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Economic Scene

American Companies Show an Edge in Putting Information to Work

By HAL R. VARIAN

PRODUCTIVITY just keeps humming along. Growth in output per hour in the third quarter of 2005 was a striking 5.4 percent. In fact, output per hour has grown at an average annual rate of nearly 3.5 percent over the last three years.

These are large numbers by historical terms. From 1974 to 1995, productivity grew at around 1.4 percent a year. Productivity growth in the United States accelerated to about 2.5 percent a year from 1995 to 2000. Since then, productivity has grown at a bit over 3 percent a year, with the last few years looking particularly strong.

Unlike the United States, European countries have not seen the same surge in productivity growth in the last 10 years. Why the difference?

The answer, according to Nick Bloom, Raffaella Sadun and John Van Reenen, researchers at the Center for Economic Performance at the London School of Economics, is that American companies make much more effective use of information technology than European companies. (A selection of their studies can be downloaded from <http://cep.lse.ac.uk/research/innovation/ict.asp>.)

Nowadays, most economists agree that information technology is a significant part of the explanation for the post-1995 productivity surge in the United States. In fact, when you look at productivity statistics by industry, those industries that make and use information and communications technologies intensively in the United States have accounted for the bulk of the productivity growth, with other industries showing little change.

The story is quite different in the European Union. In the late 1990's, when productivity growth in the United States was accelerating, productivity growth in Europe was static. But Europe has access to the same information technology that the United States does, at more or less the same prices. Why didn't those countries get the same increase in productivity?

To answer the question, we have to move away from macroeconomics and look at the experience of individual companies. Work by the economist Erik Brynjolfsson and his colleagues at M.I.T. suggests that organizational factors are quite important. Just dropping a bunch of new personal computers on workers' desks is unlikely to contribute to productivity. A company has to rethink how business processes are handled to get significant cost savings.

As the Stanford economic historian Paul A. David has pointed out, the productivity effects from the electric motor did not really show up until Henry Ford and other industrialists figured out how to use it effectively to create the assembly line. The same is true for computers: just as the early industrialists had to learn how to use manufacturing technology to optimize the flow of materials on the factory floor, companies today must learn how to use information technology to optimize the flow of information in their organizations.

It appears that United States companies are much farther up the learning curve than European companies. Professors Bloom, Sadun and Van Reenen looked at 7,500 establishments in Britain and found that in terms of value added per worker, American multinational corporations were 23 percent more productive than the average in Britain. Non-American multinationals were about 16 percent more productive than the average, while British companies were about 11 percent less productive than average.

Furthermore, the authors suggest that information technology capital may be a big part of the productivity difference: American companies in Britain use a whopping 40 percent more information technology capital per worker than the average company. Not only did American companies use more information technology, they used it more effectively. According to the economists, "U.S. firms appeared to simply get more productivity out of the same amount of I.T. (this was not true of non-I.T. capital)."

There is an additional piece of evidence: the big returns to information technology use by American companies operating in Britain were in wholesale and retail trade - the same industries that have been so productive in the United States.

Why the difference in effective use of information technology? This is still something of a mystery, but part of the answer seems to be managerial practices. According to the authors, American companies are more likely than European companies to adopt practices like merit-based promotion and pay, lean manufacturing techniques, performance management and employee autonomy.

Personally, I have found that American managers are much more comfortable with computers than their European counterparts. Until a few years ago, a typical European manager could not even type. This is no longer true of the younger generation of European managers, and I would venture to guess that as they move up in their organizations, managerial comfort with information technology in European companies will broaden.

As a business school professor, I sometimes worry whether we are giving our students the right skills in finance, accounting, marketing and leadership. But the one thing I never worry about is their skills in PowerPoint and Excel; in these areas, the students far surpass their professors. Perhaps the comfort of young American managers in using computers and other sorts of information technology contributes more than we realize to productivity growth.

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