

Microeconomics 1: Consumer

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Consumer Theory

- The Consumer Theory is a study of consumption behavior of an individual agent.
- A consumption/saving decision of a consumer is to solve an *intertemporal allocation* problem of income resources over time.
- In economics, we assume that a consumer maximizes his/her utility subject to the budget constraint.

The Two-Period Model

- A *representative* consumer considers spending his/her income for consumption across the present and the future periods.
- As “periods” we can consider today/tomorrow, this year/next year, young/old, or anything else.

The Budget Constraint

- A consumer's spending pattern must be limited by his present income and future income.

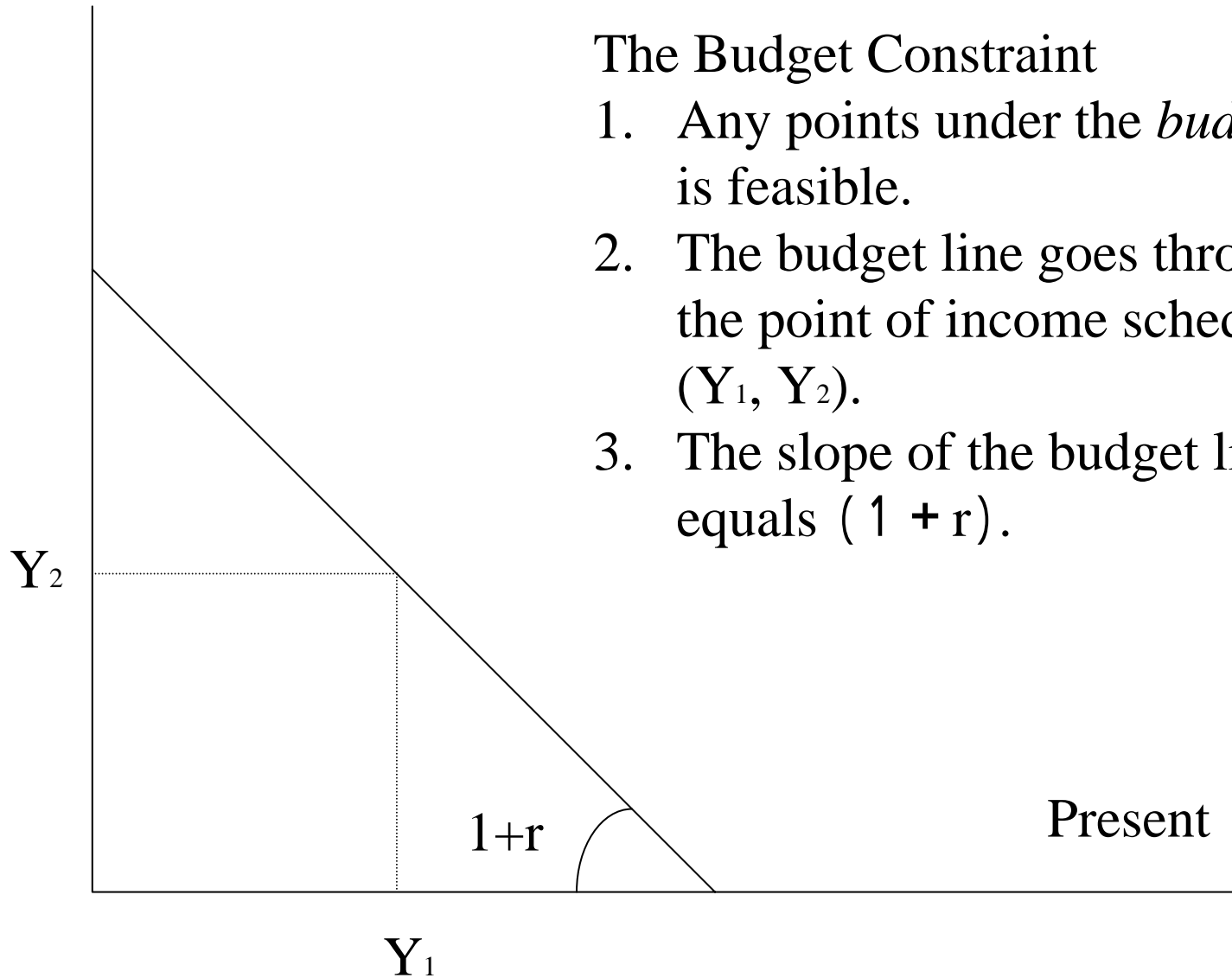
$$C_1 + S = Y_1$$

$$C_2 = Y_2 + (1 + r)S$$

Combining the budget constraints of the two periods, we have an intertemporal budget constraint as follows.

