

chapter:

10

>> The Rational Consumer

Krugman/Wells

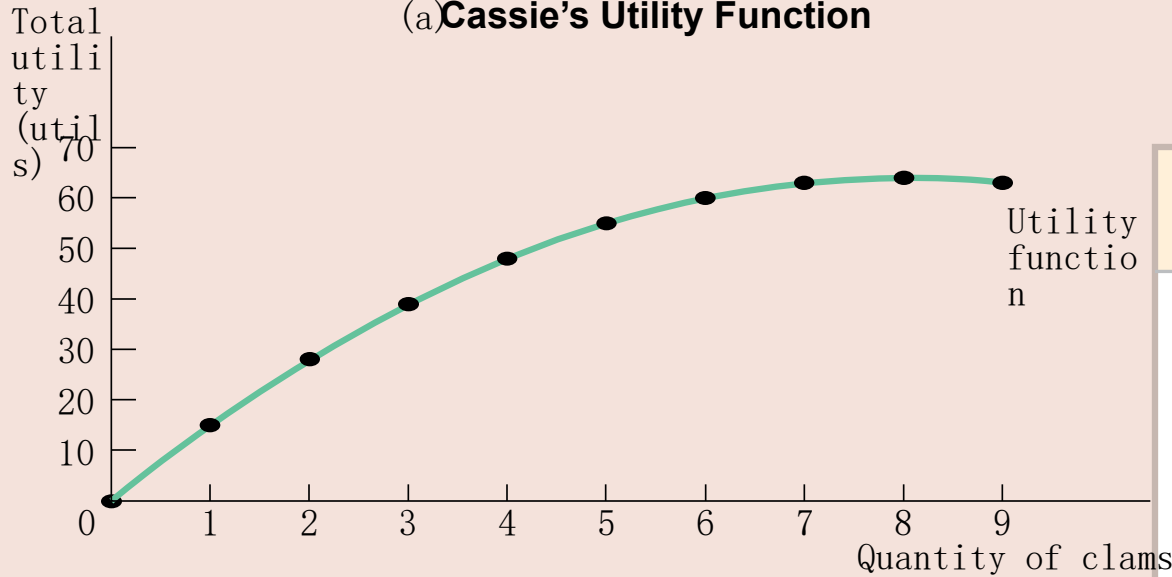
- How consumers choose to spend their income on goods and services
- Why consumers make choices by maximizing utility, a measure of satisfaction from consumption
- Why the principle of diminishing marginal utility applies to the consumption of most goods and services
- How to use marginal analysis to find the optimal consumption bundle
- What income and substitution effects are

