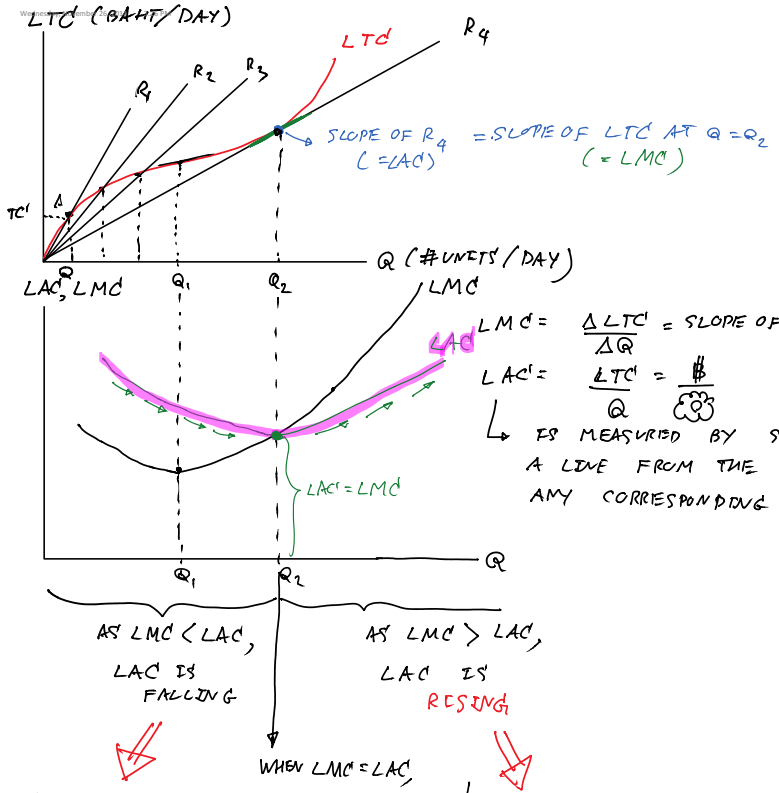


$LMC = \frac{\Delta LTC}{\Delta Q}$ = SLOPE OF LTC

$LAC = \frac{LTC}{Q}$ = #

↳ IS MEASURED BY SLOPE OF A LINE FROM THE ORIGIN TOWARDS ANY CORRESPONDING OUTPUT LEVEL

AS LMC < LAC, LAC IS FALLING

AS LMC > LAC, LAC IS RISING

WHEN LMC = LAC, LAC BOTTOMS OUT!

WE CALL "ECONOMIES OF SCALE" : AS Q↑, LAC ↓ ☺ (WHY?)

REASONS:

① BENEFITS OF SPECIALIZATION

② BARGAINING POWER W/ SUPPLIERS (VOLUME DISCOUNTS)

AS Q↑ (BEYOND Q_2), LAC ↑ ☹

"DISECONOMIES OF SCALE"

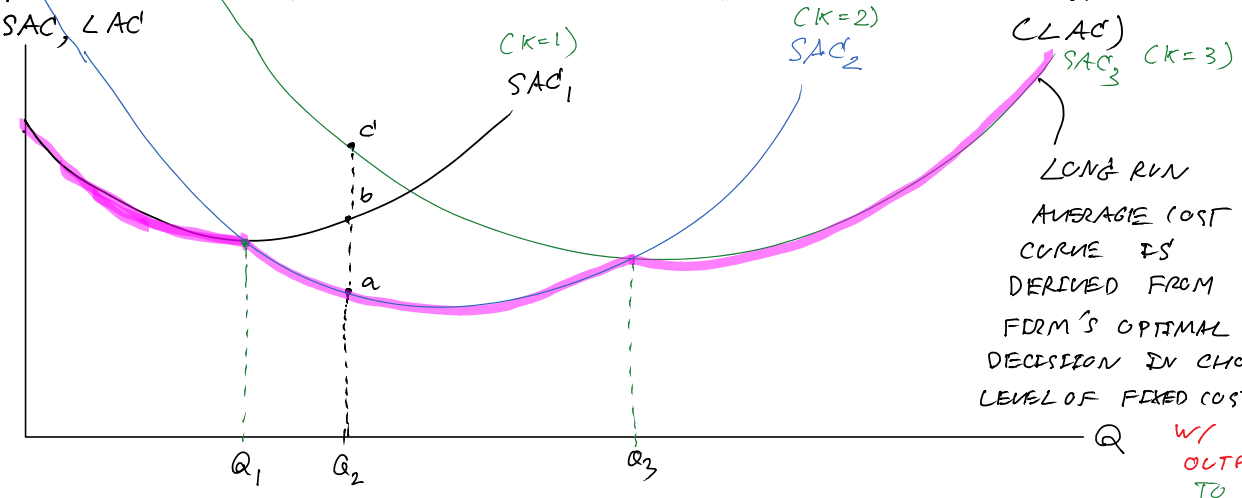
REASONS:

① COORDINATION PROBLEMS BETWEEN LAYERS OF COMMAND

② COMMUNICATION PROBLEMS

③ VOLUME DISCOUNTS DISAPPEARED.

ANOTHER METHOD TO OBTAIN LONG RUN AVERAGE COST CURVE



LONG RUN AVERAGE COST CURVE IS DERIVED FROM FIRM'S OPTIMAL DECISION IN CHOOSING LEVEL OF FIXED COST SUITABLE W/ DESIRED OUTPUT LEVEL TO MINIMIZE ITS LAC OR COST PER COOKIES IN THE LONG RUN

IN THE LONG RUN, FIRM CAN USE LEVEL OF FIXED COST (WHICH NOW BECOMES VARIABLE COST) TO MATCH W/ THE OUTPUT IT WANTS TO PRODUCE TO MINIMIZE LONG RUN AVERAGE COST (LAC)

BECOMES VARIABLE COST) TO MATCH W/ THE OUTPUT IT WANTS TO PRODUCE TO MINIMIZE LONG RUN AVERAGE COST (LAC) OR COST PER UNIT IN THE LONG RUN.

PER COOKIES IN THE LONG RUN

RETURNS TO SCALE (RTS)

Q: IF YOU INCREASE L AN K BY 100%, WOULD YOUR OUTPUT ALSO INCREASE BY 100%?

EX: $L_1 = 10 \xrightarrow{100\%} L_2 = 20$

$K_1 = 10 \xrightarrow{100\%} K_2 = 20$

$Q_1 = 100 \rightarrow Q_2 = 200?$ $< 200?$ $> 200?$

3 TYPES OF RTS

① INCREASING RETURNS TO SCALE (IRS): WHEN YOU DOUBLE YOUR L AND K, YOUR OUTPUT INCREASE MORE THAN DOUBLE.

EX: L ↑ 100% & K ↑ 100% → Q ↑ BY 120%

HERE, $\%\Delta Q$ (120%) $>$ $\%\Delta L = \%\Delta K$ (100%).

② CONSTANT RETURNS TO SCALE (CRS): DOUBLING ALL INPUTS GIVE DOUBLE OUTPUT.

EX: INCREASE L AND K BY 100% GIVES 100% INCREASE IN Q.

HERE, $\%\Delta Q$ (100%) $=$ $\%\Delta K = \%\Delta L$ (100%)

③ DECREASING RETURNS TO SCALE (DRS): DOUBLING ALL INPUTS GIVES OUTPUT LESS THAN DOUBLE.

EX: INCREASE L AND K BY 100% → OUTPUT RISES BY 70%

HERE, $\%\Delta Q$ (70%) $<$ $\%\Delta K = \%\Delta L$ (100%)