

Artificial intelligence (AI) can precipitate and exacerbate financial crises?*



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AI can augment speculative behaviour and foster panic, more instability, especially when financial markets are not adequately regulated. AI can amplify cyber attacks.

Human judgement cannot be replaced by non-human intelligence in nontrivial aspects. Not least, because AI tools are trained on past data, that may not reflect reality in extreme circumstances. This has implications for monetary, financial stability, and macroprudential policies.

AI can lead to the destruction of many jobs. Without a considerable creation of new jobs, there will be widespread “destructive disruption”, with very serious economic and social implications, including financial disruptions.

AI needs to be regulated and the regulation and supervision of finance should be strengthened and be all encompassing.

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AI epitomizes the new industrial/technological revolution, with an anticipated huge transformative impact on economy and society at large, but surrounded by major uncertainties. Some authoritative voices argue that AI could make “machines” surpass the cognitive abilities of humans¹. AI brings about great benefits, but, also, entails major risks unless its use is carefully managed; hence, regulation of AI is in the making.

AI does not alter economic logic/rationality, nor does it eliminate competition, income and wealth disparities among individuals and groups of people, or between societies/states². What public policies aim to do is to mitigate such disparities and social tensions. Internationally, policies are carried out by specialized international financial bodies (eg: the IMF), while in the EU various stabilization mechanisms (eg: the ESM³, the ECB through specific tools) and structural and cohesion funds⁴ operate.

A big question is whether AI can prevent financial and economic crises. The almost automatic answer is no. Because AI does not change economic logic or rationality, and competition does not disappear. In other words, business/economic cycles do not vanish, whether one considers short and medium-term fluctuations in economic activity, or longer-term ones generated by investment cycles and major technological breakthroughs that induce technological cycles. AI can precipitate and exacerbate financial crises unless finance is properly regulated. The text below develops this line of reasoning.

1. The general context in a nutshell

Uncertainties abound nowadays and are linked with climate change, energy transition, pandemics, wars. As a general conjecture, one can argue that AI could help mitigate the impact of extreme events and processes, but could also entail new uncertainties and risks/threats, including dazzling military competition (cyberfare included).

Scenarios vary much in terms of the impact of AI on economy⁵; IMF estimates that ca. 40% (60% in advanced economies) of current jobs will be wiped out by AI in the future, which would further strain the social assistance capacity of governments unless new jobs are created. Could AI create new jobs at a speedy pace, empower people who lose their jobs with new skills in due time? This is an open question.

AI can make financial systems more fragile, in spite of enhancing capacity to gather, classify and process data at both micro and macro levels. Panic (herd behavior), contagion, cannot be eliminated. And AI can enhance systemic risks and favor frauds and money laundering, though AI could also help fight fraudulent behavior. AI can strengthen cyberattacks. Higher fragility could entail new rescues (with public money) of private entities, that would increase public debts.

It is not clear whether AI will raise GDP growth significantly (one finds here an echo of Robert J. Gordon’s thesis on the impact of technical change on economic growth⁶), or help keep overall economic growth rate (g) higher than (i), the interest debt payment. Future GDP growth will be influenced by the loss of the peace dividend, due to geopolitics and military threats.

¹“Cold war-style safeguards needed to avert AI Armageddon, scientists warn” (Cristina Griddle and Eleanor Olcott, Financial Times, 19 March 2024); this message echoes strong warnings by Henry Kissinger, Eric Schmidt and Daniel Huttenlocher in “The Age of AI”, London, John Murray, 2022.

² Daniel Daianu, “Can AI change economic logic?” Hotnews and Contributors, January 28, 2024.

³ The European Stability Mechanism.

⁴ Plus the NGEU (NextGenerationEU) in recent years.

⁵ See also Anton Korinek, “Scenario planning for an A(G)I future”, Finance & Development, December 2023.

⁶ Robert J. Gordon, “The Rise and Fall of American Economic Growth”, Princeton, Princeton University Press, 2016.

If more resources will be assigned to defense expenditure, this would influence resource allocation and complicate the trade-off between “guns and butter” at a time of a *cost of living crisis*. And this would happen at a time of rising public debts worldwide due to extreme events and when monetary policy rates are much higher than a few years ago. These rates will get lower in the years to come (as inflation is subdued), but are unlikely to reach the levels associated with central banks’ unconventional operations that followed the financial crisis. Public debt sustainability will amplify as a major concern.

