

Consumer choice

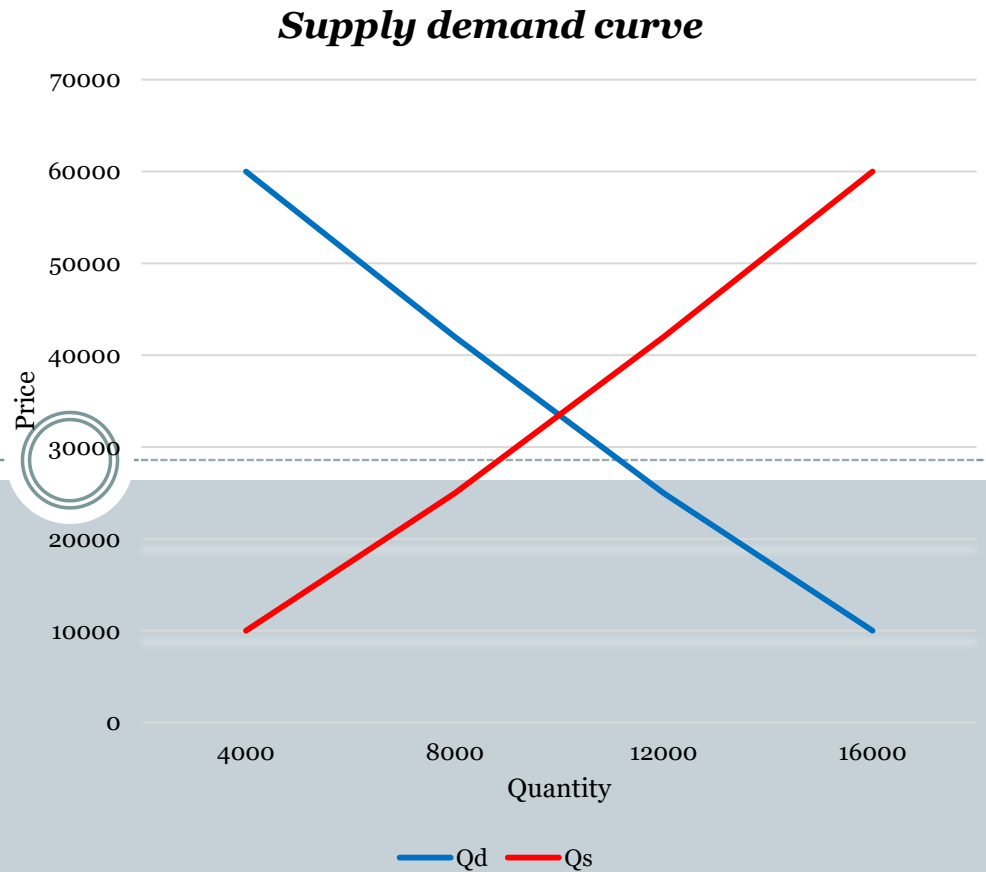
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- Budget constraint
- Preferences
- Marginal utility approach
- Income effect and substitution effect
- Extension of the model
- Challenges to the model

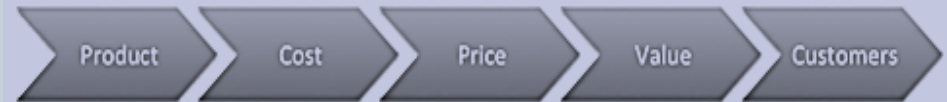
Price Mechanism

Price mechanism is the outcome of the free play of market forces of demand and supply. However, sometimes the government controls the price mechanism to make commodities affordable for the poor people too.

For example, the Government of India recently passed an order to decontrol the prices of diesel and remove it from the jurisdiction of the government. Now the prices will be determined by the demand from consumers and supply from the oil companies.



Cost Based Pricing



Value Based Pricing

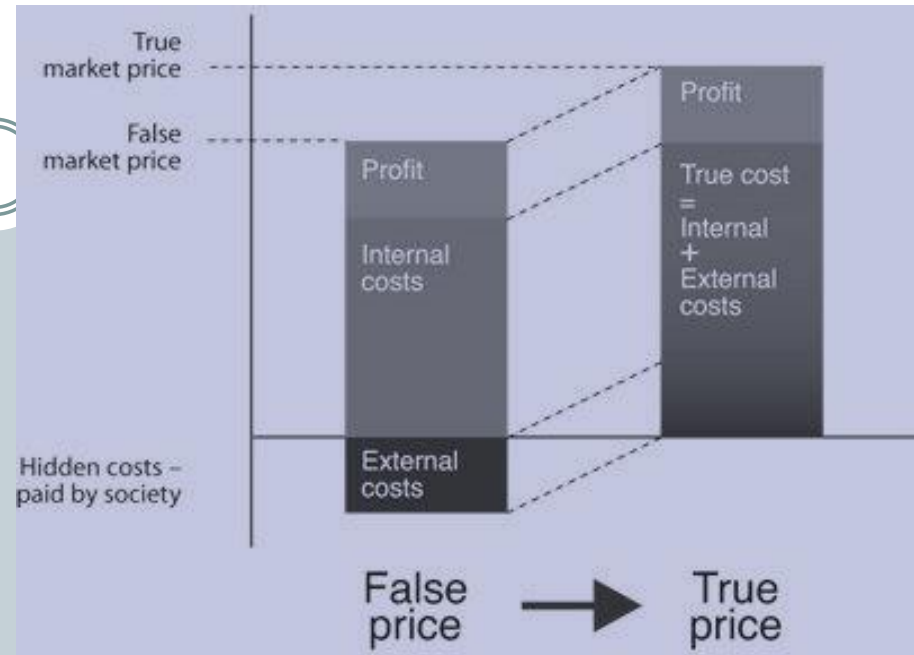





Cost and Price

The technical definition of “price” is “the amount of money to gain a product or service.” On the other hand, “cost” is “the amount paid to produce a product or service.”

Both “price” and “cost” refer to the element of money. In “price,” money is used to gain something.

