

Focus on costs and ethical considerations: assessing the impacts of regulating vehicle emissions and safety

**ITF-OECD
Roundtable on
Assessing regulatory changes in the transport sector
(6-7 October 2016, Stockholm)**

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	Transport volume	Modal split	Technology	Efficiency of using vehicles	Driving behavior
Regulation	*	*	*		*
Prices	*	*	*	*	*
Land-use planning	*	*			*
infrastructure	*	*			*
Marketing		*			
Information and communication	*	*		*	*

Economists: often preference for pricing. But ...



Which project, policy?

Many countries: SCBA

Mainly: infrastructure, way less: regulations.

This paper: discussion pros and cons SCBA for regulations



Criteria for 'good' policies

- effectiveness
- efficiency
- fairness/equity

Van Wee (2009)

- ease of implementation
- flexibility
- long term robustness

CBA: Efficiency. Effectiveness: implicitly.

Conclusion: not 'all you need to know'.

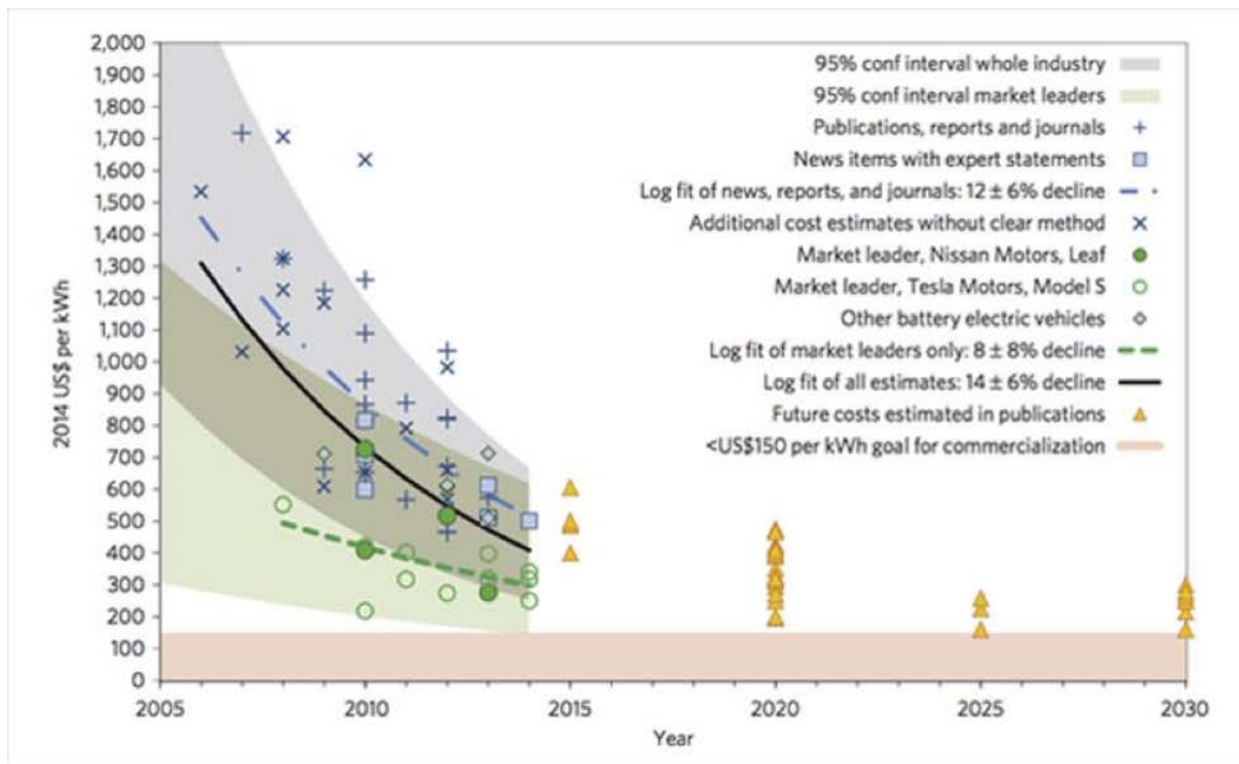
REGULATIONS FOR SAFETY AND ENVIRONMENT AND THE USE OF CBA

Focus of paper
Vehicles, speeds



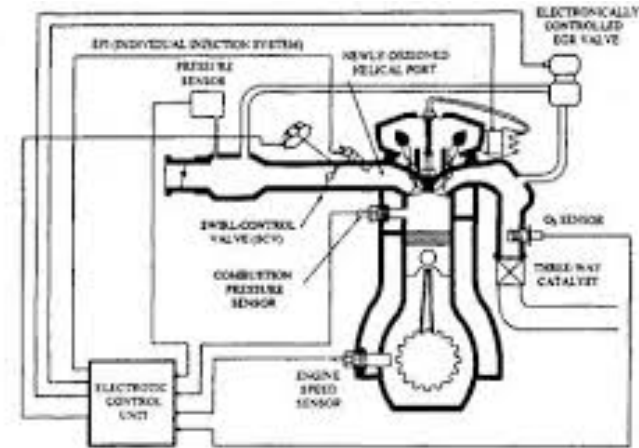
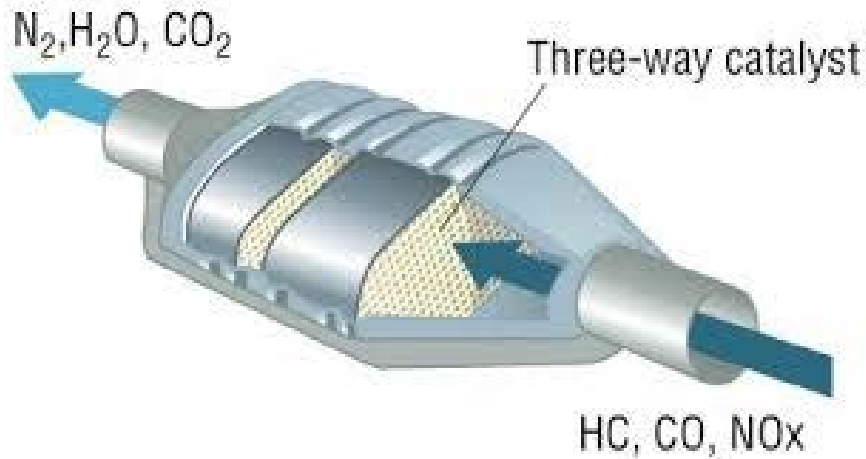
DIRECT COSTS: CHALLENGES

1. Unit costs change over time, mainly due to scale and learning effects



2. Scale effects depend on regulations in other (groups of) countries
3. There are not general values for the decrease in the effects of scale and learning effects
4. The assumption of constant costs is almost per definition wrong

5. We need to know the alternative, the reference case



6. Marginal costs should be considered, not total costs

INDIRECT COSTS: CHALLENGES

7. Safety regulations for road vehicles have several indirect effects

- More weight – energy, CO₂
- More expensive – car ownership and use
- More comfortable
- Impact on other cars
- Speed limits

