Taxes and Fees as Climate Policy Instruments

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Climate think tank , Denmark

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Politically independent

”CONCITO will provide analyses, based on research and practice … which can be translated into direct action in politics, business and the responsibilities of every citizen.”

The Constitution of CONCITO

Taxation project

What is the role of taxes in a policy leading to max 2 tons CO2e per citizen in 2050

A cost efficient transformation

Can taxation shift from labour tax to carbon tax?

Will a uniform tax on carbon be a solution?

Policy recommendations

Taxes in Denmark

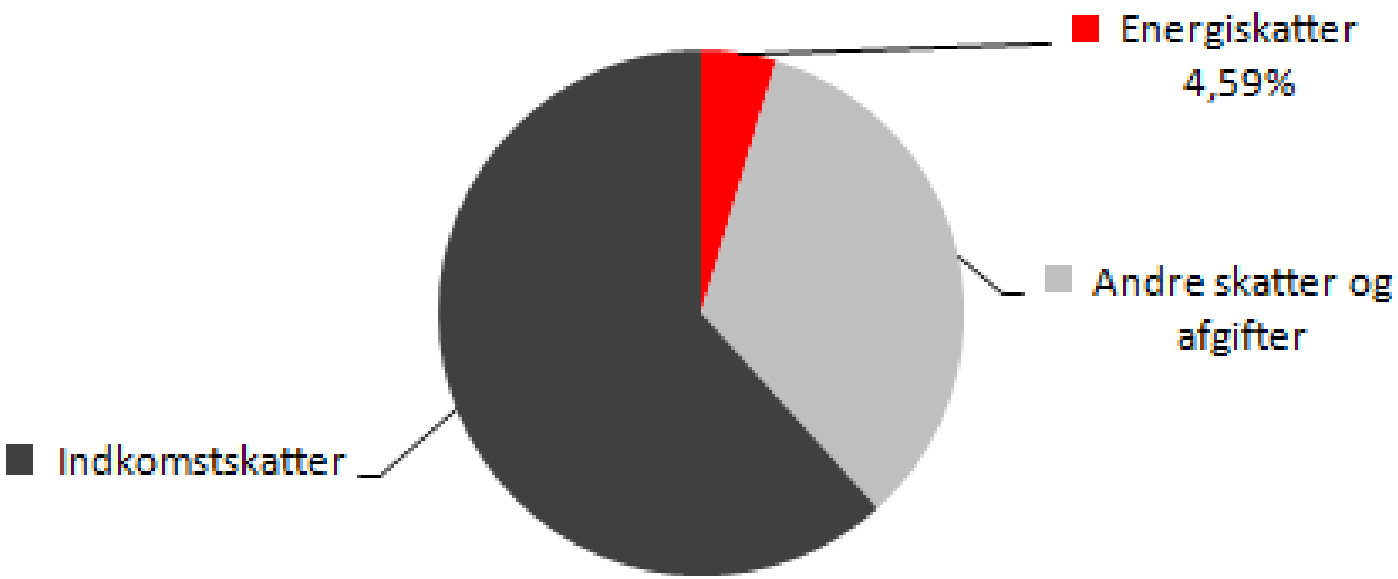
Point of departure:

A high level of taxation in Denmark

- on labour (max 51,7%)
- on cars (105%/ 180%)
- one of the highest energy and CO_2 tax pr GDP