Meanwhile, “cost” refers to the money in the production process like labor, capital, materials, wages, bills, and other transaction costs.




$$\text{Consumer Price Index Formula} = \frac{\text{Cost of Market Basket in a Given Year}}{\text{Cost of Market Basket at Base}} \times 100$$


Consumer Choice

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- You are constantly making economic decisions
- At the highest level of generality, we are all very much alike
 - Come up against the same constraints
 - ✦ Too little income or wealth
 - ✦ Too little time to enjoy it all
- The theory of individual decision making is called “consumer theory”

- Economists assume that any decision maker tries to make the best out of any situation
 - Marginal utility theory treats consumers as striving to maximize their utility
 - Utility is a quantitative measure of pleasure or satisfaction obtained from consuming goods and services.
- Anything that makes the consumer better off is assumed to raise his utility
 - Anything that makes the consumer worse off will decrease his utility

The Budget Constraint

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- Virtually all individuals must face two facts of economic life
 - Have to pay prices for the goods and services they buy
 - Have limited funds to spend
- A consumer's budget constraint identifies which combinations of goods and services the consumer can afford with a limited budget
- Budget line is the graphical representation of a budget constraint
 - The price of one good relative to the price of another
 - The slope of the budget line indicates the spending trade-off between one good and another
 - ✦ Amount of one good, that must be sacrificed in order to buy more of another good
 - ✦ If P_Y is the price of the good on the vertical axis, then the slope of the budget line is $-P_X / P_Y$

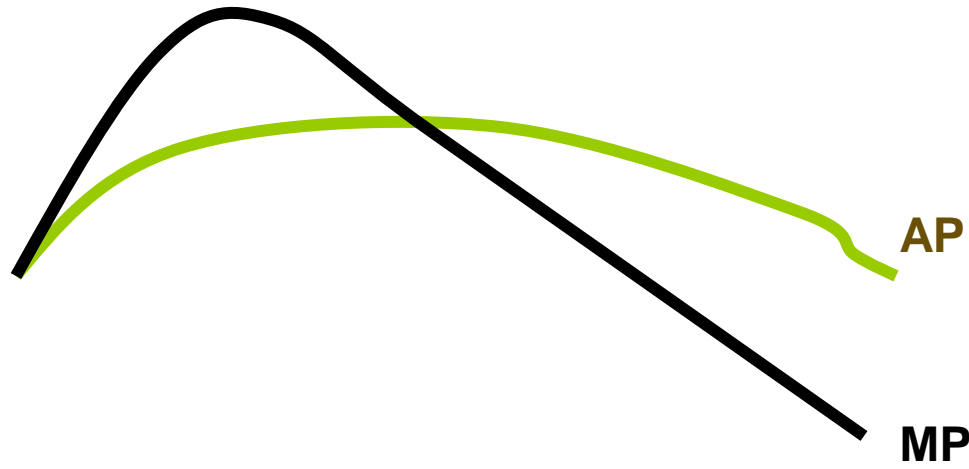
Production Costs



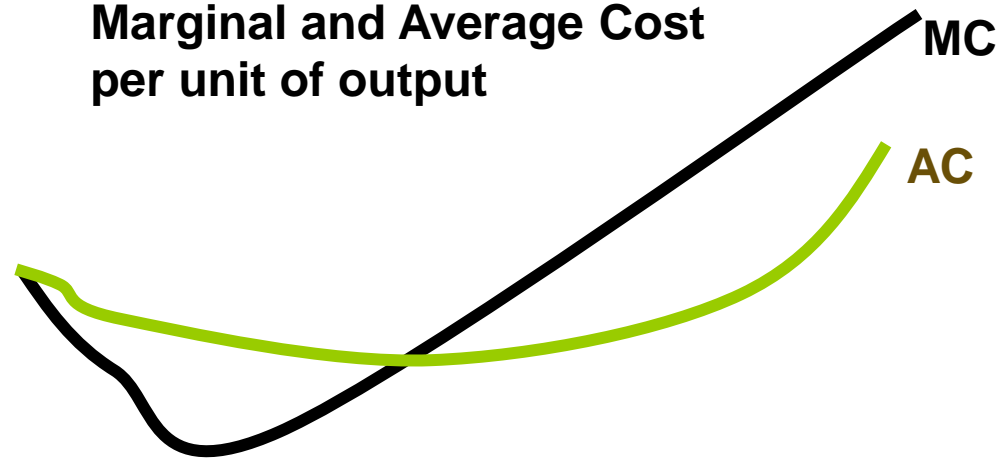
*IN THE SHORT RUN FOR A
FIRM*

**PRODUCTION COSTS
ARE THE *MIRROR IMAGE*
OF PRODUCTIVITY**

Marginal and Average Physical Product per unit of input



Marginal and Average Cost per unit of output



Economic cost



- Includes explicit costs
and Also
- includes implicit costs

explicit costs



Accounting costs

- ✦ Out of pocket expenses -
- ✦ When you pay ***someone else*** for one of the factors of production

implicit costs



- Value of the business owner's time
- Other opportunity costs
- The cost of capital tied up in a productive activity

Economic costs



- explicit costs
- implicit costs (opportunity costs)

• **A “normal profit”
covers all of the
above**

Economic costs and Economic Profit

- **Economic Costs**
 - Include explicit costs
 - ✦ Accounting costs
 - Out of pocket expenses
 - Also include implicit costs
 - ✦ Value of the business owner's time
 - Wages forgone
 - ✦ The cost of capital tied up in a productive activity
 - Rent forgone
 - A “normal profit” covers all of the above
 - **ECONOMIC PROFIT:**
 - ✦ **returns are greater than normal profit**

Short run



- In the short run
- some costs are **fixed**, at least one
 - The plant capacity
 - owner's overhead
- And some are **variable**
 - Additional inputs to increase productivity
 - Usually labor

Total costs



$$\begin{aligned} & \text{total variable costs TVC} \\ + & \text{ total fixed costs } \quad \underline{\text{TFC}} \\ & \qquad \qquad \qquad = \text{TC} \end{aligned}$$

Average costs



Average costs
are
costs per unit of
output

Average costs



Average variable costs

$$AVC = \frac{TVC}{TQ \text{ (output)}}$$

Average fixed costs

$$AFC = \frac{TFC}{TQ \text{ (output)}}$$

Average Total costs



- $ATC = \text{average variable costs (AVC)} + \text{average fixed costs (AFC)} = \underline{ATC}$
- Or
- $ATC = \frac{TC}{\text{output}}$

ATC In the short run



- Is U-shaped
- Because declining AFC (avg. fixed costs) bring costs down at low production levels.
- At higher production levels, sharply rising AVC (average variable costs) swamp the effect of declining AFC (average fixed costs)

