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Central banks in the 21st Century

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Central banks in the 21st Century

by Luiz Awazu Pereira da Silva[1]

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Let me thank you for the kind invitation to share my thoughts on Central Banking in the 21st Century, in this public lecture at the prestigious Tokyo University. It is a privilege and honour to speak to you. In my address I would like to think together about challenges for central banks in the coming years and how they might address them.

Before going any further, why should anyone be interested in Central Banks? For sure, they became recently like "rock stars" and well-known as our "ultimate defence" against catastrophic recessions, the Global Financial Crisis, COVID-19, the Cavalry that comes when all is lost, "the only game in town". But more technically speaking because they are the agent implementing monetary policy in our societies, a key component of what is called macroeconomic stabilization policies aiming at ensuring low and stable inflation (price stability) and reducing the likelihood of banking crises (financial stability). The other component is fiscal policy under the responsibility of governments. In this second decade of the 21st century, central banks, and central bankers face six major challenges and need to reflect carefully on how the new challenges could affect their role: (1) the re-emergence of inflation, in the short and medium-long term; (2) dealing with financial exuberance; (3) climate change; (4) inequality; (5) digital financial innovation and artificial intelligence; and (6) independence, mandate and accountability.

Challenge 1: Rising inflation in the short and medium-long term

The first part of the challenge, in the short-term, relates to the re-emergence of inflation. After the Great Moderation, the Global Financial Crisis (GFC) and Covid-19 prompted an unprecedented series of measures of monetary and fiscal stimulus. During a decade-long post GFC period, many advanced economies experienced a Japan-like puzzle with rather

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fears of deflation and the under-shooting of the inflation target[2]. But then inflation returned mid-2021, starting to rise after the faster-than-expected post-pandemic recovery, as supply chains were stretched. Price increases accelerated further after Russia invaded Ukraine, with food and energy prices driving inflation higher. Many advanced economies experienced headline inflation rates not seen in decades. And even if by now, May 2024, headline inflation has fallen, core inflation is proving to be more resilient than expected. With hindsight, and when core inflation is resilient, it is easier to be more "hawkish".

In the middle of 2021, the debate started about how transitory was this inflation episode, and therefore the timing and intensity for policy reaction. Surprised by the 2021-22 surge in inflation, the central banks of advanced countries initially put more weight on an interpretation of the inflation surge as essentially a series of "supply shocks" starting with energy and food prices. But then other factors on the demand side materialized: the presence of Covid-related savings that could validate price increases, the tightness in the labour market especially in the service sector accommodated by higher wages[3]. All this made inflation more difficult to forecast and repeated under-estimation mistakes entailed some loss of credibility. Despite no clear de-anchoring of inflation expectations, inflation was indeed more resilient than expected. Therefore, central banks had to engage into a much faster and aggressive tightening cycle. And despite that, the "last mile" of the convergence path is proving to be more complex, with each monthly inflation data point creating debate among central banks' watchers and market participants. As we are still far from their 2% inflation target, it seems difficult to declare victory for this tightening cycle. Therefore, communication has evolved and been more cautious with a re-pricing of fewer cuts underway: this "last mile" has become a challenging balancing act especially regarding the communication of the stance being adopted and the way forward.

Unlike their peers, facing these challenges, emerging market economies (EMEs) have weathered the recent crisis much better than before. Traditionally, EMEs have experienced greater vulnerability to monetary tightening in advanced economies. Risk aversion associated with weaker institutions and macro-financial imbalances made them more vulnerable to shocks, including spillovers from advanced economies. Therefore, in the past, tightening in advanced economies has triggered sudden stops in capital inflows and large capital outflows, resulting in higher FX volatility. This time, it was different. EME central banks started to raise interest rates ahead of their peers in advanced economies, confirming that they have indeed strengthened their policy frameworks. Stronger macroeconomic

[2] Under the textbook manual of inflation targeting regime followed by most central banks, fighting inflation requires monetary policy rates to be set at a level that ensures convergence to a defined and pre-announced target, anchoring of inflation expectations, in a specified timeframe while inflicting minimal damage on activity, employment and financial stability. But the GFC, like the experience of Japan, required central banks to maintain policy rates at very low levels, sometimes negative and make use of unconventional policies such as massive purchases of assets to try to boost inflation up towards target.

