THE DEMAND FOR HIGHER EDUCATION FACING AN INDIVIDUAL INSTITUTION

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ABSTRACT

The purpose of this paper is to provide an estimate of the elasticity and cross-elasticities of demand for higher education facing an individual institution. The utility which a high school graduate derives from each educational option open to him is assumed to be a stochastic function of the attributes of that option. For certain types of utility functions the maximization of utility results in the logit probability model.

This model is used to analyze the choices made by a sample of high school graduates in Hawaii. Estimates of the price elasticity and the cross-price elasticities of demand for enrollment at the University of Hawaii are obtained. It is found that the demand is quite inelastic with respect to both tuition and total cost of education. These estimates imply that changes in tuition will not affect enrollment appreciably.

I. Introduction

Financial difficulties have become a common experience for higher education institutions in recent years. These difficulties have been attributed to the growing demand on public funds for purposes other than financing higher education “... accentuated by recent federal cutbacks in funds and by reduced generosity on the part of state legislators responding to campus turmoil” (Hansen, 1970, p. 335). The result has been a growing interest by economists in studying the features of the current system of financing higher education with respect to equity and efficiency, and in suggesting alternative methods of financing which would promote efficiency, equity, or both. One of the main alternatives suggested is that tuition should perform the function of a “... price in an economic sense” (Nerlove, 1972, p. S178), supplemented if desired by a loan or grants-in-aid program. This method of financing in addition to promoting efficiency (Friedman, 1955), “directs educa-

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tional activities more to the interests of students and less to that of the university staff” (Alchian, 1968).

Many public institutes of higher education have been reluctant to raise tuition. Apart from the reasons given by Alchian (1968) (which include the politician’s desire for power, the faculty’s desire to engage in the more rewarding research and the administrator’s reluctance to yield control over the product to the students), this may be due to the fear that increasing tuition will not be accompanied by a loan and grants program of sufficient magnitude to maintain existing levels of enrollment. If one believes in the existence of externalities generated by higher education, such a reduction in enrollment is socially undesirable. For all these reasons, estimating the magnitude of the effect on enrollment in an institution of higher education resulting from changes in tuition, i.e., the estimation of the elasticity of demand for public higher education, has been the focus of a number of recent studies.

The higher education “industry” comprises a large number of “firms” producing differentiated products: private/public, two-year/four-year, academic/professional/vocational. Although studies of the industry’s demand curve are of interest, they will not be of much help to the individual firm in discerning the effects of changing its own price. Thus, the estimate of the enrollment ratio elasticity with respect to tuition provided by Campbell and Siegel (1967) using time series data on the U.S. total enrollment, or Feldman and Hoenack (1969) using a cross-section sample of enrollment ratio for the different states, offers little help to the individual institution. The recent works of Radner and Miller (1970) and Hoenack (1967) come closer to estimating a firm’s demand curve. The information provided by Radner and Miller is, however, insufficient to derive an estimate of the elasticity and cross-elasticities of demand, while Hoenack’s finding of an elasticity of −0.85 is biased by his overestimation of the value of travel/commuting time. He assumes that cost differences between the alternative educational options are entirely attributable to differences in transportation costs, and that students place a value on travel time equal to the current wage rate. However, the value of travel time estimates obtained in several studies fall between 20 and 50 percent of the wage rate (Beesley, 1965, Lave, 1970, Quarmby, 1967). Radner et al. (1975) report the elasticities of the individual student’s demand curve for twelve hypothetical types of students. They do not report, however, the elasticity of demand facing an individual institution. While the cross-elasticities of demand curves of each hypothetical student can be calculated using the equations they provide, the cross-elasticities are not reported.

The purpose of this paper is to provide an estimate of the elasticity and cross-elasticities of demand for higher education facing an individual institution. The model used for estimation is discussed in section II. This model