Chapter Six

The Non-Monetary Benefits of Higher Education

This Chapter addresses the third objective of the thesis. The purpose of this chapter is to document some of the non-monetary benefits associated with a Virginia Tech education. Section 6.1 outlines the non-monetary benefits of education, together with a review of previous studies that have focused on the estimation and significance of such benefits. Section 6.2 presents estimates of the true value of a Virginia Tech education.

6.1 The non-monetary benefits of education

The typical focus of returns to education studies has been on the market effects of a higher education. These effects are manifested in the higher earnings of graduates, and are therefore monetary in nature. However, the returns to education are not confined to the labor market outcomes of individuals with a higher education. There are significant non-monetary benefits of higher education. Exclusion of the non-monetary benefits from rate of return calculations significantly understates the true return to higher education. The non-monetary benefits are varied, and it is often difficult to impute values to them. It is important to note that in the estimation of non-monetary benefits it is extremely important to avoid double-counting of income. For example, the higher earnings of individuals with a higher degree that is used to purchase better healthcare, and therefore better health is not a non-monetary return to higher education, but merely double counts the monetary return to higher education. Therefore, care must be taken to separate the monetary and non-monetary effects. A discussion of the non-monetary benefits along with their estimates (from previous studies), is presented below.

6.1.1 Health

The relationship between education and health has been the focus of several studies in the past. After controlling for income, many studies have found the positive effects of an additional year of schooling on mortality rates, morbidity rates, psychological indicators

of good health and longevity. Apart from one's own health, many studies have found the strong positive relationship between women's education and the health of their children. Grossman reported that an additional year of schooling lowers the probability of death of adults by 0.4 percentage points per year. The authors conclude that the purely non-monetary effects on better own health, better spouse health and better child health add up to 40 percent of the direct effect of education on earnings. This implies that a VT education leads to healthier lifestyles of graduates. This impact on health significantly improves the quality of life in Virginia, as a large number of graduates remain in the state after graduation. The better health of VT graduates also has an indirect effect in the form of lower health-related costs to state tax-payers.

6.1.2 Fertility, Family Size, Unemployment, and Poverty Rates

Education has an important effect on fertility choices. Cochrane (1979) reported that education reduces female fertility rates. Families of college graduates are usually smaller. The relationship between higher education and unemployment has been extensively studied. The unemployment rates of college graduates are lower relative to high school graduates. The unemployment rates (in 1992) were 8.2 percent and 9.3 percent, for high school male and high school female graduates, respectively. The corresponding figures for bachelors degree-holders were 4.8 percent, for both males and females. The smaller family size and lower unemployment rates make college graduates less likely to depend on social welfare payments (unemployment compensation, AFDC, Medicaid, Department of Children and Family Services, Salvation Army etc). In 1992 while 5.6 percent of high school graduates (age-group 25-34) received welfare payments, the figure was only 0.5 percent for bachelors degree-holders. The savings in social welfare costs that are borne by society could be substantial if more individuals pursue a college degree.

6.1.3 Household Management and Cognitive Development of Children

A college education prepares individuals to make more-informed decisions. Soloman (1975) reported that college graduates get a larger rate of return on their savings by

choosing better investment strategies; and, they spend a smaller percent of their income on gambling. Therefore, they make better use of their non-market time.

Haveman and Wolfe (1994) studied the relationship between the cognitive development of children and the productive use of non-market time by college-educated parents. There is a positive relationship between the time spent by parents on such activities like reading to their children, taking them to the library and so forth, and the children's test scores. The authors impute a value of $318,738 (1993 dollars) over 42 years of additional child life expectancy for a family with two children, to this time spent by college-educated parents on their children.

6.1.4 Non-monetary job satisfactions

Studies have indicated that a college-education contributes to 'well-being' at the workplace. This is because a college-education instills discipline and confidence in individuals. They are likely to be highly motivated as a college education helps individuals to know their interests and abilities better. However, it is difficult to impute values to these non-monetary satisfactions, although it could sometimes get reflected in higher earnings.

6.1.5 Lifelong Learning

One of the most important benefits of a college-education is the capacity it (college-education) creates in individuals to learn throughout their lives. The capacity to learn and adapt has assumed great importance in this fast-paced technology-driven economy of today. A college-education not only improves learning capacities on the job, but significantly raises the productivity of non-market time through the learning that takes place in that time.