[3] Bernanke B. and O. Blanchard (2024)

fundamentals and more robust corporate and government balance sheets, along with a more stable banking sector, have underpinned their traditional central bank response. Thanks to these stronger fundamentals, the FX impact of advanced economy tightening was more muted than in the past.

So, in the short-term, it looks like the monetary policy stance will require high rates for longer, accompanied by a more "hawkish" communication, perhaps diminishing the odds for a "soft-landing" in advanced economies.

But there is a second part of this inflation challenge, the medium-long-term, about the future of inflation. There are new challenges already in sight, various "structural" changes that might affect inflation in the future. What are these? Essentially changes in factor markets and the re-pricing of risks that could result in cost-push factors, whether one-offs or perhaps extended over a longer period of time.

- The fading of the disinflationary effect of integrating into the global economy a large number of new workers from China-India-Russia-Eastern Europe; that contributed to reducing substantially global production costs of goods and services; global growth with low wages and low production costs, which had contributed to the decades of success of the 2% inflation targeting regimes, is coming to an end, together major new demographic trends[4]; on top of that the current rise in protectionism and higher import tariffs will not help desinflation.

- The reshaping of global trade due to geopolitical tensions including the war in Europe; the "re-shoring" or "friend-shoring" of many productive activities, motivated by geopolitical insecurity, wars and localized conflicts, is also creating higher costs of operating global value supply chains; one can add to that, changes in transport routes, etc; all this increases global production costs.

- The higher wages due to tightness in labour markets, reflected in higher post-Covid reservation wages, accepted given unfilled vacancies; even without the strengthening of traditional trade unionism, many wage demands have been met in certain service sectors; ironically, the widespread political resistance in many advanced economies to greater immigration of unskilled labour will not contribute to disinflation either.

- The costs for greening our economies, in terms of both technological investments and higher production costs due to regulation and taxes on activities with a high

[4] Goodhart and Pradhan (2020).

carbon footprint; the beginning of the transition to carbon neutrality or Net Zero[5], is hopefully happening but it comes with the costs of using new renewable energy technologies, which for now are still more expensive (although their costs are falling and converging towards the ones of fossil-fuel based energy); this comes also with greater regulatory pressure in the real economy (in Europe and the USA in relation to standards for electric cars making them mandatory from 2030-35) but also for the financial system (e.g. , more stringent disclosure standards for exposure to climate risks, whether coming from Basel rules or IFRS standards).

So, this is the medium-term, but are these factors already starting to have an effect and should central banks begin to incorporate this new narrative into their "guidance"? We will come back to that.

Challenge 2: Financial irrational exuberance and instability

The success of the Great Moderation that stabilized in the 1990s and 2000s the price of goods and services was not accompanied by the end of financial crises. This is not new, we know that the success of monetary policy regime such as inflation targeting in achieving low and stable inflation was not able to do the same for many asset prices in financial markets, quite the contrary. We also know the inherent propensity in finance for "manias", "bubbles" and "panics" as portrayed by Charles Kindleberger[6]. Fernand Braudel taught us the role of bankers and finance in putting in place "structures", economic and social, such as organized behaviours, attitudes, and conventions, as well as physical structures and infrastructures. That led to financial bubbles since the 17th century, after long-term financial cycles in Europe with a periodic rotation of financial centres: from Venice in 14-15th century to Antwerp and Genoa in the 16th century, then Amsterdam through 18th century and finally London (and England) in 19th century. And even in the past history of finance, with relatively rudimentary financial products (just plain vanilla loans and bonds) financial crises occurred. This was all the more common when the housing market was the underlying asset that allowed wealth effects to translate into large macroeconomic and financial vulnerabilities. Financial cycles of booms and busts are well-known, despite regulatory improvements, they seem also to be related to fading memories of past crises and herd behavior.

