

Borjas Textbook Notes

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1 Chapter 1: Introduction

1.1 The Actors in the Labor Market

This book will consider three actors within the labor market: (1) workers, (2) firms, and (3) government. The decisions of workers will be based on a desire to optimize what Borjas calls their well-being. These decisions across workers generate the labor supply curve. Firms have the goal of maximizing profits. The firm's demand for labor is a "derived demand" in the sense that it is derived from consumer's demand for the firm's output. Equilibrium is attained when supply equals demand in a free market economy. The government's motives are left more opaque.

1.2 Why Do We Need a Theory?

Writing out supply and demand curves reflects the construction of a model, which makes predictions about what will transpire if certain conditions change. The model is simple but is useful for organizing our thoughts about the labor market and provides a solid foundation upon which to build more complex infrastructure.

The predictions of the supply and demand model is an example of positive economics. Positive economics is concerned with "What is?" questions, i.e., questions about how the world actually works. This is in contrast to normative economics, which is concerned with questions of "What ought to be?"

2 Chapter 2: Labor Supply

The aggregate labor supply is the sum of the individual labor supply decisions of all prospective workers in the economy. This chapter will be focused on fleshing out the framework that economists use to think about labor supply decisions.

2.1 Terms

- LF : The size of the labor force
- E : The number of employed individuals
- U : The number of unemployed individuals
- P : The size of the population
- C : The consumption of goods
- L : The consumption of leisure
- $U = f(C, L)$: The utility function
- MU_L : The marginal utility of leisure
- MU_C : The marginal utility of consumption
- V : Nonlabor income
- h : Hours worked
- w : The wage rate
- T : Total time available in, say, a week
- σ : The labor supply elasticity

2.2 Measuring the Labor Force

The CPS classified individuals over the age of 16 into three categories:

1. Employed: Somebody working at least 1 hour of paid labor or 15 hours of unpaid labor
2. Unemployed: Somebody temporarily laid off from a job or actively looking for work
3. Out of the labor force: Everyone else

Definition D.1: Labor Force

The labor force (LF) is everyone who is employed (E) or unemployed (U).

$$LF = E + U$$

Definition D.2: Labor Force Participation Rate

The Labor Force Participation Rate is the fraction of the population (P) that is in the labor force.

$$\text{Labor force participation rate} = \frac{LF}{P}$$

Definition D.3: Employment Rate

The fraction of the population that is employed.

$$\text{Employment rate} = \frac{E}{P}$$

Definition D.4: Unemployment Rate

The fraction of the population that is unemployed.

$$\text{Unemployment rate} = \frac{U}{LF}$$

Notice that the number of unemployed people is calculated as a fraction of the labor force, not as a fraction of the population. Thus, one way for the unemployment rate to go down is for people to stop looking for work entirely.

2.3 Basic Facts about Labor Supply

Below are just a few facts of key labor supply trends over the last century. Figure 1 shows the labor force participation rate for men and women over the last century. Figure 2 shows

the average weekly hours worked for all workers over the last century.

TABLE 2-1 Labor Force Participation Rates of Men, 1900–2010

Sources: U.S. Bureau of the Census, *Historical Statistics of the United States, Colonial Years to 1970*, Washington, DC: Government Printing Office, 1975; U.S. Bureau of the Census, *Statistical Abstract of the United States*, Washington, DC: Government Printing Office, various issues.

Year	All Men	Men Aged 25–44	Men Aged 45–64	Men Aged over 65
1900	80.0	94.7	90.3	63.1
1920	78.2	95.6	90.7	55.6
1930	76.2	95.8	91.0	54.0
1940	79.0	94.9	88.7	41.8
1950	86.8	97.1	92.0	45.8
1960	84.0	97.7	92.0	33.1
1970	80.6	96.8	89.3	26.8
1980	77.4	93.0	80.8	19.0
1990	76.4	93.3	79.8	16.3
2000	74.8	93.1	78.3	17.5
2010	71.2	90.6	78.4	22.1

TABLE 2-2 Labor Force Participation Rates of Women, 1900–2010

Sources: U.S. Bureau of the Census, *Historical Statistics of the United States, Colonial Years to 1970*, Washington, DC: Government Printing Office, 1975, p. 133; and U.S. Department of Commerce, *Statistical Abstract of the United States, 2011*, Washington, DC: Government Printing Office, 2011, Table 596.

Year	All Women	Single Women	Married Women	Widowed, Divorced, or Separated
1900	20.6	43.5	5.6	32.5
1910	25.4	51.1	10.7	34.1
1930	24.8	50.5	11.7	34.4
1940	25.8	45.5	15.6	30.2
1950	29.0	46.3	23.0	32.7
1960	34.5	42.9	31.7	36.1
1970	41.6	50.9	40.2	36.8
1980	51.5	64.4	49.9	43.6
1990	57.5	66.7	58.4	47.2
2000	59.9	68.9	61.1	49.0
2010	58.6	63.3	61.0	48.8

Figure 1: Labor Force Participation Rate for Men and Women

FIGURE 2-1 Average Weekly Hours of Work, 1900–2013

Sources: The pre-1947 data refer to workers in manufacturing and are drawn from Ethel Jones, “New Estimates of Hours of Work per Week and Hourly Earnings, 1900–1957,” *Review of Economics and Statistics* 45 (November 1963): 374–385. The post-1947 data are drawn from U.S. Department of Labor, Bureau of Labor Statistics, *Employment, Hours, and Earnings from the Current Employment Statistics Survey*, “Table B-7. Average Weekly Hours of Production or Nonsupervisory Workers on Private Nonfarm Payrolls by Industry Sector and Selected Industry Detail.”

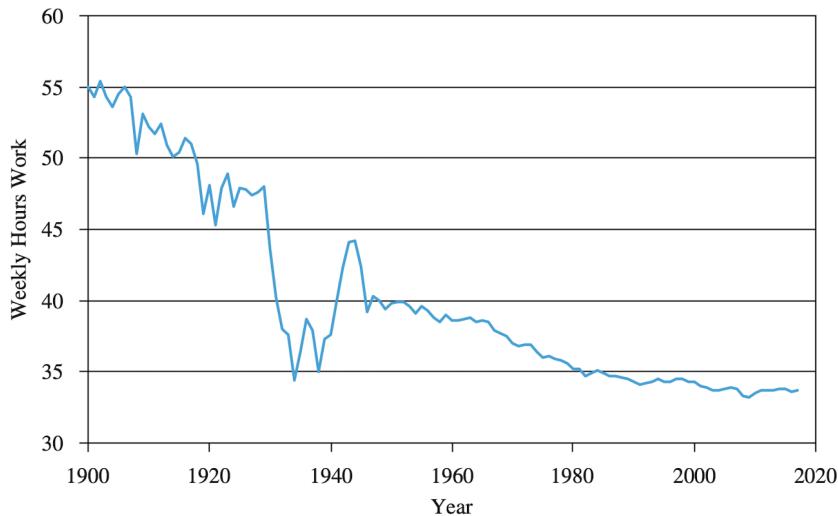


Figure 2: Average Weekly Hours Worked

2.4 The Worker’s Preferences

The framework that economist’s typically use to think about labor supply behavior is the “neoclassical model of labor-leisure choice.” This model is used to think about what’s underpinning a worker’s decision regarding whether and how much to work.