MARGINAL COST



MC is the extra cost of
producing an
additional unit

MC rises as production expands

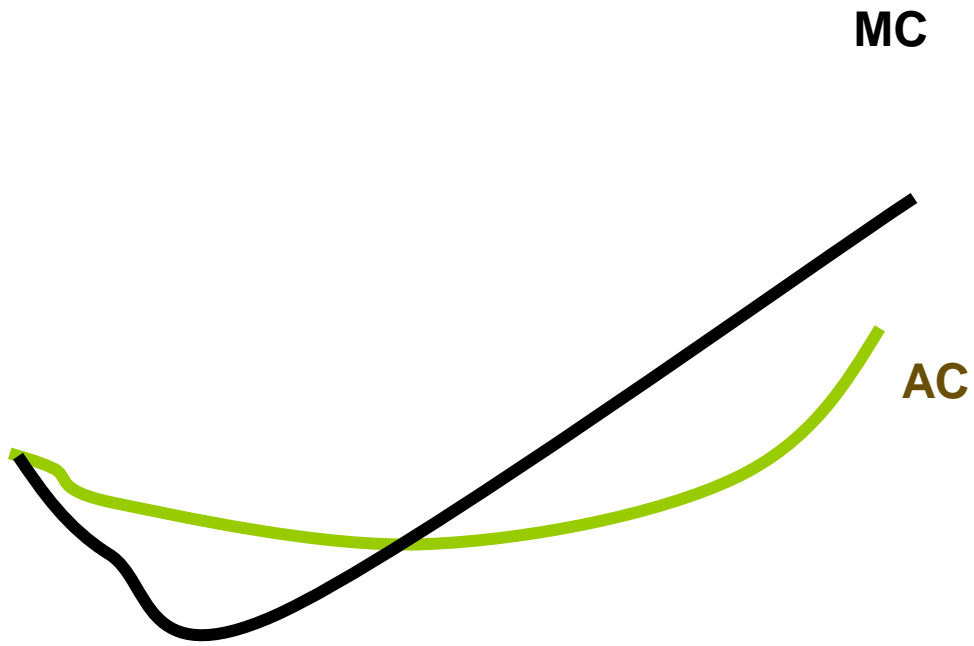


- **Either**
 - immediately
- **Or**
 - At low levels of output if diminishing returns set in with some delay

Marginal cost and average cost curves



- When Marginal Costs are below average Costs ($MC < AvgC$)
 - Average costs are declining
- When Marginal Costs are above average Costs ($MC > AvgC$)
 - Average costs are rising
- When Marginal Costs are equal to average Costs ($MC = avgC$)
- Average costs are constant, at the minimum



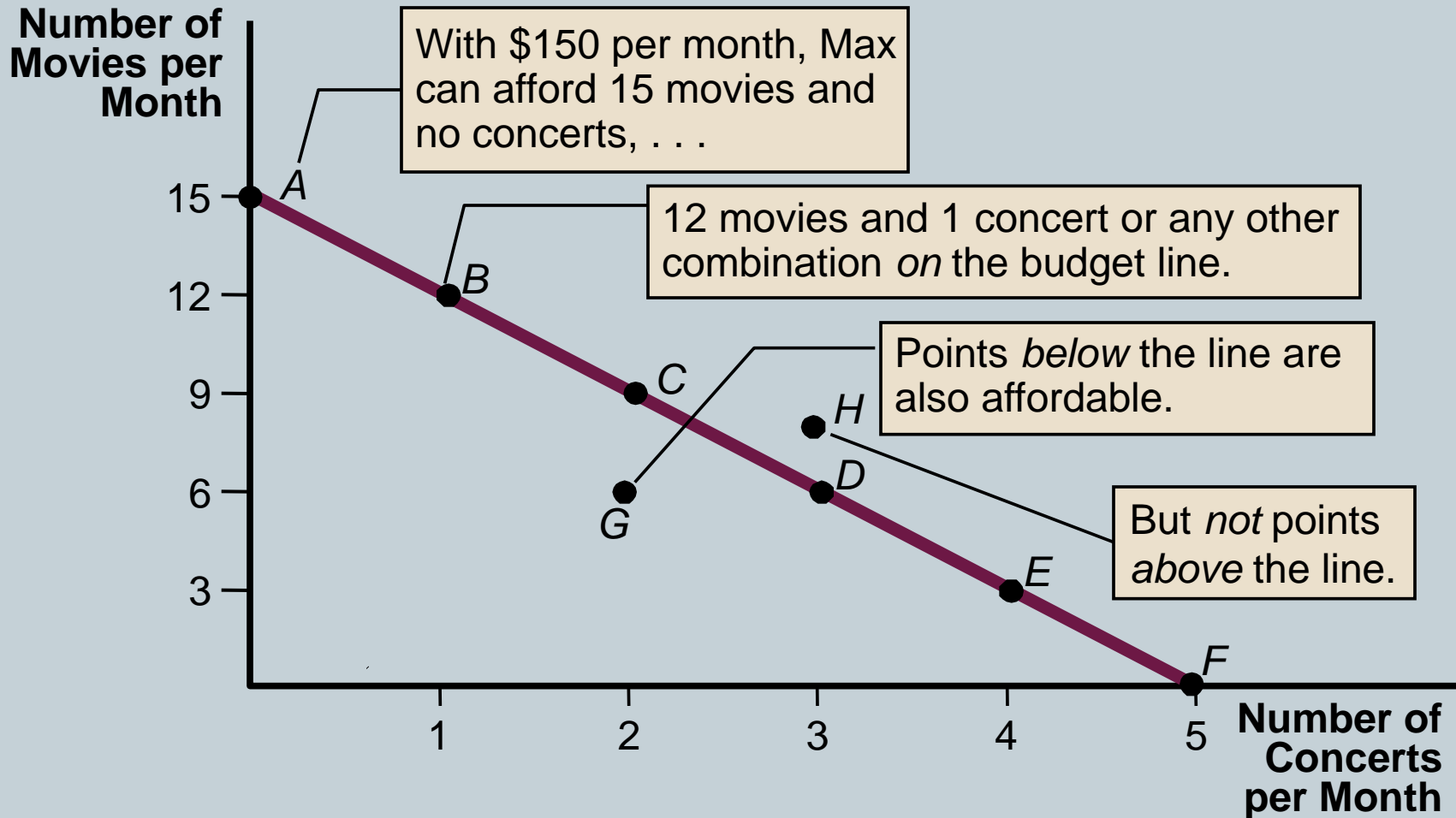
Economic Efficiency $MB=MC$ and perfect competition



- Allocative efficiency (**$P=MC$**)
- **(short run)**
 - Can achieve economic profit
 - down to ($P=MC=AVC$) you shut down
 - If $AVC > MC$ loss is greater than fixed cost
- Productive efficiency (**$P=\text{minimum ATC}$**)
- **(long run)**
 - Achieves no economic profit ($P=ATC=MC$)

Figure 1: The Budget Constraint

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Changes in the Budget Line

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- **Changes in income**
 - Increase in income will shift the budget line upward (and rightward)
 - A decrease in income will shift the budget line downward (and leftward)
 - Shifts are parallel
 - ✦ Changes in income do not affect the budget line's slope
- **Changes in price**
 - In each case, one of the budget line's intercepts will change, as well as its slope
 - ✦ When the price of a good changes, the budget line rotates
 - Both its slope and one of its intercepts will change

Figure 2a: Changes in the Budget Line

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(a)

