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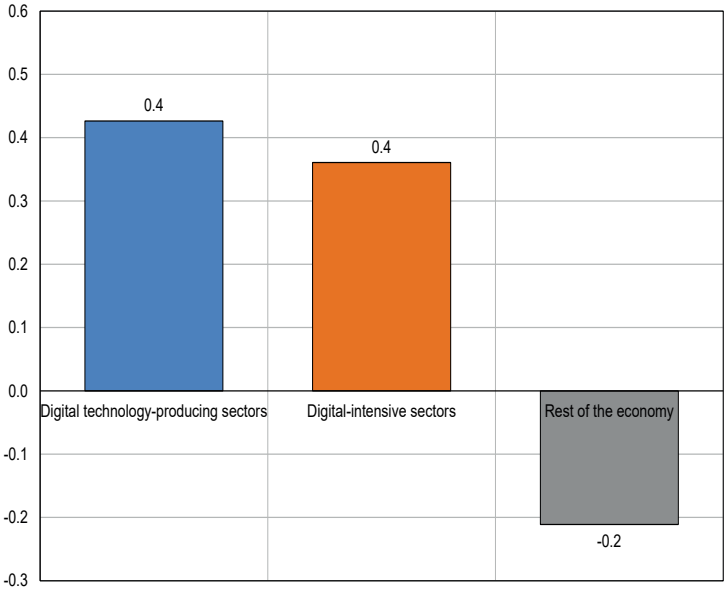
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The Digital Sector: the Main Factor Behind the France-US Productivity Gap

Eloïse Villani, Jean-Baptiste Auger, Alisée Koch and Antoine Koiran Portier

- Stalling labour productivity in Europe relative to the United States since the mid-1990s has often been attributed to the digital sector, as noted in particular in the Draghi Report. The reason for this gap can be found in both the digital technology-producing sectors and the digital-intensive sectors.
- The digital technology-producing sectors – encompassing electronics and digital services – account for less than 10% of French or US value added, but have seen steady productivity growth in the last 30 years, particularly in the United States.
- The productivity of digital-intensive sectors (e.g. retail and wholesale trade, financial services), which make up around one-third of GDP in France and the United States, is significantly dependent on the adoption of new digital technologies.
- From 1997 to 2019, hourly productivity grew on average by 0.6 percentage points (pp) per year faster in the United States than in France. According to our sectoral breakdown, the digital technology-producing and digital-intensive sectors contribute 0.8 pp per year to this gap, while France's productivity, relative to that of the US, has increased slightly faster in the rest of the economy.
- Artificial intelligence (AI) provides an opportunity for growth in the digital technology-producing and digital-intensive sectors. Public policy measures are being implemented to address the lag that French and European stakeholders are facing across the entire value chain, with the France 2030 Investment Plan lending support to research, innovation and industrialisation, the *Osez l'IA* (Dare to Try AI) plan backing firm-level AI uptake, and the European Commission proposing a tech sovereignty package.

Breakdown of the 0.6-pp gap in hourly productivity growth between France and the United States (in pp/year, 1997-2019)



Source: EU KLEMS data, DG Trésor calculations. See Box 1 for sector classification information.

How to read this chart: Even the smallest increase in hourly productivity in sectors classified as digital-technology producing contributed, on average from 1997 to 2019, 0.4 pp per year to the France-US gap in hourly productivity.

1. The digital goods- and services-producing sectors are driving productivity but are decoupled in France from those in the United States

1.1 The digital technology-producing sectors have seen strong growth momentum

All information and communication technologies (ICTs) have experienced very strong growth in recent decades, driven by the digital revolution, i.e. the mainstreaming of PCs, the internet and mobile phones, followed by that of smartphones and digital services. This increased uptake has significantly increased production volumes, with digital technologies becoming an ever-growing part of household and business users' lives.

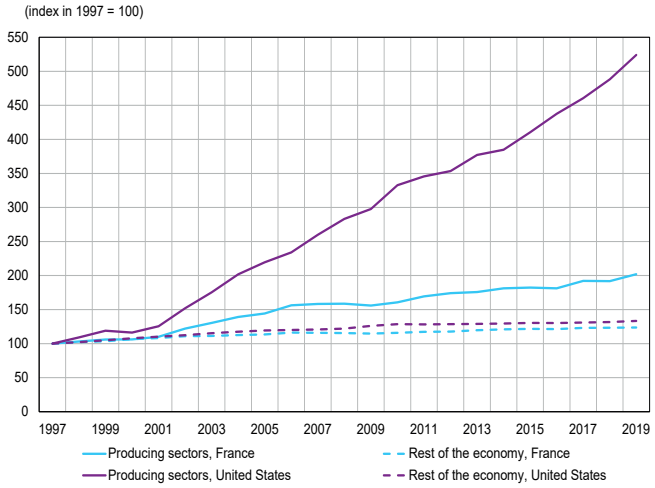
The digital technology-producing sectors include both industry and service sector stakeholders (see Box 1). On the industry side, they cover, for example, the manufacture of computers and communications equipment, as well as the manufacture of components for these goods. On the service provider side, many business activities are included, e.g. telecommunications, web portals, data centres, software and application publishing and IT consulting.

