Workshop of the Lab Banque de France-Fondation France-Japon (EHESS)

01/12/2025

Meeting minutes

The Lab Banque de France-Fondation France-Japon of the EHESS aims to encourage further cooperation between French and Japanese researchers in the field of economics. In 2025, participants of the Lab met in Paris on 4 June, followed by a second full-day workshop on 1st December in Tokyo, both focusing on the impact of AI on macroeconomics and financial stability.

MORNING WORK SESSION

Opening remarks

Akinori Horii (Canon Institute for Global Studies) opened the morning session by reminding the audience of concrete AI use cases, arguing that by 2026 the macroeconomic landscape will have undergone a substantial transformation driven by AI diffusion. He signalled that the large capital reallocation and investment cycles already observed in the U.S. are closely linked to AI adoption, and that such fluctuations may presage structural economic changes elsewhere.

Sébastien Lechevalier reminded participants that the Lab's workshop initiative started three years ago and is supported by multiple partners (including the Canon Institute for Global Studies, the Banque de France, the Bank of Japan, the French and Japanese embassies, Crédit Agricole, the German Institute for Japanese Studies and the Institut Louis-Bachelier). He emphasised the objective of producing a written outcome comparable to last year's special journal issue on economics of ageing, central theme of the BdF-FFJ Lab in 2024.

Panel 1 – THE IMPACT OF AI ON THE MACROECONOMY

1. **Miracle or Myth? Assessing the macroeconomic productivity gains from Artificial Intelligence** – Peter Gal (OECD)

Peter Gal noted that productivity growth has been declining in recent decades even across emerging economies, creating a public policy problem that AI could hopefully reverse or at least mitigate. Research conducted by the OECD gives reason to be cautiously optimistic about productivity gains from AI (in particular generative AI), though results have varied widely across previous estimates (widespread use of AI could translate to a 1% boost to labour productivity per year according to Aghion, while Acemoğlu suggests a more conservative estimate of 0.1%). According to Peter Gal, the impact of AI could roughly be compared to the US internet boom in 1990s in their more optimistic scenario, though it should be noted that this effect is not uniform across countries. The OECD framework builds on the one developed by Acemoğlu and adapts it to a sectoral approach. The model first requires estimates of micro-level productivity gains, prevalent in particular in tasks such as coding, general and professional writing, etc. which are common in the services sector. Because countries differ in sectoral composition – Japan and Italy being comparatively manufacturing-heavy while France and the UK have larger service sectors, for instance – the macro effect of AI will be heterogeneous across countries. Peter Gal stressed that adoption dynamics matter: although AI behaves like a general-purpose technology which have historically experienced fairly slow diffusion, the user-friendly characteristics of AI could allow it to follow a more rapid diffusion path, like mobile phones did, with adoption rates rising to 60% over a decade as costs fall. When sectoral gains are aggregated, Peter Gal cautioned, total macro gains typically fall short of the sum of sectoral improvements because of reallocation frictions and Baumol-type effects. AI's macro-level productivity gains could therefore be significant, while the diffusion rate and sectoral specialisation are key to understanding country-specific impacts (estimated around 0,5 pp for Japan, and 0,7 pp for France). He concluded by underlining the role that can be played by government through policies aimed at enabling widespread adoption and easing labour reallocation.

Estimating the impact of AI on job quality and job satisfaction – Malo Mofakhami (USPN & IFRJ-CNRS)

Malo Mofakhami addresses the relationship between technology and employment with a particular focus on job quality and job satisfaction. He aims to answer three main questions: (i) does tech destroy jobs, (ii) why tasks matter more than occupation, and (iii) is the digital job faster and smarter or more intense and stressful for workers. Empirically, productivity gains from AI should translate to a labour-saving effect, and – following a Schumpeterian creative destruction process – thus create new employment, in the same firm or in other sectors. Malo Mofakhami emphasised that the macroeconomic impact of AI depends on whether it corresponds to the production or the diffusion of innovation, according to Schumpeter's innovation cycle. He highlighted workforce polarisation dynamics driven by routine tasks shrinking while non-routine cognitive and interpersonal tasks grow, and argued that task-level analysis is more informative than occupational aggregates because AI typically substitutes or complements specific tasks rather than whole jobs. On job quality, replacing

routine tasks can yield a positive impact, leading to more flexibility that can be beneficial or produce technostress; the blurring of work and leisure boundaries and the intensification of standardized tasks were signalled as risks for worker well-being. Malo Mofakhami noted mixed evidence on the causal impact of ICT use on job satisfaction: France shows greater ICT adoption than Japan, yet job satisfaction patterns differ, with lower adjusted satisfaction observed in Japan.