$$C_1 + \left(\frac{1}{1+r}\right)C_2 = Y_1 + \left(\frac{1}{1+r}\right)Y_2$$

Future



The Budget Constraint

1. Any points under the *budget line* is feasible.
2. The budget line goes through the point of income schedule, (Y_1, Y_2) .
3. The slope of the budget line equals $(1 + r)$.

Preference

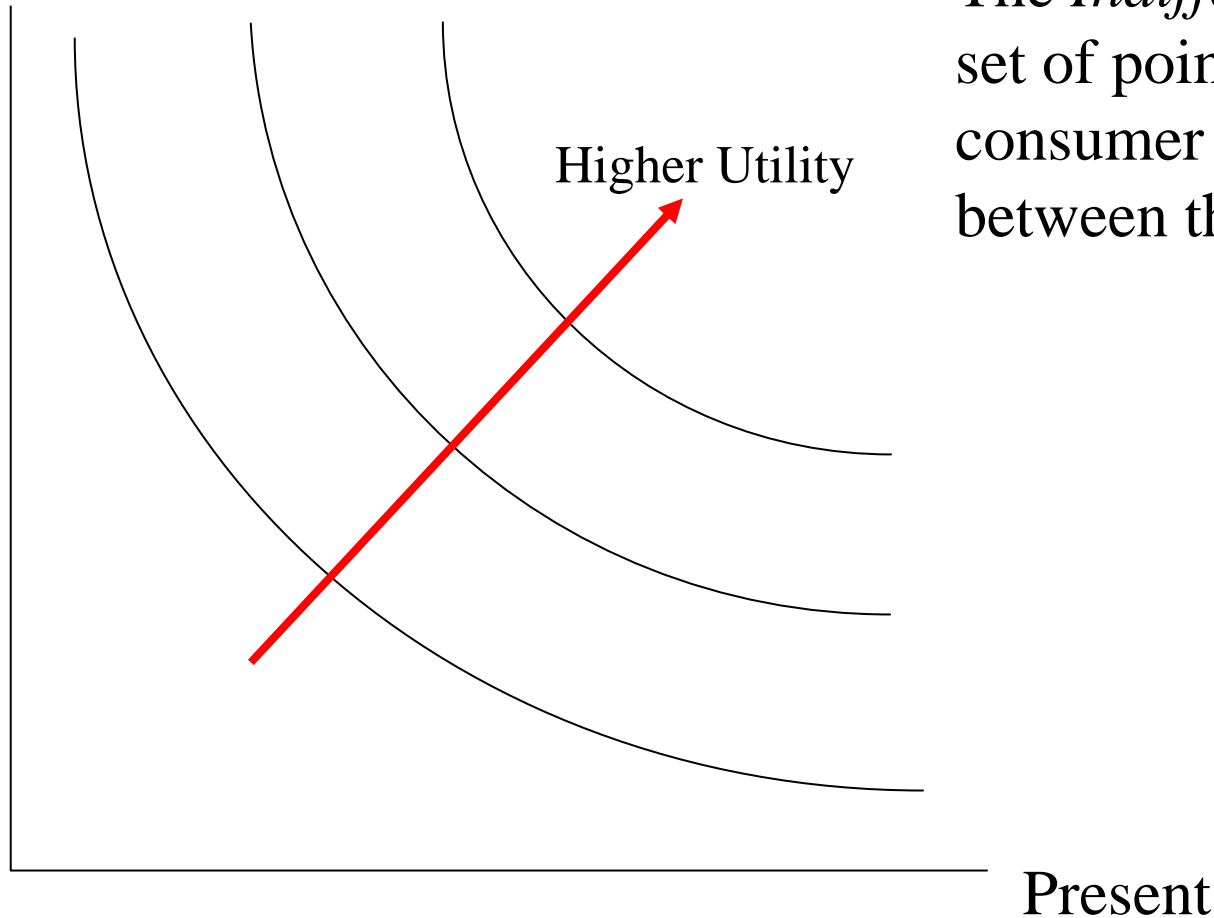
- A consumer has his/her own preference (utility function) on consumption across present and future periods. A consumer's problem is written as follows

$$\max u(C_1, C_2)$$

subject to

$$C_1 + \left(\frac{1}{1+r} \right) C_2 = Y_1 + \left(\frac{1}{1+r} \right) Y_2$$

