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> "Artificial intelligence (AI) is a major technological upheaval with far-reaching economic implications. What does the economic literature say about the effects of this technology on productivity and growth, on the one hand, and on employment and labour dynamics, on the other?"

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PRODUCTIVITY, GROWTH AND EMPLOYMENT IN THE AI ERA: A LITERATURE REVIEW

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Artificial intelligence (AI) is a major technological upheaval with far-reaching economic implications. This economic literature review[1] is both a practical exercise (it was written using generative artificial intelligence tools) and an analytical exercise, as it provides an update on the effects of this technology based on two complementary areas: productivity and growth, as well as employment and labour market dynamics.

Firstly, AI appears to be a potential source of significant productivity gains, particularly in data-intensive sectors and cognitive automation. While some macroeconomic models anticipate a significant acceleration in global growth in the medium term, these projections are highly dependent on the speed of diffusion, additional investment and the absorption capacity of economies, however. The benefits appear to be concentrated in advanced countries and the services sector, accentuating the differences between regions and levels of technological development.

Secondly, the impact of AI on employment should not result in massive job destruction, but in a profound reconfiguration of tasks and skills. AI helps to partially automate routine tasks while generating new complementarities between humans and machines. The effects on employment vary based on qualification levels, gender, age and sector, exacerbating some inequality risks. If productivity gains are redistributed fairly and accompanied by active training policies, AI could become a vehicle for improving working conditions and creating new jobs.

Finally, a number of constraints are holding back the full realisation of AI's potential, such as high adoption costs, technological concentration and still uncertain returns. These limitations underline the need for an overarching strategy combining regulation, governance and inclusive innovation.

1 This literature review was written with the help of generative artificial intelligence tools, including OpenAI's model on Azure and an internal BNP Paribas language model. The bibliographic references used for the review were independently selected and a detailed plan was drawn up to structure the content. The IA tool was only asked to summarise the documents and write a first draft of the text based on the plan provided. Finally, all of the content was checked by comparing the result with the sources and any necessary adjustments were made to ensure accuracy and consistency

PRODUCTIVITY, GROWTH AND EMPLOYMENT IN THE AI ERA: A LITERATURE REVIEW

Artificial intelligence (AI) is a major technological upheaval with far-reaching economic implications. This economic literature review is both a practical exercise (it was written using generative artificial intelligence tools) and an analytical exercise, as it provides an update on the effects of this technology based on two complementary areas: productivity and growth, as well as employment and labour market dynamics.

PRODUCTIVITY: EXPECTED GAINS AT A MACROECONOMIC LEVEL

AI is a general-purpose technology with the potential to bring lasting changes to the foundations of the economy. It automates not only routine tasks, but also complex cognitive functions, while enhancing the capacity to generate, analyse and use large quantities of data. Its potential impact on overall productivity and long-term economic growth is being increasingly covered in economic literature, with contrasting perspectives depending on the assumptions made.

Macroeconomic modelling of the impact of AI: walking a fine line between potential and caution

Many recent studies model AI as a positive technological shock affecting total factor productivity (TFP) (*see Table 1 and Chart 1*). The IMF simulations carried out by Cerutti et al (2025) illustrate two contrasting trajectories: a scenario of rapid adoption and diffusion, and another one where adoption and diffusion are slower.

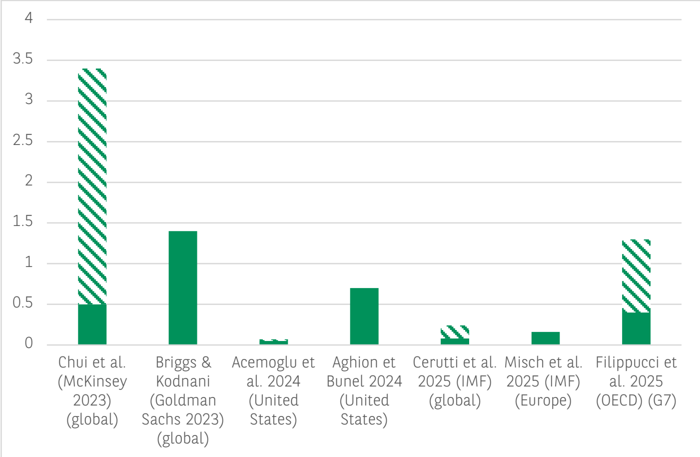
In the first scenario, global TFP grows by 2.4% in ten years, leading to a 4% increase in global GDP compared with the trajectory without AI.