Opportunity Cost and Decisions

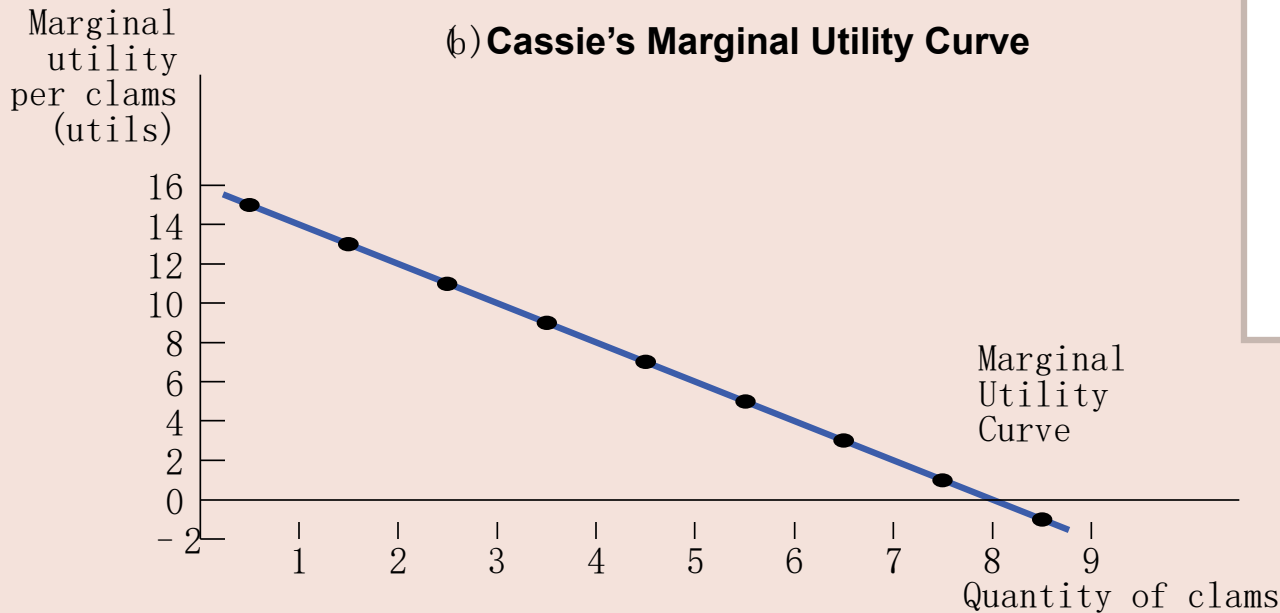
- The utility of a consumer is a measure of the satisfaction the consumer derives from consumption of goods and services.
- An individual's consumption bundle is the collection of all the goods and services consumed by that individual.
- An individual's utility function gives the total utility generated by his or her consumption bundle. The unit of utility is a util.

Cassie's Total Utility and Marginal Utility

(a) Cassie's Utility Function



(b) Cassie's Marginal Utility Curve



Quantity of clams	Total utility (utils)	Marginal utility per clam (utils)
0	0	15
1	15	13
2	28	11
3	39	9
4	48	7
5	55	5
6	60	3
7	63	1
8	64	-1
9	63	-1

Cassie's Total Utility and Marginal Utility

- Cassie's total utility depends on her consumption of fried clams.
- It increases until it reaches its maximum utility level of 64 utils at 8 clams consumed and decreases after that.
- The marginal utility curve slopes downward due to diminishing marginal utility; each additional clam gives Cassie less utility than the previous clam.

Cassie's Total Utility and Marginal Utility

- Note that the 9th clam is “too much.”



The Principle of Diminishing Marginal Utility

- The **marginal utility** of a good or service is the change in total utility generated by consuming one additional unit of that good or service. The **marginal utility curve** shows how marginal utility depends on the quantity of a good or service consumed.
- The **principle of diminishing marginal utility** says that each successive unit of a good or service consumed adds less to total utility than the previous unit.

Is Marginal Utility Really Diminishing?

Are all goods really subject to diminishing marginal utility? Of course not; there are a number of goods for which, at least over some range, marginal utility is surely increasing.

Examples are:

Downhill skiing, which involves more fear than enjoyment at the start, but then es pleasurable after its mastered.

People who are not accustomed to drinking coffee find it bitter.

If you need two rolls of wallpaper to finish a room, the marginal utility of the second roll is larger