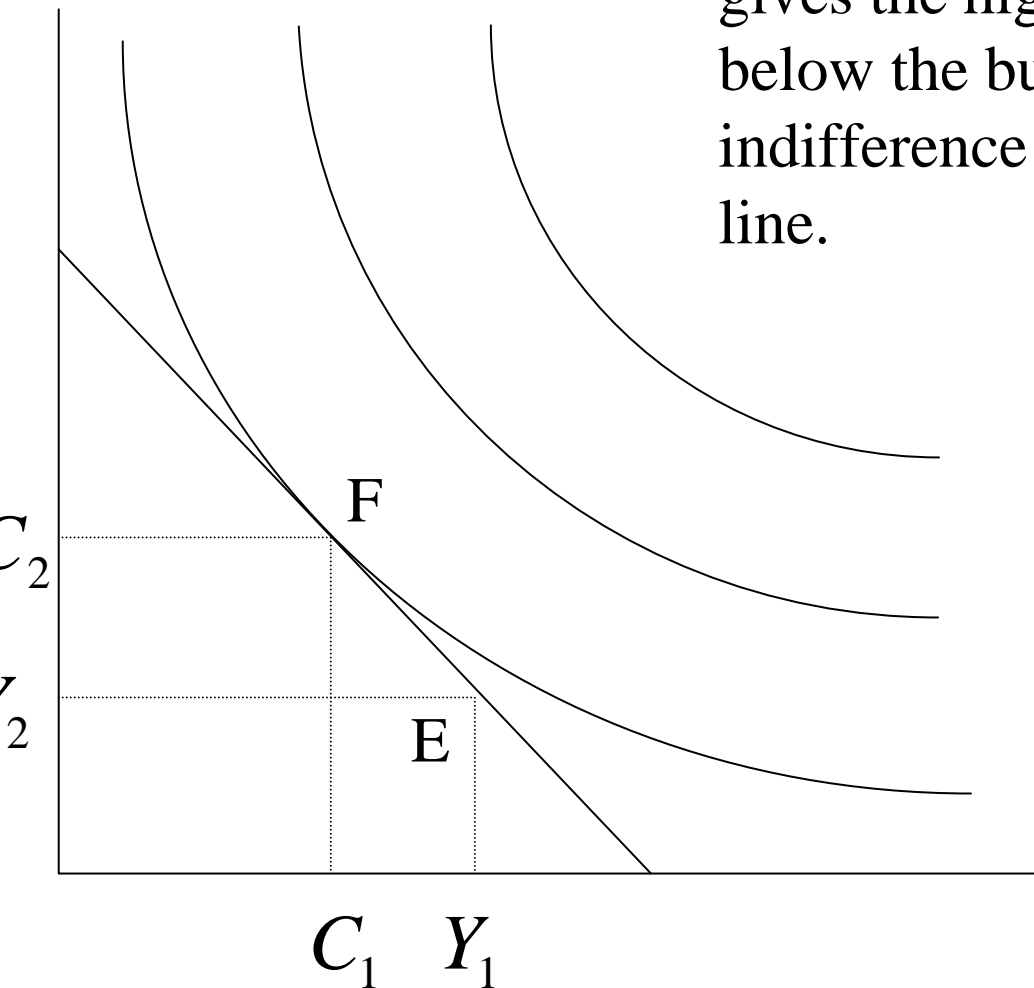
Future



The *Indifference Curve* is a set of points at which the consumer is indifferent between the two goods.

Future

The consumer chooses the point that gives the highest utility among the points below the budget line. At that point, the indifference curve is tangent at the budget line.



