



## **Financial penalties on unhealthy foods**

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## Financial Penalties on Unhealthy Foods

### - the "Fat Tax" in Denmark

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

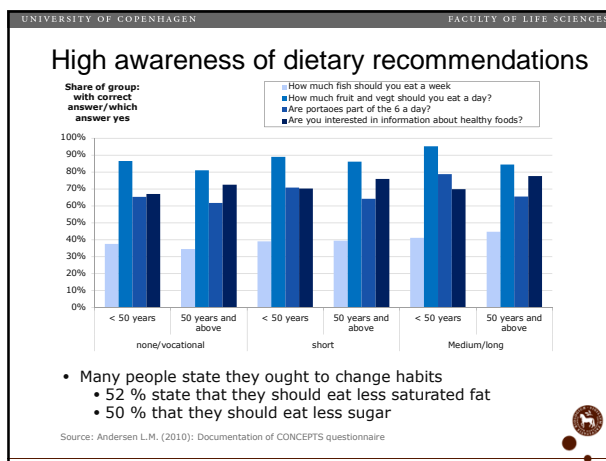
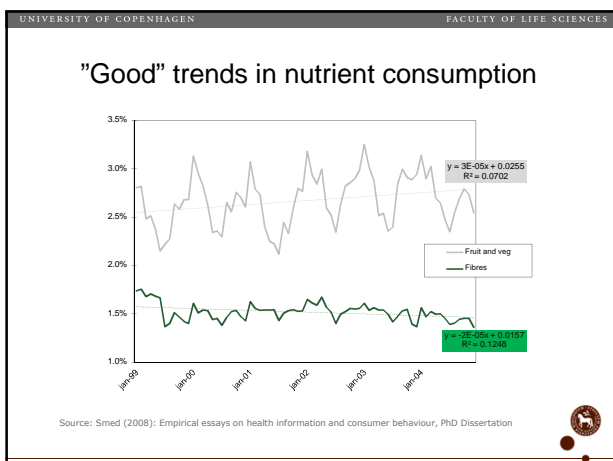
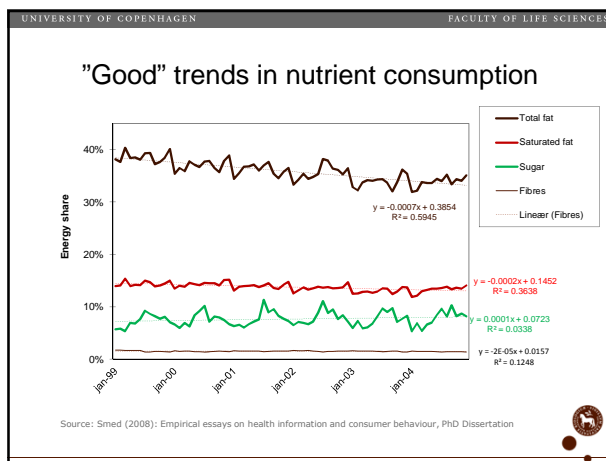


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## Agenda

- 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?



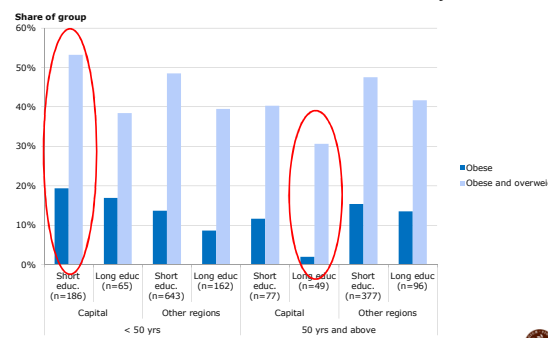
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# BUT!



