BACHELOR OF ECONOMICS
THAMMASAT UNIVERSITY

EE403

Law & Economics

Tort II

Model of unilateral care

- the simplest version (the unilateral care model), only the injurer can invest in costly precaution, or care, to reduce the likelihood and severity of the damages borne by the victim.

- Notation
  - **x** –
  - **w** –

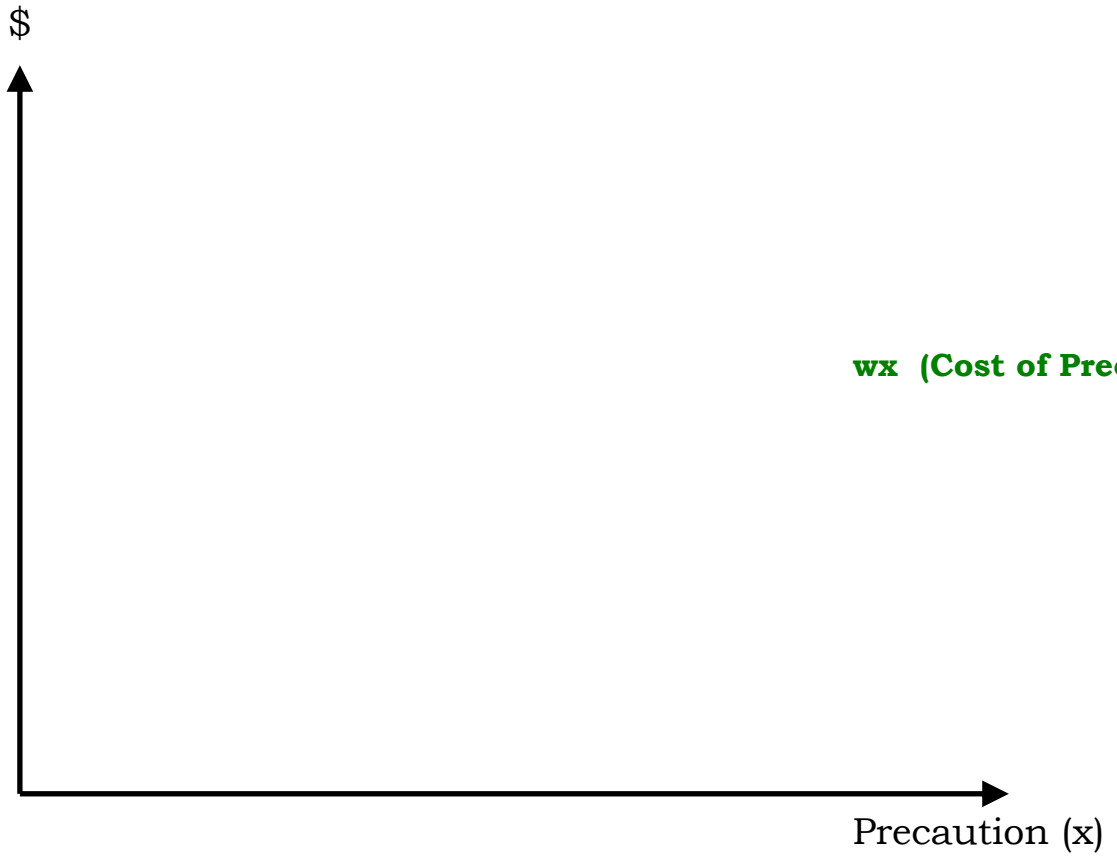
Total cost cost of precaution =

  - **p(x)** –
  - **A** –

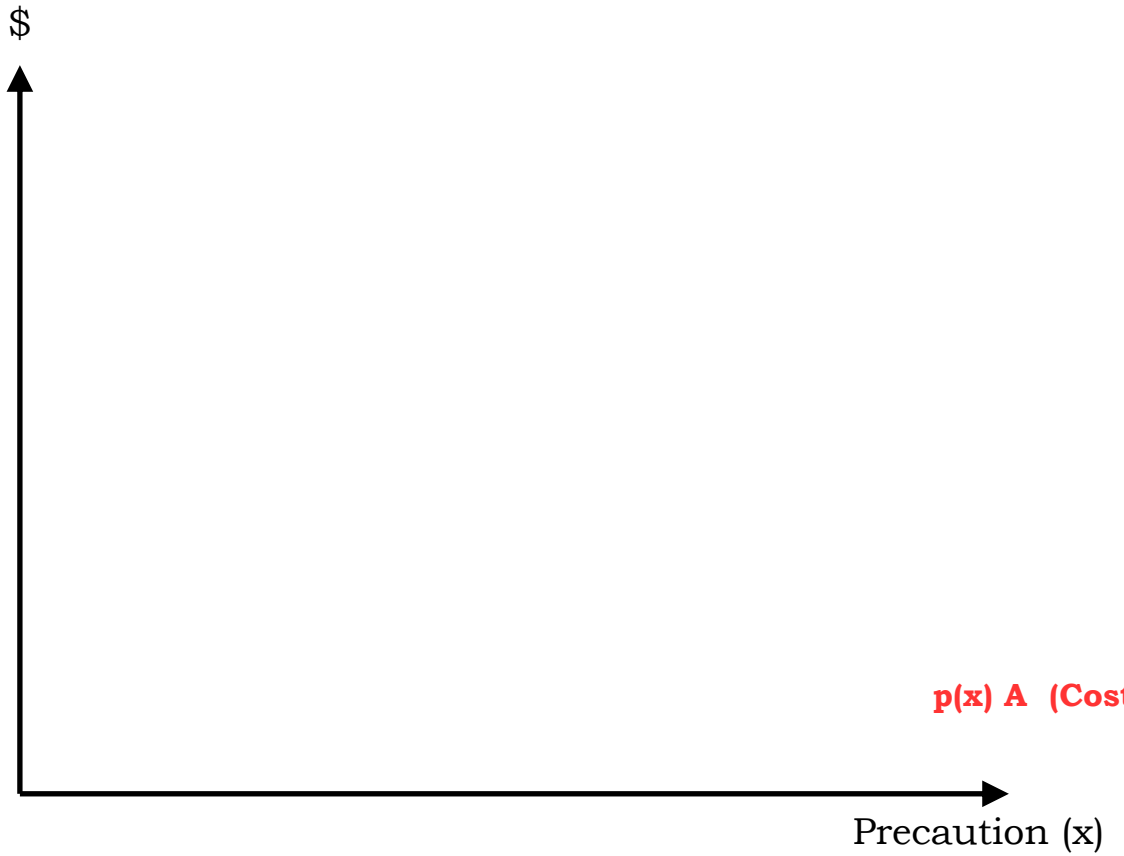
Expected cost of accidents =

Model of unilateral care : Cost of precaution

x	level of precaution
w	marginal cost of precaution
p(x)	probability of an accident
A	cost of an accident

