Chapter4

Differences in gender-related time allocation for market and non-market activities

Associate Professor Dr. Sasiwimon Warunsiri Paweenawat

Faculty of Economics, Thammasat University

Outline

The effect of family formation on the labor market → **Household's joint labor supply decision**

Decision analysis based on Comparative Advantage Concept

Labor-leisure choice model

Unitary preferences, cooperative bargaining, non-cooperative bargaining

Decision between labor and leisure

- Allocating working time (to earn income) and leisure time
- How does having children affect working decisions?
- Effects of government assistance on working decisions

Households' joint labor supply decision

- In a household consisting of a husband and wife, the joint labor supply decision is a mutual one between them.
  - Together, they decide who should work in the household (outside the labor market) and outside it (in the labor market).
- This question is answered based on the relative productivity of the husband and wife.
- If work is divided according to specialization, husbands and wives can specialize and increase overall productivity.
  - This increases the level of productivity (both in/outside the labor market) and average household consumption.

Comparative advantage

There is a married couple named Mr. Somchai and Mrs. Somying

Productivity (measured by outputs producted) (unit/hour)		
	labor market	non-labor (household)
 Mr. Somchai	*3*	*3*
 Mrs. Somying	*2*	*6*

Comparative advantage

- Mr. Somchai has the absolute advantage to work **in the labor market**
- Mrs. Somying has an absolute advantage. advantage) to work **outside the labor market**
- Mr. Somchai, 1 hour working in the labor market = 1 hour working outside the labor market
- Mrs. Somying, 1 hour working in the labor market = 3 working hours outside the labor market

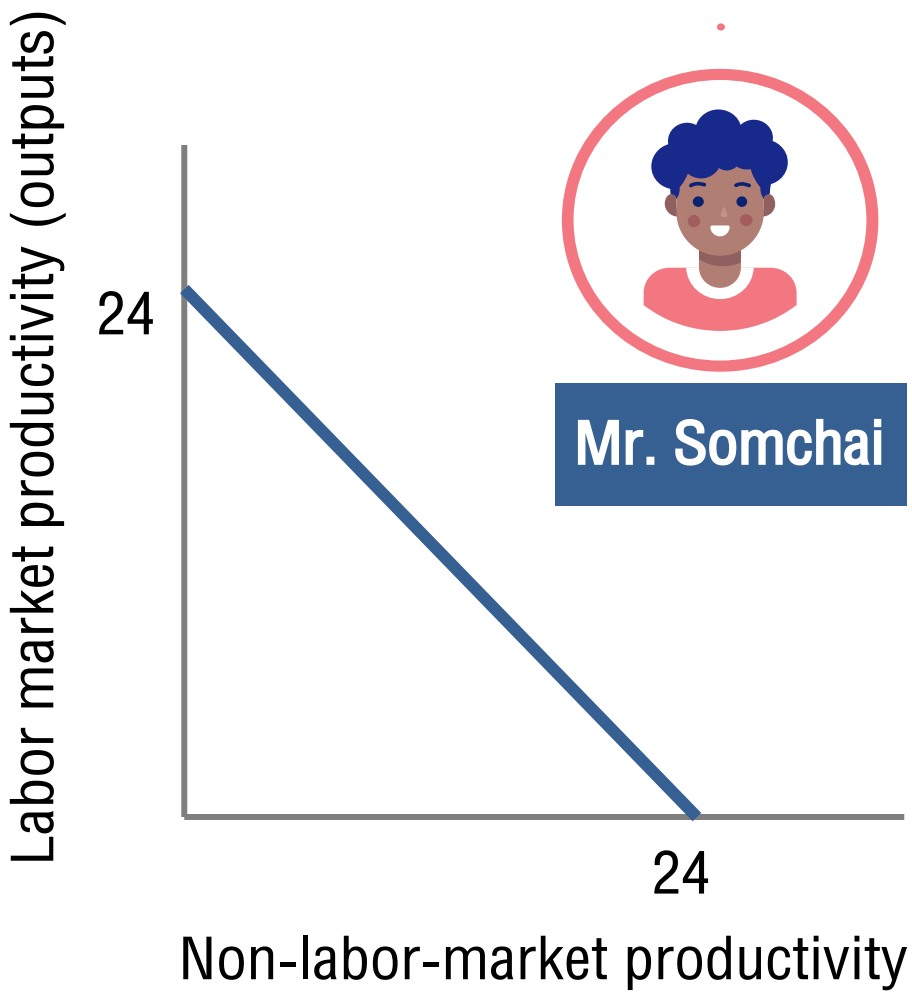
Therefore, Mr. Somchai has a comparative advantage in working in the labor market.

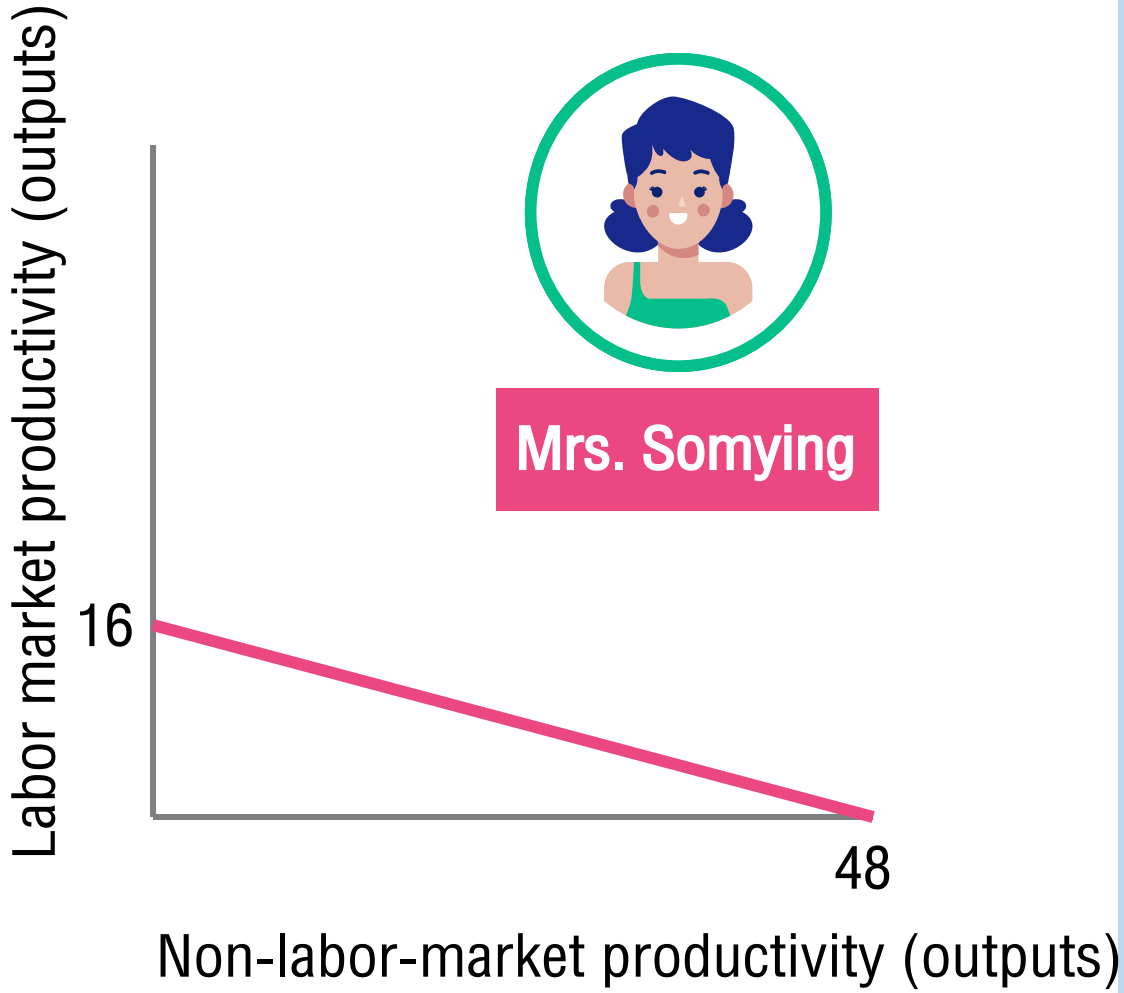
Mrs. Somying has a comparative advantage in working outside the labor market.

