The NBER Digest
NATIONAL BUREAU OF ECONOMIC RESEARCH, INC.

April 1994

Beauty Pays

The better looking you are, the better off you are economically, according to two recent studies published by the National Bureau of Economic Research. In **Beauty and the Labor Market** (*NBER Working Paper No. 4518*), **Daniel Hamermesh** and **Jeff Biddle** find that plain people earn 5 to 10 percent less than people of average looks, who in turn earn about 5 percent less than those who are good looking. The effects of looks are slightly larger for men than for women. However, unattractive women are less likely than other women to be in the labor force, and are more likely to be married to men with limited education.

Hamermesh and Biddle's data come from two household surveys for the United States and one for Canada, conducted in the 1970s and 1980s. All three surveys asked the interviewer to rate the respondent on physical appearance as: strikingly handsome or beautiful; above average for age (good looking); average for age; below average for age (quite plain); or homely. Among both men and women, roughly half are rated as average; many more are rated above average than below average.

"The 9 percent of working men who are viewed as being below average or homely are penalized about 10 percent in hourly earnings," the authors report. "The 32 percent who are viewed as having above-average looks or even as handsome receive an earnings premium of 5 percent."

For women, the premium for good looks averages 4 percent, while the penalty for bad looks is about 5 percent. But the economic penalties facing below-average-looking women are not limited to hourly earnings, Hamermesh and Biddle find. "Both their success in the marriage market and their likelihood of working outside the home are reduced by their bad looks." There is no such penalty for below-average-looking men.

Hamermesh and Biddle suggest that "at least part of the explanation for the apparent impact of individuals' looks on their earnings is that beauty is productive, arising perhaps from the effects of customers' preferences," but pure employer discrimination on the basis of looks also exists. The authors cannot determine how much of the total effect of looks stems from each source.

In the second study, **Susan Averett** and **Sanders Korenman** find that obese women have lower family incomes than women whose weight-for-height is in the recommended range. The results for men are weaker and mixed.

"Differences in marriage probabilities and in spouses' earnings account for as much as 95 percent of the obese women's lower economic status."

In **The Economic Reality of *The Beauty Myth*** (*NBER Working Paper No. 4521*), Averett and Korenman find some evidence of labor market discrimination against obese women. However, the authors discover that differences in marriage probabilities and in spouses' earnings

account for as much as 95 percent of the obese women's lower economic status. Further, there is no evidence that obese African–American women suffer an economic penalty relative to other African–American women.

Averett and Korenman study women who were aged 23 to 31 in 1988. By comparing siblings, they are able to confirm that differences in family background do not explain the social and economic disadvantages experienced by obese women.

They also find that women who were obese at ages 16 to 25 have lower economic status at ages 23 to 31 than other women. However, women who became obese in their mid- to late twenties are substantially better off financially than those who were obese at both age ranges, and they do not differ greatly from those in the recommended weight range.

In 1988, about half of the women in the sample were in the recommended range. The fraction of overweight and obese women and men rises considerably with age, though, Averett and Korenman observe.

401(k) Plans Increase Private Saving

Because they enable employees to earn before-tax rates of return on savings for retirement, 401(k) plans are one of the fastest-growing employee benefits. Although these plans were not widely available until the early 1980s, more than 20 million workers now participate in them. Two recent NBER Working Papers analyze how 401(k) plans affect personal retirement saving and other forms of wealth accumulation.

In **Did 401(k) Plans Replace Other Employer-Provided Pensions?** (*NBER Working Paper No. 4501*), **Leslie Papke, Mitchell Petersen,** and **James Poterba** explore the substitution between 401(k) plans and other components of wealth. The authors surveyed firms with 401(k) plans in 1987 and asked whether the 401(k) plan had replaced a previous pension plan, or whether it represented an additional employee benefit. Although the responding sample of firms is small, very few indicated that the 401(k) plan had replaced a previous defined-benefit plan. A substantial fraction of the companies transformed previous thrift plans into 401(k) plans to take advantage of their more favorable tax treatment.

Papke, Petersen, and Poterba also show that it is rare for a 401(k) to be the *sole* pension plan for a worker. Only 14 percent of the total assets in 401(k) plans in 1989 were held in such sole plans. These findings suggest relatively little substitution between 401(k) plan contributions and other pension contributions.

> **"[There is] relatively little substitution between 401(k) plan contributions and other pension contributions."**

In another recent study of 401(k) plans, **Employee Decisions with Respect to 401(k) Plans: Evidence from Individual-Level Data** (*NBER Working Paper No. 4635*), **Andrea Kusko, James Poterba,** and **David Wilcox** examine the importance of IRS and firm-level constraints on individual behavior in 401(k) plans. The authors analyze summary information on a large 401(k) plan. They find that most workers contributing to the plan at this firm contribute either the maximum amount that the employer will match, the maximum amount that they are allowed to contribute by IRS limits, or the maximum amount of salary that the employer will permit them to contribute.