The world gets more fragmented along geopolitical fault lines, which will likely raise production costs (*ceteris paribus*), while industrial policies (with a protectionist bent) seem to be on the rise. AI will likely be used to support such policies.

AI will likely increase *market concentration* as giant corporations have more resources to invest; market concentration will impact the financial sector, too, and enhance systemic risks.

AI may deepen social tensions, not least since many persons will lose their jobs and income inequality will grow. This could have wide political repercussions. Governments would be under pressure to increase social expenditure while they have to control overall expenditure –as the new fiscal governance framework in the EU demands. And governments may have to increase taxation to keep budget deficits under control.

2. AI can augment instability

And yet, can't AI reduce/eliminate judgment errors, improve models and algorithms so that decisions are as close to optimality as possible, leading to market stability be it asymptotically? Markets, of course, are dynamic. The question posed makes sense given that there are more or less adequate models, more or less effective algorithms that are used by market participants. This reasoning leads to the great dispute regarding the functioning of financial markets: the “efficient markets hypothesis” put forward by Eugene Fama (1965)⁷ vs. Hyman Minsky's “financial instability hypothesis” (1986⁸), the latter following a path initiated by Irving Fisher and John Maynard Keynes in the interwar period of the last century. Keynes spoke of “animal spirits” in financial markets, alluded to “multiple equilibria” in the economy, and the need for stabilization interventions⁹.

The global financial crisis that erupted in 2008 further proved that financial markets have inherent instability, that the internal drivers that move autonomous expansion and contraction of credit (financial flows) cannot be eliminated, leading to cycles of boom and bust. Here one finds the rationale for the re-imposition of financial market regulations after 2009 (following the wave of deregulation that began in the City of London in the 1980s and continued through similar measures in the USA), the introduction of macroprudential measures aimed at limiting excessive lending, financial flows, and requiring banks to hold higher capital and liquidity reserves.

Unfortunately, the non-bank financial system is still insufficiently regulated, with inconsistencies in this regard. And how much capital and liquidity reserves should be adequate remains a controversial topic – despite the fact that common sense suggests that more reserves should make the system more resilient¹⁰.

⁷ Eugene Fama, “The Behavior of Stock Market prices”, *The Journal of Business* (38), 1965.

⁸ Hyman Minsky, “Stabilizing an unstable economy”, Princeton, Princeton University Press, 1986.

⁹ John Maynard Keynes, “The General Theory of Unemployment, Interest and Money”, London, Macmillan, 1936.

¹⁰ Anat Admati and Martin Hellvig are adamant about the need to have much higher capital and reserve requirements in order to make the banking system resilient (“The Bankers’ new clothes: what’s wrong with banking and what to do about it”, Princeton, Princeton University Press, 2013). See also Admati, “Nonsense and bad rules persist in banking”, *Project Syndicate*, 8 April, 2024.

AI can amplify "herd behavior" even if new technologies, algorithms, process much more information (*big data*), and the models used by banks and investment funds to manage risks are more sophisticated. It is worth remembering that those who managed the LTCM hedge fund benefited from highly sophisticated models (two Nobel laureates worked there), but they were thrown off track by extreme events, by non-linearities. And other similar failures occurred over time.

AI cannot eliminate contagion in markets, which is a form of chain reaction, a "herd effect," and it often asks for public intervention (by the central bank) as a *lender of last resort*. This was seen in the United Kingdom in 2022 after misguided decisions by the Truss government, which affected the stability of the pensions system; it was also seen in the United States with the fall of Silicon Valley Bank and other turbulences in the banking system, which compelled the Fed to intervene through new lines of financial assistance and revision of regulations.

AI, that underpins cyberfare, can bring components of the financial sector to a standstill and cause havoc in financial markets; it could impair the operations of central banks.

3. Micro-rationality does not ensure macroeconomic stability

No matter how much we believe that AI can improve internal prudence and optimize decisions at the microeconomic level, it is worth considering that: a/ decisions cannot be put entirely on automatic pilot (and even if they were, it still wouldn't solve the issue of avoiding critical moments, crises); and b/ micro-level rationality does not ensure macro-level stability because of compounded effects leading to fluctuations in economic activity, to *panic*. Thus, one gets back to Keynes, Fisher, Minsky, etc.

