuits is doubled and an additional 250 florints (72p) is placed on a litre of soda. These levies, which come into force in September 2011, are expected to raise the equivalent of £60 million.

September 2011: Irish health minister, James Reilly, says that he is considering a tax on fizzy drinks.

15 September 2011: The centre-right coalition led by Venstre is replaced by a centre-left coalition led by the Social Democrats in the Danish general election.

30 September 2011: On the eve of the fat tax's introduction, the liberal newspaper *Politiken* interviews John and Betina Friis, a couple who met in a grocery store. 'We consumers are cheated to pay more to the treasury all the time', says John. 'The fat tax is just another way to get money out of us.' 'We buy what we have always done', adds Betina, 'and the fat tax will not change that.' [6]

1 October 2011: Danish fat tax introduced at 16 kroner (£1.78) per kilogram of saturated fat on products which contain more than 2.3 per cent saturated fat. With VAT added to this at 25 per cent, the price of butter and margarine rises by more than 20 per cent and the price of cooking oil rises by 8.2 per cent (Jensen and Smed, 2012: 4). The *Copenhagen Post* welcomes the groundbreaking policy, saying that since the government taxes tobacco and alcohol, 'there's no reason why there shouldn't also be a disincentive to consuming saturated fats, given their link to heart disease.' It adds that if the government were serious about preventing ill health, it would raise the tax to a 'prohibitive level'.[7] However, the newspaper also cautions the government to 'listen closely to the voices of economists, who question the fat tax's effectiveness in influencing people's behaviour'.

4 October 2011: British prime minister David Cameron says a Danish-style fat tax is 'something we should look at.'

5 October 2011: Bob Brown, leader of Australia's Green Party says 'we should look at the Danes' saturated fat tax' as a way of reducing the 'costs of obesity' (Ryan and Vasek, 2011).

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[6] http://politiken.dk/mad/madnyt/ECE1409255/john-og-betina-fedtafgift-er-nok-bare-en-maade-at-faa-penge-ud-af-os/

[7] http://cphpost.dk/commentary/editorial/editorial-ounce-prevention-worth-pound-fat

23 October 2011: Writing in the *New Scientist*, Marion Nestle, professor of public health nutrition at New York University, says: 'let us congratulate Denmark on what could be viewed as a revolutionary experiment. I can't wait to see the results' (Nestle, 2011). Nestle echoes the views of Jane Martin of Australia's Obesity Policy Coalition who hoped the fat tax would encourage other governments to use tax as a deterrent. 'Rarely do we get to see such policies played out in the real world', she wrote, 'and the opportunities to learn from this are very promising' (Martin, 2011).

29 October 2011: The Danish wholesaler SuperGros estimates that its deliveries of whipped cream, margarine and cheese fell by a third in the first two weeks of the new tax regime compared to the same period in 2010. There are indications that this decline is partly due to consumers stockpiling food prior to the ban being enacted.[8] The company notes that the biggest decline in sales occurred near the southern border where cross-border shopping into Germany is common.

November 2011: The fat tax is blamed for inflation rising to 4.7 per cent in a year in which real wages fell by 0.8 per cent.[9]

24 November 2011: The European Public Health Alliance, an EU-funded pressure group, calls on member states to introduce taxes on 'unhealthy' foods. It claims that the fat tax is 'a two pronged arrow' which will 'tackle the obesity epidemic' and 'boost austerity-stricken budgets.'[10]

1 January 2012: France introduces tax on sugar-sweetened beverages at a rate of €7.16 per hectolitre. This amounts to the equivalent of just over 1p on a 330ml can and is widely regarded as a stealth tax rather than a serious attempt to reduce obesity.

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8 http://politiken.dk/mad/madnyt/ECE1434676/fedtafgiften-virker---i-starten/

9 http://politiken.dk/tjek/tjekmad/ECE1408548/fedtafgiften-vil-koste-en-familie-1000-kr-aarligt/

10 http://www.epha.org/a/4852

April 2012: Mike Rayner, Britain’s best known campaigner for sin taxes on food and drink, says the Danes have ‘got the right idea’ but expresses concern that they have not gone far enough. He tells the BBC that ‘a lot of the low-fat foods in Britain are high in salt, so we might be tackling one problem only to create another... I don’t care whether it’s hot or cold, whether you got it from a takeaway or a shop - I’d like us to tax all unhealthy foods from butter to biscuits. And in doing so we can tackle a problem that will only keep expanding’ (BBC, 2012).

