

Lecture Note

Gender Economics (EE364)

Chapter 4: Differences in gender-related time allocation for market and non-market activities



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Chapter 4

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

4.1 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.

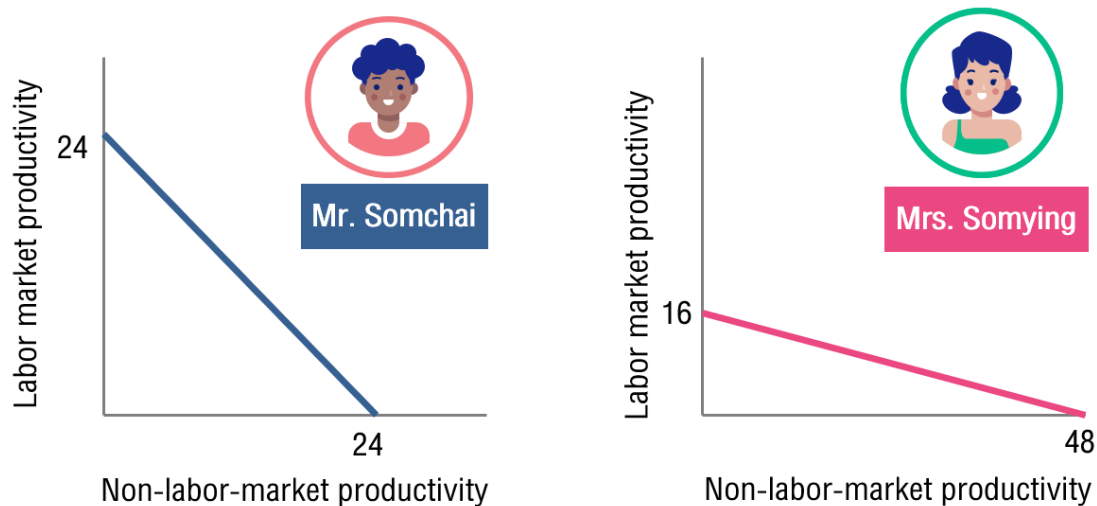
Comparative advantage - There is a married couple named Mr. Somchai and Mrs. Somying. Productivity of these people are measured by output (unit/hour) produced (Table 4.1). In one hour, Mr. Somchai can produce 3 units in labor market and 3 units in non-labor market (or household). Mr. Somying can produce 2 units in labor market and 6 units in non-labor market (or household). 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. However, Mr. Somchai, 1 hour working in the labor market = 1 hour working outside the labor market (3:3). Mrs. Somying, 1 hour working in the labor market = 3 working hours outside the labor market (2:6 = 1:3). 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.

Table 4.1 – Productivity (Output) of Mr. Somchai and Mrs. Somying

Productivity (unit/hour)		
	labor market	non-labor (household)
Mr. Somchai	3	3
Mrs. Somying	2	6

