JRI Research Journal

Japan Research Institute

Vol.9 No.35

November 25, 2026

Economic and Social Implications of AI

— In the short term, shortages of electricity and data centers, and financial pressures, may become barriers to widespread adoption. In the long term, employment, education, and economic thought could be transformed —

Tomohisa Ishikawa*

ishikawai.tomohisa@jri.co.jp

〈Summary〉

◆ The AI boom is currently boosting the global economy through large-scale capital investment and the expansion of trade in related goods. Data-center investment by the five biggest U.S. hyperscalers increased approximately six-fold between 2020 and 2025. In 2025, global exports of AI-related goods rose 22.8% from the previous year, and accounted for just under 20% of total global exports. However, the economic benefits are concentrated in the countries/territories participating in the relevant supply chains, which is leading to uneven economic growth.

◆ At the same time, there are obstacles that will need to be overcome if AI is to see broader adoption. The first is the expansion of electricity demand. The International Energy Agency (IEA) expects global electricity consumption by data centers to double by 2030, when it will account for approximately 3% of total electricity consumption. If this projection turns out to be accurate, data centers alone will be consuming more electricity than Japan currently uses, but if power supply capacity fails to keep up, growth could be impeded.

◆ The second obstacle is delays in data-center construction. Rising costs, labor shortages, and a lack of suitable sites have become increasingly serious issues, resulting in construction delays. In the U.S., movements opposing data-center construction have become more vociferous in various parts of the country, making data-center construction a hot-button issue at the midterm elections.

* *Research Director/ General Manger / Chief Economist (Economics Department, JRI).

© 2026 Japan Research Institute Limited.

- The third obstacle is the increasing impact on financial markets. To finance their massive capital expenditures, the hyperscalers are no longer relying on their internal cash flow. They are expanding their sources of money to encompass corporate bond issuance and private credit. A watchful eye needs to be kept on the declining capacity of financial markets to absorb newly issued bonds, increasingly opaque risk profiles due to off-balance-sheet financing, "circular" transaction structures in which invested funds are funneled back to the investor in the form of purchases of their products, and upward pressure on government bond yields. If future earnings, which form the premise for financial transactions, fall short of expectations, the global economy could be adversely impacted by factors such as stock market corrections. In addition, serious consideration is now being given to putting data centers in space, but doing so would require even larger amounts of capital.

- Over the longer term, adaptation to changes in the structure of employment caused by AI will present challenges. According to the IMF, approximately 40% of jobs globally, and around 60% in advanced economies, could be negatively affected by AI. At present, the impact is mainly being felt by white-collar workers and younger people, but technological progress could mean that it eventually extends to employment across a broad range of age groups and occupations. Whether productivity gains from AI use lead to improvements in living standards and reductions in working hours for the general population, or instead to the loss of employment opportunities, will be influenced by the design of social institutions.

- In education, attention will need to be paid to the possibility that over-reliance on AI could impair critical thinking skills and study habits. Declines in academic achievement and in optimism about the future among young people have been observed recently, and the possibility that AI has played a part in such negative developments cannot be ruled out. It will thus be important to reconcile the use of AI with maintaining the academic ability and physical and mental well-being of younger generations.

- Furthermore, AI advances may spur a shift in economic thought. In Silicon Valley, new philosophies such as "effective altruism" have emerged and attracted attention. However, opposing views have been expressed by various experts, with these being some of their concerns: 1) opposition to AI could invite support for socialism; 2) AI could end up controlling or imposing totalitarian rule on humanity, or lead to a social system under which only the minority capable of controlling it benefits; 3) overemphasis on efficiency gains from AI and data could produce dystopian outcomes or eugenic thinking whereby anything deemed inefficient is eliminated; and 4) extreme ideas could emerge whereby restrictions

on certain human rights are considered acceptable in the short term in pursuit of the long-term objective of ensuring that AI does not harm humanity. These worries raise questions regarding the forms of institutional change and economic thought that can deliver well-being to a broad range of people.