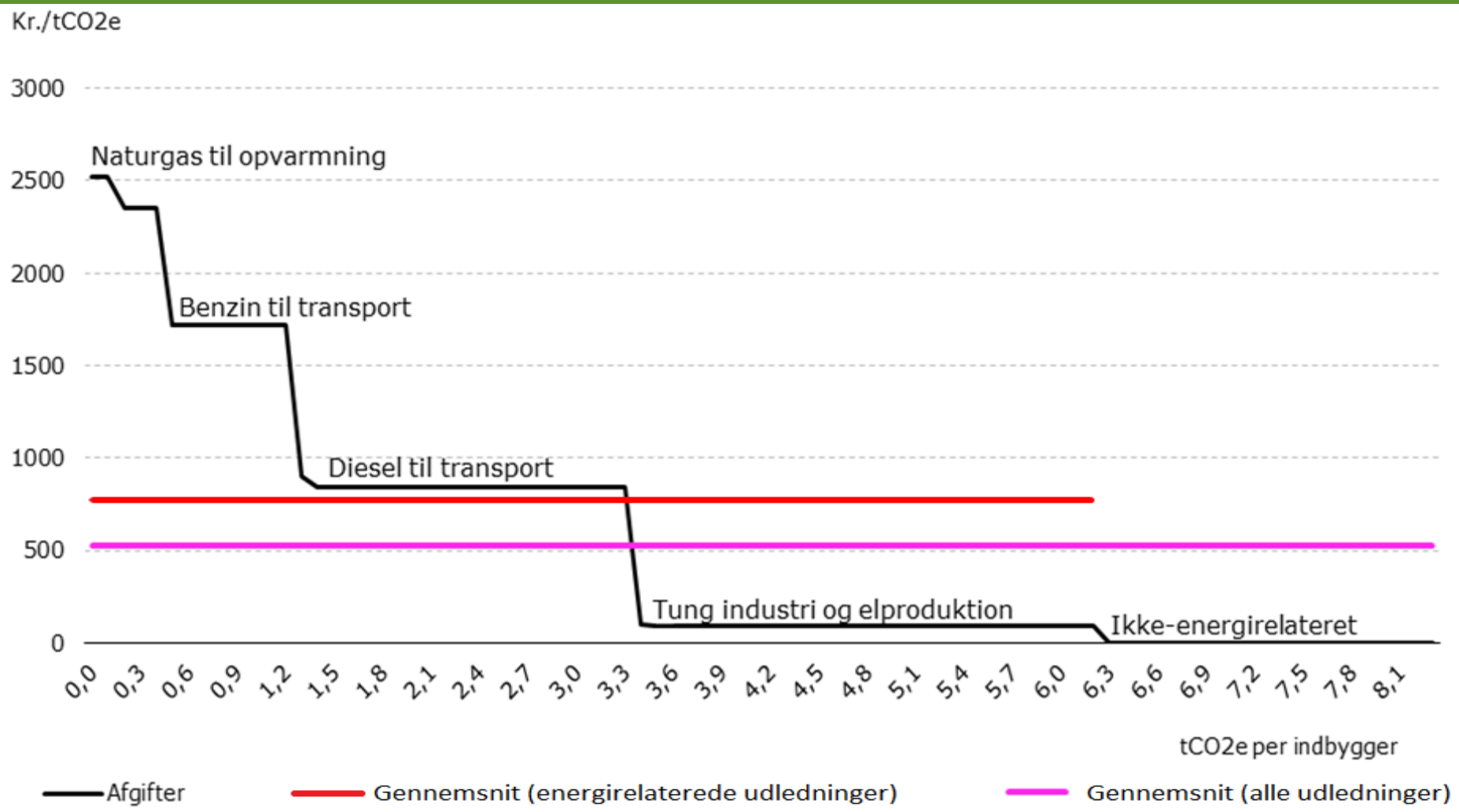
Current taxation

Figur 10. Fordeling af skatter og afgifter i Danmark (2012)



Kilde: Danmarks Statistik (2013)

