Chapter 13: Labor Markets, Poverty, and Income Distribution

A. Demand for labor

Inputs:
- building
- tools
- utilities
- labor

Output:
- number of mufflers replaced

● Joe’s shop gets: $100 for each muffler replaced
● Question: take building, tools, and utilities fixed, vary labor

Definitions:

The **marginal product of labor** is how much output would increase from hiring one more worker.

The **value of marginal product** is how much revenue would increase from hiring one more worker.

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<tr>
<th>Number of workers</th>
<th>Output (mufflers per day)</th>
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<tbody>
<tr>
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<td>5</td>
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<tr>
<td>2</td>
<td>8</td>
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<td>3</td>
<td>9</td>
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Definition:
The tendency of the marginal product of labor to fall as the number of workers hired increases is referred to as **diminishing returns to labor**

Proposition: A profit-maximizing firm would hire labor up to the point where VMP equals the wage

Note this is a special case of the general principle of setting marginal benefit equal to marginal cost
Marginal benefit of hiring one more worker = VMP
Marginal cost of hiring one more worker = wage
MB = MC requires VMP = W
Summary: how to calculate firm’s demand for labor
- Calculate how much output goes up by hiring one more worker (=MP)
- Calculate what this is worth in dollars to the firm (=VMP)
- Find largest number of workers for which VMP is greater than or equal to the wage
- This is the number of workers the firm wants to hire

Conclusion: VMP and labor demand are just two names for the same curve
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A. Demand for labor

VMP = additional revenue to firm from hiring one more worker

Proposition: A profit-maximizing firm would hire labor up to the point where VMP equals the wage

Conclusion: VMP and labor demand are just two names for the same curve

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B. Firm versus industry labor demand

Firms of type 1 Firms of type 2

Labor demand for whole industry

Industry-wide labor demand is horizontal summation of each individual firm’s VMP schedule

C. Supply of labor

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A. Demand for labor

B. Firm versus industry labor demand

C. Supply of labor
Could ask three different questions:
How many people would be willing to work for a given wage:
• at this particular firm? (gives us firm’s supply of labor)
• in this industry? (gives us industry’s supply of labor)
• in the entire economy? (gives us economy-wide supply of labor)

Perfect competition in the labor market:
• There are a large number of firms in this industry
• Workers don’t care which firm they work at
• All workers have the same productivity

Implications:
• All firms in this industry must pay the same wage
• The individual firm’s supply of labor looks flat from point of view of the firm

Labor supply curve for one industry: raise wage in this industry, holding wages in other industries constant
Labor supply for entire economy: raise wage in all jobs, what would happen to number of people who want jobs?

Substitution effect
One possibility: some people are attracted into labor force who wouldn’t otherwise want to work
In this case, economy-wide labor supply curve would slope up

Income effect
Another possibility: if one member of couple earns more money, the other might feel he or she doesn’t need to work (or each worker puts in fewer hours)
In this case, economy-wide labor supply curve would slope down
Unclear (from both theory and evidence) which effect dominates
Assumption for some simple illustrations: income and substitution effects exactly cancel out (vertical labor supply)

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A. Demand for labor
B. Firm versus industry labor demand
C. Supply of labor
D. Determinants of wages

To represent what goes on in the economy as a whole, let's assume that there are only two industries in the economy as a whole.

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A. Demand for labor
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D. Determinants of wages
  1. Wages when all people have same abilities and same interests and all jobs look alike
Conclusion:
If everybody had the same ability and same interests and all jobs were equally attractive, then economic theory predicts that everybody would receive the same wage.

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D. Determinants of wages
1. Wages when all people have same abilities and same interests and all jobs look alike
2. Wages when some people are unable or unwilling to do certain jobs

A U.S. truck driver might make $35,000 per year.
If you’re willing to drive it in Iraq, you could make $80,000.

A compensating wage differential can be negative if people would want that job even if it pays less than others.

Examples:
• median income of dancers is $21,000
• median income of zoo workers is $16,500

Definition:
A compensating wage differential is a difference in the wage rate that reflects the attractiveness of a job’s working conditions.

Truck drivers in Iraq receive a positive compensating wage differential.
Some jobs may require skills that many people do not have, or effort that many are unwilling to commit.

The average 30-year-old college graduate earns $15,000 more per year than high-school graduate.

The average 55-year-old college graduate earns $30,000 more per year.

Definition:
Human capital refers to the combination of education, experience, training, intelligence, energy, work habits, trustworthiness, and initiative, that may determine an individual’s VMP.

Some economists believe that most differences in wages can be attributed to differences in human capital.

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D. Determinants of wages
1. Wages when all people have same abilities and same interests and all jobs look alike
2. Wages when some people are unable or unwilling to do certain jobs
3. Wages when some people are restricted from doing certain jobs
Outcome when only union members can work in Industry 1

Outcome is socially inefficient because too few people are now working in union sector
Take 1 worker from nonunion sector and put on union job

Winners:
• union members who stay employed
Losers:
• union members who lose their jobs
• non-union members
• firms in union sectors
Can we compare total dollar value for each?