- **This is an English version of "AI に関する経済・社会的な考察 ― 短期的には電力・データセンター不足と金融逼迫が普及の壁に。長期的には雇用・教育・経済思想が変容する可能性 ―" in JRI Viewpoint (The original version is available at https://www.jri.co.jp/MediaLibrary/file/report/viewpoint/pdf/17081.pdf)**

< Disclaimer >

This report is intended solely for informational purposes and should not be interpreted as an inducement to trade in any way. All information in this report is provided "as is", with no guarantee of completeness, accuracy, timeliness or of the results obtained from the use of this information, and without warranty of any kind, express or implied, including, but not limited to warranties of performance, merchantability and fitness for a particular purpose. In no event will JRI, its officers or employees and its interviewee be liable to you or anyone else for any decision made or action taken in reliance on the information in this report or for any damages, even if we are advised of the possibility of such damages. JRI reserves the right to suspend operation of, or change the contents of, the report at any time without prior notification. JRI is not obliged to alter or update the information in the report, including without limitation any projection or other forward looking statement contained therein.

1. Introduction

The rapid diffusion of AI is significantly reshaping the global economy. Some observers argue that the process of AI diffusion could have a greater economic and social impact than previous waves of massive industrial investment, such as railway construction in the 19th century, electric power grid development in the 20th century, and the IT revolution in the 21st century. Recent developments back up this view, as AI- and data-center-related spending in the U.S. is projected to reach around 2% of GDP in 2026, and the current AI boom is boosting stock prices and economic growth.

At the same time, factors that could constrain the diffusion of AI are becoming increasingly apparent. Key challenges will be meeting demand for the enormous amount of electricity that will be required and building out the data-center infrastructure. Moreover, against the backdrop of massive capital inflows being driven by the benefits that AI is expected to deliver, concerns about an AI-related investment bubble are beginning to emerge in equity and bond markets. How such constraints and risks are addressed will be an important factor in influencing the future diffusion of AI.

Discussion has also begun regarding long-term adverse effects that AI may bring. For example, in July 2026, a group of economists, including 16 winners of the Nobel Prize in Economics, released a statement titled "We Must Act Now." Its main thrusts were that 1) AI will have a major economic impact over the next decade, 2) that impact could exceed that of the Industrial Revolution, 3) while AI could raise living standards, it also carries the risk of causing large-scale unemployment, and 4) work should begin immediately on creating incentives, guardrails, and institutions to steer AI for the benefit of society. Nobel laureates such as former Federal Reserve Chair Ben Bernanke, Joseph Stiglitz, Daron Acemoglu, and Paul Krugman were among the economists who signed the statement. The statement expresses hopes for AI while also warning of the risk that it could have serious adverse social consequences, including job displacement. Concerns have also been raised recently about negative effects on education. Furthermore, the debate has started to go beyond the institutional arrangements needed to address AI to encompass broader questions of economic thought, with some voices warning that AI could lead to totalitarianism or eugenics.

This paper considers the economic effects of AI and the constraints on its diffusion, before moving on to a discussion, from a long-term perspective, of its potential impact on employment and education and possible directions for policy responses.

2. Economic effects of AI

Against the backdrop of growing excitement surrounding AI, large-scale investments are being made all over the world, and this trend is also visible in statistics. This section provides an overview of the developments, with the focus on investment and trade.

First, data-center investment by the five biggest U.S. hyperscalers (Microsoft, Amazon, Alphabet, Meta, and Oracle) has jumped nearly six-fold from $51.2 billion in 2020 to $310.6 billion in 2025. According to the IMF, capital expenditures by major U.S. technology companies amounted to approximately 0.5% of U.S. GDP in 2023, but have now risen to almost 2%. In addition, according to a BIS report (BIS Bulletin No. 120, "Financing

the AI boom: from cash flows to debt," January 2026), as of mid-2025, spending on data centers (construction plus equipment) and IT manufacturing facilities had reached 1% of U.S. GDP, while overall IT investment, including software, had climbed to 5%. The report also stated that expenditures on semiconductor manufacturing facilities and data centers contributed on average 0.4 percentage points to GDP growth over the three years from 2022.

