

Consumer Preferences

Designing New Automobiles (I)

- Growth of Japanese Imports
 - 1970's and 1980's
 - ◆ 15% of domestic cars underwent a style change each year
 - ◆ This compares to 23% for imports



Consumer Preferences

■ Utility

- **Utility:** Numerical score representing the satisfaction that a consumer gets from a given market basket.



Consumer Preferences

■ Utility

- If buying 3 copies of *Microeconomics* makes you happier than buying one shirt, then we say that the books give you more utility than the shirt.



Consumer Preferences

■ Utility Functions

- Assume:

The utility function for food (F) and clothing (C)

$$U(F,C) = F + 2C$$

Market Baskets:	F units	C units	$U(F,C) = F + 2C$
A	8	3	$8 + 2(3) = 14$
B	6	4	$6 + 2(4) = 14$
C	4	4	$4 + 2(4) = 12$

The consumer is indifferent to A & B

The consumer prefers A & B to C



Consumer Preferences

Utility Functions & Indifference Curves

Clothing
(units
per week)

Assume: $U = FC$

Market Basket

$U = FC$

C

$$25 = 2.5(10)$$

A

$$25 = 5(5)$$

B

$$25 = 10(2.5)$$

$U_3 = 100$ (Preferred to U_2)

$U_2 = 50$ (Preferred to U_1)

$U_1 = 25$

Food

(units per week)



Consumer Preferences

■ Ordinal Versus Cardinal Utility

- **Ordinal Utility Function:** places market baskets in the order of most preferred to least preferred, but it does not indicate how much one market basket is preferred to another.
- **Cardinal Utility Function:** utility function describing the extent to which one market basket is preferred to another.



Consumer Preferences

- Ordinal Versus Cardinal Rankings
 - The actual unit of measurement for utility is not important.
 - Therefore, an ordinal ranking is sufficient to explain how most individual decisions are made.



Budget Constraints

- Preferences do not explain all of consumer behavior.
- **Budget constraints** also limit an individual's ability to consume in light of the prices they must pay for various goods and services.



Budget Constraints

■ The Budget Line

- The **budget line** indicates all combinations of two commodities for which total money spent equals total income.



Budget Constraints

■ The Budget Line

- Let F equal the amount of food purchased, and C is the amount of clothing.
- Price of food = P_f and price of clothing = P_c
- Then $P_f F$ is the amount of money spent on food, and $P_c C$ is the amount of money spent on clothing.



Budget Constraints

- The budget line then can be written:

$$P_F F + P_C C = I$$



Budget Constraints

Market Basket	Food (F) $P_f = (\$1)$	Clothing (C) $P_c = (\$2)$	Total Spending $P_f F + P_c C = I$
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A	0	40	\$80
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B	20	30	\$80
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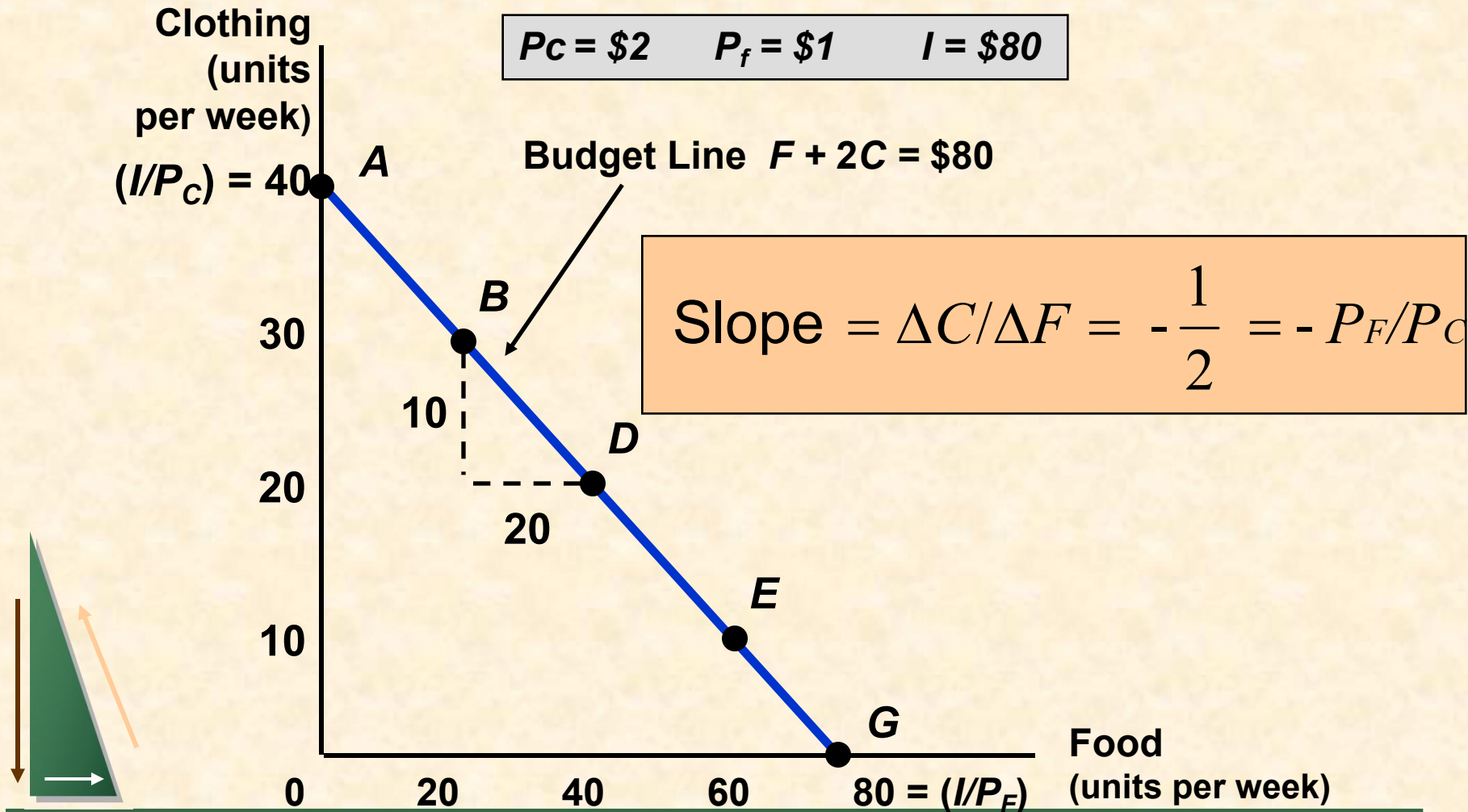
D	40	20	\$80
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E	60	10	\$80
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G	80	0	\$80
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Budget Constraints



