Financial penalties on unhealthy foods
Smed, Sinne

Publication date: 2011

Document Version
Early version, also known as pre-print

Citation for published version (APA):
Financial Penalties on Unhealthy Foods
- the “Fat Tax” in Denmark

Sinne Smed
University of Copenhagen
Institute of Food and Resource Economics

Natural salt and sugar replacements, conference 16-17 November 2011, London

Agenda
• The dietary status in Denmark
• Some background for the “fat tax”
• Regulating dietary habits in a theoretical setting
• The new tax “package”
  • Sugar tax
  • The fat tax
    • The difficult delivery of the fat tax, proposals, discussions and modifications
    • The final proposal
• The industry
• What is the assumed effect of the tax?

Only a limited amount of obese

Source: OECD - statistics

"Good" trends in nutrient consumption

Source: Smed (2008): Empirical essays on health information and consumer behaviour, PhD Dissertation

"Good" trends in nutrient consumption

Source: Smed (2008): Empirical essays on health information and consumer behaviour, PhD Dissertation

High awareness of dietary recommendations

Source: Andersen L.M. (2010): Documentation of CONCEPTS questionnaire

Many people state they ought to change habits
• 52 % state that they should eat less saturated fat
• 50 % that they should eat less sugar
BUT!

There is a social bias in obesity

Only a few fulfil the dietary recommendations

And we die too early

- Smoking, bad diets, alcohol and inactivity are cause of 40% of all deaths
  - Excess intake of saturated fat 3.7%
  - Smoking 23.8%
  - To little fruits and vegetables 3.8%
  - Inactivity 7.4%
  - Alcohol 5.2%
- Prevention committee
  - Increase average years of life with 3 years over a period of 10 years
  - 51 recommendations
  - Increasing the tax on sugar and impose a tax on saturated fat

History of food taxes in Denmark

- We have a VAT on 25% on almost everything
- Cigarettes, alcohol and soft-drinks

Why do economists like taxes?
Arguments for taxing food
- Opposite bans consumers have the possibility of adjusting to the changed conditions
- The price of the food will reflect the social cost of consuming that food
- Revenue for the authorities – can be used for health promoting activities

Arguments against taxing food
- You want to tax abuse NOT use
- Administration costs
- Food is a private thing
- Regressive effect of taxation

The 2010 tax reform
- Increased taxation of tobacco by 0.4 € per 20 cigarettes.
- Tax on sweets, chocolate and sugar products and ice cream is increased by:
  - Sugar-products 0.48 €/kg
  - Ice-cream 0.11 €/litre
    - This means that the tax on a 100 grams bag of sweets increases from 0.19 € to 0.24 €
- Tax on soft drinks with sugar increases by 0.04 €/litre and decreases by 0.04 €/litre on sugar free soft drinks
  - Tax on 1 litre of e.g. Coca Cola increases from 0.12 € USD to 0.16 € or decreases to 0.08 €
- Tax on saturated fat
What does the reform imply?

Before tax-reform:
Price=8.45+0.76=9.22 €

After tax-reform:
Price=8.45+0.82=9.27 €

Before tax-reform:
Price=8.45+0.76=9.22 €

After tax-reform:
Price=8.45+0.9=9.35 €

Before tax-reform:
Price=8.45+0.76=9.22 €

After tax-reform:
Price=8.45+0.82=9.27 €

Before tax-reform:
Price=8.45+0.76=9.22 €

After tax-reform:
Price=8.45+0.82=9.27 €

What does the reform imply?

Before tax-reform:
Price=8.45+0.76=9.22 €

After tax-reform:
Price=8.45+0.82=9.27 €

What does the reform imply?