2.4.1 Indifference Curves

Under this model, we think of an agent as deriving utility from both consumption (C) and leisure (L). We express the utility function as $U = f(C, L)$, where higher U indicates higher utility and is preferred by the agent.

We use indifference curves to represent the combinations of C and L that yield the same level of utility.

See Figure 3 for an example of indifference curves.

FIGURE 2-2 Indifference Curves

Points X and Y lie on the same indifference curve and yield the same utility (25,000 utils); point Z lies on a higher indifference curve and yields more utility.

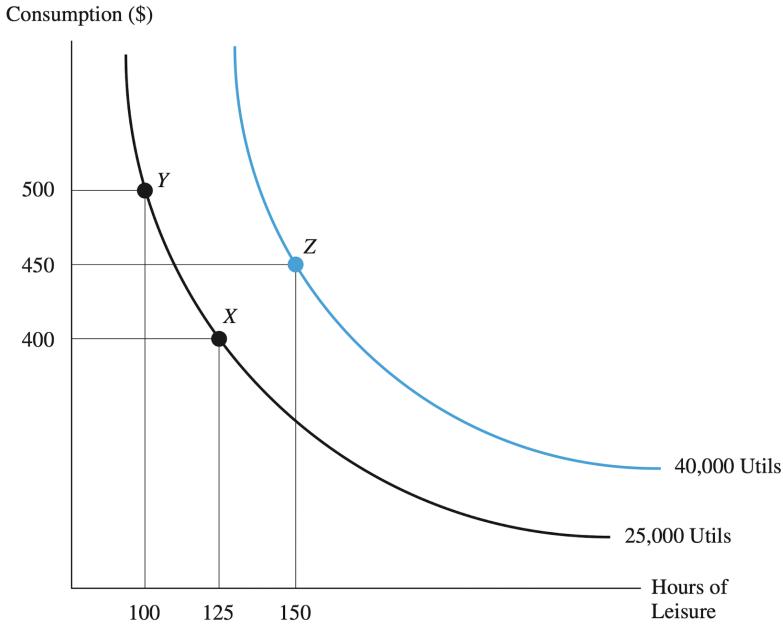


Figure 3: Indifference Curves

Indifference curves can be quite flexible in some aspects of their shape, but there are four properties that we generally impose:

1. Indifference curves are downward sloping: Otherwise, you could get more of both C and L without getting any additional utility.
2. Higher indifference curves indicate higher levels of utility
3. Indifference curves don't intersect: Otherwise, one point would yield two different levels of utility.
4. Indifference curves are convex to the origin

2.4.2 The Slope of an Indifference Curve

Marginal utility from an additional unit of consumption is denoted MU_C . Similarly, the marginal utility from an additional unit of leisure is denoted MU_L .

The slope of an indifference curve is given by

$$\frac{\Delta C}{\Delta L} = -\frac{MU_L}{MU_C}$$

This is logical, since the claim of indifference mandates that the utility change is equivalent as you move along the curve, so it must be that

$$\left| \begin{array}{c} \underbrace{\Delta C}_{\text{reduction in consumption}} \cdot \underbrace{MU_C}_{\text{marginal utility of consumption}} \\ \end{array} \right| = \left| \begin{array}{c} \underbrace{\Delta L}_{\text{increase in leisure}} \cdot \underbrace{MU_L}_{\text{marginal utility of leisure}} \\ \end{array} \right|$$

That is, you're essentializing making the changes equivalent after scaling by their impact on utility.

Definition D.5: Marginal Rate of Substitution (MRS) in Consumption

The Marginal Rate of Substitution (MRS) in consumption is the absolute value of the slope of the indifference curve.

That is,

$$MRS_{CL} = \frac{MU_L}{MU_C} = \left| \frac{\Delta C}{\Delta L} \right|$$

2.5 The Budget Constraint

Let

- V : Nonlabor income
- h : Hours worked
- w : The wage rate
- L : Hours of leisure
- T : Total hours available in, say, a week

$$T = L + h$$

An individual's budget constraint can then be written in various ways:

$$\begin{aligned} C &= wh + V \\ &= w(T - L) + V \\ &= (wT + V) - wL \end{aligned}$$

The budget constraint then describes the boundary of the worker's opportunity set. This last expression is helpful towards this end, because it follows the familiar $y = mx + b$ format, so we can use it to graph the budget constraint with $(wT + V)$ as the intercept and $-w$ as the slope as leisure increases.

See Figure 4 for an example.

FIGURE 2-5 The Budget Line Is the Boundary of the Worker's Opportunity Set

Point E is the endowment point, telling the person how much she can consume if she does not work at all. The worker moves up the budget line as she trades an hour of leisure for consumption of goods. The absolute value of the slope of the budget line is the wage rate.

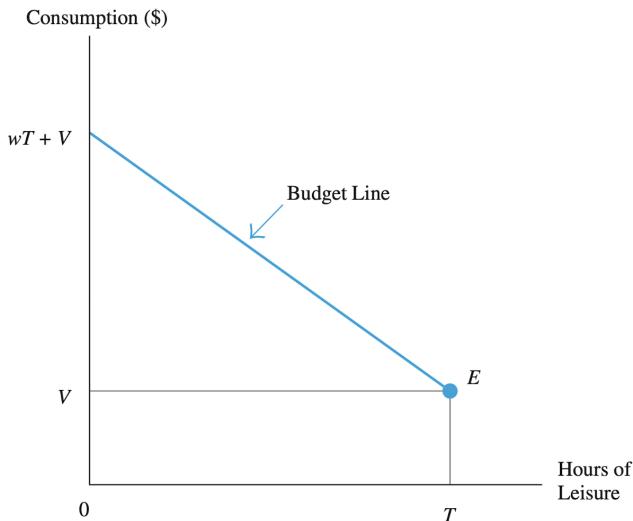


Figure 4: Worker's Opportunity Set

2.6 The Hours of Work Decision

Supposing there is an interior solution, i.e., the worker chooses to work some positive amount of hours but not all available hours, the optimal choice of C and L occurs where the budget constraint is tangent to an indifference curve. See Figure 5 for an example.

FIGURE 2-6 Interior Solution to the Labor-Leisure Decision

A utility-maximizing worker chooses the consumption-leisure bundle at point P , where the indifference curve is tangent to the budget line.

