

Silicon Valley Doesn't Believe U.S. Productivity Is Down

Contrarian economists at Google and Stanford say the U.S. doesn't have a productivity problem, it has a measurement problem

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111 COMMENTS

MOUNTAIN VIEW, Calif.— Google Inc. chief economist Hal Varian is an evangelist for Silicon Valley's contrarian take on America's productivity slump.

Swiveling to a large screen on the desk behind him, Mr. Varian types in a search for the most commonly asked question on the subject economists elsewhere are wringing their hands over. Up pops, "What is productivity?"

See, he says, vindicated: "Most people don't know what it even means."

To Mr. Varian and other wealthy brains in the world's most innovative neighborhood, productivity means giving people and companies tools to do things better and faster. By that measure, there is an explosion under way, thanks to the shiny gadgets, apps and digital geegaws spewing out of Silicon Valley.

Official U.S. figures tell a different story. For a decade, economic output per hour worked—the federal government's formula for productivity—has barely budged. Over the past two quarters, in fact, it has fallen. Sluggish productivity is raising alarms all the way to Federal Reserve Chairwoman Janet Yellen.

Productivity matters, economists point out, because at a 2% annual growth rate, it takes 35 years to double the standard of living; at 1%, it takes 70. Low productivity growth slows the economy and holds down wages.

The 68-year-old Mr. Varian, dressed in a purple hoodie and khaki pants, says the U.S. doesn't have a productivity problem, it has a measurement problem, a sound bite shaping up as the gospel according to Silicon Valley.

"There is a lack of appreciation for what's happening in Silicon Valley," he says, "because we don't have a good way to measure it."

One measurement problem is that a lot of what originates here is free or nearly free. Take, for example, a recent walk Mr. Varian arranged with friends. To find each other in the sprawling park nearby, he and his pals used an app that tracked their location, allowing them to meet up quickly. The same tool can track the movement of workers in a warehouse, office or shopping mall.

"Obviously that's a productivity enhancement," Mr. Varian says. "But I doubt that gets measured anywhere."

Consider the efficiency of hailing a taxi with an app on your mobile phone, or finding someone who will meet you at the airport and rent your car while you're away, a new service in San Francisco. Add in online tools that instantly translate conversations or help locate organ donors—the list goes on and on.

Surely, Mr. Varian says, they also make the U.S. more productive.

The 'free' problem

But the only way goods and services move the official U.S. productivity needle is when consumers and businesses pay for them. Anything free, no matter how much it improves everyday life, isn't included.

Many in Silicon Valley say it is just a matter of time before new innovations surface in salable products and goose the official productivity tally. First, though, businesses must harness the innovations to the products they sell. Driverless car technology, for example, won't hit city streets for a while.

U.S. productivity, meanwhile, has hit the skids. From 1948 to 1973, it grew at an annual average of 2.8%. The rate through the 1980s slowed to half that, even as computers spread through the economy, driving everything from welding robots in auto plants to bank ATMs.

In 1987, during the last period of productivity hand-wringing, Nobel Prize winning economist Robert Solow quipped: “You can see the computer age everywhere but in the productivity statistics.”

From 1995 to 2004, it finally looked like the digital age was paying off: Productivity growth rates closed in on post-World War II highs of near 3%. Then average gains fell to 2% from 2005 to 2009; since 2010, they have dipped below 1%.

Ms. Yellen, in a speech in May, said that over time “sustained increases in productivity are necessary to support rising incomes.”

Yet in Silicon Valley, skepticism, if not outright derision, greets such talk. Stanford economist Nicholas Bloom, who studies differences in productivity across companies and countries, says the idea of a productivity slowdown seems ridiculous to technologists there.

“You can’t be in the Valley without thinking we’re in the middle of a productivity explosion,” Mr. Bloom says. “And when they do discuss it, everyone jumps to Hal’s conclusion here.”

In fact, Silicon Valley seems the exception to the larger U.S. economy. Its businesses are largely defined by their ability to produce impressive output with far fewer people than traditional companies. That means their productivity numbers—output per hour worked—are as sky high as their stock valuations.

Vinod Khosla, a prominent venture capitalist who co-founded Sun Microsystems, is another local who calls productivity an obsolete concept. Steve Jurvetson, a venture capitalist who sits on the board of Tesla Motors and cruises around Menlo Park in the world’s first Tesla Model S, also says he doesn’t believe the metric is accurate.

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“We only invest in businesses that reduce labor,” Mr. Jurvetson says. “They’re always massively more efficient than their predecessor, or we wouldn’t invest in them.” He does, however, accept

that parts of the U.S. economy are difficult to make more productive. Barbers can only cut so many heads of hair an hour, he says, no matter how skilled or how good their tools.