Production Possibilities Frontier (PPF)

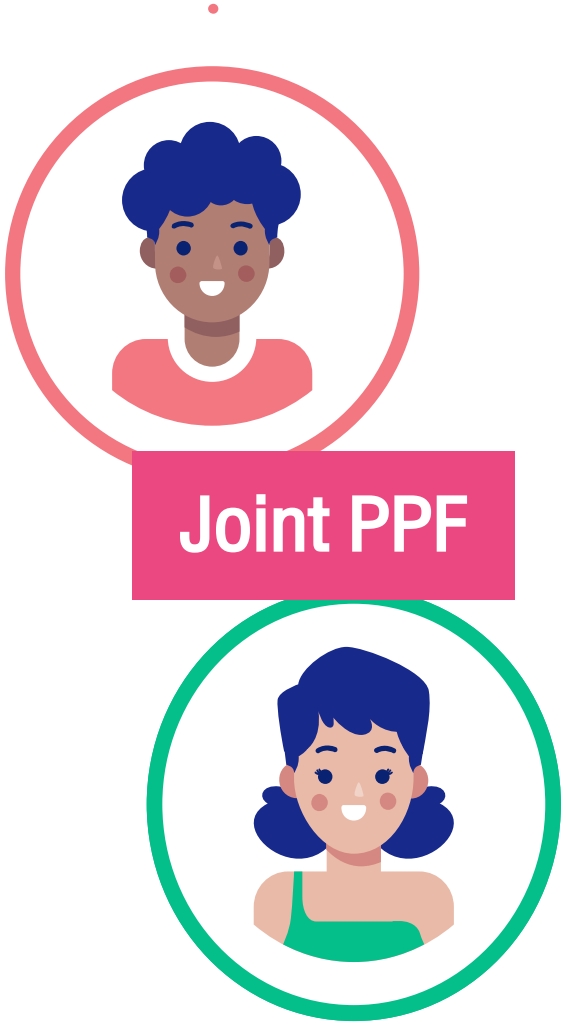
- The Production Possibilities Frontier (PPF) curve shows the proportion of potential output produced over a unit of time.
  - It is the maximum possible output an economy can achieve when all resources are utilized with full capacity and time efficiency.
- What would the PPF of Mr. Somchai and Mrs. Somying look like for each person?
- If Mr. Somchai and Mrs. Somying get married, what will their PPF look like?
- The PPF of Mr. Somchai and Mrs. Somying is determined by assuming that they work in and/or outside the labor market 8 hours a day.

Production Possibility Feasibility (PPF) of Mr. Somchai and Mrs. Somying (individual)
(assuming working 8 hours a day)