Number of Movies
per Month

30

15

1. An increase in income shifts the budget line rightward, with no change in slope.



5

10

15

Number of
Concerts per
Month

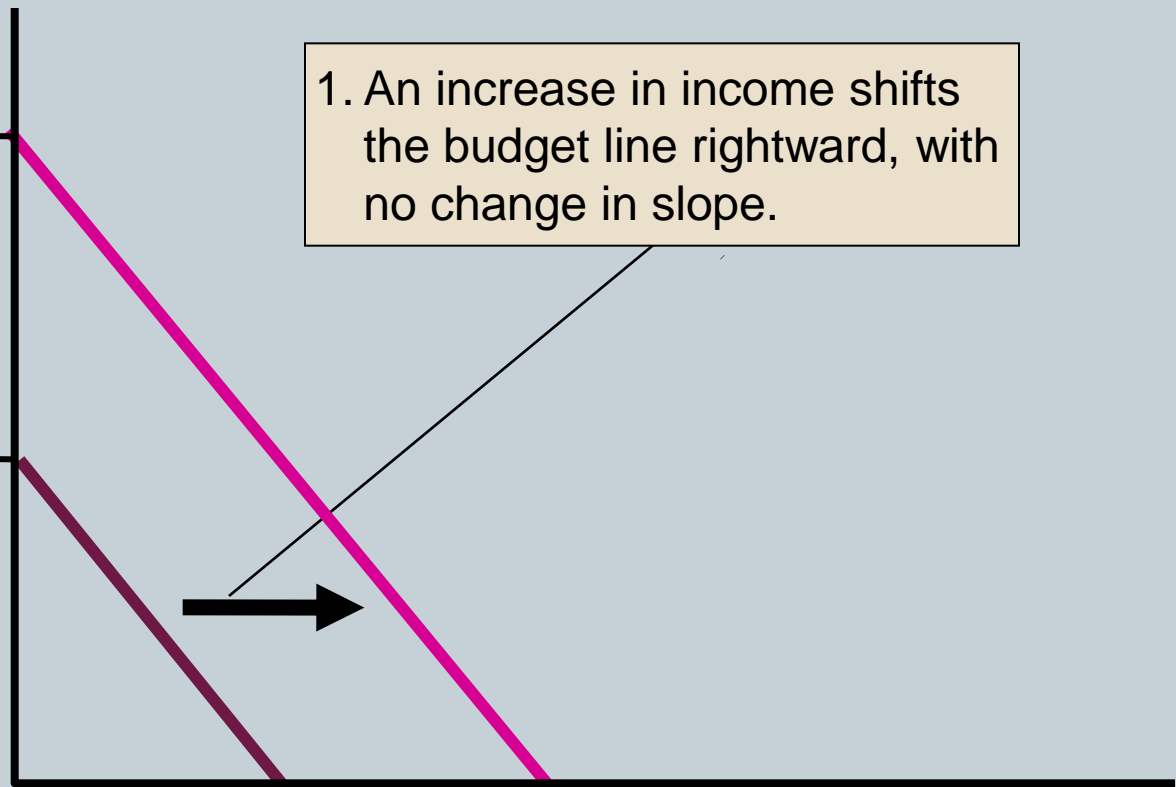


Figure 2b: Changes in the Budget Line

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(b)