In the second scenario, GDP growth is limited to around 1.3%, due to partial adoption, with TFP growing by only 1.8% in 10 years.

However, the benefits of AI will only materialise if there is significant additional investment in both physical capital and human capital. Simons et al (2024) stress that productivity gains are not automatic, but hinge on the reorganisation of production processes, the adaptation of skills and the renewal of capital. In this sense, AI follows the logic of a productivity 'J curve', with an initial latency period before the aggregate benefits appear.

Acemoglu et al (2024) take a more cautious view. By modelling AI through a task-based framework in the United States, they estimate that AI's contribution to TFP gains may not rise above 0.7 percentage points over ten years, even assuming full automation of the tasks identified as exposed[1].

ANNUAL PRODUCTIVITY GAINS OVER 10 YEARS DUE TO AI ACCORDING TO THE LITERATURE (PERCENTAGE POINTS)



The filled area represents annual productivity gains. When several scenarios are considered, the hatched area gives the high estimate of these gains.

CHART 1 — SOURCE: CHUI ET AL., BRIGGS & KODNANI, ACEMOGLU ET AL, AGHION & BUNEL, ALDASORO ET AL, CERUTTI ET AL., MISCH ET AL., FILIPPUCCI ET AL.

The impact on GDP, although slightly higher due to induced effects (investment and consumption), would remain modest at +1.1%. These estimates suggest that AI may only produce an incremental positive effect on annual growth, unless there is a deep structural change, as seen with previous waves of technology which have been able to create new types of activities.

Such a profound structural change, in addition to making companies able to adopt these new technologies, also hinges on the quality of the regulation choices made in terms of public policies in order to direct innovation towards tasks with high social and economic value (health, energy and education) and to combat misinformation, manipulative advertising and data protection.

1 The tasks shown are those where Large Language Models (LLMs) are already performing well (such as data classification, information recognition and extraction, translation, synthesis, coding and writing).

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CONCEPTUAL FRAMEWORK OF THE RESULTS FROM IMPACT STUDIES OF AI ON PRODUCTIVITY GAINS	
Authors	**Conceptual framework**
Chui et al. (McKinsey 2023)	The impact of generative AI is estimated by breaking down 2100 jobs and assessing their automation potential on the basis of 18 human capabilities. Adoption of this technology is modelled using S-curves[1], (like previous technologies) depending on the speed of technological progress and the reallocation of work.
Briggs & Kodnani (Goldman Sachs 2023)	The authors make several assumptions: • Half of companies will adopt AI within 10 years. • 25% of tasks can be automated by AI in advanced economies, i.e. 7% of jobs will be entirely replaced. • Workers displaced by AI will find jobs in less productive positions. • Workers whose tasks can be partially automated will become more productive.
Acemoglu et al. (2024)	Task-based microeconomic model: • Productivity materialises through two channels: automation • The complementarity of AI and the labour factor. The authors use Hulten's theorem[2] to generalise the effects of productivity on the tasks performed at a macroeconomic level. TFP is deduced by multiplying two factors: the share of tasks impacted by AI (4.6%) (exposure and adoption) and the average productivity gain per task, i.e. the associated cost saving. In order to calculate the average productivity gain per task, the authors estimate the share of jobs affected by automation (57%) and the average cost saved per worker (27%).
Aghion & Bunel (2024)	The authors replicated the approach of Acemoglu et al. (2024) by taking up the formula for productivity gains associated with AI but used other estimates from the literature for each calculation component.
Aldasoro et al. (2024)	Dynamic and stochastic general equilibrium (DSGE)[3] model where AI raises TFP by 1.5 points per year for 10 years: • Unanticipated scenario where economic actors do not anticipate future productivity gains of AI. • Anticipated scenario where economic actors anticipate the positive impact of AI on productivity and adapt more quickly to the changes brought about by AI.
Cerutti et al. (FMI 2025)	Dynamic equilibrium macroeconomic model: The impact of AI on productivity is based on 3 factors: exposure to AI, AI preparedness and access to AI. Two TFP scenarios: • High scenario: rapid adoption of AI, like Aghion and Bunel (2024) • Low scenario: slow adoption and diffusion of AI, like Acemoglu (2024) Productivity gains differ across countries depending on the exposure to AI and the physical and legal infrastructure for adopting AI.
Misch et al. (FMI 2025)	The authors replicated the Acemoglu et al. (2024) model for Europe. The 10-year horizon of Acemoglu et al. (2024) becomes 5 years for Misch et al. (2025). In order to calculate the variables impacting TFP, the authors chose a median level of exposure to Europe, econometrically estimated the adoption rate at industry-country level and used Acemoglu's average saving cost of 27%.
Filippucci et al. (OCDE 2025)	Aggregate microeconomic approach using a multi-sector general equilibrium model. The model is based on preliminary estimates of company and worker productivity gains. The authors calculate a rate of exposure and adoption of AI and incorporate intersectoral knock-on effects. Three adoption scenarios are considered: slow, medium and fast adoption.