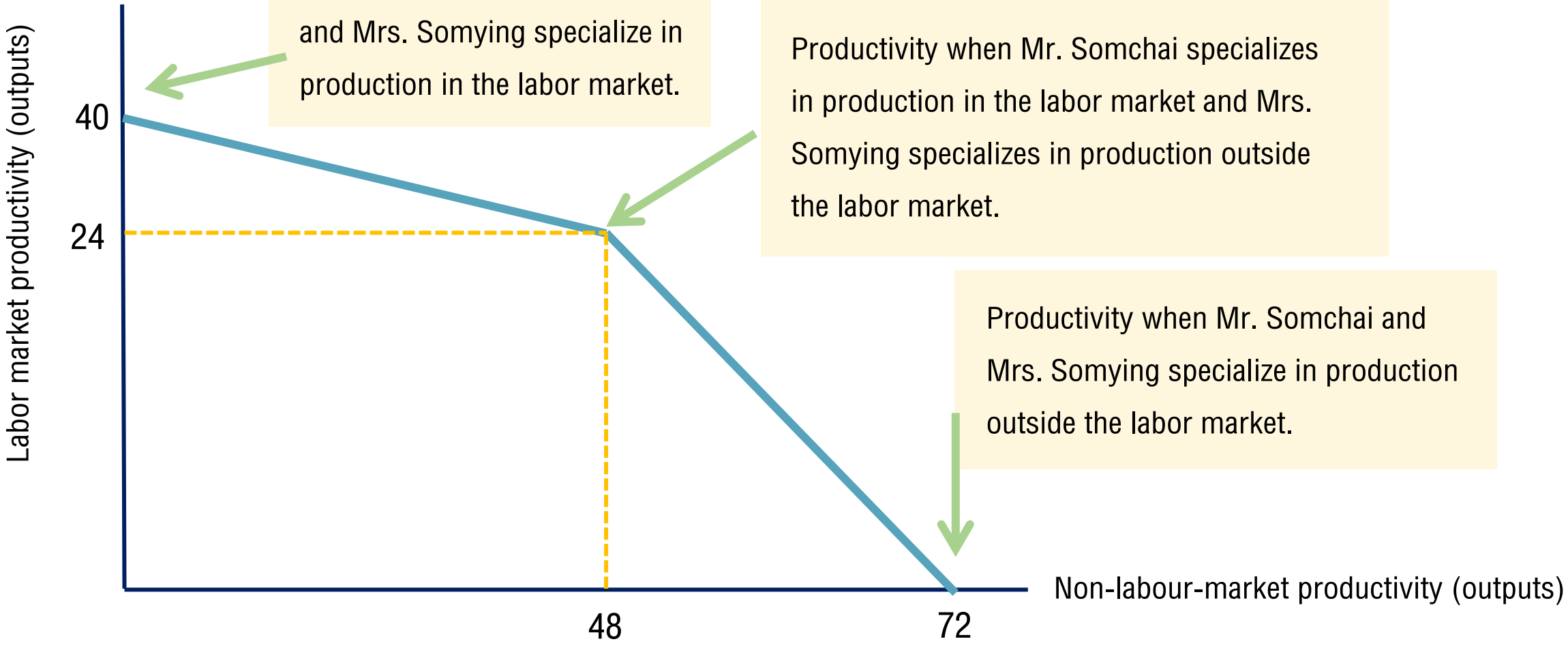


PPF in the joint production of Mr. Somchai and Mrs. Somying -> joint PPF

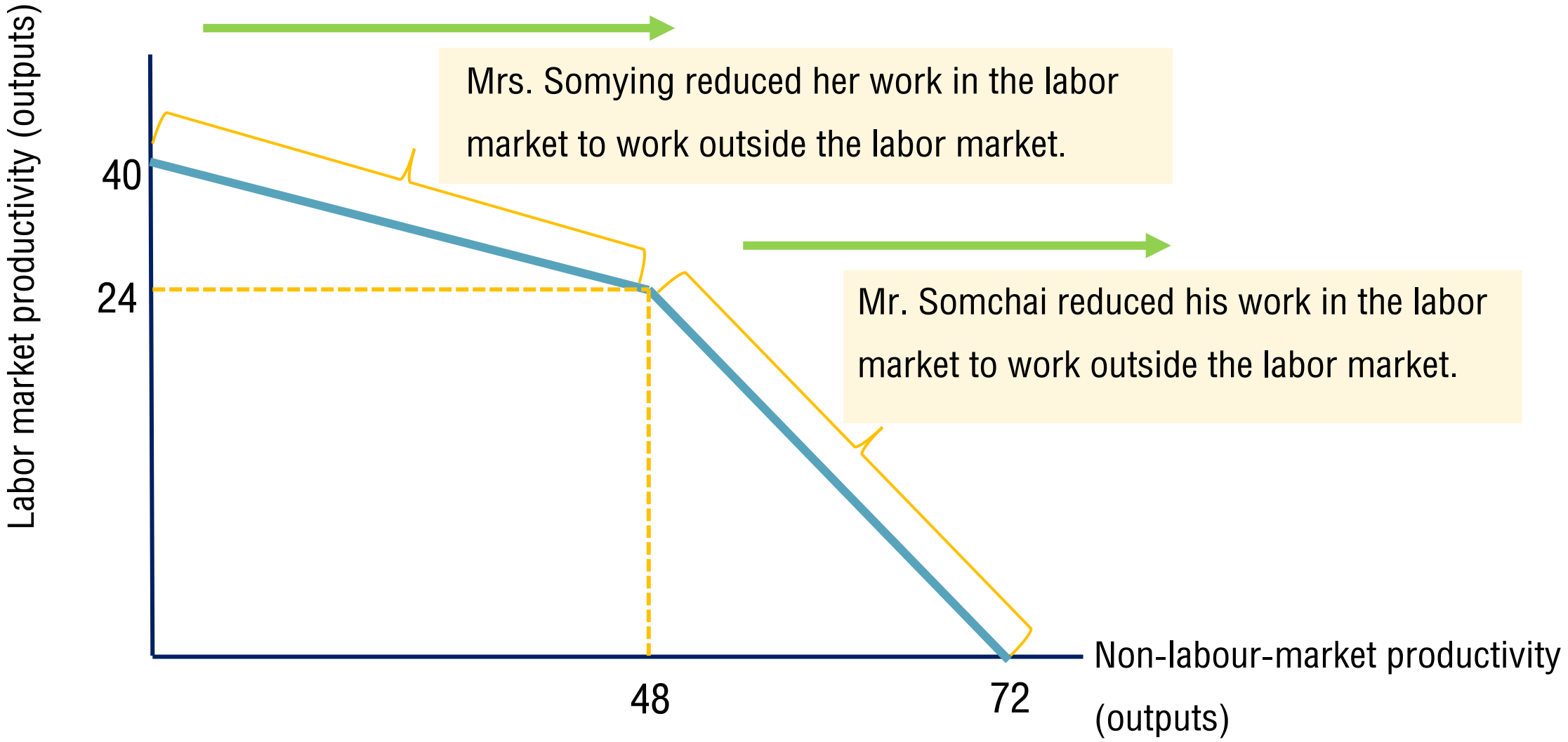


- How is the joint PPF of Mr. Somchai and Mrs. Somying determined?
- How do they determine their productivity (outputs) if both specialize in working in the labor market (vertical axis)?
- How do they determine their productivity (outputs) if both specialize in working outside the labor market (horizontal axis)?
- How do they determine the output level of both if each has production expertise (each has a comparative advantage) (what is the point of discontinuity)?

Joint PPF of Mr. Somchai and Mrs. Somying



Joint PPF of Mr. Somchai and Mrs. Somying



The benefits of specialization

Everyone has 8 hours a day

	Labor market hours	labor market productivity (outputs)	non-labour-market hours	non-labour-market productivity
Mr. Somchai	6	18	2	6
Mrs. Somying	2	4	6	36
all		22		42

64

Mr. Somchai and Mrs. Somying work in labour market and outside labor market.

Mr. Somchai worked in labor market 6 hours, outside labor market 2 hours.

- Mr. Somchai can produce 6*3 = 18 units in labor market
- Mr. Somchai can produce 2*3 = 6 units outside labor market

Total outputs he can produce = 24 units (18 +6)

The benefits of specialization

Everyone has 8 hours a day

	Labor market hours	labor market productivity (outputs)	non-labour-market hours	non-labour-market productivity
Mr. Somchai	6	18	2	6
Mrs. Somying	2	4	6	36
all		22		42

64

Total outputs they both can produce are 64 (=24+40) units

Mr. Somchai and Mrs. Somying work in labour market and outside labor market.

- Mrs. Somying worked in labor market 2 hours, outside labor market 6 hours.

- Mr. Somchai can produce 2*2 = 4 units in labor market
- Mr. Somchai can produce 6*6 = 36 units outside labor market

Total outputs she can produce = 40 units (4 + 36)

The benefits of specialization

Everyone has 8 hours a day

Mr. Somchai works in labor market, but Mrs. Somying works outside labor market (household).

