

CH 13 THEORY OF THE FIRM

$$\text{PROFIT} = \text{TOTAL REVENUE} - \text{TOTAL COSTS}$$

$$= \text{PRICE} \times \text{QUANTITY}$$



- EXPLICIT COSTS
- IMPLICIT COSTS

EXPLICIT COSTS: RAW MATERIALS

LABOR (ALL ~~IN~~ INPUTS)

- REQUIRE MONEY

IMPLICIT COSTS

- DON'T REQUIRE MONEY

OPPORTUNITY COSTS, TIME OF OWNER

$$\text{ECONOMIC PROFIT} = \text{TR} - \text{EC} - \text{IM}$$

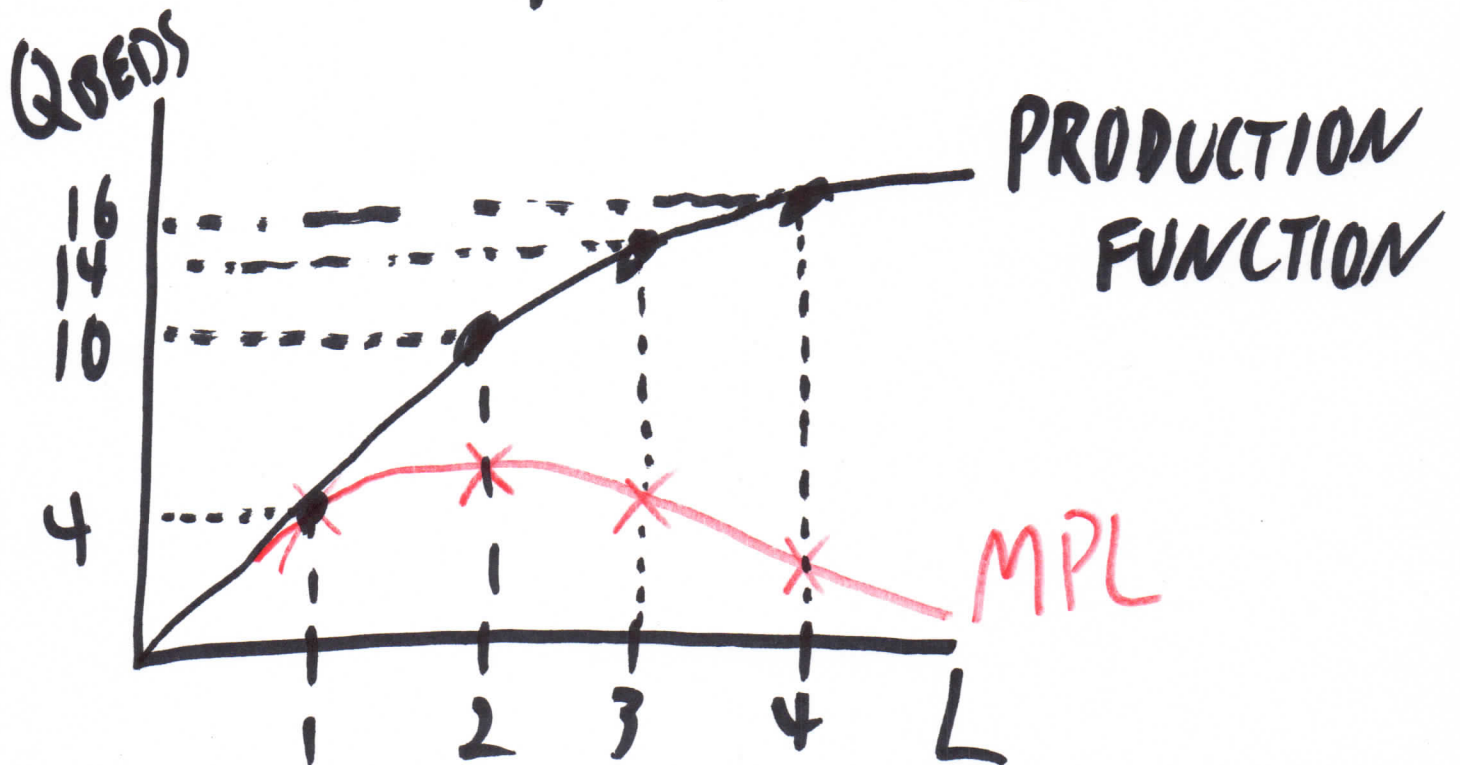
$$\text{ACCOUNTING PROFIT} = \text{TR} - \text{EC}$$