1 An S-curve represents the life cycle of technology adoption: start-up (slow growth), rapid adoption, maturity (stabilisation) and decline (replacement by new technologies).
2 Hulten's theorem shows that the macroeconomic effect of an improvement in productivity in a sector is proportional to its weight in the economy.
3 These models seek to explain how different markets (such as the labour market, the goods and services market and the capital market) interact in order to reach a state of equilibrium, based on microeconomic foundations.

TABLE 1 SOURCE: BNP PARIBAS

Sectoral and geographical heterogeneity of gains

One of the major lessons that can be drawn from the literature is the highly heterogeneous nature of the effects of AI across sectors and regions. Productivity gains are concentrated in data-intensive activities and cognitive automation[2]. Cerutti et al (2025) show that sectors such as finance, professional services and healthcare are more exposed to AI. Conversely, sectors based on complex physical processes or human interactions that cannot be formalised to any great extent (such as personal care or traditional agriculture) will see lower productivity gains in the short term.

Geographically, the differences are just as stark. The advanced economies are capturing a disproportionate share of the gains because of their technological capital, their adapted productive fabric and their investment capacities. In the optimistic ten-year scenario of Cerutti et al (2025), GDP would increase by 5.4% in the United States and 4.4% in Europe, compared with just 3% on average in emerging economies and 2.2% in low-income countries (*see Chart 2*).

These differences are due to specific structural and institutional factors for each country, which the IMF breaks down into three categories:

- Exposure to AI: The share of jobs and sectors likely to be transformed by AI.
- AI preparedness: "*cover the countries' digital infrastructure, human capital and labor market policies, innovation and economic integration, and regulation and ethics*"[3] (IMF).
- Access to AI: Takes into account the accessibility of the resources needed to deploy and operate AI (such as semi-conductors, data centres and partnerships).

Even within Europe, persistent gaps are projected. Misch et al (2025) estimate an average productivity gain of 0.8%, but this figure masks significant disparities: up to 1% in Luxembourg, but barely 0.5% in Romania. These differences are especially due to the relative weight of the services sectors, the level of wages (making automation economically more attractive) and the digital maturity of companies.

Disparate effects across different worker profiles

AI is often described as a "skill-biased technology". It tends to increase the productivity of skilled workers, strengthen the companies' demand for these profiles, which in turn improves the pay of these workers (Besson et al., 2024; Filippucci et al., 2024). However, some empirical studies reveal that AI tools can also disproportionately benefit less experienced workers. For example, in a study conducted on software developers, an AI coding assistant can improve the workers' productivity by 26%, but with higher adoption rate and productivity gains for juniors (Cui et al., 2025). Similar results have been observed in consulting and marketing copywriting.

This phenomenon suggests that AI could reduce the dispersion of individual performance, by raising the productivity 'floor' in some professions. However, this positive effect depends on the ability of less skilled workers to appropriate digital tools. Without targeted training, the substitution risk remains high.