Mr. Somchai can produce 24 units (=8*3) and Mrs. Somying can produce 48 (=8*6)

	Labor market hours	labor market productivity (outputs)	non-labour-market hours	non-labour-market productivity
Mr. Somchai	8	24	0	0
Mrs.Somyig	0	0	8	48
all		24		48

72

Total outputs they both can produce are 72 (=24+48) units

- Total outputs increased when Mr. Somchai and Mrs. Somying produced according to their specialization.
  - Mr. Somchai and Mrs. Somying have higher per capita consumption (Don't know allocation)

Joint consumption

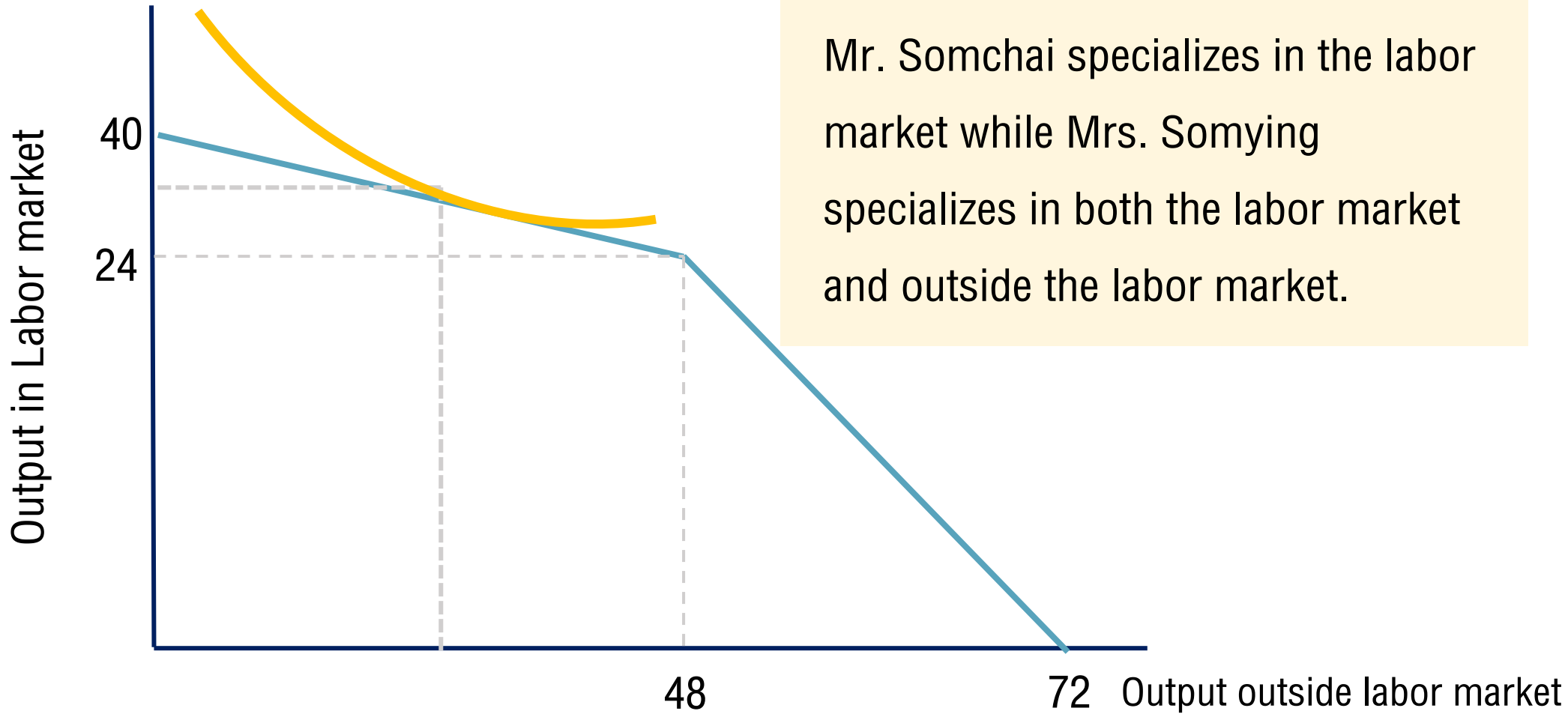
- The proportion of work in the labor market and outside the labor market for Mr. Somchai and Mrs. Somying, which production point will they choose? Where is the point of consumption?
- Results will depend on the order of preference.
- The main assumption is that households have unitary preferences.
  - Mr. Somchai and Mrs. Somying have the same preferences in production in the labor market and outside the labor market.
  - Mr. Somchai and Mrs. Somying the same indifference curve (IC).

Joint consumption

Joint consumption

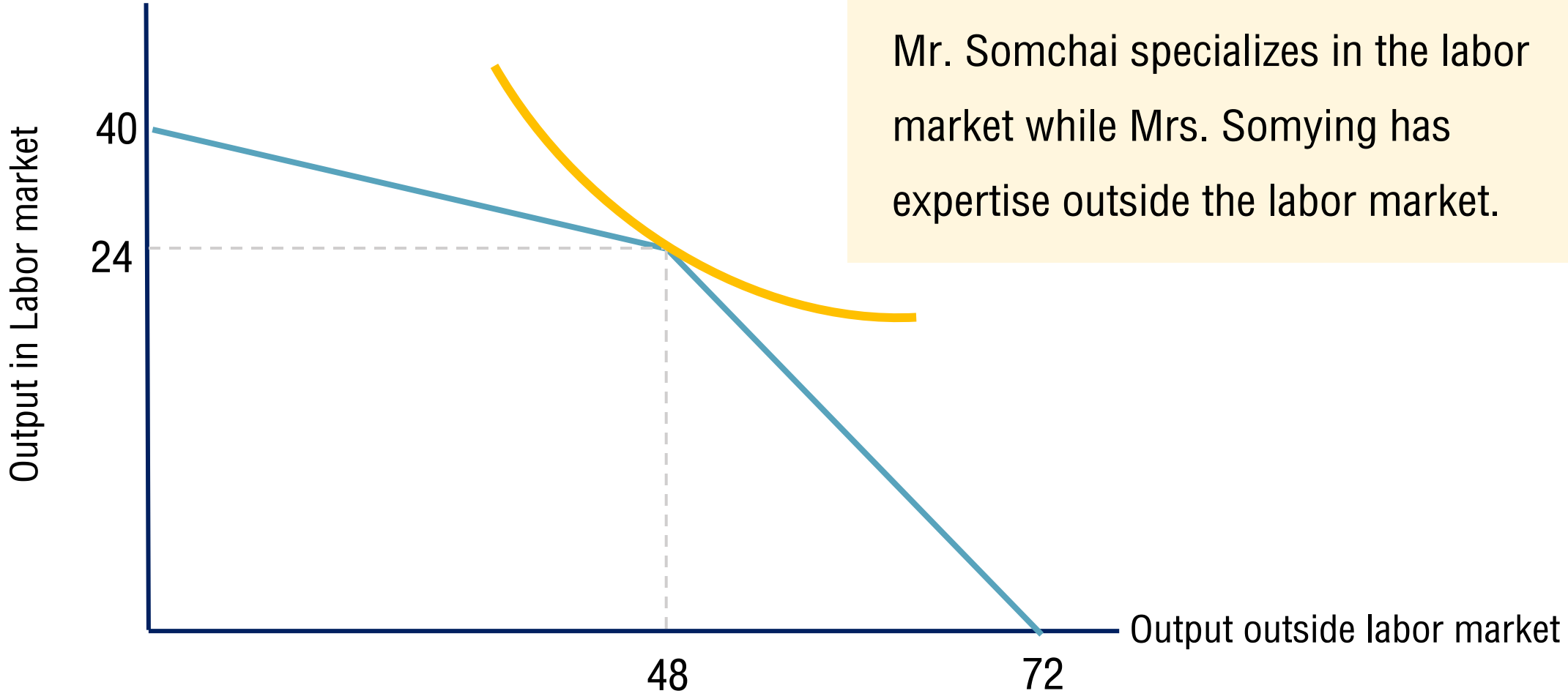
- A flat IC means that Mr. Somchai and Mrs. Somying will have a preference for production in the labor market.
- A steep IC means that Mr. Somchai and Mrs. Somying have a preference for production outside the labor market (within the household)