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## There is a social bias in obesity



Share of group

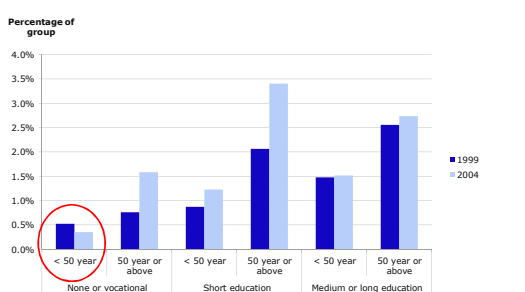
Region	Age Group	Education Level	Obese (%)	Obese and overweight (%)
Capital	< 50 yrs	Short educ. (n=186)	~20%	~55%
		Long educ. (n=65)	~18%	~38%
	50 yrs and above	Short educ. (n=162)	~14%	~48%
		Long educ. (n=162)	~9%	~40%
Other regions	< 50 yrs	Short educ. (n=77)	~12%	~40%
		Long educ. (n=49)	~2%	~30%
	50 yrs and above	Short educ. (n=377)	~15%	~48%
		Long educ. (n=96)	~14%	~42%

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



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## Only a few fulfil the dietary recommendations



Percentage of group

Education Level	Age Group	1999 (%)	2004 (%)
None or vocational	< 50 year	~0.5%	~0.4%
	50 year or above	~0.8%	~1.6%
Short education	< 50 year	~0.9%	~1.3%
	50 year or above	~2.1%	~3.4%
Medium or long education	< 50 year	~1.5%	~1.5%
	50 year or above	~2.5%	~2.8%


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



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## 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



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## History of food taxes in Denmark

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



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## Why do economists like taxes?




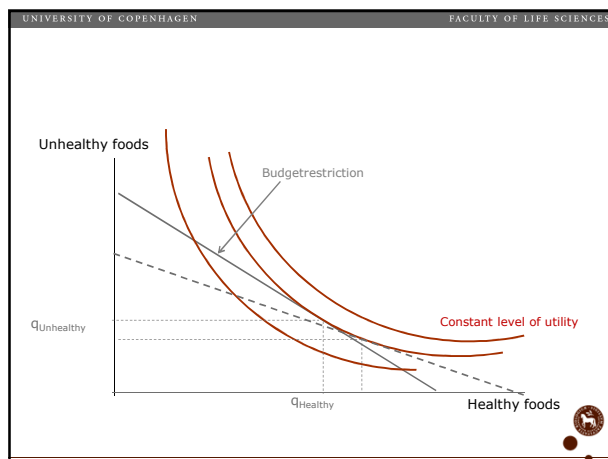
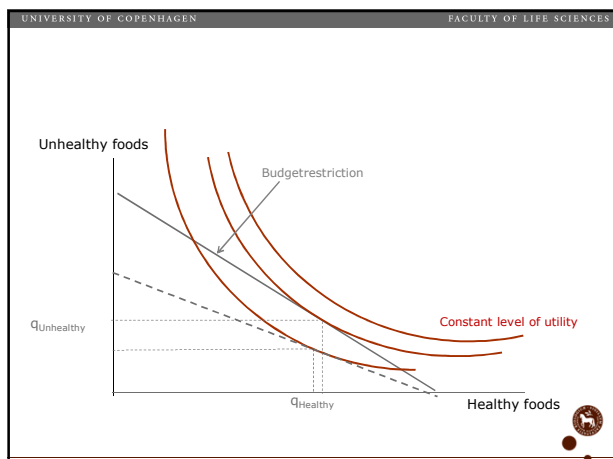
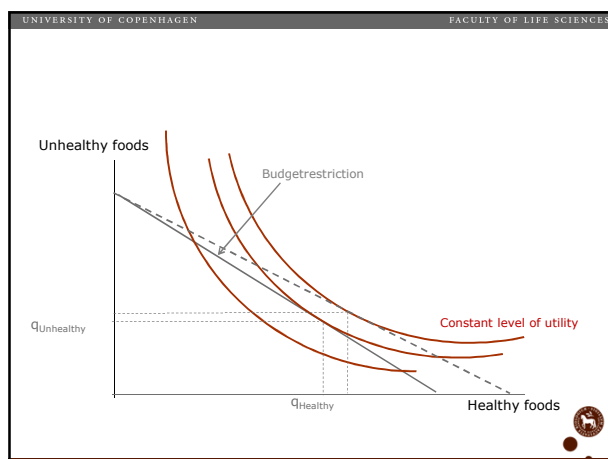
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### Arguments for taxing food

- 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

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## Danish nutrition policy



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### 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



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### What does the reform imply?