Current taxation in Denmark



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A uniform carbon tax

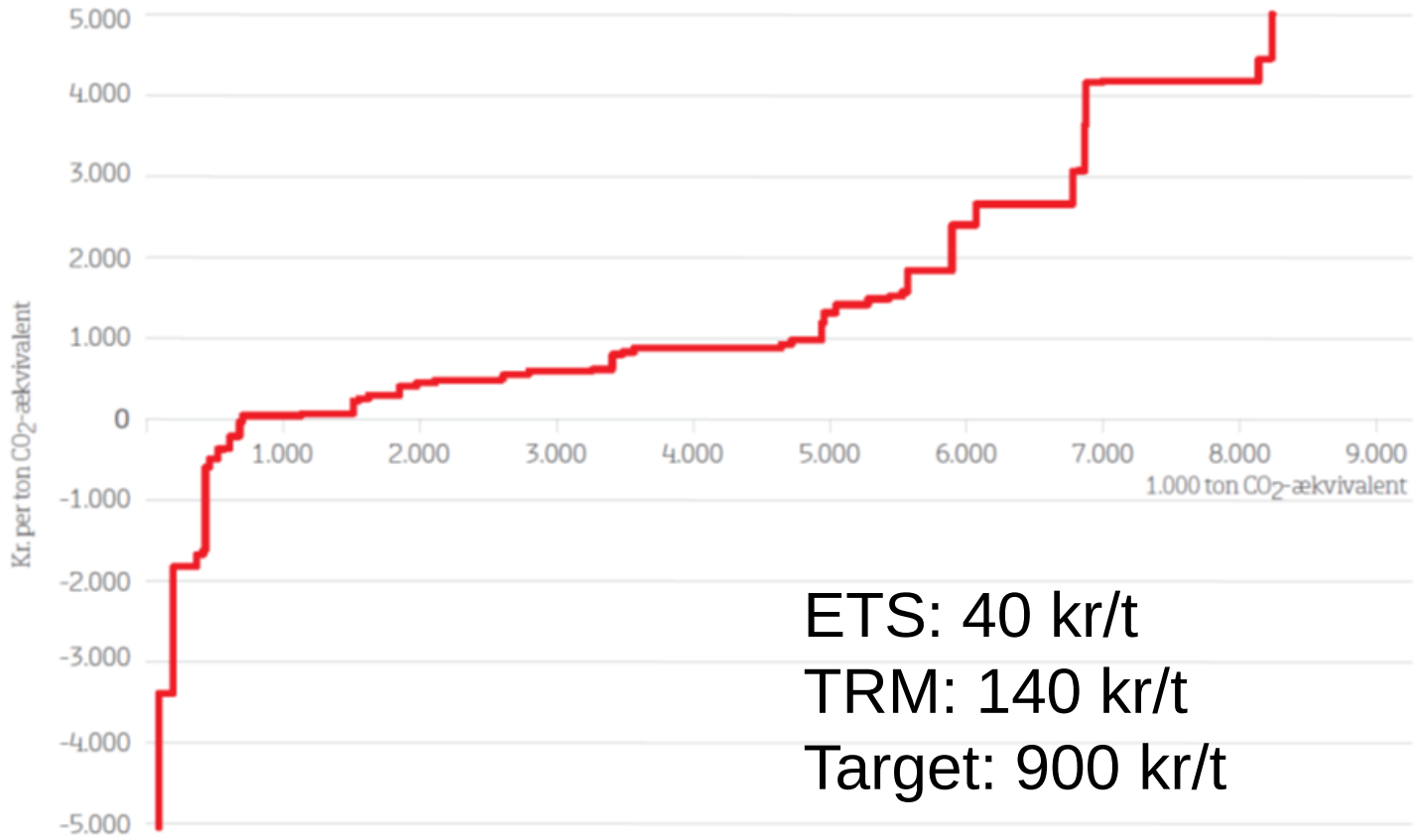
First: Economic theory:

The solution is a uniform and global Carbon tax: 880 kr/ton CO2e

Will lead to a technological deveopment

And lead to the target of 4ton CO2/person in 2030 and 2,2 t in 2050

Price on CO2 ?



ETS: 40 kr/t
TRM: 140 kr/t
Target: 900 kr/t

Figur 15. Potentialekurve med marginale reduktionsomkostninger

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Transport tax

Purchase tax reform in 2007:
Bonus/malus system after CO2 emission

Introduced after EU regulation of CO2 emissions from cars had brought more energy efficient cars to the market

Substantial reduction of the price of efficient small cars

Klimavenlig transportbeskatning

Udvikling af provenuet fra skatter og afgifter fra 2005 til 2011.

	2005	2006	2007	2008	2009	2010	2011	2012
	Mia. kr.							
Grøn ejer-/ Vægtafgift	8,7	9,2	9,6	9,8	9,8	10,0	9,9	10,0
Vejbenyttelses-Afgift	0,5	0,5	0,5	0,4	0,4	0,4	0,4	0,4
Miljøbidrag	0,1	0,1	0,2	0,2	0,2	0,1	0,2	0,1
Afgift benzin	9,4	9,3	9,2	8,9	8,7	8,0	7,7	7,4
Afgift diesel	8,1	8,2	8,5	8,9	9,0	8,6	9,5	9,2
Registrerings-afgift	21,3	23,8	24,3	19,1	11,9	13,5	13,6	13,0
Afgift af ansvarsforsikringer	2,0	2,1	2,1	2,0	1,9	1,9	1,7	1,6
I alt	**50,1**	**53,1**	**54,3**	**49,2**	**41,9**	**42,5**	**42,9**	**41,7**