Indeed, Carmen Reinhart and Ken Rogoff[7] show that throughout history, developed and developing countries alike have experienced a wide range of financial crises. Each time, politicians backed by "experts" have claimed that, "this time is different"—arguing that the

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5 "Net Zero" refers to implementing environmental policies that ensure a balance between the amount of greenhouse gases (GHGs) emitted into the atmosphere and the amount removed from it. It comprises various initiatives and efforts to mitigate climate change, as reducing and offsetting emissions is critical to limiting global temperature rise. More on that below.

6 Kindleberger (1978)

7 Reinhart and Rogoff (2009)

old rules of valuation no longer apply and that the new situation was different from those that led to past disasters like government defaults, banking panics, and inflationary spikes, until the subprime debacle. Indeed, the late 20th century brought a dramatic illustration that price stability is not a guarantee for financial stability with the Global Financial Crisis, as described by Alan Blinder[8]. And now the 21st century will possibly exacerbate further financial "irrational exuberance" that is still a perennial challenge that all central banks have to deal with, a term coined by Alan Greenspan referring to the unsustainable and overly optimistic expectations that drive asset prices to levels that are not supported by fundamentals. The phrase has since become synonymous with speculative bubbles in financial markets in Robert Shiller's words[9]. "Irrational exuberance" is likely to be now exacerbated by new financial technology, decentralized finance (DeFi), the widespread usage of algorithms for financial decisions, crypto-assets and Artificial Intelligence (AI), as we shall see next.

Challenge 3: Climate change

The third challenge is presented by climate change and it is now increasingly present in our daily lives. Climate change impacts central banks' core mandates because it affects both price and financial stability. Indeed, climate change represents a new type of systemic risk, which we have labelled a Green Swan.[10] Unlike rare tail events, such as the Black Swans of the Global Financial Crisis, Green Swans are doomed to happen with certainty if not addressed by appropriate policies.

Climate change presents two main kinds of risk. Physical risks stem directly from the effects of more frequent extreme weather such as more frequent floods, heatwaves, rising sea levels or lower crop yields. Transition risks stem from the transition to a net zero economy, which can produce changes in asset valuation due to new consumer preferences, new regulation related to exposure to climate-related risks and the consequent migration to new technologies.

As there is no "silver bullet" to address these risks, central banks need to coordinate their actions with other stakeholders such as governments, other public agencies, the private sector and other actors in society, locally and globally.

Coordination is all the more relevant because climate change is a global negative externality that forces our societies as a whole to confront complex challenges. On the one hand, climate risks threaten macroeconomic stabilisation. On the other hand, the financing

8 Blinder (2013)

9 Shiller (2000)

10 Bolton et al (2020).

requirements of investing in the innovations needed to foster a net zero economy call for the mobilisation of very large public and private financial resources.

Moving towards a net zero economy is a typically Schumpeterian creative-destruction process that has large macroeconomic implications. Our best scientific experts estimate that large investments in green technologies must be made quickly, with corresponding financing needs. The financing mix is likely to involve several sources: taxes (including on carbon), and government and private debt. While the economic impact will depend on the transition speed and the precise financing mix, it is likely that climate-related investments will affect macro-financial conditions in a substantial way. As alluded to above, these large investments may increase the neutral rate in the economy, and they might also require novel forms of private-public burden-sharing. Last but not least, climate risk-related financial regulation and supervision will be necessary to enable the financial system to adequately map its climate risk exposures as well as channel these large investments effectively – along with more stringent regulation in the real economy to ensure the path to net zero in our production and consumption processes.

In responding to climate change, central banks have already joined forces in the Network for Greening the Financial System (NGFS). Their analysis is reflected in a number of important published reports: the construction of climate scenarios to help financial sectors to work from a common set of hypotheses; guidelines for identifying climate risks; discussions on the implications of climate change for monetary policy; solutions for financing the transition with blended finance etc.

Climate-related action poses obvious challenges for central banks, some strictly related to their traditional price and financial stability mandates and some when the radical uncertainty that Green Swans bring is considered, such as the cost-push factors related to the effects of global warming on agriculture, migration and labour, and the financing of the transition to net zero. Finally, climate change has distributional consequences: it affects primarily poor countries and poor people in rich countries. It is likely that we will have to deal with the severe distributional consequences of global warming, especially if we do not manage to address it in time. That sense of urgency and the impact on the poor need always to be remembered in order to strengthen and calibrate our policy responses. That brings us to the next challenge.

