

THE DEMAND FOR A PURE PUBLIC GOOD

CONSIDER 3 CONSUMERS: A, B, C

THESE THREE PEOPLE LIVE TOGETHER IN A SMALL COMMUNITY AND DESIRE TO PROVIDE THEMSELVES W/ SECURITY PROTECTION.

SECURITY GUARDS \Rightarrow A PURE PUBLIC GOOD AS IT IS NON-RIVAL IN CONSUMPTION & IT IS NON-EXCLUSION.

Q: HOW MANY SECURITY GUARDS SHOULD BE PROVIDED IN ORDER TO ACHIEVE AN EFFICIENT PROVISION LEVEL?

LET'S CONSIDER ...

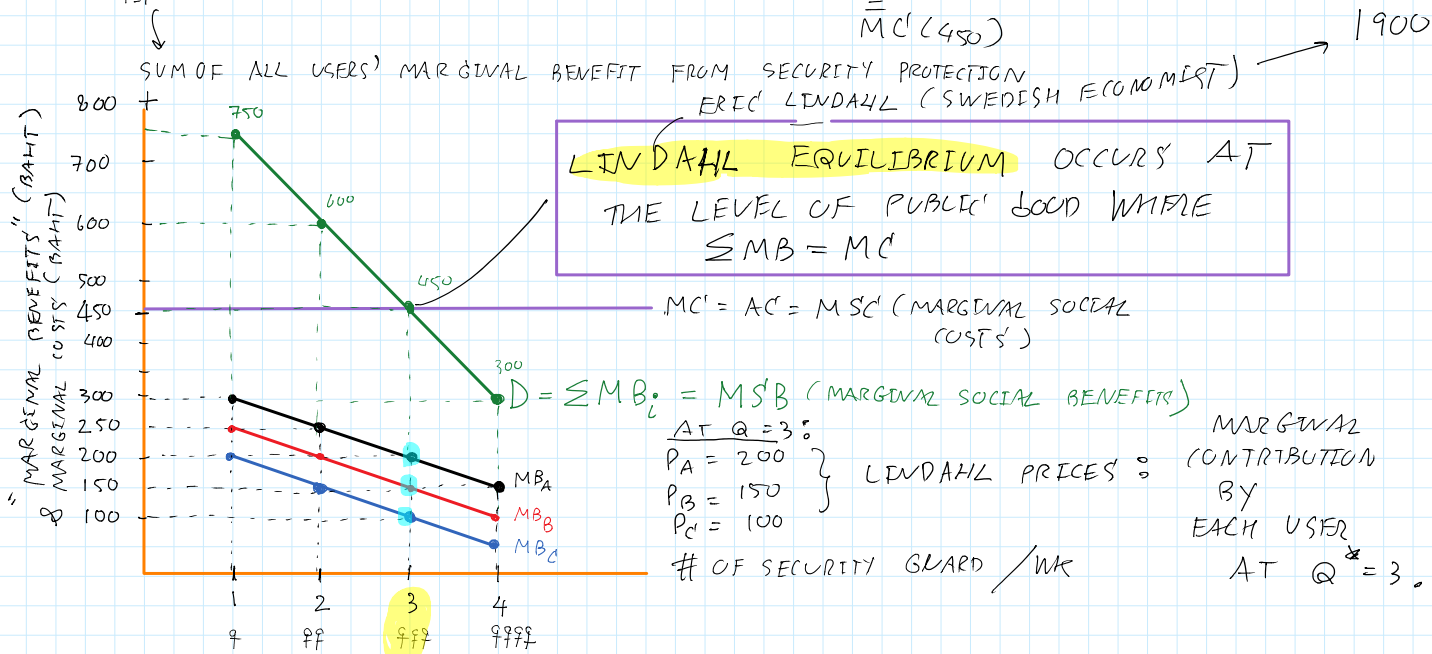
SUPPOSE THAT THE WEEKLY COST PER SECURITY GUARD = 450 BAHT

ALSO, SUPPOSE THAT $AC = MC = 450 \text{ BAHT} / \text{G} / \text{WEEK}$.

