AI IN ECONOMIC AND FINANCIAL POLICYMAKING

SUERF BAFFI BOCCONI E-LECTURE

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A High-Level Panel of Experts Report on Al and Economic and Financial Policymaking

- Established by mandate of G7 Finance Ministers and Central Bank Governors
- Panel composition:
 - Chair Dr. Luis Videgaray (MIT)
 - Experts in economics, AI, finance, and governance

DISCLAIMER: speaking in personal capacity

- research lecture drawing on insights of the report and on my own research
- views do not represent those of the G7 or other panel members



ARTIFICIAL INTELLIGENCE AND ECONOMIC AND FINANCIAL POLICYMAKING A High-Level Panel of Experts' Report to the G7

WHY AI MATTERS FOR ECONOMIC & FINANCIAL POLICY



PART I: POLICYMAKING UNDER UNCERTAINTY

KEY TECHNOLOGICAL UNCERTAINTIES

• Speed of future progress:

- Rapid progress since launch of ChatGPT in 2022
- Will performance continue to improve going forward?
- Or will there be ceilings/walls?

 Declared goal of frontier Al labs: Artificial General Intelligence (AGI) = Al systems that can perform essentially all economically valuable cognitive tasks

• Will AGI be reached?

SCALING OF AI SYSTEMS

- Rapid scaling of compute
 - ever larger investments
- Intelligence = f(compute)

Fall 2024: Concerns about
the end of scaling

Notable AI Models



CC-BY

epoch.ai

FEPOCH AI

TWO NEW SCALING PARADIGMS

- New development in Fall '24: Reasoning models: o3, R1, ...
- Enable scaling via
 - Longer thinking
 - More training to "think"

two new dimensions of
 scaling for 2025 and beyond
 currently, rapid progress



2025: RISE OF AI AGENTS Al Agents are systems that autonomously pursue goals via

- Strategic planning
- Using long-term memory
- Employing external tools

build on greater LLM reliability, longer context windows, faster speed

are the focus of the Al buzz in 2025

KEY MARKET STRUCTURE UNCERTAINTIES

Currently fierce competition among model providers

- Will continued scaling lead to natural monopolies/market tipping?
- Proprietary models vs open-source models

Significant market concentration at the chip layer

SCENARIO PLANNING

= best approach to deal with massive uncertainty

Three useful scenarios:

I) Conventional wisdom scenario: gradual progress, limited disruption
 II) Intermediate AGI scenario: AGI in ~ 20 years, progressive adaptation

III) Accelerated AGI scenario: AGI in 2-5 years, rapid transformation

PART II: MACROECONOMIC EFFECTS

INNOVATION & GROWTH

• Mechanisms through which AI may increase innovation & growth:

- Automation of existing tasks
- Accelerated innovation

• Key uncertainties:

- speed of continued progress
- adoption & diffusion lags



LABOR MARKET & DISTRIBUTIVE EFFECTS

- New technologies have always had large effects on labor markets
 - Greater productivity
 - Job displacement

- Overall effect of technology on labor in the past 250 years: positive
- But no guarantee that this will continue AGI could shift paradigms and lead to the demise of the "Age of Labor"
- May require a new social contract

IMPACT ON OUTPUT & WAGES

Rapid advances towards AGI could

- turbo-charge growth
- but depress wages

See <u>"Scenario Planning for an</u> <u>A(G)I Future</u>" (IMF F&D Magazine)



PART III: USE OF AI BY GOVERNMENT AUTHORITIES

USE OF ALIN POLICYMAKING

Enormous potential for:

• better and more efficient governance

Challenges:

- lack of training and encouragement
- ill-informed skepticism and bureaucratic impediments
- need to build safe infrastructure

Risk of inaction: government falling behind private sector Al adoption

Witnessing the productivity gains from AI from a front row seat

Semi-annual update:



Journal of Economic Literature 2023, 61(4), 1281–1317 https://doi.org/10.1257/jel.20231736

Generative AI for Economic Research: Use Cases and Implications for Economists⁺

Generative artifi analyze how larg by describing do ground research, eral instructions of these, classifyi that economists c ative AI to autom of AI systems con AI-powered cogr ciated with this p the latest capabil

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LLMs Level Up—Better, Faster, Cheaper: June 2024 Update to Section 3 of "Generative AI for Economic Research: Use Cases and Implications for Ec

Journal

December 2024 Update of

Applications of Economi

The landscape o

Generative AI for Economic Research: LLMs Learn to Collaborate and Reason

PART IV: AI AND FINANCE

FINANCE AT THE FOREFRONT

Al in Finance

• Currently receiving massive investments

Automate entire workflows

Examples in finance: trading agents, risk management agents, robo-advisors, credit risk analysis agents, loan approval systems, securitization agents, debt collection agents, scamming agents, etc.