Since the early 2000s, output in the ICT sector has been growing at a faster rate than output in the rest of the economy: between 1997 and 2019, real value added of digital technology-producing sectors increased by a factor of 2.8 in France and 5.3 in the United States, compared to a factor of 1.4 and 1.7 respectively for the economy as a whole.[1] In July 2026, the world's top seven companies by market capitalisation were all digital tech or semiconductor firms. In the United States, information sector profits grew ninefold between 1998 and 2025, compared to a fivefold rise for all companies operating in the United States, increasing its share of corporate profits from 5% to 8%.[2]

1.2 Digital technology-producing sectors boast strong productivity growth in comparison with other sectors of the economy

Steady growth in the value added of digital technologies, combined with major returns to scale, has led to a pointed increase in labour productivity. In these digital sectors in France, real labour productivity per hour worked doubled between 1997 and 2019, and even increased fivefold in the United States. By comparison, hourly productivity in other sectors rose by only 24% in France and 33% in the United States over the same period (see Chart 1).

Chart 1: Hourly productivity in digital technology-producing sectors relative to all other sectors in France and the United States, 1997-2019



Source: EU KLEMS, DG Trésor calculations. Baseline = 100 for 1997.

How to read this chart: Hourly productivity in digital technology-producing sectors doubled between 1997 and 2019 in France.

The electronics industry was the sector that saw the largest productivity gains in the United States over the period 1958-1996.[3] From 1988 to 2023, the digital

(1) EU KLEMS & INTANProd data, 2025 release; DG Trésor calculations.
(2) U.S. Bureau of Economic Analysis, "National Income and Product Accounts".
(3) See D.W. Jorgenson and K.J. Stiroh (2000), "U.S. Economic Growth at the Industry Level", *American Economic Review.*

sectors were the leading contributor to growth in US total factor productivity, i.e. the share of growth not attributed to increases in labour and capital.[4] Average annual growth in these sectors stood at 2.9%, compared with 0.3% for all other sectors combined. Over this period, these sectors accounted for 45% of total factor productivity growth in the United States, whilst accounting for only around 8% of GDP.

The sharp increase in the real value added of the ICT-producing sectors has not resulted in a significant rise in their share of the nominal value added in the economy (6.0% of value added in France and 8.3% in the United States in 2024, see Chart 2, compared to 6.1% and 7.9% respectively in 1997). This gap is due to the rapid fall in the prices of digital goods and services, particularly electronic equipment, once improvements in their quality are factored in.[5] As a result, growth in these sectors appears much more marked when measured in real terms as opposed to nominally. The real value added of the ICT-producing sectors increased by a factor of 2.8 in France, compared with 5.3 in the United States, whilst their nominal value added rose by a factor of 1.8 and 2.7 respectively.

In 2001, the OECD[6] highlighted the robust growth in productivity of digital technology-producing sectors, but also noted that its effect on growth could vary from country to country depending on the size of the ICT-producing sectors, their productivity gains and the subsequent spread of these gains into the rest of the economy.

1.3 Digital technology-producing sectors are highly concentrated, raising sovereignty issues

Winner-takes-all dynamics[7] are prevalent in the digital sector, which have a high level of market concentration. Driving this high concentration level is the fact that product quality often increases with the number of users (network externalities),[8] a dynamic that benefits the first entrants into the market. These entrants establish themselves on the market for the long term, to the extent that the digital technologies have increasing returns to scale,[9] meaning that the output increases by a larger proportion than the increase in production factors. These dynamics explain the dominant position occupied by a handful of stakeholders (e.g. Apple, Alphabet – and its subsidiary Google – Microsoft, Amazon, Nvidia and TSMC).

Chart 2: Share of the value added of the digital technology-producing sectors and the digital-intensive sectors to French and US GDP (as a %)



Source: Eurostat and Bureau of Economic Analysis, DG Trésor calculations.

How to read this chart: In 2024, digital technology-producing sectors accounted for 6.0% of French GDP and 8.3% of US GDP.

(4) J. David et al. (2025), "Concentrated Growth: The Role of the IT Sector", Federal Reserve Bank of Chicago, Chicago Fed Letter, No. 515. The digital goods- and services-producing sectors defined by the authors are similar to the sectors described in Box 1, as they define the information technology (IT) sector as covering computer and electronic product manufacturing, software publishing, telecommunications, data processing and computer systems design.

(5) L. Aeberhardt et al. (2020), "L'économie numérique fausse-t-elle le partage volume-prix du PIB ? L'expérience française", INSEE, *Économie et Statistique*, no. 517-518-519 (in French only).

