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Will Artificial Intelligence Cause Mass Unemployment?

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Abstract

Massive investments in artificial intelligence raise questions about their impact on productivity, labour markets and prosperity. The answer depends on how the government responds.

Zusammenfassung

Riesige Investitionen in die Künstliche Intelligenz stellen die Frage nach der Auswirkung auf Produktivität, Arbeitsmärkte und Wohlstand. Die Antwort hängt von der Reaktion der Staaten ab.

"Higher interest rates lead to the economy running leaner, greater geopolitical instability leads to greater volatility, and increased regulation leads to slower growth and higher costs of innovation. Given this outlook, we'll need to operate more efficiently than our previous headcount reduction to ensure success."

Mark Zuckerberg (2023)

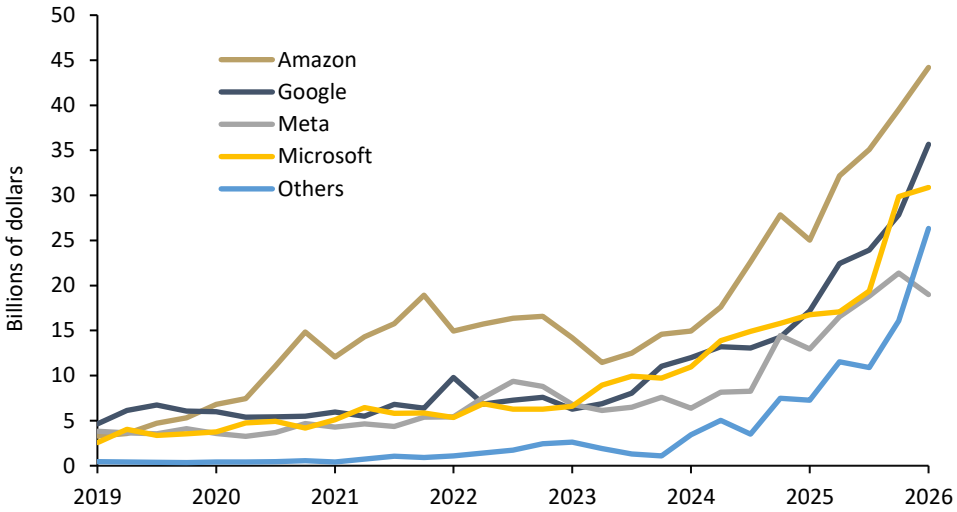
1. The hyperscalers' investments and redundancies

Artificial intelligence is not only astonishing the world with searches completed in a matter of seconds, impressive programming capabilities and autonomous driving. The rises in share prices and investment expenditure by the major technology firms are also impressive (Fig. 1). The five hyperscalers (Amazon, Microsoft, Google, Meta, Oracle) have announced investments totalling more than 800 billion dollars for the AI of the future by 2026 (Levine 2026) — around 80 per cent more than in 2025 (Crosley 2026). By 2027, this figure is expected to reach 1,000 billion dollars (Adams et al. 2026).

The AI boom is also fuelling speculation about the future of work and the labour markets. On the one hand, AI companies are hiring heavily; on the other, fears of job losses are rife, most recently even emanating from the AI sector itself. It is reported that since spring 2022, the technology sector in the US has cut hundreds of thousands of jobs. In 2023, Mark Zuckerberg declared a 'Year of Efficiency' and announced the loss of 15,000 jobs (Zuckerberg 2023). He set out the guiding principles: *'flatter is* faster', *'leaner is* better', *'keep technology the main* thing', *invest in tools to get more* efficient' and *'in-person time helps build relationships and get more* done'.

The high level of planned investment is fuelling fears of job losses, as AI can perform many tasks better than humans. As early as 2014, Brynjolfsson and McAfee (2014) identified AI as a universal helper that permeates all areas of life. Intelligent robots would take over monotonous and dangerous tasks in factories. According to futurist Martin Ford (2021), AI and robotics will replace many highly skilled knowledge-based professions (e.g. lawyers, radiologists or software developers) and trigger a phase of structural unemployment and growing inequality. According to tech billionaire Elon Musk, AI and robotics can perform almost any task better and more cheaply than humans. No one would need to work to earn a living any more (Ray 2026). *"In the future, physical work will be a choice*." The forecasts for the AI-driven world of work of the future range from heaven to hell. Which scenario is the most likely? And what role does currency stability play in the impact of AI on productivity and labour markets?

Fig. 1: Investment expenditure by major technology firms



Source: Board of Governors of the Federal Reserve System. 'Other' includes Oracle and Coreweave. Quarterly figures.

2. Types of unemployment from a historical perspective

Until the Industrial Revolution, there was virtually no unemployment in the modern sense, as most people had to work in agriculture to support themselves. People were embedded in social structures such as the family, manorial systems, villages, monasteries or guilds, where they found work or, when needed, social support. Because productivity was low, people had to work long hours to secure their livelihoods. Waves of unemployment first emerged during the Industrial Revolution, during the Great Depression and in the post-war period of the 1970s – though not on a permanent basis and for different reasons.

a. Technological unemployment during the Industrial Revolution

Karl Marx described the emergence of unemployment and impoverishment in the wake of the Industrial Revolution, focusing on 19th-century England. Thanks to improved farming methods and new machinery, the same amount of agricultural land could be cultivated with fewer workers. Through enclosures[1], common land was privatised and landowners created large areas of pasture for more profitable sheep farming. As a result, small farmers often lost their rights of use, their jobs and their livelihoods, and were henceforth forced to offer their labour for wages in the cities, where large-scale industrial production facilities for textiles and steel products were emerging with the aid of machinery. As vast numbers of people flocked from

[1] In the past, villagers were able to use communal land (*commons*), for example for grazing livestock. Large landowners had these areas fenced off and turned them into their private property.