Challenge 4: Inequality

Inequality within countries represents the fourth challenge. Inequality has declined between countries as the world has become more integrated economically with “globalization” and the spreading of technological progress. In the immediate post-World War II period, there was a domestic effort to reduce inequality with the deployment of more effective social policies in both advanced economies and EMEs, following Keynes and Beveridge ideas that led to social welfare institutions. The distance between poor and rich countries has shrunk

tremendously. However, later in the 1980s, inequality has increased within countries, in part due to job losses due to the relocation of manufacturing to developing countries, technological progress and the reduction of compensatory transfer policies: that led to some socio-political fragmentation with "winners" and "losers" in many developed countries. This rising within-country inequality has compounded many other questions about fairness, equity and socio-political stability. But, perhaps surprisingly, it also matters for monetary policy.[11]

Research conducted at the Bank for International Settlements (BIS) shows that monetary policy is less effective in more unequal societies. In very simple terms, as rich households tend to save more and their consumption is less sensitive to their income, more unequal societies may respond less to monetary policy stimulus. Furthermore, an adverse feedback loop can arise, because recessions tend to increase inequality. More unequal societies respond less to expansionary monetary policy and experience slower recoveries from recessions. This, in turn, keeps them more unequal. We call this "inequality hysteresis".

Central banks need to understand the impact of inequality on monetary policy effectiveness. In particular, this might imply exploring new types of modelling approach in fulfilling their mandates, featuring heterogeneous agents, which some central banks such as the Fed and the ECB have started doing. In addition, they can take into account the way in which fiscal policies are addressing today's income inequalities, through the progressiveness of taxation and the quality of spending on public goods such as education and health, while structural reforms and policies can help to reduce future inequality, including through fostering innovative financial technology for social inclusion. That brings me to the next challenge.

Challenge 5: Digital financial innovation, algos and Artificial intelligence

Digital financial innovation represents the fifth challenge. Technological innovations such as big data, fast payment systems and distributed ledger technology (DLT) are gaining ground – in both the financial sector and the real economy. This is visible in digital payments, in online lending and insurance, and in applications of DLT in crypto and decentralised finance (DeFi).

These technologies are helping to increase access to finance and are playing a key role in fostering financial inclusion in many countries. The technological advances in digital finance can dramatically reduce the cost of processing information and expand the set of available contracts – including in (social) insurance. This could, in principle, help to smooth consumption and enhance welfare, allowing more people to escape poverty traps.

[11] Pereira da Silva et al (2022).

Digital financial innovation thus offers the potential for a brighter future. If we develop common interoperable platforms and safeguard data privacy, we can strengthen global links and improve resource allocation. Furthermore, we can offer financial tools for the previously underserviced and poorer segments of our societies. We can also strengthen trust in the financial system through new, more widely available and higher-quality financial products. In this way, digital innovation can contribute to a more efficient and more stable global financial system.

Yet, there is a flipside to this. Technologies can also allow concentration and market power and trigger new types of discrimination. To assess their net impact, one must look at all aspects of the existing technological transformation and be guided by more data and evidence. What matters is how digital technologies are applied, and in particular what role public policy will play.

Grasping this potential requires the public and private sectors to work together. The development of digital financial products, like all technological advances, is a double-edged sword. Used responsibly, new technologies can offer increased welfare for all, but they can also result in new forms of discrimination.[12] That is because digital innovation can also drive a fragmentation of the financial world. Differing systems can divide different user groups and countries from each other. Globally, in the context of increased geopolitical tensions, digital innovation can foster segmentation and disintegration along geopolitical fault lines. Locally, if abused, digital technologies can give rise to more sophisticated, and thereby less perceived, discrimination against specific minority groups. They can also pose new challenges to global and local financial stability by amplifying asset price volatility, contagion, exuberance and, for example, accelerating deposit runs simply using smartphone aps. At the extreme, these trends could result in a more volatile financial system, eroding people's trust in money.