The spillover effects of this build-out are most clearly manifested in trade. According to JETRO estimates, global exports of AI-related goods reached a record $4.1547 trillion dollars in 2025, up 22.8% from the previous year and accounting for 45.1% of the increase in global exports. Their share of world trade also rose from 13.0% two years earlier to 16.4%. By product category, server exports nearly doubled from the previous year, and computing chips and semiconductor memory also recorded strong export growth.

The trade map itself is also being redrawn. In the first half of 2026, exports in U.S.-dollar terms reached $496.3 billion for South Korea and $416.6 billion for Taiwan, with both figures exceeding Japan's ($384.4 billion) for the first time. While exports from South Korea and Taiwan jumped almost 50% year over year, Japan's export growth was considerably lower, registering only about 10%. Nevertheless, Japan remains a significant presence, ranking 7th in global exports of AI-related hardware. Meanwhile, countries with limited AI-related demand and supply have found it difficult to expand trade. When global exports of AI-related hardware are aggregated, the top 15 countries account for virtually 100% of the total, meaning that most countries are receiving little direct trade benefit from the AI boom. While the U.S. and China are reaping significant economic gains from AI through the development of related software, countries that depend on imports for both software and hardware seem to be seeing only limited direct economic benefits from the AI boom.

In evaluating the medium- to long-term economic effects of AI, a key question is whether the technology will expand supply capacity in the future. According to the IMF, if AI significantly raises productivity, global economic growth could be boosted by approximately 0.5 percentage points per year over the next decade. Similarly, the WTO has estimated that the diffusion of AI could expand trade in goods and services by around 34-37% by 2040

However, the benefits of technological innovation are not necessarily realized in a short period of time. With the current AI boom, expectations appear to be running ahead of actual outcomes. Although AI is a field with substantial potential, conditions at present suggest that three constraints stand in the way of its wider diffusion. These three "obstacles" are discussed below.

3. Obstacles to AI diffusion

While there is burgeoning demand for AI, its wider diffusion faces constraints relating to supply infrastructure and financing. This section examines three areas that pose constraints: electricity, data centers, and financial markets.

(1) Electricity

The biggest constraint is electricity supply. The International Energy Agency (IEA) expects global electricity consumption by data centers to double by 2030, when it will account for approximately 3% of total electricity use. At that scale, data centers will be consuming more electricity than Japan currently uses. As for the U.S., according to "Powering Intelligence 2026," published by the Electric Power Research Institute (EPRI) in February 2026, data centers could account for 9-17% of the country's electricity consumption by 2030. As recently as 2024, the estimate had been 4–5%, meaning that the forecast has increased by a factor of two or three in just two years.

The problem is that construction on the supply side is struggling to keep pace with the surge in electricity demand. According to Lawrence Berkeley National Laboratory, in the U.S., the median period between an application for connection of a power plant to a transmission grid and the start of commercial operation of the plant lengthened from 22 months in 2008 to 61 months in 2025. This has created a mismatch in timing: data centers can generally be built in two to three years, while construction of generation and transmission infrastructure takes more than five years. The issue reflects the sharp increase in applications to build new plants in anticipation of expanding electricity demand. Delivery timelines for high-voltage equipment such as large transformers and circuit breakers have also become longer. In the wholesale electricity market operated by Pennsylvania–New Jersey–Maryland Interconnection (PJM), the largest transmission organization in the U.S., market prices per unit of capacity have risen roughly tenfold in recent years, and soaring electricity prices have become a political issue. Securing electricity supply quickly and at low cost has become a major challenge for countries seeking to be leaders in AI. In nations with limited land available for power plants or underdeveloped transmission grids, this problem is emerging as a bottleneck. In other words, differences in electricity-supply capacity are becoming a key determinant of whether a country can establish itself as an AI leader.