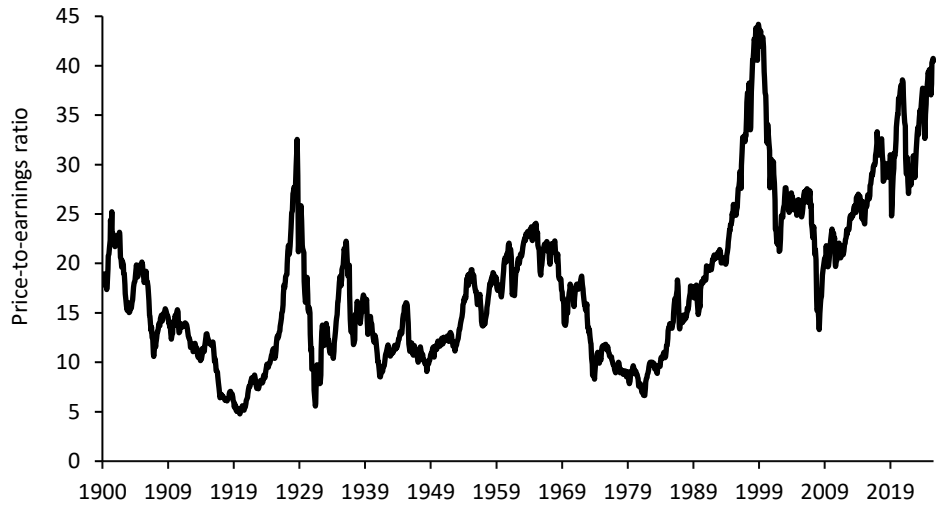
the countryside to the cities, employers were able to drive wages down to the subsistence level.

Observing this development prompted Marx (1867) to formulate a theory of crisis. Driven by the pursuit of profit, capitalists acquire machinery, the stock of which grows faster than the demand for labour. More and more people become unemployed until the 'industrial reserve army' rises up against the capitalists and their economic system. The machine-breakers ('Luddites') of the early 19th century destroyed mechanical looms because they saw their livelihoods under threat. In Silesia, the weavers' revolt took place in 1844 (Hauptmann 1892). More recently, resistance has grown in the USA against the construction of data centres. *'The AI Backlash Has Tech Executives Fearing for Their* Lives', as a headline reads (Ellis et al. 2026).

b. 'Austrian' unemployment

In the overinvestment theory of Mises (1912) and Hayek (1931), excessively low interest rates trigger too much credit-financed investment, leading to an unsustainable boom. The share prices of companies and banks, which make higher profits during the boom, rise. This rise in share prices – often fuelled by the prospect of huge profits resulting from groundbreaking innovations – can lead to a wave of speculation in which share prices become detached from their fundamental values. When labour supply becomes scarce, wages rise, forcing companies to raise their prices.

Fig. 2: Shiller Price-to-earnings ratio of the S&P 500 (CAPE)



Source: Online Data Robert Shiller. Shiller-P/E Ratio / CAPE = current share price relative to average inflation-adjusted earnings over the past ten years.

The central bank must then raise interest rates to combat inflation. The benchmark against which the profitability of investment projects is measured is set higher, meaning that many unprofitable investment projects must be abandoned. The bankruptcy of the first companies leads to the bankruptcy of others, resulting in unemployment during the downturn. This unemployment is not the consequence of technological progress, but of monetary policy mistakes that have led to exubarance.[2] Unemployment causes wages and prices to fall, which is the prerequisite for the emergence of new companies and a new economic upturn that creates new demand for labour.

Hayek (1931) described the 'golden 1920s' in the USA as such a boom driven by overinvestment. Following the recession of 1920–21, he argued, the US Federal Reserve triggered a credit expansion – and thus excessive investment in durable capital goods – by cutting key interest rates. The resulting economic upturn was accompanied by excessive rises in share and asset prices, fuelled in part by the euphoria surrounding the innovations of Fordism.[3] Fig. 2 shows the steep rise in the price-to-earnings ratio of the S&P 500 during the 1920s. The speculative boom came to an abrupt end with Black Friday in October 1929, after the Federal Reserve Bank had raised interest rates in response to rising inflation. Unemployment rose dramatically not as a result of technological progress, but primarily due to the adjustment crisis following the bursting of the bubble (Fig. 3).[4]

c. 'Keynesian' unemployment

Against the backdrop of soaring unemployment during the Great Depression, John Maynard Keynes (1936) argued that the state should tackle unemployment through debt-financed public spending. By investing in roads, railways, ports and public buildings, the state would generate additional demand for labour, whilst avoiding the creation of additional production capacity – which would remain unused during the crisis. The central bank should lower interest rates to boost private investment.[5] Keynesian ideas were reflected from 1933 onwards for instance in the New Deal of US President Franklin D. Roosevelt, who created millions of jobs through road,

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[2] Schumpeter (1911) refers to this as 'creative destruction'.

[3] In the 1920s, assembly-line production (primarily pioneered by Ford) and the electrification of industry led to major gains in productivity (Hounshell 1984). Hayek recognised the importance of innovation for the economic upturn of the 1920s, but emphasised that the boom was prolonged beyond the equilibrium driven by innovation through an overly expansionary monetary and credit policy. Field (2011) argues that the gains in total factor productivity in the 1920s were concentrated almost exclusively in the manufacturing sector and only began to spread more widely across the entire economy in the 1930s.