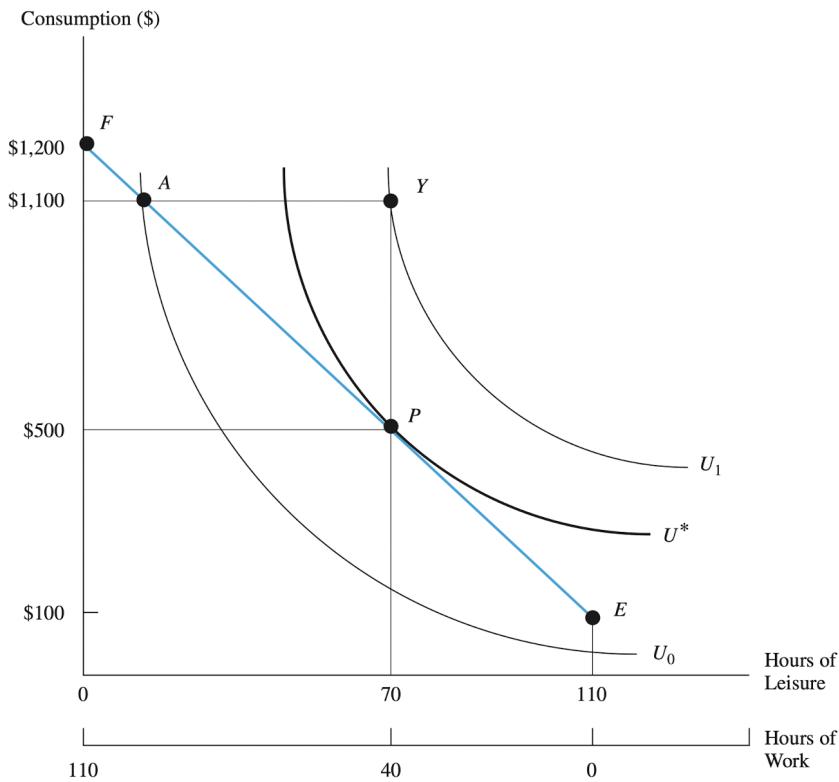


Figure 5: Tangency Condition for Optimal Choice

At the optimal point, denoted by P in Figure 5, the slope of the indifference curve equals the slope of the budget constraint. That is,

$$\frac{MU_L}{MU_C} = w$$

This is easier to interpret, in my opinion, if we re-write it as:

$$MU_L = wMU_C$$

That is, we are indifferent between the marginal utility from an additional unit of leisure (MU_L) and the marginal utility from consumption (MU_C) multiplied by the amount of consumption that you could get from working the extra hour (w).¹ Thus, the last dollar spent on consumption yields the same marginal utility as the last dollar spent on leisure.

¹I think this is based on a normalization, so that the price of one unit of the consumption good is 1.

2.6.1 What Happens to Hours of Work When Nonlabor Income Changes

I won't spend long on this discussion, but see Figure 6 for a graphical depiction considering what happens to consumption and leisure when nonlabor income (V) increases and leisure is a normal or inferior good. Essentially this changes the frontier of the worker's opportunity set by shifting the intercept up without changing the slope. Thus, it's a pure income effect, with no substitution effect. If leisure is a normal good, which the author suggests is probably the case, then this should lead to a decrease in hours worked.

FIGURE 2-7 The Effect of a Change in Nonlabor Income on Hours of Work

An increase in nonlabor income leads to a parallel, upward shift in the budget line, moving the worker from point P_0 to point P_1 . (a) If leisure is a normal good, hours of work fall. (b) If leisure is an inferior good, hours of work rise.

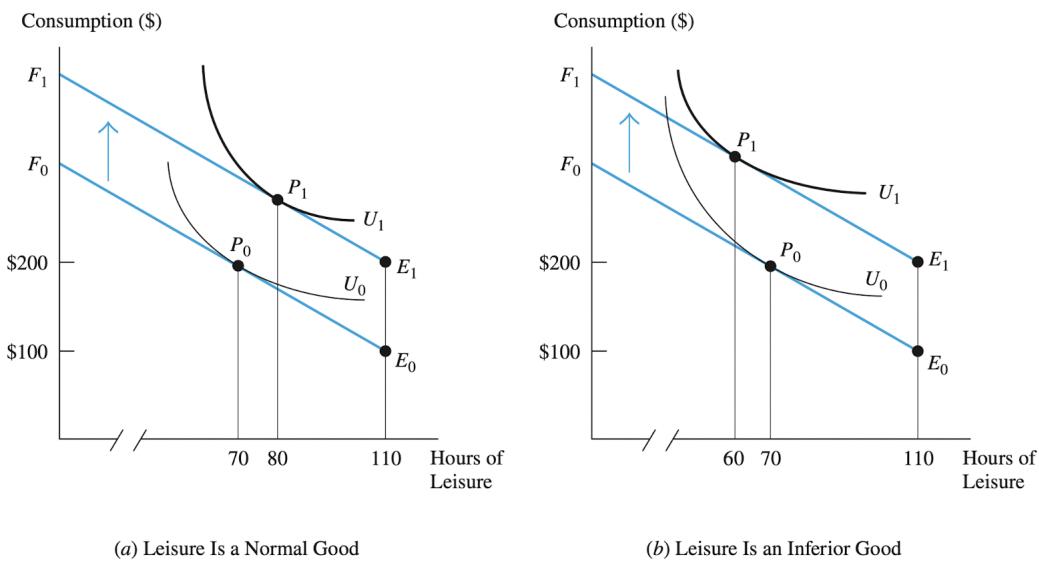


Figure 6: Effect of Nonlabor Income Shock on Hours of Work

2.6.2 What Happens to Hours of Work When the Wage Changes?

If there is a change to the worker's wage, then the effect on hours worked is ambiguous, as we must contend with both income and substitution effects. See Figure 7 for a graphic depiction of what happens to the worker's opportunity set when the wage increases, as well as an example of indifference curves that could generate an increase or decrease in hours worked.

FIGURE 2-8 The Effect of a Change in the Wage Rate on Hours of Work

A change in the wage rate rotates the budget line around the endowment point E . A wage increase moves the worker from point P to point R , and can either decrease or increase hours of work.

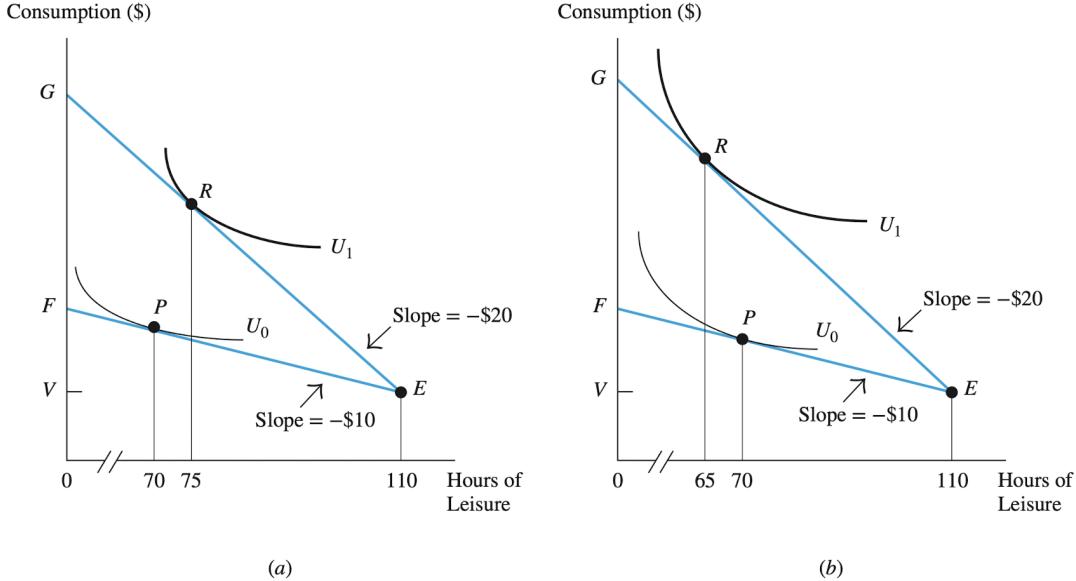


Figure 7: Effect of Wage Change on Hours of Work

Figure 8 decomposes the effect of the wage change into the income and substitution effects. In this decomposition, the pre-wage-change level of consumption and leisure is given by P . After the wage change, the move from P to Q is the income effect, in which the worker works fewer hours due to the increase in income. We visualize this with a parallel shift in the budget constraint,² as we did in Figure 6 when the worker experienced a non-wage income shock. The income effect portion is thus characterized by a change in the intercept of the budget constraint line, but not the slope.

