

## DEPLOYMENT OF AI: INITIAL FEEDBACK

Although artificial intelligence (AI) has been around for a long time, its widespread use in the world of work, particularly in the service sector, is a new phenomenon that raises many questions. Which sectors or professions will be affected? Which others will benefit? Will the expected productivity gains materialise? Observing trends in the United States, where it all began, already provides some answers.

Will artificial intelligence (AI) change the destiny of humanity, as James Watt's steam engine (1763) and Thomas Edison's light bulb (1879) did in their day? Of course, nothing is predetermined, and the annals of science are filled with promises that are at times overstated, and at other times unmet. Nevertheless, one would have to be quite detached from the realities of the world to overlook the fact that the digital wave currently sweeping across it is on a scale unprecedented since the advent of the internet, that no economic player can escape it, and that its consequences will be significant.

Rather than being a disruption, the emergence of AI in homes and businesses is the ultimate manifestation of a frantic race for computing power, which is also a race towards the infinitely small. In 2026, the engraving precision of the most advanced integrated circuits, produced by the Taiwanese company TSMC<sup>1</sup>, is reduced to an astonishing size of 2 nanometres, or a thirty-five thousandth the thickness of a human hair. Capable of executing hundreds of millions of operations per second, the chips that fill data centre cabinets are scanning the universe of human knowledge and interactions with greater speed and precision, as long as they leave a digital trace.

As a result, AI has evolved beyond merely performing complex analytical tasks based on a predefined program; in its "generative" and "agentic" forms, it is now capable of improving its performance, assimilating instructions in real time, creating content (whether textual, visual or audio), making independent decisions and using natural language. Given these advancements, the question is no longer whether, but when and to what extent, certain professions or sectors will be impacted.

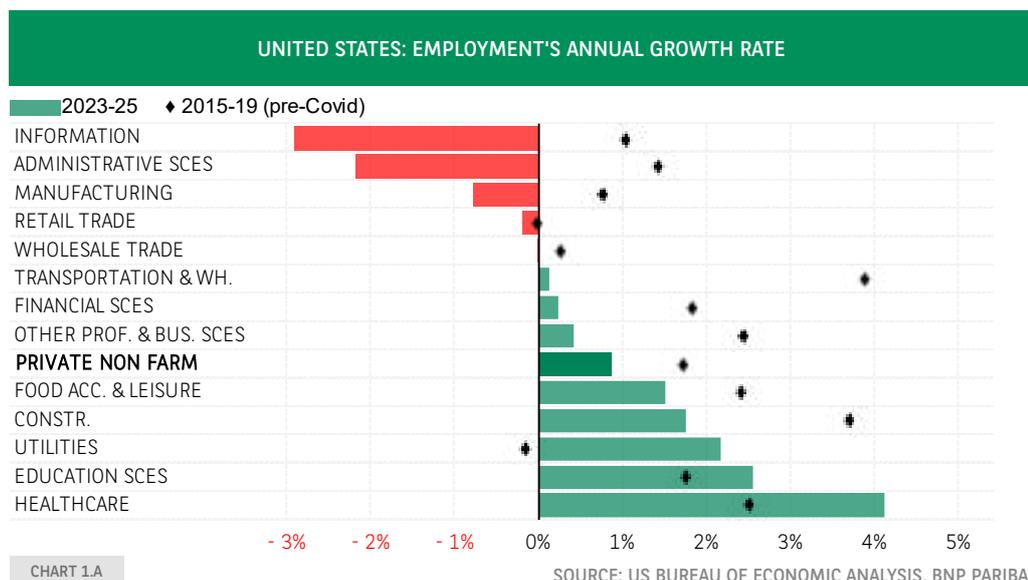
<sup>1</sup> TSMC: Taiwan Semiconductor Manufacturing Company. See Les Echos (2025), TSMC launches mass production of 2-nanometre chips, December.

<sup>2</sup> See Bensaidani, A. (2026), [AI in the United States: growth without jobs?](#), BNP Paribas Economic Research, EcoTV, February.

## IMMEDIATE IMPACT ON EMPLOYMENT AND PRODUCTIVITY: INSIGHTS FROM THE UNITED STATES

In the United States, where it all began, the deployment of AI is already having a very real impact on the labour market<sup>2</sup>. Remarkably, employment trends began to change in 2023, coinciding with the introduction of the first pre-trained generative language models (GPTs) on personal and office computers. The most notable shifts were observed in information and communication technologies (ICT), administrative services, retail, and manufacturing, where robust business performance did not prevent a reduction in the workforce (*Chart 1.A*). In these sectors, tasks such as mechanical assembly, computer programming, data entry, invoice processing, first-level technical support, quality control and customer e-mailing were increasingly being taken over by machines.