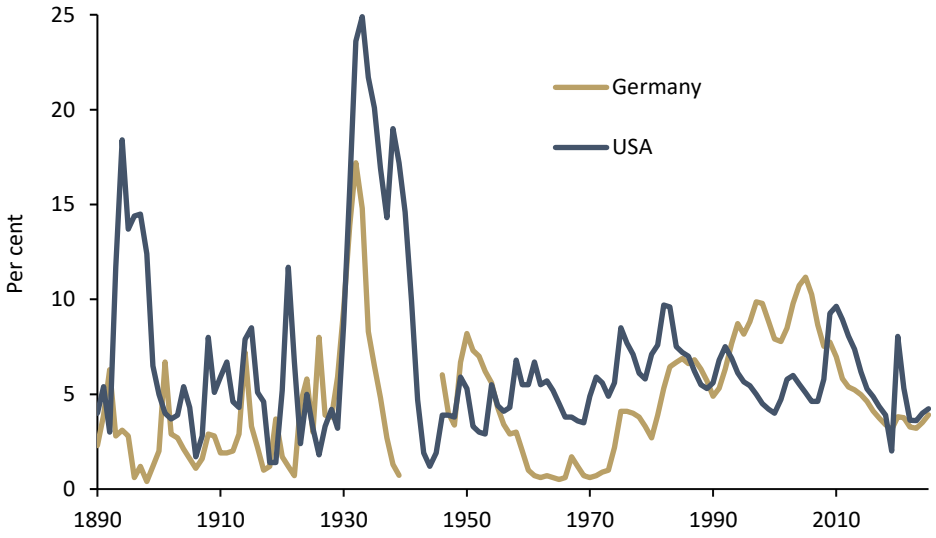
[4] Similarly, according to Perez (2002), a macroeconomic innovation process proceeds in cycles. During the phase of irruption, a basic technology emerges. Financial capital fuels euphoria and speculative bubbles (frenzy). At the turning point, the bubble bursts and a correction takes place (synergy). In the maturity phase, the new technology spreads throughout the economy. Productivity and prosperity rise across the board.

[5] In practice, this required the abolition of the gold standard, which triggered competitive depreciations of the currencies.

bridge, school, cultural and afforestation projects.[6] In Germany, the National Socialists eliminated unemployment through public construction projects, rearmament and compulsory military service. In effect, the expansion of employment in the public sector served to conceal unemployment.

After the Second World War, high unemployment arose because the production sites had been destroyed (Germany) and soldiers were returning from the war (Germany and the USA). The stabilisation of currencies under the Bretton Woods system, the liberalisation of world trade under the General Agreement on Tariffs and Trade (1944) and market-oriented reforms in the defeated nations of Germany and Japan led to high economic growth, which curbed post-war unemployment. Unemployment was moderate in the 1950s and 1960s (Fig. 3). In Germany, the economic and monetary reform of 1948 marked the starting point for impressive productivity gains, which completely eliminated the high post-war unemployment by the end of the 1960s (Schnabl 2024).

Fig. 3: Unemployment rates in Germany and the USA, 1890–2026



Source: OECD and Macrohistory Database.

In academic circles, Keynes's theories gained acceptance in form of counter-cyclical economic policy (Samuelson 1948). Government-debt-financed spending programmes and interest rate cuts by central banks increasingly dominated the economic policy agenda during downturns. Based on the modified Phillips curve, the belief spread that expanding the money supply and inducing inflation could reduce real wages and unemployment (Samuelson and Solow 1960). However, as trade unions increasingly anticipated inflation in their wage negotiations, wage-price

[6] Unemployment was finally eradicated in many countries as a result of the Second World War, because many men were conscripted into military service.

spirals emerged in the 1970s, which had a negative impact on investment and employment due to rising uncertainty. This gave rise to high 'Keynesian unemployment' (Fig. 3), which was perpetuated by the (debt-financed) expansion of social security systems.

3. Monetary stability, technical progress and unemployment

This shows that unemployment is linked in various ways not only to technological progress but also to the design of fiscal and monetary policy. Fiscal and monetary policy are often closely interlinked, because in the longer run expansionary fiscal policy is only possible through an expansionary monetary policy. If monetary policy remains restrictive, then debt-financed government spending raises lending rates, which ultimately forces governments to cut spending through the disciplining function of the financial markets.

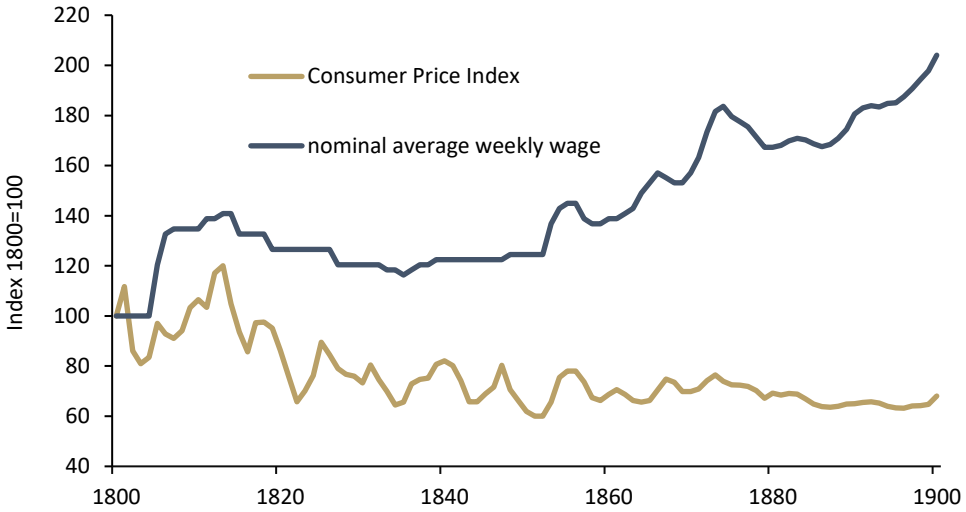
a. Technological progress and unemployment under the gold standard

The Industrial Revolution took place at a time when gold and silver dominated as money, and when the emerging paper money was backed by gold (the gold standard). According to North (1990), institutions such as the gold standard reduce uncertainty and thereby create incentives for innovation and investment. According to Polanyi (1944), the gold standard, industrialisation and free trade were closely intertwined in the 19th century. The gold standard made investment and trade predictable due to stable prices and exchange rates. Industrialisation required large and stable markets, which were fostered by free trade.