Kusko, Poterba, and Wilcox also find very strong persistence in contributor behavior from one year to the next. Less than 5 percent of contributors in a given year cease to contribute in the next year. This suggests that workers who participate in 401(k) plans may accumulate substantial wealth in these plans by the time they retire.

College Proximity Leads to More Schooling and Higher Earnings

It is a well-known fact that better-educated workers earn higher wages. However, how much of the higher wages are due not to education, but rather to some characteristic of the individual, such as ability, is unknown.

In **Using Geographic Variation in College Proximity to Estimate the Return to School-**

ing (*NBER Working Paper No. 4483*), **David Card** suggests that "any credible analysis of the causal link between education and earnings requires an exogenous [external] source of variation in education choices." He uses college accessibility, defined by geographical proximity, as that source.

Card finds that men who grew up in areas with a nearby four-year college have significantly higher schooling and significantly higher earnings than other men. This differential persists even after taking into account region and family background, including parental education and family structure; it is greatest for men whose parents were poorly educated, who might not have continued their schooling otherwise. Card estimates that the earnings gain per year of additional schooling is 10 to 14 percent.

"Men who grew up in areas with a nearby four-year college have significantly higher schooling and significantly higher earnings than other men."

"Students who grow up in an area without a college face a higher cost of college education, since the option of living at home is precluded," Card points out. This higher cost might reduce investments in higher education, especially among children from low-income families. Indeed, Card finds that among men most likely to go to college anyway, proximity has hardly any effect on schooling. But among men least likely to go, geographic proximity increases schooling by over a year. As a result, the presence of a nearby college has its strongest effect on children from single-headed families with low parental education in rural southern areas.

Card uses data from the National Longitudinal Survey of Young Men, which began in 1966 with 5525 men aged 14–24 and continued with follow-up surveys through 1981.

Income Inequality and Growth Linked by Instability

According to a new NBER study by **Alberto Alesina** and **Roberto Perotti**, income inequality, by fueling social discontent, increases socio-political instability; instability, by creating uncertainty in the politico-economic environment, reduces investment. Since investment is a primary engine of growth, political instability is thus the connection between income inequality and growth, they conclude.

"Instability, by creating uncertainty in the politico-economic environment, reduces investment."

In **Income Distribution, Political Instability, and Investment** (*NBER Working Paper No. 4486*), Alesina and Perotti study 70 countries for which data are available for 1960–85. They develop an index of political instability based on assassinations, domestic mass violence, coups and coup attempts, and the level of democracy versus dictatorship in the country. They find that more unequal societies are more politically unstable. Political stability is enhanced by the presence of a wealthy middle class, though. A viable middle class, which implies more equality in the distribution of income, is conducive to capital accumulation because it creates conditions of social stability, the authors write.

Not only does political instability have an adverse impact on investment, and therefore growth, but these two effects are both statistically and economically significant, Alesina and Perotti find. Finally, they conclude that, after controlling for its effect on instability, income distribution has no additional effect on investment.

Computers Raise Productivity

The impact of computers on the output and productivity of American business has been the subject of considerable debate. Some analysts have asserted that the return on investment in information technology generally has been low. But a number of others have found that the contribution of computers to output is quite large. However, these studies have not shown that computer investment (like R and D investment) yields *excess* returns: returns greater than those earned by ordinary investment in plant and

equipment. Moreover, although labor costs account for over 40 percent of the budgets of information systems (IS), only one previous study has examined the role of IS labor costs as well as IS capital.

"There are substantial excess returns to investment in computer capital and information systems."

In **The Output Contributions of Computer Equipment and Personnel: A Firm-Level Analysis** (*NBER Working Paper 4540*), **Frank Lichtenberg** examines the contributions to output of both IS capital and IS employment at the firm level throughout the business sector during 1988–91. His estimates imply that there are substantial excess returns to investment in computer capital and information systems. His research also suggests that employees in IS departments earn excess returns. The wage rate of IS employees is about three times as high as that of non-IS employees, but their productivity appears to be about six times as high. Even though IS employees in 1986 accounted for a very small share of total employment, growth in IS employment—16 percent per year—made a larger contribution to output growth in 1976–86 than growth in non-IS employment did. Information systems may enhance productivity in part because they reduce the likelihood of costly mistakes.

Previous studies examined the period preceding the large increase in the use of computers. Further, some studies were based on the manufacturing sector, which is a relatively small user of computers. This study, in contrast, was based on measured differences in productivity levels between firms *within* industries and years, not on measured differences in productivity growth rates *between* industries. This may explain Lichtenberg's higher estimates of the effects of information systems on productivity.

Expenditure on information systems accounts for about 2.7 percent of total revenue in the business sector, and the share of IS employment in total employment is about 3.1 percent. The share of computers in capital expenditure is about 10–13 percent. But, because computers have a much higher depreciation rate, and much lower (in fact, negative) rate of asset price appreciation than other capital, the mean value in the used equipment market of sample firms' computer capital as a percentage of their net tangible assets is only 1.5 percent.

NBER