EXTERNALITIES

(ANOTHER SOURCE OF MARKET FAILURE)

EXTERNALITY OCCURS WHEN THE ACTIVITY OF AN AGENT (A PERSON OR A FIRM) DIRECTLY AFFECTS THE WELFARE OF ANOTHER AGENT IN SUCH A WAY THAT IS "OUTSIDE" THE MARKET MECHANISM.

NEGATIVE EXTERNALITY: THESE ACTIVITIES IMPOSE DAMAGES ON OTHERS

Ex: AIR POLLUTION, WATER POLLUTION, IRON BARS INSTALLED ON YOUR HOUSE, NOISE POLLUTION, ROBBERY, SMOKING IN A PUBLIC AREA, DEFORRESTATION, LOUD MUSIC AT NIGHT FROM YOUR NEIGHBORS, GANGSTERS, DRINK AND DRIVE, TRAFFIC CONGESTION

POSITIVE EXTERNALITY: THESE ACTIVITIES BENEFIT ON OTHERS,

Ex: GROWING TREES, MUSICS IN THE PARK, JANITOR SERVICES, TEACHERS SHARING KNOWLEGE TO STUDENTS, FIRE-PROOF ROOFS, NATIONAL PARKS, SCIENTIC DISCOVERY, CSR, CHURCH SERVICES, TECHNOLOGICAL SPILLOVERS FROM FDI, BEE FARMS & FLOWERS FARMS, WATER ABATEMENT, ASKING GOOD QUESTIONS IN CLASS.

NATURE OF EXTERNALITIES

1. CAN BE POSITIVE OR NEGATIVE
2. CAN BE PRODUCED BY PERSONS OR FIRMS
3. CAN BE FROM CONSUMPTION OR PRODUCTION ACTIVITIES

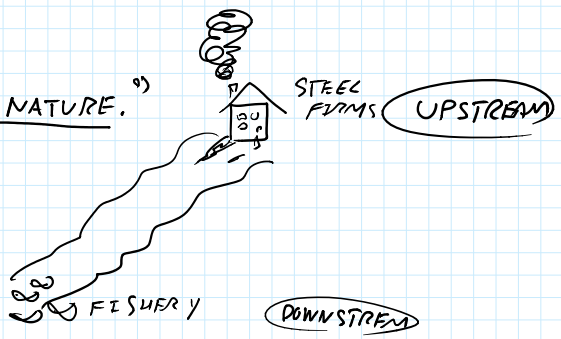
ACTIVITIES

	CONSUMPTION	PRODUCTION
+ve EXTERNALITY	SITTING NEXT TO A PRETTY GIRL	SCIENTIFIC DISCOVERY
-ve EXTERNALITY	DRINK & DRIVE	AIR POLLUTION, NOISE POLLUTION

4. EXTERNALITIES ARE "RECIPROCAL IN NATURE."

Ex: 2 AGENTS — STEEL FIRM, FISHERY FIRM

THIS IN SIGHT



IS PROVIDED BY "RONALD H. COASE" (CHICAGO SCOOL)

A NOBEL PRIZE WINNER

HIS FAMOUS CONTRIBUTION IS "COASE'S THEOREM"

⑤ PUBLIC GOODS { ARE / OR / CAN BE } SPECIAL TYPES OF EXTERNALITY.

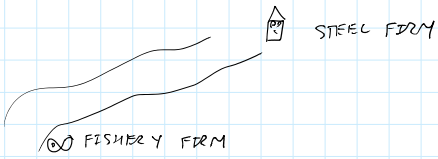
VIEWED AS

EX: MOSQUITO CONTROL IN A VILLAGE

- IF ALL MEMBERS IN THE VILLAGE RECEIVE BENEFITS, THEN MOSQUITO CONTROL IS CONSIDERED AS "PUBLIC GOOD"
- IF ONLY FEW MEMBERS GOT BENEFITS, MOSQUITO CONTROL IS CONSIDERED AS "EXTERNALITY"

NEGATIVE EXTERNALITIES : GRAPHICAL ANALYSIS

CONSIDER STEEL FIRM Vs. FISHERY FIRM.
SUPPOSE THAT THE STEEL FIRM DUMPS POLLUTION INTO A RIVER THAT HARMS A FISHERY FIRM DOWNSTREAM.