The substitution effect is then the move from Q to R , in which the worker works more hours due to the increase in the wage. In contrast to when the worker experienced a non-wage income shock, leisure has now become more expensive, in the sense that the opportunity cost of leisure has increased. The substitution effect can be thought of as what happens to the worker's choice of C and L as the wage changes but the worker's level of utility is held constant, in this case at the level associated with U_1 .

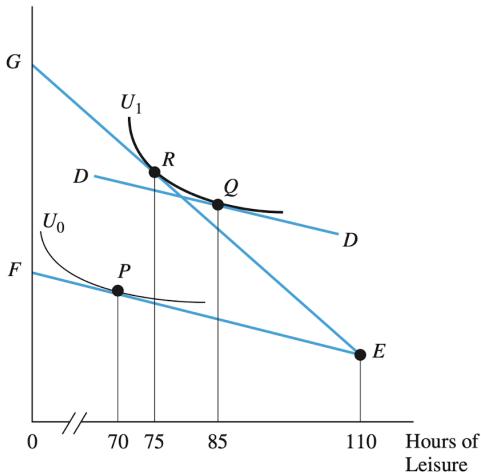
As demonstrated in Figure 8, the overall effect of the wage change on hours worked is ambiguous, as it depends on the relative magnitudes of the income and substitution effects.

²When I say budget constraint here, I guess I really mean the opportunity set frontier.

FIGURE 2-9 Income and Substitution Effects

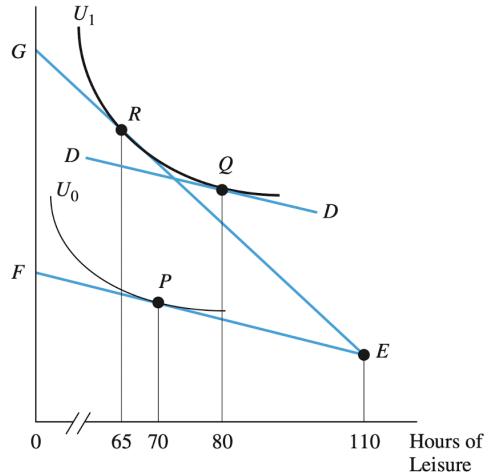
An increase in the wage rate generates both income and substitution effects. The income effect (the move from point P to point Q) reduces hours of work; the substitution effect (the move from Q to R) increases hours of work.

Consumption (\$)



(a) Income Effect Dominates

Consumption (\$)



(b) Substitution Effect Dominates

Figure 8: Decomposition of Wage Change Effects

2.7 To Work or Not to Work?

A worker may choose not to work at all. Look at Figure 9 for an example. At wage w_{low} , the worker chooses not to work. This is because the utility curve that they're on at their initial endowment point E (U_0) is higher than any utility curve that they could reach along the line GE characterizing their opportunity set under wage w_{low} . However, if the wage increases to w_{high} , then, they could reach point Y on indifference curve U_H , which is higher than U_0 . Thus, they work at wage w_{high} . In fact, we can pinpoint the exact point at which the worker is indifferent between working and not working. This occurs at the wage w^* , which is the absolute value of the slope of the line tangent to the indifference curve U_0 at point E . We refer to this as the reservation wage.

Definition D.6: Reservation Wage

The reservation wage is the wage at which the worker is indifferent between working and not working.

Note that the probability of working is increasing in the wage – only the substitution effect applies, since the income effect of a wage increase doesn't kick in if the person wasn't working to begin with.

FIGURE 2-10 The Reservation Wage

If the person chooses not to work, she can remain at the endowment point E and get U_0 units of utility. At a low wage (w_{low}), the person is better off not working. At a high wage (w_{high}), she is better off working. The reservation wage w^* is given by the slope of the indifference curve at the endowment point.

