SPEECH

The transformative power of AI

Welcome address by Christine Lagarde, President of the ECB, at the ECB conference on "The transformative power of AI: economic implications and challenges" in Frankfurt, Germany.

Frankfurt, 1 April 2025

It is a pleasure to welcome you to our conference on the transformative power of AI.

In the early stages of a new technological breakthrough, it is often hard to discern fact from fiction. We struggle to imagine the ways in which the new technology will be used. And even if we predict the direction of technological change correctly, we rarely get the timeline or the size of the impacts right.

Today, we sometimes hear claims that AI is improving so fast that we are only a few years away from the nature of work being radically reformed. But we also hear arguments that the same barriers that slowed down the adoption of all past technologies will also delay AI adoption.

I cannot claim to know which vision will prove to be correct. But the early evidence is promising and, in my view, we must act on the basis that we are facing an economic revolution. This attitude will be particularly important here in Europe.

On this side of the Atlantic, we are still paying the price for having been too slow to capitalise on the last major digital revolution, the internet. The tech sector explains around two-thirds of the productivity gap between the EU and the United States since the turn of the century.

And now we are faced with a technology that can improve its own performance through self-learning mechanisms and feedback loops, enabling even more rapid advances and innovations. The risks of underestimating the potential of AI, and falling behind again, are simply too great to be ignored.

What's more, we are facing a new geopolitical environment in which we can no longer be sure that we will have frictionless access to new technologies developed overseas. This new reality strengthens the case for Europe to establish itself at the technological frontier.

There are two main areas where we should expect, and prepare for, major changes in the economy.

The first is productivity.

We can already see the productivity effects of AI in sectors like the US tech sector, where output is expanding while employment is falling.[1] But we are still in the early phase of the "productivity J-curve", where new technologies diffuse to the wider economy and are reflected in GDP.

As such, estimates about the productivity gains of AI vary widely – but even at the lower end they would be a game changer for Europe.

One widely accepted methodology estimates that the euro area could see a boost to total factor productivity (TFP) of around 0.3 percentage points per year over the next ten years.[2] Compare that with the past decade, when annual TFP growth averaged just 0.5%.

Other estimates point to much larger gains, with productivity expected to grow 1.5 percentage points faster annually if AI is widely adopted over the next decade.[3]

Whether Europe can achieve such productivity gains will depend on whether we can improve the environment for AI innovation and diffusion.

This comes down to funding, regulation and energy.

As I have been arguing for some time, Europe's relatively small venture capital ecosystem is a major hindrance to building foundational models in the EU.[4] Between 2018 and 2023, around €33 billion was invested in AI companies in the EU, compared with more than €120 billion in their US peers.[5]

Building and developing this technology also requires considerable investment in data centres, and the EU currently has around 4 times fewer dedicated sites than the US.[6]

At the same time, ECB research finds that regulation and a lack of institutional quality are particularly detrimental to the expansion of high-tech sectors relative to more mature technologies. Investing in radical technologies is highly risky and needs a different set of framework conditions.[7]

The adoption of AI, for example, depends on access to data pools to train models, which requires smart regulation to avoid data fragmentation while ensuring data protection. It also requires good institutions as, for instance, effective legal systems are needed to defend a non-patentable asset like a set of AI prompts.

Our research shows that if the EU's average institutional delivery were raised to the level of best practice, AI-intensive sectors would see their share in investment rise by more than 10 percentage points.[8]

Finally, unless we see major breakthroughs in efficiency, Europe's energy supply constraints could pose a challenge to the diffusion of AI through the economy in the future.

The power consumption of data centres is expected to triple in Europe by the end of the decade.[9] AI training and inference is extremely energy-intensive.[10] And this surge in demand comes at a time when the green transition is also increasing the demand for electricity, for example for charging battery electric vehicles.

There is now a clear policy agenda in Europe to address these barriers. It is widely recognised that we need to build a savings and investment union to jump-start European venture capital, that we must simplify complex digital regulations and improve permitting speeds, and that we have to massively increase investment in data centres, fibre-optic networks and electricity grids.

But for Europe to make the most of the AI revolution, *how* the productivity gains from AI are harnessed also matters. Labour productivity can be increased either by reducing labour inputs relative to outputs, or by raising outputs relative to inputs. The employment implications of each route are vastly different.

This brings me to the second area of major change: the effect of AI on labour markets.

According to ECB research, between 23% and 29% of workers in Europe are highly exposed to AI.[11] This does not necessarily herald a "job apocalypse". It is reasonable to expect that AI will follow historical patterns by displacing some jobs while creating new one.[12]

But there are two new questions that this technology poses.

First, will the pace of technological change be faster than in previous transitions? This question is critical for Europe, as our social model and traditionally high levels of job protection make it hard to see how a transition that leads to massive job reallocations could avoid a major backlash.

The key factor will be whether AI leans more towards job displacement via its "automation potential", or towards changes in the nature of work via its "augmentation potential". In the augmentation scenario, workers will still need to adapt to changing roles and tasks, but the transition will likely be easier.

Recent research by the ILO finds that only a small share of jobs – around 5% in advanced economies – meet the criteria for high automation. But a much larger share – over 13% – meet the criteria for high augmentation.[13]

The second question is about the distribution of gains.

Early studies suggested that AI could increase the productivity of lower-skilled workers the most.[14] But newer studies looking at more complex tasks – like scientific research[15], running a business[16]and investing[17]– tell a different story. High performers benefit disproportionately and, in some cases, less productive workers see no improvements at all.

So even if AI augments more than it automates, we are likely to see an increase in labour market inequality. Demand for higher-skilled workers who can use AI most effectively will rise, while those less able to learn new skills could suffer.

All told, I do see a path for Europe to adopt AI without fracturing its social model. But it will require massive complementary investments in skills to prevent a rise in inequality.

Crucially, this will not require everyone to become coders, which would probably set the bar too high. According to the OECD, most workers who will be exposed to AI will not need specialised AI skills to get ahead in their careers.

In fact, the most sought-after skills in highly exposed jobs will be linked to management and business – skills that many people have the capacity to learn.[18]

The CEO of Anthropic, Dario Amodei, has described the potential capabilities of AI as being like "a country of geniuses in a data centre".[19] If this proves to be correct, it is both an awesome prospect for humanity and a daunting one for individual workers.

I believe we must act today, and especially in Europe, with the mindset that this future will likely come to pass. We must remove all the barriers that will prevent us from being at the forefront of this revolution.

But we must also prepare for the human and climate impacts of this transition, and we need to start now. I trust that this conference will generate the ideas we need to move forwards.

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