May 2012: Denmark’s health minister defends the yet-to-be-introduced sugar tax after the food industry warns that it will lead to further job losses. ‘Businesses cannot take anymore’, says Ole Linnet Juul from Dansk Industri, a confederation of 10,000 businesses. ‘First a fat tax and now a sugar tax. Does the government just want companies to shut down?’ (Jyllands-Posten, 2012). A survey finds that seven out of ten food manufacturers say they expect to have to cut staff numbers when the sugar tax is introduced in January 2013 (ibid.).

June 2012: The Danish Chamber of Commerce and two trade unions - HK Commerce and the Danish Food and Allied Workers Union - join forces to place advertisements in national newspapers calling for the fat tax to be repealed.

July 2012: With the political tide turning against the fat tax, the social liberal party Radikale calls for the sugar tax to be ‘buried’. The party had previously supported the tax but decides that it is unworkable. The far-left Enhedslisten party also opposes it, expressing concerns about how it will affect the poor (Weaver, 2012b).

2 August 2012: It is reported that Israel's Health Ministry is in favour of introducing a tax on 'unhealthy foods'. The country's Tax Authority is also supportive.[11] The idea of introducing a fat tax in Israel had first surfaced at a health conference in 2006 when the scheme 'sounded extreme even to many of those whose job it is to promote healthy living', according to the Israeli newspaper *Haaretz.*[12]

27 August 2012: *Politiken* reports that the Danish government is ready to abandon the fat tax and is looking at increasing income tax to make up the shortfall.

August 2012: Italian health minister, Renato Balduzzi, considers a tax on soft drinks (later rejected).

October 2012: An opinion poll shows that 70 per cent of Danes consider the fat tax to be 'bad' or 'very bad' and 80 per cent say that it has not made them change their shopping habits (Gade and Klarskov, 2012).

10 November 2012: Noting that '[t]axes on fat and sugar weigh heavier on the budget of those with low incomes', the Danish government agrees to 'abolish the fat tax and cancel the planned sugar tax.' The government releases a statement saying:

> *'The fat tax and the extension of the chocolate tax – the so-called sugar tax – has been criticised for increasing prices for consumers, increasing companies' administrative costs and putting Danish jobs at risk. At the same time it is believed that the fat tax has, to a lesser extent, contributed to Danes travelling across the border to make purchases.'* (Skatteministeriet, 2012b)

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[11] http://www.haaretz.com/news/national/israel-planning-to-slap-special-tax-on-junk-food-to-curb-ballooning-obesity-1.455329

[12] http://www.haaretz.com/print-edition/business/health-summit-debates-healthy-living-moots-fat-tax-1.190589

To fill the four billion kroner hole in the budget, the government announces that the starting rate of income tax will be lowered from 42,900 to 42,000 kroner and the basic tax rate ('bundskat') will be raised by 0.19 percent from January 2013.[13]

The *Copenhagen Post*, which had initially supported the fat tax, issues an editorial titled 'Giving up an unbearable burden', which expresses relief at its abolition:

> *'The jury remains out on whether people actually reduced their fat consumption – businesses say we didn't, while the only academic study so far says we might have. The evidence of the fat tax's negative impact on the economy, meanwhile, is incontrovertible: it increased border trade and saddled businesses with a burdensome administrative procedure.'*
>
> *'Add to that the nearly two billion kroner the tax sucked out of consumers' pockets over the past 12 months, and there's no wonder it had little popular support.'* [14]

In an editorial in *Politiken*, Kristian Madsen says that it is time for the centre-left to find a third way in matters of public health, one which does not rely on 'blind faith in economic incentives or prohibitions'.[15]

[13] http://cphpost.dk/news/politics/fat-tax-repealed

[14] http://cphpost.dk/commentary/editorial/editorial-giving-unbearable-burden

[15] http://politiken.dk/debat/profiler/kristianmadsen/ECE1812006/nekrolog-over-den-forhadte-fedtskat/

The effect on fat consumption and health

'There have been absolutely no health benefits gained from this tax', claimed Ole Linnet Juul of the food industry group DI Fødevarer (Weaver, 2012c). A spokesman for the country's largest dairy said that consumers bought as much milk, cheese and yoghurt in 2012 as they had before, albeit often choosing cheaper brands (ibid.). And according to the snack food manufacturer Kim's, the market for crisps and snacks was 'growing' while the fat tax was in effect (ibid.). There is no incontrovertible data to corroborate or refute these statements, but such evidence as there is suggests that the fat tax would not have had a significant impact on health if it had been kept in place.

