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## The Level and Utilization of Human Capital in the United States, 1975–2000

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# The Level and Utilization of Human Capital in the United States, 1975–2000

*NOTE: This article highlights some of the research findings that have been published in the authors' new book, Human Capital in the United States from 1975 to 2000, which was recently published by the Upjohn Institute (see page 7).*

**T**he nation's labor and physical resources are its primary inputs into the production process that is the U.S. economy. While we do an excellent job of measuring and reporting on the level and utilization of the nation's physical capital, comparable information on the productive contributions of the nation's workers is far less adequate. Measures of this human capital rest on count statistics, such as the number of people who are available to work and the number of available workers who are employed. While these statistics are quite useful and significant in their own right, they convey little regarding the value of the potential or actual contributions of these people to the nation's output.

Our study attempts to supplement existing measures of the nation's human capital and the extent to which that capital is utilized. We think of the nation's human capital as the value of the labor resources that are embodied in its working-age citizens. These resources can be allocated in many ways to produce things of value.

Indeed, it is the value of this 'output' that gives value to these labor resources.

In our study, we develop an indicator of the value of the human capital stock held by the nation's working-age population. We call this indicator *earnings capacity* (EC). We use it to study the time trends (from 1975 to 2000) in aggregate human capital in the United States, and also human capital per worker. We also use EC to evaluate the utilization of the nation's human capital stock. We explore these patterns for the entire working-age population, as well as for subgroups distinguished by race, schooling, and age. Thus, our empirical results provide insight into the performance of the U.S. economy over the past three decades, and serve to supplement other analyses of this performance.

How is EC an indicator of the nation's human capital stock? A comprehensive measure of the value of human capital of the nation's potential workers would be the value as of today of the entire future stream of productive services of the existing working-age population. This measure of the human capital stock is analogous to estimates of the nation's physical capital stock. If we had an estimate of this capital value, so defined,

for each working-age individual, we could sum these values and obtain a measure of the nation's human capital stock. Some researchers have attempted such a measure, although it is difficult to produce on a timely basis (see, for example, Jorgenson and Fraumeni 1989).

Our EC indicator of human capital is not such a full "discounted present value" measure. Rather, EC is equal to the annual value of the potential output of the nation's working-age population. Hence, it reflects the market value of the annual earnings that the working-age population would generate if its human capital were used to its full potential, which we take to mean full-time, full-year work. This EC measure accurately tracks changes over time in a full human capital stock measure, though as an annual value its absolute level is much lower. By comparing the actual earnings of working-age people in the United States with this potential value, we are able to measure the extent to which human capital is utilized.

Like measures of the nation's physical capital stock, this EC human capital measure relies on evidence regarding how the market values the flow of human capital services. While the standard and regularly reported indicators of labor market performance measure either the physical quantity of potential and actual labor services (e.g., the labor force, employment, unemployment, hours worked) or the price of labor services (e.g., wage rates), EC captures in one indicator both the level of potential labor supply, and the valuation of these services. For many questions, then, the EC measure is able to provide a richer and more comprehensive description of the actual and potential performance of the labor market.

**Per Capita Earnings Capacity, 1975–2000**

Figure 1 presents our human capital indicator for the entire working-age population, and for men and women separately, in per capita terms for the 1975–2000 period. During that period, average real EC increased from \$31,500 to \$39,100 (in 2000 dollars), or about 24 percent. For men, per capita real EC

increased by only 16 percent, from \$40,100 to \$46,500. After fluctuating over the period from the late 1970s to the early 1990s, average male EC has grown steadily since then, and this recent growth has accounted for the entire \$6,000 increase in average male EC over the 25-year period. In contrast, per capita female human capital increased over the period from \$23,600 to \$30,100, or by 36 percent. Growth in average female EC was persistent over the entire 25 years, sagging only slightly during both of the recession periods. This gender disparity in the growth of EC is clearly seen in the convergence of the two time trends over the period.