Joint production possibility frontier (Joint PPF) and order of preference (preferences) for Mr. Somchai and Mrs. Somying



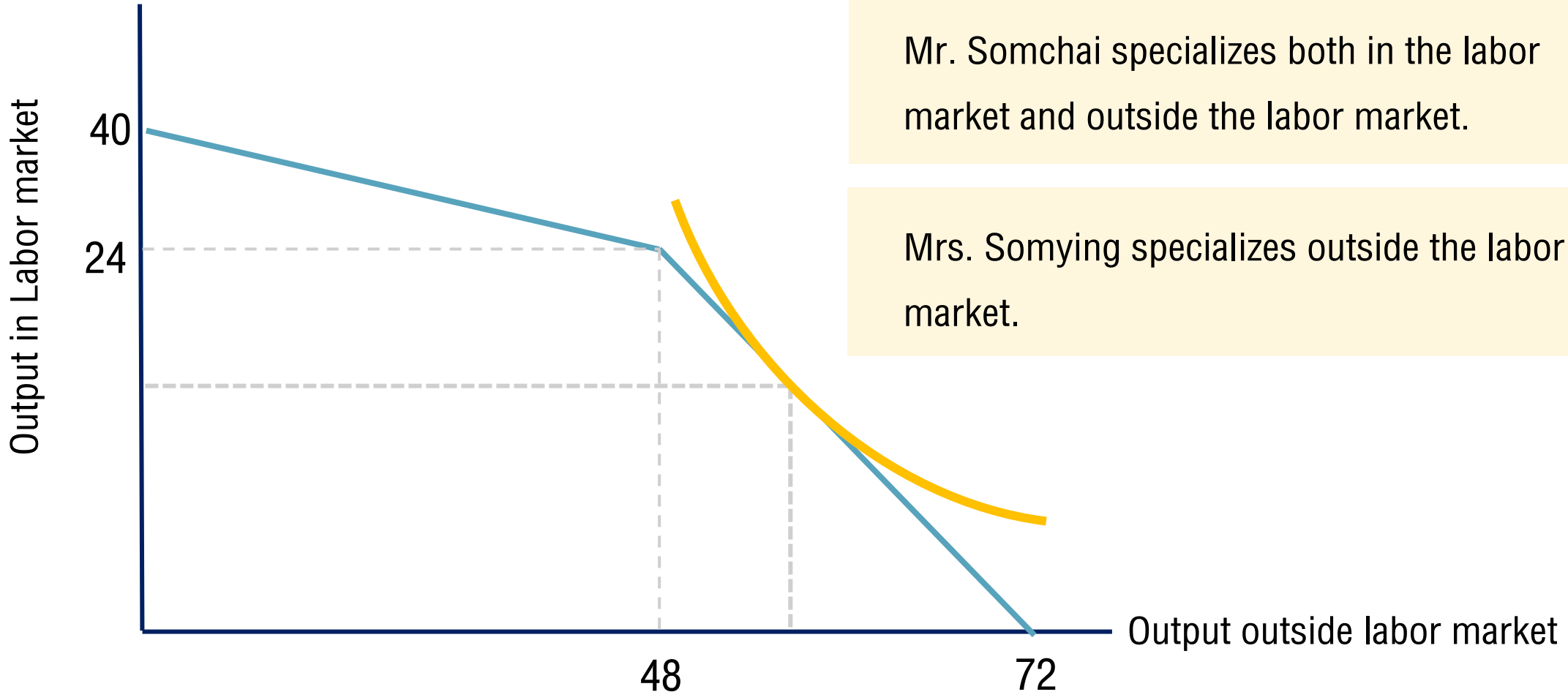
Mr. Somchai specializes in the labor market while Mrs. Somying specializes in both the labor market and outside the labor market.

Joint production possibility frontier (Joint PPF) and order of preference (preferences) for Mr. Somchai and Mrs. Somying



Mr. Somchai specializes in the labor market while Mrs. Somying has expertise outside the labor market.

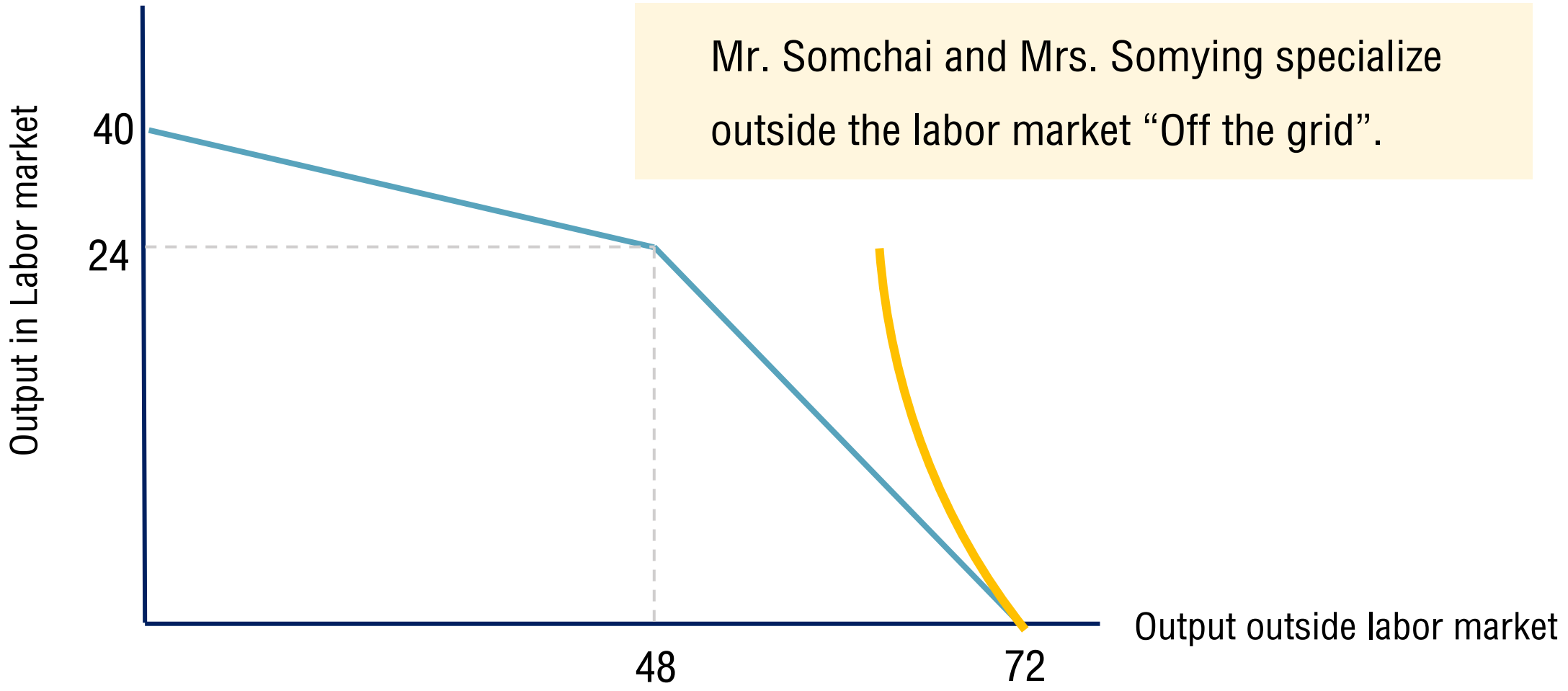
Joint production possibility frontier (Joint PPF) and order of preference (preferences) for Mr. Somchai and Mrs. Somying



