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Human Capital in the United States from 1975 to 2000: Patterns of Growth and Utilization. By Robert H. Haveman, Andrew Bershadker, and Jonathan A. Schwabish. Kalamazoo, Mich.: W.E. Upjohn Institute for Employment Research, 2003. xii, 229 pp. ISBN 0-88099-256-5, $40.00 (cloth); 0-88099-256-5, $17.00 (paper).

What is the value of the entire U.S. capital stock, and how well is it utilized? The Department of Commerce Bureau of Economic Analysis (BEA) and the Federal Reserve answer these questions for *physical* capital, but surprisingly there are no continuously published equivalent computations for the value and utilization of the economy's *human* capital. In this noteworthy and carefully done nine-chapter Upjohn Institute monograph, Haveman, Bershadker, and Schwabish (hereafter HBS) develop measures for a nation's earnings capacity (EC) and its earnings capacity utilization rate (CUR). They then use these measures to answer the above two questions concerning the worth and utilization of U.S. human capital. In addition, they illustrate how their index varies from 1975 to 2000 among various demographic groups. Finally, as a byproduct, they show that their index pertains to many important policy questions, such as whether low-skilled single mothers utilized their human capital more fully after the Earned Income Tax Credit was reformed in 1996.

HBS's EC index is based on the simple yet standard neoclassical assumption that workers are paid their marginal product. Accordingly, HBS's computation relies on the assumption that a person's yearly earnings reflect the annualized value of his or her human capital stock. The extent to which a person works less than full-time defines that person's underutilization of his or her human capital. This latter notion forms the basis of HBS's CUR index.

Computing these EC and CUR indices entails several steps. First, using the 1976–2001 March CPS data, HBS estimate full-time full-year (FTFY) selectivity-adjusted annual earnings functions for various demographic groups. They then multiply these FTFY earnings estimates (including the selectivity adjustment, as well as a random component to capture luck and other unmeasured variations in individual earnings) by the number of people in each demographic group. This FTFY wage bill is the annualized value of human capital, since it approximates what human capital's value would be if all potential employees were to use their skills fully. The extent to which an individual's *actual* earnings fall below his or her FYFT capacity earnings reflects the degree to which human capital is underutilized. Accordingly, HBS define the ratio of an economy's actual wage bill to its potential wage bill (EC) as the economy's human capital utilization rate (CUR).

HBS tabulate and graph these EC and CUR indices for the entire economy (Chapter 6), by gender (Chapter 6), and by race, education, and age group (Chapter 7), as well as for particularly vulnerable groups such as high school dropouts, young workers (aged 18-24), and more senior workers (aged 55-64) (Chapter 8). They find a number of interesting patterns. For example, per capita EC was $39,138 in 2000, reflecting a 24% increase since 1975. The level was $46,500 for men and just under $32,100 for women. It was about $51,100 for white men and $34,600 for nonwhite men (Table B.6). Whether these differences represent human capital or discrimination is an important issue, but as HBS indicate, acceptance of these measures "is no different than acceptance of wages and earnings by the nation's statisticians in providing measures of national or personal income, both basic and standard national statistical series" (p. 172), except that these connote earnings *capacity* rather than *actual* earnings.

Between 1975 and 2000 total EC rose 75%, from $3.6 trillion to $6.3 trillion. In contrast, real GDP rose a whopping 128%, from $4.37 trillion to $9.96 trillion. According to HBS, this increased output relative to potential human capital reflects secular increases in human capital's productivity. They argue that this productivity gain arises because of "changes in the age, race, gender and education composition of the working age population . . . as well as changes in productivity and level of other outputs, such as physical capital" (p. 93). I wonder whether shrinking remuneration (perhaps because of declining union membership or greater global competition) for some labor classes might be a factor.

In 2000 the CUR was about 72%, compared to 62% in 1975. So the utilization of human capital (mostly due to increasing women's employment) was rising. Men utilized 81% of their 2000 human capital, while women utilized 61%. However, women's utilization rate rose by 50% between 1975 and 2000, while men's inched up only slightly. The 2000 utilization rate for senior workers (aged 55 to 64) was only 58%. Not surprisingly, the major factor responsible for

under-utilization was involuntary unemployment for men and housework for women.

In a sense, HBS's approach is ingenious. It uses the market to evaluate a person's worth in the economy. As such, HBS need not involve themselves in appraising particular on-the-job tasks that comprise each particular type of employment, as is the case with job evaluation approaches often promoted by comparable worth advocates. Nor need HBS be concerned with functional distribution of income issues, as are macroeconomists who have a long history of evaluating labor's share of national income.

On the other hand, despite the ingenuity of using current earnings, much evidence indicates that spot wages do not correlate perfectly with human capital and marginal product. Perhaps most obvious is the fact that employees often accept wages below their productivity as a way of financing general and specific on-the-job training. Also, firms are known to offer incentive pay, bonuses, and other more exotic payment plans. Whereas market wage payment schemes tend to equalize worker productivity and worker earnings over the lifetime, they do not always match up worker productivity to the wage a firm pays in each year. Thus to assume that the market accurately evaluates the *annual* value of a person's human capital might result in an imperfect approximation. In addition, using current spot wages might give short shrift to the influence of market imperfections, such as discrimination, already mentioned.

HBS are meticulous about computing EC, but still biases can creep in. Take omitted variables. Given the data, HBS rely on a relatively simple earnings function specification. Measurable variables not included in the wage function, such as a respondent's occupation or industry or unobservable variables such as ability, motivation, or effort, can result in misleading implications. For example, do women underutilize human capital more than men, or are they searching less for a high-paying job and commuting less, but utilizing their skills productively at home to invest in their children and family?

The same applies to potential simultaneous equations biases. HBS treat utilization as a residual. CUR is the difference between FTFY earnings and actual earnings. But could not this difference be construed as a form of labor supply, since it is linked to the degree to which one works less than FTFY? As such, perhaps both CUR and EC should be estimated simultaneously.

One additional but apparent potential bias might be relevant. HBS compute EC and CUR only for the working-age population under age 65. The obvious question is, why ignore people over 65? This omission implies that aggregate EC is undervalued by an amount at least equal to the EC of all those over 65 at work—a group representing almost 15% of the elder population and 3% of the work force. Furthermore, from a policy perspective HBS's CUR index does not consider the possibility of utilizing this potentially valuable segment of the population, should the need arise.

To summarize, HBS devise a simple way to evaluate human capital stock and assess its utilization. As a first approximation, HBS's indices reveal a number of important implications. However, camouflaged behind the indices are intricate facets that may warrant deeper interpretations. Despite this caveat and others, I applaud the authors' efforts and believe we learn a great deal from their results. I hope HBS's work will be used as a basis for future scholarship.

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