中级微观经济学

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Contents

章节 1. Introduction

What do we cover?

- Consumer Theory (Preferences, utility)
- Equilibrium
- Firm technology, Profit maximization
- Firm supply
- Market structure (competition, monopoly, oligopoly)
- Externalities and public goods
- Game Theory
- Information

Problem Set: 15%, Group presentation: 10%, Midterm: 30%, Final: 45%.

我们将主要使用 Varian (2014) 作为教材.

Examples:

- Airfare. Relationship between the ticket price and the departure time. High demand → Charging high price.
- Streaming Media. 2 Strategies: Membership subscription and Individual purchase(Pay-per-view).
- Charity-linked products.
- Urban Green.
- Electric Vehicles. Subsidize the purchase of electric vehicles.

章节 2. Consumer Theory

Economic Modeling:

- Who are the participants?
- Some assumptions:
  - Rational Choice: A person chooses the best alternative available.
  - Equilibrium: The market is in equilibrium.

Consumer Choice. → Preference

Consumers are assumed to choose the best bundle of goods they can afford.

- Best:
- Can afford: Allocated budget.

Consumption Choice Sets A consumption choice set is the collection of *all* consumption choices available to the consumer.

What constraints consumption choice?

- Budget
- Time
- Other resource limitations

Consumption Bundle A consumption bundle containing x_1 units of commodity 1, x_2 units of commodity 2 and so on up to x_n units of commodity n is denoted by the vector $(x_1, x_2, ..., x_n)$.

Assume commodity prices are $p_1, p_2, ..., p_n$.

Budget Constraints

$$p_1 x_1 + p_{x_2} + ... + p_n x_n \leq m \tag{2.1}$$

where m is the consumer's (disposable) income.

Budget Set

$$B(p_1, p_2, ..., p_n, m) \tag{2.2.1}$$

$$= \left\{(x_1, x_2, ..., x_n) |\ x_1 \geq 0, x_2 \geq 0, ..., x_n \geq 0, p_1 x_1 + p_{x_2} + ... + p_n x_n \leq m\right\} \tag{2.2.2}$$

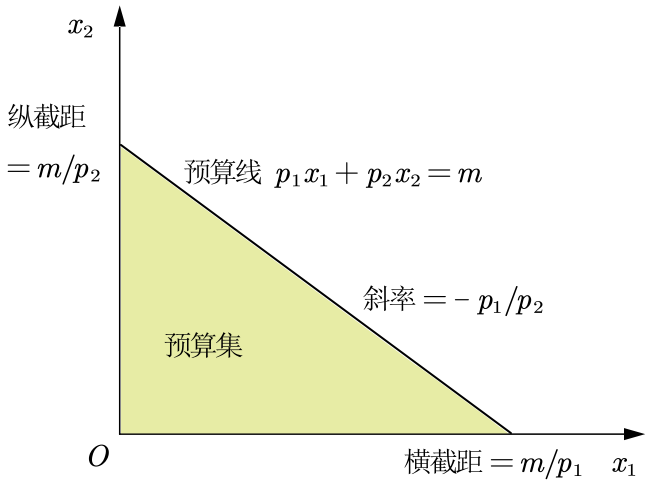

Figure 2.1: Budget Constraints

- Which is affordable? Unaffordable? Just affordable?

If $n = 3$ what do the budget constraints look like?

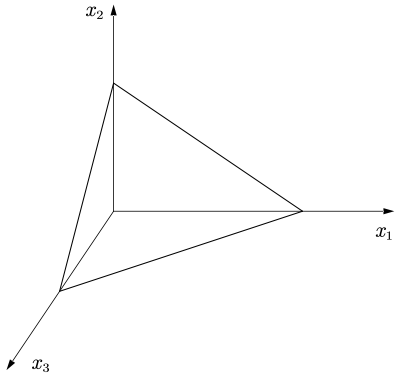

Figure 2.2: 3-dimensional Budget Constraints

In other words, opportunity cost of an extra unit of commodity 1 is p_1/p_2 units foregone of commodity 2.

Higher income gives more choice. improve consumer welfare.

enlarging, shrinking

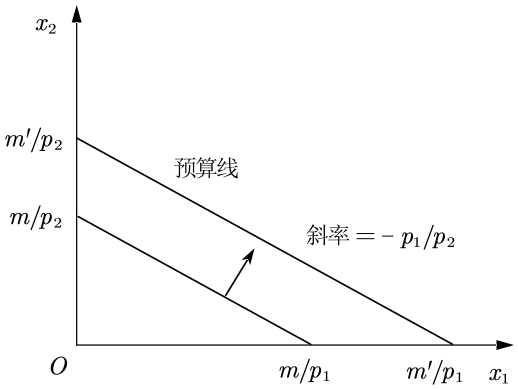

Figure 2.3: Higher Income

Increasing one price pivots the constraint inwards, reduces choice and will make the consumer worse off.

