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The biology of economic policy

The COVID-19 pandemic has been an unexpected event. From a "biological" perspective, it may have been the catalyst for an important step in the evolution of economic policy.

When I was in high school, I didn't like biology much. As a good pupil studying classics, I loved the humanities, Greek especially, and I was also passionate about mathematics and physics, but biology never aroused great interest in me.

To my surprise, things changed during my university years, more precisely in the final year of my studies of economics. As I was preparing to write my dissertation, I read some articles by Robert Axelrod about the complexity of cooperative behavior and, over the years, I continued to be interested in the subject. In one of his works, the author makes a comparison with biology and explains how the sexual reproduction that takes place in many species, especially complex and large organisms, can appear extremely inefficient: two individuals of different sex are needed for reproduction, neither females nor males can do it alone. From an economic perspective, this is a curious problem. Nature is always pointed out as an example of efficiency. Therefore, there must be a valid reason to explain why large and more complex organisms reproduce in this way rather than through asexual reproduction, which generates identical replicas of a single organism.

The hypothesis that Axelrod has tested and verified with computer simulations, carried out along with the well-known evolutionary biologist William Hamilton, is that this process helps protect bigger and more complex organisms from the attacks of parasites. Parasites are much smaller and capable of reproducing very quickly. They can thus evolve faster than their hosts, defeating their immune system. Combining genes from two different parents introduces a greater variability in the offspring and in the population of a species, which can therefore better respond to and resist the attacks of parasites, defending the organism and allowing the species to survive over time.

Fast forward in time to the years following the global financial crisis (GFC) of 2008 and the COVID-19 pandemic of 2020. In 2008, the great and complex organism of the world economy, starting from the financial system that metaphorically might represent its cardiovascular system, suffered a serious shock, which weakened it. Not only that, but the nature of the shock was very different from any experienced during the previous eight decades. The immune system of the global economy was caught off guard and took some time to develop a defense.

The economic policy initiatives and announcements in the first phase of the GFC and in subsequent years (both right and wrong, because we cannot forget former European Central Bank President Jean-Claude Trichet's interest rates hike in 2011) mostly came from monetary policy. Central banks usually react in an expansionary way during a slowdown or a recession, and the fact that the crisis had affected the financial sector, in my opinion, may even have contributed to push to a larger-than-usual extent the monetary policy authorities' level and feelings of involvement and accountability.

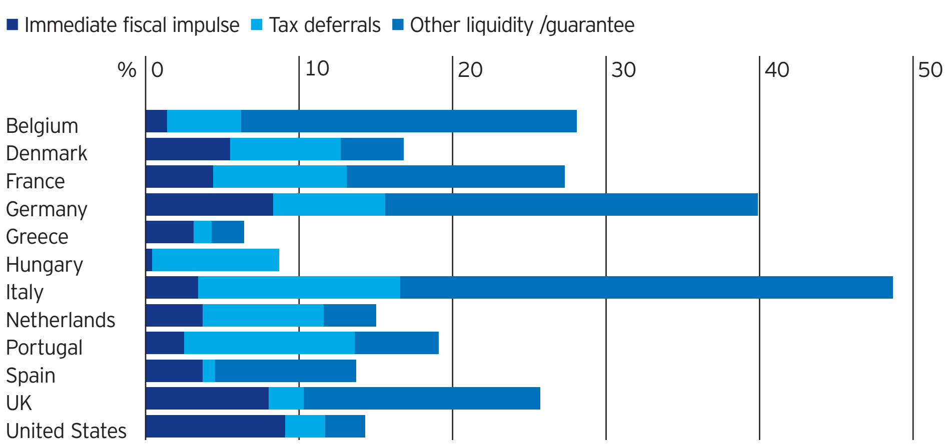
Since the beginning of the non-conventional monetary expansion of the Federal Reserve in 2008, and especially since former European Central Bank President Mario Draghi's famous "whatever it takes" speech in July 2012, monetary policy has remained very similar – essentially identical – to itself, under two key respects: the lower and lower reduction of reference interest rates, which even reached deeply negative levels in several countries, and the ampler and ampler purchases of securities of various types. The variations mainly concerned the magnitude of interventions and the kind of securities, from government bonds to equity ETFs, depending on the country, that central banks decided to purchase. Not an actual cloning, but a rapid replication of individuals (i.e., interventions and announcements) consistently very similar to each other, generation after generation.