2. **AI and Firm Performance: Evidence from Japan** – Tomohiko Inui (Gakushuin University)

Tomohiko Inui (Faculty Fellow at the Research institute of Economy, Trade and Industry, RIETI) presented firm-level evidence from Japan and emphasised the uneven distribution of AI gains – which remain limited in Japan – across firms. The data sources used for the analysis were the ministry of Economy, Trade and Industry's Basic surveys of Japanese business structure and activity (from 1994 to 2019), the IIP patent database (from 1960 to 2018) and Tokyo Shoko Research (from 2007 to 2021), which discloses intrafirm relationship and equity holdings. Tomohiko Inui explained that the Japanese Patent Office distinguishes core AI inventions from AI-applied inventions. He reported that Japan has a modest number of AI patents relative to China and the United States (respectively around 7 000 and 6 000 patents, versus 1 200 for South Korea and 800 for Japan). Tomohiko Inui classified four channels through which AI affects firms: AI used in-house for production purposes, AI used as part of a product that permits price premia (e.g., self-driving cars), and AI as a product (e.g., ChatGPT) or externally supplied business tool. His empirical finding was that low-productivity firms are less likely to capture AI-related productivity gains, while AI patents correlate positively with productivity for patenting firms.

3. **Impacts of AI on economic activities and financial systems in Japan** – Nao SUDO (Bank of Japan)

Nao Sudo (Deputy Director General, Financial System Research) focused on the impact of AI on Japan's financial institutions, arguing that the financial sector is among the most susceptible to AI-driven change. Japan ranks third in AI preparedness among G7 members and faces severe labour shortages in finance, creating a strong incentive to implement AI tools. However, Nao Sudo enumerated risks associated with AI: increased cyber threats, third-party risks, data leakages, model hallucinations, lack of accountability, data silos, etc. He reported rising cyber-attacks in Japan (phishing, ransomware, illicit

transfers) and noted how generative AI can be abused by threat actors – consequently driving many financial institutions to set up risk management measures, though labour shortages complicate capacity building. Survey figures suggest rapid growth in AI usage within one year, with a hike from 31% to 50% of institutions reporting AI use, primarily for non-client-facing tasks such as translation and proofreading. Nao Sudo's presentation underlined a tension between strong incentives to adopt AI because of workforce shortages and the need for robust governance to mitigate escalating operational and cyber risks.

Panel 1 discussion: **Matteo Mogliani** (Head of the Macroeconomic Research and International Analysis Department at the Banque de France) synthesised the first panel and emphasised two principal discussion points. Firstly, he pointed out the high level of uncertainty around quantification, with estimates of productivity gains varying widely across models and assumptions. Second, he suggested general equilibrium and welfare effects as an area requiring further research: even if aggregate productivity rises, distributional inequalities may offset welfare gains, such as preliminary evidence seems to suggest for the United States where AI-related pressures could be the driver of electricity price increases in states that host datacentres, producing concentrated gains.

Recent developments of AI in France and tools for French-Japanese cooperation – Jean-Baptiste Bordes (Embassy of France in Japan)

Jean-Baptiste Bordes, Science and technology Attaché, presented France's AI ecosystem and the Franco-Japanese scientific partnership. He compared R&D spending (3,3 % of GDP in Japan, versus 2,2 % in France, while France has more researchers) and stressed that neither country can build a full AI ecosystem in isolation, making international collaboration is all the more strategic. Jean-Baptiste Bordes reviewed the long-standing bilateral scientific cooperation (formal ties since 1974, strengthened by the "exceptional partnership" framework in place since 2013) illustrated by the presence of 13 French-Japanese joint research laboratories in Japan, and highlighted France's strengths in mathematics and as a global AI talent hub (with researchers such as Yann Le Cun and Gaël Varoquaux, and 1 000 AI startups among which Mistral AI, Hugging Face and Dataiku). Jean-Baptiste Bordes presented the French AI Acceleration strategy policy plans, which resulted in the construction of the Jean-Zay supercalculator and the creation of 9 AI clusters.