IMPACT OF AI-RELATED PRODUCTIVITY GAINS ON GDP, IN 10 YEARS, ACCORDING TO THE IMF (CERUTTI ET AL. 2025)

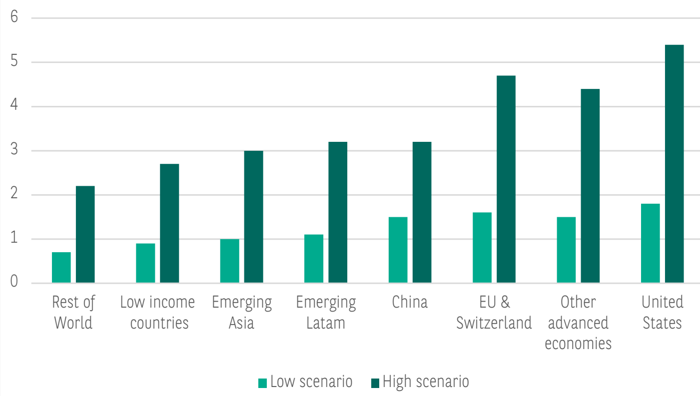

CHART 2 SOURCE: IMF, BNP PARIBAS

Macroeconomic dynamics and investment scenarios

The impact of AI on growth is not only the result of a productivity shock, but also of the induced investment and demand dynamics. Aldasoro et al (2024) examine two behavioural scenarios.

In the first scenario, operators do not anticipate future gains in productivity from AI, which leads to a massive increase in investment in order to adapt production tools before stabilising at 35% above the reference level. GDP would then increase by 30% in ten years. In this case, inflation would be moderate in the short term, resulting from the positive supply shock that increases the productive capacity of the economy and thus helps to moderate inflation despite the extra growth.

In the second scenario, households anticipate the gains provided by AI on their productivity and salaries and start increasing their consumption. This demand shock has a positive impact on growth, but to a lesser extent than in the first scenario, because this demand shock is more inflationary.

These simulations highlight the importance of expectations, government communication and the responsiveness of economic policies. However, in the long term, the estimated variables converge towards the same trajectory whatever the scenario.

Another counter-intuitive macroeconomic effect is identified by Cerutti et al (2025): while exchange rates could be expected to appreciate on the back of dynamic growth and capital inflows, AI could instead cause the currencies of advanced economies to weaken. By increasing productivity in non-tradable services (health and education), it would lower the level of domestic prices relative to foreign prices, leading to a real depreciation of the dollar and the currencies of the advanced economies. Therefore, this "reverse Balassa-Samuelson"[4] effect would favour the external competitiveness of technologically advanced countries.

2 Cognitive automation is an advanced technology that combines AI and process automation to mimic and improve human decision-making capabilities. Unlike traditional automation, it automates complex tasks requiring judgement or understanding, using machine learning, natural language processing and the ability to self-improve by learning from new data.
3 AI Preparedness Index (AIPI)
4 The Balassa-Samuelson effect shows that an increase in productivity in the tradable goods sector leads to a real appreciation of the exchange rate. Since workers are mobile and the non-tradable goods sector has not suffered a supply shock, wages in this sector increase more and domestic prices rise.

Innovation, research and dynamic returns

Beyond its effects on current production, AI is transforming how we innovate. McKinsey (2025) estimates that AI could double the speed of R&D in sectors such as pharmaceuticals, materials and energy. By automating the generation of hypotheses, scientific intelligence, experimental simulation and patent analysis, AI reduces the cost and development time of new technologies.

Therefore, the long-term macroeconomic impact could go beyond simple productivity gains in existing processes. AI is itself becoming a factor in technological progress, capable of boosting endogenous growth by improving the efficiency of research. It could counterbalance the decline in R&D return observed over the last few decades (Eroom's law[5] phenomenon).

What's more, AI by its very nature has increasing returns: the more it is used, the more it improves. Simons et al (2024) show that the computing power dedicated to AI models now doubles every six months, much faster than transistors did during the period covered by Moore's law. This exponential dynamic could fuel a sustained acceleration in productivity, provided that investment in data, infrastructure and skills keeps pace.