When the tax came into effect, Mike Rayner told Channel 4 News that models predicted 'a 14 per cent decrease in butter consumption'.[16] There is only slender evidence that such a decline took place. In November 2011, *Politiken* reported that only seven per cent of the population had reduced the amount of butter, cream and cheese they bought [17] and it was reported elsewhere that butter sales fell by five per cent in the first month while sales of margarines with less saturated fat rose by the same proportion.[18]

[16] http://www.channel4.com/news/denmark-introduces-fat-tax-on-food; Rayner cautioned that the tax might 'lead to an increase in salt and added sugars, for example, and so the tax might not have actual health benefits.'

[17] http://politiken.dk/newsinenglish/ECE1459080/fat-tax-has-little-effect/

[18] http://politiken.dk/mad/madnyt/ECE1434676/fedtafgiften-virker---i-starten/

The only academic study carried out to date found that discount stores (e.g. Aldi) increased their prices above the rate of tax while supermarkets sometimes absorbed part of the tax to keep prices lower (Jensen and Smed, 2012). This confirmed previous research that showed Aldi to have increased the prices of nine out of ten products by more than the new rate of tax.[19] Despite this, there was a shift in consumer behaviour from the supermarkets to the (generally cheaper) discount stores while the tax was in effect.

Jensen and Smed found that average weekly sales of butter fell by 61 grammes per person in supermarkets and by 34 grammes per person in discount stores. In sum, they estimated that sales of saturated fat from butter, margarine and oils fell by 10-20 per cent after the tax was implemented (ibid.: 17-18). Although this is in line with Rayner's prediction of a 14 per cent decline, Jensen and Smed's evidence is based on the first three months of the new tax regime only, and they acknowledge that this probably exaggerates the decline in consumption because of the hoarding that went on in the weeks before the tax was enacted. A large spike in sales in September 2011 supports anecdotal accounts of stock-piling on the eve of the new tax regime:[20]

[19] http://cphpost.dk/business/supermarkets-using-fat-tax-fatten-bottom-line ('It is not acceptable to make an extra profit under the cover of the fat tax', Social Democrat food spokesperson Orla Hav said, according to MetroXpress newspaper. 'We would like to take up a debate on whether there are ways to protect the consumer.')

[20] http://politiken.dk/tjek/tjekmad/ECE1408548/fedtafgiften-vil-koste-en-familie-1000-kr-aarligt/

> *'We have had to stock up with tons of butter and margarine in order to be able to supply outlets'*
> Soeren Joergensen of Arla Distribution

> *'It has been a chaotic week with a lot of empty shelves. People have been filling their freezers'*
> Christian Jensen, independent local Copenhagen supermarket. [21]

Sales in Danish stores also underestimate the true level of consumption because of the rise in cross-border shopping (see below).

[21] http://www.mnn.com/food/healthy-eating/stories/denmark-levies-worlds-first-fat-tax; Jensen added: 'But actually I don't think the tax will make that much difference. If people want to buy a cake, they will buy it. But right now they're saving money.'

Further economic problems caused by the fat tax

The Danish government expected the fat tax to raise 'around 1 billion' kroner (£115 million) per year (Danish Ministry of Taxation, 2010: 12). In the event, it raised 1.475 billion kroner (£170 million) (including VAT) which further suggests that it reduced fat consumption by less than was anticipated (Skatteministeriet, 2012b: 2).

Sin taxes are usually designed to generate additional revenue. The Danish case is interesting because it was carefully calibrated not to raise extra revenue but to balance out lost revenue from income tax cuts. The question for the Danish government was therefore not how to soak consumers for the most cash but how to find the best way of generating a specific amount of money. There are several reasons why it eventually concluded that there were fairer and more efficient ways to raise revenue.

