Microeconomics, Module 21, “The Market for Labor” (Chapter 16)

Homework Assignment

(The attached PDF file has better formatting.)

Some towns and cities have passed statutes requiring higher wages. This homework assignment examines the economic results of these statutes.

We do not judge the morality of these statutes or whether low paid workers are exploited by firms. *Exploit* is a normative term, implying that firms unfairly appropriate the wealth of their workers. Landsburg does not deal with normative issues and does not use this term.

Scenario #1: A firm with 30 workers now pays them $6.00 an hour. From each worker, the firm gains $11.00 an hour, so its net profit is $5.00 an hour. A new statute sets a minimum wage of $10.00 an hour for firms with 30 or more employees. The advocates of the new statute say the firm will now pay $10.00 an hour, so its net profit is $1.00 an hour and its workers receive a better wage.

We examine three cases:

α: The firm pays $6.00 an hour to thirty workers.
β: The firm pays $10.00 an hour to thirty workers.
γ: The firm lays off 5 workers and pay $6.00 an hour to 25 workers.

For each case, work out the

- Total revenue of the firm.
- Total labor costs of the firm.
- Net profit of the firm.

For case α, the total revenue is $11 × 30 = $330 an hour; the total labor costs are $6 × 30 = $180; and the net profit is $330 – $180 = $150. For the homework assignment, determine the corresponding figures for cases β and γ and answer the items below.

A. Total revenue when it pays $6.00 an hour to 30 workers? (30 × $11.00)
B. Total labor cost when it pays $6.00 an hour to 30 workers? (30 × $6.00)
C. Total profit when it pays $6.00 an hour to 30 workers? (30 × $5.00)
D. Total labor cost if it pays $10.00 an hour to 30 workers? (30 × $10.00)
E. Total profit if it pays $10.00 an hour to 30 workers? (30 × $1.00)
F. Total revenue if it lays off 5 workers and pays $6.00 to 25 workers? (25 × $11.00)
G. Total labor cost if it lays off 5 workers and pays $6.00 to 25 workers? (25 × $6.00)
H. Total profit if it lays off 5 workers and pays $6.00 to 25 workers? (25 × $5.00)
I. What is the expected response of a profit maximizing firm to the new labor law?
J. What is the expected change to unemployment?
K. Do workers gain from the new law?
L. Do firms gain from the new law?

Some argue that the new laws are aimed at large firms that employ many workers and earn large profits from each worker. Consider the scenario below, which reflects the more typical case.

Scenario #2: A firm with 100 workers now pays them $6.00 an hour. From each worker, the firm gains $16.00 an hour, so its net profit is $10.00 an hour. A new statute sets a minimum wage of $10.00 an hour for firms with 30 or more employees. The advocates of the new statute say the firm will now pay $10.00 an hour, so its net profit is $6.00 an hour and its workers receive a better wage.

If we examine the cases outlined above, the firm earns greater profits by retaining its workers and paying them \$10.00 an hour than by laying off 75 workers and paying the rest of the workers \$6.00 an hour.

To examine this scenario, we assume the firm would pay \$6.00 an hour if it moved its operations to a neighboring town (Town ZZ), but the move would cost \$250,000. Assume the revenue of the firm does not change if it moves to ZZ.

A. What is the difference in labor costs if the firm moves to ZZ? {(\$10.00 – \$6.00) × 100 workers each hour.}
B. What is the difference in net profit?
C. Assuming the work week is 40 hours, what is the difference in weekly profits?
D. How many weeks would it take the firm to recoup the moving costs?
E. What is the effect of the new statute on unemployment?

We infer nothing about fairness or equity. Landsburg implies the following:

- In competitive markets, firms produce at minimum cost and earn just the required return on capital; they earn zero economic profits. Only monopolies and other firms with market power earn economic profits (in the long-run). To ensure optimal social welfare for consumers, keep the markets competitive; don't try to legislate prices or quantities.
- In competitive markets, labor earns a wage that reflects its marginal product. If the wage is low, the marginal product is low. This may occur because many persons are seeking work in a given industry. Mandating a higher wage rate, even if it is successful, puts people out of work, reduces the quantity produced, and raises prices.

In this example, if the market is competitive, the \$16.00 an hour revenue may provide a fair return for owners of fixed land, suppliers of capital, and managers of the firm. If it is excessive, another firm will enter the market and sell the product at a lower cost. But we can't raise social welfare by mandating higher wages.