BED MAKING BIZ

$L=7$ COSTS \$7 PER HOUR

WORKERS (L)	BEDS PER HOUR	LACE (W)
0	0	-
1	4	4
2	10	6
3	14	4
4	16	2

MPL
MARGINAL
PRODUCT
LABOR



DIMINISHING MARGINAL RETURNS

- ADD MORE L (BUILD MORE Q)
THE COSTS INCREASE (RETURNS DECREASE)
- SATISFACTION FALLS AS MORE Q IS CONSUMED

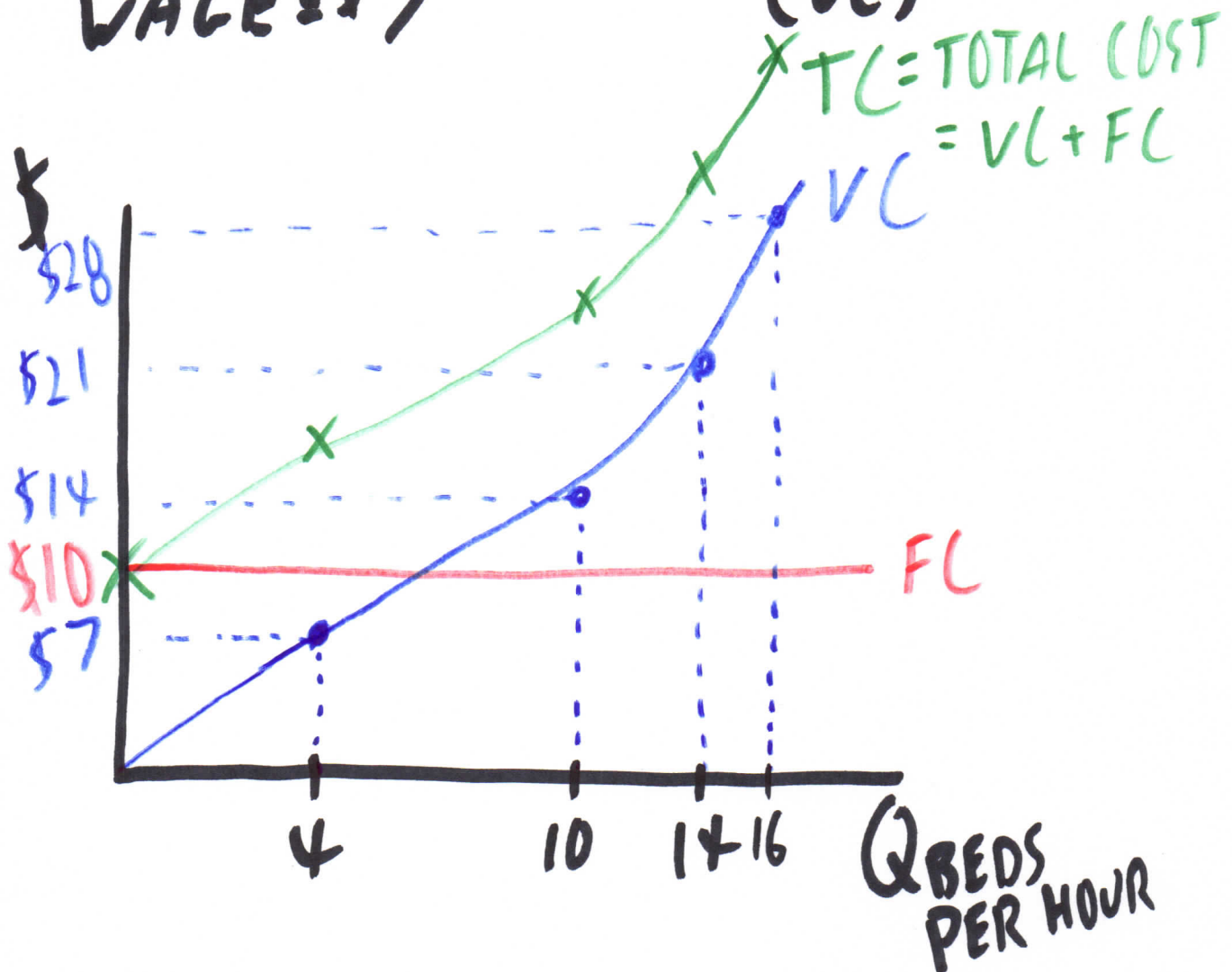
EQUIPMENT COST = \$20,000
PER YEAR

2000 HOUR YEAR

EACH HOUR COSTS \$10

FIXED COST PER HOUR = \$10
(FC)

ASSUME ONLY VARIABLE COST IS LABOR
(VC)
WAGE = \$7



WHAT ARE FIXED COSTS?

- COSTS THAT DON'T CHANGE w/ Q
 - RENT, PROPERTY TAXES
 - INSURANCE, MACHINERY
- } → KAPITAL

WHAT ARE VARIABLE COSTS?