Mr. Varian, who works from a sparse office at the Google campus, is best known for fine-tuning the search giant's system for auctioning online advertising, which last year generated nearly 90% of the company's \$66 billion in revenue. He was one of the first big-name establishment economists to set up a research arm at a technology firm. Mr. Varian is known admiringly as the Adam Smith of Googlenomics, which is the virtuous-cycle idea of combing through data generated by online ad sales to predict consumer behavior and improve the product—and, ultimately, to sell even more ads.

He spent his academic years at the University of California, Berkeley, and wrote one of the most widely used microeconomics college textbooks, which, he notes, has no chapter on productivity.

One problem with the government's productivity measure, Mr. Varian says, is that it is based on gross domestic product, the tally of goods and services produced by the U.S. economy. GDP was conceived in the 1930s, when economists worried mostly about how much, for example, steel and grain were produced—output easy to measure compared with digital goods and services.

Technological improvements and timesaving apps are trickier. For one thing, it is tough to capture the full impact of quality improvements. For example, if a newer model car breaks down less often than older models but cost the same, the consumers' gain can get lost in the ether.

Many economists question why productivity measures can't capture the full benefit of improved products and services, such as a refrigerator that signals when the milk is getting low.

Is GDP outdated?

The U.S. Labor Department has sought to update its GDP measure over the years to include more intangibles, such as adjusting for higher quality. Productivity measures of computer chips, for example, are periodically updated to account for faster speeds. But critics say the process lags behind badly.

The economy also needs time to make use of new capabilities before they show up in productivity numbers. James Manyika, who heads technology research at McKinsey & Co.'s San Francisco office says, "A lot of the technologies we're most excited about are relatively new."

McKinsey has compiled a list of more than 100 disruptive technologies—cloud computing, for example—and most provide what economists call “consumer surplus,” the extra benefit from technology above the price paid.

“We have all these benefits,” he says, “but we’re not paying for them.”

Silicon Valley’s complaints echo earlier eras. The introduction in the last century of indoor plumbing and household appliances drastically increased the efficiency of performing domestic chores. But since domestic labor isn’t counted in GDP either, the time saved hauling water or washing clothes by hand didn’t show up in productivity numbers.

However, these timesaving technologies—among other factors—eventually led to the flood of women into the workforce starting in the 1960s, which, in turn, sent U.S. output soaring.

Mr. Varian is convinced something similar will happen again. At the heart of his argument is the Internet search, cutting short the time to, say, learn how to grow geraniums or find the best Mexican restaurant—a free tool that provides uncounted value at home and at work.

In 2009, researchers at the University of Michigan, following a suggestion from Mr. Varian, ran an experiment to see how much time was saved by search engines. Two teams were given a set of complex questions; one was told to use a search engine to find the answers, the other the library. On average, the search engine team beat the library team by 15 minutes.

Add up those results at every office, school and home around the world and, Mr. Varian argues, the result is a major contribution to efficiency that isn’t strictly counted in U.S. productivity. “To be fair,” he says, “as we adopt technologies that save time in these nonmarket activities, that frees up time for market-based activities which will show up in GDP.”

Outside Silicon Valley, the arguments aren’t as persuasive. University of Chicago economist Chad Syverson said there might be some measurement problems, but that has always been the case. And, he says, he doubts it would account for more than a small part of the recent productivity slowdown.

Mr. Syverson, an expert on productivity, says a more likely explanation for the current slowdown is timing. Productivity has always tended to ebb and flow as new technology is introduced, with waves of gains followed by years of doldrums. The world is likely in a normal lull, he says.

Economists also say that stagnant wages don't reflect hidden productivity gains. If U.S. productivity was indeed going up, they argue, so would wages.

"I'm always reluctant to point a finger at failure in measurement because it feels like you're making excuses," says Marco Annunziata, chief economist for General Electric Co. One explanation for the paradox of low productivity in a time of technical advances may be the uneven way innovation spreads, he says. Some firms gobble up new technology while others don't, so productivity growth could be lagging because many U.S. companies are laggards.

American business since the recession has, in fact, been stingy about investing in new equipment.

It may also be harder for companies to charge higher prices for innovated product lines, Preston McAfee, Microsoft Corp.'s chief economist says. For instance, when UPS started using new GPS technology to speed package deliveries, it couldn't charge more for the improvement in service because FedEx and other carriers could easily match them.

"Maybe our mysterious productivity gain is in the form of less inflation than we deserve," Mr. McAfee says.

Back at Google, Mr. Varian admits that slow and uneven adoption of new technology puzzles him. "If you go to Europe," he says of restaurants there, "all the servers have hand-held devices for ordering, payment." But the technology has yet to spread across the U.S., even though it would make a slice of the economy more productive.

He also acknowledges the gold-rush optimism that drives work and local attitudes: "People in Silicon Valley always overestimate what can be accomplished in two years, and underestimate what people can accomplish in 10."

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