Diffusion in the face of high development and adoption costs

Fixed costs, such as model development and the acquisition of graphics processor servers for training, are high and constitute a barrier to entry, especially for small and medium-sized businesses. The cost of collecting, structuring and annotating data, the scarcity of specialist skills, and dependence on external service providers limit their ability to adopt these technologies (Cerutti et al., 2025; Filippucci et al., 2024). Variable costs, linked to execution, storage and energy for each use of the model, have an impact on expansion to new users. Once the fixed costs have been amortised, dissemination can accelerate if the variable costs are kept under control, enabling AI to be deployed on a large scale.

In addition to the high hardware costs, teams need to be trained, internal procedures need to be adapted and organisational models need to be transformed (Acemoglu et al., 2024). Furthermore, AI works best when combined with other technologies, such as IoT sensors[6], robotics, cloud computing[7] or smart ERP systems[8]. This logic of technological complementarity requires an in-depth transformation of the production tool, which takes time and is not within the reach of all economic operators (Aghion et al., 2019, cited in Filippucci et al., 2024).

Concentration of technological power

Current AI is based on a highly concentrated ecosystem, dominated by a small number of large companies with the data, talent, financial resources and computing capacity needed to drive large-scale models (Filippucci et al., 2024). Google, Microsoft, Amazon, OpenAI, Meta and Tencent monopolise access to foundation models and dictate the pace of innovation. These companies can use their market power to erect barriers to entry, making it difficult for new players to gain access, which, by limiting competition, can limit innovation and slow down the adoption of AI. This concentration limits the spread of benefits, increases asymmetries between countries and creates a strategic dependence on digital infrastructure owned by private operators (Filippucci et al., 2024).

For example, the European ecosystem is lagging far behind the United States and China in terms of AI investment, the number of researchers, scientific publications and computing power (Cerutti et al., 2025). This technological dependence raises questions of sovereignty and resilience, in addition to possibly limiting the development potential and diffusion of AI within the economy and the underlying positive macroeconomic impacts.

EMPLOYMENT: BENEFICIAL EFFECTS EXPECTED, PROVIDED THAT THE WORKFORCE IS TRAINED

The rise of AI raises profound questions about the future of employment. Unlike previous waves of automation, which focused on manual tasks, AI is also having an impact on cognitive functions, redefining the boundary between substitution and complementarity between humans and machines.

Employment trends: substitution, complementarity and the net impact

Contrary to the widespread idea that AI will massively eliminate jobs, the literature emphasises that current technologies rarely automate an entire job. It is primarily specific tasks, which are often routine, structured and predictable, that can be automated. Gmyrek et al (2025) estimate that only 3.3% of jobs will be exposed to full automation. This figure rises to 7% for Chui et al. (2023). This means that AI is transforming jobs more than it is eliminating them.

This transformation involves a redeployment of activities towards non-automatable tasks, particularly those requiring creativity, judgement or human interactions. However, this reconfiguration may not necessarily run completely smoothly: for highly routine occupations, workers need to be supported in acquiring new skills, while not everyone is necessarily able or willing to implement such changes. In 2024, McKinsey estimated that 12 million career changes would be needed in both the United States and Europe.

However, AI is not limited to substitution: it also enhances human capabilities. In many functions, it is used as a tool for supporting decision-making, content generation or personalised recommendations. This support role extends to journalism, design, education and programming. With this in mind, new professions are emerging, such as prompt engineer[9], data curator[10], avatar designer and AI ethics analyst[11]. These positions illustrate the emergence of an economy with a human-algorithm interface, where interdisciplinary skills are becoming central.

5 Eroom's law (the inverse of Moore's law) describes the decline in R&D productivity in the pharmaceutical industry.
6 Smart sensors that measure physical data and transmit them via the Internet.
7 Access to IT resources via the Internet without needing to install these resources locally (servers, storage and software).
8 An ERP is a software package that centralises and coordinates all the functions of a company, such as accounting, stock management, human resources, sales and logistics. Coupled with the adjective "smart", this software incorporates AI modules to anticipate needs and automate certain decisions.
9 A prompt engineer is a specialist who designs and adjusts the instructions given to generative AI in order to obtain relevant, reliable and optimised results. They need to understand both how the model works and the jobs' needs in order to translate a human request into an effective language for the AI tool.
10 A data curator is responsible for selecting, organising, cleaning and enriching data sets in order to make them usable in training or using AI systems, while complying with the ethical and legal requirements of data management.
11 An AI ethics analyst assesses the risks associated with using AI by ensuring that these systems adhere to the principles of fairness, transparency, data protection and non-discrimination.