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

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

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### 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 €

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### 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

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	Weight	Estimated fat (g/100g)	Real fat content (g/100 g)	Current price (€)	Price change	
					%	€
Minced beef (9-15 pct.)	500 g	10	9 - 15 %	4.46	1.95	0.09
Tenderloin	500 g	10	2.7	12.44	0.70	0.09
Minced pork fat (9-15 pct.)	500 g	12	9 - 15 %	2.68	3.91	0.10
Cumberland sausage	500 g	12	6.7	3.55	2.94	0.10
Cutlet	500 g	12	4.14	4.20	2.50	0.10
Chicken	500 g	3.4	3.3	2.51	1.12	0.03
Chickenbreast	500 g	3.4	1	5.59	0.53	0.03

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### Final proposal


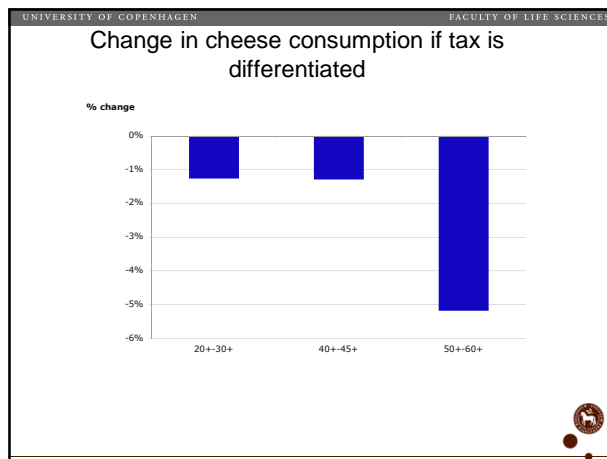
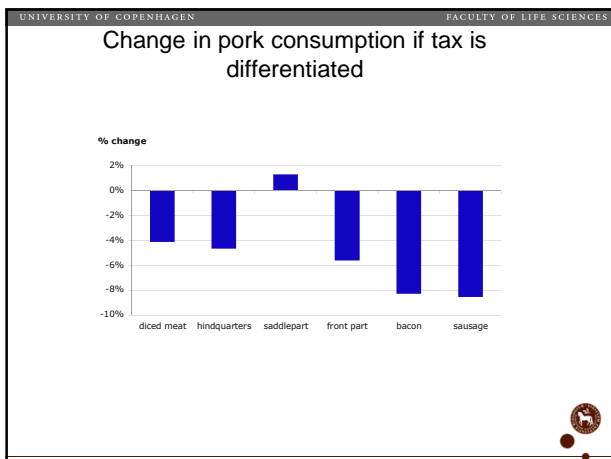
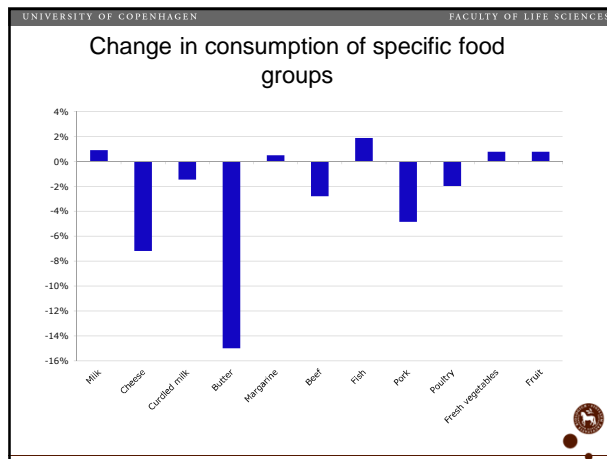
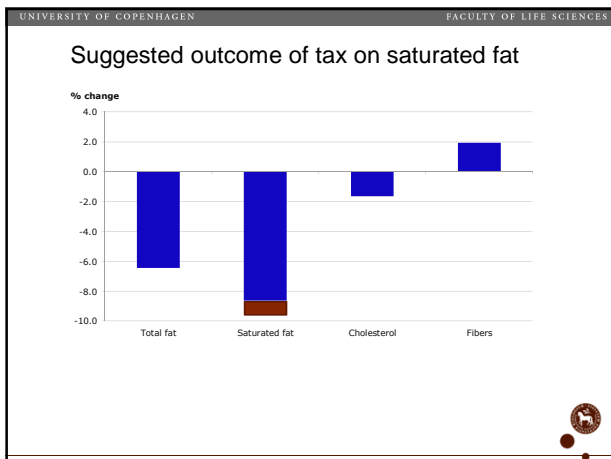
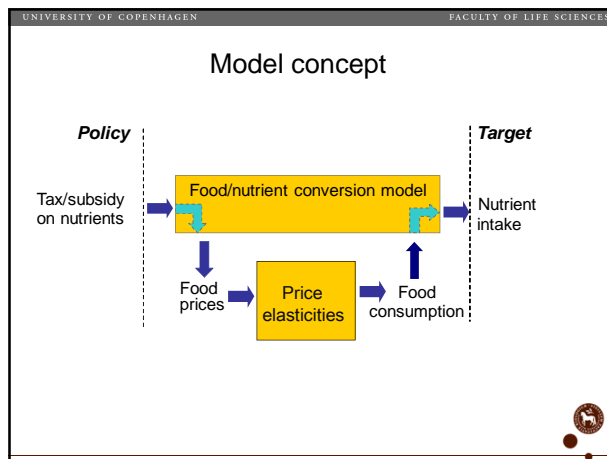
- Major critique points of "fat tax"
  - The "fat" pig
  - The undiversified "tax" on meat
- Final proposal passed in the Parliament the 17<sup>th</sup> of March 2011
  - Coefficients on saturated fat adjusted to Danish conditions
  - Possibility to differentiate according to cut of meat
  - Tax increased to 2.15 € per kg saturated fat
  - Start October 2011

