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Can artificial intelligence (AI) prevent financial crises?

In another text, I argued that 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/states (*Can AI change economic logic?*, Hotnews and Contributors, January 28, 2024). What public policies aim to do is to mitigate such disparities and derived social tensions within economies. Internationally, interventions are carried out by specialized international financial bodies such as the IMF, while in the EU, various stabilization mechanisms and structural and cohesion funds operate.

A related question is whether AI can prevent financial or 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 we consider short and medium-term fluctuations in economic activity or longer-term ones generated by investment cycles and major technological breakthroughs that induce technological cycles.

I

And yet, can't AI reduce/eliminate judgment errors, improve models and algorithms so that decisions are as close to full optimality as possible, leading to market stability even if asymptotically? Markets, of course, are dynamic. This question makes sense when we consider that there are more or less adequate models, more or less effective algorithms used by market participants. This leads us to the great dispute regarding the interpretation of financial markets' functioning: the "efficient markets hypothesis" put forward by Eugene Fama (1965)

vs. Hyman Minsky's "financial instability hypothesis" (*Stabilizing an unstable economy*, 1986), 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, of "multiple equilibria" in the economy, and the need for stabilization interventions.

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 we find 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 robust.

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

AI can indeed facilitate fraud, although it could also aid authorities in detecting them.

AI cannot eliminate contagion in markets, which is a form of chain reaction, a "herd effect", and it often necessitates state 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 pension system; it was also seen in the United States with the fall of Silicon Valley Bank and other turbulence in the banking system, which compelled the Fed to intervene through new lines of financial assistance and revision of regulations.

II

No matter how much we would like to believe that AI can improve internal prudence and optimize decisions at the microeconomic level, it is worth considering that: a/ decisions cannot be entirely put on autopilot (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, panic. Thus, we return to Minsky, Keynes, Fisher etc.

The thesis of those who advocate the elimination of the state (and central banks) from the economy to prevent financial crises is more than heroic; it is fundamentalist and has been invalidated by history. The emergence of central banks was precisely demanded 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 J.P. Morgan. The fact that central banks can make mistakes is another story because no institution is infallible. However, no matter how much criticized, for example, quantitative easing measures (QE), without them, the financial crisis would have been much more acute, similarly 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), large 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, also a Nobel laureate in economics, has dedicated many analyses to behavioural excesses in financial markets. And Greenspan himself, in congressional hearings on the causes of the financial crisis, noted that a wrong paradigm dominated the Fed's monetary policy, which, by the way, as the issuer of the world's main reserve currency, allowed the US government to consistently run large budget deficits.

The role of fiat money in economic dynamics can be discussed, especially considering that some central banks seem to have sought to prevent any recession through excessively lax monetary policies – as mentioned in the previous paragraph; this is a frequent reproach made by the BIS (Bank for International Settlements) to some central banks. This leads us to a relevant discussion about

whether AI could “optimize” monetary policies. However, monetary policies depend on paradigms (the set of assumptions), be it 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 also assist in better figuring out what is R*, the natural rate in the economy, an unobservable variable but that indirectly guides the 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, 2021). 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).

III

AI cannot eliminate the distinction between micro and macro, with theoretical and practical implications. Individual and firm-level behaviours can be rational (pursuing net gain in relation to various constraints, including ecological ones), 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 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 by AI.

And thus, we arrive 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., G20 had such a role in the collective response to the global financial crisis).

Central banks have long been granted 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, it should be noted that from the standpoint of a country's financial situation, private indebtedness is no less important than public indebtedness. Balance of payments crises thoroughly prove this. Consider also that in the US, in EU countries etc., public budgets have taken over private debts (of banks) to save financial systems – beyond unconventional operations by central banks. Furthermore, fiscal rules are not God given; they must be adapted according to circumstances.

IV

It can be inferred that 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 of countries (*hard budget constraints*, in Janos Kornai's meaning) should differentiate between good and less good, bad companies in the markets, rewarding superior performance and vice versa. However, regulations and public policies have the role of mitigating behavioural excesses that can lead to overall economic breakdown, preventing abuses of power and fraudulent behaviour in markets.

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

Civilized 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 demagogy, resistance to pressure from interest groups. Visionary thinking, understanding of immediate challenges and long-term ones are also necessary. Courageous leaders who speak the truth are needed as well.

It must also be emphasized that financialization has exacerbated economic instability, speculative behaviour, and economic inequalities; it has favoured major financial crises, which have required interventions by states and central banks, leading to the socialization of losses. A lesser instability in economies would require a reconfiguration of financial systems, a de-financialization, and simplification; the increasing complexity of financial systems does not foster economic stability. It is not by chance that the idea of "narrow banking" is sometimes brought up (here, the development of non-bank financial entities that offer banking services must be examined).

A good, more stable economy requires also "good citizens"; incentives cannot obliterate the need for citizens with good conduct (Samuel Bowles, *The Moral Economy*, Yale University Press, 2016). 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. However, economic motivations ultimately define human behaviour; the struggle for economic survival is visible at every level of human life.

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AI cannot prevent financial (and economic) crises, but it could help mitigate their negative effects. Nonetheless, as some anticipate, AI could lead to the destruction of more than 40% of current jobs worldwide. Without a considerable, compensatory creation of new jobs, we would witness widespread destruction with very serious economic and social implications, including financial ones – not the "creative destruction" as Joseph Schumpeter would say. Not to mention that, as noted by Nouriel Roubini (Project Syndicate, February 5, 2024), stupidity in the world is overwhelming and could easily nullify the benefits of AI.