Mr. Somchai specializes both in the labor market and outside the labor market.

Mrs. Somying specializes outside the labor market.

Joint production feasibility curve (Joint PPF) and order of preference (preferences) for Mr. Somchai and Mrs. Somying



Labor-leisure choice model

- Model to decide between labor and leisure for maximum utility.
- Labor-leisure choice model has the same characteristics as the consumer choice model of two goods.

Assumptions:

- There are two types of goods: leisure and consumption goods (represented by income).

Labor-leisure choice model

Assumptions:

- Budget constraint
  - Budget lines are limited by the number of possible working hours (24 hours – 8 (sleep) = 16)
  - For simplicity, we assume that each day has the number of hours that a person can work 16 hours per day.
    - In these 16 hours, workers can choose how many hours to work and how many hours of rest.

Labor-leisure choice model

Assumptions:

- Preferences

  - Labor's preference for leisure and goods can be represented by indifference curves (IC).

    Each person's IC is different according to different preferences.

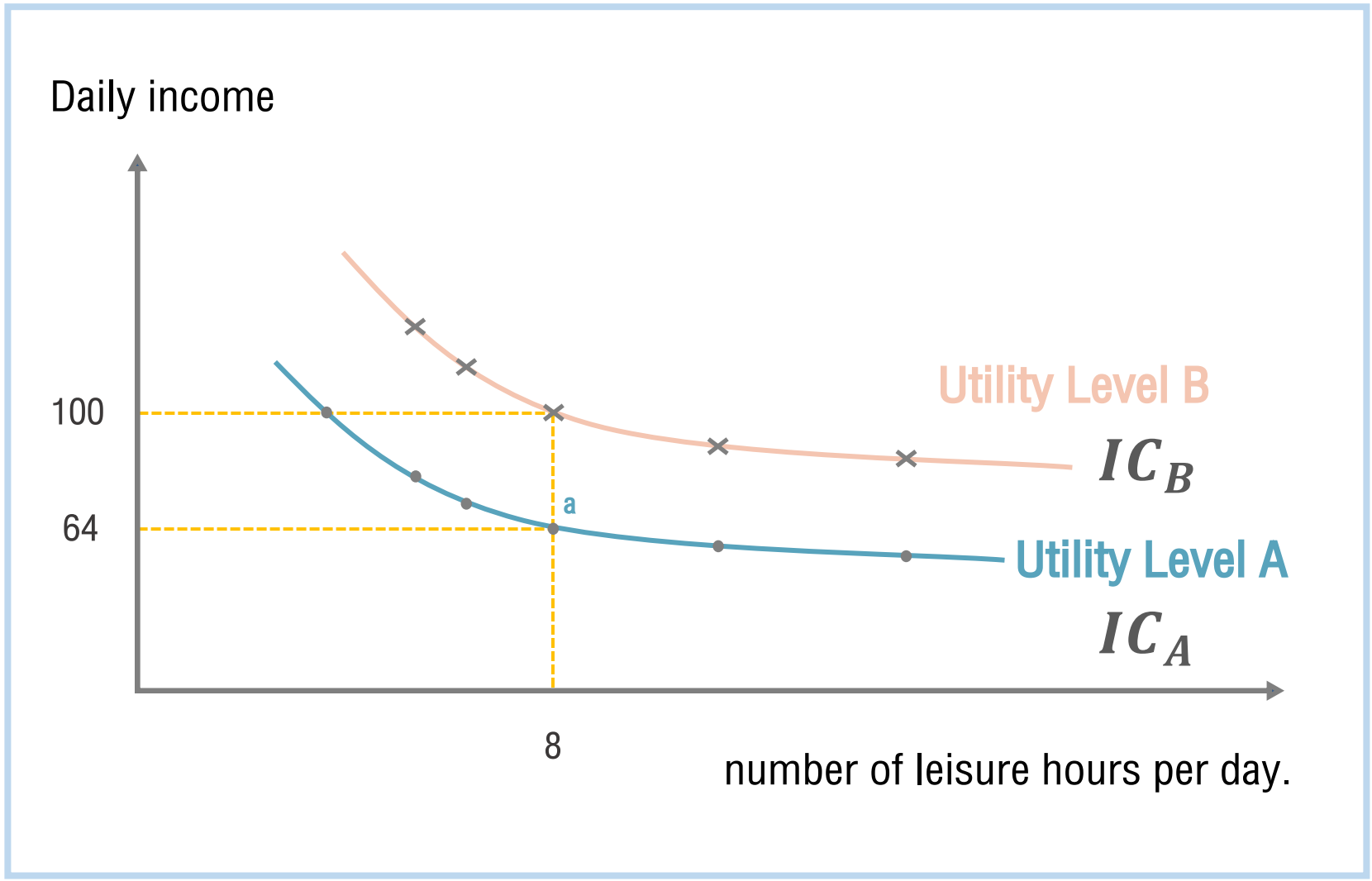
Properties of Indifference Curves (IC)

- Composition of increased income (from working hours) and leisure hours - Utility level of individual worker
- ICs are downward slope - more resting come in exchange for less work (resulting in lower incomes).
- ICs are convex because workers tend to have both work and rest.
- ICs of each worker do not intersect and has a pattern in the same direction (Higher IC, Higher utility).