The thesis of those who advocate the elimination of governments and central banks from the economy when it comes to preventing financial crises is more than heroic; it is fundamentalist and has been invalidated by history. The emergence of central banks was precisely required by the need to prevent moments of great financial stress, to halt panic. In the United States, for example, it was demanded by the main protagonists in the financial markets, including the financier J.P. Morgan. The fact that central banks can make mistakes is another story because no institution is infallible. No matter how much criticized, for example, have been quantitative easing measures (QE), without them the financial crisis would have been much deeper, and similarly one can judge what happened during the Pandemic.

On the other hand, it can be argued that, for many years --during the *Great Moderation* period with low inflation and low unemployment, central banks underestimated the exceptional nature of certain conditions (including the impact of globalization) and tolerated the creation of speculative bubbles. This is what, ironically, Alan Greenspan, the former Fed chairman, called "irrational exuberance". Robert Shiller, a Nobel laureate in economics, has dedicated many analyses to behavioral excesses in financial markets¹¹. And Greenspan himself, in congressional hearings on the causes of the financial crisis, in August 2008, noted that a wrong paradigm dominated the Fed's monetary policy; The very same Fed, which, by the way, as the issuer of the world's main reserve currency, facilitated the US government to consistently run large budget deficits.

¹¹ Robert Shiller, "Irrational Exuberance", Princeton, Princeton University Press, 2000.

The role of fiat money in economic dynamics can be discussed, especially in view that some central banks seem to have sought to prevent any recession through excessively lax monetary policies; this is a frequent reproach made by experts from the Bank for International Settlements¹². This leads to a relevant discussion about whether AI could "optimize" monetary policies. However, monetary policies depend on paradigms (the set of presuppositions), be these about the very functioning of financial markets, the role of economic agents' expectations (*rational expectations* or not), the illusion of equivalence between price stability and financial stability, the role of the non-banking financial sector, etc.

AI could assist in better figuring out what is R^* , the natural rate in the economy, an unobservable variable but that indirectly guides monetary policy conduct; similarly, regarding the "financial (in)stability real interest rate, R^{**} , which is the level of the central bank's real policy rate that could trigger financial instability (O. Akinci et.al, 2021¹³). However, it is hard to imagine a complete replacement of human judgment in monetary policy decision-making and macroprudential policy (which primarily concerns financial stability).

AI cannot eliminate the distinction between micro and macro, with theoretical and practical implications. Individual and firm-level behaviors can be rational (pursuing net gain in relation to various constraints), increasingly less subject to emotions through the use of algorithms (AI), while economic activity cannot avoid economic fluctuations, whether small or large in scale. The question is whether there is a basis for a central authority (government, central bank) to intervene in attempting to reduce significant fluctuations, stabilize economic activity, and prevent large-scale crises. If the answer is yes, then it can be discussed whether these interventions can be assisted, optimized, by AI.

And thus, one arrives at macroeconomic models and forecasts, rules and principles used by governments and central banks, by international financial organizations – by governments in formulating budgetary policies, by central banks in monetary and macroprudential policies, by international financial organizations and interstate groups as facilitators of policy coordination among states (e.g., the G20 had such a role in the collective response to the Global Financial Crisis).

Central banks have since long been given operational independence to avoid being influenced by whims and pressures from governments. The presumption is that decision-makers adhere to sound standards of policy conduct for a central bank. It is worth repeating that this does not mean central banks operate with magic tools, not least because there are many nontrivial uncertainties in monetary theory and practice, and often the sagacity and experience of decision-makers come into play, can make a difference.

The emergence of independent fiscal councils (national IFIs) in OECD countries, in the EU (especially after the sovereign debt crisis), aims to ensure that principles of fiscal prudence are adhered to by governments, thereby promoting the sustainability of public debts. However, from the standpoint of a country's financial situation, private indebtedness is no less important than public indebtedness. Balance of payments crises prove this thoroughly. Consider also that in the US, in EU countries, etc., public budgets have taken over private debts (of banks) to save financial systems – apart from unconventional operations by central banks. Furthermore, fiscal rules are not God given; they must be adapted according to circumstances. And, in addition, in the EU (the euro area in particular) fiscal rules are heavily impacted in their design and effectiveness by key missing institutional and stability related tools –such as a *safe asset*, a collective insurance scheme (EDIS), and, not least, a joint fiscal capacity.