Budget Constraints

■ The Budget Line

- As consumption moves along a budget line from the intercept, the consumer spends less on one item and more on the other.
- The slope of the line measures the relative cost of food and clothing.
- The slope is the negative of the ratio of the prices of the two goods.



Budget Constraints

■ The Budget Line

- The slope indicates the rate at which the two goods can be substituted without changing the amount of money spent.



Budget Constraints

■ The Budget Line

- The vertical intercept (I/P_C), illustrates the maximum amount of C that can be purchased with income I.
- The horizontal intercept (I/P_F), illustrates the maximum amount of F that can be purchased with income I.



Budget Constraints

- The Effects of Changes in Income and Prices
 - Income Changes
 - ◆ An increase in income causes the budget line to shift outward, parallel to the original line (holding prices constant).

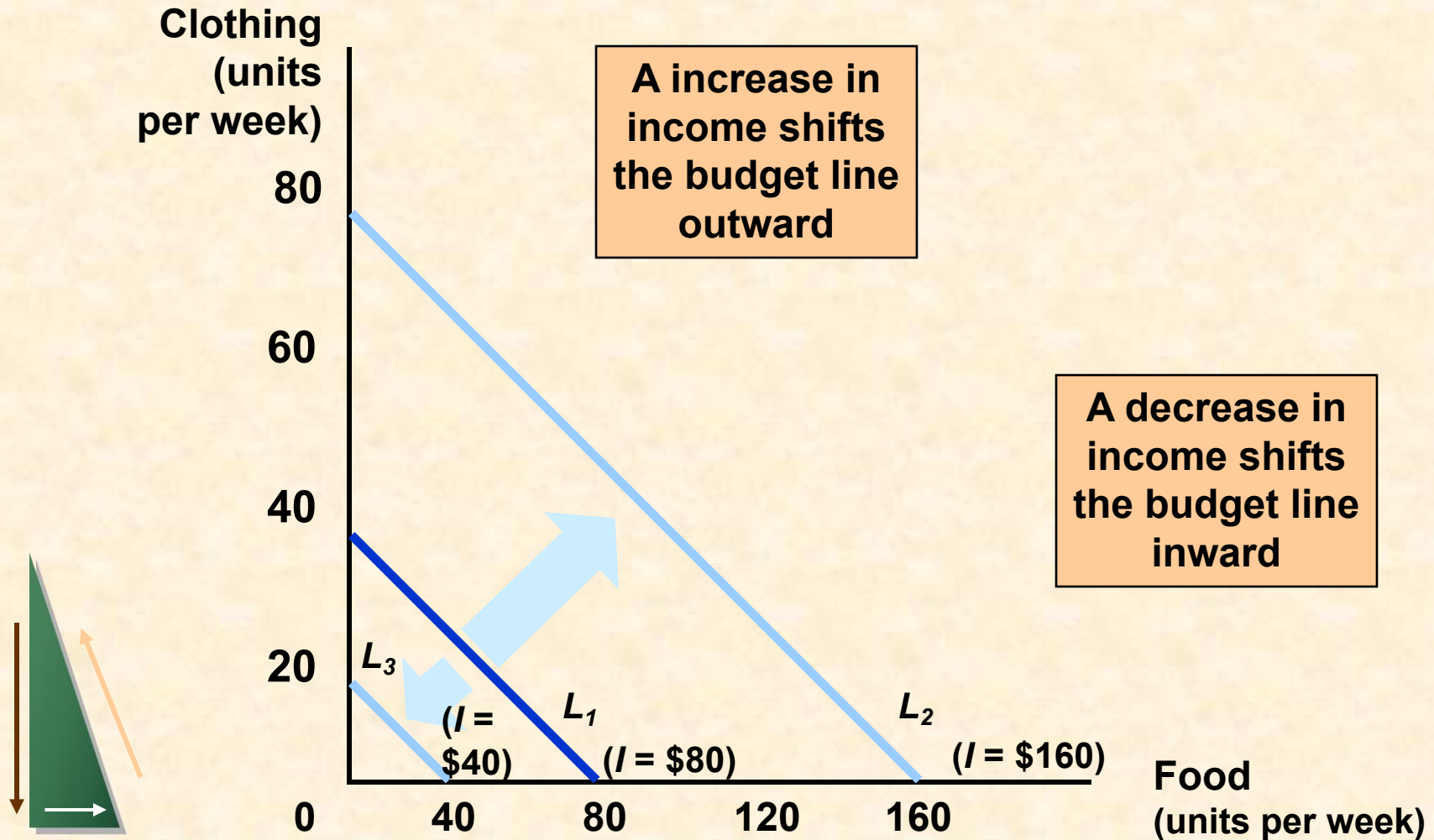


Budget Constraints

- The Effects of Changes in Income and Prices
 - Income Changes
 - ◆ A decrease in income causes the budget line to shift inward, parallel to the original line (holding prices constant).



Budget Constraints



Budget Constraints

- The Effects of Changes in Income and Prices
 - Price Changes
 - ◆ If the price of one good increases, the budget line shifts inward, pivoting from the other good's intercept.