Although the adoption of new technologies, facilitated by the gold standard, did result in the loss of many jobs, John Stuart Mill (1848) observed that productivity gains, through falling prices and rising demand, gave rise to new businesses and sectors of the economy. In the United Kingdom, where the gold standard had been in place since 1821, firms passed on the benefits of their productivity gains to consumers and to workers in the form of falling prices and rising wages (Fig. 4).[7] Currency stability contributed to the long-term elimination of technological unemployment through its positive effect on technical progress and investment. Higher productivity levels not only allowed real wages to rise but also led to a reduction in working hours. Fig. 5 shows the continuous decline in working hours from a historical perspective.

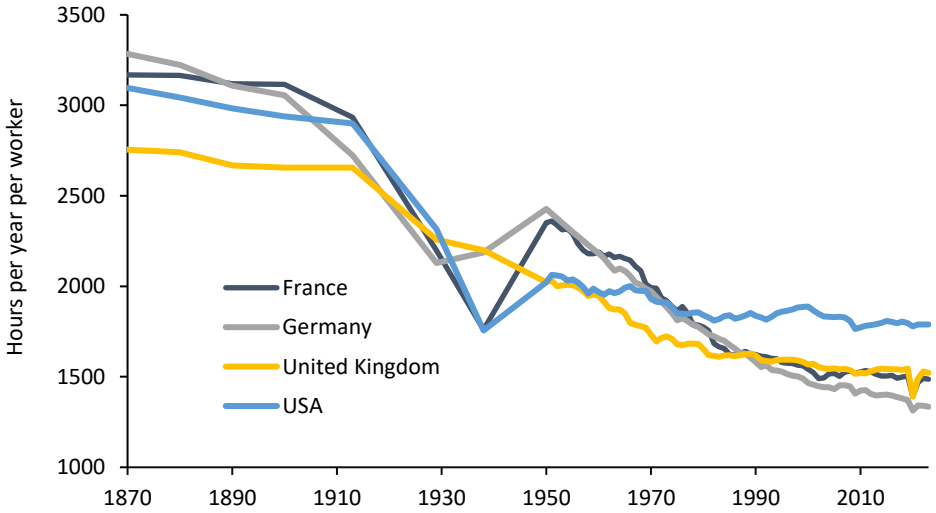
[7] Falling prices were therefore not – as Keynes argued – linked to a persistent recession. Nor did unemployment rise ever higher, as Marx had predicted.

Fig. 4: Price index and weekly wages in Great Britain in the 19th century



Source: Bank of England.

Fig. 5: Historical trend in average working hours



Source: Feenstra et al. (2025), Huberman and Minns (2005), Our World in Data.

b. Unemployment caused by monetary instability

In the overinvestment theory of Mises (1912) and Hayek (1931), monetary policy mistakes cause not only cyclical fluctuations but also fluctuations in unemployment. Too low interest rates to an excessive rise in the demand for labour, causing unemployment to fall. Wages and inflation rise, which ultimately renders many investment projects unprofitable. If this leads to a crisis and unemployment rises, according to Schumpeter (1911) and Hayek (1931), wages must fall again in order

to eliminate unemployment.[8] Keynes, however, countered that wages are rigid downwards because workers resist nominal wage cuts. This can mean that, once the exuberance has run their course, unemployment only falls after a significant delay.

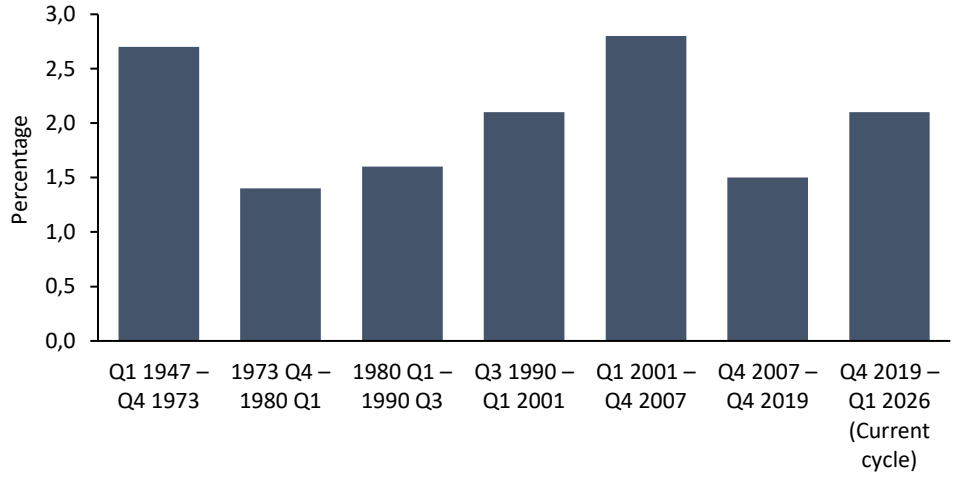
Keynes (1936) therefore did not recommend to combat unemployment through painful austerity and nominal wage cuts (*"In the long run, we are all dead*."), but rather through debt-financed government spending. As this generally leads to rising interest rates and interest burdens, central banks tended in practice to support expansionary fiscal policies with expansionary monetary policies. However, the resulting inflation has a negative impact on innovation, investment and growth because it increases uncertainty. In the 1970s, the highly expansionary fiscal and monetary policies did not come along with falling unemployment, but with a significant rise in unemployment (Fig. 3). Monetary instability dampened productivity gains and prevented the reduction of unemployment through the emergence of new firms and economic sectors. American industry was regarded as ossified and lacking in growth (Thurow 1980).