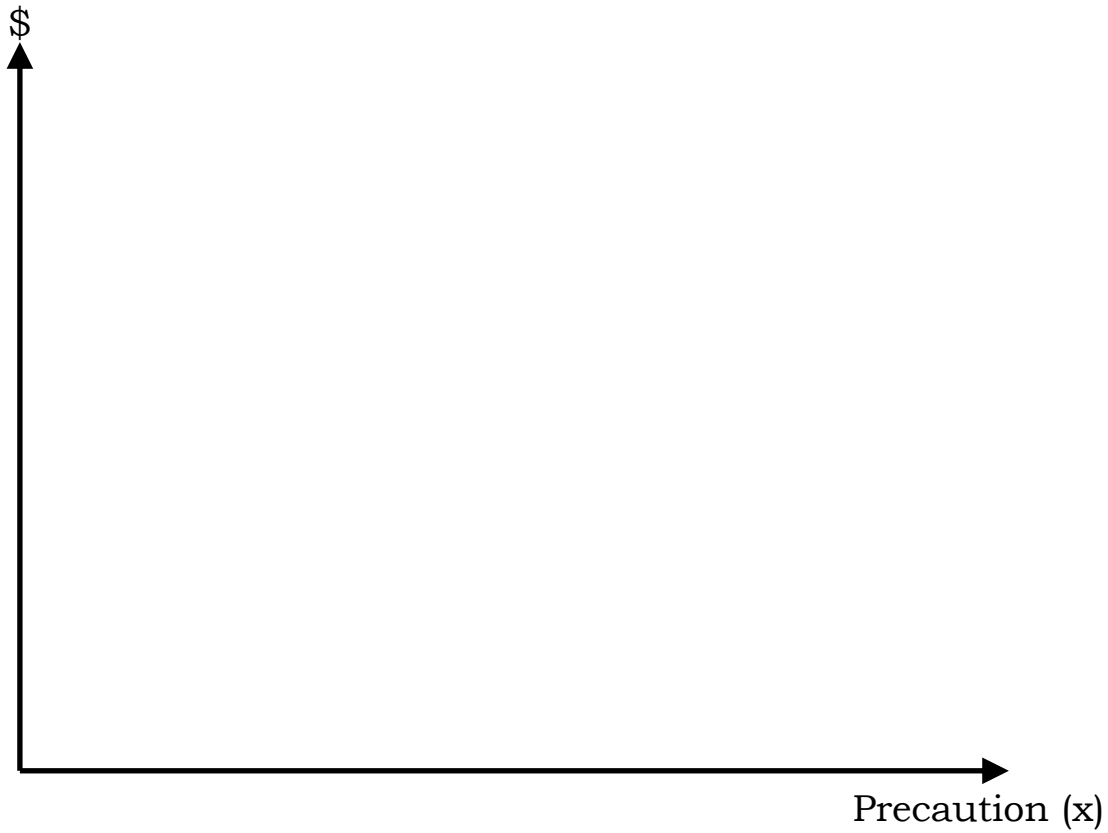


Model of unilateral care : Cost of accidents



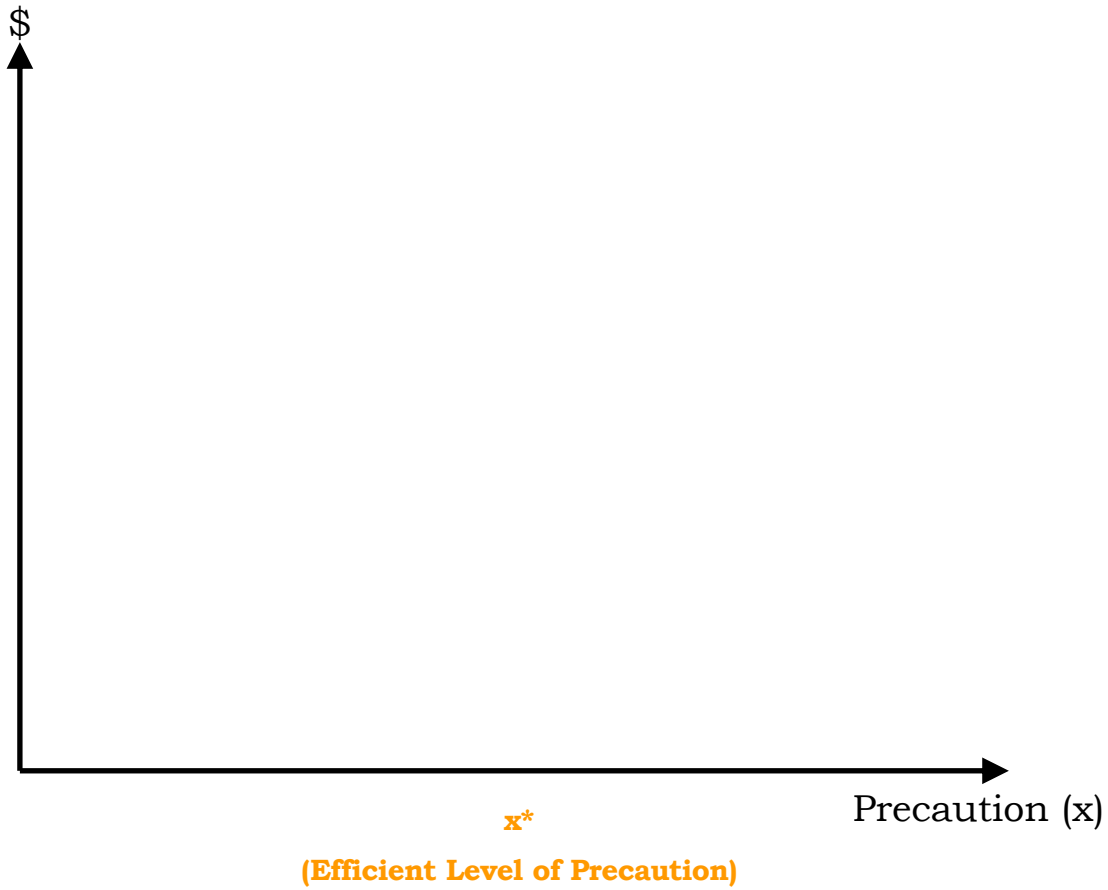
x	level of precaution
w	marginal cost of precaution
p(x)	probability of an accident
A	cost of an accident

