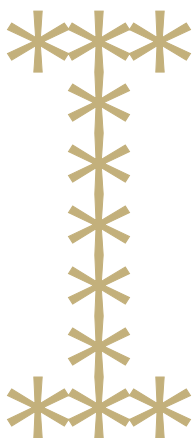


by KATHRYN SHAW

women's contribution to productivity



IN THE LATE 1990s, anyone reading the newspaper saw stories describing the New Economy and the accompanying rise in the nation's rate of productivity growth. Labor productivity (measured as output per hour worked), which had previously grown at about 1.5 percent per year from 1973 to 1995, accelerated to about 2.5 percent a year from 1995 to 2000. Although productivity typically falls coming out of a recession, as it did in 2001, more recent data suggest that trend productivity remains high compared to the 1970s and 1980s.

This rise in productivity is quite large by historic standards and brings with it very significant positive implications for the economy. In particular, increases in productivity mean larger potential increases in GDP without the same risk of inflation in an economy where productivity is lower. One calculation suggests that current output per person is about 10 percent higher than it would have been without the productivity acceleration. And, in the long run, increases in productivity raise real wages and allow

The economic contribution women make raising children may not be fully valued when measuring GDP and setting policy



our children to enjoy a higher standard of living, accumulate greater wealth, and pay for programs such as Social Security.

I would like to suggest that women played an important role in this productivity increase, both directly as workers and indirectly in their role in raising children and investing in their communities. However, I would also like to suggest that there are gains to society of having well-educated children, and these gains may not be fully taken into account within families.

Searching for causes

What explains the large increase in trend productivity? There are several possible explanations. Evidence suggests that higher labor quality—improvements in education, training, or other factors— was not the primary cause. Calculations by Jorgenson, Ho, and Stiroh indicate that labor quality grew more slowly from 1995 to 2000 than from 1989 to 1995.

On the other hand, increased investment in computers and information technology (IT) appears to have been very important. Investment in IT rose 19 percent per year in the early 1990s and 28 percent per year after 1995, while the prices of computers and equipment fell more than 70 percent between 1995 and 2000. This is an astronomical rate of increase. Overall, IT doubled its impact during this period, and was pervasive across the economy, both in industries such as computers and electronics that produced IT and in industries (such as retail and wholesale trade and services) that used it—that is, purchased large amounts of it.

Still, IT does not account for the entire increase. An additional large push came from unobserved sources which may be in the form of intangible capital. For example, research by Sandra Black and Lisa Lynch, and others suggests that investments in innovative human resource practices, such as problem-solving teams, job rotation, information sharing, additional training, more effective screening of new hires, and better job security and greater use of incentive pay, were also key. In the United States, these practices began to be increasingly adopted in the late 1980s and early 1990s. Given lags in the effectiveness of these intangible investments, their impact could have contributed to the acceleration in trend productivity.

As workplaces institute more teamwork and on-the-job problem solving, they also change decision-making power, locating decisions with the employees who have the information. IT has brought more information to everyone but especially to people at the ground floor, pushing decision-making lower down the company hierarchy.

Adopting these practices also affects the demand for labor and pushes employers to value problem-solving skills when they hire. Almost all job growth in the last 20 years has been in occupations that require nonroutine problem-solving skills, according to David Autor, Richard Murnane, and Frank Levy. At all levels of the organization, our national expertise now lies in “thinking,” and our competitive advantage lies in producing high-quality, R&D-intensive products. The U.S. doesn’t produce commodities anymore. We produce problem-solvers.

Women’s contribution at the workplace

So, where do women fit in this picture? I would suggest that women have made both direct and indirect contributions to this increase in trend productivity.

The direct contribution has come about from their role as workers in the paid economy. First, women are increasingly better educated than men; 68 percent of women who had recently completed high school were enrolled in an undergraduate degree granting institution in fall 2002, compared to 62 percent of men. And 9 million women were enrolled in undergraduate and graduate programs in 2001, compared to 6.9 million men.

Second, women have a history of success as team players and problem-solvers. In surveys, female managers receive lower ratings on masculine attributes and styles of leadership (task-oriented, directive) but higher ratings for nonmasculine styles (interpersonally oriented, participative), according to studies by Alice Eagly and her colleagues. In the past, when the masculine approach was most valued, this meant that women faced a substantial uphill battle in being (and being perceived as) effective leaders, although lab experiments showed women to be more effective when the roles were defined as less masculine.

More recently, however, there are signs of a change in the ideal managerial style, from one in which leaders sit atop a hierarchy and operate by setting objectives and rewarding those who are successful to one where leaders aim to encourage commitment and creativity and take on the role of a coach or teacher. Driven by an economic environment characterized by an accelerated pace of technological change and intense global competition, this apparent redefinition of the ideal suggests that women may now have a comparative advantage in key managerial skills that are associated with firm productivity. Social networks inside the firm have also been shown to be important, both to women’s advancement and to firm productivity, and women have always been good at building and maintaining these networks.

In sum, women are increasingly well educated, they are adept

further reading

“The Female Leadership Advantage: An Evaluation of the Evidence,” by Alice Eagly and Linda Carli, *The Leadership Quarterly*, 2003.

“What’s Driving the New Economy?: The Benefits of Workplace Innovation,” by Sandra Black and Lisa Lynch, *The Economic Journal*, February, 2004.