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	Weight	Estimated fat (g/100g)	Real fat content (g/100 g)	Current price (€)	Price change (unified tax)		Price change (differentiated tax)	
					%	€	%	€
Minced beef (9-15 pct.)	500 g	5.2	9 - 15 %	4.46	1.95	0.09	2.88	0.13
Tenderloin	500 g	5.2	2.7	12.44	0.70	0.09	0.23	0.03
Minced pork fat (9-15 pct.)	500 g	6.5	9 - 15 %	2.68	3.91	0.10	4.80	0.13
Cumberland sausage	500 g	6.5	6.7	3.55	2.94	0.10	2.02	0.07
Cutlet	500 g	6.5	4.14	4.20	2.50	0.10	1.06	0.04
Chicken	1600 g	2.5	3.3	8.04	1.12	0.03	1.41	0.11
Chickenbreast	500 g	2.5	1	5.59	0.53	0.03	0.19	0.01

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The estimated effect of the fat tax on consumption

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### 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



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### 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?



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### Literature/contact

- Email: [ss@foi.dk](mailto:ss@foi.dk)

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- More on the topic
  - Smed S., J.D. Jensen and S. Denver (2007): Socio-economic characteristics and the effect of taxation as a health policy instrument Food Policy. Food Policy, 32(5-6):624-639
  - Jensen, J.D., and S. Smed (2007): Cost-effective design of economic instruments in nutrition policy. International Journal of Behavioral Nutrition and Physical Activity 2007, 4(10)
  - Danish academy of technical sciences (2007): Economic nutrition policy tools - *useful in the challenge to combat obesity and poor nutrition?* Downloadable from <http://www.atv.dk/uploads/1227087410economicnutrition.pdf>

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- More on the data used for model estimation
  - Smed S. (2008): Health, information and consumer behaviour Ph.D. dissertation, University of Copenhagen, Denmark