Model of unilateral care : Social cost of related to accidents



x	level of precaution
w	marginal cost of precaution
p(x)	probability of an accident
A	cost of an accident

Model of unilateral care : Efficient precaution



Efficient precaution

$\min_x \; [wx + p(x)\, A]$

x	level of precaution
w	marginal cost of precaution
p(x)	probability of an accident
A	cost of an accident

Unilateral model: Effect of liability rules on level of precaution

- Efficient level of **x** ➔ Level of precaution that minimizes total social cost

x that minimize wx + p(x) A

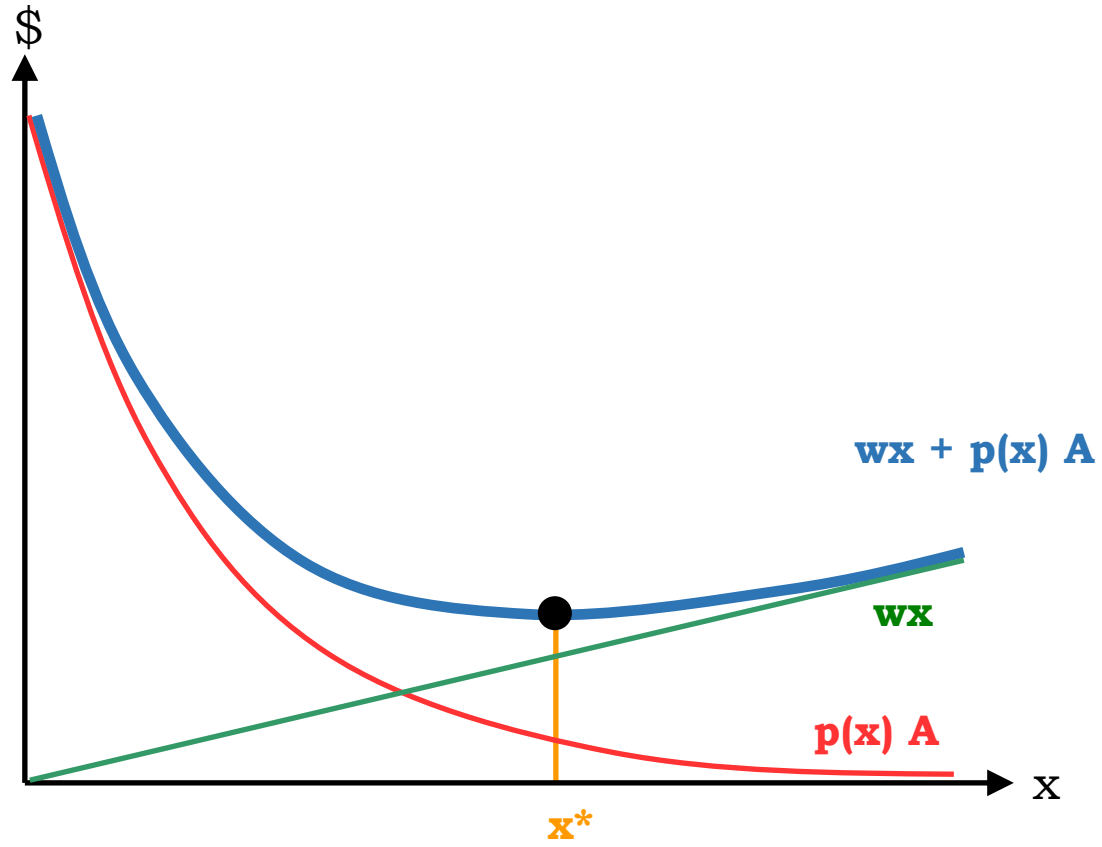
- Question : what happens if there is…
  1. .
  2. .
  3. .