**The Utilization of Human Capital**

We measure the extent of human capital utilization using a capacity utilization rate (CUR), the ratio of aggregate earnings for the working-age population to that population's aggregate EC. Figure 2 shows the capacity utilization rate of the entire working-age population, and for working-age men and women. The trend in the overall CUR is erratic, reflecting both changes in wage rates, and changes in labor force participation and working-time patterns. The effect of the early 1980s recession is seen in the drop in the overall CUR from over 63 percent in 1979 to 60 percent in 1982. Similarly, the CUR dipped slightly in the early 1990s—from 67 percent in

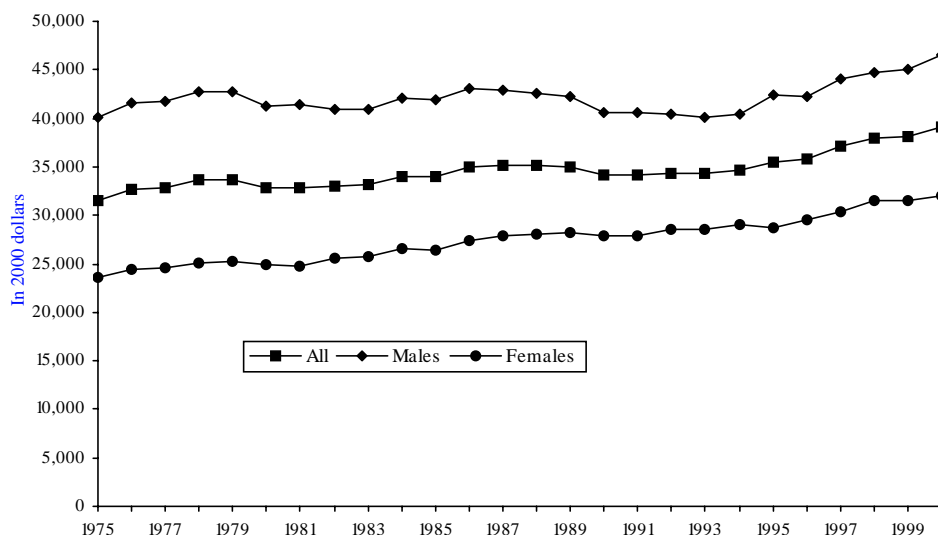
1989 to 65 percent in 1992—reflecting the recession in that period. The CUR increased substantially during the period of prosperity following that recession. Indeed, over the entire period after 1995, CUR was at least 70 percent, a level that had not been attained during the prior two decades.

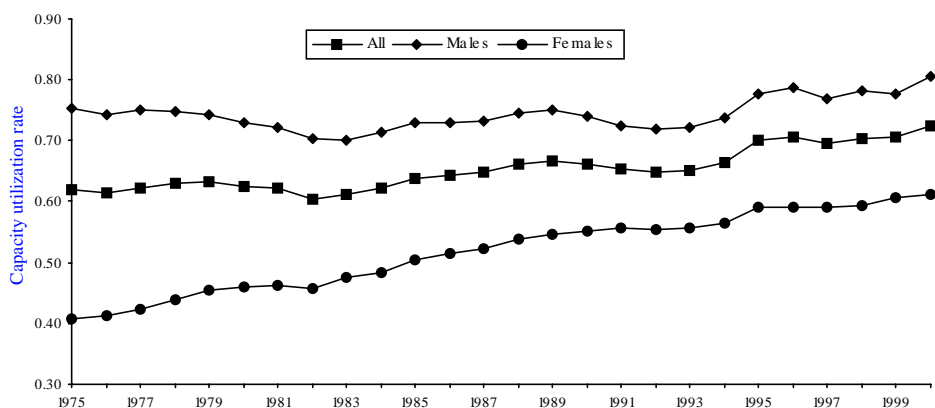
The CUR of working-age males is substantially higher than the overall CUR. It began the period at 75 percent, and fluctuated between 70 and 75 percent until the early 1990s. After 1993, a surge in utilization occurred, raising the male CUR to 79 percent by 1996 and ultimately to 81 percent in 2000. This value exceeded by six percentage points its highest level recorded during the 1975–1990 period. The CUR pattern for women of working age is quite different from that of men. At the beginning of the period, female human capital utilization stood at 41 percent of its potential. From that low level, female CUR began a rise that persists until the present. The recessions in the early 1980s and early 1990s are barely reflected in the series for women. Over the entire 25-year period, the female CUR rose by a remarkable 20 percentage points, or by 50 percent.