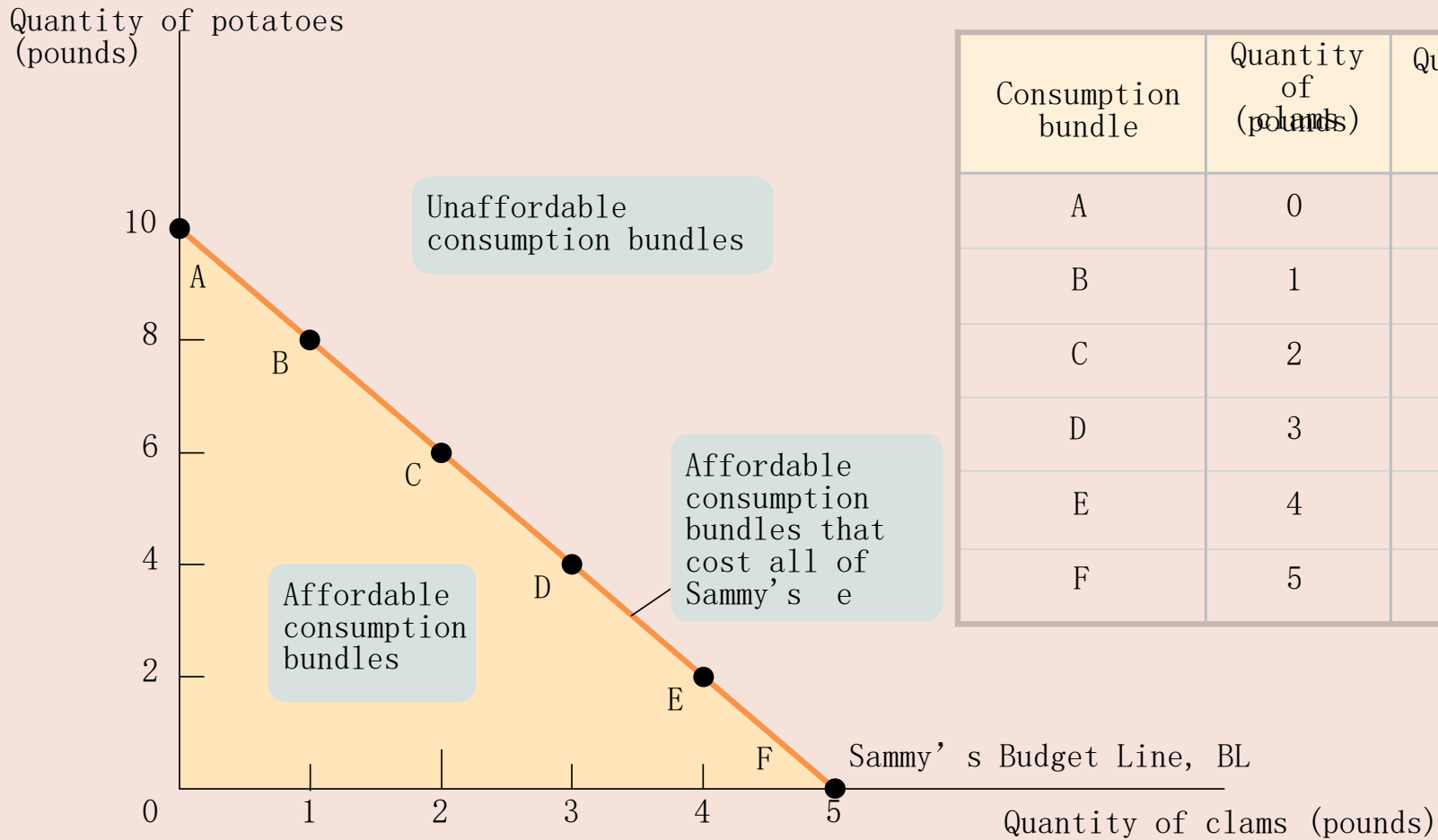
Oysters versus Chicken

- Is a particular food a special treat, something you consume on special occasions? Or is it an ordinary, take-it-or-leave-it dish? The answer depends a lot on how much of that food people normally consume, which determines how much utility they get at the margin from having a bit more.
- Unlike today, chicken was a luxury dish because chickens were expensive to raise. Also, oysters were very cheap and abundant and were regarded as poverty food.
- However, the emergence of new, technologically-advanced methods of raising and processing the birds made chicken abundant and cheap, while pollution destroyed many oyster beds, reduced supply, and human population growth increased demand.
- As such, oysters went from being common food to a luxury good while chicken took the reverse.

Budgets and Optimal Consumption

- A budget constraint requires that the cost of a consumer's consumption bundle be no more than the consumer's total e .
- A consumer's consumption possibilities is the set of all consumption bundles that can be consumed given the consumer's e and prevailing prices.
- A consumer's budget line shows the consumption bundles available to a consumer who spends all of his or her e .