(2) Data centers

The supply of data centers themselves is also subject to constraints. In major North American markets, newly commissioned data-center capacity reached a record 2,498 MW in 2025, while the vacancy rate fell to an all-time low of 1.4%. This low vacancy rate indicates that demand exceeds supply.

The construction of data centers requires skilled personnel such as electricians, plumbers, and HVAC technicians, and the Center for Strategic & International Studies (CSIS) estimates that there could be demand for as many as 140,000 additional skilled workers by 2030. The U.S. construction industry is heavily dependent on foreign labor, and the stricter immigration policies being pursued by the Trump administration could further exacerbate worker shortages. Securing water resources for cooling, and handling opposition from local residents concerned about higher electricity costs and environmental harm, are also becoming constraints on site selection. Furthermore, there are substantial international disparities in the development of digital infrastructure. According to the IMF's AI Preparedness Index, advanced economies are three times better prepared in terms of digital infrastructure than low-income countries. Uneven distribution of data centers directly translates into uneven distribution of the economic benefits of AI, so the IMF findings provide further evidence that the gap between advanced and emerging economies may widen further.

In addition, campaigns by residents against the construction of data centers have intensified in the U.S. One reason is concern that the vast amounts of electricity consumed by data centers will push up local electricity charges. Against this backdrop, proposals to build data centers in space are being seriously discussed in the U.S. Generating power in space is expected to be easier than doing so on Earth, and because cosmic data centers are being touted not only as a solution to the issue of securing land but also as a means of alleviating electricity supply constraints, there is considerable excitement about the concept. However, numerous technological obstacles will need to be overcome before such facilities can actually be built and operated, so it is expected to be some time before the concept is realized. Therefore, while it remains an option for the future, it can be viewed at present as existing only in the realm of "dream technology."

(3) Financial markets

The third obstacle concerns financial markets. While the hyperscalers driving the AI boom possess highly profitable core businesses, the scale of their investments is reaching the point where internal cash flow alone is no longer sufficient to finance them. According to research by Professor Stijn Van Nieuwerburgh of Columbia Business School, capital expenditures by the five biggest hyperscalers are expected to exceed operating cash flow for the first time in 2026, and the focus of financing is shifting from internal cash flow to the bond market. And amid this pivot, the role of private credit funds is becoming increasingly important. As a result, the hyperscalers' share of investment-grade bond issuance has jumped from less than 1% to around 10% in just the past two years.

Such massive financing is resulting in various issues. The first is less market capacity to absorb newly issued bonds. Hyperscaler bond offerings went from being nearly five times oversubscribed in February 2026 to less than two times in July, and spreads over government bond yields have widened. Investors are beginning to demand higher risk premiums as compensation for absorbing the increasing supply of newly issued bonds.

The second issue is the growing complexity of financing structures. Off-balance-sheet financing through special-purpose vehicles (SPVs), joint ventures, and leasing arrangements has become more widespread, as has involvement by private credit funds, making it increasingly difficult to identify where risks ultimately reside. Attention needs to be paid to the risk that such opacity could encourage overinvestment. During the global financial crisis of 2008, the complexity of various financial structures became a major issue, and the question of whether the experience and lessons of that episode have been sufficiently incorporated into current practices is being asked once again.

The third issue is the "circular" nature of transactions. A highly concentrated and circular transaction structure has emerged in which the hyperscalers invest in the startups developing frontier models, and then those startups use the money to buy computing resources from those same hyperscalers. Analysis by the IMF, for example, found that in 14 transactions involving hyperscalers since 2023, approximately $300 billion in equity investment and $650 billion in lending had been provided in exchange for purchase commitments worth $1.4 trillion in future revenue.