Panel 2 – THE IMPACT OF AI ON THE FINANCIAL SECTOR

1. **Human-Robot interactions in Investment Decisions** – Marie Brière (Amundi)

Marie Brière examined human-robot interaction in investment decisions and asked what role robo-advisors and AI-powered tools should play in highly regulated financial contexts. She positioned robo-advice as a potentially helpful remedy to common investment biases – insufficient diversification, limited attention, familiarity bias and low stock-market participation – by eliciting investor profiles and suggesting strategic asset allocations and automatic rebalancing. Empirical evidence from Amundi's experience suggests modest improvements: robo-enhanced investors increased attention and risk exposure, with an estimated average return improvement estimated around 2% for robot-assisted investors; yet overall market uptake remains low and heterogenous (older, female and wealthier clients are less likely to accept robo-advice). Marie Brière emphasised trust and the risk of AI hallucinations as central constraints for client-facing applications, recommending that chatbots be used primarily for technical explanations and that humans retain the final decision for advice to limit liability and address trust deficits. She also flagged distributional concerns: if robot uptake is concentrated among certain groups, inequalities in financial outcomes could widen.

2. **Use of AI for Central Bank Research** – Kazuki Otaka (Bank of Japan)

Kazuki Otaka discussed research applications of large language models (LLMs) for central banks and reported a surge of interest for three broad uses: textual analysis and classification (as practised by the Bundesbank and the Bank of England), forecasting and nowcasting (European Central Bank, Bank of Japan), and agent-based simulation (Fed, Bank of Japan, Bank of England). He described experiments that assess whether LLMs can act as valid agents in economic simulations, focusing on directional consistency, magnitude and diversity of AI projections. Using a common prompt structure and oil-shock scenario but differentiating through "personality" injections, Kazuki Otaka found that LLMs produced less diversity of responses than humans in predictions for inflation and employment, suggesting limitations in the capacity of current LLMs to reproduce human heterogeneity. He argued that while LLMs offer novel tools for causal detection and reasoning visualisation, they also learn by imitation rather than understanding, potentially leading to systematic biases. For practical central bank

application, he recommended rigorous checks for consistency with real-world data, bias detection protocols and robustness testing before deployment in policy-relevant contexts.

3. **AI development and its application to stock market, population and firm evaluation** – Shunsuke Managi (Kyushu University)

Shunsuke Managi demonstrated applied AI work linking text analytics and ESG forecasting, stock market evaluation. He described methods that harness news data to estimate ESG-related signals, reporting high classification accuracy for some applications and identifying geographic, sectoral and investor-type heterogeneity in ESG preferences. Shunsuke Managi also explained that generative AI and custom LLMs can improve forecasting of environmental variables (for instance fine-grained and accurate temperature estimation at a 5 km² resolution) and population dynamics, with operational implications for infrastructure planning. He concluded that generative AI is useful across investment research and social planning, while warning that cross-lingual and cultural differences in news narratives matter for international investors and require careful localisation.

4. **Legal risk and management regarding the use of AI at financial institutions** – Shinichiro Kawano (Bank of Japan)

Shinichiro Kawano presented an outline of the report on the use of AI in financial institutions by the Legal Study Group, which was held by the Bank of Japan's Institute of Monetary and Economic Studies (IMES). He focused on legal risks for financial institutions using AI and outlined the liability and governance challenges that arise when models produce inaccurate and potentially harmful outputs. He described several usage models – such as use of general-purpose AI services (e.g., ChatGPT) or customised AI responses filtered by humans – and stressed that contractual clarity with providers is essential to providing legal structure and defining accountability. He emphasised that AI inaccuracy does not change legal responsibilities of financial institutions: assistive versus autonomous AI may change workflow but not necessarily liability, and firms must implement continuous risk management and governance frameworks. He noted the obligations under the Companies Act and the need for alignment between corporate risk management and evolving governmental/regulatory frameworks;

ultimately, he recommended organisational arrangements that ensure accountability, ongoing updates to datasets and risk-based approaches to governance.

Panel 2 discussion: **Daisuke Miyakawa** (Waseda University) acted as discussant synthesising the overarching themes of the four panel presentations, suggesting areas for further research on AI-related customer-level impact, research applications for central banks and stock market investments, and legal risks.

AFTERNOON SESSION – *open to the general public*

Opening remarks

Toshihiko Fukui (President of the CIGS, former governor of the Bank of Japan) pointed out that AI constitutes a historical turning point from a historical and geopolitical perspective, while **Jérémie Forrat-Jaime** (Chargé d'Affaires at the Embassy of France in Japan) emphasised AI's transformative potential for the real economy and flagged systemic vulnerabilities, including environmental costs. **Koji Nakamura** (Executive Director at the Bank of Japan) noted mixed effects on the labour market (new opportunities but also job losses) and the substantial impact of AI on stock markets this year – with the risk of overheating – and the rise of AI-related capital expenditure. **Sébastien Lechevalier** (President of the Fondation France-Japon of the EHESS) reiterated the need to craft an interdisciplinary and international research agenda that addresses complex externalities and the rapid pace of change observed in AI.