8. Speed limits have welfare costs

- Travel time savings / congestion levels
- Reliability
- Fun of driving
- Should time savings of speeding be counted?

9. Cars are positional goods, which reduces the welfare loss of a shift to smaller cars

others



you



A

B



10. Regulations can have advantages in the area of transaction costs

Policy making costs money

First time regulations: time consuming. But less than pricing?

Further tightening: relatively cheap?

BENEFITS: CHALLENGES

11. Tests often poorly match real world conditions

12. Manipulation undermines effects

mirror.co.uk
WEDNESDAY 23.09.2016 DAILY MIRROR

Emission creep

» Millions of UK cars may be 'diesel exhaust cheats' » VW boss 'loses vote of shareholders' confidence'

BY MARK ELLIS and GRAHAM HISCOTT
MILLIONS of cars on UK roads could be hit by the Volkswagen "cheat switch" scandal, experts claim.

Four of an industry meltdown came after US VW boss Michael Hurn admitted: "We have totally screwed up."

He said his firm had been "dishonest" selling diesels with software that turns on emissions controls during tests - 11 million cars worldwide are affected.

Once on the road, the cars produced nitrogen oxide pollutants at up to 40 times the legal US standard.

An industry insider claimed suppliers have been testing the same 'defeat device' software to other car makers.

VW said cars sold in Europe, including the UK, were not affected 'as far as we are aware'. But Jos Dings, of Brussels think-tank Transport & Environment, said: "All evidence points to exactly the same thing going on in Europe. Diesel cars in Europe operate with worse technology on average than the UK."

Autocar magazine's chief Jim Holder said: "The key is the software. There is potential for this to spread to other manufacturers, many of whom use the same parts under the bonnet."