No Liability (Benchmark)

- Injurer does not have to pay for accidents

- Injurer's private cost is ….
- Injurer choose x to minimize private cost

x = ….



Strict Liability

- Perfect compensation: damages D = A
- Under strict liability…
  - Injurer pays damages for any accidents he causes
  - So injurer bears cost of accidents, plus his own precaution

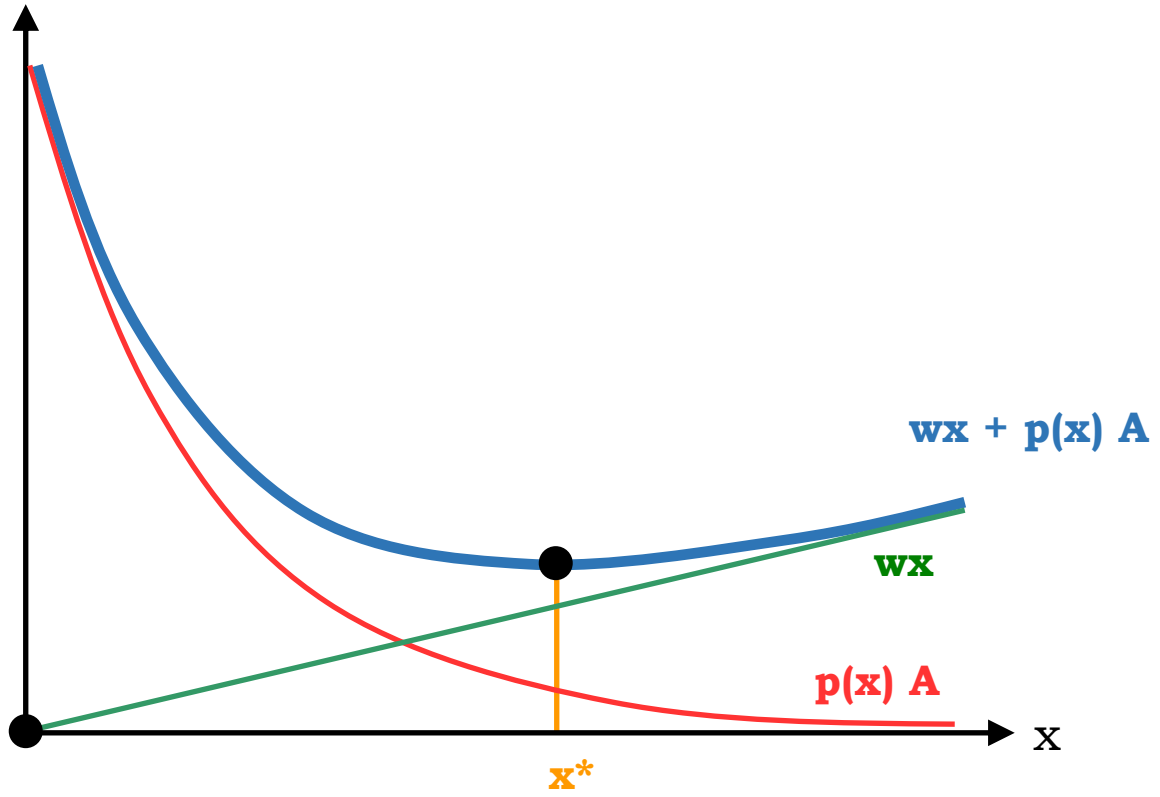
Strict Liability

- Damages = A
- Injurer's private cost is

$$p(x)\,A + wx$$

- Injurer choose x to minimize private cost

$$x = .$$



Negligence Rule

- Negligence rule: injurer is only liable ***if he breached the duty of due care***