Acemoglu et al (2024) highlight the importance of favouring AI that 'augments' rather than substitutes. In education, AI can provide a real-time diagnosis of pupils' difficulties, enabling teachers to adapt their support or create teaching aids. In the medical sector, it can assist clinical examinations while leaving the final decision to humans. These examples show that AI transforms tasks rather than replacing them. However, for these complementarities to bear fruit, workers still need to be trained to interact effectively with these tools. Disseminating the technology is not enough, as ongoing training and access to technology are critical factors too.

A recent study by the MIT[12] shows that 95% of generative AI projects deployed in companies have failed to generate profits or reduce costs. The main reason is not a lack of performance, but the existence of a "learning gap", as these systems struggle to adapt to work processes and the organisations themselves lack the experience to integrate them effectively. What's more, most companies are using AI in sales and marketing, whereas the potential return on investment is higher in the automation of back-office tasks.

Finally, beyond the dynamics of substitution and complementarity, there is the question of the net impact on employment. Historically, technological revolutions have first destroyed some jobs before creating new ones, with an overall positive result in the long term. With AI, this dynamic could be repeated, but its scale remains uncertain. A recent study by Stanford University highlights the initial negative effects on employment in the United States for occupations most exposed to AI[13]. The jobs created in the short term are linked to the development of AI, its deployment, and its implementation (training, consulting, maintenance and design). In the medium term, productivity gains can reduce costs, stimulate demand and therefore indirectly create jobs (income effect). Between 2019 and 2024, the number of jobs worldwide increased in all industries, even for functions exposed to AI.

For some observers, it is still too early to accurately measure the effect of AI on the labour market, as Oliver Nash, Associate Director of the Institute for the Future of Work, points out. However, some estimates suggest that 300 million jobs could be at risk worldwide (Goldman Sachs, 2023). In an interview, the CEO of Anthropic (the US company behind Claude generative AI) believes that, in the long term, all jobs could be replaced, as in previous revolutions (printing, electricity and cars). He stated that the capacity of AI doubles every seven months, which could lead to the disappearance of half of white-collar entry-level jobs and push the unemployment rate up to 20% in the near future.

The World Economic Forum also reports that 41% of companies surveyed plan to reduce their workforce by 2030 because of AI. However, 77% of them say they plan to invest in adapting their employees' skills between 2025 and 2030.

However, the transition phase may be painful. Displaced workers need to be retrained, supported and reintegrated into growth sectors. The scale of net losses depends on the speed of adoption of the technology, the speed of retraining and the flexibility of the labour market. The more flexible the labour market, the easier it is to adapt to new technologies, which reduces net losses.

In the longer term, AI could lead to the emergence of yet unknown sectors, as did the Internet or mechanisation. It could also improve the quality of jobs by eliminating arduous tasks, encouraging more creative or flexible work and even reducing working hours to free up time.

However, it could also intensify control and surveillance of employees (productivity monitoring and algorithmic scoring), which calls for regulatory vigilance (OECD, 2023).

Different effects for different groups of workers

Age

Older workers are generally more vulnerable to automation, because they have less digital knowledge and a shorter career horizon. Adaptation and retraining are often more difficult for them. Conversely, younger generations, who are often more comfortable with technology, are better positioned to take advantage of AI. However, some entry-level jobs that were once professional springboards (summarising, proofreading, reporting and simple coding) are now partly automated, which could affect on-the-job learning.

Automation and artificial intelligence have particularly great potential for countries facing demographic decline. More than a quarter of the world's population already lives in a country with a shrinking workforce, and this number is set to double in the 2050s[14]. Against this backdrop, the complementarity between humans and technology must be fully exploited, both by companies and by public authorities, in order to train workers to work effectively with machines and therefore offset the losses in activity and productivity linked to the reduced number of workers.

In addition, improved working conditions and greater social inclusiveness, made possible by new technologies, could enable older people to stay in work longer. A study conducted by the McKinsey Health Institute revealed that between 19% and 25% of people aged over 65 would like to work but are prevented from doing so by a lack of suitable opportunities and persistent societal barriers. Faced with a shortage of young workers, some companies are now banking on this labour pool by carrying out targeted recruitment campaigns aimed at older people.