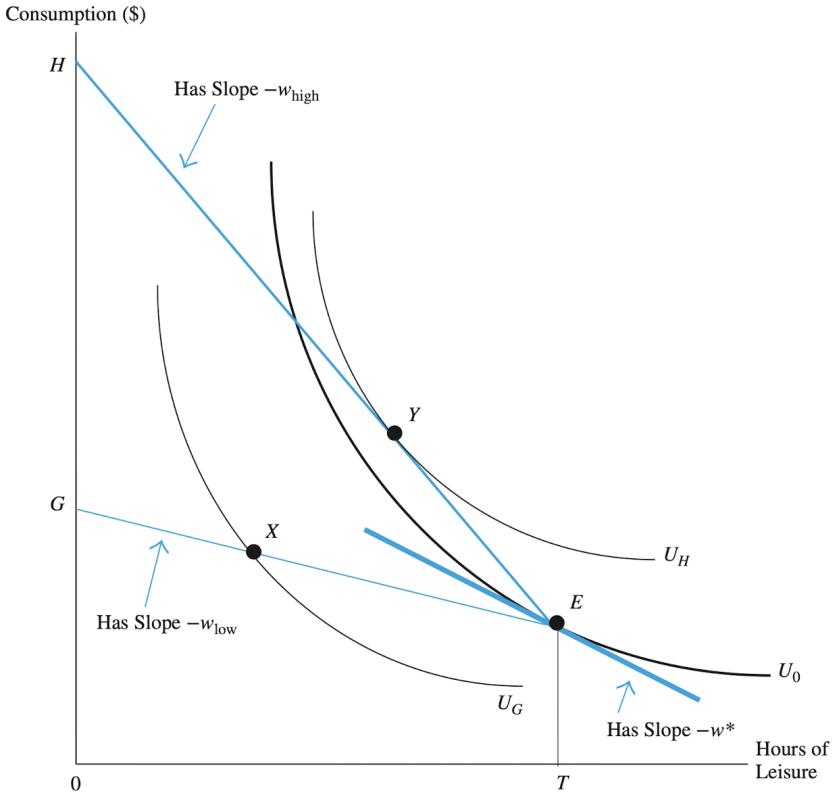


Figure 9: Decision to Work

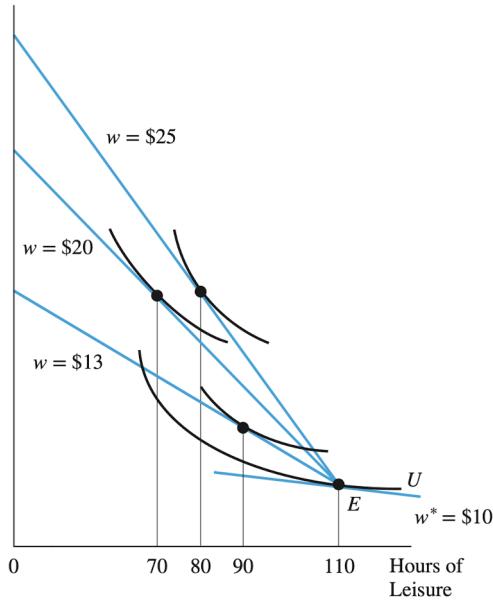
2.8 The Labor Supply Curve

There is a tight relationship between the utility maximization problem that we've been discussing and the worker's labor supply curve. Indeed, the latter can be derived from the former, as demonstrated in Figure 10. At each wage, the worker chooses a level of hours to spend on leisure (L), the hours worked is then $h = T - L$, where T is the total hours available. Thus, for each wage, we have the worker's corresponding number of hours of labor supplied, which is what we need to plot the labor supply curve. In the example we consider in Figure 10, the substitution effect dominates up until the wage hits 20, after which point, the income effect dominates and the number of hours worked declines.

FIGURE 2-11 Deriving a Labor Supply Curve for a Worker

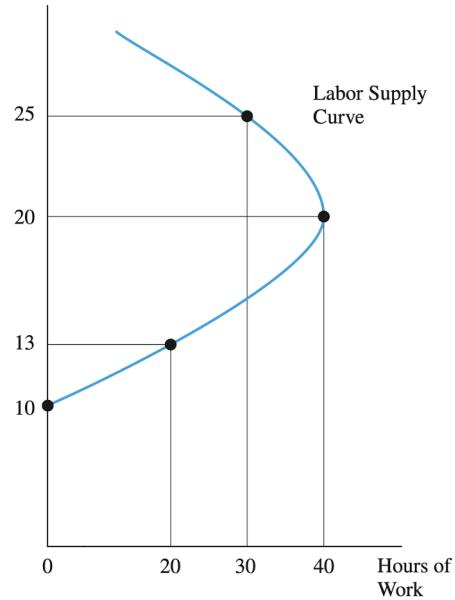
The labor supply curve traces out the relationship between the wage rate and hours of work. At wages below the reservation wage (\$10), the person does not work. At wages higher than \$10, the person enters the labor market. The upward-sloping segment of the labor supply curve implies that substitution effects are stronger initially; the backward-bending segment implies that income effects may dominate eventually.

Consumption (\$)



(a) Optimal Consumption Bundles

Wage Rate (\$)



(b) Relation between Optimal Hours of Work and the Wage Rate

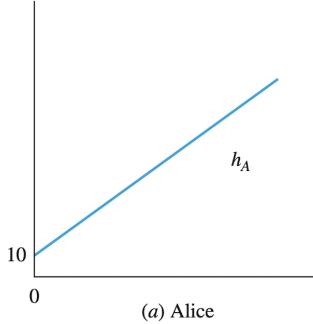
Figure 10: Derivation of the Labor Supply Curve

The aggregate labor supply is the sum of the individual labor supply decisions. See Figure 11 for an example with two workers.

FIGURE 2-12 Derivation of the Market Labor Supply Curve

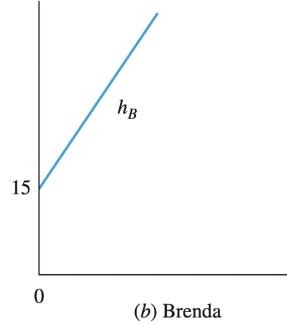
The market labor supply curve “adds up” the supply curves of individual workers. When the wage is below \$15, no one works. At a wage of \$15, Alice enters the labor market. If the wage rises above \$20, Brenda also enters the market.

Wage Rate (\$)



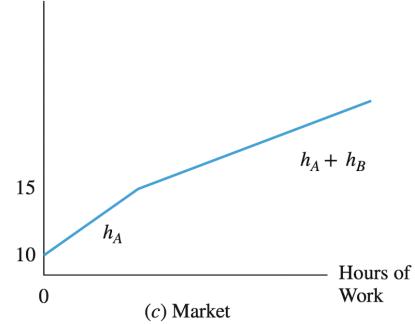
(a) Alice

Wage Rate (\$)



(b) Brenda

Wage Rate (\$)



(c) Market

Figure 11: Aggregate Labor Supply

We then consider the notion of labor supply elasticity. Labor supply elasticity tells us what

percent change in hours worked corresponds to a percent change in the wage.

Definition D.7: Labor Supply Elasticity

The labor supply elasticity is a measure of how responsive hours worked (h) is to changes in the wage (w). It is given by the expression for σ below.

$$\sigma = \frac{\left(\frac{\Delta h}{h} \right)}{\text{Percent change in hours worked}} / \frac{\left(\frac{\Delta w}{w} \right)}{\text{Percent change in wage}} = \frac{\Delta h}{\Delta w} \cdot \frac{w}{h}$$

Definition D.8: Elastic and Inelastic

If $\sigma > 1$, then labor supply is elastic. If $\sigma < 1$, then labor supply is inelastic. If $\sigma = 1$, then labor supply has unit elasticity.

2.9 Estimates of the Labor Supply Elasticity

Some evidence suggests that the labor supply elasticity for men is around -0.1 . That is, the income effect is dominating for men, which could explain the decline in hours worked among men over the last century, as real wages have increased. However, there are meaningful challenges in estimating the labor supply elasticity, e.g., measurement error.

2.10 Household Production

The neoclassical model of labor-leisure choice is built on the idea that we can either engage in leisure or wage labor. However, we often engage in home production, in which we produce goods and services for our own consumption. We now incorporate this into a model of labor supply that considers a household (in this case, 2 workers), rather than just an individual.

2.10.1 The Household Production Function

Definition D.9: The Household Production Function

The household production function describes the level of household output producible by the household for a given amount of time.

See Figure 12 for an example. In this example, we consider a couple, Jack and Jill. Panels (a) and (b) show the opportunity sets for Jack and Jill individually, respectively. Panel (c) shows the household production function, which is derived from the individual opportunity sets. In this scenario, we suppose that Jack can earn more in the market and produce less in the household per hour. Thus, the slope of the household opportunity frontier varies as it switches from the marginal productivity coming from Jack to Jill or vice versa.

One of the key implications of this model is that each member of the household should be prioritized for the activity in which they are comparatively better. For example, if the couple needs to move from a world in which they engage exclusively in home production to one in which some hours of work are allocated to the market, this model would prioritize Jack working in the market, since he has the higher wage and lower household productivity.

FIGURE 2-13 Budget Lines and Opportunity Frontier of Married Couple

At point E , Jack and Jill allocate all their time to the household sector. If they wish to buy market goods, Jack gets a job because he has a relatively higher wage, generating segment FE of the frontier. After he allocates all his time to the labor market, Jill then gets a job, generating segment GF of the frontier.