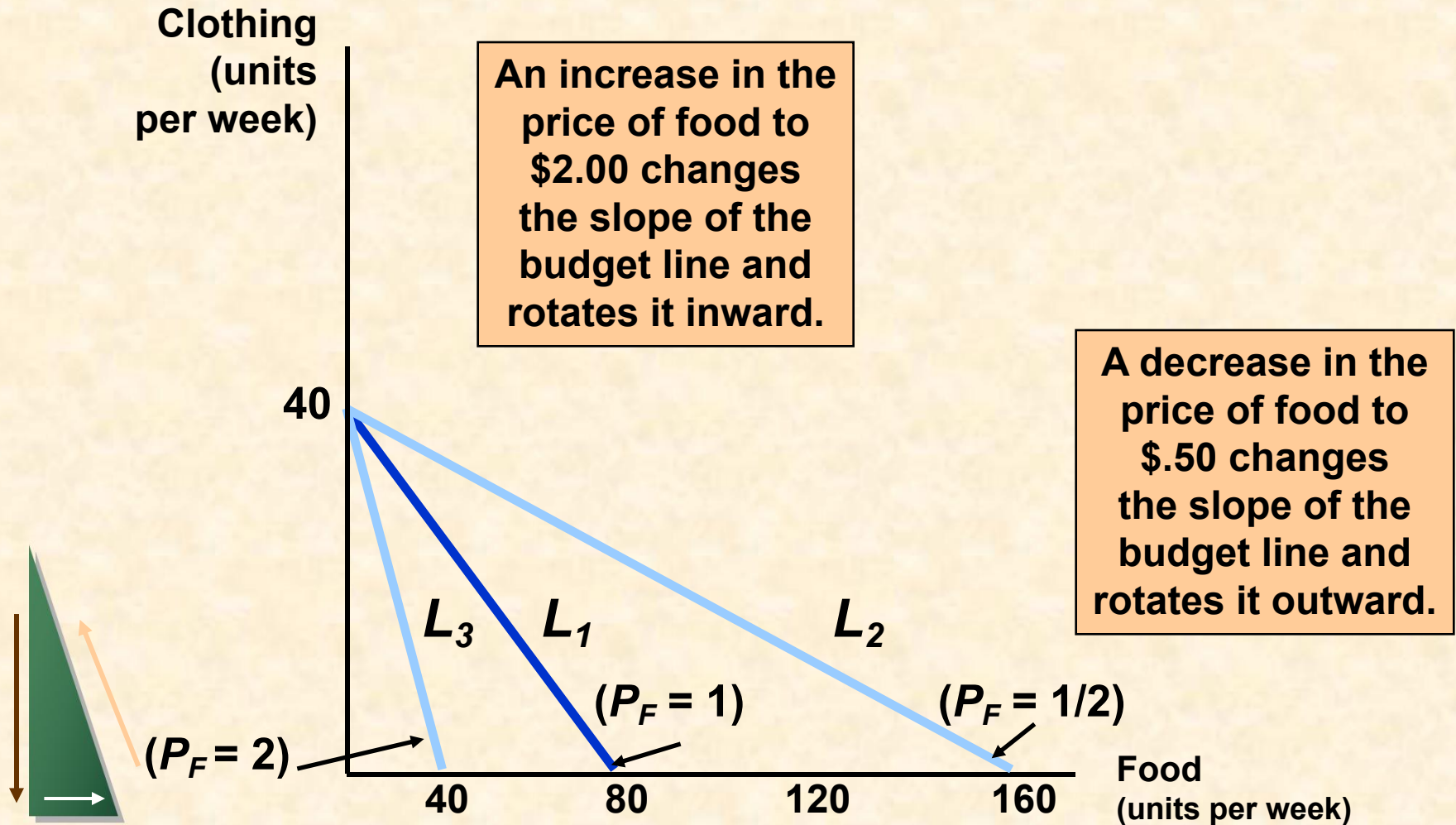


Budget Constraints

- The Effects of Changes in Income and Prices
 - Price Changes
 - ◆ If the price of one good decreases, the budget line shifts outward, pivoting from the other good's intercept.



Budget Constraints



Budget Constraints

- The Effects of Changes in Income and Prices
 - Price Changes
 - ◆ If the two goods increase in price, but the *ratio* of the two prices is unchanged, the slope will not change.



Budget Constraints

- The Effects of Changes in Income and Prices
 - Price Changes
 - ◆ However, the budget line will shift inward to a point parallel to the original budget line.



Budget Constraints

- The Effects of Changes in Income and Prices
 - Price Changes
 - ◆ If the two goods decrease in price, but the *ratio* of the two prices is unchanged, the slope will not change.



Budget Constraints

- The Effects of Changes in Income and Prices
 - Price Changes
 - ◆ However, the budget line will shift outward to a point parallel to the original budget line.



Consumer Choice

- Consumers choose a combination of goods that will maximize the satisfaction they can achieve, given the limited budget available to them.



Consumer Choice

- The maximizing market basket must satisfy two conditions:
 - 1) It must be located on the budget line.
 - 2) Must give the consumer the most preferred combination of goods and services.



Consumer Choice

Recall, the slope of an indifference curve is:

$$MRS = -\frac{\Delta C}{\Delta F}$$

Further, the slope of the budget line is:

$$Slope = -\frac{P_F}{P_C}$$



Consumer Choice

- Therefore, it can be said that satisfaction is maximized where:

$$MRS = \frac{P_F}{P_C}$$



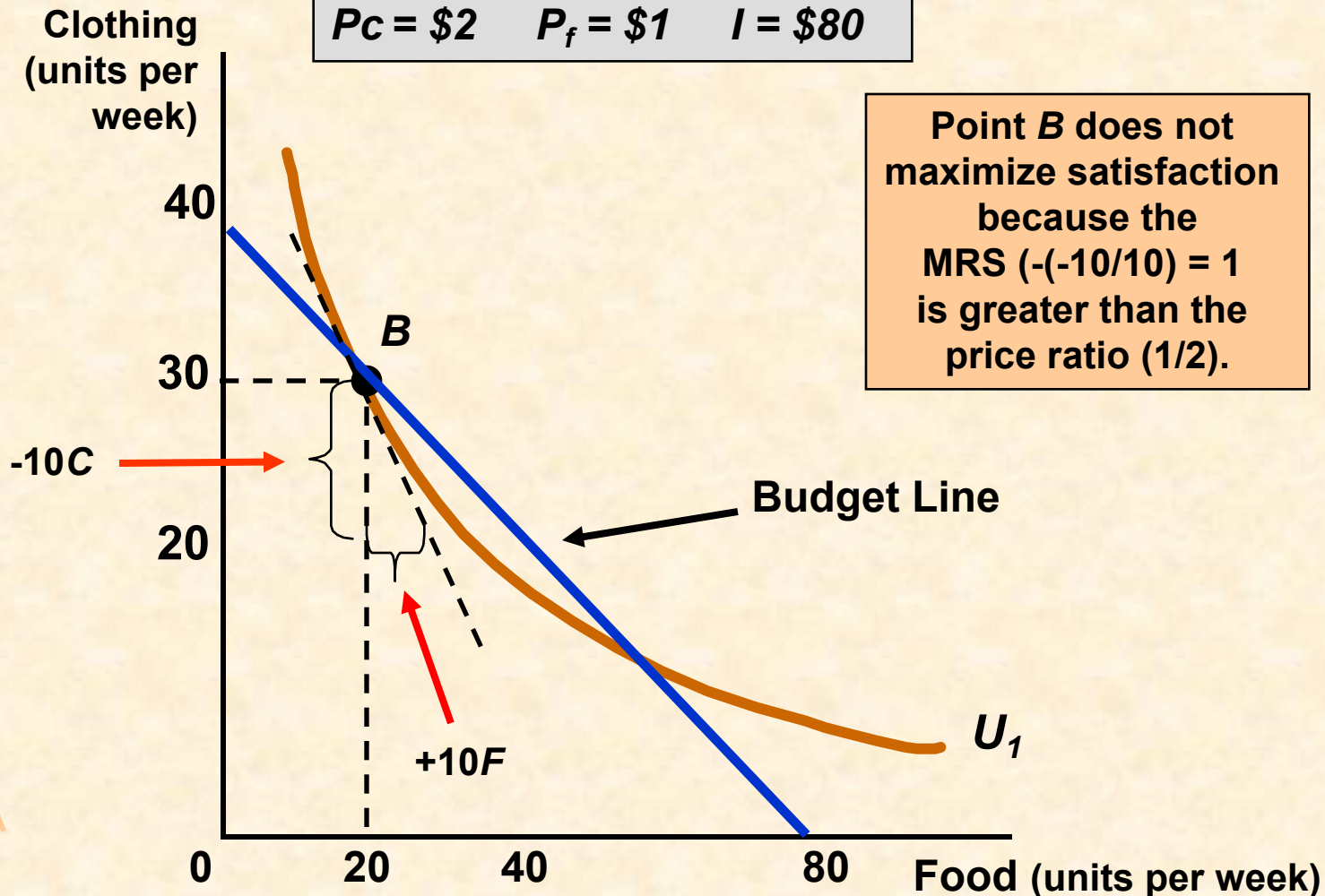
Consumer Choice

- It can be said that satisfaction is maximized when *marginal rate of substitution (of F and C) is equal to the ratio of the prices (of F and C)*.

