



Session 5

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A Human Capital Approach to Measuring the Output of Education for the U. S.

Attempts to measure the output of the education sector with quality-adjusted student counts have been largely unsuccessful in measuring the significant contribution of education to economic growth. Jorgenson and Fraumeni (1989, 1992, 1992) have conceptualized the output of the education sector as an investment in human capital, whose benefits stretch out over the lifetime of an individual. These benefits are reflected in the labor market in the form of higher market earnings and in the non-market in the form of unvalued activities, such as better parenting. This contribution proposes to update the Jorgenson-Fraumeni estimates (previous estimates extended only through the mid-80's) and to compare the rate of growth of investment in education to several other possible measures of the output of education.

A human capital approach to measuring the output of education is preferred to a cost of input approach or a quality-adjusted student count approach to measuring the output of education for several reasons. First, it allows output to be measured independently of inputs. Accordingly, the productivity of the education sector can be estimated. Students and the time they spent on education are inputs to the education process, not outputs. Second, it is difficult to quantify elements of the education process that produce higher output, accordingly it makes sense to use labor market evaluations as representing the worth of an educated individual. Quality-adjustments applied to student counts are typically very small and perhaps not fully representative of the difference between students (the inputs) and educated individuals (the output). The final Atkinson Report (2005, para. 9.33-9.34) recommends exploring a lifetime income (human capital) approach such as that implemented by Jorgenson and Fraumeni.

Several other authors have used a similar human capital approach. These include O'Mahony and Stevens (2004) for the UK, Wei for Australia (2001), and Christian for the United States (unpublished). If possible comparisons will be made to other measures for the U.S., drawing from Christian, et. al. (forthcoming) and Fraumeni et al. (2004).