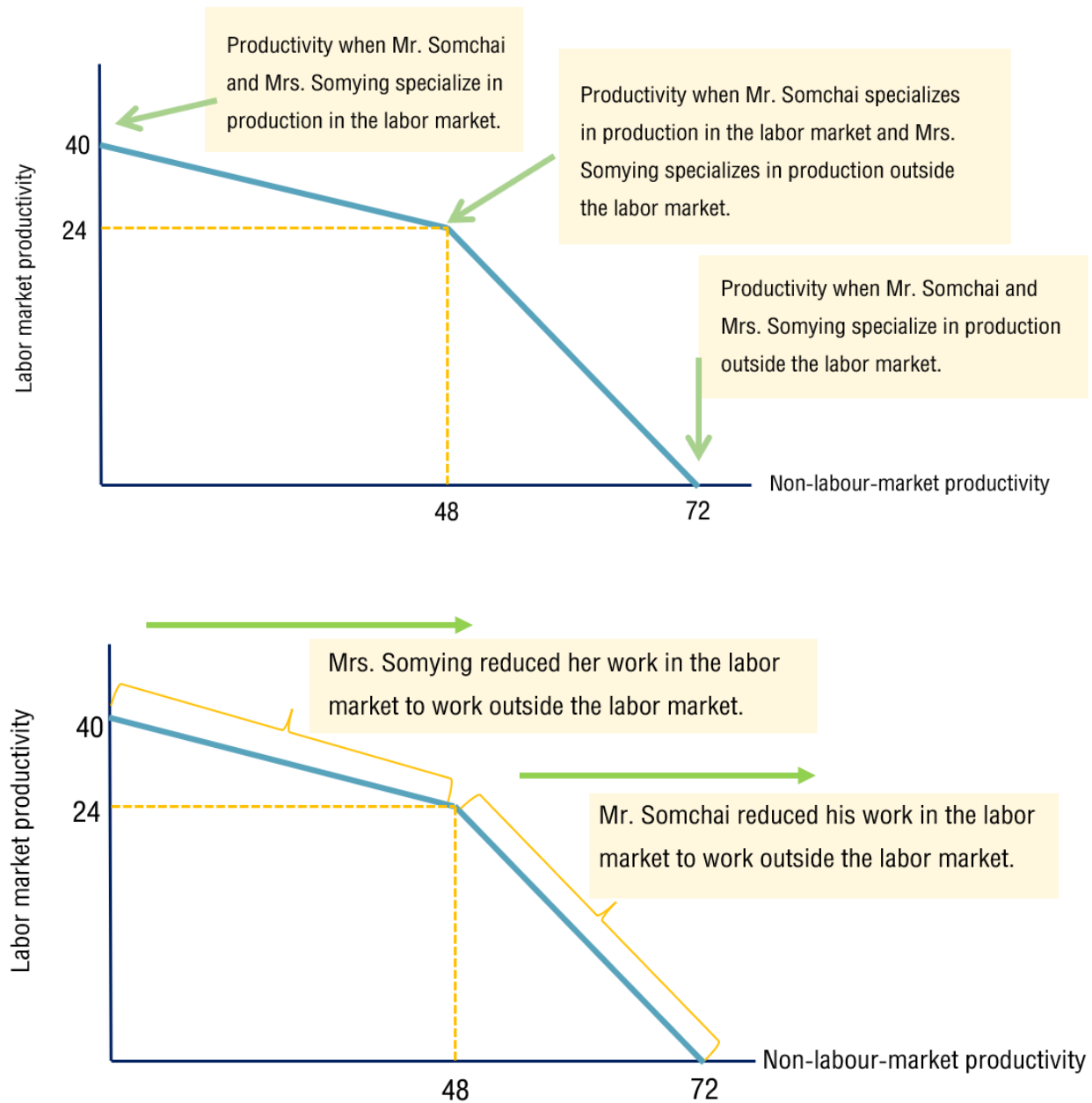
Production Possibilities Frontier (PPF) - The Production Possibilities Frontier (PPF) curve shows the proportion of potential output produced over a unit of time. It is the maximum possible output an economy can achieve when all resources are utilized with full capacity and time efficiency. By applying the PPF to the case of Mr. Somchai and Mrs. Somying, What would the PPF of Mr. Somchai and Mrs. Somying look like for each person? (Individual PPF, Figure 4.1). 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.

Figure 4.1 – Production Possibility Feasibility (PPF) of Mr. Somchai and Mrs. Somying (Individual PPF) (assuming working 8 hours a day)



PPF in the joint production of Mr. Somchai and Mrs. Somying (Joint PPF) - Furthermore, after Mr. Somchai and Mrs. Somying got married, instead of individual PPF, there is a joint PPF in their households (Figure 4.2).