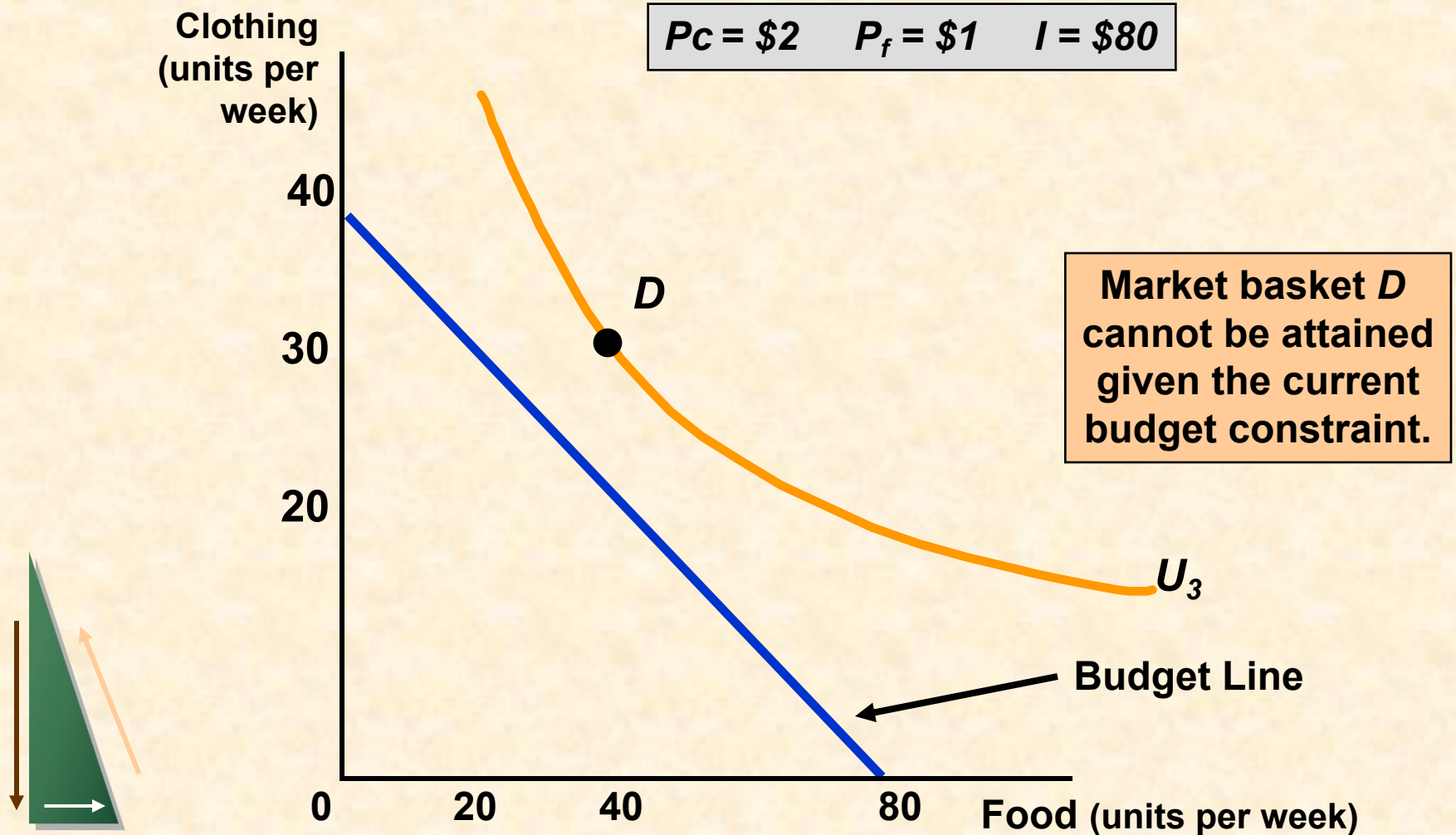


Consumer Choice

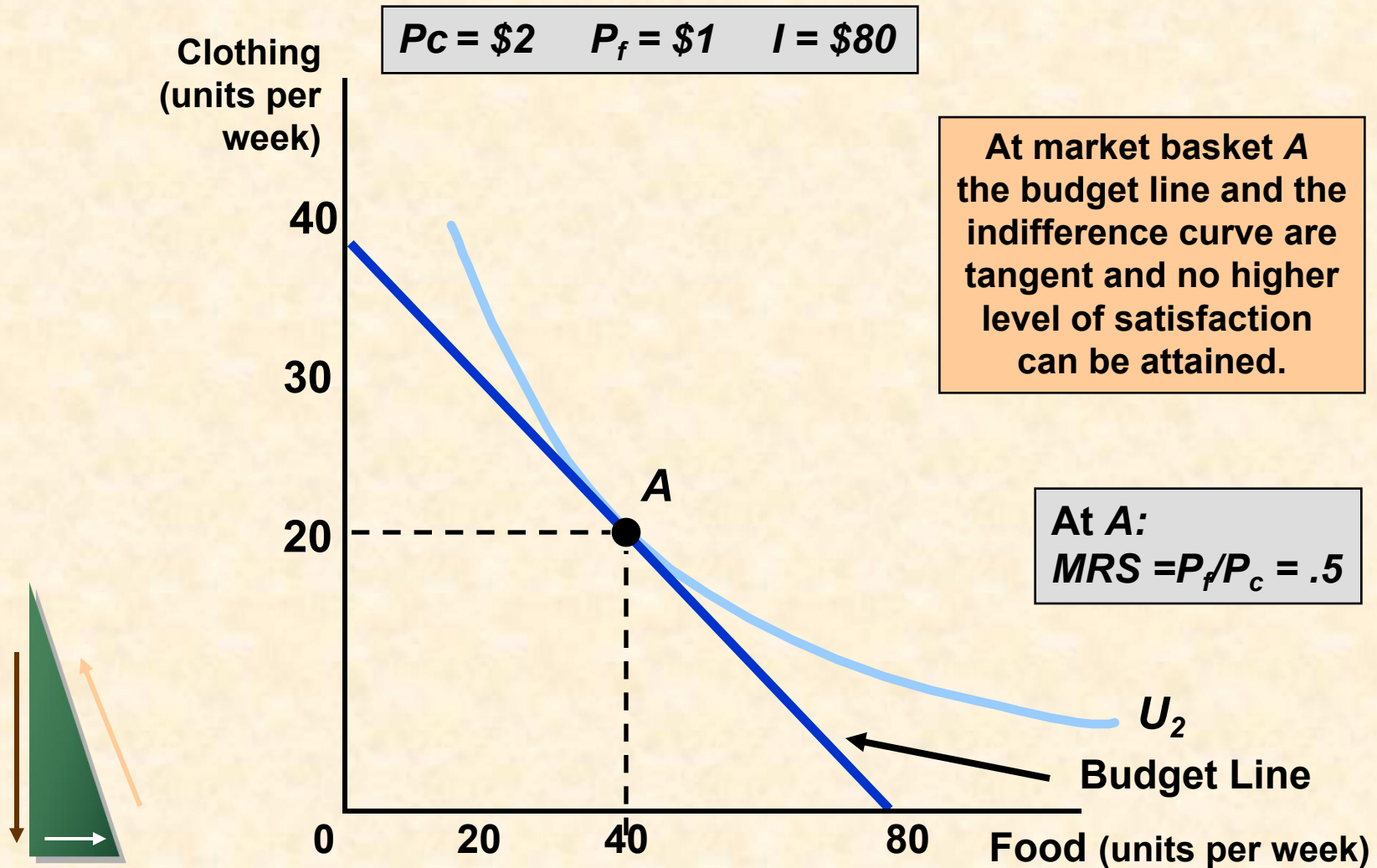
$$P_C = \$2 \quad P_F = \$1 \quad I = \$80$$



Consumer Choice



Consumer Choice



Consumer Choice

Designing New Automobiles (II)

- Consider two groups of consumers, each wishing to spend \$10,000 on the styling and performance of cars.
- Each group has different preferences.



