



**Finnish Institute of  
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# **How could incentives for safe and healthy workplaces (OHS) work?**

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## Why markets, "the invisible hand" does not work?

- employers do not face all costs of ill health caused by work
  1. In highly competitive markets firms are more likely to avoid bearing the safety and health costs (open economies, competitive industries, SMEs)
  2. High unemployment rates give firms change to transfer costs to employees (recession, declining regions, large reserves of un- and under employed labour).
  3. Insurance and welfare programs will lower the risk for individual firm (weaker incentive to invest in risk reduction) and transfer the costs to taxpayers (e.g. publicly provided health care).

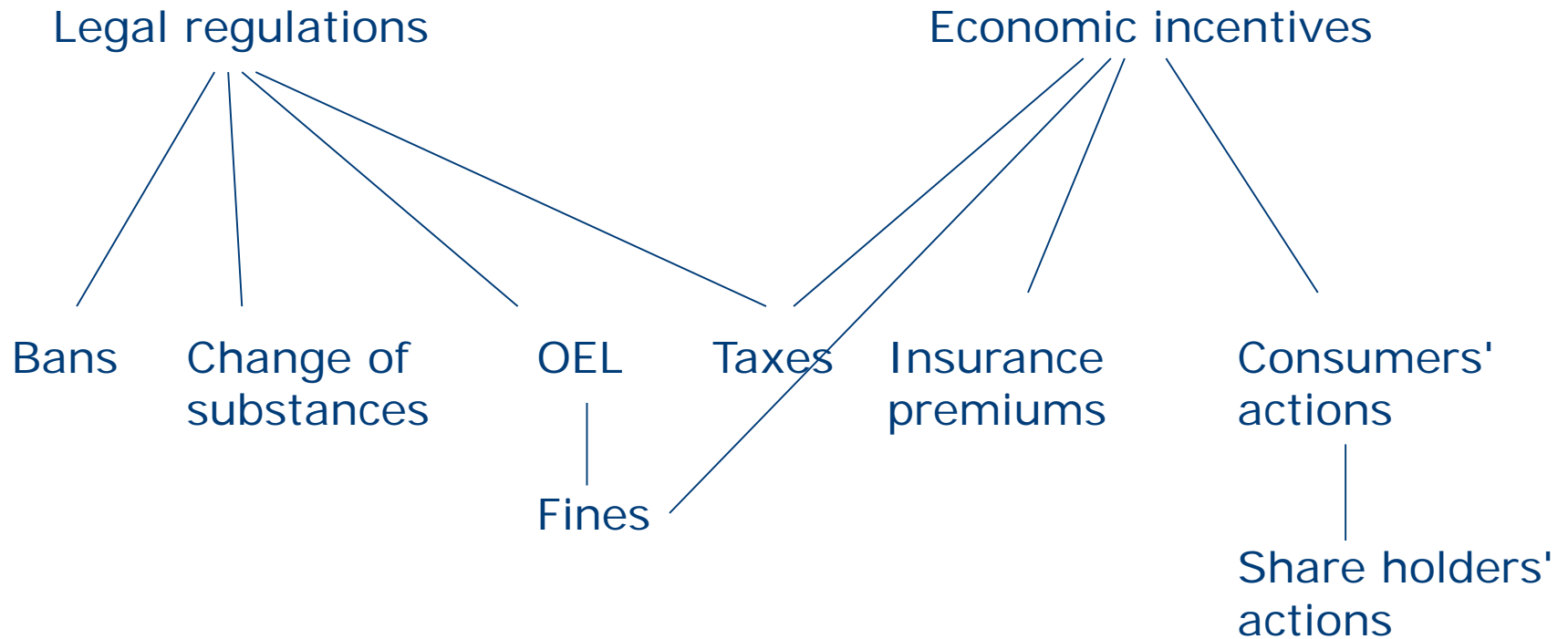
(Dorman 2000)

## ... markets fail (continued)

### Risk at work (due to work)

- employment decision: general market assumption in economics – people perceive risks correctly and then "calculate under uncertainty" whether to accept the job or not
- empirical results: general awareness good ("risk exists"), but not on the degree of the risk (Viscusi 1976, Viscusi & O'Connor 1984)
- awareness better with accidents than health outcomes (more difficult: low probability, long lag, severe outcome)

# Legal regulation AND economic incentives



OEL=occupational exposure limit

(Torén & Sterner 2003)

# "Tough regulation promotes technological development => improves competitiveness in affected firms"

- Most of economics would oppose: why don't firms undertake the action without legislation if it is so profitable?