(6) D. Pilat and F. Lee (2001), "Productivity Growth in ICT-Producing and ICT-Using Industries: A Source of Growth Differentials in the OECD?", OECD.

(7) J.-P. Auger and E. Villani (2026), "Which Competition Policy Should be Adopted to Support Growth in France and Europe?", *Tresor-Economics,* No. 381.

(8) M.L. Katz and C. Shapiro (1985), "Network Externalities, Competition, and Compatibility", *American Economic Review*.

(9) C. Shapiro and H.R. Varian (1999), "Information Rules: A Strategic Guide to the Network Economy", Harvard Business School Press.

Several digital technology markets are dominated by one or a small number of stakeholders, particularly the online search, operating system, office suite software and social media segments. For example, the cloud computing market, despite the presence of many major suppliers, is tightly clustered around three major US groups – Amazon, Microsoft and Google. These groups are supported by extensive integrated software, data and service ecosystems, with this integration ramping up the technological lock-in effect and increasing the costs associated with changing supplier.

Digital technology firms have multinational operations and produce goods and services across the globe, but their headquarters are for the most part located in the United States. The low levels of European representation at several key links across the value chain turn this economic issue into a strategic one, as European digital sovereignty (the ability to make independent choices in digital technology matters) is restricted as a result. Limited production in the digital sectors also results in critical dependencies for other public and private sectors, including in France.[10] Increasing digital technology uptake across all sectors and penetration of digital technology stakeholders harnessing their software and data usage capabilities in other traditional industrial sectors (e.g. BYD and Tesla in the automotive sector) worsens these critical digital technology dependencies.

Box 1: Defining digital technology-producing sectors and digital-intensive sectors

There is a relatively broad consensus on the scope of the digital technology-producing sectors, while the digital-intensive sectors are defined differently based on the indicators and thresholds used. The classification set out below is based on an INSEE[a] publication on digital sectors and the OECD's "A Taxonomy of Digital Intensive Sectors".[b] Our classification includes the digital-intensive sectors classified by the OECD as falling in the high or medium-high quartile of digital intensity, after excluding the manufacturing sectors and the public administration sector (in order to focus on the commercial sectors).[c] The OECD's taxonomy classifies sectors using the following indicators: ICT investment and consumption of ICT intermediates, robot use, ICT specialists in employment, and online sales.

1. Digital technology-producing sectors: Computer, electronic and optical products (C26); and Information and communication (J).
2. Digital-intensive sectors: Wood and paper products, and printing (C16-C18); Electrical equipment (C27); Machinery and equipment (C28); Vehicles and other transport equipment (C29-C30); Furniture, Repair and installation of machinery (C31-C33); Wholesale and retail trade (G); Financial and insurance activities (K); Professional, scientific and technical activities (N); Administrative and support service activities (O); Arts, entertainment and recreation (S); and Other service activities (T).
3. Rest of the economy: Agriculture, forestry and fishing (A); Mining and quarrying (B); Food products, beverages and tobacco (C10-C12); Textiles, wearing apparel, leather (C13-C15); Coke and refined petroleum products (C19); Chemical products and Pharmaceutical products (C20-C21); Rubber and plastics and Other non-metallic mineral products (C22-C23); Basic metals and fabricated metal products (C24-C25); Electricity, gas, steam and air conditioning supply; Water supply, sewerage, waste management and remediation activities (D-E); Construction (F); Transportation and storage (H); Accommodation and food service activities (I); Real estate activities (M); Public administration, Education, Human health activities and social work activities (O-R); and Activities of households as employers (U).

a. INSEE (2025), "L'économie et la société à l'ère du numérique", *Insee Références* (in French only).
b. F. Calvino et al. (2018), "A Taxonomy of Digital-Intensive Sectors", OECD Science, *Technology and Industry Working Papers.*
c. The sectors defined by the OECD in the International Standard Industrial Classification of All Economic Activities (ISIC) Rev. 4 are incorporated into the Statistical Classification of Economic Activities in the European Community (NACE) Rev. 2.

(10) French National Assembly (2026), "Rapport sur les dépendances structurelles et les vulnérabilités systémiques dans le secteur du numérique et les risques pour l'indépendance de la France" (in French only).

2. Late uptake of digital technologies is contributing to the France-US productivity lag

2.1 Digital technology uptake is central to digital-intensive sectors' productivity

Utilising information and communication technologies (ICTs) – computers, software and internet services – is one of the key ways of generating productivity gains by automating routine tasks and optimising operational processes. For example, computerised inventory and supply chain management systems cut costs and lead times, while also improving firms' responsiveness.