Keynote speech – Akihisa Shiozaki (Member of the House of Representatives of Japan)

In his keynote address, **Akihisa Shiozaki**, Member of the House of Representatives of Japan and a key architect of the country's recent AI policy framework, offered a comprehensive and forward-looking overview of Japan's strategic response to artificial intelligence. Taking the rapid diffusion of generative AI since late 2022 as a critical inflection point, he explained Japan's deliberate choice to prioritise broad-based private sector innovation and widespread adoption over the development of a single national "sovereign AI" model. Rather than concentrating public resources on building a domestic frontier model, Japan has opted to leverage leading global models while focusing on diffusion, applications and human capital. Against this backdrop, he presented the four pillars of the forthcoming AI Basic Plan, to be finalised in 2025: (1) the use of AI, notably through the deployment of Project GenAI across government to enhance productivity, accelerate adoption and signal institutional confidence; (2) the creation of AI, by fostering private-sector development through subsidies, accelerators and competitive programmes such as METI's Geniac initiative, spanning foundation models, post-training layers and applications; (3) the enhancement of trustworthiness, through transparency requirements, cybersecurity safeguards and governance tools, including the use of Article 16 to address risks associated with foreign frontier models, as illustrated by recent copyright-related cases; and (4) the anticipation of AI's macroeconomic and societal impacts, particularly on labour markets and skills, underpinned by strengthened data governance. Beyond policy architecture, Akihisa Shiozaki framed AI as a profound societal and geopolitical transformation, warning of widening divides between AI leaders and laggards, the weaponisation of AI by malicious actors, and the unresolved challenges posed by increasingly autonomous systems and the prospect of artificial general intelligence. He concluded by calling for enhanced international cooperation on AI governance, data stewardship and security, while reaffirming Japan's commitment to invest heavily in AI for science as a driver of discovery, resilience and long-term economic transformation.

Roundtable 1 – IMPACTS OF AI ON THE ECONOMY: A SECTORAL APPROACH

Marie Brière opened the discussion by listing investment use cases, reiterating that AI has already shifted practices by enabling the processing of far larger and more varied signals (text, satellite imagery, alternative data) in order to interpret sentiment around a company and its performance. She warned that LLMs and other models embed biases that vary by country and sector and that lack of transparency remains a major obstacle for investment decisions. On client engagement, she argued that AI tools can improve outcomes for some investors but that uptake remains limited. Marie Brière also raised challenges ahead, including the imperative of transparency, explainability and data quality, and the cost of AI tools in terms of dependencies and environmental consequences. She also highlighted the potential impact of widespread AI use on market efficiency and stability, and the heightened risk of market manipulation.

Robert Feldman (Morgan Stanley MUFG Securities) discussed the fourfold *sine qua non* conditions for AI diffusion: hardware, software, data and ethics. He considered Japan reasonably well-positioned on hardware and capable on adoption, but noted software leadership for global LLMs remains outside Japan (except for Japanese language models); and considers that Japan is no worse than other countries for data integration and ethical frameworks (Japan may have an advantage due to the Japanese practice of businesses being responsible for their employees' training). Robert Feldman also sketched a diffusion lifecycle – problem recognition, solution design, social consensus, action and training/retraining – and highlighted high-return areas where AI may produce outsized benefits (environmental policy, bubble detection, improvements to forecasting asymmetric expectations).

Toshinori Kurihara (PwC Research Institute, Japan) contrasted AI adoption in the financial sector through a comparative perspective on France, Japan, and the United States. France emphasizes trustworthy AI, focusing on ethics, transparency, sustainability, and alignment with the EU AI Act, while Japan prioritizes reliable and safe AI grounded in social trust, accuracy, and explainability. In contrast, the United States adopts a beneficial AI approach oriented toward speed, competitiveness, and growth. These differing value orientations are complementary, highlighting the importance of mutual learning across jurisdictions. The discussion also presented a high-performance AI adoption cycle—from ideation and prototyping to production and creative destruction—enabled by strong risk culture and disciplined agile governance frameworks. Finally, it underscored the critical role of upskilling and reskilling human capabilities, combining intelligence with humanity skills, to achieve both productivity gains and sustainable economic growth in the age of AI-driven transformation.

Yutaka Soejima (SBI Research) presented a forward-looking view of data-driven ecosystems and the API economy. He argued that APIs and agent architectures will unlock both financial and non-financial data, enabling personalised services and new business models. Natural language interfaces will lower the barrier to automation, allowing non-technical staff to build and operate AI agents; the life cycle of business models will accelerate, shortening monopolistic rents and intensifying competition.