The fourth issue is reverse crowding out. Crowding out, a concept with a long history, refers to expansionary fiscal policy pushing up long-term interest rates, making it more expensive for the private sector to obtain

financing. More recently, however, some have come to the view that the opposite phenomenon is occurring: as the AI sector seeks more funding, investors sell government bond holdings in order to provide it, creating upward pressure on government bond yields. Because government bond yields serve as the benchmark for virtually all financial-market transactions, excessive rises would pose the risk of a global economic slowdown.

The fifth issue is the risk that future revenues fall short of expectations. Some estimates suggest that, for the leading AI model developers to generate sufficient revenues to justify current levels of AI infrastructure investment in the U.S., their revenues would need to continue growing at approximately 80% annually. If future revenues and profits fall substantially short of expectations, the resulting stock-price corrections could be significantly amplified by the highly leveraged and circular AI ecosystem described earlier.

Such a scenario could lead to losses worldwide, as ownership of AI-related assets does not stop at national borders. Regulatory and supervisory authorities will therefore need to utilize existing policy tools, such as capital requirements and concentration limits, while also monitoring risk build-up through international coordination.

4. Longer-term considerations

If, after managing to overcome the various barriers discussed above, AI sees even more widespread adoption, it is likely to bring even greater changes to the global economy over the long term. Naturally, every field will be impacted to some extent, but economists and other commentators have been focusing particular attention on potential changes in employment, education, and economic thought. The main discussions in each area are summarized below.

(1) Impact on employment

According to a study by the IMF, approximately 40% of jobs globally, and around 60% in advanced economies, could be affected by AI. While some of these jobs will be complemented by AI, others may be replaced by it. It has also been noted that in the Asia-Pacific region, employer demand for workers in occupations highly exposed to AI has declined by approximately 10%, while for workers capable of utilizing AI, it has increased. As even though AI can produce basic materials and documents in an instant, human review remains necessary to improve their quality. In addition, activities such as making sales presentations using AI-generated materials are typically performed by individuals with substantial sales experience. Against this backdrop, a widely held view is that while employment of experienced personnel with personal connections and skills is rising, employment of younger workers, who have less experience, is declining. For example, in the U.S., which is at the forefront of AI adoption, unemployment among younger workers used to be lower than the overall unemployment rate, but this relationship has recently reversed. Some observers argue that this shift may be attributable less to AI and more to the rise in remote working following the COVID-19 pandemic, which has led to many companies cutting back on training of younger employees and placing greater emphasis on mid-career hiring. However, the possibility that AI has also had some degree of adverse effect on employment opportunities for younger workers cannot be ruled out. There is also the risk that as AI becomes more

sophisticated, the need for experienced personnel could disappear, too. Furthermore, if advances in physical AI continue, demand for blue-collar workers, who are currently in short supply around the world, could also fall over time.

Although the ultimate impact of AI remains uncertain at present, there is little doubt that it will have a significant effect on employment.

(2) Impact on education

AI is also presenting new challenges for education. Looking at the results of the latest Programme for International Student Assessment (PISA) survey, among students receiving digital-literacy education, those who used AI once or twice a month achieved an average science score of 558, while those using it once or twice a week scored 560. In contrast, students who used AI almost every day scored just 534, more than 20 points lower than the less frequent users. There was also a tendency for students using AI for text summarization or drafting essays to score lower. These findings suggest that excessive dependence on AI may undermine critical thinking skills and study habits.

In response to such concerns, more cautious approaches to the use of AI in education are gaining traction overseas. In June 2026, Norway imposed a near-total ban on the use of generative AI in elementary schools, and in September, New York City took a similar step with a one-year moratorium on most forms of generative AI use in public elementary and junior high schools. Japan, however, is moving in a different direction. A Ministry of Education advisory panel has proposed a substantial expansion in digital education in the next national curriculum guidelines to be implemented in four years, and has recommended for the first time the incorporation of AI use into the curricula for elementary and junior high school students. However, it will be important to avoid being swept up in the perceived benefits of AI, and instead to observe developments overseas and strike a healthy balance between traditional education and AI use.