Digital technology investment is a key driver for increasing productivity, particularly in sectors with a high digital intensity. According to the empirical literature, ICT investment has delivered considerable long-term productivity gains starting in the 1990s, but only when combined with organisational changes and investment in human capital.[11] A 2019 OECD study on various European countries also demonstrates that implementing digital technology drives up firm productivity particularly in sectors with high digital intensity. However, this productivity gain is weaker for firms suffering from a skills gap, demonstrating how digital technology serves to complement human capital.[12]

Digital technology uptake does not serve the same function across all sectors. The OECD drew up a taxonomy of sectors based on the degree of digitalisation (see Box 1): digital-intensive stakeholders include some industrial sectors such as transport equipment manufacturing and moreover several service sectors such as wholesale and retail trade, finance and business services. Digital technology uptake is a particularly critical matter in these sectors as it generates a greater increase in their productivity. These sectors account for a considerable section of the economy (34.9% of French GDP in 2024, see Chart 2) and smaller productivity gains in them can therefore significantly affect overall productivity.

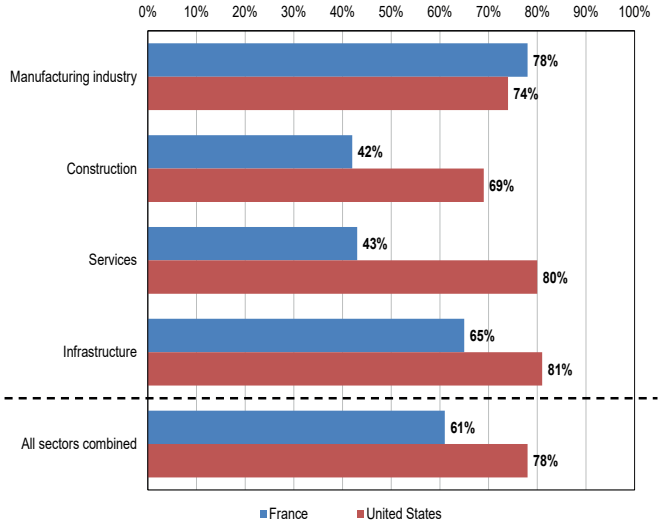
2.2 Digital technology uptake is lower in France and Europe than in the United States

From the 1990s, US firms heavily invested in ICTs, tapping into their potential to transform their business activities. Industrial groups that rolled out computerised management and monitoring systems for their production chains, thereby cutting logistics costs and raising productivity, are an example of this trend in action. These early investments, combined with an accommodative regulatory ecosystem (flexible labour market, no restrictions on large retail stores in suburban areas), paved the way for the United States to take full advantage of the economies of scale offered by digital technology, facilitating the coordination of business activities within major firms (with logistics solutions and inventory management). This progression in digital technology uptake has even been beneficial for the European market, specifically for the subsidiaries of US firms.[13]

In France and Europe, digital technology uptake was considerably slower than in the United States, particularly among large firms and certain sectors such as the service sector. According to the European Investment Bank (EIB),[14] in 2025 only 61% of French firms used at least one advanced digital technology (Internet of Things, AI etc.) compared to an average of 77% in the EU and 78% in the United States. However, these average figures conceal major differences in uptake depending on the firm size and the sector. While in France and the United States large firms more frequently adopt advanced technologies than SMEs, they do so to a lesser extent in France than in the US: the uptake gap for SMEs is only 12 pp (US: 65%, France: 53%) but stands at 26 pp for large firms (US: 90%, France: 64%). Digital technology uptake gaps also vary by sector: while France trails behind the US by 37 pp in the service sector and 27 pp in the construction sector, the France-US lag is slightly smaller in the manufacturing sector, with just a gap of 4 pp in 2025 (see Chart 3).

(11) E. Brynjolfsson and L. Hitt (2003), "Computing Productivity: Firm-Level Evidence", *The Review of Economics and Statistics*.
(12) P. Gal et al. (2019), "Digitalisation and Productivity: In Search of the Holy Grail - Firm-Level Empirical Evidence from EU Countries", *OECD Economics Department Working Papers.*
(13) N. Bloom et al. (2012), "Americans Do IT Better: US Multinationals and the Productivity Miracle", *American Economic Review.*
(14) EIB (2025), "EIB Investment Survey 2025".

Chart 3: Uptake of advanced digital technologies by sector in France and the United States in 2025 (% of firms in the sector)



Source: EIB (2025), EIB Investment Survey 2025.

How to read this chart: In 2025, 42% of French construction sector companies used advanced digital technologies, compared to 69% of companies in the United States.

