

JARGONALERT

Productivity

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For an economist, the word “productivity” can have several meanings. But if you’re reading about productivity in your daily newspaper, you’re probably reading about “labor productivity.” It is defined as the average value of output produced for every hour worked by the nation’s employees. It is the most widely used measure of the overall productivity of the economy. However, as a measure, labor productivity is a blunt tool: It can show us the trends in productivity, but it can’t tell us much about how those trends came about.

To understand what labor productivity measures, consider the example of an aluminum factory that produces \$1,000 worth of aluminum a day, and employs 10 workers who each work 10-hour days. Note that the number of labor hours that go into producing that aluminum each day is 100. Dividing the value of the aluminum produced by the number of labor hours required to produce it yields the labor productivity — in this case, \$10 an hour.

In the United States, economy-wide labor productivity is measured by the Bureau of Labor Statistics (BLS) and figures released every quarter. These data are closely followed by stock markets and policymakers. Since labor productivity growth is an indicator of economic growth, the growth of labor productivity over the previous quarter is particularly important.

One way a firm can improve labor productivity is through increasing the amount of capital they invest per worker. This is called “capital deepening.” Capital is comprised of plant and equipment, so capital deepening can be achieved through expanding plant size or buying more equipment. With more capital to work with, workers can produce more and this could lead to higher firm revenues. (Of course, there are limits to the labor productivity growth that this can achieve as there is a limit to the amount of capital each worker can efficiently utilize.)

A second measure of productivity, called “total factor productivity” — or TFP, for short — is a broader measure. TFP takes into account the amount of capital employed in production in a more explicit way by measuring the productivity of the combination of labor and capital. When TFP rises, labor productivity rises as well. The reverse, however, is not necessarily true.

TFP can be viewed as a measure of the level of overall technology in an economy. We often think of technology as it pertains to items such as computers and cars, for instance. One might be tempted to think of TFP in the same narrow

terms. However, economists discuss TFP in broader terms, and define it as being comprised of all factors other than labor and capital affecting production. TFP can be influenced by elements such as the regulatory environment, managerial talent, as well as those more traditionally associated with technology such as the level of sophistication in equipment designs.

From 1996 to 2006, economists recorded a significant rise in the growth of labor productivity in the United States. According to a 2007 study by the Congressional Budget Office, between 1996 and 2006 the average rate of annual labor productivity growth was 2.9 percent, compared to an average rate of 1.4 percent from 1974 to 1995.



In recent years, labor productivity growth has been largely driven by robust TFP growth. But the sources of this high TFP growth are hard to pinpoint. One theory attributes the acceleration in TFP growth between 2001 and 2006 to the boom in information technology (IT) investment in the 1990s. These investments provided

firms with an immediate labor productivity boost due to the effects of capital deepening. After that initial period, firms may have developed better business practices tied around the new IT capital. These new practices could have led to an increase in the growth rate of TFP, which in turn, translated into higher labor productivity growth in the post-2001 period.

While labor productivity growth was strong for much of the preceding decade, the future trajectory of labor productivity growth remains to be seen. Future trends in labor productivity are particularly important because of the direct relationship between labor productivity and labor compensation. In the long run, economic theory predicts that wage growth will follow labor productivity growth. The intuition behind this is simple: If workers are producing more, then firms will have to increase wages to compensate workers for their increased productivity.

However, there is debate about whether this relationship between wages and productivity actually holds in practice. Some point to studies which show that U.S. wage growth has been lagging productivity growth since the mid-1970s. Others counter by pointing out that, among other things, many of these studies examine only growth in take-home pay, and fail to take into account growth in the levels of non-cash benefits (such as employer-provided health care) which often constitute a major part of worker compensation. **RF**

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