“The Human Resources Revolution: Is It a Productivity Driver?,” by Kathryn Shaw, in Adam B. Jaffe, Josh Lerner, and Scott Stern (eds.), *Innovation Policy and the Economy, Volume 4*, The MIT Press, 2004.



quality child care has a social payoff in the range of three to four times its cost. Moreover, early childhood education has a much higher payoff than later remedial education or training. Basic problem-solving skills are more easily taught when a child is young and may be quite hard to teach later on; and some non-cognitive skills, such as motivation, are also more effectively transmitted when begun early at home.

Women have traditionally also been important in investing in the community, and in what Robert Putnam has called “social capital”—the neighborhoods, clubs, and civic associations that help communities work. Some observers have argued that as women entered the paid labor force and withdrew their traditional participation in these organizations, communities have weakened. This is a controversial question, and I am not going to fully address it here. But I would note that while forms of social capital that traditionally supported investment in children—such as the Girl Scouts—have declined, they have been replaced at least in part by others—such as music lessons, extracurricular clubs and activities, and participation in sports. Moreover, some market-provided services such as high-quality day care appear to offer a good substitute for traditional arrangements. So far, there is little evidence that having a working mother lowers a child’s test scores, once other factors are held constant.

Nonetheless, thinking carefully about women’s unpaid contributions to productivity raises some thorny questions. How much are those unpaid, unmeasured contributions worth in terms of GDP? Are women and men investing too much in

Women are increasingly well educated and especially adept at skills such as team-building, problem-solving, and developing social networks on the job

at skills such as team-building and problem-solving that are increasingly valuable to organizations, and they are able to develop social networks in the workplace—all of which make a positive contribution to the nation’s economic productivity.

At home and in the community

Women have also contributed indirectly to increases in productivity and long-run economic growth through unpaid work, both at home raising children and in their communities. Women are still disproportionately responsible for the valuable activity of caring for children, and the economic changes associated with the increase in trend productivity suggest that it has become more valuable than ever to raise children who are problem-solvers and who can think for themselves. There is a substantial body of research suggesting that investing in children has a high rate of return. For example, studies show that once you include such benefits as the reduced costs to the criminal justice system and special education, etc., higher-

their jobs and not enough in their children? And do current organizational practices encourage this overinvestment?

Nancy Folbre’s article includes a quote from Tipper and Al Gore: “At any given moment when the decision between work and family must be made, the workplace has a much stronger ability to quantify and express the immediate cost of neglecting work.” And although the Gores said it better, economists make exactly the same argument: Work provides explicit rewards. Home provides implicit or intrinsic rewards. People care about (their utility function includes) their own wages and their children’s future well-being, but they are unlikely to completely take into account their children’s future wages since investing in kids sends them no actual flow of money.

More specifically, society may underinvest in children for two reasons: First, we receive only the intrinsic rewards from our kids—we love them, we want them to do well—but not all of the extrinsic rewards that would come from greater GDP growth over the long run and higher income for our children. Second,



We might invest more if the social benefits of well-educated children were fully taken into account when parents made decisions about their time

the social benefits to raising well-educated children—a well-educated workforce, reduced costs of various remedial social services—are not fully considered when parents make decisions about their time. We might invest more in our children if we took all of this into account.

Moreover, current organizational practices may be encouraging us to underinvest. Prime examples are the so-called “tournaments” that firms use to determine who makes it to CEO and other top jobs, and the “rat races” that determine which associates make partner at top law firms. These practices tend to reward observable variables like hours of work, rather than talent or productivity per hour, although there isn’t much evidence that very long hours of work or very long years of experience continue to raise productivity on the job. Instead, these practices may simply help in sorting workers or in signaling worker quality, which is economically valuable but doesn’t raise individual productivity. It would be beneficial to find better signals for productivity—signals that are not based on time at work.

Looking for alternatives

Are there alternatives to current practices? And will they also facilitate women’s climb to the top?

One possibility is to reduce the monetary rewards for market work or to increase the monetary rewards for work at home. For example, policies such as income subsidies and maternity leave lower the cost of taking time out of the labor force and increase the amount of time that parents have to spend with their children. However, these policies are clearly expensive for taxpayers and firms, so that the benefits must be weighed against the costs. Moreover, the costs are also borne by women; for example, firms in European countries are thought to avoid hiring young women due to the high costs of maternity leave.

In addition, some current organizational practices have focused on rewarding people for hours, not productivity. But we know there is an alternative from the example of Deloitte & Touche (see page 42). Their attempt to reward productivity or

performance, rather than hours, is encouraging and a path that other firms might emulate, although progress in this direction is slower than one might like. One reason is institutional rigidity—firms may need to be pushed by the market to make these changes. For example, I don’t think that law firms have been pushed yet, perhaps because the surplus of law graduates means that lawyers can be easily replaced.

Increased emphasis on teams and on rewarding teamwork, and less on winning of tournaments would also tend to favor more investment time at home. In addition, many workers, and many women, perform better in team environments.

Finally, greater use of IT to measure performance should help bring both productivity gains and greater personal success for women. Whereas companies traditionally used subjective evaluations and hours worked to reward and promote, now many use enterprise resource-planning systems and other tools which can measure the productivity and talent of division managers quite well. In the long run, this should raise firms’ productivity and help boost women in their careers.

It appears that the labor market is increasingly encouraging firms to pursue policies that emphasize balanced lifestyles—as young men and women prefer jobs with more balance. Companies are increasingly focusing on this issue, but at a slow pace. Attitudes towards taking time off are also becoming more acceptable, but also at a slow rate. We need to ask whether organizational practices simply reflect old organizational habits and institutions or whether they reflect ways of obtaining optimal performance and attracting the right employees. It’s worth keeping in mind that although organizational changes may benefit firms in the long run, the transition can be costly. But perhaps we are moving in the right direction. ✱

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