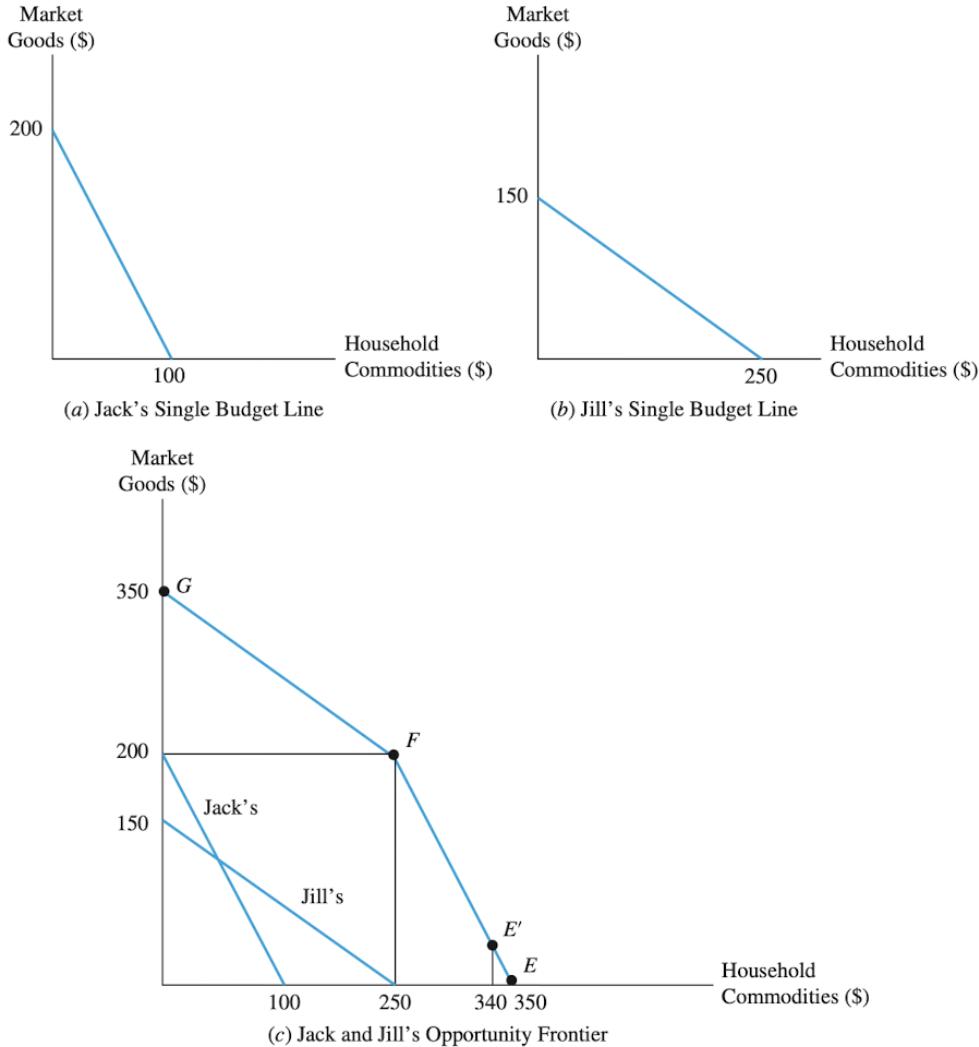


Figure 12: Household Production Function

Figure 13 shows various possible allocations of Jack and Jill's time between market work and home production that might be justified under different utility functions.

FIGURE 2-14 The Division of Labor in the Household

The indifference curve U is tangent to the opportunity frontier at point P . (a) Jill specializes in the household sector and Jack divides his time between the labor market and the household. (b) Jack specializes in the labor market and Jill divides her time between the two sectors. (c) Jack specializes in the labor market and Jill specializes in the household sector.

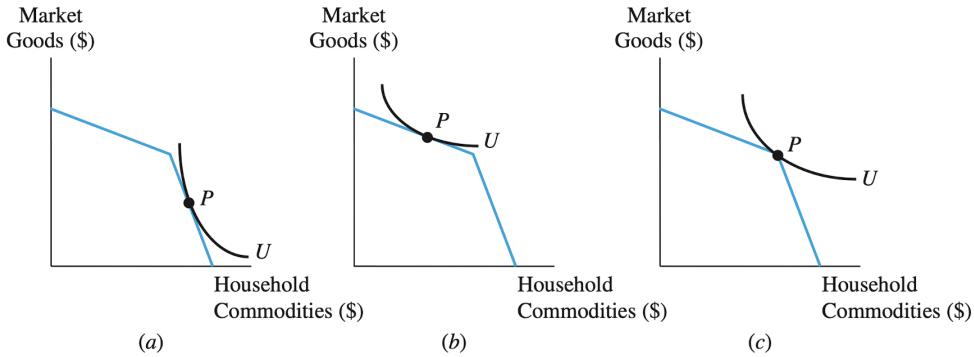


Figure 13: Various Household Allocations

Figure 14 captures what happens if Jack experiences an increase in wage or Jill experiences an increase in household productivity. In the first case, Jack shifts away from home production towards market work. In the second case, Jill shifts away from market work towards home production. In each case, these particular figures show complete specialization. In Panel (a), I show an extra bullet if there was no change in Jack's allocation between market work and home production. At this point, we can see that the household would only have to give up a little bit of household commodity to get much more in market goods, because of the newfound steepness of this portion of the household production frontier.

2.11 Policy Application: Welfare Programs and Work Incentives

This section considers the impact of various forms of welfare on work incentives. First, Figure 15 shows how a cash grant to those working zero hours could reduce a worker's supply of labor. In this figure, we see that the worker supplies G hours of labor at the considered wage, but if they receive 1,000 for not working, they reach a higher indifference curve by taking the grant and not working at all. Thus, the worker with these example indifference curves facing this binary grant would choose not to work when they otherwise would've.

FIGURE 2-15 Increases in Wage Rate or Household Productivity Lead to Specialization

- (a) An increase in Jack's wage moves the household from point P to P' and Jack specializes in the labor market.
 (b) An increase in Jill's household productivity moves the household from point P to P' and Jill specializes in the household sector.