**The Sources of Foregone Potential Earnings**

An interesting question concerns how individuals use those hours that are not spent in market work. We call the value of

**Figure 1 Per Capita Earnings Capacity, by Sex, 1975–2000**



**Figure 2 Capacity Utilization Rates, by Sex, 1975–2000**

those hours *unrealized potential earnings* (UPE), reflecting the idea that they represent the human capital that does not pass through the market, and in that sense, goes unutilized. From respondents' answers to questions regarding why they work less than the full-time, full-year norm, UPE for each year can be decomposed into the following comprehensive set of "reasons": work is not available (unemployed); illness/disability; retirement; voluntary part-time work; housework, including child care; and other.

The bulk of unutilized EC for the working-age population stems from the hours spent in housework. In 1975, more than 50 percent of unutilized EC was attributable to the decision (primarily of women) to engage in household activities rather than market work. The housework share of UPE falls substantially over the period. By 2000, only 32 percent of unutilized human capital services are attributable to that activity. In per capita terms, the amount of UPE accounted for by housework began the period at about \$4,900 per person, but by 2000 this had fallen to about \$2,700 per person.

The next largest source of UPE comes from a quite different source; namely, a lack of employment opportunities—seeking work but being unable to find it. This reason for failing to utilize the potential services of human capital shows the most cyclical sensitivity of all of the reasons, as is expected given its close tie to the macroeconomic performance of the economy. The aggregate value of human capital services lost to the U.S. economy

because of a lack of employment opportunities ranged from around \$150 billion per year in 1978 (3 percent of GDP) and 2000 (1.5 percent of GDP) to about \$350 billion per year during the recessions of the early 1980s (6.3 percent of GDP) and the early 1990s (4.3 percent of GDP). At the depth of those recessions, about 70 percent as much EC was unutilized because of unemployment as because of housework. In per capita terms, the value of unutilized EC due to a lack of jobs ranged from a high of \$2,700 per working-age person in 1982 to a low of about \$1,000 per person in 2000.

Illness or disabling health conditions form the third most important reason for human capital underutilization, and accounted for a per capita value of about \$1,300 to \$1,400 per year until the early 1990s. Beginning in 1992, the per capita loss of earnings attributable to illness or disability began a steady increase, reaching about \$1,850 by 2000. This increase is unexpected and unexplained. However, even during the 1980s, some early warnings regarding a growing incidence of illness/disability problems among the working-age population were reported in the literature. By 2000 about \$300 billion of earnings were lost annually due to this factor, accounting for 21 percent of total unrealized EC.

### Providing Policy-Relevant Information

In addition to revealing these long-term demographic and labor market patterns, estimates of the level of EC and its utilization also provide insights that are directly related to public policy

concerns. For example, one of the most prominent national social policy issues—concern with the costs and consequences of welfare programs aimed at young, low-education single mothers—resulted in the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA). This legislation sought to carry out the pledge of both Congress and the president to substitute work for welfare for these women. Increases in the generosity of work related subsidies, such as the Earned Income Tax Credit (EITC) were designed to assist in this effort. The exit from market work of older people of working age, primarily males, is also of concern to economists and policymakers. The loss of skills, experience, and productivity to the nation's production process that is implied by this exit is seen as inhibiting economic growth and macroeconomic performance. Many see this exodus as reflecting the rational choices of older workers who can either continue to work and receive wages, or retire on public and private pension income. Viewed in this context, reducing retirement benefits, increasing minimum retirement ages, and reducing access to disability benefits have often been proposed as means to halt this exodus. However, prior to undertaking such measures, policymakers need to fully understand the extent of this exit, and whether this pattern is attributable to the incentives in these public programs. Our analysis of EC and its utilization reveals detailed patterns for various groups and enhances our understanding of these policy-relevant developments.

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