The Coase Theorem

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  - John and Sam are both located along a lake. John runs a paper mill and Sam uses his property as a vacation cottage. John's actions influence the pleasure of the vacation cottage.

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  - If I purchase a widget, it may denies you the right to that widget.
  - Since I pay the social cost of the widget, there is no efficiency loss from my purchase.

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  - John and Sam constitute a non-pecuniary externality

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- Any reduction in the level of pollution is a harm to John.

The Cattle and the Fence

Number of Steers	Annual Crop Loss	Crop Loss per Incremental Steer (Tons)
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Consider two liability rules: The Cattle Owner is Liable and the Farmer is Liable

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  - If it wants to have 1, 2, or 3 head of cattle, he will simply pay damages.
  - If he wants 4 or more head of cattle, the fence is the cheaper operation.

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A regulation requiring a fence is clearly wrong.

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  - Suppose a farmer was originally there. The farmer will see no change in his income, though he may now be selling some of his crop to the cattleman rather than to the marketplace.

The Cattle Owner is Liable

- The liability will not cause the farmer to increase the size of his crop.
- Indeed in some cases, it may lead to less production.
  - Suppose that, absent the cattlemen, the farmer raised \$12 of crop at a cost of \$10, with a net profit of \$2.
  - If the cattleman wants only one steer, it is optimal to pay damages to the farmer.

The Cattle Owner is Liable

- The liability will not cause the farmer to increase the size of his crop.
- Indeed in some cases, it may lead to less production.
  - If he wants two or more, it will be optimal to pay the farmer to stop production or perhaps abandon a sub section of the land.

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  - The farmer would not plant along this path absent the cattleman, but it might be tempting to threaten to do so to get a bribe of (say) $5 from the cattleman.

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Common sense suggests that the crop will not be grown for long. It may happen as a way of maximizing the farmer's income, but only temporarily.

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- This system requires not only liability but also that the farmer and cattleman have the ability to strike an enforceable bargain.

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- Suppose the cattleman has three steers.

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Three Steers

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In any case, the farmer will not pay more than $9

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Strategic Behavior?

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Strategic Behavior

- Might the cattleman increase the size of his crop to get additional money from the farmer?
- It is possible once again as a bargaining ploy, but only as a bargaining ploy.
  - In game theory terms, the threat of increasing the size of the herd is not credible.

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- The assignment of liability affects the direction of side payments, but not the level of production.
  - Does the cattleman have the right to have cows unfenced?
  - Or does he not?

End