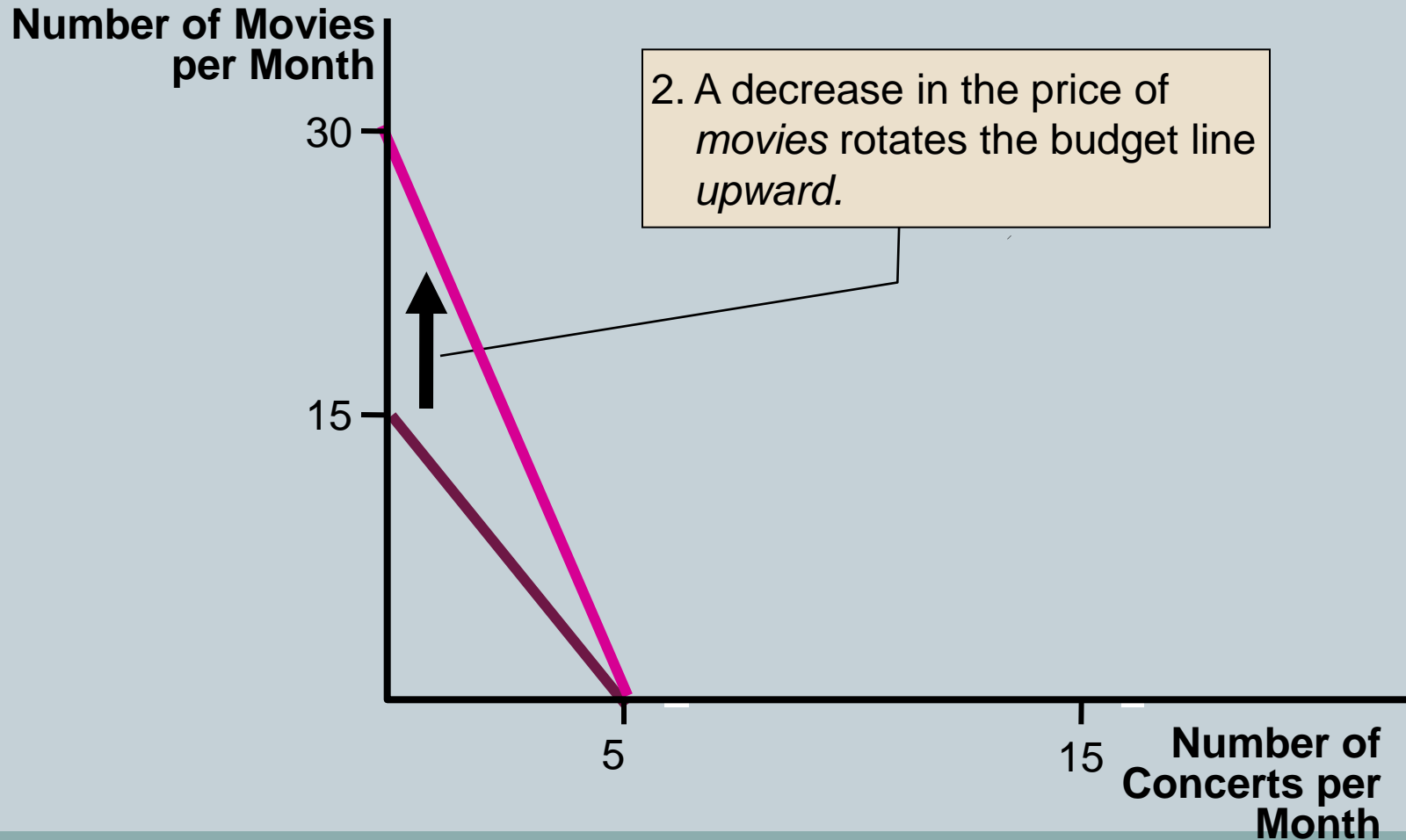
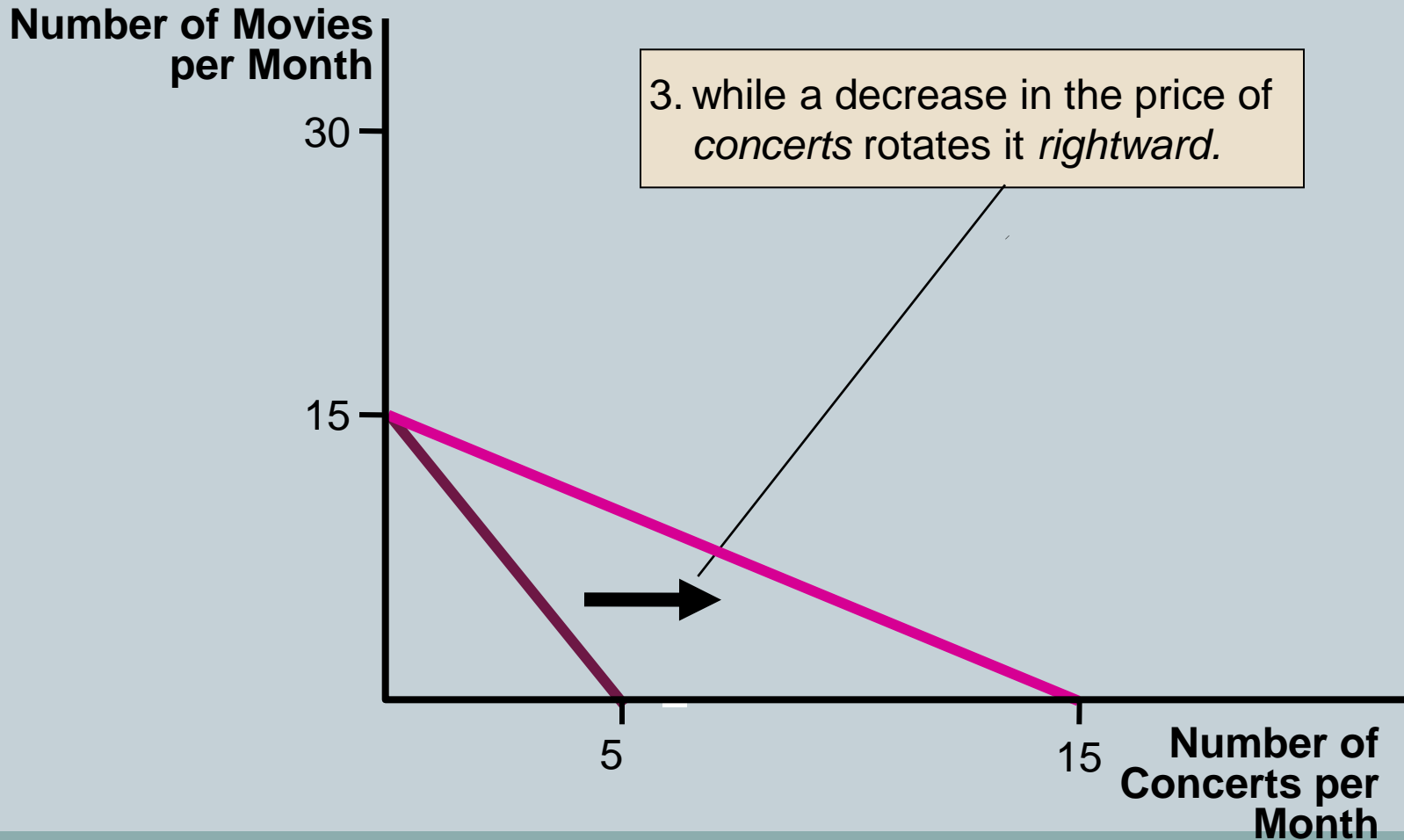


Figure 2c: Changes in the Budget Line

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(c)



Preferences

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- How can we possibly speak systematically about people's preferences?
 - People are different
- Despite differences in preferences, can find some important common denominators
 - In our theory of consumer choice, we will focus on these common denominators

Rationality

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- One common denominator
 - People have preferences
 - We assume that you can look at two alternatives and state either that you prefer one to the other or
 - ✦ That you are entirely indifferent between the two—you value them equally
- Another common denominator
 - Preferences are logically consistent, or transitive
 - ✦ When a consumer can make choices, and is logically consistent, we say that she has rational preferences
- Rationality is a matter of how you make your choices, and not what choices you make
 - What matters is that you make logically consistent choices

More Is Better

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- We generally feel that more is better
- The model of consumer choice in this chapter is designed for preferences that satisfy the “more is better” condition
 - It would have to be modified to take account of exceptions
- The consumer will always choose a point on the budget line
 - Rather than a point below it