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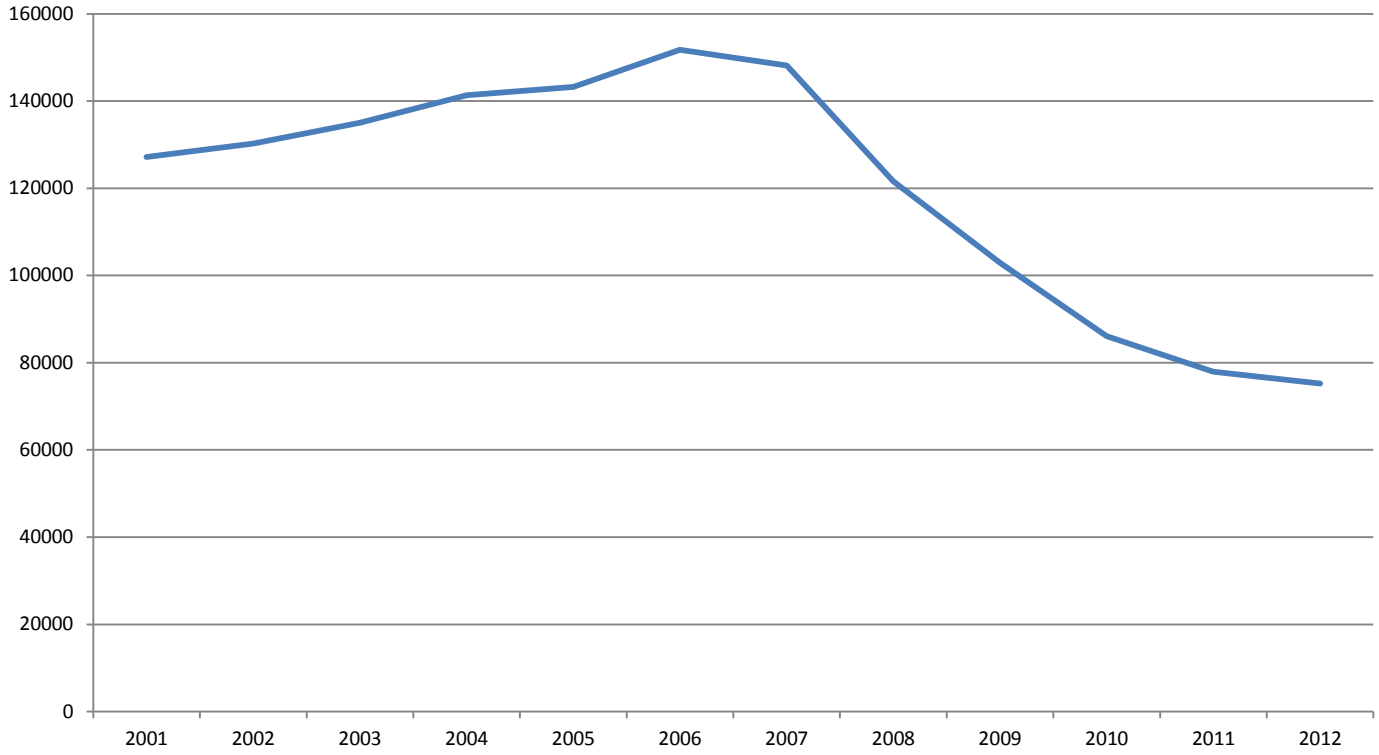