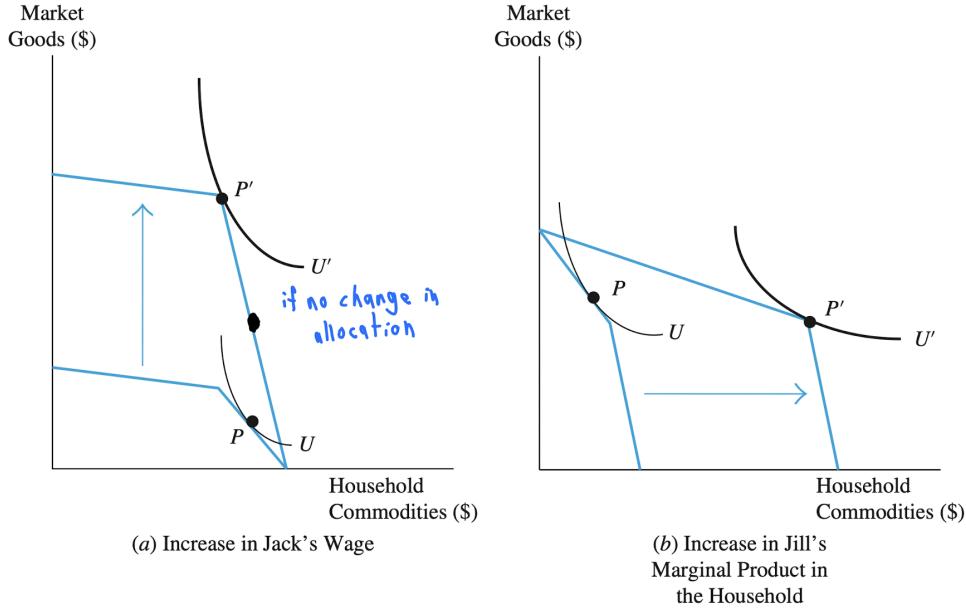


Figure 14: Impact of Wage or HH Production Changes on Household Production

FIGURE 2-16 Effect of a Cash Grant on Work Incentives

A take-it-or-leave-it cash grant of \$1,000 per month moves the worker from point P to G , and she leaves the labor force.

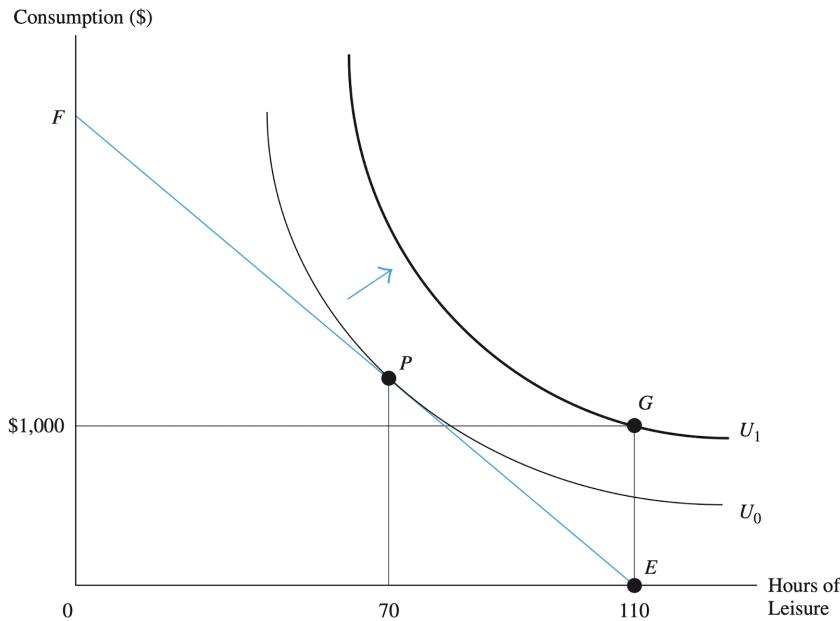


Figure 15: The Effect of a Cash Grant on Labor Supply

If we instead suppose that the worker receives a welfare benefit of \$1,000, which is then reduced by \$0.50 for every dollar earned in the market, we can think of this as a 50% tax on earnings for the first \$2,000 of earnings. An example of how this could play out for a worker is shown in Figure 16. As we can see, the policy shifts the opportunity set from being characterized by FE to HG , where FE has a slope of $-1w$ and HG has a slope of $-0.5w$. The agent's choice is characterized by P in the no-welfare scenario and R in the welfare scenario. In this example, the income effect moves the worker to Q , and the substitution effect then moves them to R . In this example, the income and substitution effects work in the same direction, since the income effect makes the worker work less when labor is a normal good, and the substitution effect makes the worker work less, given that leisure is less expensive because of the effective tax on earnings.

FIGURE 2-17 Effect of a Welfare Program on Hours of Work

The welfare program in budget line HG gives the worker a cash grant of \$1,000 and imposes a 50 percent tax on labor earnings. In the absence of welfare, the worker is at point P . The income effect resulting from the program moves the worker to point Q ; the substitution effect moves the worker to point R . Both income and substitution effects reduce hours of work.

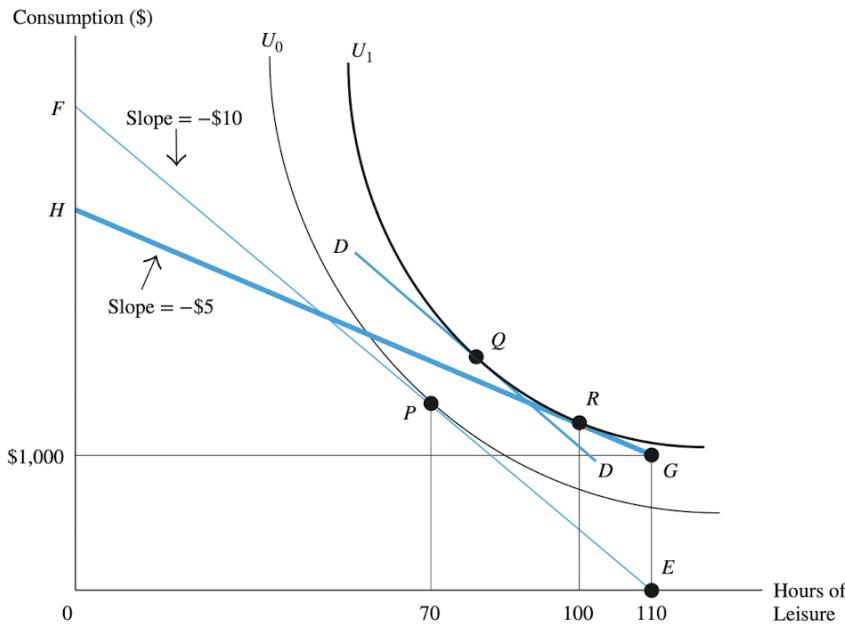


Figure 16: The Effect of a Welfare Program on Labor Supply

2.12 Policy Application: The Earned Income Tax Credit

The next example that we'll consider is the Earned Income Tax Credit (EITC). The EITC is a subsidy for low-income working families. The way that the EITC works is such that the workers earnings can be divided into four segments: (1) on earnings up to E_1 , a subsidy rate of τ applies, so that the worker earns $(1 + \tau)w$ per hour worked; (2) on earnings between E_1 and E_2 , the worker earns w per hour worked; (3) on earnings between E_2 and E_3 , the worker

earns $(1 - \rho)w$ per hour worked, where ρ is the phase-out rate; and (4) on earnings above E_3 , the worker earns w per hour worked. This is demonstrated graphically in Figure 17.

FIGURE 2-18 The EITC and the Budget Line (Not Drawn to Scale)

In the absence of the tax credit, the budget line is given by FE . The EITC grants the worker a credit of 40 percent on labor earnings as long she earns less than \$14,040. The credit is capped at \$5,616. The worker receives this amount as long as she earns between \$14,040 and \$18,340. The tax credit is then phased out gradually. The worker's net wage is 21.06 cents below her actual wage whenever she earns between \$18,340 and \$45,007.