At the same time, as major changes occur in employment and education, attitudes among younger generations are also evolving. In a survey by the Pew Research Center, a U.S. think tank, 55% of Americans under the age of 30 said they are more concerned than excited about the increased use of AI in daily life, up 24 points from 31% in 2021. In addition, 73% of adults said AI will lead to fewer jobs in the U.S. over the next 20 years. As noted above, the unemployment rate for younger workers in the U.S. has recently moved higher than the overall rate, and factors like this have also begun to change attitudes among young people.

Appropriate use of AI requires sufficient foundational academic competence to assess the accuracy of AI-generated output and to properly formulate questions for AI systems. Therefore, the design of school education should not be overly focused on digital transformation. It also needs to emphasize the development of basic abilities such as reading/writing and logical thinking. In addition, because the skills demanded by society also change as technology changes, studying a broad range of subjects is important for enhancing adaptability to changing circumstances. Studying not only core academic subjects, but also supplementary ones, can help improve the ability to respond to change. At the same time, excessive distrust of AI should also be avoided. How to reconcile the maintenance and improvement of foundational academic competence with the effective

use and application of AI is a key policy question whose answers will shape human-capital formation in the age of AI.

(3) Ideological conflict and social disruption

As noted above, many economists believe that the diffusion of AI could have a greater economic and social impact than the Industrial Revolution. To consider the relationship between technological innovation and labor, it is useful to look back at history since the Industrial Revolution. In 1930, Keynes predicted that 100 years hence, people would be able to obtain everything necessary for life by working only three hours a day. Now, with the target year of 2030 fast approaching, advances in AI have led to the question of whether that prediction can be realized being asked once again. Will shorter working hours lead to more fulfilling lives? Or will fewer work opportunities mean that people will be unable to secure more than three hours of work per day and will thus struggle to maintain their living standards? The answer will depend to a large extent on institutional design.

During the Industrial Revolution, workers in fear of losing their jobs to machines banded together to form the Luddite movement, destroying machinery. The movement itself was swiftly put down by the authorities, and the shift toward mechanization continued. It did, however, increase interest in the labor movement, and against a backdrop of widening inequality between capitalists and workers, it gave rise to new economic ideas, such as those espoused in Karl Marx's Das Kapital. The Industrial Revolution brought not only technological innovation but also transformations in social institutions and thought. Today, interest in socialism is growing in the U.S., particularly among younger generations. An example was the election of Zohran Mamdani, who identifies as a democratic socialist, as Mayor of New York City. This trend is being driven partly by dissatisfaction with income inequality and inflation, but it has also been said to reflect concerns about jobs being displaced by AI. It could thus also be said that when historically significant new technologies emerge and alter the nature of employment, interest in socialism tends to increase.

This year marks the 250th anniversary of the publication of Adam Smith's The Wealth of Nations. Although Smith argued that markets are guided by an "invisible hand," he also emphasized, in The Theory of Moral Sentiments, sympathy as a fundamental aspect of human nature, demonstrating that his concern also extended to the well-being of each individual. By contrast, commentators such as Gita Gopinath, who served as First Deputy Managing Director of the IMF, have warned that AI could become an "artificial hand," and that if left entirely to market forces, its benefits could be monopolized by a limited group of people. In a similar vein, Yuval Noah Harari has pointed to the risks of rule by a digital aristocracy and forms of algorithmic totalitarianism.

Meanwhile, in Silicon Valley, new philosophies such as "effective altruism" have emerged and attracted attention. As interpreted by this author, the principles of effective altruism are that "rather than working for a charitable organization, one can save more people (the 'altruism' part) by earning a high income and donating part of it (the 'effective' part)," and that "action that data and analysis have demonstrated to be effective should be taken." In other words, things that data has shown to be of benefit to large numbers of people tend to be valued, at the expense of other things, which get excluded.

