# Simple Policy Lessons from Embracing "Complexity"

**by William R. White[1]**

The dominant school of economic thought, prior to the crisis, essentially modelled the national economy (DSGE models) as a totally understandable and changeless machine. Moreover, the machine almost always operated at its optimal speed, churning out outputs in an almost totally predicable (linear) way, under the close control of its (policy) operators. While the sudden and unexpected onslaught of the current crisis, to say nothing of its unexpected depth and duration, might have been expected to have put paid to this false belief, in practice it has not. Nevertheless, the crisis has significantly increased interest in another viewpoint. Rather than being a machine, the economy should instead be viewed as a complex adaptive system, like a forest, with massive interdependencies among its parts and the potential for highly nonlinear outcomes. Such systems evolve in a path dependent way and there is no equilibrium to return to. There are in fact many such systems in both nature and society; traffic patterns, movements of crowds, the spread of crime and diseases, social networks, urban development and many more. Moreover, their properties have been well studied and a number of common features stand out. Economic policymakers could learn a great deal from these interdisciplinary studies. Four points are essential.

First, all complex systems fail regularly; that is, they fall into crisis. Moreover, the literature suggests that the distribution of outcomes is commonly determined by a Power Law. Big crises occur infrequently while smaller ones are more frequent. A look at economic history, which has become more fashionable after decades of neglect, indicates that the same patterns apply. For example, there were big crises in 1825, 1873 and 1929, as well as smaller ones more recently in the Nordic countries, Japan and South East Asia. The policy lesson to be drawn is that, if crises are indeed inevitable, then we must have ex ante mechanisms in place for managing them. Unfortunately, this was not the case when the global crisis erupted in 2007 and when the Eurozone crisis erupted in 2010.

Second, the trigger for a crisis is irrelevant. It could be anything, perhaps even of trivial importance in itself. It is the system that is unstable. For example, the current global crisis began in 2006 in the subprime sector of the US mortgage market. Governor Bernanke of the Federal Reserve originally estimated that the losses would not exceed 50 billion dollars and they would not extend beyond the subprime market. Today, eight years later and still counting, the crisis has cost many trillions and has gone global. It seems totally implausible that this was "contagion". Similarly, how could difficulties in tiny Greece in 2010 have had such far reaching and lasting implications for the whole Eurozone? The global crisis was in fact an accident waiting to happen, as indeed was the crisis within the Eurozone. The lesson to be drawn is that policy makers must focus more on interdependencies and systemic risks. If the timing and triggers for crises are impossible to predict, it remains feasible to identify signs of potential instability building up and to react to them. In particular, economic and financial systems tend to instability as credit and debt levels build up, either to high levels or very quickly. Both are dangerous developments and commonly precede steep economic downturns.

[1] Chair of the OECD Economic and Development Review Committee (EDRC)

© OECD 2015

Third, complex systems can result in very large economic losses much more frequently than a Normal distribution would suggest. Moreover, large economic crisis often lead to social and political instability. The lesson to be drawn is that policymakers should focus more on avoiding really bad outcomes than on optimizing good ones. We simply do not have the knowledge to do policy optimisation, as Hayek emphasized in his Nobel Prize lecture entitled “The pretence of knowledge”. In contrast, policymakers have pulled out all the stops to resist little downturns over the course of the last few decades. In this way, they helped create the problem of debt overhang that we still face today. Indeed, the global ratio of (non-financial) debt to GDP was substantially higher in 2014 than it was in 2007.

Fourth, looking at economic and financial crises throughout history, they exhibit many similarities but also many differences. As Mark Twain suggested, history never repeats itself but it does seem to rhyme. In part this is due to adaptive human behaviour, both in markets and on the part of regulators, in response to previous crises. While excessive credit growth might be common to most crises, both the source of the credit (banks vs non-banks) and the character of the borrowers (governments, corporations and households) might well be different. Note too that such crises have occurred under a variety of regulatory and exchange rate regimes. Moreover, prized stability in one area today (say payment systems) does not rule out that area being the trigger for instability tomorrow. Changes in economic structure or behaviour can all too easily transform todays “truth” into tomorrow’s “false belief”. The lesson to be drawn is that policymakers need eternal vigilance and, indeed, institutional structures that are capable of responding to changed circumstances. Do not fight the last war.

It is ironic that the intellectual embrace of complexity by economic policymakers should lead to such simple policy lessons. Had they been put into practice before the current crisis, a lot of economic, social and political damage might have been avoided. As Keynes rightly said “The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood”. Nor is the hour too late to embrace these ideas now. The recognition that the pursuit of ultra-easy monetary policies could well have undesirable and unexpected consequences, in our complex and adaptive economy, might lead to a greater focus on alternative policies to manage and resolve the crisis. Absent such policies, the current crisis could easily deepen in magnitude rather than dissipate smoothly over time. This is an outcome very much to be avoided, but it will take a paradigm shift for this to happen.

© OECD 2015