Simple Lessons for Macro Policymakers from Embracing Complexity

William White[1]

"It is worse than a crime. It is a mistake."

Joseph Fouche

"We have gotten into a terrible muddle. We have blundered in the operations of a delicate machine, the workings of which we do not understand"

John Maynard Keynes

The grave problems now facing the global economy have been building up over many decades. In large part they are the by product of well intentioned but mistaken macroeconomic policies, themselves based on mistaken assumptions about the nature of the global economy. A philosopher would say policymakers have made a fundamental ontological error. Changing those underlying beliefs, and thus avoiding the disastrous effects of "still more of the same" macroeconomic policies, is the biggest challenge now faced by policymakers.

The analytical framework used by policymakers assumes that the economy can be adequately represented by linear models that are essentially simple and static. Moreover, the economy is assumed to tend rather mechanistically towards an "equilibrium" which has properties the policymakers want – like full employment. The economy is therefore understandable and easily controllable. Really bad outcomes are ruled out by assumption.

Unfortunately, this framework is fundamentally mistaken, as events over the last decade have shown. The economy is actually a complex, adaptive system (CAS) which is constantly evolving, never in equilibrium and has highly non-linear properties. Fortunately, CAS are ubiquitous in both nature and society, and how best to manage them has been well been studied by many disciplines. Still more fortunately, such systems share many basic characteristics. This communality implies that insights from other disciplines might be speedily applied to

[1] Forthcoming in "New Approaches to Economic Challenges: The Financial System" OECD, Paris.

macroeconomic policies as well. Ironically, the conceptual embrace of complexity leads to at least ten lessons for policymakers that are actually quite simple.

Lesson 1: **Policymakers' multiple objectives make trade-offs inevitable.** CAS break down on a regular basis, determined by Power Laws, so policy must always trade off efficiency against sustainability and system resilience. Macroeconomic polices must also take note of their implications for the distribution of income and wealth. Such considerations affect the transmission mechanism of macro policies and have important spillover effects into even more complex social and political systems.

Lesson 2: **Policymakers can affect structure, and structure matters.** While a CAS will have its own evolutionary dynamic, policy induced structural changes can make it easier to achieve desired objectives. It is well known that structural reforms can increase static efficiency. It seems less well known that buffers, redundancy and modularity can increase resilience. Unnecessary complexity should be stripped away.

Lesson 3: **Policymakers should minimax not maximize**. Our understanding of CAS will always be incomplete. Thus, optimisation is beyond our powers. Rather, since systemic breakdowns can have extremely bad outcomes, policy should focus more heavily on trying to avoid such outcomes. The use of highly experimental policies (and new products) should be constrained by the "do no harm" principle which guides both medical doctors and drug administrations.

Lesson 4: **Policymakers should act more symmetrically**. CAS are all path dependent and therefore "where you are" conditions "where you can go". Stocks of debt built up over time make the economy increasingly fragile in all states of nature, both inflationary and deflationary. To avoid such buildups, both monetary and fiscal policies should lean against upturns as strongly as they lean against downturns. Private sector debt exposures should be further limited by revoking interest deductibility for tax purposes as well as share buybacks.

Lesson 5: **Policymakers should expect the unexpected**. Because CAS are "adaptive", policymakers are always in danger of fighting the last war. Worse, their own policies often encourage changes (regulatory evasion and moral hazard) that lead to this outcome. "Whack a mole" is not a strategy.

Lesson 6: **Policymakers should focus on systemic risks more than "triggers".** In a highly stressed CAS, almost anything could be the trigger for a crisis. It is far more important to develop indicators of growing risks to systemic stability. That said, new financial products often "trigger" broader problems.

Lesson 7: **Policymakers should be guided by multiple indicators.** In a CAS, many things can go wrong. The belief that CPI "price stability" is sufficient to ensure macroeconomic stability is a false belief. Similarly, "financial stability" (the stability of the financial sector) is also insufficient since problems (like rising corporate debt or household debt) can arise outside of the financial system.

Lesson 8: **Policymakers cannot forecast.** In CAS, the future is essentially unknowable. While such systems can remain stable for long periods, a prediction that they will continue to do so is simply unwarranted extrapolation. Instead of decimal point forecasts, it would be better to provide alternative scenarios based on an assessment of emerging threats to systemic stability. This would also serve to remind people that radical uncertainty is a central characteristic of CAS. This implies the need for much larger buffers than are implied by traditional risk assessment procedures.

Lesson 9: **Policymakers should be prepared for breakdowns.** Since crises are inevitable in CAS, policymakers should prepare beforehand. "War games" should be played regularly, recognizing that crises can start and unfold in myriad ways. Memoranda of Understanding between different policymakers should be negotiated and agreed. Legislation to ensure orderly insolvencies (for corporates, households and financial institutions) needs to be enacted. Since crises can also vary in myriad ways, it is important that the authorities have the flexibility required to respond adequately.

Lesson 10: **No policymaker is an island**. By definition, CAS are defined by their interdependencies. All national policy makers must therefore formulate their policies with a view to the effects on other national policymakers and their responses. Such considerations evidently limit the "independence" of central banks and of national regulatory agencies. Moreover, since the interdependencies are increasingly international, this raises questions about the viability of policies directed purely to national objectives. Embracing complexity requires a review of the existing International Monetary (Non) System.

Economists are fond of saying “It takes a model to replace a model”. We now have such a model. The economy is a complex, adaptive system and should be treated as such. The ten practical lessons for policymakers, described above, are simple but revolutionary. That is precisely why they should be adopted. We need a paradigm shift to get off our current disastrous path. If we continue to pursue, relentlessly, the impeccable logic of an argument which is based on false assumptions, it will be worse than a crime. It will be a mistake.