Thus, central bank actions matter in digital innovation: they can steer digital innovation towards a more efficient and more stable financial system, with new instruments for supervision and more data points. Central banks can innovate and consider implementing faster payments systems with new digital tools, such as central bank digital currencies. At the same time, they can build on their track record as trusted safekeepers of price and financial stability. Conferring the credibility of a central bank on new digital tools offers a new form of public good. However, the exponential development of crypto-assets without a proper regulatory framework is just one among many signals of potential dramatic changes where a multiplicity of hitherto human decision-making processes can be automated. If this occurs on a large scale, too many processes will escape from our human institutional settings, which provide necessary checks and balances that have so far ensured that our ethical values

[12] Pereira da Silva and Frost (2023).

always play a critical role when deciding on how, when and to whom new technologies spread. Yuval Harari has warned us against losing these safeguards[13].

If at some point in the future, algorithms were to determine most if not all of our societies' decisions, this will certainly go beyond mechanically applying some form of a Taylor rule to monetary policy decisions. The recent leapfrogs in Artificial intelligence (AI) promises jumps in productivity, greatly expanding the set of routine tasks that can be automated. Productivity jumps seem particularly relevant for key public goods such as health care and education. Over the past decades, healthcare and education costs have increased relative to the price of physical goods, because increasing demand for these public goods were not matched by a commensurate increase in productivity. AI promises exactly such an increase in health care and education productivity: just imagine AI nurses analysing symptoms more accurately than human doctors can. Or imagine AI teaching assistants promptly answering questions and explaining concepts better than professors can. Thus, AI could radically change the nature of health care and education, thus perhaps lowering costs and further democratising access. But there is a but…

Indeed, progress in AI technology also has potentially challenging aspects. Given big data and the scalability of computer power, there is a realistic chance for non-linear developments, that is, large jumps in AI capabilities. AI with untrammelled capabilities could play an unknown role if not properly supervised. Tireless AI surveillance could monitor human activities, controlling and reducing the critical thinking by humans that is the basis for innovation and epistemological revolutions. Even in a more benevolent scenario, we might lose our control over an expanding set of economic, social and political decision-making. In addition, AI might replace millions of semi-skilled and even skilled jobs, at a pace that is not commensurate with the creation of new activities for humans. Thus, the risk of rising skilled unemployment in many sectors is not negligible, putting our social welfare systems under further strain. This concern for AI's distributional consequences for employment is expressed by Daron Acemoglu and Simon Johnson.[14]

In addition, AI development might represent a new, non-biological form of intelligence, raising ethical and practical questions about a potential new life form. We understand humans to have human rights but how should we treat AI fairly?

Thus, AI poses unprecedented challenges for all of us. For central banks, one can see increased powers to monitor price and financial stability with the help of AI. At the same time, there is a possibility that AI might take over key decisions on price and financial stability and challenge what has been so far the "art" of central banking: a reliance on many models

[13] Harari (2018).

[14] Acemoglu and Johnson (2023).

to analyse data, project scenarios and make forecasts, but always in the context of a decision-making process where the balancing act of assessing the balance of risks was conducted by humans, in a fairly sophisticated collegial way, with a well-tested institutional setup, and under the scrutiny of society and its representatives[15].

Conclusion:
To conclude, where do central banks stand and what to make of these challenges? As you may remember Yogi Berra's quotation, "*It's tough to make predictions, especially about the future.*"

Central banks in this early 21st century are facing major challenges: (1) the harder "last mile" for convergence of inflation to target but also the medium-long-term uncertainties for price stability; (2) financial irrational exuberance again compounded by new crypto-assets; (3) climate change; (4) inequality; (5) digital innovation and artificial intelligence. In other words, and in the next decades of the 21st century, most likely, central banks will face new inflationary pressures from "greening the economy" and demands for higher wages, new forms of financial bubbles coming from the digital revolution, political pressure to be again "the only game in town", perhaps provide "helicopter money" to patch socio-political tensions in societies and the unpleasant arithmetic of high levels of debt accumulated during recent crises. The "future" is already with us in many aspects: the challenges that central banks will most likely have to face, in a nutshell, all affect the current parameters that guide monetary policymaking or the "stars" usually associated with the operational concept of a neutral level for the interest rate and also unemployment. A quick review of these:

- We are perhaps at the beginning of a <u>period of rising risk premia</u>. The fiscal responses to the GFC and Covid-19 has left us with high debt levels. For almost all countries (Japan is the exception) there are now significantly higher rollover costs of debt after the recent increases in interest rates. The golden opportunity moment where real GDP growth rates were above real interest rates on debt has passed. In addition, advanced countries are having to face well-known demographic challenges, struggling to maintain the quality of their social spending but worse, somehow compelled to increase military spending and at the same time making efforts towards decarbonizing their economies.