Explanation why this would happen:

1. firms not aware of their opportunities, regulations force them to create new solutions
  2. regulation also an opportunity to be a "first mover" which is beneficial for reputation (affects sales, recruitment)
- Frostling (2002) – OEL for styrene in Sweden

And why not ...

- regulation applied only on "new" plants and equipment => development stops, the old ones have an advantage

# Regulations/Compliance 1

- public resources for control often minimal – still compliance can be high (Harrington, 1988)
- information is a prerequisite: (Topping et al. 1998 chemical industry in England)
  1. most safety representatives were unaware of the legal regulations
  2. 60 % of managers (N=1000) understood the term OEL ("yes"), but when they had to define it very few brought up that exposure has to be kept below the OEL
  3. trade union representatives (N=150) in general better informed than managers
  4. heavy reliance on the information from suppliers (not from trade unions or other professional organizations)

## Regulations/Compliance 2

Experiences from the U.S. (Viscusi 2005)

- credibility problem: some regulations ridiculous "nit picking", emphasis was on "visible" things - accidents vs. health
- penalty for violation \$1000 federal inspection, \$500 for state inspection (much higher than the historical average of \$50); highest "willful violations" \$28 000
- total income from penalties \$149 million in 2002
- wage premiums \$111 billion, workers compensation premiums \$26 billion in 2001

=> penalties are weaker incentives than wage premiums and compensation premiums

# Regulation/recommendations ...

- targeted inspections based on registers (e.g. immigrant workers)
- concentrate on serious, not trivial violations (exit signs at wrong height)
- performance oriented regulation (instead of specific standards)
- flexibility and information built in the regulations (dust in grain elevators)
- use the results of cost-benefit analysis
- Knieser & Leeth 1995 "abolish OSHA" more resources to NIOSH to study and publicize health risks – knowledge on chemical risk vs. risk of own behaviour has different impact



## Economic incentives/consumers or firms

- price for consumers: legislation to internalize the costs of production => price up, consumption down (e.g. tobacco price elasticity  $-0.5$  => 1 % increase in price leads into 0.5 % decrease in consumption)
- insurance premiums for employers: flat rate or firm specific?

The choice of indicators (like number of accidents) crucial, should not be possible to be manipulated (pressure for employees not to report cases) or affected by other causes than the action wanted (not increased OHS, but discrimination of employees)

## Economic incentives/taxes, fines and subsidies

- taxes on products because of OHS reasons rare (white phosphorous matches)
- tax deductions for validated health and safety expenditure (physical and cultural activities at work)
- fines for no compliance, like "no occupational health services" in Finland
- subsidies: reimbursement of occupational health services in Finland (60 % for prevention, 50 % for medical care)
- rewards based on audits (environmental certification in Canada, the top scored firms will receive 2 million USD, Cooper & Cartwright 1997)

# Case - Trichloroethylene

- chlorinate solvents in degreasing and dry cleaning; widely used
- risk for kidney cancer, liver cancer and hematological malignancies
- environmental risk: carcinogen (polluted drinking water), contributes to the formation of dioxins
- different actions in Sweden, Norway and Germany with same results

# Sweden

- OEL tighter in 1984 ("recognition of the problem")
- Parliament decision in 1991: ban in consumer goods from 1993 on, in professional use from 1996 on
- strong opposition within industry
- Court of European Union: ban not in line with EU legislation 2000
- in the meantime the usage had gone down

# Norway

- government levied a heavy tax on the use of TCE (tax 5 €, market price 1-1.50 €) in 2000
- the use of TCE dropped dramatically
- half of the tax revenues refunded to the industry for research on alternative methods and new technology (lowered industry's resistance)

# Germany

- traditional trust on good engineering and technological progress =>
- several technical and workplace requirements for the use, storage, and transport of TCE
- decline in use
- advanced technology was developed => technology exported to other countries that started to regulate TCE

# Conclusions

- choice of political instruments: effectiveness, costs and political feasibility
- legal regulations have to be backed up with control (=> costs!) and sanctions
- economic incentives at least as effective as regulations (experience from environmental economics), economically usually more efficient
- understanding the motivational basis of employers, employees and consumers
- information (chemical labelling regulation in US; correcting the "market failure"); information for consumers
- political feasibility (stakeholders)  
WHO has to change WHAT and HOW => choice of instrument