Regressive

Although there are no specific data showing how the burden of the fat tax fell on different socio-economic groups, it is well established that taxes on food take a larger share of income from the poor than from the rich. Indirect taxes of this sort are invariably regressive unless the targeted product is a luxury or is disproportionately consumed by the rich, which is clearly not the case here. As Chouinard et al. (2007) note: 'fat taxes are unattractive because they are extremely regressive, and the elderly and poor suffer much greater welfare losses from the taxes than do younger and richer consumers.' Allais et al. (2010) conclude that a tax on fat 'generates substantial tax revenue, but is highly regressive.' The regressive nature of the fat tax partly explains its unpopularity in Denmark, particularly amongst leftist parties.

Administrative costs

It has been claimed that businesses spent months trying to work out how much tax should be paid on dried apricots that sat in oily wax paper (Carlson, 2013). The story may be apocryphal, but there is no doubt that the policy was intensely bureaucratic for both government and industry.

It was reported that businesses paid 10 kroner in administration costs for every 100 kroner the state took in tax and that staff were being offloaded to cut costs. The business group, Dansk Erhverv, put the cost even higher at around 200 million kroner (Weaver, 2012c). Other trade associations, such as the Danish Grocers' Trade Organisation, complained about the numerous transaction costs involved in setting up IT systems and calculating the tax rate for thousands of products.

As an example of the 'administrative nightmare' faced by manufacturers, the tax was levied on the saturated fat used in the production of food and so did not necessarily reflect the amount of fat in the finished product. It was extremely difficult for Danish companies to establish how much fat had been used in the production of imported products. As a spokeswoman for DI foodstuffs told AFP: 'Products that include other products that include saturated fats also have to have new prices worked out. Imported goods require a declaration from the producers abroad on exactly how much saturated fat has been used in production.' [22]

[22] http://www.mnn.com/food/healthy-eating/stories/denmark-levies-worlds-first-fat-tax

Transaction costs on businesses amounted to around 10-15 per cent of the tax revenue collected, not including the costs of government bureaucracy. This was acknowledged by the Danish Minister for Taxation, Holger Nielsen, who greeted the abolition of the tax by saying: ‘These taxes created big administrative costs. This is not what we need in this economic situation. We have listened to objections that were raised.’ [23]

Cross-border shopping

Denmark has a longstanding problem with cross-border shopping and smuggling as a result of its high rates of taxation on food, drink and tobacco. Tobacco is the most heavily traded commodity (amounting to 4 billion kroner in 2011) and Germany is the main source (Skatteministeriet, 2012a: 2-3).

The government was warned that the fat tax would fuel the cross-border trade before it was enacted. [24] For example, Jørgen Hoppe, president of the trade union HK Commerce, told *Politiken*: ‘Every time you put new taxes on fat, sugar and spirits, people simply cross the border to shop and that sends jobs out of the country’ (Weaver, 2012). This threat was acknowledged by the government when it set out the new budget in 2010:

> *‘Taxes on health related goods have to be balanced with respect to cross-border shopping. Too high levels of taxes will not reduce the total consumption of unhealthy goods, but only lead to increased cross-border shopping’ (Danish Ministry of Taxation, 2010: 11).*

[23] http://www.euractiv.com/science-policymaking/denmark-scraps-infamous-fat-tax-news-516018

[24] http://www.just-food.com/analysis/denmarks-saturated-fat-tax-provokes-industry-anger_id115300.aspx

Cross-border purchases had been declining before the fat tax was enacted. They peaked at 15.6 billion kroner (£1.8 billion) in 2005 before steadily falling to 9.6 billion kroner (£1.1 billion) in 2011. The Ministry of Taxation estimated that the overall border trade rose in 2012 to 10.5 billion kroner as a result of higher taxes on tobacco, food and drink (Skatteministeriet, 2012a: 3). However, it noted that due to the relatively short shelf-life of the food products involved, the effect of the fat tax on cross-border trade was 'relatively limited' (ibid.: 14). Preliminary evidence suggested that the fat tax led to cross-border sales rising by the equivalent of 100 million kroner (£12 million) per year (ibid.) and rose thereafter (Smed and Robertson, 2012).