VW was ordered to recall half a million diesel cars in the US and could face a fine of \$1 billion. Hurn could face criminal charges.

VW also face questions over their other brands, including Audi.

But the car giant said it was "working at full speed to clarify irregularities concerning a particular software used in diesel engines" and has found "discrepancies... involving some 11 million vehicles worldwide."

Last night VW CEO Martin Winterkorn lost a shareholder vote of confidence, said German media. VW shares have crashed 27% in 48 hours.

Other car makers slipped yesterday as \$48 billion was wiped off the value of Britain's top firms when the FTSE 100 dropped 1724 points.

The UK's Society of Motor Manufacturers and Traders insisted there was no evidence manufacturers in the UK attempt to mislead emission testers.

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VOICE OF THE MIRROR: PB

There is potential for this to spread to other car makers

JIM HOLDER, AUTOCAR MAGAZINE CHIEF

UPSET Jill & Trevor Taylor

Brits in shock over Algarve raider death

BY ADAM ASPINALL in Valencia, Portugal

THE British family at the centre of a police probe after a raider died at their Algarve villa are still 'in shock'.

Trevor Taylor, 60, and son Scott, 31, restrained Paulo Reto in a chokehold after mum Jill raised the alarm.

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VOLKSWAGEN SHARE PRICE PLUMMETS

Date	Share Price (€)
Aug 25, 2015	180
Sept 1	160
Sept 8	140
Sept 15	120
Sept 22	106

€106
▼ 19.82%

TAKING THE PISTON VW admit engine cheat

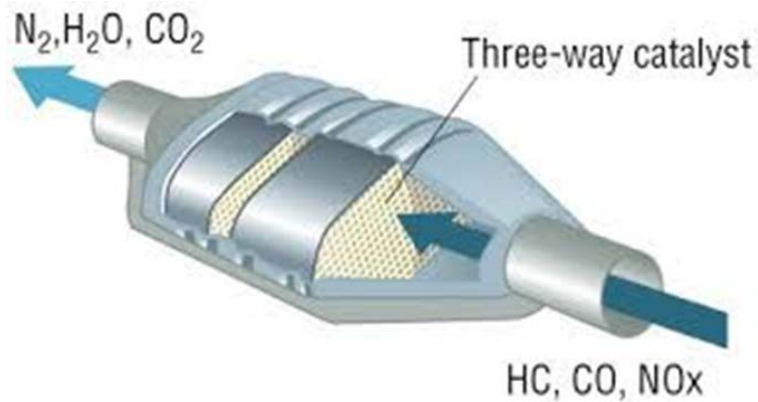
13. Unit prices of emissions and safety improvements change over time, preferences for the environment and safety are not constant

Same applies to the marginal value of travel time savings.

Higher incomes? Higher value for safety, environment



14. The performance of technologies may change over time



IMPLICATIONS FOR CBA

1. Estimate unit costs based on literature of comparable technologies, and expert judgments
2. Include a margin for possible future unit costs, and estimate the impact on CBA outcomes
3. Make an estimation of the 'break-even' points of unit costs: how low should they be in which year to have 'positive' results?
4. Consider indirect effects

6. Make a decent analyses of the reference case, which is often not 'do nothing', or 'no change'.
7. Consider increases in future preferences for the environment and safety
8. Improve tests, so that these match real world conditions as well as possible, and cover all regular driving conditions.

9. Reduce options for manipulations as much as possible
10. Environmental regulations: increase the focus on inspections and maintenance

ETHICAL CONSIDERATIONS

1. Distribution effects
2. Long term effects hardly count in a CBA but can be very relevant

3. Safety: impact on other road users

4. Poor versus rich

5. How to value safety effects?

6. Not only consequences are relevant

CONCLUDING REMARKS

- Regulations can in several ways have an impact on determinants for the environmental and safety impacts of the transport system. These determinants are: volume, modal split, technology, and the way vehicles are used.
- A CBA is a potentially useful instrument to ex ante evaluate effects of regulations in the area of road safety and the environment.

- Estimating direct costs of regulations can be difficult, and especially estimating changes in unit costs over time can be problematic. Also changing preferences for the environment and safety can be very relevant
- Regulations can have indirect effects, and these can both be very important in policy debates, as well as be substantial from a welfare perspective
- Ethical considerations are not included in CBA, but can be relevant for policy making and the wider public.