Roundtable 1 discussion: Discussing AI impact on market stability and systemic risks, Marie Brière warned of increased volatility and the potential for AI-to-AI feedback loops to amplify shocks, calling for guardrails and alignment efforts. Robert Feldman highlighted the risk of homogenous strategies and trend-following behaviour producing bubbles in asset markets; he advocated mechanisms for diversification and contrarian trading incentives.

Roundtable 2 – IMPACTS OF AI: A POLICY-ORIENTED APPROACH

Felix Von Helden (Ultra Tendency Japan, representative of the European Business Council) used a lighthouse metaphor to describe AI: the light (AI) is useful only if the lighthouse (representing the underlying infrastructure, which may be governance, data and institutions) is planned and built correctly.

Akane Enatsu (Nomura Institute of Capital Markets Research) reviewed governance trends, noting a gradual diffusion of risk awareness and a multiplicity of regulatory approaches across jurisdictions (the European Union issued the first comprehensive regulatory package, while the United States follows a looser approach to enhance competitiveness). In Japan, she observed that while most companies have issued AI guidelines, corporate disclosure on potential risks remains limited (less than 20%). She also notes that AI-related shareholder proposals are on the rise, especially in the media and entertainment industry.

Keita Nishiyama described the intellectual shift embodied by the "third wave" of AI – pattern recognition and generative capabilities rather than earlier logic-and-knowledge architectures – and argued that policy must adapt to the new epistemic characteristics of AI. He proposed the emergence of AI audits analogous to financial audits as a governance tool.

Takeo Hoshi (University of Tokyo, Faculty of Economics) placed AI within a long continuum of technological revolutions, noting that anthropological and behavioural factors – our tendency to misuse technologies and underestimate externalities – recur across innovations. He invoked Albert Hirschman's "Hiding Hand" principle to caution that optimism about our ability to solve consequences after developing AI, and he urged humility and preparation for adverse outcomes.

Stéphane Latouche (Banque de France, Chief Representative for the Asia-Pacific region) described concrete central bank use cases for AI, building on the International Settlements Bank's recent survey identifying three drivers of AI adoption by central banks: the profound impact of AI on the macroeconomic conditions, the impact of AI adoption on monetary and financial stability (core mandate of central banks), and the handling of large amounts of data with complex decision processes. At the Banque de France, AI systems are being deployed through several channels, including public chatbots for financial education (2019), SCORE AI for company ratings (2023), and an N-ACSEL system compiling corporate data for territorial analysis (2024). Stéphane Latouche highlighted four central bank domains for AI deployment – statistics, macro-financial analysis in support of monetary policy, payment systems oversight, and supervision – and reiterated concerns about third-party dependencies, cyber risk and model governance in the financial sector. He noted that the EU AI Act will reshape

compliance duties and that national supervisors such as the ACPR in France should become key actors for enforcement in finance.

Roundtable 2 discussion: Participants debated the energy inefficiency of generalist models relative to human cognitive economy, the possible need for more focused models, and the trade-offs between breadth and depth of attention for AI agents.

Closing remarks

In his concluding remarks, **Arthur Sogno Pèes** (Financial Counsellor, Deputy Head of the Regional Economic Department at the Embassy of France in Japan, and Representative of the Banque de France) highlighted the depth and coherence of the discussions held throughout the day, stressing that AI has already become a structural force shaping macroeconomic dynamics and financial systems rather than a distant or marginal innovation. He underlined the nuanced picture that emerged from the workshop: while AI holds significant potential for productivity, firm performance and analytical capacity, its effects are neither uniform nor automatic, as they depend on sectoral structures, task-level transformations, diffusion dynamics and institutional complementarities. From a financial stability perspective, he emphasised that AI simultaneously strengthens analytical and forecasting tools while generating new vulnerabilities – legal, operational, cyber and governance-related – that call for proactive and coordinated responses. Beyond economics and finance, he framed AI as a profound societal transformation, raising fundamental questions about cognition, trust, accountability and democratic resilience in an environment increasingly exposed to AI-generated content. Against this backdrop, he reaffirmed the strong convergence between French and Japanese approaches to AI, grounded in shared values of trust, responsibility and human-centric innovation, and outlined concrete avenues for enhanced Franco-Japanese cooperation, notably in trustworthy and energy-efficient AI, financial-sector applications, regulatory frameworks and human capital development. He concluded by stressing that France and Japan are uniquely positioned to jointly shape global standards on AI governance and macro-financial stability, particularly in the perspective of France's forthcoming G7 Presidency, and thanked all participants and partners for their essential contribution to the Lab's collective work.

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