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

Figure 4.2 – Joint PPF of Mr. Somchai and Mrs. Somying

The benefits of specialization - Everyone has 8 hours a day. If Mr. Somchai and Mrs. Somying worked in both in and out labor market. If Mr. Somchai works 6 hours in labor market, he can produce 18 units ($=6 \times 3$) and works outside labor market 2 hours, he can produce 6 units ($=2 \times 3$). Mr. Somchai can produce total outputs 24 units ($=18+6$). If Mrs. Somying works 2 hours in labor market, she can produce 4 units ($=2 \times 2$) and works outside labor market 6 hours, she can

produce 36 units ($=6*6$). Mr. Somying can produce total outputs 40 units ($=18+36$). Total outputs they both can produce are 64 ($=24+40$).

However, if they agree to work based on their specialization, Mr. Somchai worked in labor market, Mrs. Somying worked in household (outside labor market). Mr. Somchai can produce 24 units ($=8*3$) and Mrs. Somying can produce 48 ($=8*6$). Total outputs they both can produce are 72 units ($=24+48$) (Table 4.2). Total outputs increased when Mr. Somchai and Mrs. Somying produced according to their specialization ($72>64$). Mr. Somchai and Mrs. Somying have higher per capita consumption (But there has not been any mention of what the allocation will be).

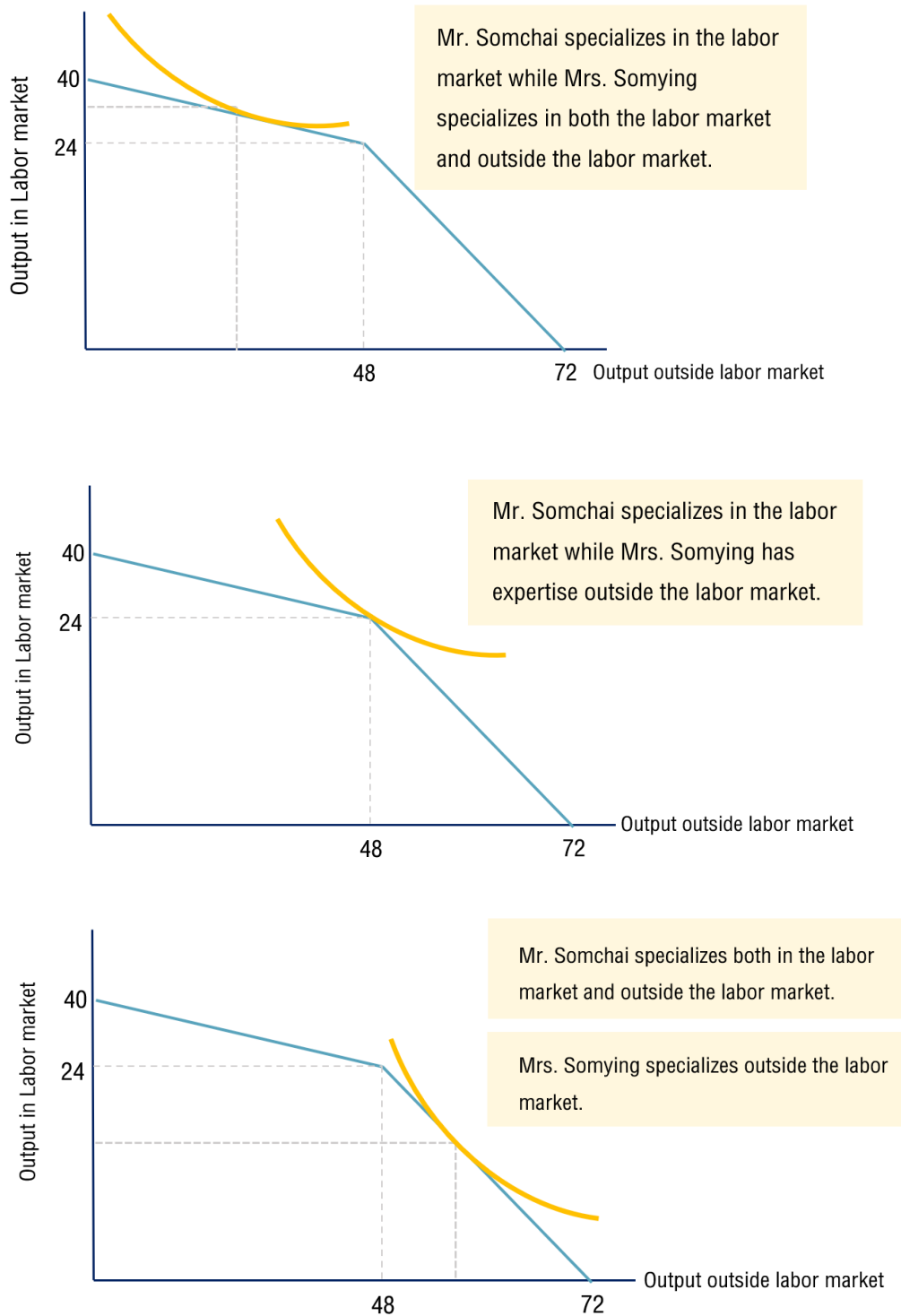
Table 4.2 – The benefits of specialization