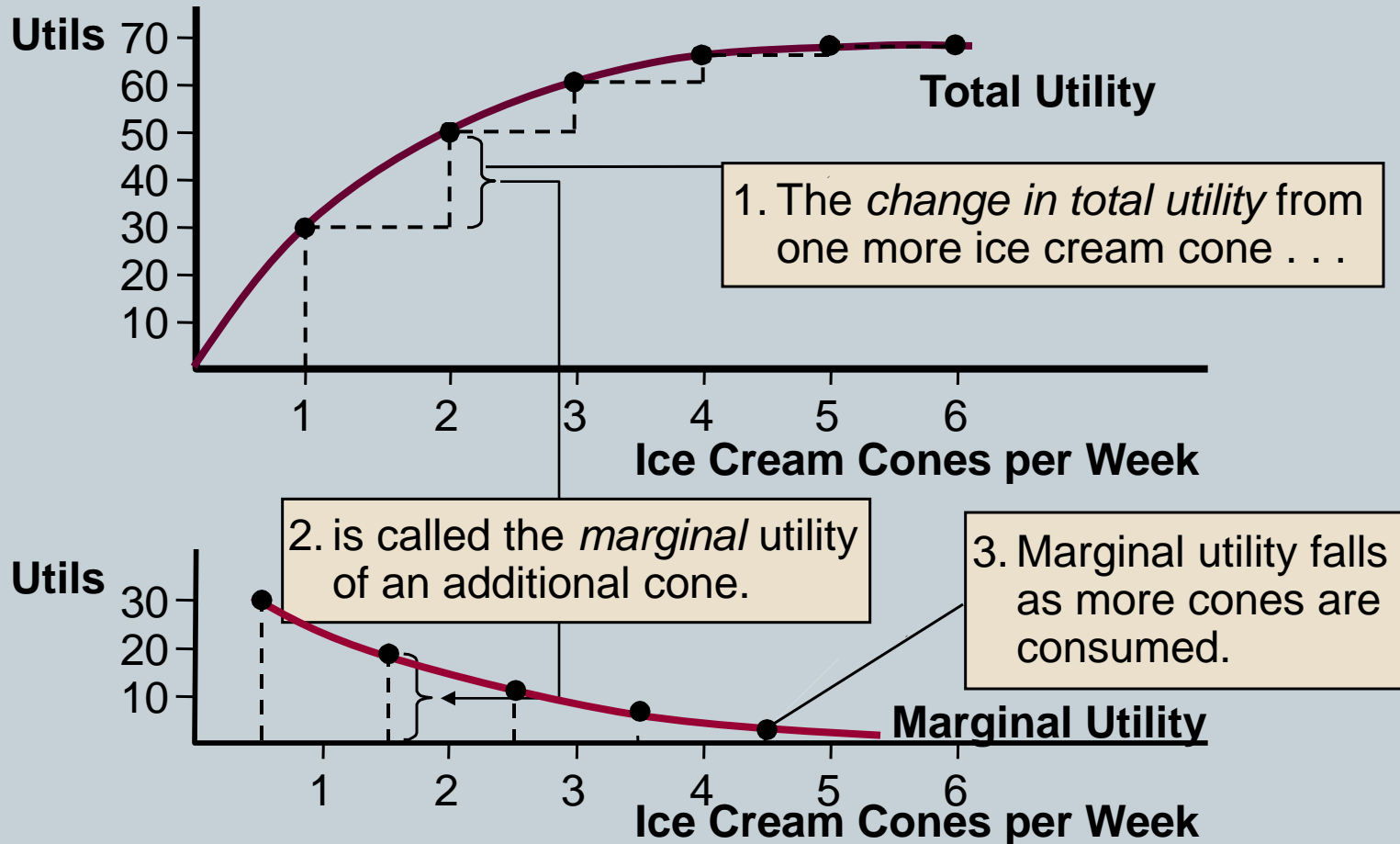
Two Theories

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- Theories of consumer decision making
 - Marginal utility
 - Indifference curve
 - ✦ Both assume that preferences are rational
 - ✦ Both assume that consumer would be better off with more of any good
 - ✦ Both theories come to same general conclusions about consumer behavior
 - However, to arrive at those conclusions each theory takes a different road
- Our goal is to describe and predict how consumers are likely to behave in markets
 - Rather than describe what actually goes on in their minds

Figure 3: Total And Marginal Utility

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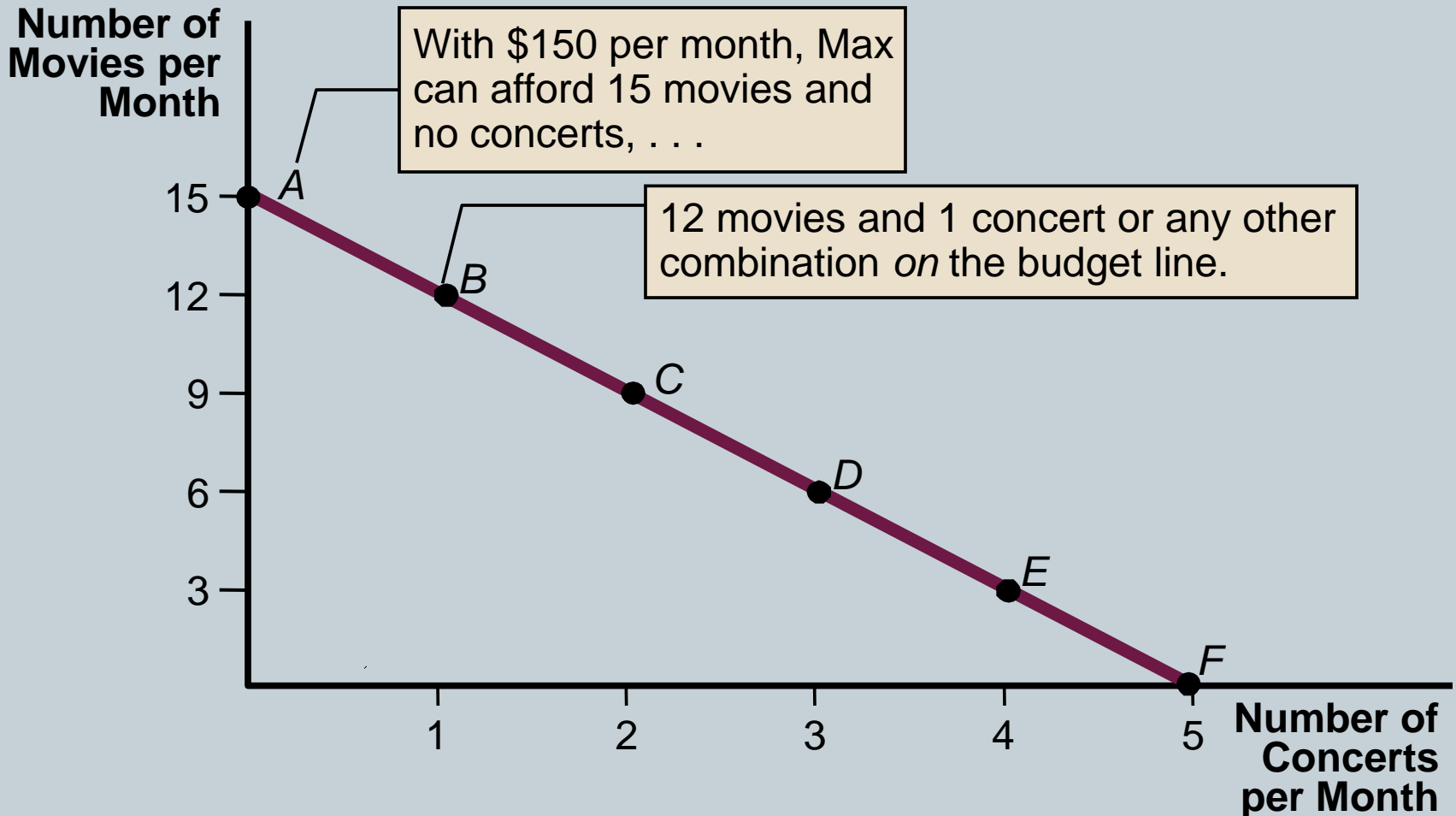
Utility and Marginal Utility

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- **Marginal utility of an additional unit**
 - Change in utility derived from consuming an additional unit of a good
- **The law of diminishing marginal utility, as defined by Alfred Marshall (1842-1924) states that**
 - Marginal utility of a thing to anyone diminishes with every increase in the amount of it he already has