c. Productivity gains and the reduction of unemployment through monetary stabilisation

The stagflation of the 1970s paved the way for the 'monetarist counter-revolution'. Milton Friedman (1970) argued that inflation was always and everywhere a monetary phenomenon**.** Since there was no permanent trade-off between low inflation and unemployment, inflation had to be curbed by controlling the growth of the money supply. When Paul Volcker was appointed Chairman of the Federal Reserve in the US in 1979, inflation was in double figures. The unemployment rate stood at 7.1 per cent in 1980, having been 3.5 per cent in the late 1960s. Volcker's radical increase in the base rate created strong pressure to adjust and thus forced a far-reaching restructuring of American companies, paving the way for the IT-driven surge in productivity of the 1990s. A low point of the unemployment rate was reached in 2000 at 4.0 per cent, but by then a speculative bubble in the IT sector – fuelled by interest rate cuts in the wake of the Asian crisis – had already artificially inflated labour demand (see Chapter 4).

[8] When workers move into new sectors, they require different skills, which can usually only be acquired after a certain delay. This gives rise to what is known as frictional unemployment. Today, the economy is highly specialised, and so too are the skill profiles required in many occupations. On the other hand, in many service-oriented professions that emerge as prosperity increases, the skill requirements are comparatively low.

Fig. 6: Growth in labour productivity in the USA, 1947–2026



Source: US Bureau of Labour Statistics.

The key technological foundations for information technology – semiconductors, microprocessors and the first personal computers – had already emerged between the 1950s and the 1970s. By the late 1970s, changes in regulation had given pension funds access to the venture capital market, and from then on, together with university endowments, insurance companies and wealthy private individuals, they formed the most important source of funding for new technologies (Gompers and Lerner 2001). Interest rate rises in the US contained inflation and accelerated the attractiveness of American financial investments and the financialisation of the US economy (Krippner 2011).

As a result, the venture capital market grew strongly in the 1980s, aided in part by the inflow of foreign capital, particularly from Japan and Taiwan (Kenney et al. 2004). Following a period of slow productivity growth in the 1970s and 1980s, the surge in technological progress – driven by information technology – finally materialised in the high productivity gains of the 1990s (Jorgenson et al. 2008, Fig. 6).[9] This points to a significant lag between the diffusion of information and communication technologies and macroeconomic productivity gains, although the decline in the unemployment rate in the US had already begun in the 1980s (Fig. 3).

4. Monetary Policy, Artificial Intelligence and Unemployment

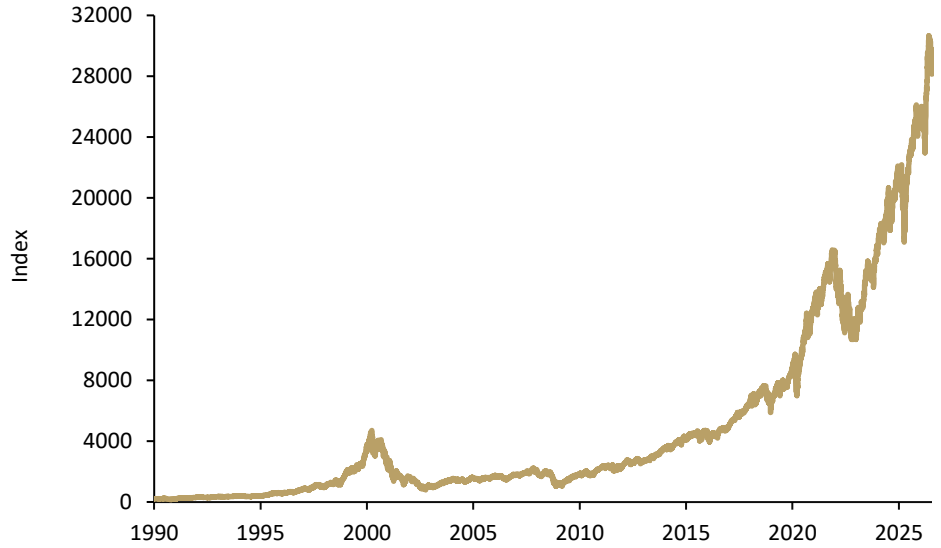
The boom in artificial intelligence is closely linked to monetary policy, high potential productivity gains and (future) developments in the labour markets.

[9] In 1987, Robert Solow remarked that 'the computer age is everywhere except in the productivity statistics'.

a. Monetary policy and excesses in AI markets

The trend in share prices relating to artificial intelligence can be understood on the basis of the overinvestment theory of Mises (1912) and Hayek (1931) (Schnabl 2025). Since the turn of the millennium, the major central banks have continually lowered key interest rates and expanded their balance sheets. With the rise in inflation in 2021 and 2022, the major central banks have indeed raised key interest rates and reduced their balance sheets. However, from a historical perspective, key interest rates remain low, central bank balance sheets are bloated as a proportion of gross domestic product, and real interest rates are low. Weak growth and structural rigidities in East Asia and Europe[10] are contributing to low key interest rates in those regions, thereby contributing to a significant outflow of capital to the US, where interest rates are higher.