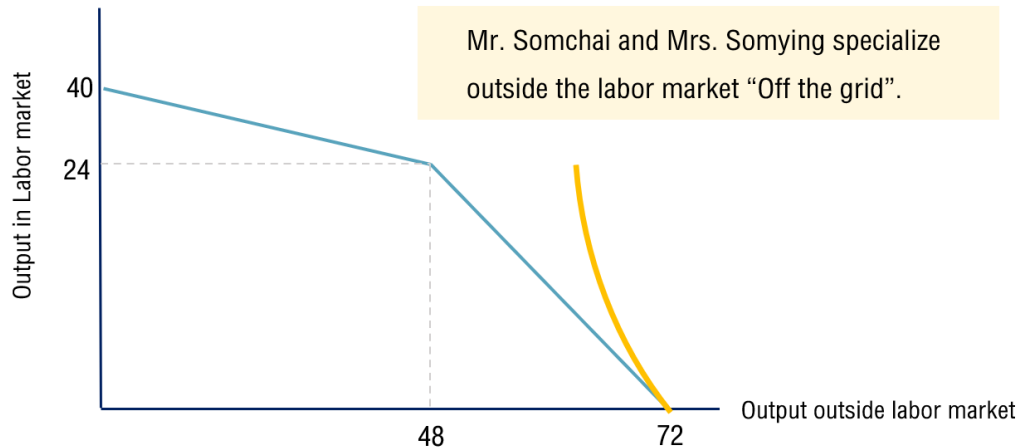
	Labor market hours	labor market productivity	non-labour-market hours	non-labour-market productivity
Mr. Somchai	6	18	2	6
Mrs. Somying	2	4	6	36
all		22		42
			64	

	Labor market hours	labor market productivity	non-labour-market hours	non-labour-market productivity
Mr. Somchai	8	24	0	0
Mrs. Somyig	0	0	8	48
all		24		48
			72	

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? (Figure 4.3) 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 have the same indifference curve (IC - line of satisfaction). A flat IC line means that Mr. Somchai and Mrs. Somying will have a preference for production in the labor market. A steep IC line means that Mr. Somchai and Mrs. Somying have a preference for production outside the labor market (within the household).

Figure 4.3 – Joint PPF of Mr. Somchai and Mrs. Somying





4.2 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 of this model are as follows:

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

Indifference Curves (IC) - The ICs present utility level of individual worker with a composition of income (from working hours) and leisure hours. The ICs downward slope as more vacations come in exchange for less work, resulting in lower incomes. The ICs of each worker do not intersect and has a pattern in the same direction (Higher lines present higher utility - Higher IC_B levels than IC_A) (Figure 4.4). The ICs convex because workers tend to have both work and rest (more resting in exchange for reduced work and reduced income) (Figure 4.5). Each worker has different satisfactions between working (earned income) and leisure (resting). IC lines are different for different persons (Figure 4.6). People who place more value on leisure (Leisure lover), they will have steep IC curve compared to others. However, people who value working than resting (Workaholic) have IC lines, that were flat compared to those who liked resting.

