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INTRODUCTION:

COMPLEXITY AND DECISION MAKING IN CONDITIONS OF UNCERTAINTY

29 Sep, 15.00-16.30, Salle XII

Background paper by Prof. Dr. Lex Hoogduin: Complexity, Uncertainty and Economic Policy

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Societies and economies are complex systems (Arthur 2015, Beinhocker 2007, Easley and Kleinberg 2010, Mitchell 2009, Waldorp 1992). Theories used to inform economic policies are predominantly neglecting complexity. They for example make the assumption of representative agents.

Economic policy models also assume that the future is risky rather than uncertain. That allows for the application of the probability calculus and a whole series of other techniques based on it.

The difference between risk and uncertainty can be traced back to Knight (1921) and Keynes (1921, 1936 and 1937). In situations of risk, all potential outcomes of a policy can be known. This is not the case in situations of uncertainty (see also Hoogduin 1987, 1991, King 2016 and Shackle 1955). Human beings, policy makers included, cannot escape having to take their decisions and having to act facing an uncertain future. The argument is one of logic. A human being cannot know now what will be discovered in the future. Future discoveries may however impact and shape the consequences of his current decisions and actions. Therefore, he is unable to come up with an exhaustive list of potential outcomes of a policy decision or action.

Properly taking into account the complexity of the economy and the uncertainty of the future implies a paradigm shift in economics. That paradigm needs not be developed from scratch. It builds on modern complexity science (see above), neo-Austrian economics (in particular Hayek 1949, 1967, 1978 and 2014 and von Mises 2006 and 2012), the above mentioned work of Keynes and Knight and certain strands of cognitive psychology (e.g. Kahneman 2011). There is no room here to elaborate on the theory and the claim that it entails a paradigm shift. Rather, I will discuss the implications for economic policy that follow from this paradigm.

This starts with the recognition that the future cannot be predicted in detail. We should be modest about what can be achieved with economic policy. This is the “modesty principle”.

Economic policy cannot deliver specific targets for economic growth, the income distribution, inflation, the increase of the average temperature in four decades from now, etc. Economic policy makers would be wise to stop pretending that they can deliver what it can be know they cannot. This insight implies that many current policies better be discontinued. To mention just one example: inflation targeting by central banks does not pass the modesty test.

This principle also implies refraining from detailed economic forecasts as basis for policy making and execution. Policies should not be made on the assumption that we know the value of certain variables which we cannot know. An example here is the income multiplier in relation to changes in fiscal policy. The modesty principle also flashes red for risk based regulation and supervision.

What economic policy can do is contribute to the formation and evolution of a fit economic order, avoid doing harm to such an order, what I would call the “do no harm principle” and be as little as possible a source of uncertainty for private economic agents. Order is a central concept in the alternative paradigm, replacing the (dis)equilibrium concept in mainstream economics.

An order is the set of possible general outcomes (patterns, like growth, inflation, cyclicity, etc.) emerging from purposefully acting and interacting individuals on the basis of a set of rules in a wide sense (laws, ethics, conventions, etc.), together called a regime. Economics can analyse the connection between changes in regime and changes in economic order. Economic policy can influence the economic order through changing the regime.

However, this knowledge is not certain. There is always the potential for surprises (positive and negative; opportunities and threats) and unintended consequences. Policy can therefore not be designed first and then just be executed as designed. Policy making and execution have to evolve in a process of constant monitoring and adaptation. This would also allow for evolutionary change. An economic order that is not allowed to evolve may lose its fitness and may suddenly collapse or enter a crisis (see Scheffer 2009 for critical transitions in society). This mechanism may have played a role in the Great Moderation leading up to the financial crisis of 2007/2008 and in the crisis of fully funded pension systems. It is a warning against basing sustainability policies on precise temperature targets decades in the unknowable future.

Fitness of an order has five dimensions. The first one is an order in which agents are acting like described in the previous paragraph. In addition to that the fitness is determined by the alertness (the ability to detect mistakes and opportunities), resilience (the ability to survive and recover from mistakes and negative surprises), adaptive capacity (the ability to adjust) and creative capacity (the ability to imagine and shape the future) of its agents. Policies may be directed at facilitating economic agents to improve these capacities, although constrained by the “modesty” and “do no harm” principles.

Note that the concept of stability does not appear in the definition of fitness. This marks a difference with current policies which put much emphasis on stability.

In its own actions the government should be transparent and predictable. The best way to do that seems to be to follow simple rules. For example, in fiscal policy: balance the budget, perhaps with clearly defined limited room for automatic stabilizers to work.

The alternative paradigm places some methods and analytical techniques in the spot light, like narrative techniques (e.g. Kurtz 2014), network analysis (e.g. Easley and Kleinberg), evolutionary logic (Karner 2014), qualitative scenario thinking (e.g. Wilkinson and Kupers 2014), non-linear dynamics (e.g. Scheffer 2009), historical analysis (development of complex systems is path dependent) and (reverse) stress testing.

Economic policies along these lines help people to live their lives as they wish. They are good policies for good lives.

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