- We are also perhaps at the beginning of <u>a period of a rising "neutral rate"</u> or r* for monetary policy. We might have reached the end of a "savings glut" and we are witnessing a pressure from growing demand for more investments, including for the transition to Net Zero. There is also increased productivity with new IT technologies

[15] Blinder (1998)

and the use of Artificial Intelligence (AI) that are radically changing the production and consumption processes of various types of goods and services. Increased productivity improves investment prospects, profitability and tends to increase r*. It could be a way out of secular stagnation.

- We are also perhaps at the beginning of a period of new financial excesses (cryptocurrency bubbles, less regulated non-bank financial activities etc.). Many new financial markets risks are not covered by the current regulatory framework of Basel III. Their spreading is exacerbated by the growth of the non-bank financing channel, fintechs, Bigtechs, new fast payment technologies. Those new features have already materialized in the volatility of the value of crypto-assets, the rise of new non-bank, less regulated, financial institutions and liquidity/solvency crises (of the type of the Sillicon Valley Bank run).

- Finally, we are perhaps at the beginning of a period of new equilibria in labour markets. New working arrangements might change preferences between employment and leisure but technology can also bring a destructive effect on jobs (including semi-skilled and qualified white-collar ones). Some sectors will witness wage gains but not all and there could be a possible need to increase safety nets, transitional social transfers, etc. even in the difficult fiscal position and debt levels (described above). These are complex changes at play with impacts on our social and political institutional set-ups and the way we see the "non-accelerating inflation natural rate of unemployment".

The answers and the policy responses by central banks to these challenges will have to break free from the various situations where their action became "dominated" by constraints outside their reach[16], fiscal, financial or even "political economy" dominance. In other words, with rising inflation risks, rising r*, higher debt, higher investment needs for Net Zero, pressure for higher wages, higher social demands for a new Social Welfare State, central banks need to clearly invoke Tinbergen's separation principle and define their responsibilities and those of other agents in the macroeconomy.

[16] The obvious one is fiscal dominance, when fiscal policy dominates or influences the actions of its central bank, when high levels of public debt and/or significant budget deficits and political forces pressures central bank to finance deficits or keep interest rates artificially low to reduce the cost of borrowing and roll over debt more easily. It usually ends with higher risk premia and higher inflation. The second is financial dominance where the priorities and stability of the financial sector significantly influence the actions of policymakers, including central banks and governments. This might result from regulatory capture or excessive economic dependence on the financial sector. The pressure in this case comes from private forces for keeping interest rates low for longer than necessary to avoid valuation losses, limit financial costs and roll over debt more easily. And the third that could be labelled "political dominance" where the political economy around fiscal policy prevents its timely deployment during crises and/or is delayed by political factors, putting central banks under pressure to be "the only game in town" and deliver quasi-fiscal policy stimulus for example in the form of unprecedented expansionary balance sheet policies without necessarily the capacity to targeting that fiscal authorities possess.

For central banks and monetary policy, they operate inflation targeting regimes. They need to focus precisely on how they will make the regime perform well (better than during the Great Moderation?) in this new environment.