Fig. 7: NASDAQ Technology Index



Source: NASDAQ Stock Market

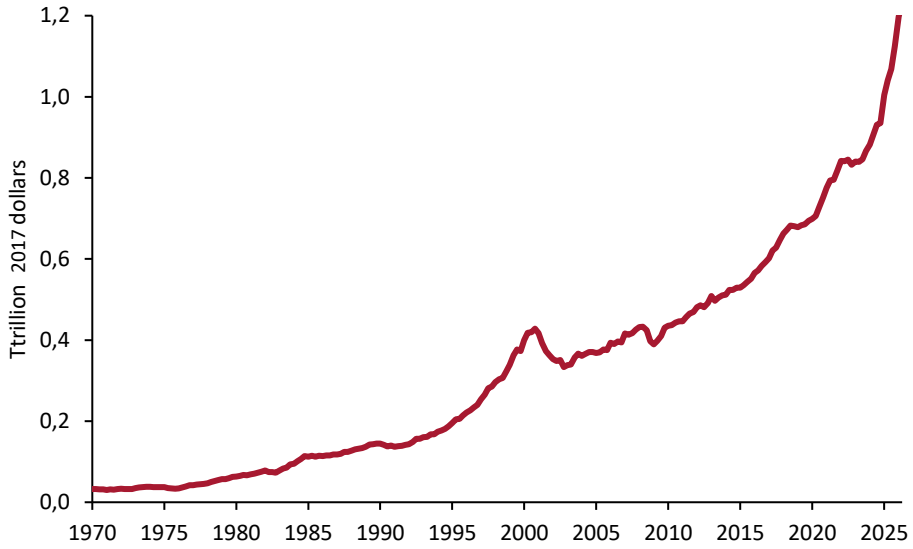
In the US, too, growth prospects are limited in most sectors, which is why the still excessive liquidity appears to have concentrated on artificial intelligence due to its high future potential. This may have fuelled a speculative bubble in this sector that significantly exceeds the scale of the dot-com bubble at the turn of the millennium (Fig. 7).[11] Whilst the Magnificent Seven (Apple, Microsoft, Alphabet (Google), Amazon, Meta Platforms, Nvidia and Tesla) have so far financed their investments through cash flow, an immense credit-fuelled investment boom has begun, following the pattern of Hayek's overinvestment theory (Fig. 1). Private investment in AI-

[10] Banerjee et al. (2024) foresee a widespread 'zombification' of the global economy due to persistently low interest rates.

[11] On a logarithmic scale, the price increase during the AI boom would appear significantly less pronounced relative to the dotcom bubble.

related sectors—specifically software, computers and peripherals, communications equipment, and data centers—has once again risen sharply, even when adjusted for inflation (Fig. 8). J.P. Morgan estimates the volume of the planned AI infrastructure, including energy supply, at 5,000 billion dollars (Wigglesworth 2025).

Fig. 8: Private AI-related investment



Source: Bureau of Economic Analysis. Software, Software, computers and peripherals, communications equipment and data centers. Deflated with the sector-specific price index.

b. Artificial intelligence and employment effects in the AI sector

Since the onset of the AI boom, employment among the 'Magnificent Seven' has grown strongly, rising from 324,000 full-time employees in 2011 to around 2.4 million at present (Fig. 9). The rise in employment was initially substantial and accelerated further from 2019 onwards. From 2021 onwards, it has levelled off noticeably, with only a slightly positive upward trend. The boom in the AI industry has thus had positive effects on the labour market, as no significant job losses due to AI have become apparent to date. Accordingly, the unemployment rate in the US is at a relatively low level from a historical perspective (Fig. 3).

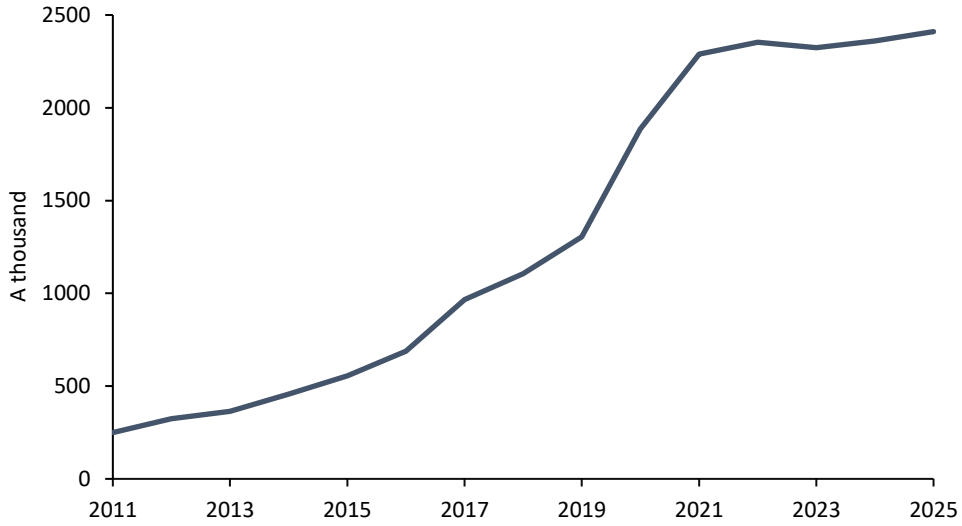
On the other hand, AI offers significant potential for cost savings in other sectors.[12] Artificial intelligence is expected to reduce jobs primarily in areas where tasks are standardised, repeatable and information-based. Brynjolfsson and McAfee (2014) and Acemoglu (2024) see this happening particularly in information-intensive services.[13] Tasks that can be made more efficient include research, documentation,

[12] However, the potential cost-saving effects could be limited by the need to prevent AI agents from getting out of control (see Guccione and Fryba 2026).

[13] In the financial sector, for example, there is routine work – that is, standardisable processes in back-office operations, administration, reporting and customer service – which can be largely automated

contract review, document drafting, translation and graphic design. Sectors and areas of business likely to be affected include administration, customer service, banking, insurance, the legal sector, accountancy, marketing, media, software development, human resources and manufacturing. Under the banner of the 'Great Flattening', corporations are already scaling back management layers (Boyle 2026 and Le 2026).[14]

Fig. 9: Full-time employees of the Magnificent Seven



Source: Company data (SEC Form 10-K, 'Human Capital' / 'Employees' section), own calculations.