The Budget Line



Consumption bundle	Quantity of clams (pounds)	Quantity of potatoes (pounds)
A	0	10
B	1	8
C	2	6
D	3	4
E	4	2
F	5	0

The budget line represents all the possible combinations of quantities of potatoes and clams that Sammy can purchase if he spends all of his e. It is also the boundary between the set of affordable consumption bundles (the consumption possibilities) and unaffordable ones.

Sammy's Utility from Clam and Potato Consumption

Utility from clam consumption		Utility from potato consumption	
Quantity of clams (pounds)	Utility from clams (utils)	Quantity of potatoes (pounds)	Utility from potatoes (utils)
0	0	0	0
1	15	1	11.5
2	25	2	21.4
3	31	3	29.8
4	34	4	36.8
5	36	5	42.5
		6	47.0
		7	50.5
		8	53.2
		9	55.2
		10	56.7

Optimal Consumption Choice

- The **optimal consumption bundle** is the consumption bundle that maximizes a consumer's total utility given his or her budget constraint.

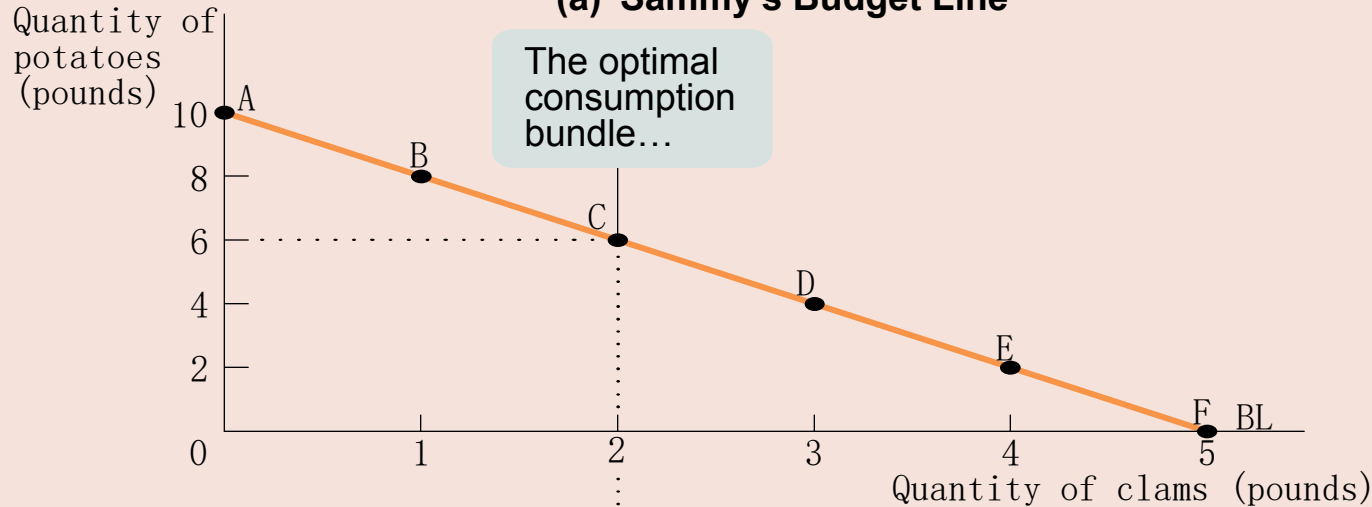
Sammy's Budget and Total Utility

Consumption Bundle	Quantity of clams (pounds)	Utility from clams (utils)	Quantity of potatoes (pounds)	Utility from potatoes (utils)	Total utility (utils)
<i>A</i>	0	0	10	56.7	56.7
<i>B</i>	1	15	8	53.2	68.2
<i>C</i>	2	25	6	47.0	72.0
<i>D</i>	3	31	4	36.8	67.8
<i>E</i>	4	34	2	21.4	55.4
<i>F</i>	5	36	0	0	36.0