- Inflation target. At some point in the transition to Net Zero, central banks will have to carefully analyse their forecasts of inflation and then possibly consider their temporary but new inflation target, higher than the current 2%. Under the current inflation targeting regime in monetary policy, this will correspond to the recognition of an impact of a succession of supply and demand shocks for a period of time (the opposite phenomena of the disinflationary role played by China during the Great Moderation). When and for how long is difficult to say but in any event, coordination and agreement is crucial between all major G7 central banks. The adoption of a common temporary new inflation target, needs to start in an agreed upon specific year (naturally after stabilizing the current inflation surge) and the new x% target should be discussed, calibrated and announced simultaneously by all G7 central banks[17]. Regarding the rising neutral rate r*, the communication of the monetary policy target and stance will also need coordination: if this is done adequately, for a well-defined period of time, it will help to anchor inflation expectations, strengthen credibility, stabilize financial markets volatility and avoid excessive contractionary policy. At the same time, with a higher neutral rate and a higher target rate, the nominal policy rate will have to be higher. But hopefully, the transition period, if accompanied by appropriate monetary and fiscal policies, can bring a stabilization and then a disinflationary trend with an increase in potential output, higher productivity, cost reductions, etc. In other words, the communication could be something like: (a) we will converge towards the 2% target and win the battle of the "last mile"; and (b) only by then, "after the victory", we will define the policy stance entering these new global macro-financial challenges with new cost-push factors that could alter the growth path, the natural rates of interest and unemployment, and perhaps a new pattern for inflation, at least for a while.

- Macro-Financial Policy Framework. To ensure price stability and restrain digital financial exuberance, central banks can move toward an enhanced version of inflation targeting, an Integrated Inflation Targeting frameworks (IIT) that uses in a complementary but decisive manner monetary policy and other macroprudential tolls such as financial regulation, FX interventions and capital flows management (CFM). In particular, this is what many EME central banks have been doing, learning

[17] This higher inflation target for G7 central banks should not be seen to provide more room for maneuver for them when facing the zero lower bound; it is rather to reflect structural (albeit transitory) cost changes and setting the right expectations for monetary policy reaction. It also reflects a choice between two risks: leaving the current target at 2% and facing credibility losses for erring systematically above the target (after a long period coping with the opposite situation) or recognizing the effects of cost-push factors, rising the target temporarily but facing the risks of de-anchoring inflation expectations at a higher level.

their lessons from past crises as they were subject to the spillovers of policies from their major peers in advanced economies.[18]

- This type of framework had been used mostly by many EME central banks and in bank-dependent economies. But upon reflexion, shouldn't this approach be considered explicitly also for more advanced open economies? Small for sure but even larger advanced economies. It is possible that a combination of a tighter monetary policy stance with a tougher macro-prudential regulation (eg., on the housing market) would have been capable of reducing the risks that led us to the Global Financial Crisis in 2008. Is might be also the case today, when we see the risks of bubbles in the non-bank financial sector, in the various developments of DeFi, crypto-assets, etc that more financial regulation, disclosure and adequate monetary policy could reduce these new systemic risks.

Now and importantly, for governments, fiscal authorities and fiscal policy, they operate discretionary regimes even if many have explicit or implicit sustainability rules and automatic stabilizers. Here and ironically, there is increasingly a convergence between the constraints faced by EMEs and advanced economies. Both need to focus just on how they will operate fiscal policy, debt and taxation in this new environment. Both need to address higher debt levels, higher investment needs for Net Zero, pressure for higher wages, higher social demands for a new Social Welfare State. Given the high levels of debt, it is unlikely that macro policies going forward can sweep the issue of some fiscal consolidation under the rug (even Japan, with still a lower cost of debt service and significant assets, is concerned). Sailing through this new uncertain future with high debt and higher service costs is not going to be solved by keeping low interest rate for a long period of time. The temptation of fiscal dominance will be quickly priced by markets, risk premia will rise, inflation expectations will jump. The differentiation of advanced and EMEs as distinct asset classes is diminishing as illustrated recently by the United Kingdom's risks repricing by markets for inconsistent policies, an episode that had many similarities with what many EMEs have experienced in many instances. In addition, most EMEs facing crises have faced periodic limitations to run counter-cyclical fiscal policies due to market sensitivity via higher risk premia to debt levels and exchange rate depreciation. Therefore, it is important to reflect (and whenever possible

[18] Agénor and Pereira da Silva (2019 and 2024). An IIT can be defined as a flexible IT regime in which the central bank's mandate includes explicitly a financial stability objective. It uses an augmented policy rate to react also to some equilibrium metric of financial activity and limit exuberance and excessive credit. For that, central banks use, in a complementary way, their policy rate and macro-prudential policies that need to be calibrated jointly because they both affect the cost of lending in the economy, to achieve macroeconomic and financial stability. Moreover, central banks can use FX interventions to smooth volatility, address systemic risk in financial system but never to set a level for the exchange rate, since a floating regime should remain the first line of defense and policy.

implement) some form of a sovereign wealth fund and/or a fiscal stabilization fund in order to increase the policy room for manoeuvre during crises[19].