The cross-border shopping spree was further fuelled by additional taxes on alcohol (January 2012) and tobacco (April 2012). In 2011, Danes reportedly bought an average of 420 units of beer and soft drinks in shops on the German border.[25] A poll conducted in October 2012 found that half the population had shopped in Germany, up from a third in February 2011 (Gade and Klarskov, 2012). Another poll found that 57.1 per cent of Danish households had bought beer or soft drinks in Germany in the past year, an impressively high figure in a country where only 59.7 per cent of households own a car. Four years earlier, only 47 per cent of Danish households reported shopped in Germany in the past year.[26]

> 'When asked about why they shop outside Denmark, one in three named the fat tax as the primary reason. Long known as the place where Danes shop for booze, cigarettes and sweets, Germany, thanks to the fat tax, large discounts and professional marketing, has now become a place where Danes also shop for food. German stores now send their brochures, proudly proclaiming 'No fat tax here!', to homes in the vast majority of Denmark.' (Gade and Klarskov, 2012)

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[25] http://www.euractiv.com/consumers/danes-buy-danish-beer-germany-news-514372

[26] http://www.dsk.dk/Nyheder/pressemeddelelser/Naesten6udaf10hargraensehandlet.html

In conclusion, the fat tax led to many Danes changing their behaviour, but not in the way health campaigners had hoped for. For the most part it led to consumers switching to cheaper alternatives and shopping abroad. As a result, the food industry estimated that the fat tax cost 1,300 jobs in its first year.[27] Objections came not just from business owners, but also from trade unions, politicians, journalists and the general public. Moreover, the fat tax contributed to a surge in consumer prices and price-gouging, and was widely considered to be regressive. Consequently, when the tax was abolished Margrethe Vestager, Minister for Economic Affairs and the Interior declared: 'With the new plan, we will keep jobs in Denmark, reduce border trade and the companies' administrative costs. This is good.'[28]

[27] http://cphpost.dk/commentary/opinion/opinion-tax-everyone-wants-see-cut

[28] http://www.euractiv.com/science-policymaking/denmark-scraps-infamous-fat-tax-news-516018

Reaction from public health campaigners

The reaction of public health lobbyists to the painful real world experience of the Danish U-turn ranged from complaints that the policy had been wrecked by commercial interests to assurances that the tax could have worked with a little fine tuning. Having described the fat tax as an important 'bellwether' barely a year earlier,[29] the public health establishment now blamed policymakers for setting the tax too low and/or making it insufficiently complex. It was, they concluded, a bureaucratic failure rather than a systemic failure. The abolition of the tax was widely described as a 'political decision', influenced by those who made and sold food.

Writing in the *New Scientist*, where she had praised Denmark's 'revolutionary experiment' the previous year, Marion Nestle blamed 'intense pressure from the food industry in an already weak economy' (Nestle, 2012). Although she conceded that the fat tax had been 'especially unpopular among Danish consumers', she nevertheless insisted that 'the real reason for the repeal was to appease business interests'. Nestle argued that the tax was too low to make much difference to rates of obesity and that a tax on saturated fat in general was too broad. A better approach, she said, was to target 'processed food, fast food or sugary drinks' (arguably an even broader category). She concluded that the way forward required 'fighting makers of fatty foods' by restricting portion sizes, restricting advertising and, heedless of the Danish experience, more fat taxes.

[29] http://www.washingtonpost.com/blogs/wonkblog/post/will-a-fat-tax-make-denmark-healthier/2011/10/04/gIQA3D5nKL_blog.html

A similar note was struck by Gary Sacks, writing for the Australian public health blog *The Conversation*. Like Nestle, he accepted that it was impossible to say whether the tax would have had the 'desired impact on public health', but its abolition was, he said, 'another Big Food victory'. He complained that the decision had been 'a political one' and that 'given the enormous influence of Big Food, it is reasonable to expect that they had at least some influence over this decision' (Sacks, 2012). He expressed hope that events in Denmark would not discourage other governments from pursuing fat taxes, soft drink taxes, advertising bans and restrictions on serving sizes.

Tam Fry of the National Obesity Forum said that the Danes 'have found the water too hot and given up. The clear message for the UK is that it is time for the government to get tough with food manufacturers and impose maximum acceptable levels of saturated fat, sugar and salt.'[30] A different strategy was suggested by Alberto Alemanno, the editor of the *European Journal of Risk Regulation*, who argued that the failure of the Danish fat tax could be used to justify an EU-wide tax. The cross-border trade that had undermined the fat tax was, he said, due to a distortion of the internal market which required action from the European Commission (Alemanno, 2012).[31]

[30] http://www.foodmanufacture.co.uk/Regulation/Denmark-to-drop-fat-tax-and-shelve-sugar-tax-plans

[31] In other words, the mere existence of potential distortions in the internal market could enable the EU to step in. Yet, at the same time, by scrapping such a tax Denmark is set to weaken the case for an EU-wide tax as the distortions will be eliminated. It is indeed undisputed that only a critical mass of domestic fat tax schemes might empower the EU to enact an EU-wide fat tax.