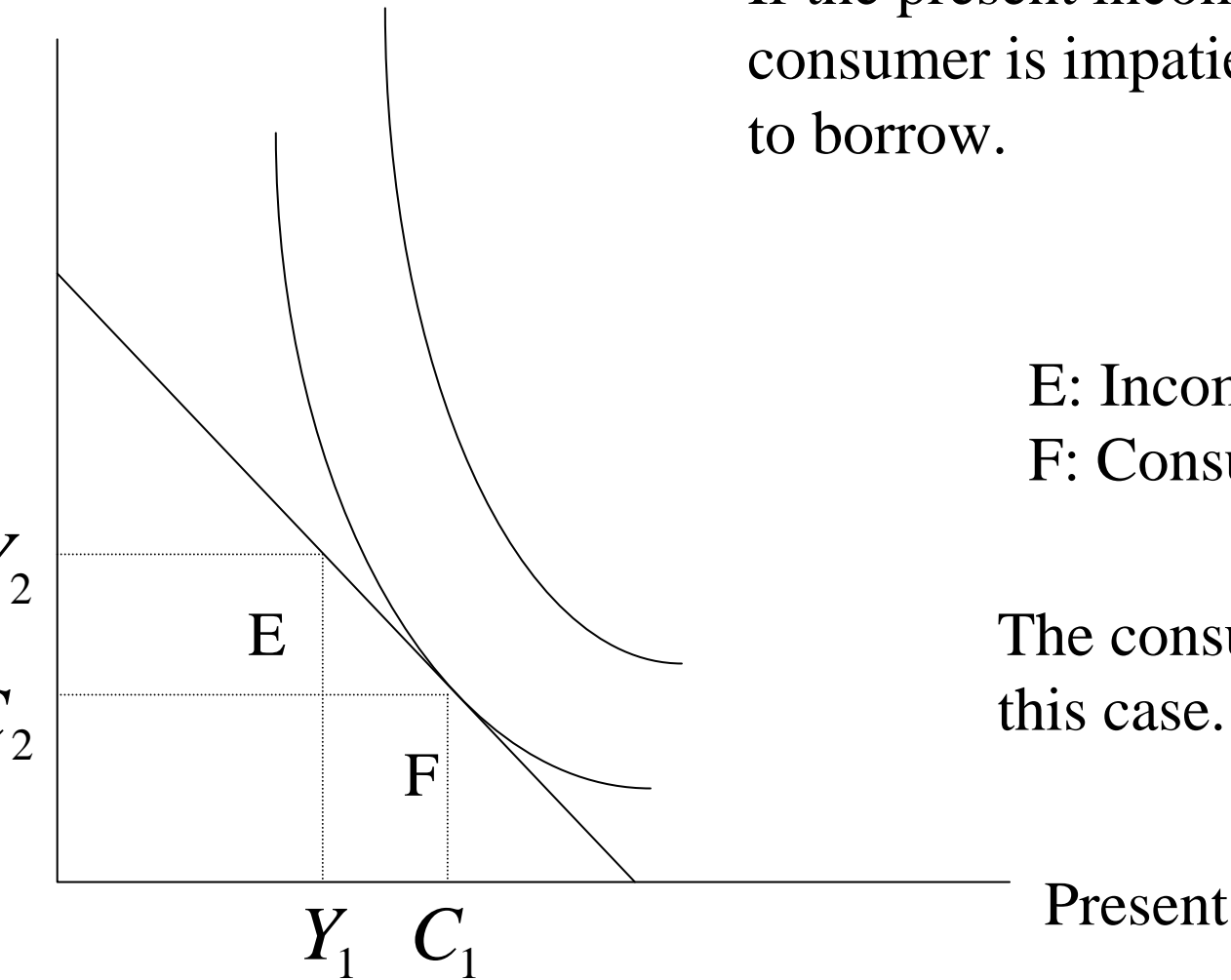
E: Income Point

F: Consumption Point

The consumer saves in this case.

Present

Future



If the present income is low, or the consumer is impatient, he can choose to borrow.