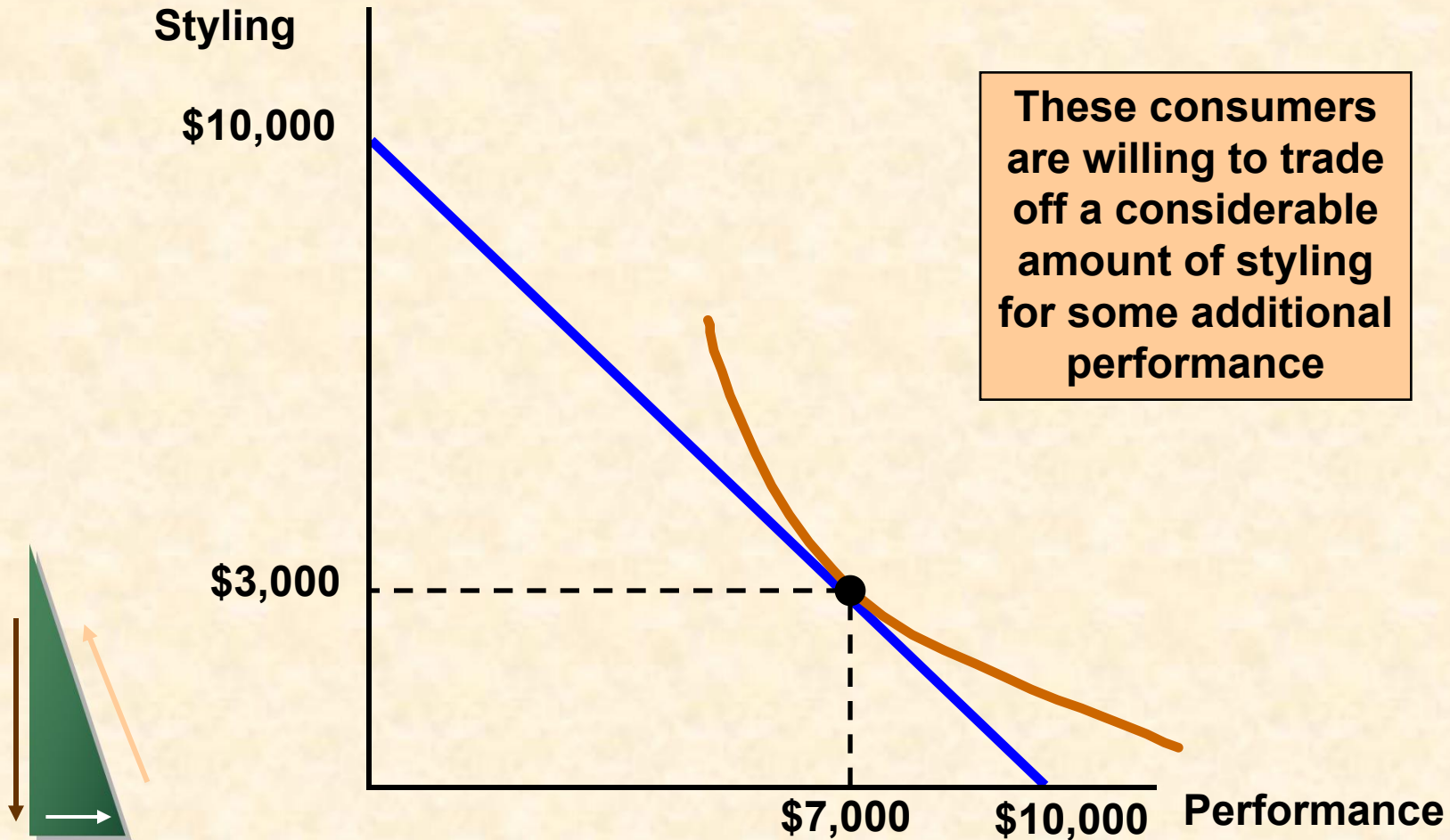
Consumer Choice

Designing New Automobiles (II)