The reason for the lag in digital technology uptake are several structural impediments shared by all EU Member States. Firstly, the combination of fragmented markets and regulations within the EU and stricter laws such as the General Data Protection Regulation (GDPR)[15] can hinder the rollout of new technology, particularly in sectors where economies of scale are vital. In addition, the relatively small average size of European firms is a potential stumbling block, as fixed costs, requirements for specialist skills and organisational changes involved in digital technology uptake are generally a more heavier cost to bear for micro-enterprises and other small businesses.[16]

Lastly, the basic digital skills shortage is a major barrier to uptake: in 2023, 44% of Europeans had not acquired these skills[17] meaning that firms and employees are less able to harness these tools. This skills shortage is particularly apparent in France compared to the rest of Europe: the proportion of graduates and employees specialising in ICTs (4.9%) in France is slightly below the European average (5.0%), and French firms provide relatively little ICT training to their employees (only 13% of firms in 2024 versus an average of 22% in the EU and 38% in Finland).

3. The digital technology-producing and digital-intensive sectors are primarily responsible for the productivity gains gap with the United States

3.1 According to the economic literature, digital technology heavily contributes to Europe's lag behind the United States, but the exact extent of this contribution is the subject of debate

A broad consensus in the literature has gradually formed on the key role digital technology has played in productivity trends since the 1990s. Firstly, the increased pace of productivity in the United States in the mid-1990s is attributed to digital technology investment: the digital technology-producing and digital-intensive sectors are said to be responsible for the entirety of this acceleration.[18] Over the 1995-2005 period, the United States saw a peak in productivity gains that was primarily concentrated in the digital sectors, particularly in digital-intensive services. Meanwhile in Europe, these gains were much weaker.[19] However, this increased pace of productivity was temporary, with the productivity growth gap shrinking over the 2005-2015 period.

(15) M. Demirer et al. (2024), "Data, Privacy Laws and Firm Production: Evidence from the GDPR", N*BER Working Paper*; G. Johnson (2022), "Economic Research on Privacy Regulation: Lessons from the GDPR and Beyond", *NBER Working Paper*; R. Janßen et al. (2022), "GDPR and the Lost Generation of Innovative Apps", *NBER Working Paper*; C.B. Frey and G. Presidente (2024), "Privacy Regulation and Firm Performance: Estimating the GDPR Effect Globally", *Economic Inquiry*.

(16) The "micro-enterprises" statistical category covers businesses hiring less than ten people and with an annual turnover or balance sheet total that does not exceed €2m. This category does not correspond to the tax and social security scheme applicable to micro-entrepreneurs. Despite the positive correlation between firm size and digital technology uptake, some small businesses do heavily implement such technology, particularly micro-entrepreneurs carrying out transport and delivery activities that directly rely on digital platforms. See INSEE, "Micro-enterprise"; D. Acemoglu et al. (2023), "Advanced Technology Adoption: Selection or Causal Effects?", *AEA Papers and Proceedings.*

(17) Eurostat (2024), "Digitalisation in Europe".

(18) K.J. Stiroh (2002), "Information Technology and the US Productivity Revival: What Do the Industry Data Say?", *American Economic Review.*

(19) R.J. Gordon and H. Sayed (2020), "Transatlantic Technologies: Why Did the ICT Revolution Fail to Boost European Productivity Growth?", VoxEU.

More recently, the Draghi Report[20] reintroduced this line of argument, claiming that the productivity growth gap between Europe and the United States over the 2000-2019 period was primarily the result of the weaker performance of European digital technology-producing sectors. According to Banque de France estimates, 68% of this France-US gap is attributed to digital technology-producing sectors.[21] Adopting a different approach, a European Commission study posited that digital technology investment is the main driver of the Europe-US productivity gap, and that levels of tangible ICT capital per person employed in line with the US level would raise productivity from 7-8 %, thereby narrowing the EU-US gap by 25-29%.[22]

Nevertheless, discussions surrounding Europe's apparent productivity lag raise fundamental methodological issues. Estimates are influenced by methodological choices made for the sectoral breakdown: they are swayed particularly by the geographical scope used for Europe, the period under examination – specifically the inclusion of the COVID-19 pandemic years – and the scope used for sectors producing and employing digital technologies. They also vary depending on the variables considered (value added in nominal terms or chain-linked volumes for example).

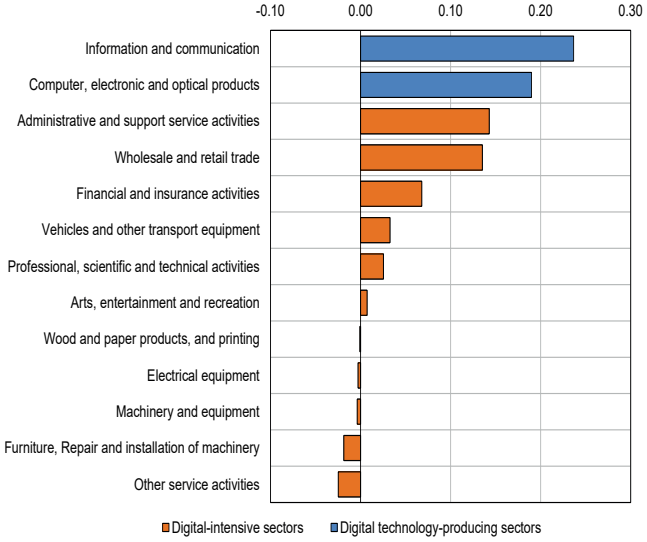
3.2 Empirical data shows that the digital sector is the primary driver of the France-US productivity gap