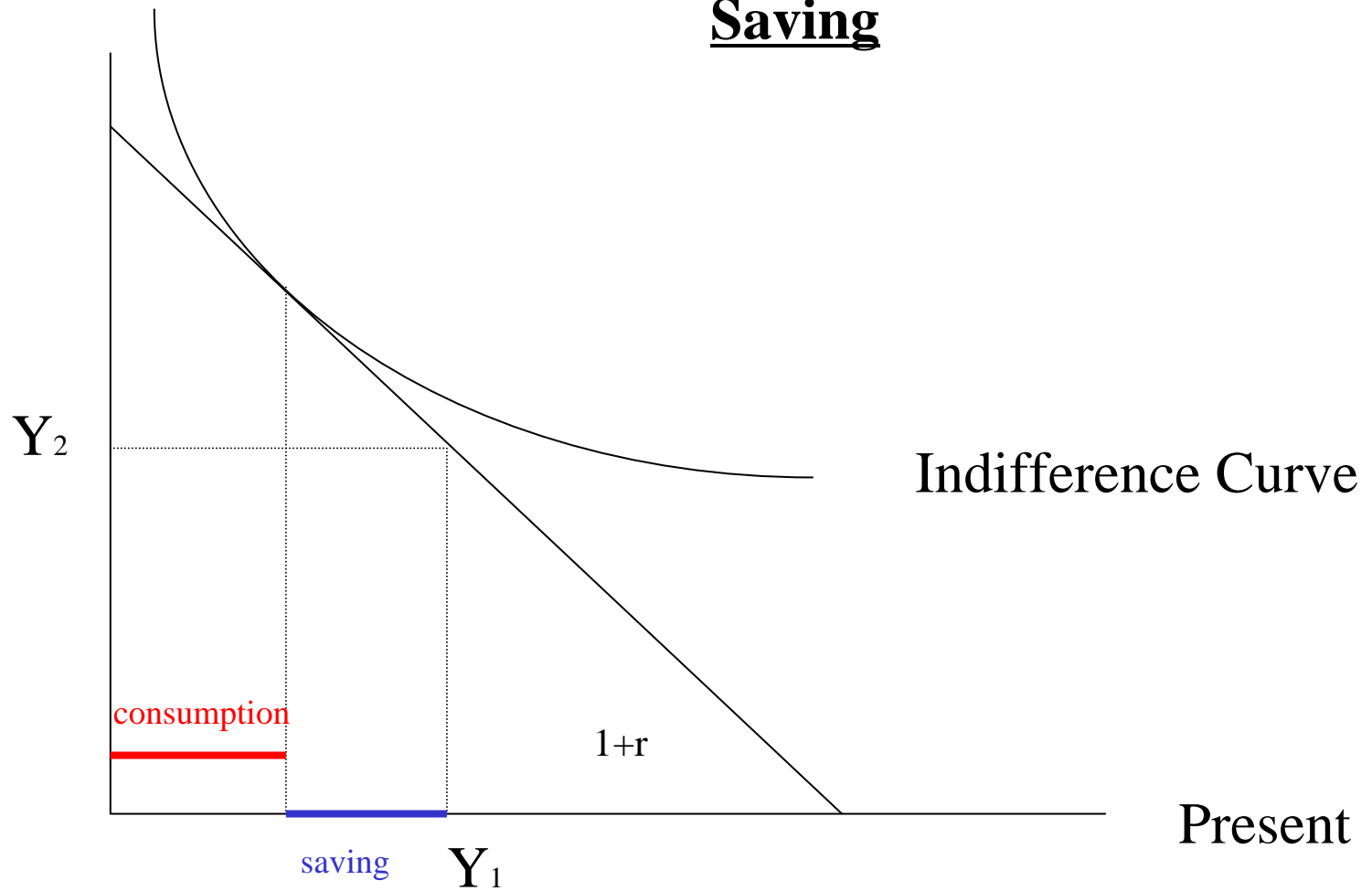
E: Income Point

F: Consumption Point

The consumer borrows in this case.