AI consumes a lot of resources, including electricity, but also water for metal refining and data centre cooling. Consequently, it had a positive effect on employment in sectors such as energy, infrastructure and distribution networks (utilities). In light of these developments, stock market valuations have diverged significantly. American technology companies considered the primary beneficiaries of AI, particularly the "magnificent seven" (Apple, Microsoft, Amazon Web Services, Alphabet, Meta, Nvidia and Tesla), have seen a threefold increase in their market capitalisation in just three years.



## UNITED STATES: PRODUCTIVITY PER HEAD'S ANNUAL GROWTH RATE

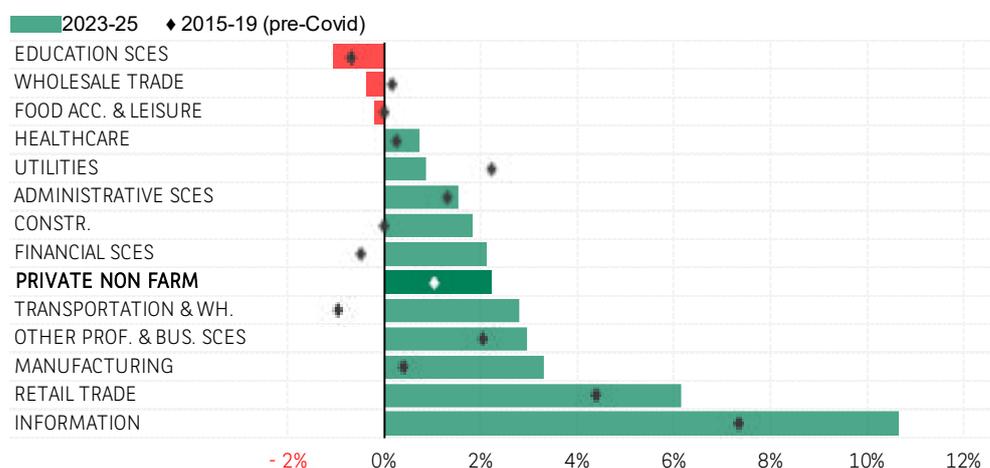


CHART 1.B

SOURCE: US BUREAU OF ECONOMIC ANALYSIS, BNP PARIBAS

Is this justified? In 1987, as the world was becoming computerised, economist Robert Solow playfully remarked that computers were everywhere except in productivity statistics. Today, those statistics have something to say. A comparison of employment and value-added data by sector in the United States confirms the significant gains made in the ICT sector: per capita productivity growth has exceeded 10% per year since the deployment of the latest generation of AI, compared with 7% during the pre-Covid period, which was already high (see Chart 1.B). With the exception of administrative services, the productivity leap is also impressive in the previously identified sectors of retail and manufacturing. Ultimately, the entire economy is being driven forward. Although it was expected to slow down due to rising interest rates and customs tariffs, US growth has continued to defy forecasts, mainly thanks to productivity gains. Since 2023, these have amounted to 2.2% per year (in the non-agricultural private sector), which is double the historical average<sup>3</sup>.

### BEYOND THE SHORT TERM: AI SHOULD SUPPORT GROWTH RATHER THAN CAUSE UNEMPLOYMENT.

There is a shift in the paradigm, even if it cannot necessarily be extrapolated at the same rate. In the short term, the substitution effect is in full swing (capital is replacing labour). A recent article by the Federal Reserve Bank of Dallas shows that this trend is to the detriment of younger workers, who are less experienced than their elders and whose jobs are therefore more easily automated<sup>4</sup>.

However, in the long term, the history of technical progress teaches us that the factors of production are more complementary than substitutive: while a wave of innovation may render certain skills obsolete, it also requires the development of other skills to enable it to move forward. This concept of "creative destruction" was theorised in 1942 by the economist Joseph Schumpeter and has been taken up by the recent Nobel Prize winner in economics, Phillipe Aghion<sup>5</sup>.

<sup>3</sup> Average from Q1 2023 to Q3 2025. Source: U.S. Bureau of Labor Statistics, U.S. Bureau of Economic Analysis.

<sup>4</sup> David J.S. (2026), AI is simultaneously aiding and replacing workers, wage data suggest, 24 February.

<sup>5</sup> See, for example, Aghion P. (2025), Senate hearing on growth and industry, October.

<sup>6</sup> See Peltier C. (2026), [The rise of artificial intelligence: strategic opportunities for emerging countries](#), BNP PARIBAS Eco-Perspectives, March.

In the rather optimistic interpretation advocated by the latter, the main challenge posed by AI is not so much destruction as the adaptation of employment: thus, public authorities, through universities or vocational training programs, but also businesses, must address the issue of "acculturation" in order to support this transition.

According to the AI readiness index calculated by the International Monetary Fund, France, like all Western countries, is fairly well positioned to meet the challenges ahead, which notably sets it apart from the emerging world<sup>6</sup>. Provided it is properly supported, the deployment of AI should not lead to a sustained increase in unemployment, especially as it is taking place within a specific demographic context characterised by a growing shortage of workers. In Japan, the country with the oldest population in the world, a high degree of automation has long coexisted with near full employment.

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