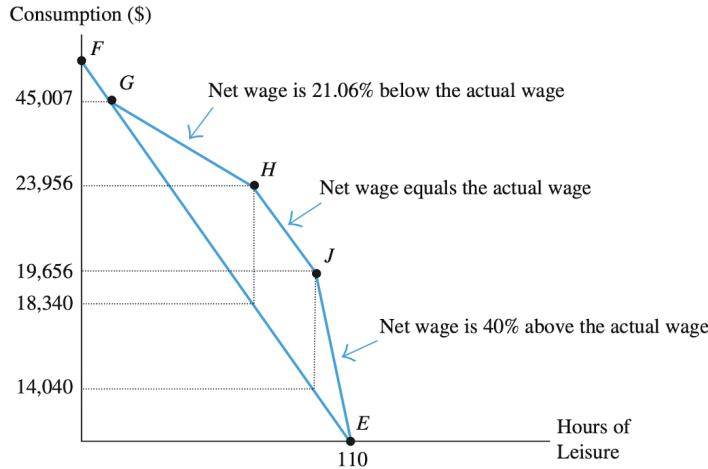


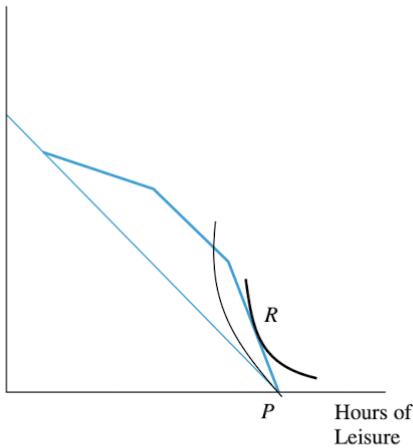
Figure 17: The Structure of the Earned Income Tax Credit

Figure 18 demonstrates some possible effects of the EITC on a worker's labor supply. Panel (a) demonstrates a worker who is brought into the labor force by the EITC. Panel (b) demonstrates a worker who reduces their hours worked due to the income effect of the EITC. Panel (c) demonstrates a worker who decreases their hours worked due to the income and substitution effects of the EITC.

FIGURE 2-19 The Impact of the EITC on Labor Supply

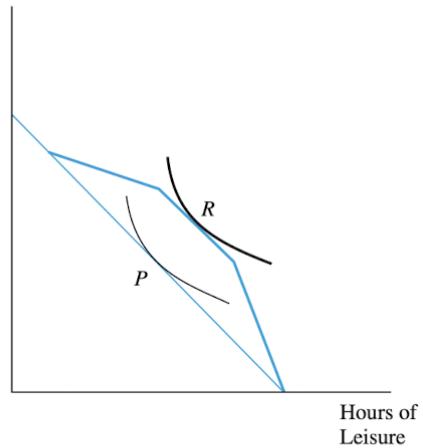
The EITC shifts the budget line, and will draw new workers into the labor market. In (a), the person enters the workforce by moving from point P to R . The impact of the EITC on the labor supply of persons who are already working is less clear. In the shifts illustrated in (b) and (c), the worker works fewer hours.

Consumption (\$)



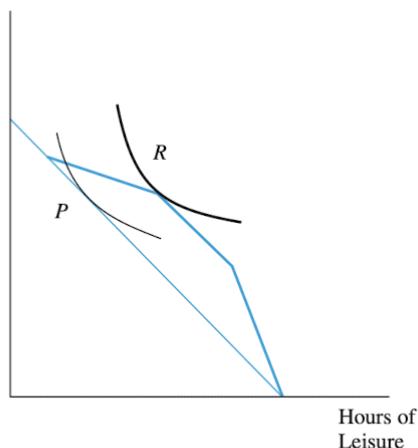
(a) EITC Draws Worker into Labor Market

Consumption (\$)



(b) EITC Reduces Hours of Work

Consumption (\$)



(c) EITC Reduces Hours of Work

Figure 18: The Effects of the Earned Income Tax Credit

2.13 Labor Supply Over the Life Cycle

Consumption and leisure decisions are made over the course of the life cycle. Thus, workers can shift their labor to periods of relative higher productivity. This hypothesis is known as the “intertemporal substitution hypothesis.” Figure 19 illustrates the typical earnings and hours worked patterns over the life cycle. Models of life cycle labor supply crucially

depend on estimating the intertemporal labor supply elasticity. I won't include so much more discussion of this right now.

FIGURE 2-20 The Life Cycle Path of Wages and Hours for a Typical Worker

(a) The age-earnings profile of a typical worker rises rapidly when the worker is young, reaches a peak at around age 50, and then wages either stop growing or decline slightly. (b) The changing price of leisure implies that the worker will devote relatively more hours to the labor market when the wage is high and fewer hours when the wage is low.

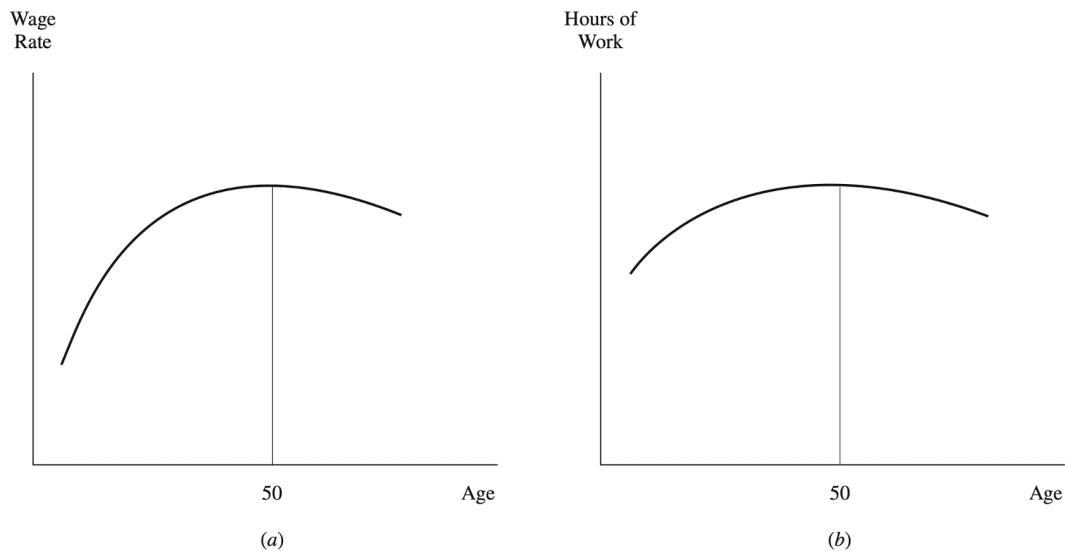


Figure 19: Wages and Hours Worked Over the Life Cycle

2.14 Policy Application: Disability Benefits and Labor Force Participation

The textbook then discusses some evidence that disability benefits reduce labor force participation. In particular, the author discusses some research suggesting that people who get denied disability benefits are more likely to work afterwards than people who are approved, even after attempting to sort through the endogeneity issues (e.g., by using an instrumental variable approach). I don't doubt that these results are true, but I'm not really sure what I'm meant to take away from it in a normative sense. Perhaps nothing.

3 Chapter 3: Labor Demand

3.1 The Firm's Production Function