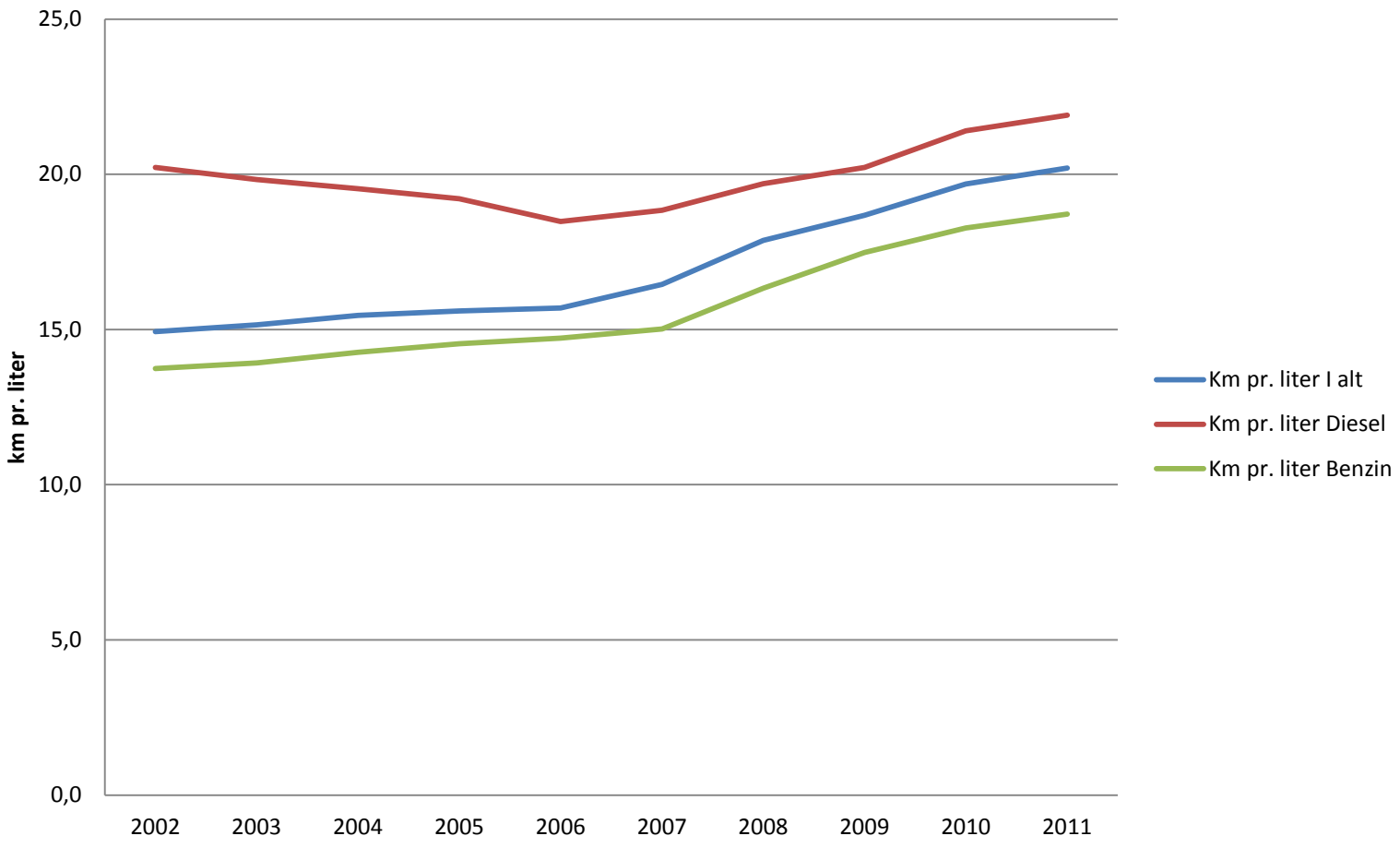
Purchase tax per car