Gender

Women are over-represented in administrative, customer service and support functions, which often involve tasks that can be automated. Gmyrek et al (2025) show that around 9.6% of female employment in high-income countries is in occupations at high risk of automation, compared with 3.5% for men. What's more, the most promising technological professions remain largely male-dominated. Therefore, there is a twofold challenge: to avoid job destruction targeting women and to encourage them to access the technical professions of tomorrow.

Sectoral effects

The impact of AI on employment varies considerably from one sector to another and also hinges on the regulatory barriers that may slow down its adoption:

- Cognitive-intensive sectors: banking, finance, IT, consulting and media. These highly exposed sectors are seeing the emergence of automated decision-making, content production and data analysis.
- Manufacturing industry: AI combined with robotics enables predictive maintenance, logistics optimisation and finer quality control, without necessarily replacing the physical workforce (Simons et al., 2024).

12 Massachusetts Institute of Technology (2025), The GenAI divide: State of Business 2025.
13 Brynjolfsson et al. (2025), Canaries in the Coal Mine? Six Facts about the Recent Employment Effects of Artificial Intelligence, 26 August.
14 Where working age populations are shrinking,' Axios, Apr 2024.

- Public services: health, education and administration. AI plays an assistance role (smart tutoring and diagnostic assistance) without completely replacing human labour.
- Transport/logistics: route optimisation, automated piloting and warehouse management.

Some sectors, such as agriculture, the hotel and catering industry or personal services, remain partially protected by the nature of the tasks (manual, social and non-codifiable), but could benefit from decision support tools or smart sensors.

Polarisation and inequalities

The literature converges on one observation: AI risks aggravating the polarisation of the labour market. On the one hand, highly skilled workers capable of exploiting AI tools are capturing a growing share of value. On the other hand, low-skilled jobs that cannot be automated (care, cleaning and handling) continue on, but often with stagnating wages.

The middle segment (office workers and technical assistants) is the most vulnerable. The gradual disappearance of positions from this segment is reducing upward social mobility. Autor et al (2003) warn of the possible erosion of the "cognitive middle class".

This polarisation could be accompanied by a decline in the share of labour in national income if productivity gains are captured mainly by those with technological capital (patents, platforms and cloud infrastructure). The growing market power of large AI companies emphasises this imbalance (Brollo, 2024).

The impact of AI on employment, income and inequality may result in social resistance. If the gains are captured mainly by a minority of skilled workers or by highly capitalised companies, acceptance of the technology will be limited (Filippucci et al., 2024; World Economic Forum, 2024). Fear of downgrading (BCG, 2024), excessive surveillance or a loss of meaning at work may fuel mistrust too.

Public policy and training

The response of the public authorities is crucial. Three main tools have been identified:

- Initial and ongoing training: education systems must integrate digital literacy, the use of AI, and cross-disciplinary skills. Lifelong learning is crucial for retraining.
- Employment policies: support for moving between jobs, help with upskilling and support for retraining. AI can also become a tool for tailored training via adaptive learning15 (OECD, 2023).
- Distribution of gains: if AI increases inequalities, partial redistribution via taxation, employee share ownership or a minimum income could maintain social cohesion.

Trade unions and social partners must also be involved in negotiating the use of AI in companies, to ensure fair and transparent deployment.

CONCLUSION: ISSUES AND CHALLENGES

While AI holds out great promise in terms of productivity, innovation and economic gains, it also raises profound questions about its limits and the conditions for its real effectiveness. Moreover, AI has a growing environmental cost, with potential impacts on international climate targets, even if it also offers technological solutions to help achieve the green transition.

In macroeconomic terms, the main limitations of AI primarily relate to the reliability of information and its potential negative impacts on economic operator confidence and financial market stability. This erosion in confidence can also affect institutional stability, a key determinant of investment. These issues illustrate the need to strengthen AI governance and to strike the right balance between protecting fundamental rights and encouraging innovation.

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15 Adaptive learning creates personalised educational content for students with different skill levels and expectations, with the help of AI.

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