In theory, the long-term impact on employment is therefore uncertain. The OECD (2023) distinguishes between a displacement effect – where AI replaces human labour in certain tasks, leading to job losses – a productivity effect – where higher productivity reduces costs and increases demand, thereby creating additional jobs – and a reinstatement effect – where AI creates new tasks, professions and activities, which in turn generate new jobs. The overall impact on employment depends on which of these effects predominates in the long term. Whilst Acemoglu (2024) sees a negative overall employment effect from AI, the World Economic Forum (2025) estimates that 78 million additional jobs will be created worldwide by 2030. This would see 170 million new jobs offset by 92 million job losses. The estimates

using AI. On the other hand, there are judgement-dependent tasks that require human interaction and personal responsibility, which cannot be carried out by AI (Immenkötter 2026).

[14] This is made possible by 'agent-based' AI, which takes on coordination and reporting tasks that were previously carried out by managers. The span of control for each remaining manager increases. Autor (2024) argues that occupations consisting of a mix of different tasks – e.g. technical knowledge, social interaction, judgement, improvisation, situational decision-making and physical dexterity – are more resilient to AI. The more 'messier' (diverse) the job profile, the less at risk it is from AI.

thus suggest that there will be no mass unemployment as a result of artificial intelligence. However, significant changes in the structure of the labour market are on the horizon, which will require sufficient flexibility in labour markets to prevent structural unemployment from arising.

c. Employment effects of AI depending on monetary policy

Which effect prevails, and how this aligns with the hoped-for job-creating productivity gains, could depend largely on monetary policy. For instance, since the turn of the millennium, the groundbreaking internet revolution has not led to any noticeable productivity gains during a phase of increasing monetary and fiscal expansion. In Fig. 6 average productivity gains for this period are comparatively high, but have to be partially attributed to a rise in productivity in the US financial sector due to sharply rising prices of mortgage-backed securities. [15] The so-called dot-com bubble, during which the price-to-earnings ratio of the S&P 500 also rose sharply around the year 2000 (Fig. 2), initially caused demand in the labour market to rise. There were labour market bottlenecks, particularly for IT jobs (Freeman and Aspray 1999), and the unemployment rate fell.

However, this trend was reversed when the dot-com bubble burst. According to Gordon (2016), whilst the IT revolution did bring about enormous productivity gains in certain sectors, these were smaller for the economy as a whole because large sectors – particularly public services – made hardly any progress in terms of productivity. Whilst Cowen (2011) acknowledges that computers and the internet have massively increased the marginal productivity of highly skilled knowledge workers, he identifies only modest productivity gains in sectors such as education and healthcare.

Indeed, in the US, the sharp rise in public spending on healthcare and the provision of extensive student loans have led to a significant increase in employment and real wage levels in these sectors (Fig. 10), without any substantial growth in productivity.[16] Many occupational groups that are considered to have limited potential for productivity gains through AI are part of the public sector – specifically healthcare, education, social care, police, fire service, defence and emergency services. It is therefore possible that, in the case of AI, sectoral productivity gains will not translate into macroeconomic productivity gains if monetary and fiscal policies remain

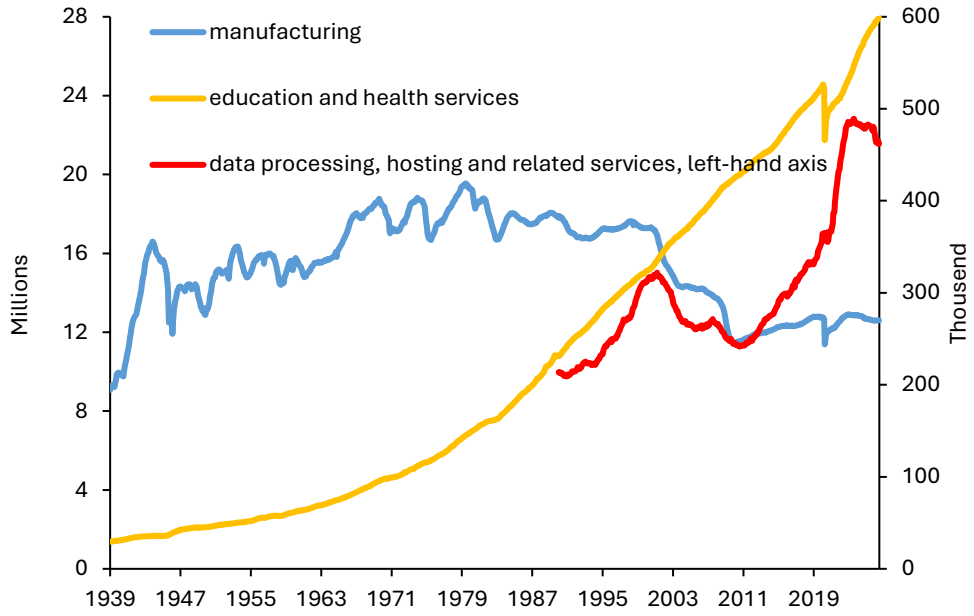
[15] The sharp rise in asset prices led to an overestimation of aggregate economic productivity. See Haldane et al. (2010).

[16] The currently very low unemployment rates in the US and Germany are likely to be linked to the expansion of government spending – indirectly financed by central banks – and the associated creation of numerous jobs in state-funded sectors of the economy.

expansionary. Furthermore, with interest rates remaining low, there is less pressure on companies to realise potential productivity gains through innovation.[17]

That the AI sector is sensitive to changes in interest rates in terms of employment became apparent from 2022 onwards with the interest rate hikes by the US Federal Reserve, which significantly curbed the sharp rise in employment among the 'Magnificent Seven' (Fig. 9). Meta CEO Mark Zuckerberg (2023) announced extensive job cuts and a greater focus on efficiency. The number of job vacancies fell more sharply in the US tech sector than in other sectors (Fig. 11). This suggests not only that there may be a boom in overinvestment within the AI sector[18] , but also that the AI sector is able to adapt rapidly to changes in the monetary policy environment. A potential bursting of an AI bubble could lead to a rise in unemployment across the economy as a whole.