Figure 4.4 – Indifference Curve: IC

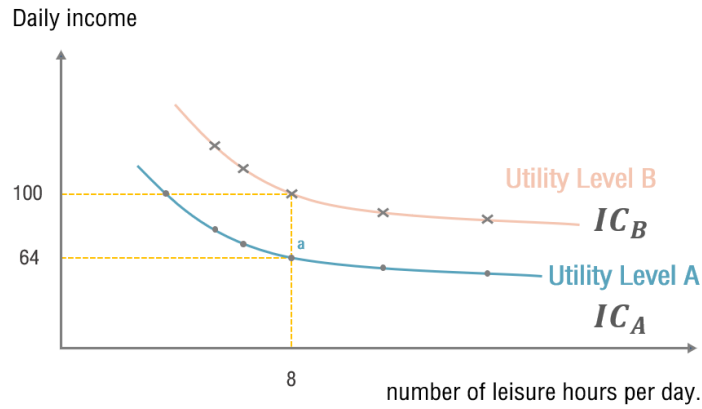


Figure 4.5 – Indifference Curve: IC

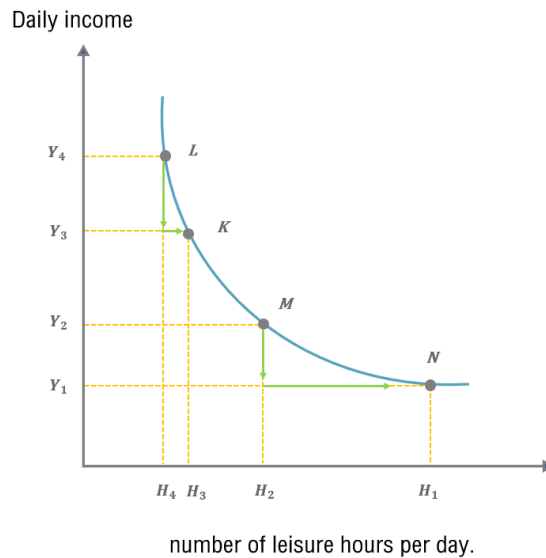
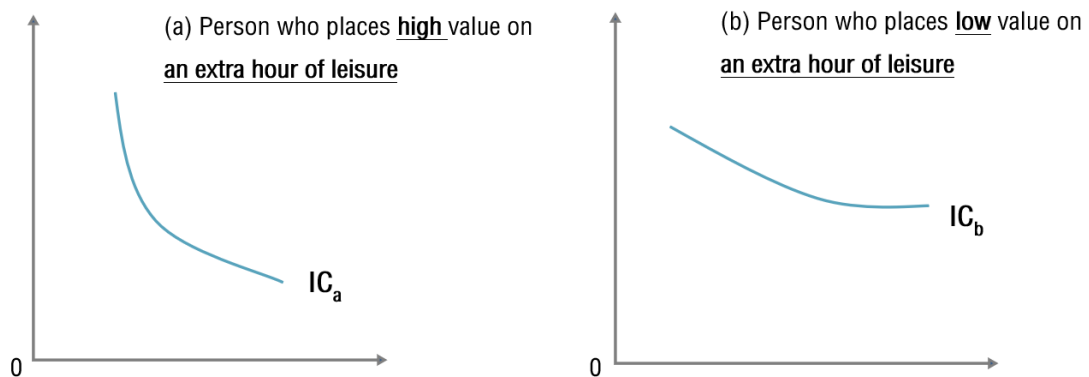