Opportunities: productivity gains, reduced biases, better risk management **Challenges:** alignment & human oversight, including by regulators (regulatory arbitrage and manipulation at scale, ...)

FINANCIAL STABILITY IMPLICATIONS



Automating Financial Instability
first example: 1987: automated portfolio "insurance"

- Al agents are:
 - faster
 - more opaque
 - possibly (?) more uniform/correlated

REAL DISRUPTIONS IMPERILING FINANCIAL STABILITY

AGI may generate large redistributions:

- Significant labor displacement
- Sudden shifts in corporate revenues & tax revenues
- Shifts in asset prices & exchange rates

debt sustainability risks
 increased default risks among households, firms, governments

→ See also <u>"Intelligent financial system: how AI is transforming finance</u>" (BIS Working Paper No 1194, June 2024, with Aldasaro, Gambacorta, Shreeti and Stein)

PART V: POLICY RECOMMENDATIONS

POLICY RECOMMENDATIONS

- need to be approached proactively
- and transparently
- 1. Rapidly augment AI expertise within institutions
- 2. Explore AI capabilities to enhance public institutions
- 3. Establish AI procurement strategies

POLICY RECOMMENDATIONS

- 4. Modernize government data management
- 5. Enhance AI cybersecurity
- 6. Establish guidelines for AI in financial activities
- 7. Monitor labor market impacts and prepare for disruptions
- 8. Cross-border cooperation



AI POLICY PREPAREDNESS MATRIX

| | Conventional Wisdom Scenario | Intermediate AGI Scenario | Accelerated AGI Scenario | |
|-------------|---|------------------------------|-----------------------------|--|
| .ICY DLS | [should reflect national cultures, priorities, and needs] | | | |
| | | | | |

- Tool to prepare for different scenarios
- Identify policies that work across scenarios
- But preserve policy optionality

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| The Al | Policy preparedness Matri | ix Structure | | |
|---|---------------------------|------------------|----------------|--|
| | Convertes | | | |
| | <u>Scenarios</u> | | | |
| | Conventional | Intermediate AGI | Accelerated AG | |
| Delinited | Wisdom Scenario | Scenario | Scenario | |
| | | | | |
| Investment in AI enablement | | | | |
| R&D investment | | | | |
| Education | | | | |
| Infrastructure | | | | |
| Incentives (subsidies, tax breaks) | | | | |
| Governmental venture capital | | | | |
| Use of AI in government | | | | |
| Tax design and collection | | | | |
| Decision making in government | | | | |
| Government workforce enablement | | | | |
| Other economic policy tools | | | | |
| Competition policies | | | | |
| Employment incentives | | | | |
| Redistribution/social safety redesign | | | | |
| Laws, regulations and enforcement | | | | |
| Privacy and data protection | | | | |
| Bais, fairness and non-discrimination | | | | |
| Explainability and transparency | | | | |
| Accountability and liability allocation | | | | |
| Persuasion and manipulation | | | | |
| Financial stability and systemic risks | | | | |
| AML, CTF | | | | |
| Cybersecurity | | | | |

(p. 70 of HLPE report)

PERSONAL REFLECTION: CRITICAL PRIORITIES

- Preparing for rapid technological change under uncertainty
- Building policy capacity
- Preserving flexibility while avoiding harmful effects
- Ensuring widespread diffusion of AI benefits

BACKGROUND READINGS at <u>www.korinek.com</u>

Available at https://www.korinek.com/research

- <u>High-Level Panel of Experts Report to the G7</u>, Dec. 2024
- The Economics of Transformative AI, NBER Reporter, Dec. 2024.
- <u>Economic Policy Challenges for the Age of Al</u>, forthcoming, MIT Press, 2025.
 Also NBER WP
- <u>Scenario Planning for an A(G)I Future</u>, IMF Finance & Development Magazine, Dec. 2023.
- Intelligent financial system: how AI is transforming finance, BIS Working Paper, June 2024