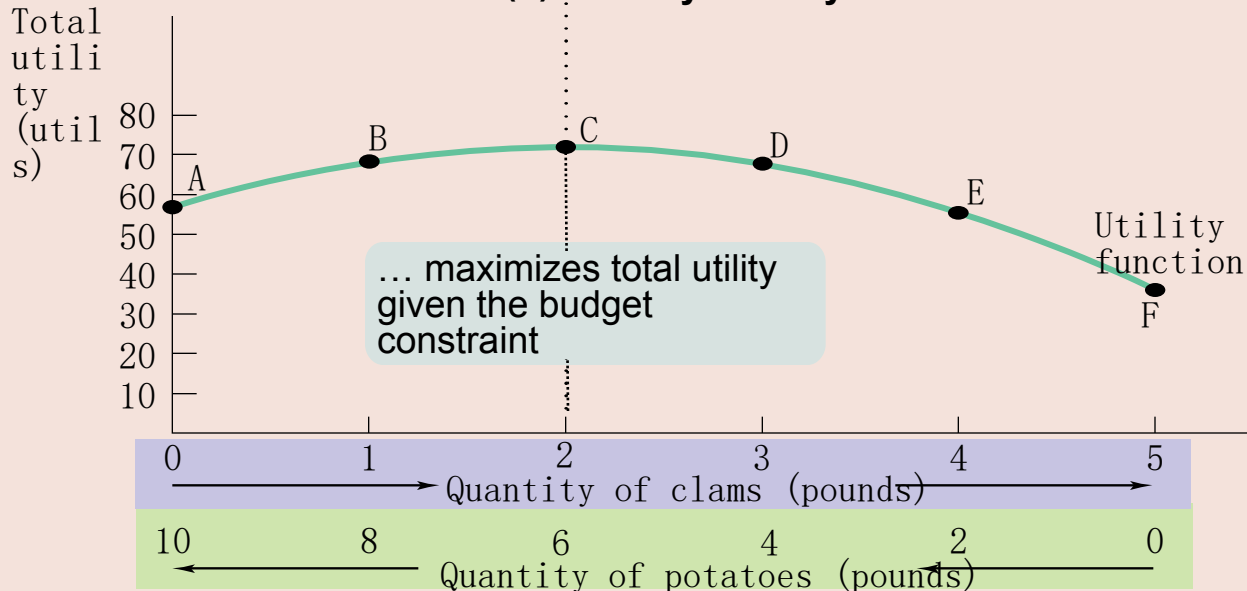
Sammy's total utility is the sum of the utility he gets from clams and the utility he gets from potatoes.

Optimal Consumption Bundle

(a) Sammy's Budget Line



(b) Sammy's Utility Function



Sammy's total utility is maximized at bundle C, where he consumes 2 pounds of clams and 6 pounds of potatoes. This is Sammy's *optimal consumption bundle*.

Food for Thought on Budget Constraints

Budget constraints aren't just about money. In fact, there are many other budget constraints affecting our lives.

Examples are:

Limited amount of closet space for clothes.

A fixed number of hours in a day.

A dieter on the Weight Watchers plan is only allowed a maximum number of points regarding the food they can eat each day whereby each food is assigned a certain number of points.

The dieter is just like a consumer choosing a consumption bundle: points are the equivalent

The Consumption Possibilities of American Workers, 1895-2000

Over the past century, the consumption possibilities of the average American worker have increased radically as the nation has become vastly richer.

According to Economist DeLong,

In 1895, an average worker's annual income would have bought 7.7 one-speed bicycles; in 2000, it would have bought 278 bicycles.

In 1895, the worker's annual income would have bought 45 full sets of dinner plates; in 2000, it would have bought 556 sets.

In 1895, an average worker's annual income would have bought 0.83 of a Steinway piano; in 2000, it would have bought 1.8 pianos.

By any standard, the average American's consumption

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