A derivative concept that has emerged from this current of thought is long-termism. This is the view that "having a positive impact on the long-term future should be high on the list of moral priorities in the present day." This view has given rise to the argument that humanity should act to avert the risk of AI advancing to the point where it could cause the extinction of humans. On its own, this explanation makes long-termism seem like a good thing. However, it can also lead to extreme conclusions, such as that "rather than saving 100 people who are suffering right now, the right thing to do is to use those resources to develop technology that will save 10,000 people in the future," that "if something will benefit society as a whole over the long term, there is no need to consider short-term benefits or the interests of minorities," or that "if it will provide long-term stability, it is acceptable for a handful of Silicon Valley elites to control AI." Because of this, there are also concerns about and rejection of such ways of thinking.

As the above discussion has shown, AI has become the subject of what is essentially a theological debate. Nevertheless, caution is warranted, as there is a risk of falling into modern-day forms of eugenics or totalitarianism. Now, with AI evolving at an ever-faster pace, the question being asked is whether it will be possible to achieve institutional change and economic thought that can deliver well-being to a broad range of people.

<Reference>

石川智久「ノーベル経済学賞受賞者等による AI 社会への警告 ～大国主導ではなく多国間で AI の弊害の解決を～」(2026 年 7 月 21 日)、Economist Column No.2026-043、日本総合研究所
https://www.jri.co.jp/page.jsp?id=114577

石川智久(2026)「 経済史のエピソードから AI 社会の在り方を考える ～ケインズの予言、ラッダイト運動、アダム・スミス～」(2026 年 8 月 5 日)、Economist Column No.2026-049
https://www.jri.co.jp/page.jsp?id=114701

JETRO「ビジネス短信 AI 導入で世界貿易額は 2040 年までに 40%近く押し上げ、WTO 予測」(2025 年 9 月 19 日)
https://www.jetro.go.jp/biznews/2025/09/624410cf2953bdd2.html

JETRO「財貿易の主役に躍り出る AI 関連財(世界)」(2026 年 8 月 6 日)
https://www.jetro.go.jp/biz/areareports/special/2026/0801/e9bccb0e4e5bcf9c.html

木内登英「AI 関連需要の経済効果の各国比較と金融リスク」(2026 年 10 月 14 日)、
野村総合研究所、https://www.nri.com/jp/media/column/kiuchi/20261014.html

国際通貨研究所「米国 AI 関連投資の持続性～拡大を支える要因とリスク～」(2026 年 9 月 16 日)
https://www.iima.or.jp/docs/newsletter/2026/nl2026.52.pdf

山家公雄「【AI データセンターが促す米国電力変革⑤】背水の需給ひっ迫防止対策を講じる PJM」（2026 年 7 月 11 日）、エネルギー政策研究所
https://energy-policy
japan.com/2026/07/11/%e3%80%90ai%e3%83%87%e3%83%bc%e3%82%bf%e3%82%bb%e3%83%b3%e3%82%bf%e3%83%bc%e3%81%8c%e4%bf%83%e3%81%99%e7%b1%b3%e5%9b%bd%e9%9b%bb%e5%8a%9b%e5%a4%89%e9%9d%a9%e2%91%a4%e3%80%91%e8%83%8c%e6%b0%b4%e3%81%ae/

ロイター「ハイパースケーラーの社債利回り上昇、投資家の選別厳格化で」（2026 年 7 月 30 日）
https://www.reuters.com/jp/markets/japan/T4VJW3C6HZNCZHIYIA7S4HNADQ-2026-07-30/
星暁雄「OpenAI 内紛劇の背後に「21 世紀の優生思想」、EA コミュニティと e/acc の危険性」（2023 年 12 月 21 日）、The Ashi Shimbun Globe+　https://globe.asahi.com/article/15087941