Between 1997 and 2019, hourly productivity rose 0.6 pp/year more quickly in the United States than in France (see Box 2 for methodological details). Both digital technology-producing sectors and digital-intensive sectors contributed to this gap for an amount of 0.4 pp/year each (see Chart on cover page), making for a cumulative contribution of 0.8 pp/year. This total exceeds the aggregate gap because the rest of the economy provided a negative contribution of 0.2 pp. In other words, excluding the lag observed in the digital sectors, there was no France-US productivity gap for this period. In terms of the contribution of digital sectors to the productivity gains gap, producers accounted for just over half while digital-intensive sectors contributed just under half.

The producers' contribution derives from (i) the information and communications segments (0.2 pp/year) and (ii) the computer, electronic and optical product manufacturing segments (0.2 pp/year). These figures are in line with a recent study[23] that, using a different method and sector-specific scope, attributes 68% of the France-US gap observed in the 2000-2019 period to three hi-tech sectors.

Of the digital-intensive sectors, the main contributions to the gap come from administrative and support service activities and wholesale and retail trade, which each provide 0.1 pp, followed by finance and insurance (over 0.05 pp, see Chart 4). The weaker growth of productivity in France therefore stems from the major service sectors utilising digital technologies.

Chart 4: Sectoral breakdown of average contribution to the France-US growth gap (in pp/year)



Source: EU KLEMS, DG Trésor calculations.

How to read this chart: On average over the 1997-2019 period, the wholesale and retail trade sector (code: G) contributed 0.14 pp/year to the France-US growth gap.

(20) M. Draghi (2024), "The future of European competitiveness".
(21) S. Bunel et al. (2025), "Revisiting the European Performance Gap vis-à-vis the United States", *Bloc-notes Éco*, Banque de France.
(22) A. Adarov et al. (2020), "Productivity Drivers: Empirical Evidence on the Role of Digital and Intangible Capital, FDI and Integration", Joint Research Centre, *Publications Office of the European Union*.
(23) S. Bunel et al. (2025), op. cit.

Box 2: Sectoral breakdown data and methodology

The results set out in this paper were calculated using the EU KLEMS & INTANProd 2025 database,[a] which provides harmonised data by country and sector[b] on the national accounts and production factors (capital, labour). The database covers the period from 1995 to 2021, but the years 1995 and 1996 are excluded because of a break in the series affecting US data,[c] and the 2020 and 2021 figures are left out due to the exceptional disruption in business activity and in the number of hours worked as a result of the COVID-19 pandemic.

The key indicator was the France-US gap in growth of hourly labour productivity.[d] Each sector's contribution to aggregate productivity growth was calculated by carrying out a shift-share analysis. This analysis distinguishes between two elements: the intra-sectoral effect of productivity gains generated within the sector and the reallocation effect that measures the productivity gains resulting from the transfer of hours worked to more productive sectors.[e]

For each sector, the annual contribution was calculated as follows:

Contribution = $s_{VA} \times g_{LP} + (s_{VA} - s_H) \times g_H$, s_{VA} being the share of the sector in the nominal value added, s_H the share of the sector in worked hours, g_{LP} the given sector's hourly productivity growth, and g_H the growth in hours worked for the given sector. The sector shares were calculated as the average of the shares in year t-1 and year t. The growth in productivity and hours worked were calculated in logarithmic form. The shares of value added were calculated in nominal terms in order to capture the current economic significance of a sector for a given year.

The sectoral contributions were then aggregated into three groups: digital technology-producing sectors, digital-intensive sectors and the rest of the economy. For each group, France's contribution was subtracted from the US contribution. Lastly, the average of these gaps over the 1997-2019 period gave the contribution of each category to the productivity growth gap.

a. The EU KLEMS & INTANProd 2025 release, Luiss Lab of European Economics; F. Bontadini et al. (2023), "EU KLEMS & INTANProd: Industry Productivity Accounts with Intangibles".
b. Based on the Statistical Classification of Economic Activities in the European Community (NACE) Rev. 2.
c. The EU KLEMS & INTANProd 2025 release factors in the revisions of US accounts carried out for the Bureau of Economic Analysis's comprehensive update in 2023. These revisions affect the US sector series starting from 1997.
d. Productivity is measured in real terms, since a portion of the productivity gains causes price cuts.
e. OECD (2002), "Measuring Productivity - OECD Manual: Measurement of Aggregate and Industry-level Productivity Growth", *OECD Publications*.