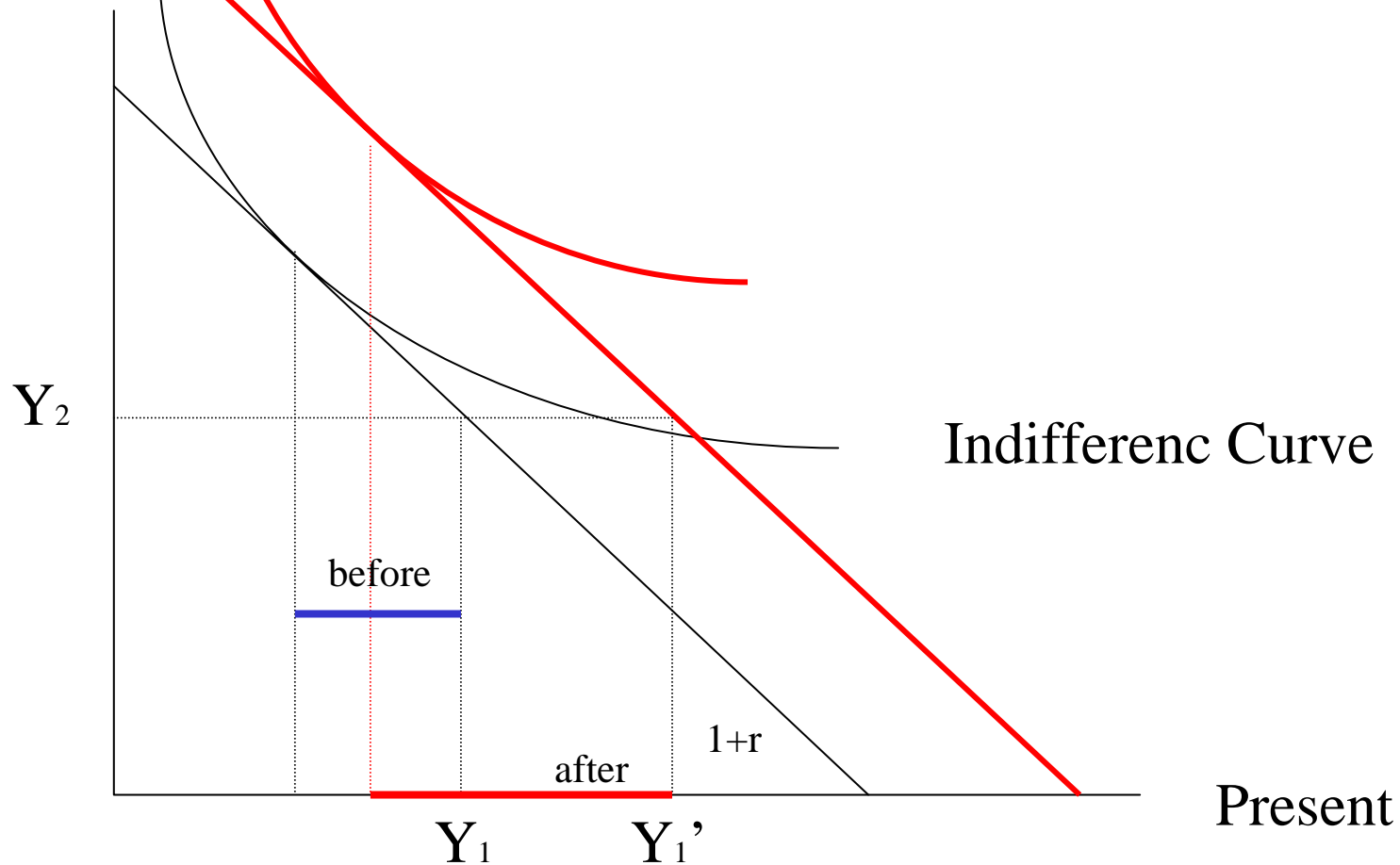
Future

Saving