So indeed, many economic and socio-political issues mentioned above are not a central banks' business, they are mainly a political issue, to be addressed with fiscal policy. But obviously, the outcomes affect central banks' objectives, and have to be factored in the way they will operate monetary policy. The desirable policy-mix is one where there is a rational burden sharing between stabilization policies and there is in addition the possibility to undertake public policies that favour sustainable and shared growth. It is unfortunate (but unavoidable) that policy-makers are confronted with the need for provide public support for the transition to Net Zero (ie., fiscal spending on R&D, green investment, etc) and at the same time set credible limits to more debt and more taxes. It is even more unfortunate (but also unavoidable) that this is happening in a context of socio-political polarization in many countries (and in the World) that makes more difficult to reach consensus on global policies, on multilateral cooperation, on possible trade-offs or different sequencing of measures that could ensure aiming at these objectives with a consistent set of policy instruments, globally and locally.

At least at a country level, most likely, given the now limited space for new massive debt accumulation, fiscal policy solutions would have to try to achieve at the same time debt sustainability, financing (some of) the green transition (obviously with a much more massive participation from the private sector) and creating more fairness in income distribution. Accordingly, this could logically imply choosing a combination of more progressive taxation (eg., of wealth and high income) and innovative green finance, a selective set of new debt instruments, for example "green bonds". The political economy aspect of this new fiscal policy is important to address the problems of rising inequality mentioned above. Taxation will need to be more progressive and redistributive to produce more social consensus in its implementation and thus prevent "political volatility". And a positive collateral effect is that such a progressive fiscal policy with stronger automatic stabilizers can remove some of the burden that has been put on monetary policy in the past and engineer a more effective policy-mix.

Separating monetary and fiscal policies while improving their effectiveness as a mix is an old idea and practice that is more necessary today after boundaries became blurred. Given the challenges listed above the best course here is indeed to ensure clarity in the division of tasks between fiscal and monetary policy but also to make both work to address these challenges. It still brings inevitably questions about the institutional set-up in which central

[19] Most EMEs have increased significantly their levels of international reserves in that same spirit of self-insurance and building counter-cyclical capacity for periods of market stress. This has allowed them to smooth excessive volatility of their exchange rates via FX interventions while keeping a floating (but managed) exchange rate regime, under their IT monetary policy regime. De facto, as stated above, it is an Integrated Inflation Targeting regime.

banks have been successful in the 20th century: their independence but also their accountability to elected authorities and also society. The more central banks can keep their technical expertise and neutrality while contributing to incorporate the new objectives of societies, the more they will demonstrate that it is worth having unelected experts informing the general public and giving sound policy directions on the two objectives of price and financial stability. Last but not least, to the extent that society provides new explicit mandates for central banks, it would certainly facilitate clarity in the communication of their actions. Given their capacity to have dual mandates (price and activity) and even to be responsible for financial stability, it is also possible to have new hierarchical objectives where central banks can look more explicitly into climate change, income heterogeneity and the vast arrays of consequences of the digital revolution.

Can this future policy-mix be successful? The combined effects of these challenges are yet hard to grasp, precisely because the uncertain interaction between decisions taken across different policy areas. The way forward is perhaps not to despair and to use the traditional wisdom of Tinbergen's separation principle. Central banks will have to make clear that their function has limits: they are impacted by other policies but they should contribute in the coordination process to address the challenges listed above. However, central banks alone cannot respond to deep-rooted structural issues such as the "greening" our economies, rising inequality, lower productivity, declining growth trends, etc. All these issues ultimately require constructing policy frameworks that reflect the new demands for a balanced social contract that encompasses macroeconomic stability, environmental sustainability and fairness and equality in our societies, with defined objectives and instruments, having the aim of best serving the common good[20].

Thank you.

[20] Tirole (2017)

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