Energy efficiency in new cars



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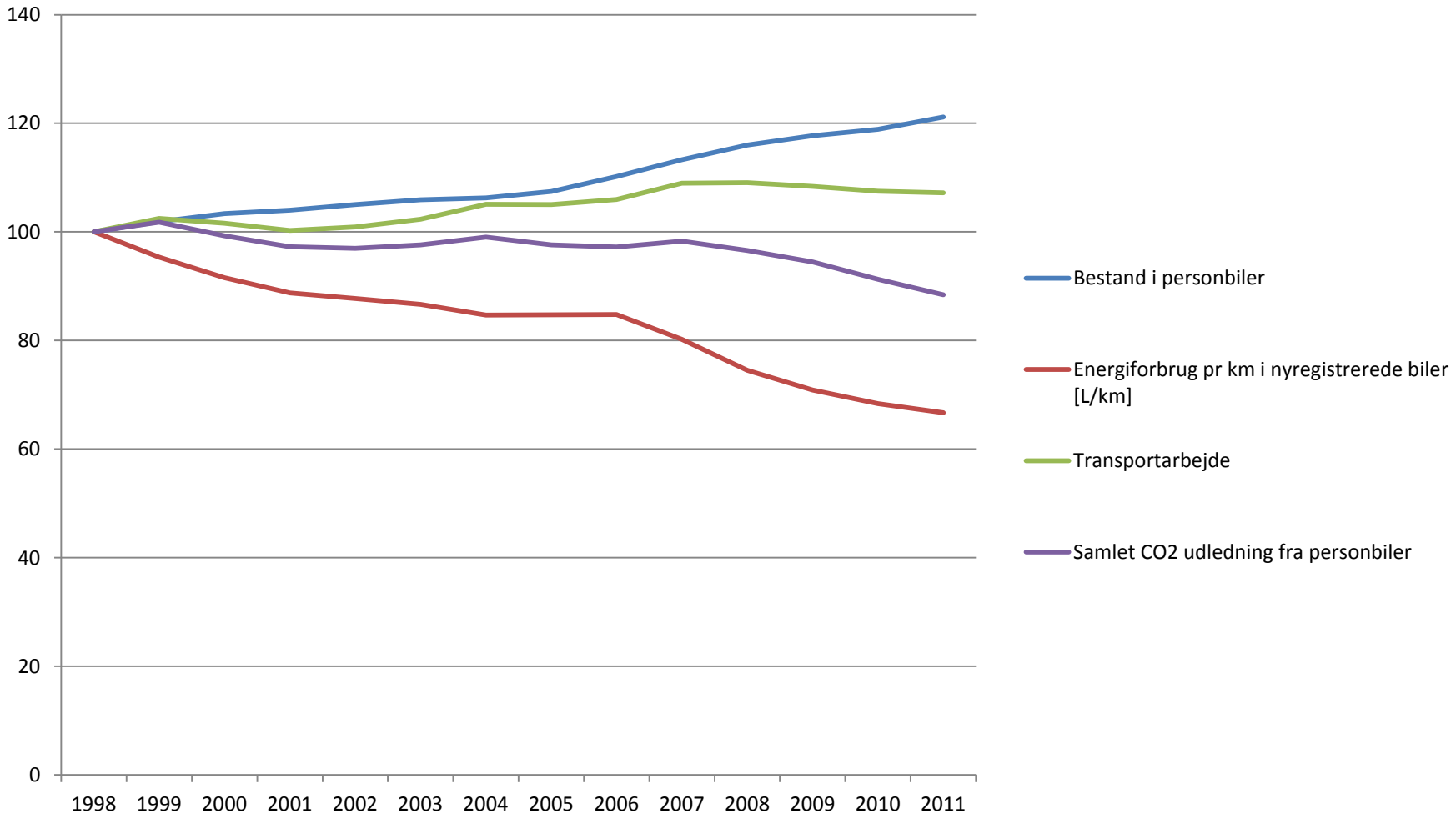
Energy efficiency in new cars