Mincer (1993) has extensively studied the relation between on-the-job-learning and the amount of prior formal education. Individuals with more years of formal schooling learn

more on the job than individuals with lesser years of schooling. Also, college graduates are able to make better use of their non-market time by learning techniques that improve their job performance. They are therefore able to adapt to changing technologies and new jobs easily.

6.1.6 College Extracurricular Learning Experiences

A college experience helps in the all-round development of individuals. Wise (1975) has shown that non-cognitive attributes and attitudes created by education contribute substantially to productivity on the job as measured by earnings and promotions later. In this case too there is a chance of double-counting. Extracurricular activities like student leadership roles and part time work are particularly useful in later years. A college experience also broadens democratic and international perspectives.

6.1.7 Democratic Institutions, Human Rights and Political Rights

College-educated individuals are more likely to participate in political processes. Several studies have confirmed the positive relationship between education, and democratization, human rights and political stability. The voting behavior of individuals further reiterates this fact. In the Presidential election of 1996, only 29.9 per cent of high school dropouts voted, while 49 per cent of high school graduates and 72.6 per cent of college graduates did. Further, college graduates have higher participation rates in local democratic institutions like school boards, city commissions, and service agencies. The important role of education in a democracy is thus too important to ignore.

6.1.8 Voluntary Contributions

Individuals with a college degree have been found to contribute more of their time and money to voluntary services relative to high school degree-holders. A Gallup survey reported by NCES (1995) found that 22 percent of the population above 25 years, and with some college education volunteered their time, while the figure was 12 percent for

high school graduates. The same survey found that 19.6 percent of the population above 25 years, and with some college education donated 'generously' (defined as 3 percent or more of income) to charity, while the figure was 10.9 percent for high school degree-holders.

6.1.9 Crime Rates

Witte (1997) reports that enrollments in schools and colleges reduce youth crime ("enrollment effect"). It also helps in the formation of better peer group relationships. McMahon (1998b) also reports the so-called "enrollment effect" in his study. The author further suggests an indirect effect in the form of lower unemployment. Both effects ("enrollment effect" and unemployment) were significantly related to lower homicide and property crime rates after controlling for income. However, the author concludes that it is very difficult to separate the effects of a college education versus high school education in this case.

Haveman and Wolfe (1984) estimated the value of education in reducing criminal activity. The value was estimated to be $100 per year per college graduate in 1975 prices.

6.1.10 Environmental Quality

Research has shown that education leads to environmental awareness. Smith (1994) and McMahon (1998b) reported that there are indirect effects of education that contribute to environmental quality. These effects are manifested in the form of lower population growth rates and less poverty, both important factors in improving environmental quality. College students have increasingly expressed their concern for the environment by enrolling in courses related to the environment, and demanding pollution controls.

6.1.11 Summary of the non-monetary benefits of higher education

The above discussion points to the fact that a Virginia Tech education not only increases the lifetime earnings of graduates, as shown earlier, but lead to several other benefits, some of which are enjoyed by the graduate and his/her family, and others that are enjoyed by society as a whole. Incorporation of the non-monetary benefits into rate of return calculations (done earlier) is therefore important to arrive at the true value of a Virginia Tech education. The final part (Section 6.2) of this chapter combines the monetary benefits of a Virginia Tech education obtained earlier, with the estimates of non-monetary benefits from previous studies to arrive at the true value of a Virginia Tech education.

6.2 The True Value of a Virginia Tech Education

Haveman and Wolfe (1984) and Wolfe and Zuvekas (1997) reported that the value of non-monetary benefits is roughly equal to the value of monetary benefits of education. Using this result it can be concluded that the present discounted value of monetary and non-monetary benefits of a VirginiaTech undergraduate education is approximately equal to $380,000 (the discounted value of monetary benefits is approximately equal to $190,000). If we consider that out of the roughly 4,000 graduates each year, 50 percent remain in the state after graduation, the additional state income (monetary plus non-monetary) per year that can be attributed to Virginia Tech undergraduates is $760,000,000. The important contribution of Virginia Tech to the state economy is thus clearly revealed by these figures. This contribution is likely to increase if we consider the additional income of masters and PhD graduates of the university.

Consideration of the total benefits of education is therefore important for making policy decisions. Exclusion of the non-monetary benefits can seriously undermine the true value of education to society.