- COSTS THAT DO CHANGE w/ Q
 - LABOR COSTS
 - RAW MATERIALS
- } → LABOR

$$\text{AVERAGE FIXED COSTS} = \frac{FC}{Q}$$

(AFC)

$$\text{AVERAGE VARIABLE COSTS} = \frac{VC}{Q}$$

(AVC)

$$\text{AVERAGE TOTAL COSTS} = \frac{TC}{Q} = \text{AFC} + \text{AVC}$$

(ATC)

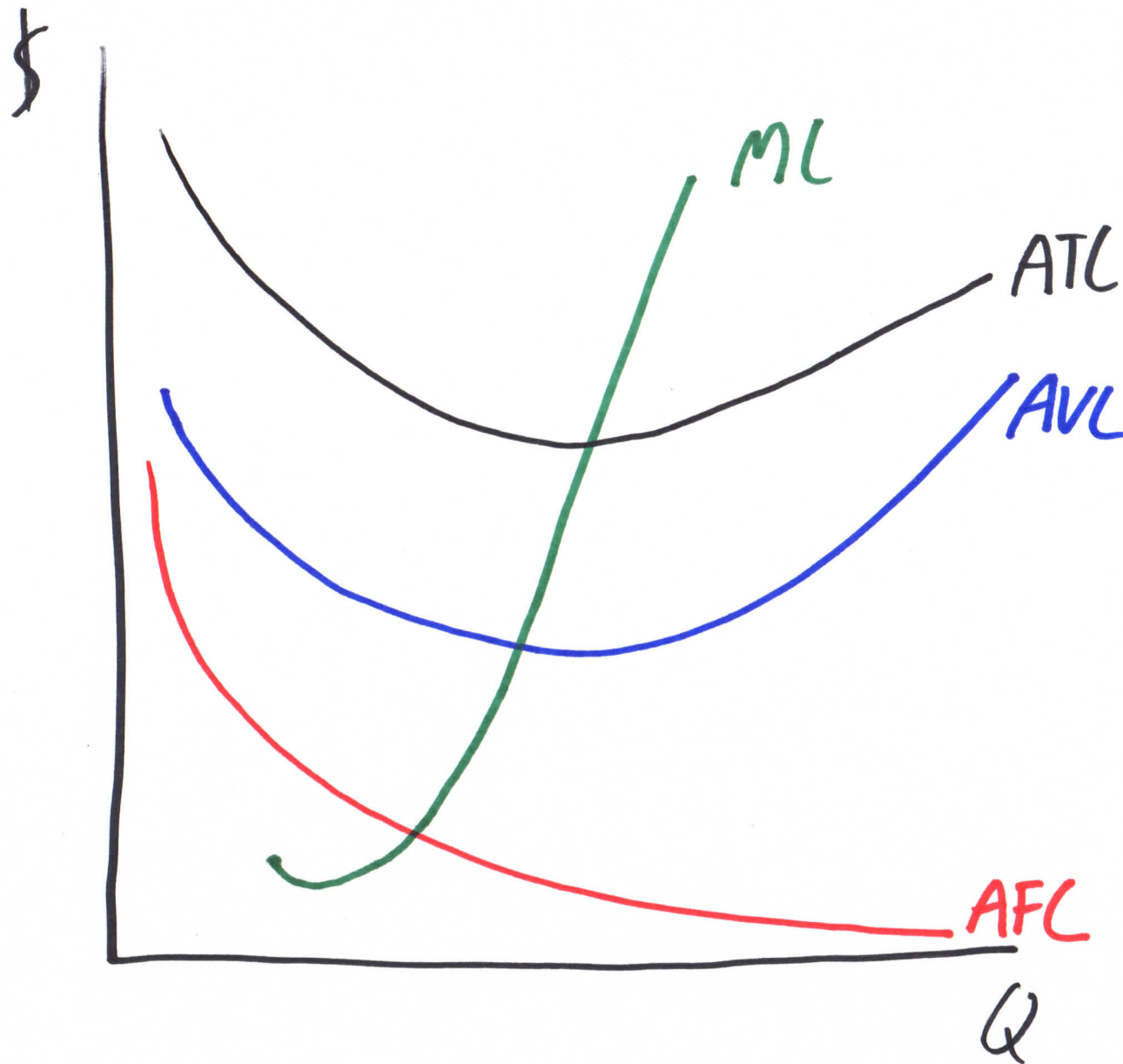
SWEET GRASS BASKETS

Q	FC	VC	TC	AFC	AVC	ATC	MARGINAL COST (MC)
0	50	0	50	-	-	-	-
1	50	5	55	50	5	55	5
2	50	12	62	25	6	31	7
3	50	21	71	16.6	7	23.6	9
4	50	32	82	12.5	8	20.5	11
5	50	45	95	10	9	19	13

MC = ADDITIONAL COST FROM 1 MORE QUANTITY

$$MC_1 = TC_1 - TC_0 = VC_1 - VC_0$$

COST STRUCTURE



① AFC ALWAYS GETS CLOSER TO ZERO

② AVC ARE U-SHAPED

③ $ATC = AFC + AVC$
U-SHAPED
ALWAYS GETS CLOSER TO AVC

④ ML
- J-SHAPED
- GOES THROUGH THE MINIMUM OF AVC, ATC

SHORT-RUN vs LONG RUN

- SHORT RUN HAS FIXED COSTS
- ① LONG RUN COSTS ARE VARIABLE

$$AVC = ATC, AFC = 0$$

$$VC = TC, FC = 0$$

WHY?

CHANGE EQUIPMENT, CAPITAL
FACTORY #, STORE #

HOW LONG? LONG ENOUGH TO CHANGE
K

SHORT-RUN vs. LONG RUN