In the post-ban rhetoric of fat tax campaigners, the possibility that politicians had simply responded to public opinion was seldom entertained. For them, it is axiomatic that the interests of industry are in irreconcilable conflict with the public interest. No explanation is required for why the industry should prefer selling 'unhealthy' food to 'healthy' food, nor is it necessary to explain why, if 'Big Food' wields so much political power, it was unable to prevent the tax being introduced in the first place. (The term 'Big Food', which until recently would only ever be used satirically, is clearly intended to draw parallels with 'Big Tobacco' and to imply great power.)

From the perspective of self-appointed public health experts, it is only they who act on evidence while everybody else is motivated by the mysterious and unpredictable force of 'politics'. Alberto Alemanno wrote that 'the circumstances surrounding the withdrawal of the tax suggest that politics rather that an evidence-based policy assessment justify the decision of the Danish government' (Alemanno, 2012). But politics covers a multitude of interests. Evidence of widespread unpopularity is a legitimate reason to ditch a policy in a liberal democracy. The fat tax never had the support of the majority of Danes and it became even less popular as time went on. The proportion of the population who disagreed with the statement 'in general it's a good idea to tax saturated fat' rose from 43 per cent in 2009 to 50 per cent in November 2011.[32] By October 2012, 70 per cent of Danes considered the tax to be 'bad' or 'very bad' (Gade and Klarskov, 2012) and by the time it was scrapped, newspapers were routinely describing the tax as 'infamous', 'maligned' and 'hated'. The liberal newspaper *Politiken's* editorial about the tax's abolition was headlined 'Obituary for the hated fat tax'. Mette Gjerskov, the minister for food, agriculture and fisheries said: 'The fat tax is one of the most criticised policies we have had in a long time.'[33]

The indifference of health campaigners towards public opinion came as a surprise to Stephen Dubner, co-author of *Freakonomics*,

[32] http://fdb.dk/analyse/fedtskatten-har-forel%C3%B8big-flyttet-f%C3%A5

[33] http://online.wsj.com/article/SB10001424127887323894704578113120622763136.html

who attended a public health conference in November 2012 at which fat taxes were praised: 'One objection that I was surprised no one raised: the simple fact that taxpayers might hate the tax and rebel against it to the point where it becomes politically and economically impossible.'[34]

Some in public health wear this unpopularity as a badge of honour. 'The fat tax may be unfair and unpopular but it will certainly make people sit up and take notice', Tam Fry of the National Obesity Forum told *Deutsche Welle* when the tax came into effect. 'It's a shock treatment but a necessary one to cure an epidemic.'[35] But shock treatment rarely goes down well with voters, especially when the economy is on the rocks. Concerns about job losses and the cost of living may not be paramount to public health campaigners, but it is quite understandable that the government would place these considerations ahead of what is likely to be, at best, a small reduction in the population's waist line.

There is, then, good evidence that the fat tax was widely unpopular in Denmark. There is equally good evidence that the tax encouraged cross-border shopping and put an unreasonable burden on shoppers and food producers alike. There is circumstantial evidence that the impact on consumption patterns was so limited that any benefit to public health would have been negligible even if the tax had stayed in place for years. And it is almost certain that the fat tax was, by its very nature, regressive.

None of this is of interest to the health campaigners. From their perspective, the only evidence that could justify revoking the tax would be if rates of obesity had unequivocally risen. Even if that had happened, their response would likely have been to demand a more punitive tax rate across a wider range of products. As health campaigners, they are entitled to take a narrow view, but politicians are not obliged to do likewise. The wider social and economic perspective is too important to be dismissed as mere 'politics'.

