

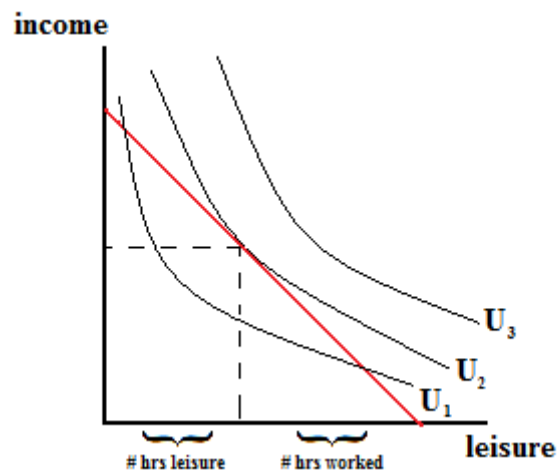
Income Tax and Labor-Leisure Tradeoff

Introduction

People decide how to “budget” their time in much the same way that they decide how to budget for different goods. Each person decides how much they “value” their leisure time versus their work time. The more people work, the more they tend to value their remaining leisure time. This is the justification for paying overtime to people working over 40 hours per week. How might we model this trade-off economically?

This question can be analyzed by using a utility function. To simplify this case, we will assume that the person modeled faces a constant hourly wage, regardless of the number of hours worked. (We could also do the model with a premium over-time wage, changing the slope of the line for all labor hours over 40 hours.)

Figure 1: Basic Model of Labor Supply



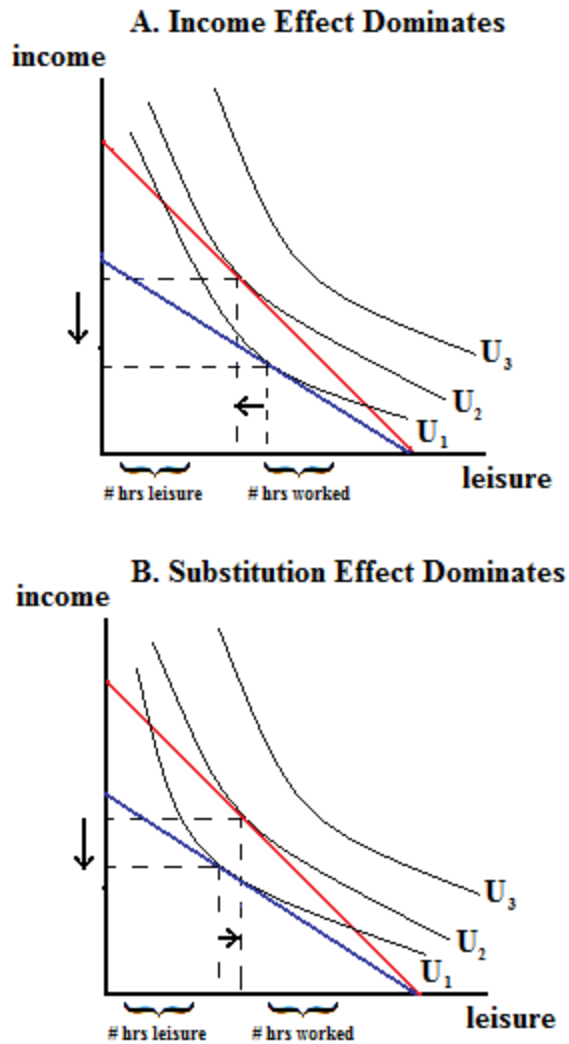
Effects of a Tax on Labor Market Decisions

If a tax is imposed on labor, the worker will perceive this tax as a reduction in his or her wage. For every hour worked, the individual worker receives a lower return on his or her labor. Faced with this change in prices, the worker may decide to increase the number of hours worked in order to achieve a certain income level (income effect) or may choose to work fewer hours, substituting leisure for labor in response to a lower return to labor (substitution effect). Determining whether a tax will result in more or less hours worked depends on whether the substitution or income effect is stronger. Figure 2 shows the effect that a tax will have on labor market decisions, with both the income effect dominating (part A) and the substitution effect dominating (part B). As shown, the



final effect depends on the shape of an individual's indifference curves—that is, his or her preferred trade-off of labor and leisure given different prices and income levels.

Figure 2: Labor Supply Model with the Imposition of a Tax



The aggregate effect of all labor supply curves in the economy yields the Laffer curve, which is a topic in a future unit in this course.

Empirical Evidence

Many studies have been conducted to measure the effects of income/wage taxes on labor market decisions. These studies aim to measure how sensitive the number of hours worked is to changes in the wage. Many of the early studies (see, for example, Killingsworth 1983 and Pencavel 1986), have shown that decisions on the number of



hours worked are fairly un-responsive to changes in the wage, particularly among male heads of households. Thus, according to these studies, people, especially male breadwinners, are unlikely to substitute leisure for labor when the wage falls due to a tax. However, when a more progressive tax system is modeled, it appears that taxes have a more important impact (see Hausmann 1981, and Ziluaq and Knieser 1999), which indicates that progressive tax schemes may result in efficiency costs due to decreased labor supply, even when considering the individual's life cycle. Studies that specifically study married women have had more mixed results, with women appearing to be more sensitive to changes in the income tax rate (and thus their wages) (Kimmel and Kneiser 1998). Over time, however, it appears that female decision making is becoming increasingly similar to that of their male counterparts, as female labor market participation has become standard (Blau and Kahn 2005).

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