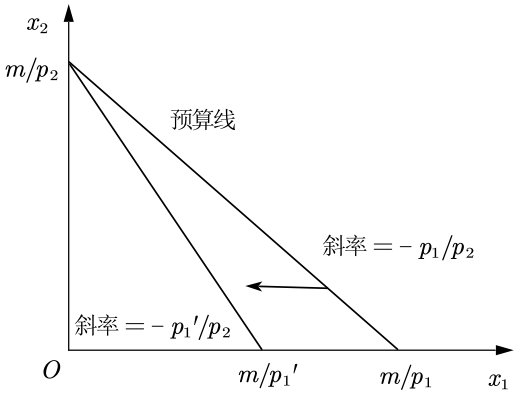

Figure 2.4: Increasing one price

- Q: If the economy is weak and so is consumer demand, what should the policy makers do to stimulate consumption?
- A: Reduce tax rate, sending cash to consumers. PRICE: subsidy.

Price changes: High demand, low supply.

2.1. *Ad Valorem* Sales Tax

Original price: $p \to$ New price: $(1+t)p$.

A uniform sales tax is applied uniformly to all goods.

$$(1+t)p_1x_1 + (1+t)p_2x_2 \leq m \tag{2.3.1}$$

$$\Rightarrow p_1x_1 + p_2x_2 \leq \frac{m}{1+t} \tag{2.3.2}$$

Remark: The tax essentially discount the income. And the equivalent income loss is

$$m - \frac{m}{1+t} = \frac{t}{1+t}m. \tag{2.4}$$

2.1.1. Example: The food stamp program

How does a commodity-specific gift such as a food stamp alters a family's budget constraint?

Suppose $m = 100$, $p_F = 1$ (food), "other goods" $p_G = 1$, the budget constrait is:

$$F + G \leq 100. \tag{2.5}$$

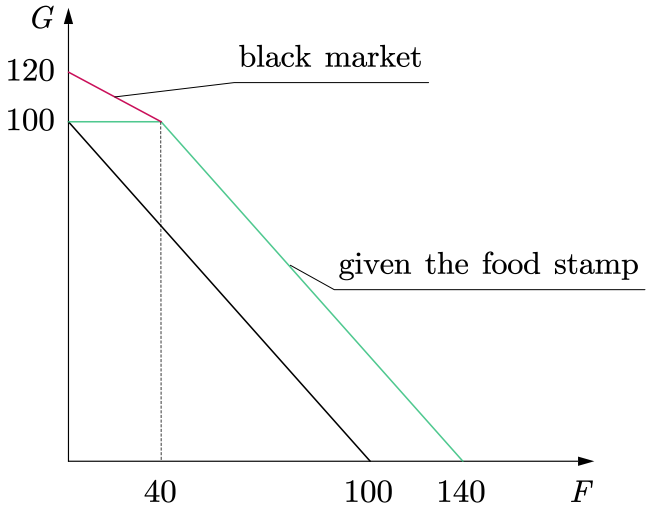

Figure 2.5: The food stamp program

Black market trading makes the budget set even larger. Black market improve consumer welfare.

2.2. Relative Price

Numeraire unit of account.

Changing the numeraire changes neither the budget constraint nor the budget set.

Any commodity can be chosen as the numeraire without changing the budget set or the budget constraint.

A straight line: constant relative price.

Quantity discounts:

Suppose $p_2 = 1$ is constant and $p_1 = 2$ when $0 \leq x_1 \leq 20$ and $p_1 = 1$ when $x_1 > 20$. The figure is like Figure 2.6.

Q: Is price always positive?

Commodity 1 is stinky garbage. You are paid \$2 per unit to accept it; $p_1 = -2, p_2 = 1$.

$$-2x_1 + x_2 \leq 10 \tag{2.6}$$

Like in Figure 2.7.

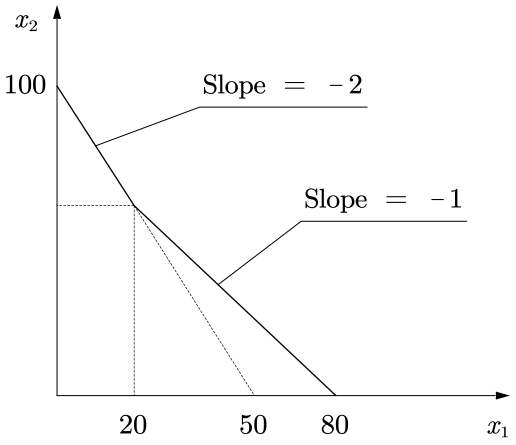

Figure 2.6: Quantity discounts

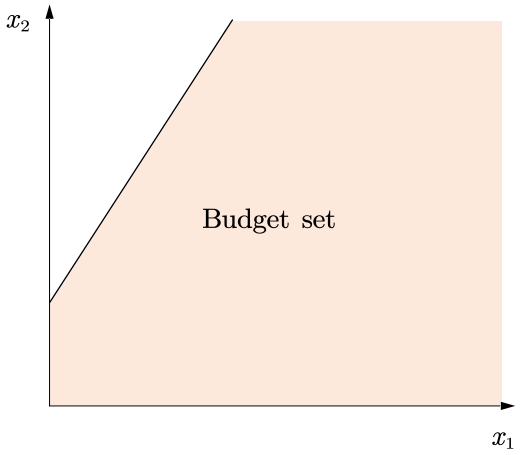

Figure 2.7: Negative prices

参考文献

Varian, H. R. (2014) *Intermediate Microeconomics: A Modern Approach*. 9th ed. New York: W.W. Norton & Company