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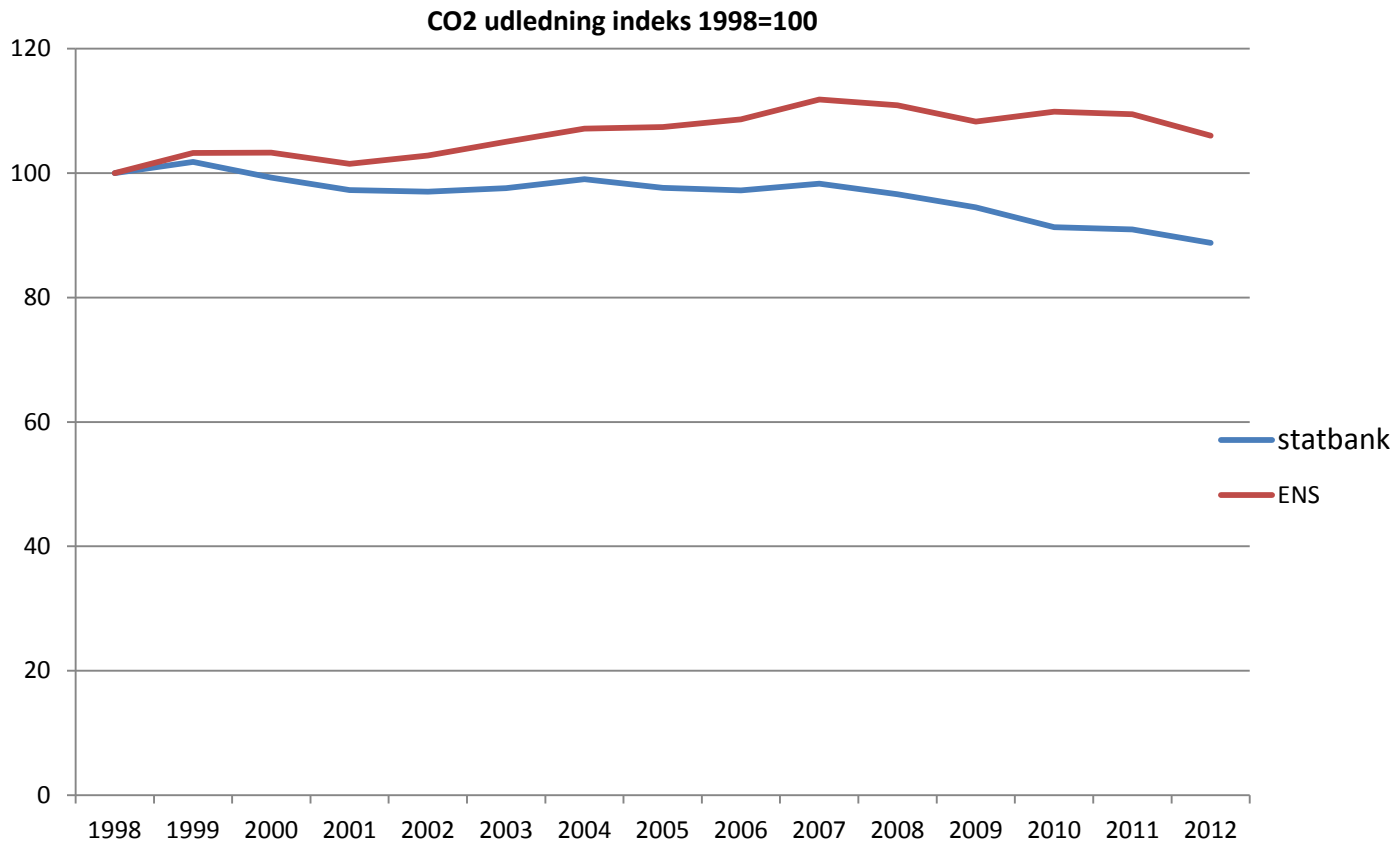

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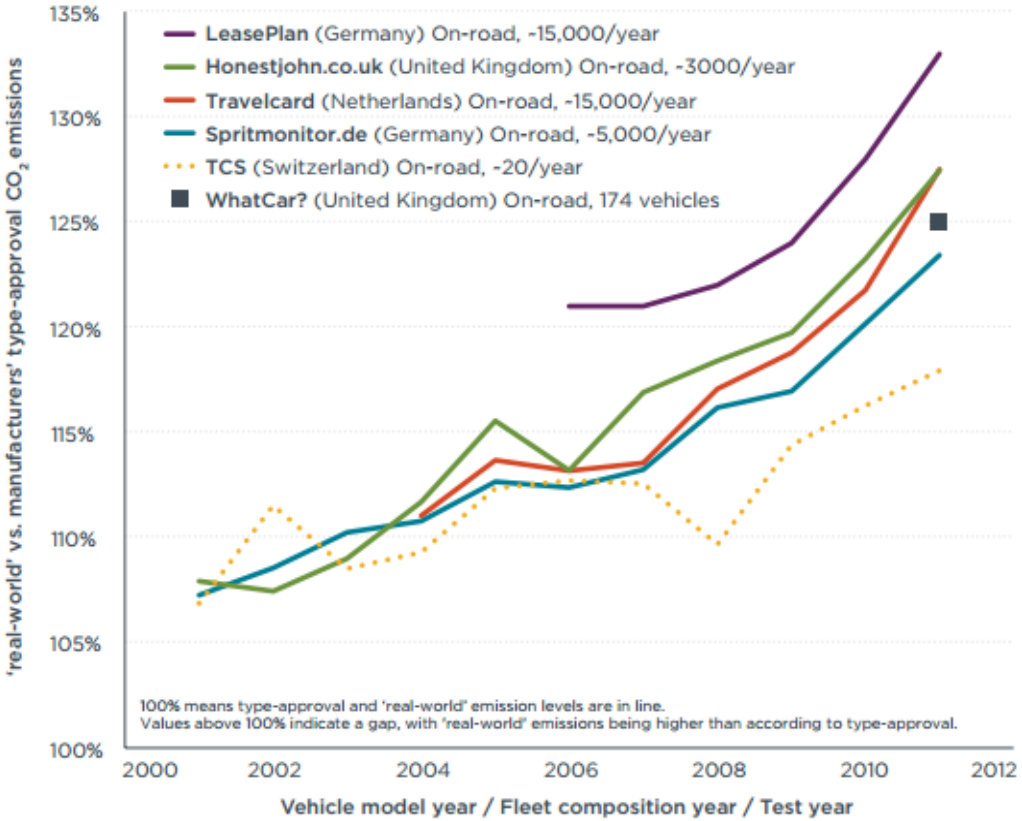
Energy efficiency in new cars