4. AI production and adoption is a key factor in France's growth outlook

4.1 AI promises to deliver significant productivity gains and growth – but to what extent is still unclear

AI could deliver major productivity gains,[24] but estimates wildly vary because of the different methodologies and assumptions used. Some estimates, such as Acemoglu's,[25] point to a modest economic impact of an increase in GDP of roughly 0.9% over ten years. This estimate is based particularly on a limited exposure of tasks performed by AI and without factoring in AI's effect on innovation. By contrast, models incorporating the effects of sectoral reallocation[26] and/or positive externalities[27] forecast economic gains that are up to ten times greater i.e. roughly between 10 and 15 percentage points of GDP over ten years, highlighting AI's vital role in innovation and creating new ideas. Estimates vary due to the various parameters applied such as the share of actually exposed tasks, the productivity gain delivered by each application, the rate of AI uptake and the reorganisation work required within firms[28] They also differ depending on whether the model factors in sectoral reallocations, innovation and the creation of new tasks.[29]

With AI capabilities and applications expected to radically change within five to ten years, the economic repercussions of this technology for France and the EU are a pressing issue. Following on from large language models (LLMs), technologies such as agentic AI (with autonomous and complex planning capabilities) and physical AI (i.e. AI integrated into robots or autonomous vehicles) could revolutionise many sectors including logistics and healthcare. Currently, the gains measured are still only limited to certain tasks however: for example, in the customer service department of a large firm, introducing a generative AI (GenAI) assistant has increased the number of requests resolved per hour by 14%.[30] This effect is not yet clearly apparent in the aggregate statistics. By automating entire workflows rather than individual tasks, agentic AI could widen the coverage of AI's effects. However, the degree and timeline of these effects are still very unclear.[31]

4.2 Lower AI uptake is a significant risk and cannot be easily measured

With no standardised indicator in place, measuring AI uptake is more complicated, both in the case of professional and individual use. The available data varies given the different scopes used for the studies (strictly professional or mixed applications of AI) and the various methodologies that differ in key criteria e.g. the time frame (in the past few weeks or past year). These differences make comparisons at an international scale difficult. As a result, public institutions (INSEE, Eurostat) tend to post lower uptake rates than private-sector stakeholders (IBM, Microsoft), probably because large firms are overrepresented in surveys conducted by private-sector stakeholders.

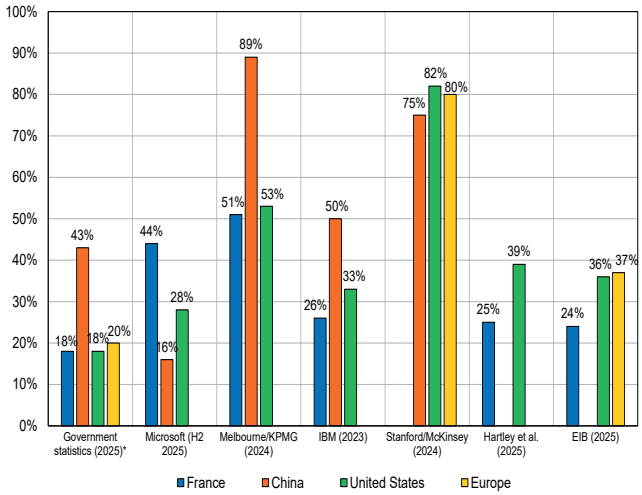
In France, the AI uptake rate for professional applications considerably varies depending on the source as a result of the different methodologies used (see Chart 5). The public statistical data available points to an AI uptake rate of roughly 18% among French firms (of 10 employees or more, excluding the financial sector) in 2025, just short of the European average (20%) and the same as the US rate (18% according to the Census Bureau). Conversely, some surveys such as the one conducted by Microsoft (2025) estimate a rate for professional and individual AI uptake of up to 44% in France (compared to 28% in the United States), but these figures are calculated using relatively opaque methodologies and data. In contrast, according

(24) S. Chardon-Boucaud et al. (2024), "The Artificial Intelligence Value Chain: What Economic Stakes and Role for France?", *Tresor-Economics*, No. 354.
(25) D. Acemoglu (2024), "The Simple Macroeconomics of AI", *NBER Working Paper*.
(26) F. Filippucci et al. (2024), "Miracle or Myth? Assessing the Macroeconomic Productivity Gains from Artificial Intelligence", *OECD Artificial Intelligence Papers.*
(27) P. Aghion and S. Bunel (2024), "AI and Growth: Where Do We Stand?", Federal Reserve Bank of San Francisco.
(28) L. Besson et al. (2024), "The Economic Implications of Artificial Intelligence", Tresor-Economics, no. 341
(29) M. Chopard et al. (2026), "Artificial Intelligence and Its Effects on Employment", *Tresor-Economics,* No. 391.
(30) E. Brynjolfsson, D. Li and L. Raymond (2025), "Generative AI at Work", *The Quarterly Journal of Economics*.
(31) M.C. Daly (2026), "The AI Moment? Possibilities, Productivity, and Policy", *FRBSF Economic Letter.*

to the EIB, the EU uses GenAI to roughly the same degree as the United States (37% of firms compared to 36% respectively), but France appears to be lagging behind (24%). Other studies show France lagging behind in AI uptake among the public, with only 25% being users compared to 39% in the United States.[32] These figures should therefore be interpreted with caution.