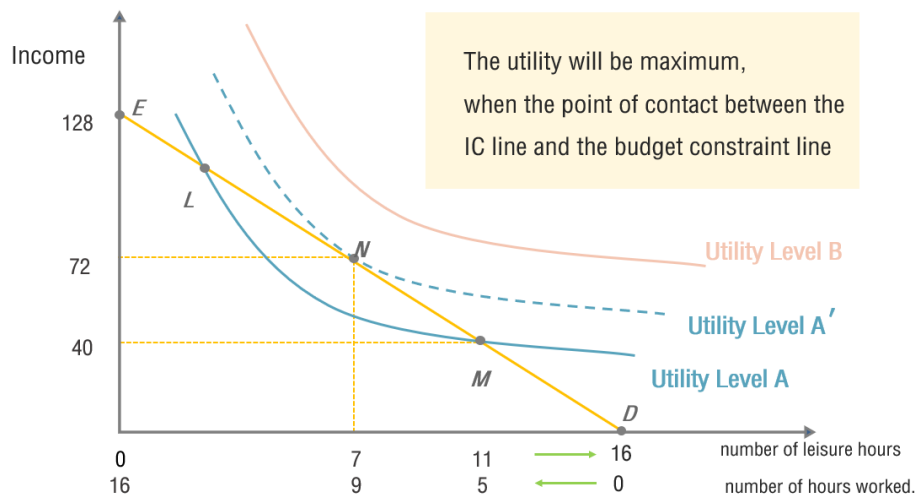
Figure 4.6 – Indifference Curve: IC



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. 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 lead to 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) (Figure 4.7).

Figure 4.7 – Utility Maximization



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 addition, 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, mostly, 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.

Exercise

- 1) From the production table of Mr. Somchai and Mrs. Somying, who has an absolute and comparative advantage in working outside the labor market? (assuming that Mr Somchai and Mr Somying work in labor market and/or outside labor market 8 hours a day). Next, draw the production possibilities frontier (PPF) before and after the marriage of Mr. Somchai and Mrs. Somying. If Mr. Somchai and Mrs. Somying had similar preferences regarding in and outside the labor market, who should work in or outside it?

- 2) Based on (1), use a joint PPF and indifference curve (IC) to analyze the points of joint production and consumption of Mr. Somchai and Mrs. Somying. If both are still working in the labor market, calculate the total productivity in this case. In addition, should both be in the labor market? Or should one work in the labor market and another at home? Why? Explain your answer.

- 3) From the labor-leisure decision model, the IC shows the order of preference of each worker. The workers prefer work and leisure. Describe the properties of this IC line, and draw IC lines along with a description of each feature.

- 4) Use basic economic principles to analyze the characteristics of the IC for the labor-leisure decision model. Why? If the IC curve is the same, then the IC is a flat line (flat–less steep), and this worker has a preference for production in the labor market. However, but if the IC line is steep (steep–very steep), this worker has a propensity to produce outside the labor market (within the household).

- 5) Based on the labor-leisure decision model, draw the budget constraint of a worker if the hourly wage is 20 baht. Mr. A, who likes to work a lot, works 12 hours per day. Calculate his earnings. Then, use an IC curve to analyze the appropriate points of the composition between work and leisure at which this worker can achieve maximum utility. Please draw a graph accompanied by an explanation.

6) Using a household production analysis model, please draw a graph accompanied with an explanation of your analysis of Mrs. B's working behavior inside and outside the labor market before and after she received a government subsidy for childcare of 300 baht per day in the following two cases:

(a) Mrs. B stayed at home and raised her children, and Mr. A, her husband, gave her 500 baht a day to spend.

(b) Initially, Mrs. B works both inside and outside the home and is paid 20 baht per hour.

7) Do you agree with this sentence: "If the husband receives a wage increase, the wife tends to work less. However, if she earns more, she tends to work more." Use basic economic theories to discuss this woman's behavior.

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