MARGINAL BENEFITS OF SECURITY PROTECTION FOR A COMMUNITY OF THREE PERSONS

	1	2	3	4
MB_A	300	250	200	150
MB_B	250	200	150	100
MB_C	200	150	100	50
$\sum_{i=1}^n MB_i$	750	600	450	300

$MC = 450$





① EFFICIENCY REQUIRES THAT $\sum MB_i = MC$ OR

MARGINAL SOCIAL BENEFITS (MSB) = MARGINAL SOCIAL COST (MSC)

SO, EFFICIENT PROVISION OF SECURITY GUARD IS AT $Q = 3$

WHERE $MSB = MSC$.

ON THE LEFT-HAND-SIDE OF , $MSB > MSC$. SO MORE PUBLIC GOOD SHOULD BE PRODUCED.

ON THE RIGHT-HAND-SIDE OF , $MSB < MSC$. SO LESS PUBLIC GOOD SHOULD BE PRODUCED.

② IF SECURITY GUARD IS AVAILABLE VIA MARKET, NO ONE WOULD PURCHASED.

W/ $MC = 450$, NO ONE, EVEN MR. A, WOULD PURCHASE SINCE THEIR MARGINAL VALUATION $<$ MARGINAL COST FOR $Q=1$, $MB_A = 300 < MC = 450$.

③ IT IS SO INEFFICIENT IF NO SECURITY GUARD IS PROVIDED (WHY?)

B/C AT $Q=1$, WE SEE THAT $\sum MB_i = 750$ WHICH IS SUFFICIENT TO COVER THE COST OF 450.

④ VIA VOLUNTARY CONTRIBUTION OF THE THREE USERS, A PUBLIC GOOD CAN BE PRODUCED. (HERE, GUARDS)

AT $Q=1$

$MB_A = 300$	}	$MC = 450$
$MB_B = 250$		
$MB_C = 200$		
$\sum MB = 750$		

SO, THE FIRST GUARD CAN BE HIRED AND WE SEE THAT THERE IS A SURPLUS OF 300 ($= 750 - 450$).

SO, THEY THINK OF HOW ABOUT HIRING 2?

AT $Q=2$ (??)

$MB_A = 250$
$MB_B = 200$
$MB_C = 150$

FOR $Q=2$, TOTAL PAYMENT = $450 \cdot 2 = 900$ BAHIT.

AT $Q=2$ (??)

A	IS WILLING TO PAY	$250 \cdot 2 = 500$	BAHIT
B	"	$200 \cdot 2 = 400$	BAHIT
C	"	$150 \cdot 2 = 300$	BAHIT

$$\begin{array}{r}
 B \text{ " } \xrightarrow{\quad\quad\quad} \quad 100 \cdot 2 = 200 \text{ RMH} \\
 C \text{ " } \xrightarrow{\quad\quad\quad} \quad 150 \cdot 2 = 300 \text{ RMH} \\
 \hline
 \text{TOTAL AMOUNT} \\
 A, B, C \text{ ARE WILLING TO} \\
 \text{PAY ALL TOGETHER} \\
 \hline
 = 1200 \text{ RMH}
 \end{array}$$

SO, THEY HAVE ENOUGH MONEY TO PAY FOR 77 GUARDS AND THEY HAVE A SURPLUS OF 300 ($=1200-900$).

SO, THEY DELIBERATE ABOUT "SHALL WE GO FOR $Q=3$?"

FOR $Q=3$,

$MB_A = 200$
$MB_B = 150$
$MB_C = 100$

TOTAL COST OF 777 GUARD = $450 \cdot 3 = 1350$ RMH/WK

W/ $Q=3$: A IS WILLING TO PAY $200 \cdot 3 = 600$ RMH

B " $\xrightarrow{\quad\quad\quad}$ $150 \cdot 3 = 450$ RMH

C " $\xrightarrow{\quad\quad\quad}$ $100 \cdot 3 = 300$ RMH

1350 RMH/

THEREFORE,

$Q=3$ IS POSSIBLE TO PROVIDE

AS TOTAL CONTRIBUTION BY THE THREE: A, B, C JUST COVERS THE TOTAL PAYMENT!

④

TWO CONDITIONS MUST BE FULFILLED SO THAT WE ARRIVE AT "LINDAHL SOLUTION."

① TRUTHFUL REVELATION OF MARGINAL BENEFITS TOWARD PUBLIC GOODS.

§ ② # OF USERS IS SMALL.