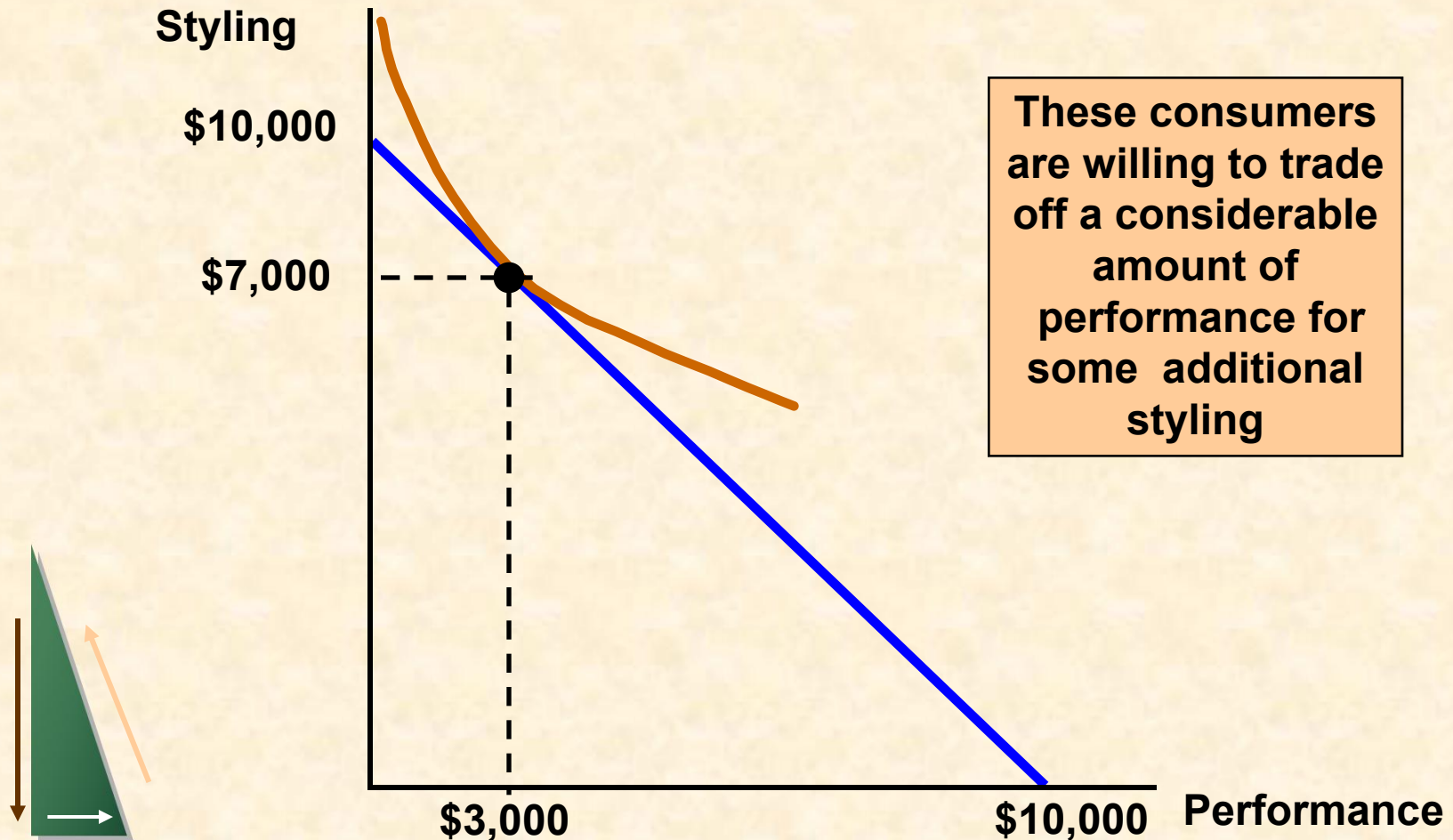
- By finding the point of tangency between a group's indifference curve and the budget constraint auto companies can design a production and marketing plan.



Designing New Automobiles (II)



Designing New Automobiles (II)



Consumer Choice

Decision Making & Public Policy

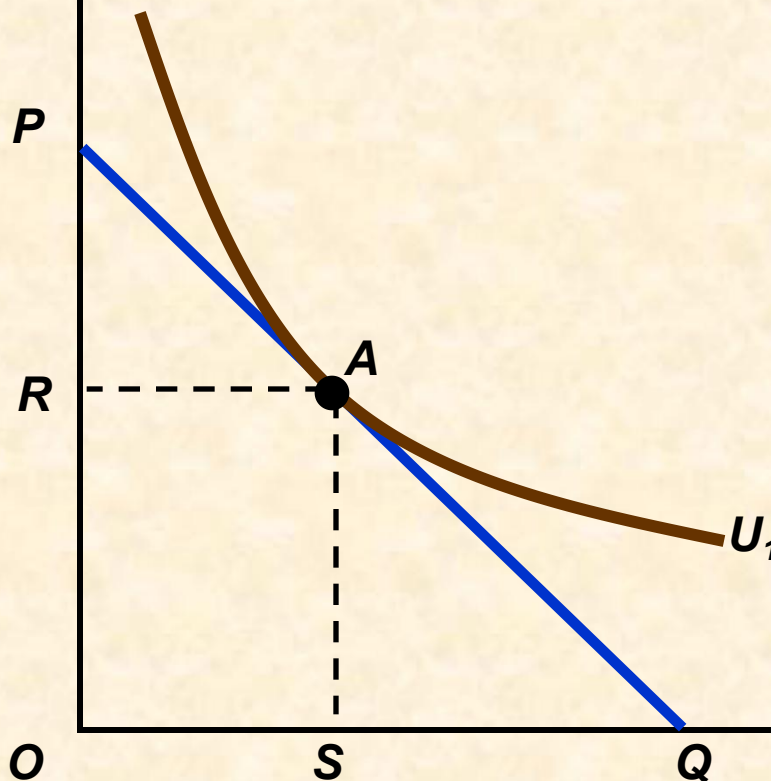
- Choosing between a non-matching and matching grant to fund police expenditures



Consumer Choice

Non-matching Grant

Private
Expenditures (\$)



Before Grant

- Budget line: PQ
- A: Preference maximizing market basket
- Expenditure
 - OR: Private
 - OS: Police