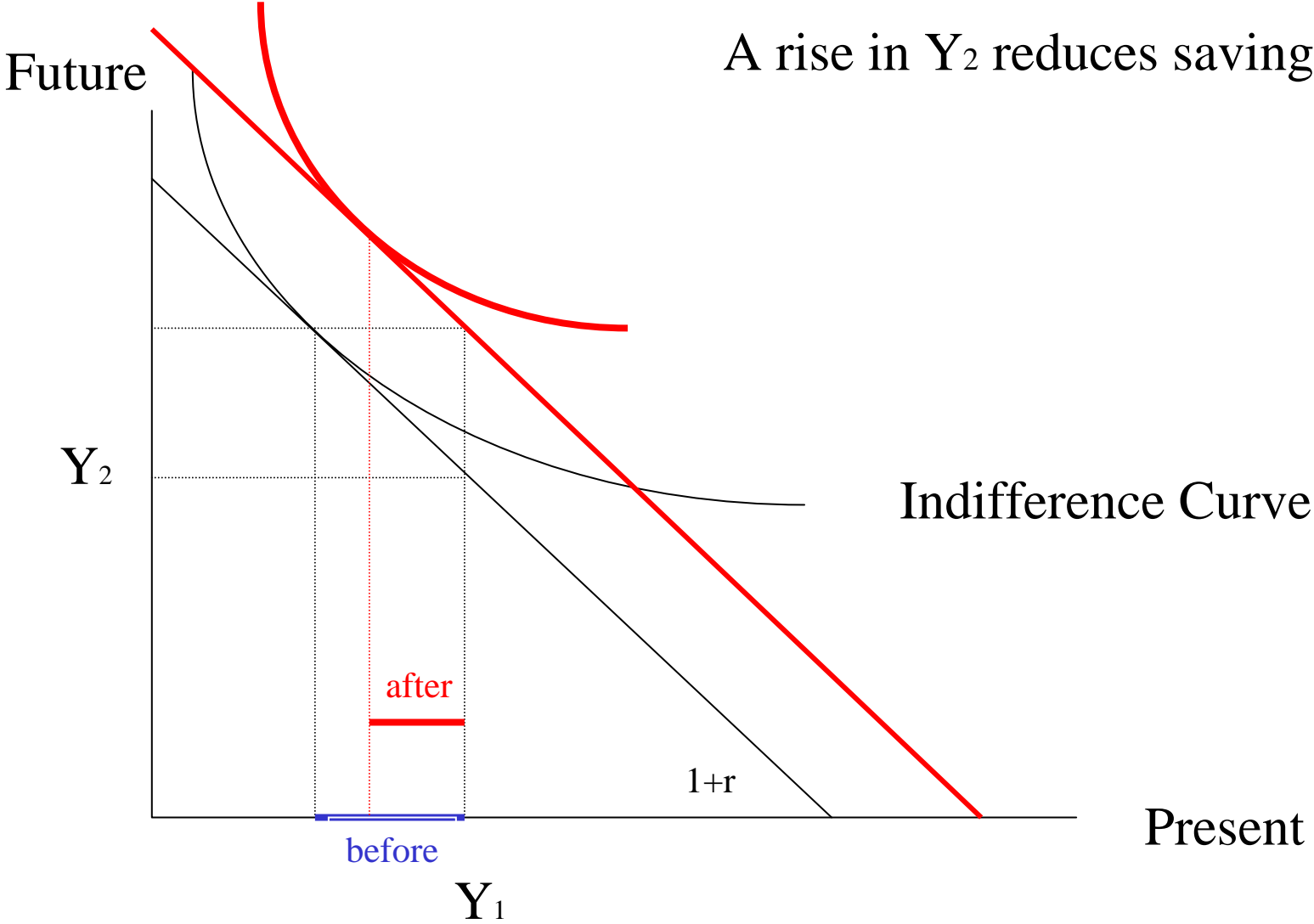


A rise in Y_1 increases saving.

