AI: ENHANCING OR DISPLACING THE FUTURE WORKFORCE

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One of the most important debates today relates to the potential impact that Generative artificial intelligence (Gen AI) models will have on the U.S. labor market. Some observers see the ongoing process of automation as a harbinger for widespread layoffs, not only for low-skilled workers but also for more highly skilled professionals.

John Thornhill, the innovation editor at the Financial Times, reports that the term "superfluous people" is now being used to describe the impact that the AI revolution will have on workers. He relates a conversation with a West Coast venture capitalist, who asserted, "There will be only two types of jobs in the future: those that tell machines what to do and those that are told by machines what to do."

However, there are also numerous examples where job losses in one sector are reversed by gains in new occupations. For example, an NBER study found that 60 percent of today's workers are employed in occupations that did not exist in 1940.

HOW WILL AI IMPACT WORKERS?

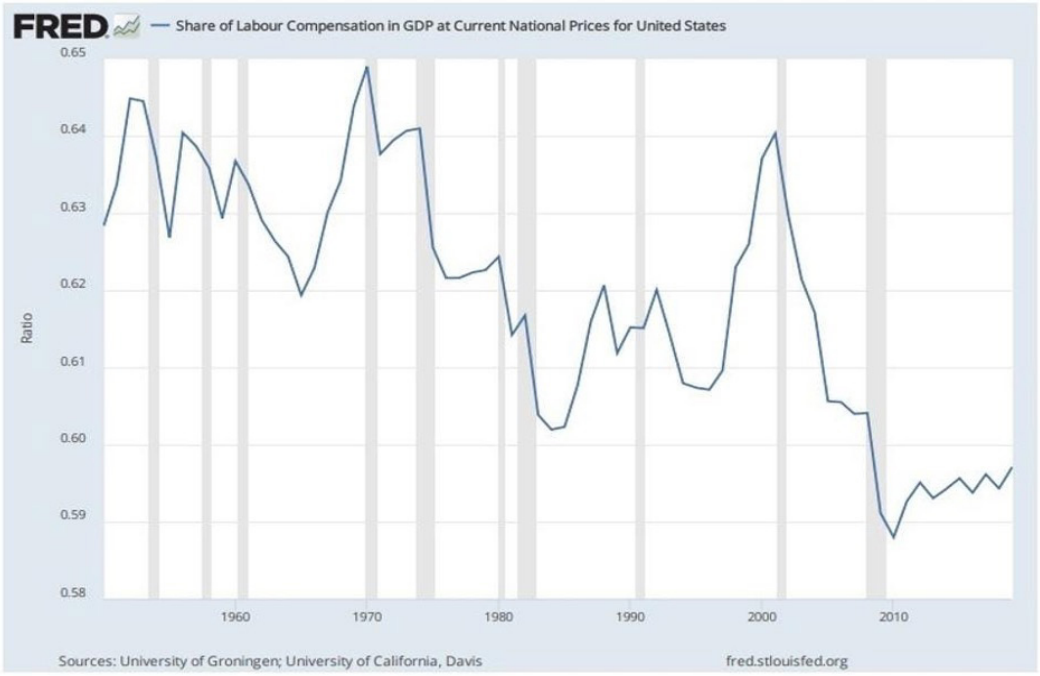
At the heart of the debate is whether AI will ultimately be labor-saving or labor-augmenting when the totality of jobs is considered.

The mechanization of agriculture in the second half of the 19th century and first half of the twentieth century is a clear example of labor-saving technology: Agriculture's share of the labor force has fallen from nearly two-thirds in 1850 to only about 5 percent today.

By comparison, the adoption of computers from 1970-1995 increased the growth of demand for college graduates relative to workers without college degrees, according to an NBER study by Autor, Katz, and Krueger. As a result, the use of computers contributed to increased wage differentials between high-skilled and low-skilled workers over this period.

Along with globalization, this may also help to explain the reduction in the share of labor income relative to GDP in the last two decades (see chart below). Darren Acemoglu and Pascual Restrepo attribute it to weaker-than-average productivity growth for the labor force as a whole due to a deceleration in creating new tasks associated with technological innovation. The surge in U.S. corporate profit margins in the tech sector, in turn, has been accompanied by a stock market boom.

Figure 1. Share of Labour Compensation in GDP at Current National Prices for United States



Source: FRED

WHERE DOES GENERATIVE AI FIT IN THIS SPECTRUM?

One consideration that differentiates it from previous technologies is the much wider array of jobs it can impact. Using a database that lists about 900 occupations, Goldman Sachs' economists estimate that roughly two-thirds of U.S. occupations are exposed to some degree of automation by AI. They further estimate that of those occupations that are exposed, roughly one-quarter to one-half of the workload could be replaced. Accordingly, Goldman and other research organizations are optimistic that as Gen AI is increasingly adopted by businesses, it will likely boost productivity growth in the future.

One must also recognize, however, that it typically takes considerable time to reap the benefits of new technologies because of long lags for businesses to adopt them.

The Economist, for example, observes that AI accounted for only about one-fifth of growth in revenues at Microsoft's cloud-computing division last year, and analysts suspect the comparable figures of Alphabet and Amazon are lower. The article concludes, "For the AI stock market boom to endure, these firms will at some point need to make serious money from selling their services to clients."

HOW IS AI BEING USED TODAY?

In a recent Forbes commentary, Economist Zachary Kroff of the U.S. Census Bureau identified an interesting change in the usage of AI based on firm size. In the initial surveys taken in 2018-2019, larger firms consistently were more likely to deploy AI than smaller firms. More recently, however, there has been a U-shaped pattern of AI use, with the largest and smallest firm size classes reporting the highest rates of usage. The reason: Tools like ChatGPT have made it easier for small firms to utilize the technology.

Another facet is the way that tools such as ChatGPT are being deployed. A recent survey by Forbes Advisor found that the most common usage included customer service (56% of respondents) and cyber security and fraud management (51% of respondents). Other notable uses include customer relationship management, inventory management, and content production, followed by a host of other business activities. By comparison, the usage of AI tools by professional workers, whose needs are more complex, is less widespread.

My take is that the principal advantage Gen AI or other large language models have over humans is the ability to analyze massive volumes of data quickly. This makes them a powerful tool that workers can utilize to improve their performance.

At the same time, humans hold an important advantage over machine learning systems when there are only limited data-based prior experiences.

In the end, I subscribe to the optimistic assessment of MIT economist David Autor. He sees Gen AI as giving people without a college education the skills to do more sophisticated work that will garner higher wages for them. If so, it could help to lessen income inequality. At the same time, it could moderate stock market returns if profits revert to their long-term trend relative to GDP.

A version of this article was posted to Forbes.com on April 1, 2024.

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