Figure 1: The Budget Constraint

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Max's decision making

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Income = \$150 per month

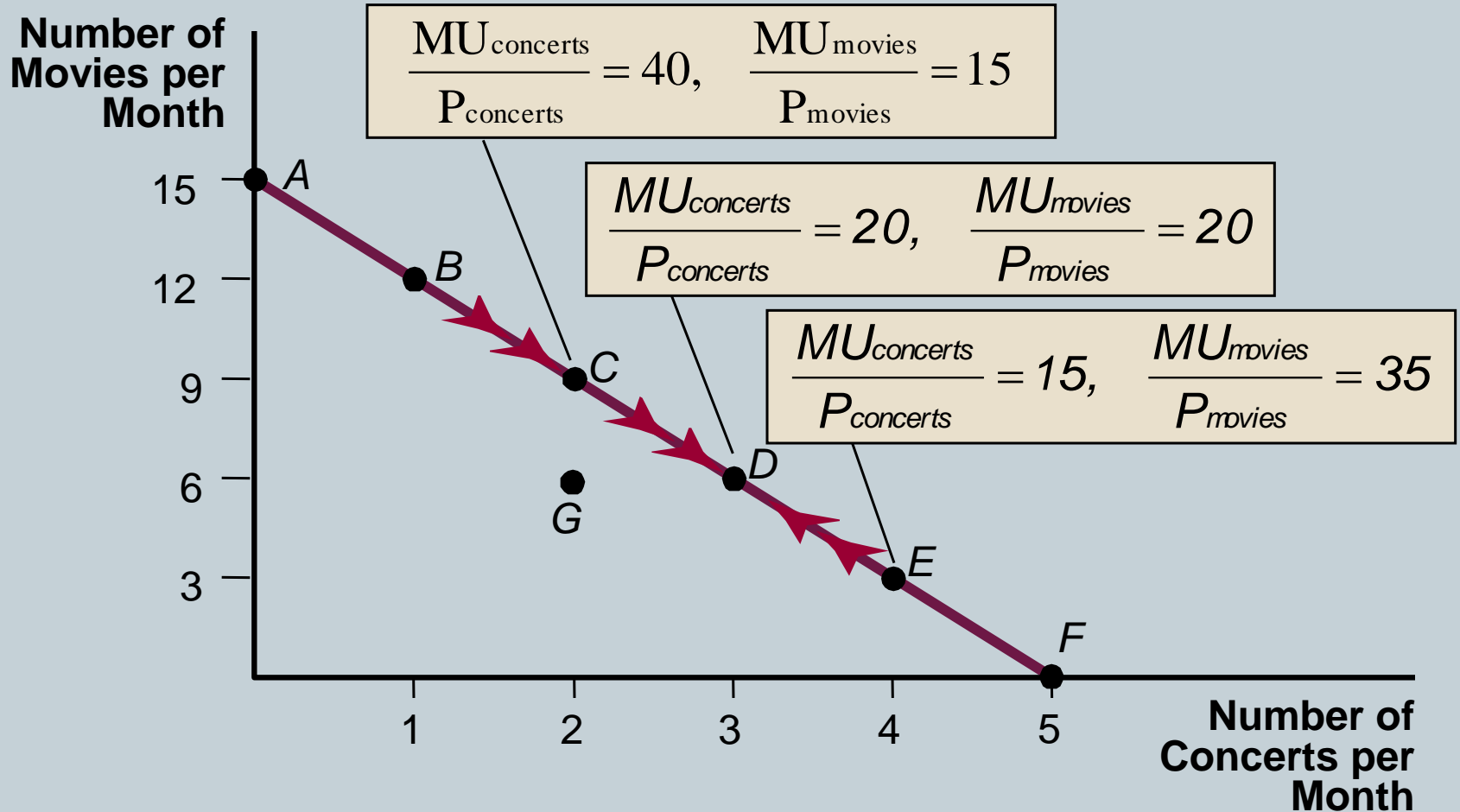
Concerts at \$30 each

Movies at \$10 each

Point on the budget line	No. of concerts per month	Marginal Utility from last concert	$\frac{MU_{\text{concerts}}}{P_{\text{concerts}}}$	No. of movies per month	Marginal Utility from last movie	$\frac{MU_{\text{movies}}}{P_{\text{movies}}}$
A	0			15	50	5
B	1	1,500	50	12	100	10
C	2	1,200	40	9	150	15
D	3	600	20	6	200	20
E	4	450	15	3	350	35
F	5	360	12	0		

Figure 4: Consumer Decision Making

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Changes In Price

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- A drop in the price of concerts rotates the budget line rightward, pivoting around its vertical intercept
- The consumer will select the combination of movies and concerts on his budget line that makes him as well off as possible
 - Will be combination at which marginal utility per dollar spent on both goods is the same

The Individual's Demand Curve

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- Curve showing quantity of a good or service demanded by a particular individual at each different price
- In theory, an individual's demand curve could slope upward
 - However, in practice this doesn't seem to happen

Income and Substitution Effects

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- Demand curve actually summarizes impact of two separate effects of price change on quantity demanded
 - Effects sometimes work together, and sometimes opposes each other
- Substitution effects
 - As the price of a good falls, the consumer substitutes that good in place of other goods whose prices have not changed
- Substitution effect of a price change arises from a change in the relative price of a good
 - And it always moves quantity demanded in the opposite direction to the price change
 - ✦ When price decreases (increases), substitution effect works to increase (decrease) quantity demanded

The Income Effect

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- A price cut gives consumer a gift, which is rather like an increase in income
- Income effect
 - As price of a good decreases, the consumer's purchasing power increases, causing a change in quantity demanded for the good
- Income effect of a price change arises from a change in purchasing power over both goods
 - A drop (rise) in price increases (decreases) purchasing power
- Income effect can work to either increase or decrease the quantity of a good demanded, depending on whether the good is normal or inferior

Normal Goods

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- Substitution and income effects work together
 - Causing quantity demanded to move in opposite direction of price
 - ✦ Normal goods must always obey law of demand

Inferior Goods

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- Substitution and income effects of a price change work against each other
 - Substitution effect moves quantity demanded in the opposite direction of the price
 - While income effect moves it in same direction of price
 - But since substitution effect virtually always dominates
 - ✦ Consumption of inferior goods will virtually always obey law of demand

Consumers in Markets

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- Since market demand curve tells us quantity of a good demanded by all consumers in a market
 - Can derive it by summing individual demand curves of every consumer in that market

Challenges to the Model

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- The model of consumer choice is quite versatile
 - Capable of adapting to more aspects of economic behavior than one might think
 - But certain types of behavior do not fit model at all
 - ✦ Violating our description of rational preferences

