

CHAPTER 4 - LABOR DEMAND ELASTICITIES

While Chapter 3 dealt with the downward sloping nature of labor demand curves, Chapter 4 deals with the *magnitude* of the employment response to a change in the wage rate. We begin the chapter by defining and discussing the own-wage elasticity of demand. In this regard the Hicks-Marshall laws of derived demand are explained, with each of the four laws being related to the substitution and scale effects (concepts that were introduced in Chapters 2 and 3).

After discussing the laws of derived demand in the context of own-wage effects, we move to a discussion of the cross-wage elasticity of demand. Here we stress the concepts of gross substitutability and gross complementarity (as distinguished from substitutes or complements in production). Another section is devoted to a discussion of the empirical evidence on both the own-wage elasticity of demand and cross-wage elasticities.

The chapter concludes with sections that apply the concepts of demand elasticity to analyzing the effects of minimum-wage legislation and technological change. The appendix to Chapter 4 analyzes the labor-market effects of international trade.

List of Major Concepts

1. The own-wage elasticity of demand is the percentage change in employment of a class of labor induced by a one-percent change in the wages of that class.
2. Cross-wage elasticities of demand are the percentage change in employment of a class of labor induced by wage changes in *another* class; they may be positive or negative.
3. The four Hicks-Marshall laws of derived demand are introduced and related to the substitution and scale effects of a wage change.
4. The concepts of gross substitutability and gross complementarity are defined and distinguished from substitutability or complementarity in production.
5. Empirical evidence concerning the own-wage and cross-wage elasticities of demand, based on both statistical studies and inferential analyses, is presented.
6. Standard labor demand theory predicts that an increase in the minimum wage will result in the loss of employment.
7. Actually measuring the employment effects of minimum-wage increases requires that we distinguish between nominal and real changes in the rate, that other things influencing employment levels be controlled for, and that the presence of uncovered sectors and intersectoral shifts in product demand be built into the design of the study.

8. The results of studies estimating the effects of minimum-wage increases are sensitive to the specification employed, with some studies finding the "conventional" negative effects and some finding none. Even those studies with negative employment effects generally find labor demand elasticities that are much smaller than those summarized earlier in the chapter.
9. It is possible that the generally small effects of minimum-wage increases are the result of the studies' focus on short-run effects, but they might also derive from labor markets that are characterized by monopsonistic behavior (for which theoretically expected short-run employment effects of mandated wage increases are ambiguous).
10. Technological change in product markets can change the slope and placement of product demand curves, thereby shifting and/or changing the elasticity of labor demand curves.
11. The labor-demand effects of technological improvements in capital depend on crosselasticities; in attempting to analyze the likely dominance of the substitution or scale effect in this case, the Hicks-Marshall laws applicable to own-wage changes cannot be slavishly applied.
12. Technological change causes total employment to be reallocated, not permanently reduced.
13. (Appendix) International trade is based on comparative advantage, and while trade may shift employment across industries, it is not true that trade will cause permanent job loss in high-wage countries.