Divergence, real-world vs. manufacturers' type-approval CO_2 emissions for various on-road data sources.[1]

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CO_2 based tax on cars

A clear shift to more efficient and small cars

Also more cars and more km

So all together no change in CO_2 emission from passenger cars

CONCITO proposal: the CO_2 differentiated tax, but the cheapest car should not become cheaper.

Social Cost of transport

2009-priser	Pasenger car			Lorry		
	Urban	Rural	Tax	Urban	Rural	Tax
Current tax						
Roadtax (kr./km)			0,00			0,17
Purchase tax(kr./km)			0,33			0,00
Annual tax(kr./km)			0,27			0,00
Fuel tax (kr./km)			0,31			0,88
Social cost						
Infrastructure (kr./km)	0,01	0,01		0,99	0,99	
Congestion (kr./km)	0,37	0,30		0,92	0,52	
Accident(kr./km)	0,30	0,14		2,07	1,12	
Noise (kr./km)	0,11	0,01		0,62	0,03	
CO2(kr./km)	0,01	0,01		0,10	0,10	
Air pollutoin(kr./km)	0,01	0,01		0,94	0,39	
Total (kr./km)	0,81	0,48	0,91	5,64	3,15	1,05

Comparisson of taxes and externalities from transport

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Transport Tax

Tax to cover externalities:

- Purchase tax should cover CO2 from production of vehicles (passenger car: 3.250 kr., lorry 20.800 kr.)
- Fuel tax to cover CO2 from driving (well to tank) (petrol: 0,38 kr. diesel: 0,41 kr.)
- Road pricing to cover al other externalities (average of passenger car: 0,70 kr/km, van: 0,82 kr/km, lorry 3,73 kr/km)

Simpel model calculation

If CO_2 price is 130 kr/ton:

- 24% more vehicles
- 7% reduced milage
- 8% reduction of CO_2
- 15% higher revenu

If CO_2 price is 880 kr/ton:

- 15% more vehicles
- 15% reduced milage
- 14% reduction of CO_2
- 36% higher revenu

Simpel model calculation

Results:

- Freight transport gets a higher tax
- Less freight milage
- More cars that drive less
- Cleaner vehicles will be expensive to drive
- No new technologies will be introduced

Transport tax

Recommendations

Principles:

- Purchase tax: Make Low carbon vehicles attractive
- Fuel tax: cover CO2 emissions from driving
- Road Pricing: cover other external cost (vary in time and place)
- Annual tax – if a higher revenu is wanted

Will give right incentives for both freight and passenger transport

General Conclusions

Natioal tax at consumer level can change consumer behavour :

- Buy energy eficcient cars
- Drive less
- Reduce the consumption of meat
- Reduce heat and electricity use
- Insulate private homes

Taxing fuels for energy production:

- Shift to less CO2emitting fuels (coal/wind)
- Energy efficiency measures at compagnies

Global CO2 tax /international regulation/clever incentives

- Development of cleaner technologies