Indifference Curves (IC)

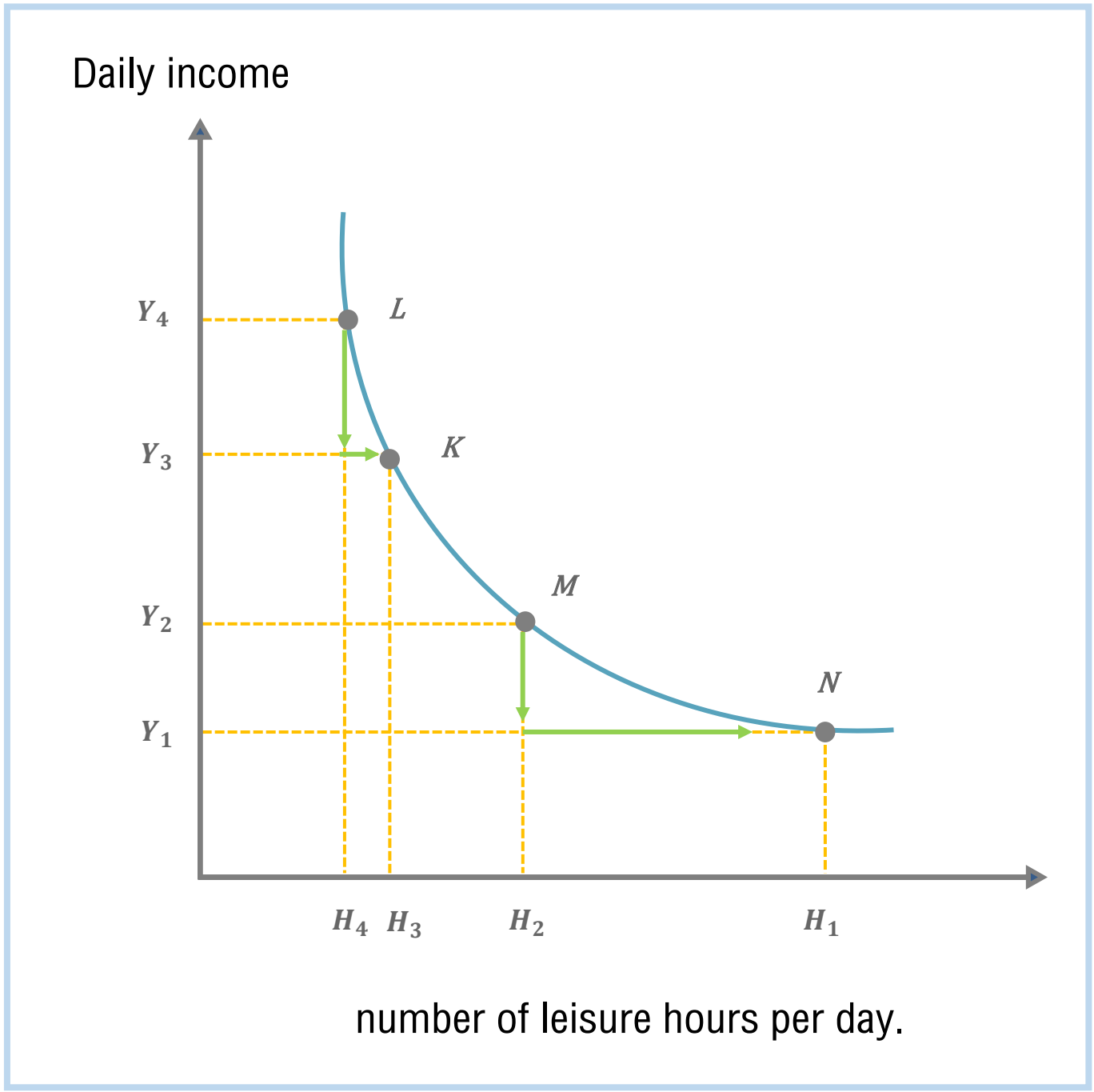
Two IC lines of the same person.

Higher utility - higher IC_B levels than IC_A



Indifference Curves (IC)

- more resting in exchange for reduced work (and reduced income)



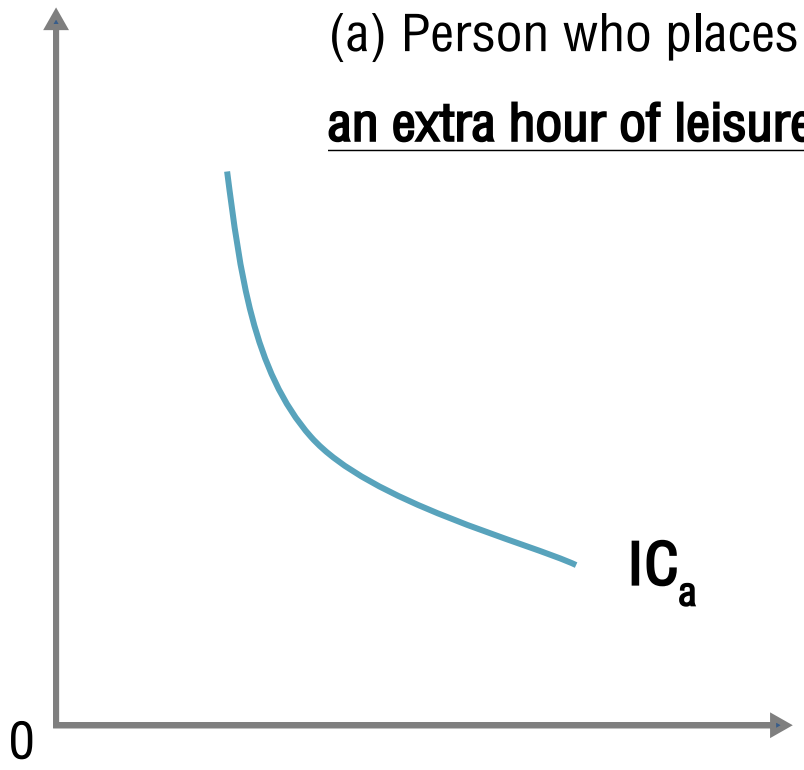
Indifference Curves (IC)