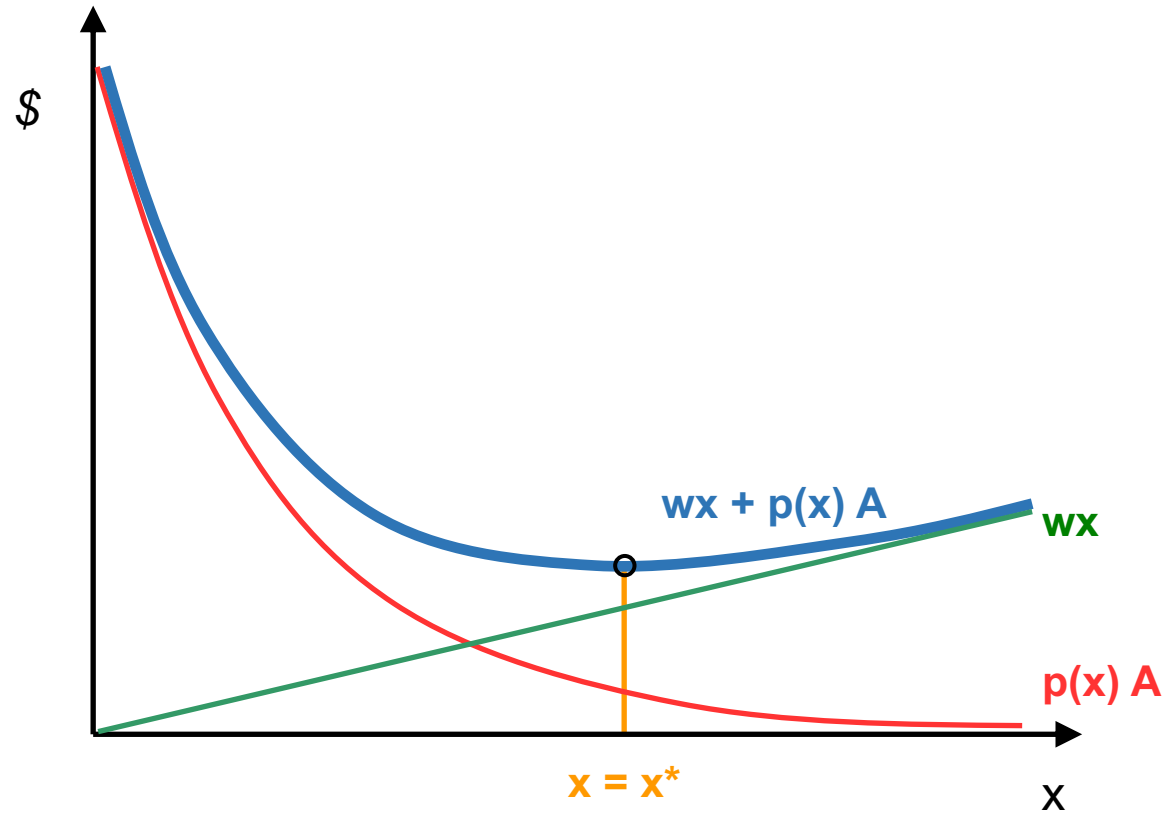
- Within our model:
  - Legal standard of care x* (Assume that we set the standard at the optimal)
  - Injurer owes damages if precaution level was below the legal standard of care

1. $x < x^*$ → D = .
2. $x > x^*$ → D = .

- So, private cost to injurer is…

1. . for $x < x^*$
2. . for $x > x^*$

Negligence Rule :



- Private cost is ..... if $x < x^*$ and only ..... otherwise
- If standard of care is set efficiently ($x = x^*$), injurer minimizes private cost by choosing $x =$ .....

Precaution isn't the only thing that determines number of accidents

- Precaution – actions which make an activity less dangerous
  - Driving carefully
  - Wearing bright-colored clothing while bicycling
- The **activity levels** also affects the number of accidents
  - I decide how much to drive
  - You decide how much to bicycle
- Liability rules also create incentives for **activity levels** as well as precaution

What about activity level?

- With no liability, injurer don't consider cost of accidents when deciding **how fast** to drive…
  - also don't consider cost of accidents when deciding **how much** to drive
  - So injurer drive too recklessly, **and drive too much**

- Under strict liability, injurer internalizes cost of accidents
  - Weighs benefit from driving against cost of accidents
  - Takes **efficient activity level**

What about activity level?

- Under negligence: injurer is only liable if he was negligent
  - Leads injurer to take efficient precaution, so injurer expects to not be liable for any accidents that do occur
  - So injurer ignores cost of accidents when deciding on activity level (how much to drive) Injurer drives carefully, but still drives too much