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[34] http://www.freakonomics.com/2012/11/13/fans-of-a-fat-tax-will-be-saddened-by-the-news-from-denmark/

[35] http://www.dw.de/fat-tax-gains-weight-in-europe/a-15445105-1

Don't let them eat cake

Since there is no reliable evidence of what effect the fat tax had on calorie consumption, the Danish experience shows us nothing as far as public health lobbyists are concerned. From their standpoint, the policy was neither a success nor a failure, it was merely a non-event which demonstrated nothing except the excessive power of corporations to nip well-intentioned policies in the bud. This attitude may explain why there has been little in the way of serious analysis of the Danish experiment and almost nothing has been published in academic journals to assess the economic, social or public health impact. For the most part, public health advocates simply returned to their computer models and resumed campaigning.

Within days of the fat tax being scrapped, Jack Winkler, professor of nutrition policy at London Metropolitan University, told the *Guardian* that 'the Danish reversal will prove the high water mark for such policy proposals, and interest in the subject will now recede' (Campbell, 2012). He could not have been more wrong.

On 14 November 2012, just four days after the Danes announced the abolition of the fat tax, Britain's National Heart Forum called on the government to introduce a tax on foods that are high in salt, sugar and fat. Reporting this news, the *Guardian* claimed that '"Fat taxes" are increasingly popular internationally' (ibid.).

The following day, France narrowly avoided a 'Nutella tax' when the Socialist government's social security budget was voted down by conservatives and communists in parliament. The tax would have quadrupled the tax on palm oil, a key ingredient in Nutella chocolate spread, from €100 to €400 per metric tonne. The proposal had drawn protests from Malaysia, one of the world's biggest exporters of palm oil and was unpopular with much of the French public for whom Nutella on bread was a cherished part of breakfast. The French Communist Party voted against the tax because they saw it as an attack on the working class.

The 'Nutella tax' had been promoted by environmentalists who claimed that the palm oil industry was responsible for deforestation and by public health lobbyists who objected to the saturated fats in palm oil. The tax's chief advocate in government, Yves Daudigny, said: 'Many people have questioned the reasons for taxation. So I repeat one more time, it has only one purpose: to fight against obesity and cardiovascular disorders.'[36] It was expected to have raised €400 million per year. Subsequent attempts to levy sin taxes on aspartame and energy drinks for public health reasons were also rejected.

The momentum accelerated in 2013. In January, a coalition of 61 organisations called on the British government to introduce a 20p per litre tax on sugar-sweetened beverages (or 'mini-health timebombs' as they called them). The campaign was led by the lobbying charity Sustain, whose chairman was Mike Rayner.

In February, the Ontario Medical Association lent its support to fat taxes. Asked about the real-world evidence from countries such as Denmark, the association's president, Doug Weir, replied: 'There's no evidence that it [taxing] doesn't work… I think what we're saying is that the problem is too big to wait until we get the evidence from other jurisdictions' (Ryckewaert, 2013).

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[36] http://www.foodnavigator.com/Legislation/French-Senate-rejects-palm-oil-tax

In the same month, Britain's Academy of Medical Royal Colleges unveiled a ten-point plan to combat obesity that was explicitly inspired by anti-smoking legislation. Most notably, it called for a 20 per cent tax on sugar-sweetened beverages. The Academy's report mentioned that Denmark had experimented with what it called 'a slightly broader plan', but there was no acknowledgement that the experiment had ended, let alone any explanation of why (Academy of Medical Royal Colleges, 2013: 29).

Revealed preferences and stated preferences

Public health campaigners talk a great deal about 'making healthy choices easier'.[37] The implication of this slogan is that people's consumption habits do not reflect their true preferences, but are merely the consequence of an environment that pushes 'unhealthy' products under their noses while making 'healthy' food expensive and inaccessible.[38] The solution, therefore, is to remould the commercial environment to make it easier for people to act upon their latent preference for 'healthy' food.

There is little evidence from the real world to support this hypothesis. Firstly, it is by no means clear that 'unhealthy' foods have an unfair advantage in the retail environment. Low- and zero-calorie fizzy drinks are stacked alongside their sugary cousins on the shelves, for example, and are on sale at the same price. Similarly, low-fat food products compete on an even footing with high-fat alternatives. Nothing in the price, availability or advertising of food and drink implies a systematic bias against 'healthier choices'.

Secondly, there is no reason to assume that people's revealed dietary preferences do not closely mirror their true preferences. In the case of the fat tax, the willingness of many Danes to go out of their way to stockpile butter or to drive considerable distances to buy basic foodstuffs strongly suggests that their preference for 'unhealthy' products is conscious and very real.