Behavioral Economics

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- Tries to incorporate approaches of psychology and sociology to answer economic questions
- Behavioral economists incorporate notions about people's actual thinking process in making decisions
 - Such behavior by large groups of people can alter a market's equilibrium
- We do observe many cases where behavior is not rational
 - However, we observe far more cases where it is
- While the questions raised by behaviorists are fascinating
 - Standard economic models work much better for most macroeconomic studies
- Behavioral economics is more commonly viewed as an addition to the existing body of economic theory, rather than a new independent field of study

Improving Education

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- Consumer theory can be extended to consider almost any decision between two alternatives including activities where cost is time rather than dollars
- Billions of dollars have been spent over the past few decades trying to improve the quality of education
- Economists find these studies highly suspect
 - Experimenters treat students as passive responders to stimuli

Improving Education

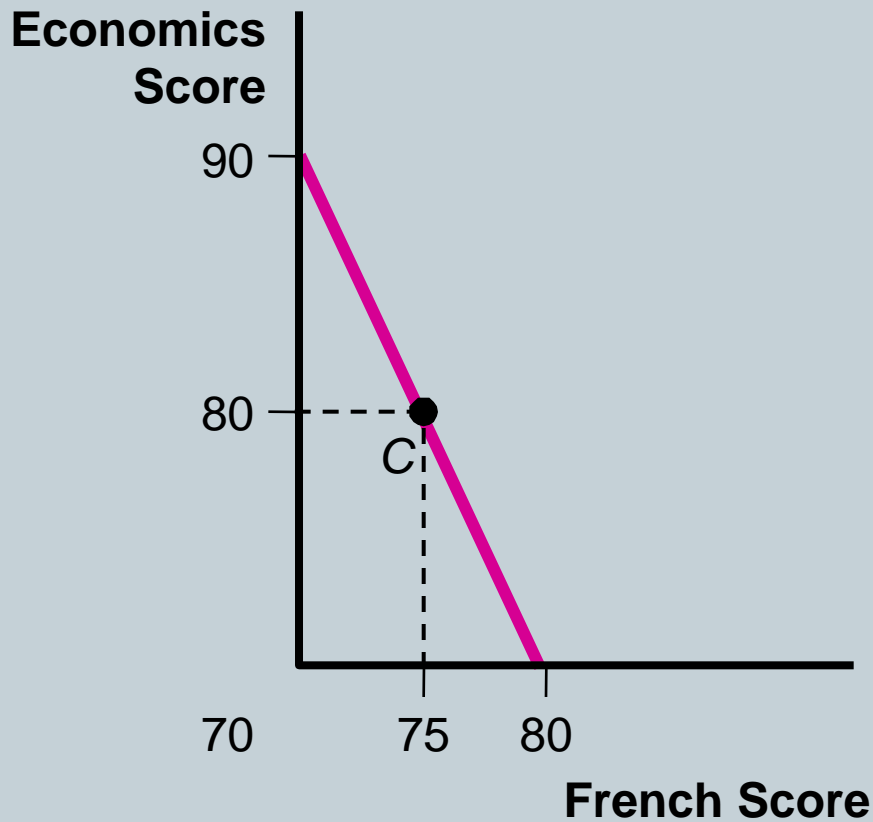
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- Let's apply our model of consumer choice to a student's time allocation problem
 - We'll assume there are only two activities
 - ✦ Studying economics
 - ✦ Studying French
- Each of these activities costs time and there is only so much time available
 - Students "buy" points on their exams with hours spent studying

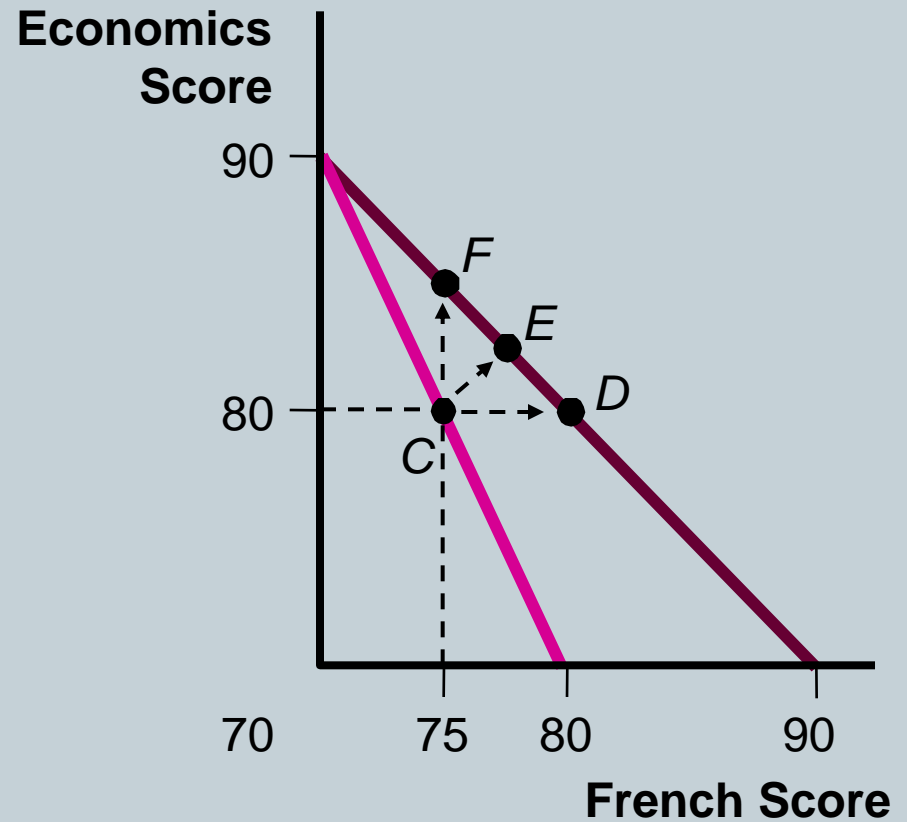
Figure 9: Time Allocation

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(a)



(b)



Improving Education

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- Let's introduce a new computer-assisted technique in the French class
 - It enables students to learn more French with the same study time or to study less and learn the same amount
 - ✦ It now takes fewer hours to earn a point in French
- Opportunity cost of an additional point in French is one point in economics rather than two

Improving Education

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- How can a new technique in the French course improve performance in economics but not at all in French
 - Substitution effect will tend to improve French score
 - If performance in French is a “normal good”
 - ✦ Increase in “purchasing power” will work to increase the French score
 - But if it is an “inferior good”
 - ✦ Could work to decrease the French score

Improving Education

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- Expect a student to choose a point somewhere between, with performance improving in both courses
- Leads to a general conclusion
 - When we recognize that students make choices, we expect only some of the impact of a better technique to show up in the course in which it is used
- Leads to the conclusion that we remain justified in treating this research with some skepticism