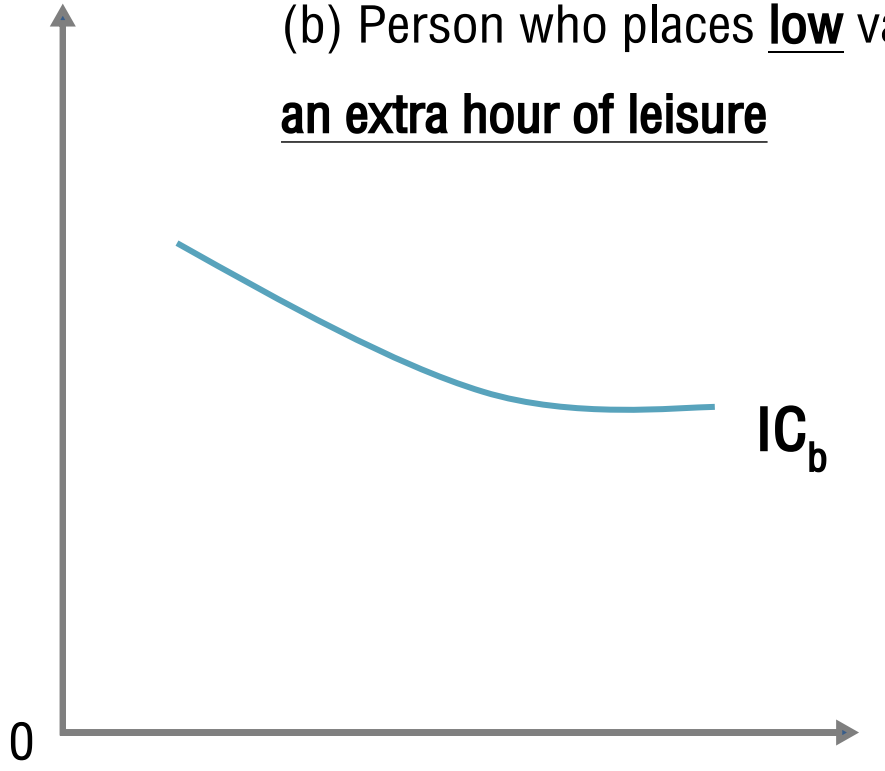
- Each worker has different satisfactions between working (earned income) and leisure (resting).
- IC lines are different for different persons.
- People who place more value on leisure (Leisure lover), they will have steep IC curve compared to others.
- People who value working than resting (Workaholic) have IC lines, that are flat compared to those who like resting.

Indifference Curves (IC)

Leisure lover(IC_a) vs Workaholic (IC_b)

IC lines of two workers with different preferences





Budget Constraint

Budget Constraint

- The total amount of income we can earn in one day. (when limited by the number of working hours)
- Budget lines are limited by working hours the workers have and the income they can make each day.
- Budget lines show the different components of income (derived from work) and leisure hours (rest) that each worker receives based on the wages set by the market.

Budget Constraint

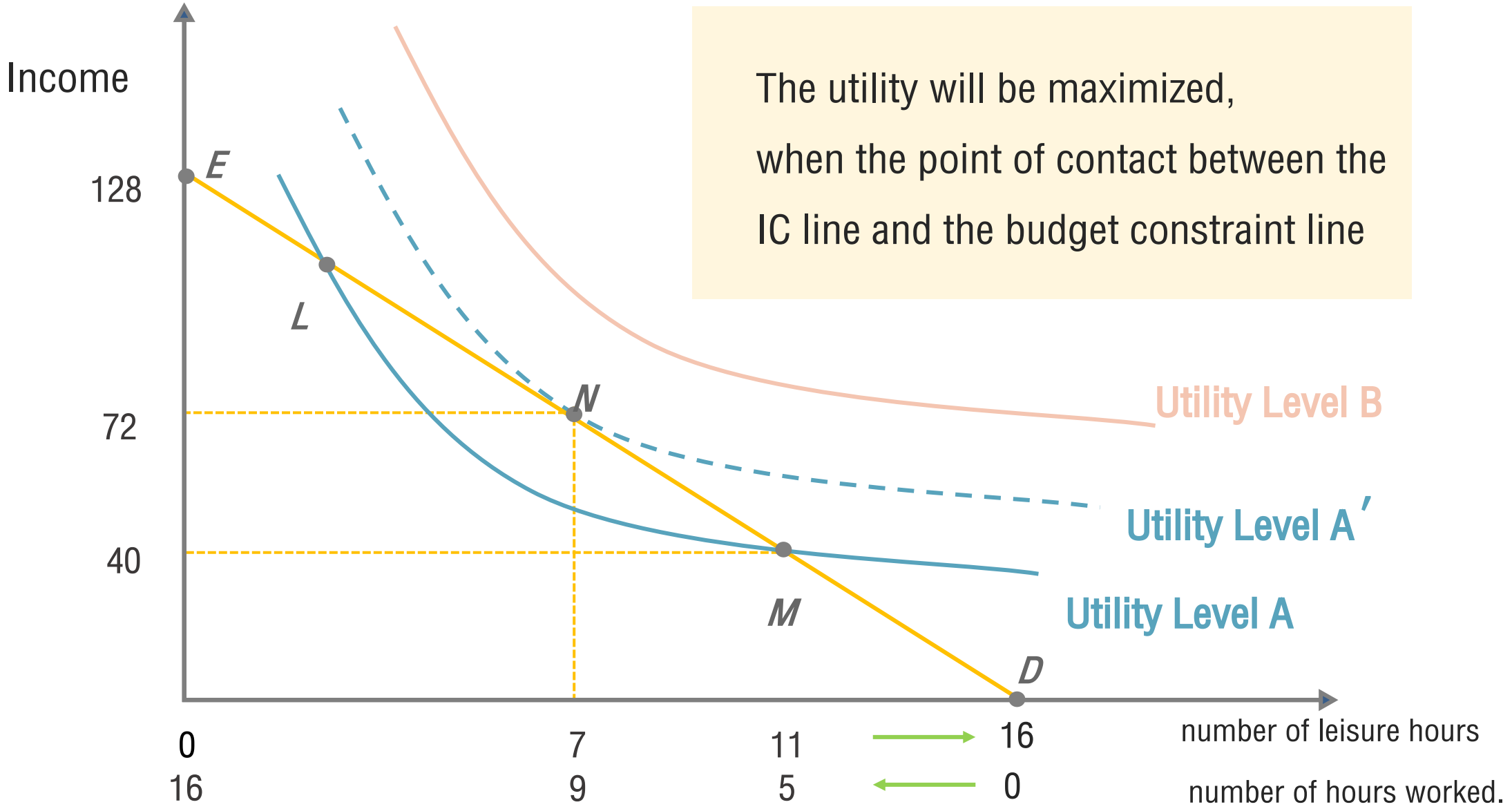
Budget Constraint

- Suppose a person sleeps 8 hours a day. Therefore, people come to work and rest for 16 hours a day.
- For example, the hourly wage is $8, so a worker can work a maximum of $128 (=8*16) [worked 16 hours] or a minimum of $0 (=8*0) [worked 0 hours] per day.

Utility maximization

- Decisions regarding the number of hours worked (generates income) and leisure -> maximize utility
- Workers analyze their own preferences (indifference curve; IC) and information on the labor market (such as wages)
- At the optimal point of the composition between work and leisure (optimal work-leisure position) (or slope of IC = slope of the budget line)

Maximum utility



The utility will be maximized,
when the point of contact between the
IC line and the budget constraint line

Criticism of the labor-leisure choice model

- This model does not consider non-market production.
- It is based on the decisions of male workers because they were the main labor force during the modeling period in the 1950s and 1960s.
- In this model, there are only two activities for people to choose:

  work and leisure

- The assumption is that when you are not working, you are resting.

  However, if you are not working, you are engaging in household production.

  - Instead of modeling a labor-leisure tradeoff, we can now model a

    labor-household time tradeoff