To tell the truth, monetary policy authorities, in particular Draghi's ECB, immediately invited the political world to work on the fiscal and on the structural reforms side, both for individual countries and for the eurozone in general. As we have already mentioned in the T con Zero notes #3 and #30, these calls have gone unheeded for years. Central banks, in particular the ECB, have long remained alone to face the uncertainties and adversities of the economy, wherever and whenever they manifested themselves, and to seek to ensure the stability of the financial system by replicating their monetary policy interventions with some tweaks along the way.

Over the years, politicians have been reluctant to follow the call to action, both when the suggestion, rightly or wrongly, was to be restrictive, and when they were asked for a fiscal expansion. Structural reforms, after some meaningful steps towards a banking union in Europe, have almost always been an off-limits matter. In practice, in our biological metaphor, fiscal policy has reproduced itself autonomously, too, with little changes only, if any, for years.

It took the attack of a virus, with the COVID-19 pandemic, to convince the decision-makers of individual countries, in many areas of the world, and even supranational entities such as the European Union, to act intensely and in a coordinated manner when possible on the lever of fiscal policy. Over the recent months, large-scale – honestly huge-scale by historical standards – fiscal policy packages have been announced. If we add up the theoretical value of expenditure promises, of cuts and delays in tax payments, of public money earmarked for potential investments and of guarantees for private – as well as public – companies' loans, fiscal stimulus can easily reach double-digit percentages of the GDP of important countries. Thanks to the think-tank Bruegel, we can see an updated picture of the breakdown of fiscal stimulus announcements and actions in some countries.

Chart 1: Composition of fiscal policy interventions announced in various countries, 2020



Source: Bruegel.org, "The fiscal response to the economic fallout from the coronavirus", 5 August 2020, https://www.bruegel.org/publications/datasets/covid-national-dataset/

This situation is objectively new. I mean, not just the pandemic, or even the economic policy response. For the world as a whole, as for many countries individually, the juggling of simultaneously expansive fiscal and monetary policy on a massive scale is a combination that has not been seen for many years. Financial markets' reaction has been very positive. The response of the real economy can obviously be assessed only over longer time horizons, of at least some quarters.

The fact remains that the reference scenario may have changed. The reproduction of economic policy has changed: from an autonomous and fast reproduction, to a process that is inevitably slower, but capable of generating a greater number of possible combinations and outcomes.

As in all evolutionary processes, it is likely that we will go through one or more trial and error stages in order to understand which combinations and characteristics of fiscal and monetary policy interventions may be most suitable for different situations. Where monetary policy alone had begun to show its limits, the possibility of breeding into economic policy the gene pools of two parents — one fiscal and one monetary — potentially provides the world with tools to face more challenges, even unforeseen ones, thanks to the flexibility to generate more "mutations" to respond as offspring. If only because of this merely biological aspect, in a context where uncertainty about the economy, markets, politics and global health could continue, this evolutionary change in economic policy seems a positive to me.

Notes and references

T con Zero #3, "I would prefer not to", June 2017

T con Zero #30, Central Banks: trampoline or jet engine?, September 2019

Bruegel.org, The fiscal response to the economic fallout from the coronavirus, 5 August 2020

Robert Axelrod, William D. Hamilton, The Evolution of Cooperation, in Science, New Series, Vol. 211, No. 4489. (27 March 1981), pp. 1390-1396.

William D. Hamilton, Robert Axelrod, Reiko Tanese, Sexual Reprodution as an adaptation to resist parasites (A review), Proceedings of the National Academy of Science of the United States of America, Vol. 87, no. 9 (May 1990), pp. 3566-3573.

Robert Axelrod, The Complexity of Cooperation: Agent-based models of competition and collaboration, Princeton University Press, 1997, chapter 1: Evolving new strategies - The Evolution of strategies in the iterated prisoner's dilemma.

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