[37] For example, the British government's 2004 white paper, *Choosing Health: Making Healthy Choices Easier*.

[38] In the case of diet, the word 'obesogenic' has been coined to describe an environment in which physical activity is perceived to be inconvenient and 'unhealthy' food is perceived to be too readily available (Foresight, 2007).

Butter or guns?

While public health campaigners search for solutions, the public deals in trade-offs. In this instance, the campaigners pursue a solution to an ‘obesity epidemic’ while the public makes a trade-off between weight gain and the pleasure of eating. As Tim Harford put it: ‘If you tax ice cream, people will be less obese, which is good, but they will also be enjoying less ice cream, which is bad’ (Harford, 2012). Before the Danish fat tax was introduced, the Prevention Commission predicted that it would increase average life expectancy by five and a half days. Leaving aside the remarkable precision of this estimate, it is debatable whether most people would willingly trade the sacrifices of money and pleasure for this negligible increase in longevity.[39] It is by no means obvious that those who prefer to indulge themselves in a lifetime’s pleasure of eating their favourite foods at the expense of being overweight are making an irrational choice.

It is true that some people say that they would like to eat less fatty and sugary food, but stated preferences are less informative than revealed preferences. If they actually liked eating less fatty and sugary food they would do so. What they really mean is that they wish they enjoyed ‘healthy’ food as much as enjoyed ‘unhealthy’ food. But they do not. They wish that ‘healthy’ foods were their first-order preference, but must ruefully admit that this is not so.

[39] http://www.foodnavigator.com/Legislation/Danish-food-industry-sources-slam-fat-tax

Campaigners might talk about ‘making healthy choices easier’, but the most they can do is make ‘healthy choices’ more appealing in relative terms by making ‘unhealthy choices’ more expensive and therefore less appealing. Unfortunately, this does not make the ‘healthy’ choices cheaper in real terms, nor does it make them any tastier. The government can make the consumer’s first-order preference less attractive in terms of its pricing, packaging and availability - and this may force some consumers to resort to their second-order preference - but those who switch will still get less enjoyment from their second-order preference than they would have got from their ‘unhealthy’ first-order preference. In short, the public health intervention can only work by reducing pleasure or reducing wealth. This explains why the Danish policy was widely unpopular.

Once implemented, a fat tax creates two distinct groups. There are those who continue eating what they like but who are somewhat poorer as a result, and there are those who are coerced into eating their second-preference food and therefore get less pleasure from eating. The first group - which probably makes up the majority - is unambiguously worse off financially. The second group is not worse off financially but is no longer maximising its utility. In the best case scenario, some of the members of the latter group might enjoy modest weight loss which might or might not result in better health outcomes.

From the narrow perspective of obesity campaigners, any reduction in body mass is to be welcomed and any policy that reduces calorie intake is a ‘solution’. But the rest of society deals in ‘trade-offs’ rather than ‘solutions’, and so the success or failure of a policy does not depend solely on whether it achieves its primary objective. We also need to know how much it cost and what the unintended consequences were. If we move beyond the ‘health at any cost’ viewpoint and instead see trade-offs between health, wealth and enjoyment, it is not difficult to see why taxes of the sort tried out in Denmark face significant opposition.

The costs are visible and affect many people, whereas the benefits affect a relatively small number of people and are barely perceptible. Even the few who benefit may still begrudge having to sacrifice their first-order preference. Such an arrangement is not conducive to winning votes, but, as Kristian Madsen noted in *Politiken* when the tax was abolished, 'doctors don't need to get re-elected.'[40]

Postscript

In April 2013, as this paper was going to press, the Danish government announced that it was abandoning its tax on soft drinks and will lower the excise duty on beer. The tax on soft drinks will be halved in July 2013 before being abolished completely in January 2014. The beer tax will be reduced by 15 per cent in July 2013. Both taxes have been blamed for cross-border sales of these products reaching record levels. Margrethe Vestager, the Deputy Prime Minister, said that the tax cuts 'will promote growth and employment. That is our key priority' (Stanners, 2013).

[40] http://politiken.dk/debat/profiler/kristianmadsen/ECE1812006/nekrolog-over-den-forhadte-fedtskat/

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