¹² See for instance Jaime Caruana: "Stepping out of the shadows of the crisis: three transitions for the world economy", speech at the BIS annual meeting, Basel, 29 June, 2014. Claudio Borio has numerous papers in this respect.

¹³ O. Akinci et.al "The Financial (In)Stability Real Interest Rate, R^{**} ", FRB New York, staff report No. 946, 2020 (revised 2023).

4. Excessive financialization increases fragility and instability

Attempting to avoid any recession in the economy invites excesses and imbalances (not only through moral hazard) and leads to larger debts, both public and private. This is an empirically verifiable observation.

Therefore, regulations and public policies should not destroy the market entry and exit mechanism, which gives vitality to the economy and stimulates innovation. The budget constraints (*hard budget constraints*, in Janos Kornai's meaning¹⁴) should differentiate between good and less good, bad companies, by rewarding superior performance and vice versa. However, regulations and public policies have the role of mitigating behavioral excesses that can lead to overall economic breakdown, of preventing/diminishing power abuses and fraudulent behavior in markets.

At the same time, public policies must strike a rational compromise between the need for economic balance (equilibrium) and the goals of fairness and inclusive development (which involves broadly based education, "equal opportunities"). A lesson in good practice in this regard is provided by Scandinavian countries (consider their public debts as a proportion of GDP, which are much below the EU average; or their public spending on education and healthcare).

Fair capitalism and social insurance instruments, significant social expenditures, do not necessarily imply ever-rising public and private debts. To prevent debts from overwhelming economic systems, sober management of public policies is needed, opposition to rampant populism and demagoguery, resistance to pressure from interest groups. Visionary thinking, understanding of immediate challenges and long-term ones is also necessary. Courageous leaders who speak the truth are needed as well.

Excessive financialization has exacerbated economic instability, speculative behavior, and economic inequalities; it has increased the fragility of economic systems and has favored major financial crises, which have forced governments and central banks to step in. All this has led to socialization of losses, massive frustration and resentment among ordinary citizens.

Lower instability in economies would require a reconfiguration of financial systems, de-financialization and simplification; the increasing complexity of financial systems does not foster economic stability. The development of non-bank financial entities that offer banking services must be taken into account.

A good, more stable finance and economy requires also "good citizens"; incentives cannot obliterate the need for citizens with good, ethical conduct, as Samuel Bowles argues¹⁵. Bowles aligns his reasoning with Adam Smith (*Theory of Moral Sentiments*), Kenneth Arrow, Amartya Sen, who all emphasized the importance of morality, ethics, in economic life. Nonetheless, economic motivations ultimately define human behavior; the struggle for economic survival is visible at every level of human life.

¹⁴ Janos Kornai, "The Economics of Shortage", Amsterdam, North Holland, 1980.

¹⁵ Samuel Bowles, *The Moral Economy*, New Haven, Yale University Press, 2016.

AI cannot prevent financial crises. AI can augment speculative behaviour and foster panic, more instability, especially if finance is not properly regulated¹⁶. AI can strengthen cyberfare. AI can precipitate and exacerbate financial crises. Therefore, AI needs to be regulated and the regulation of finance should be strengthened and all-encompassing.

The bottom line is that human judgement cannot be replaced by non-human intelligence in nontrivial aspects. Not least because, as Anselm Kuester argues, AI tools are trained on past data, that may not reflect reality in extreme events.¹⁷ This has implications for monetary, financial stability, and macroprudential policies.

AI could lead to the destruction of many jobs, that can strain economic systems to the utmost. Without a considerable, compensatory creation of new jobs, there will be very serious economic and social implications including financial tremors – not "creative destruction" as Joseph Schumpeter would say¹⁸. Not to mention that, as noted by Nouriel Roubini (Project Syndicate, February 5, this year), stupidity in the world is overwhelming and could easily nullify the benefits of AI. ■

¹⁶ Carlota Perez remarks that "...if AI's development unfolds in a system where financial markets remain unregulated and decoupled from the real economy, it is unlikely to move us in a more environmentally, socially, or politically sustainable direction" ("What is AI's Place in History?", Project Syndicate, 11 March 2024).

¹⁷ Cited by Jeff Kearns, "AI reverberations across finance", Finance & Development, Dec. 2023, p.41.

¹⁸ See also Daren Acemoglu, "Are we ready for AI creative destruction", Project Syndicate, 9 April, 2024.

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