To speed up AI uptake, France has rolled out various targeted measures. The National AI Strategy, in combination with the *Osez l'IA* (Dare to Try AI) plan (2025), aims to remove the identified barriers by (i) increasing AI tool training opportunities and (ii) sharing sector-specific use cases to help the smallest businesses identify useful applications. These measures seem successful: the AI uptake rate increase among businesses between 2024 and 2025 was in fact greater in France (up 8 pp) than in Europe (6 pp).[33]

Chart 5: AI uptake rate in France, China, the United States and Europe according to various sources



Source: INSEE, Eurostat, US Census Bureau, China Internet Network Information Centre (2026), "57th Statistical Report on China's Internet Development", Microsoft, IBM, the University of Melbourne/KPMG, Stanford University/McKinsey and the BNY Institute (2026), based on Hartley et al. (2025), the EIB (2025).

How to read this chart: The figures cannot be directly compared from one source to another as the surveys differ in their scope (firms, total population or working population), definition of "use" and reference periods.

* The National Bureau of Statistics of China does not make its data available. Data for China is sourced from the China Internet Network Information Centre.

4.3 Supporting French and European players across the entire digital technology value chain is key to European sovereignty, including in the AI sector

France boasts major AI assets, with a robust research ecosystem – driven by institutions such as the French Centre for Scientific Research (CNRS) and the Institute for Research in IT and Automation (INRIA) – and a global player in the form of Mistral AI. Despite this, Europe trails behind the United States in this field, in which the large language model (LLM) segment is dominated by players like OpenAI, Anthropic and Google which account for the bulk of investments. This gap is part of the trend of French and European firms lagging behind along almost the entirety of the digital technology value chain (e.g. semiconductors, cloud computing)[34] which is the reason for a number of weaknesses in the upstream AI value chain. France and Europe rely heavily on training data and computing power for inputs: Nvidia holds over 80% of the global market of graphics processing units for AI applications.[35] European players also struggle to compete on the cloud computing infrastructure market, where AI tools would be distributed and US hyperscalers (Amazon Web Services, Microsoft Azure, Google Cloud) generate 71% of IaaS/PaaS[36] revenue in France in 2021.[37]

In an effort to prevent an AI lag, France rolled out a number of targeted public policies, focused on a combination of large-scale investment and the development of an ecosystem structure. The National AI Strategy, launched in 2018, which was allocated a budget of around €2.5bn under the France 2030 Investment Plan, was structured into three phases: the first two (2018-2025) involved financing interdisciplinary institutes and the Jean Zay supercomputer, while the third phase (ongoing since 2025) broadens the scope of action to include AI uptake by firms, the development of computing infrastructure and talent training. At the same time, initiatives originating from the AI Summit are using €109bn primarily to finance large data centres, harnessing some of France's assets such as low-

(32) J. Hartley et al. (2025), "The Labor Market Effects of Generative Artificial Intelligence", *SSRN Working Paper.*
(33) Eurostat (2025), "Use of artificial intelligence in enterprises".
(34) EuroStack report (2025).
(35) OECD (2025), "Competition in Artificial Intelligence Infrastructure", *OECD Roundtables on Competition Policy Papers.*
(36) Infrastructure as a Service; Platform as a Service.
(37) French Competition Authority (2023), Opinion on competition in the cloud sector.

carbon electricity and turnkey sites with the intention to rely less on US hyperscalers. Lastly, initiatives such as the Alliance for Language Technologies (ALT-EDIC)[38] have been launched to promote AI development in European languages.

Europe has also made closing the gap on the digital technology value chain a priority. In order to build Europe's capacity in semiconductors, artificial intelligence, cloud computing and open source practices, the European Commission proposed a tech sovereignty package for Europe on 3 June 2026.[39]

These measures will support the rise of European players in these key sectors and promote using European suppliers for digital technology activities that are most vital to attaining sovereignty. At the same time, these measures will ensure to maintain the balance between uptake and production, as the benefits of uptake can be minimal if it is limited to local, lesser-quality products. Uptake and production complement each other and must be enacted in concert to boost long-term competitiveness in an economy.

(38) The Alliance for Language Technologies - European Digital Infrastructure Consortium was created by the European Commission on 7 February 2024 and is coordinated by France.
(39) European Commission (2026), "Commission proposes tech sovereignty package to strengthen Europe's digital autonomy and resilience".

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