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D. Determinants of wages
1. Wages when all people have same abilities and same interests and all jobs look alike
2. Wages when some people are unable or unwilling to do certain jobs
3. Wages when some people are restricted from doing certain jobs
E. Discrimination
Median Weekly Earnings:
white men: $747
white women: $589
black men: $529
black women: $512
Source: BLS, “Usual Weekly Earnings”

Could such differences be explained by differences in human capital or work preferences?

Fraction of population with bachelor’s degree or higher:
whites: 27.6%
blacks: 17.3%

Average hours worked per week:
men: 41.6
women: 35.9
Source: BLS, “Characteristics of the Employed”

However, some differences persist even when we compare people of same observable characteristics

Some economists argue that this is just because many of the differences in human capital or preferences for type of work are not measured accurately

Suppose there were two different workers who would contribute the same VMP to the firm, but one would cost the firm 20% less than the other.

Then the firm could make more money by hiring the cheaper worker to do the same job.

Implication: pure discrimination (paying a higher wage to someone who is no better qualified because they are in a favored group) would not be in the economic interests of a firm
So how could we explain the existence of discrimination?

(1) ignorance—firm doesn’t know it would make more profits if it didn’t discriminate

But if that’s the explanation, wouldn’t smart firms come in and drive the ignorant people out of business?

(2) persistent historical advantages—social networking

(3) noneconomic forces—social pressure or physical coercion

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A. Demand for labor
B. Firm-versus industry labor demand
C. Supply of labor
D. Determinants of wages
E. Discrimination
F. The basic facts about income inequality

Top 20% of households earn 50% of income. Bottom 20% of households earn less than 4% of income.

But these figures are based on before-tax income.

Richest 25% of U.S. taxpayers pay 83% of all income taxes.
Richest 1% pay 34%.
Source: U.S. Treasury Dept. Fact Sheet, April 2004

These figures also do not include the value of in-kind transfers to the lower income households (food stamps, housing, medical care,...)
After some of these corrections, top 20% of households earn 46% of income. Bottom 20% of households earn 5% of income.

Top 20% of households by earnings include 25% of the population. Bottom 20% of households by earnings include 14% of the population. Top 20% of households by earnings performed 34% of hours worked. Bottom 20% of households by earnings performed 4% of hours worked.

If each quintile included the same number of people working same number of hours, top 20% would earn 36% of income, bottom 20% would earn 12% of income.

Wages of those at the top of the earnings distribution have grown faster than those at the bottom.

This increase in wage inequality is closely related to an increase in the difference in wages between college-educated and high-school-educated workers.

Adjusted for inflation, the minimum wage fell in the 1980’s when wage inequality was rising.
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F. The basic facts about income inequality
G. Policies to reduce income inequality
   1. Raising the minimum wage

Conclusion: Raising minimum wage would:
(1) Help poor workers who keep their jobs
(2) Hurt those who lose their jobs
(3) Hurt employers
(4) Maybe socially inefficient if (a) dollar value lost in (2) and (3) is bigger than dollar gain in (1) and (b) one puts equal weight on all sources of economic surplus

Cash benefits, medical assistance, housing, food stamps for the poor
Paid for with tax on the rich
Two potential problems with existing welfare system:
(a) decreased work incentives caused by taxing those who are successful
(b) decreased work incentives caused by making benefits depend on low income

progressive income tax:
the more you earn, the higher your tax rate in percentage terms

Current U.S. tax rates:
• $50,000 taxable income, tax is $9,238 (=18%)
• $100,000 taxable income, tax is $22,627 (=23%)

If progressive income taxes cause computer hardware engineers to work fewer hours or work in other occupations, there is a deadweight social loss

Means-tested benefit programs:
You only receive the benefit (food stamps, medical coverage, …) if you are sufficiently poor
If someone from a poor household works more hours, they may lose their eligibility for Temporary Assistance for Needy Families, food stamps, Medicaid, housing assistance, child care, school lunches, earned income tax credit, …

Example: single mother of 2 in Oklahoma in 1999

| Single mother of 2 in Oklahoma in 1999 working at minimum wage ($5.15/hr) |
|------------------|---------|--------|
|                  | no work | 20 hr/week | 40 hr/week |
| wages            | 0       | 446     | 892       |
| EITC             | 0       | 179     | 318       |
| FICA             | 0       | -34     | -68       |
| TANF             | 292     | 163     | 0         |
| food stamps      | 329     | 311     | 223       |
| Medicaid         | 207     | 207     | 121       |
| childcare copay  | 0       | 0       | -32       |
| total resources  | $628    | $1,272  | $1,454    |

Source: Hager and Reed, Univ. of Okla., 2003

If she went from part-time to full-time, she would work an extra 20 hours per week in order to make her income rise from $1,272 to $1,454

Net pay rate: $2.10/hour

Basic tradeoff:

**Equity:** we’d like the outcome to be equal and fair where everyone enjoys a decent standard of living

**Efficiency:** we’d like to make sure that the incentives encourage everyone to have as high a standard of living as possible

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F. The basic facts about income inequality

G. Policies to reduce income inequality
   1. Raising the minimum wage
   2. Welfare programs
   3. Negative income tax
Negative income tax:

If your income is \( Y \), your tax is \(-$10,000 + 0.25 \times Y\)

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<th>after-tax income</th>
<th>average tax rate</th>
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