ビジネス＋IT「米国で若者の AI 不安強まる…55%が「期待より懸念」、雇用減予想も増加」（2026 年 8 月 24 日）https://www.sbbit.jp/article/cont1/186639

NHK「宿題を AI に丸投げ？ 生成 AI の学力への影響は」（2026 年 10 月 14 日）
https://news.web.nhk/newsweb/na/nd-20261002de53846

クーリエ・ジャポン「『 将来が奪われる』 AI ネイティブの Z 世代が抱く切実な拒否感の正体」（ 20261 年 4 月 12 日）
https://courrier.jp/news/archives/441773/

前川太志「特集 宇宙データセンター 実現に向けた課題の克服に挑む」（2026 年 10 月 15 日）、日経コンピュータ 10 月 15 日号

Economist, “Effective altruism is this century’s biggest idea” (2026 年 10 月 1 日)
https://www.economist.com/leaders/2026/10/01/effective-altruism-is-this-centurys-biggest-idea

WTO, “World Trade Report 2025: Making trade and AI work together to the benefit of all”（ 2025 年 9 月）https://www.wto.org/english/res_e/publications_e/wtr25_e.htm

Stanford Digital Economy Lab, “We Must Act Now: Sixteen Nobel Laureates Join Leading Economists and AI Researchers in Call to Prepare for AI’s Economic Transformation”（ 2026 年 7 月 13 日）https://digitaleconomy.stanford.edu/news/wemustactnow/

International Energy Agency, Energy and AI（2025 年 4 月 10 日）
https://www.iea.org/reports/energy-and-ai

Natalia Emanuel, Emma Harrington, and Amanda Pallais" Remote Work Leaves Younger Workers Sidelined"(2026 年 6 月 1 日)、Liberty Street Economics, Federal Reserve Bank of New York,
https://libertystreeteconomics.newyorkfed.org/2026/06/remote-work-leaves-younger-workers sidelined/

Electric Power Research Institute, Powering Intelligence 2026: Updated Scenarios of U.S. Data Center Electricity Use and Power Strategies（2026 年 2 月 25 日）
https://powering-intelligence.epri.com/

Lawrence Berkeley National Laboratory, Queued Up: 2026 Edition, Characteristics of Power Plants Seeking Transmission Interconnection As of the End of 2025（2026 年 5 月）
https://emp.lbl.gov/publications/queued-2026-edition-characteristics

Center for Strategic and International Studies, "GenAI's Human Infrastructure Challenge—Can the United States Meet Skilled Trade Labor Demand Through 2030?"（ 2025 年 9 月 16 日）

https://www.csis.org/analysis/genais-human-infrastructure-challenge-can-united-states-meet skilled-trade-labor-demand
International Monetary Fund, "AI Will Transform the Global Economy. Let's Make Sure It Benefits Humanity."（ 2024 年 1 月 14 日）

https://www.imf.org/en/blogs/articles/2024/01/14/ai-will-transform-the-global-economy-lets make-sure-it-benefits-humanity

Kristalina Georgieva," The World Can't Afford to Get AI Wrong- AI promises a more productive world, but we must manage risks in the transition" IMF BLOG
https://www.imf.org/en/blogs/articles/2026/10/15/the-world-cant-afford-to-get-ai-wrong

OECD, PISA 2025 Results (Volume I): Future-Ready Students（2026 年 9 月 8 日）
https://www.oecd.org/en/publications/pisa-2025-results-volume-i_73451bc5-en.html

Pew Research Center, "Young adults in the U.S. are increasingly wary of AI, concerned it will take jobs"（ 2026 年 8 月 18 日）
https://www.pewresearch.org/short-reads/2026/08/18/young-adults-in-the-us-are-increasingly wary-of-ai-concerned-it-will-take-jobs/