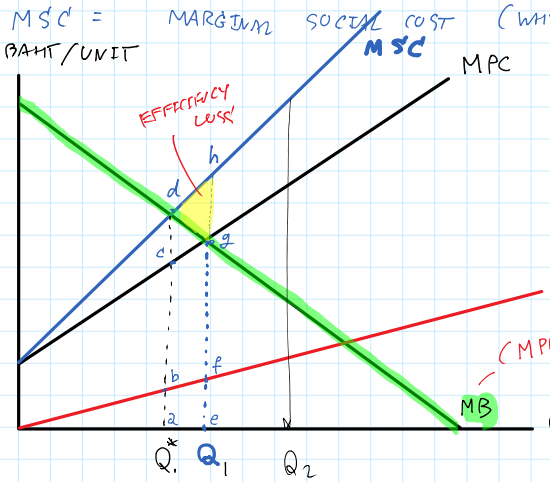


STEEL FIRM CARES ONLY ABOUT HIS PROFITS, NOT FISHERY'S PROFIT.
FISHERY FIRM ↔ STEEL FIRM'S PROFITS.

MB = MARGINAL BENEFITS TO STEEL FIRM FROM PRODUCING STEEL.
MPC = MARGINAL PRIVATE COSTS TO STEEL FIRM

MD = MARGINAL DAMAGE ADVERSELY AFFECTED BY FISHERY FIRM

MSC = MARGINAL SOCIAL COST (WHICH = MPC + MD)



MSC = MPC + MD
∴ MD = MSC − MPC

BETWEEN Q* AND Q1 :
COST OF MAKING Q1 − Q* = area d, h, u, e

BENEFIT OF PRODUCING (Q1 − Q*) = area d, g, u, e

SINCE COST > BENEFIT, WE HAVE area d, h, g AS EFFICIENCY LOSS.

OBSERVATION #1 TO MAXIMIZE PROFITS, STEEL FIRM WOULD PRODUCE AT THE QUANTITY WHERE MB = MPC
SO, Q_1 IS HIS PROFIT MAXIMIZING OUTPUT LEVEL

OBSERVATION #2 HOWEVER, FROM SOCIETY'S VIEWPOINT, Q^* WHERE MB = MSC SHOULD BE PRODUCED!

Q^* = SOCIALLY DESIRABLE OUTPUT LEVEL.

OBSERVATION #3 THE STEEL FIRM PRODUCES "TOO MUCH": $Q_1 > Q^*$.
(WHY?)
B/C STEEL FIRM TAKES INTO A/C ONLY HIS PRIVATE COST WHEN HE MAKES PRODUCTION DECISION.
MD IS NOT TAKING INTO HIS CONSIDERATION.

OBSERVATION #4 THE PREFERRED AMOUNT OF STEEL FROM FISHERY'S PERSPECTIVE = 0. (WHY?)
B/C TO MAKE MD = 0, Q MUST BE EQUAL TO 0!

OBSERVATION #5 Q^* (WHERE MB = MSC) IS THE BEST COMPROMISE BETWEEN STEEL FIRM AND FISHERY FIRM.

OBSERVATION #6 WE OBSERVE THAT "ZERO PRODUCTION OF STEEL" IS NOT SOCIALLY DESIRABLE!

(NO STEEL → NO CARS, NO CHAIRS, AND ETC'. WHICH IS NOT WHAT WE WANT TO BE)

WE HAVE TO LIVE W/ SOME AMOUNT OF POLLUTION.

OBSERVATION #7 (DWL) DWL OCCURS IF $Q > Q^*$.

FOR EXAMPLE, AT Q_1, DWL = $\triangle dhg$

OBSERVATION #8 IF Q CAN BE REDUCED FROM Q_1 TO Q^*,

STEEL FIRM WOULD FACE LOSS = AREA $adge$ (TR) − AREA $acge$ (TC) = $\triangle cdg$ (LOSS IN PROFITS)

(SINCE TR > TC) THE LOSSES THIS IF WE FORCE HIM TO MOVE FROM $Q^* \leftarrow Q_1$

FISHERY FIRM WOULD GAIN = $abfe$ OR = $cdhg$.

SINCE GAINS TO FISHERY OUTWEIGHTS LOSS TO STEEL FIRM,

THEN MOVING FROM $Q^* \leftarrow Q_1$ IMPROVES EFFICIENCY.