Present



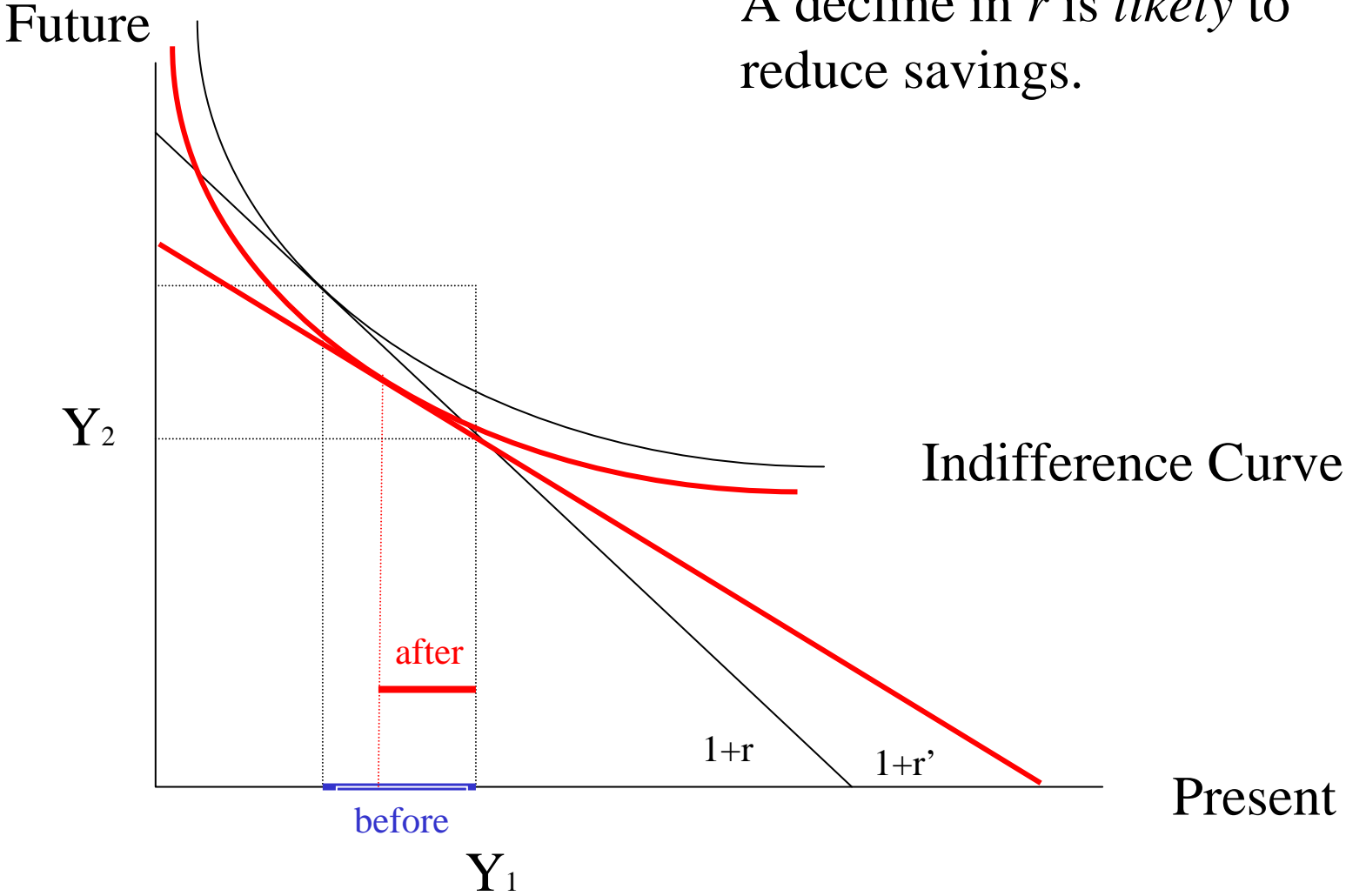
A rise in Y_2 reduces saving.



Consumption Smoothing

- A representative consumer tends to *smooth* his/her consumption over time.
- Even if the income rises and declines in each period, this change is *not fully* reflected by a rise or decline in consumption in the period when the income change occurs.

A decline in r is *likely* to reduce savings.



A decline in the interest rate has two effects.

- The *Substitution Effect*: The lower interest rate induces the consumer to save less.
- The *Income Effect*: The lower interest rate implies the lower future income, which induces the consumer to save more.
- In general, the substitution effects and the income effects work into the opposite directions.
- In the *regular* economy, it is plausible to assume that the substitution effect exceeds the income effect.
- According to empirical studies, it is unclear which effect overcomes the other one.

Questions

1. If both the present and future income become twice as much as before, what do you expect will happen in the consumption pattern?
2. If the present income goes down, and the interest rate goes up, what do you expect will happen in the consumption pattern?
3. Now you are a borrower. There is a rise in the future income and a decline in the interest rate, then what will you do?