Before tax-reform:
Price=8.45+0.76=9.22 €

After tax-reform:
Price=8.45+0.82=9.27 €

History of the fat-tax proposal

• Original proposal - saturated fat with milk and meat exempted
  • Meat contribute with 22 % of total fat and 19% of sat. fat
  • Drinking milk contribute with 19% of total fat and 16% of sat. fat
  • EU – commission found it anti-competitive

• Modified proposal
  • Tax on saturated fat (except milk) 13.50 DKK/kg (1.81 €)
    • The cost of a packet of butter (250 grams) increase by 0.3 €
    • The cost of 250 g chips increase by 0.08 €
  • Meat – taxed according to estimated content of fat by means of animal type
    • Beef 10 g saturated fat/100 g
    • Pork 12 g saturated fat/100 g
    • Poultry 3.4 g saturated fat/100 g

Final proposal

• Major critique points of “fat tax”
  • The “fat” pig
  • The undiversified “tax” on meat

• Final proposal passed in the Parliament the 17th of March 2011
  • Coefficients on saturated fat adjusted to Danish conditions
  • Possibility to differentiate according to cut of meat
  • Tax increased to 2.15 € per kg saturated fat
  • Start October 2011

<table>
<thead>
<tr>
<th>Weight</th>
<th>Estimated fat content (g/100g)</th>
<th>Real fat content (g/100g)</th>
<th>Current price (€)</th>
<th>Price change (unified tax)</th>
<th>Price change (differentiated tax)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minced beef (9-15 pct.) 500 g 9 - 15 % 4.46 1.95 0.09 2.88 0.13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tenderloin 500 g 2.7 12.44 0.70 0.09 0.23 0.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minced pork fat (9-15 pct.) 500 g 12 9 - 15 % 2.68 3.91 0.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cumberland sausage 500 g 6.7 3.55 2.94 0.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cutlet 500 g 4.14 4.20 2.50 0.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chicken 500 g 3.4 3.3 2.51 1.12 0.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chickenbreast 500 g 3.4 1 5.59 0.53 0.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The estimated effect of the fat tax on consumption

Model concept

Policy
Tax/subsidy on nutrients
Food/nutrient conversion model
Food prices
Price elasticities
Food intake
Nutrient intake
Food consumption

Suggested outcome of tax on saturated fat

<table>
<thead>
<tr>
<th>% change</th>
<th>Total fat</th>
<th>Saturated fat</th>
<th>Cholesterol</th>
<th>Fiber</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-10.0</td>
<td>-14.0</td>
<td>-12.0</td>
<td>-10.0</td>
</tr>
</tbody>
</table>

Change in consumption of specific food groups

<table>
<thead>
<tr>
<th>% change</th>
<th>Total</th>
<th>Saturated fat</th>
<th>Cholesterol</th>
<th>Fiber</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Change in pork consumption if tax is differentiated

<table>
<thead>
<tr>
<th>% change</th>
<th>Hindquarters</th>
<th>Shoulders</th>
<th>Front part</th>
<th>Bacon</th>
<th>Sausage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-10%</td>
<td>-8%</td>
<td>-6%</td>
<td>-4%</td>
<td>-2%</td>
</tr>
</tbody>
</table>

Change in cheese consumption if tax is differentiated

<table>
<thead>
<tr>
<th>% change</th>
<th>20-30+</th>
<th>30-60+</th>
<th>60+</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Estimated revenue from tax reform

- Health taxes in total 2.75 billion D.kr. in revenue to the state (cigarettes, sugar and fat)
- Fat tax will provide a bit more than 1.2 billion D.kr in revenue
- Will cost each households almost 550 D.kr/year

On a longer term basis

- Evaluation of natural experiments
- Cost – benefit analysis of the use of taxation
  - Calculation of administration cost
  - Short and long term welfare economic costs
- How to design a subsidy/tax scheme most effectively
  - In order to decrease social bias in obesity
  - In order to get most “efficiency”
- Are there synergy effects from combining taxation schemes and information campaigns?

Literature/contact

- Email: ss@foi.dk
- More on the topic
- More on the data used for model estimation