Fig. 10: USA: Number of people in employment by sector



Source: US Bureau of Labour Statistics.

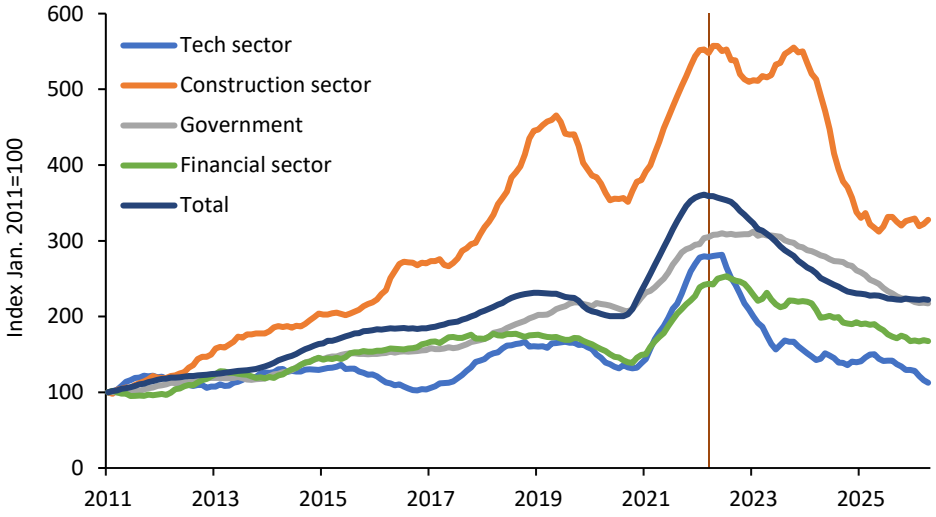
US Federal Reserve Governor Kevin Warsh has argued that AI has very high innovation potential. Whilst the US government has created the conditions for greater investment in the US through far-reaching deregulation and comprehensive tax cuts, it is up to the Federal Reserve to determine whether Americans can benefit in

[17] A reduction in the time required to complete work processes due to AI could result in longer breaks or extended periods of unproductive work from home. Alternatively, governments could use the higher productivity in industry and the service sector as an opportunity to raise taxes and, with the additional fiscal leeway, allowing to increase the number of jobs in the public sector.

[18] Groundbreaker (2026) sees clear parallels with the US mortgage market boom between 2003 and 2007.

the long term from rising productivity[19] and, consequently, rising wages (Warsh 2025).[20] To this end, the Fed must shrink its balance sheet and reduce regulation on small and medium-sized banks in order to stimulate lending. Pressure for productivity-enhancing investment would increase as a result of interest rate rises by the Fed. The spread of the innovation potential across the whole economy offered by AI could be facilitated by the deregulation of small and medium-sized banks called for by Warsh.

Fig. 11: Job vacancies in the US by sector



Source: US Bureau of Labour Statistics.

The reduction in the Fed's balance sheet and the deregulation of bank lending signalled by Warsh could be aimed on the one hand at taking some of the air out of the potential AI bubble through higher long-term interest rates. On the other hand, it could aim at increasing pressure on the US economy as a whole to boost productivity gains through investment in AI. According to Perez (2002), the latter would correspond to the diffusion phase, in which the new technology spreads throughout the economy, leading to a rise in overall productivity and increased prosperity

[19] Acemoglu (2024) forecasts a maximum annual increase in total factor productivity of up to 0.66 per cent over a 10-year period. Aghion and Bunel (2024), based on a historical comparison, estimate additional annual productivity growth of between 0.8 and 1.3 percentage points over a 10-year period. The Federal Reserve Bank of St. Louis (2026) attributes around one percentage point of real GDP growth in the first three quarters of 2025 to AI.

[20] *"Americans would benefit from higher take-home pay and greater purchasing power if only the Federal Reserve's leadership stopped defending its mistakes and started correcting them*." (Warsh 2025). According to Warsh, the Federal Reserve has stifled growth through persistently low interest rates and the expansion of its balance sheet, and has caused negative distributional effects that favour the wealthier parts of the population (Bugdalle and Schnabl 2026).

for all. Job losses caused by AI in standardisable, information-based service sectors could thus be offset by dynamic growth.

5. Outlook: The substitution of labour by capital

With the Industrial Revolution, under the gold standard, the substitution of labour by capital began in the agricultural sector, later spreading to industry in the second phase. This process was socially disruptive at the start of the Industrial Revolution because income levels were low and the remit of states was limited to core tasks such as internal and external security. Since then, productivity gains driven by technological progress have significantly raised living standards. Therefore, if technological unemployment caused by AI spreads to the service sector, a sufficiently large social buffer will be available. The kind of impoverishment described by Marx is unlikely.

However, whether the social security systems will remain sustainable, hinges on the question of how the high potential of artificial intelligence for productivity gains will be utilised. If the AI-induced productivity gains will be allowed to spread over the whole economy, welfare will increase and the social welfare systems will remain sustainable. If, however, – as in the case of the internet economy – the state absorbs the resulting unemployment through the expansion of unproductive public employment, this will further slow down growth and further increase distribution conflicts.

AI's productivity potential will only be realised under a tight monetary and fiscal policy, which prevents the misallocation of capital. If Fed chairman Kevin Warsh succeeds in reducing the Fed's balance sheet, thereby pushing companies and banks towards greater efficiency, then the impact of AI on society will be positive. The resulting productivity gains could be passed on to the population either in the form of higher real wages or a further reduction in working hours. In Europe, where a sustained tightening of fiscal and monetary policy is not in sight due to the high levels of debt in many euro area countries, artificial intelligence could bring about greater economic and social disruptions.

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