"UNCERTAINTY SPILLOVERS FOR MARKETS AND POLICY"
AN EVENT WITH PROF L.P.HANSEN, NOBEL PRIZE IN ECONOMIC SCIENCES

Written by Gioele Giussani

"We live in a world surrounded by uncertainty".
With this key phrase, Professor Lars Peter Hansen, Professor of Economics at the University of Chicago and recipient of the 2008 Nobel Memorial Prize in Economic Sciences, starts his latest working paper *Uncertainty Spillovers for Markets and Policy*.
The Economic Society for Bocconi Students had the honor to host the Nobel Laureate on 11th May and to hear from him about his latest piece of research. Professor Marinacci, AXA-Bocconi Chair in Risk, moderated the event.

Every day, agents have to take decisions based on their forecasts about the future: they face uncertainty. And, to deal with this uncertainty in a rational way, they adopt models. But are they conscious of the model they are embracing and of the other models that they are consequently forgoing?
Very often, decision makers end up putting all of their faith in one quantitative model. Though, this overconfident "quantitative storytelling", as Hansen calls it, may be dangerous and not to be trusted: quoting St. Thomas Aquinas, "hominem unius libri timeo".

Future variables are subject to random impulses: this is risk. As the early member of the Chicago School Frank Knight explained in his *Risk, Uncertainty and Profit*, though, risk is when agents know in advance the potential outcomes and their odds. However, agents do not only face risk, but also ambiguity, i.e. the uncertainty about which model to use to forecast variables relevant to their decision making. In fact, different models have contrasting implications. "How much weight should be assigned to the alternative methods?", the Professor asks himself. If you consider also that each model might be a misspecification since it is an abstraction from the real economic world, the situation becomes even more problematic.

The role of ambiguity is very important in asset pricing theory.
A section of the paper is indeed dedicated to how investors confront uncertainty about the future levels of macroeconomic growth.
Usually, investors fear the persistence of economic growth in bad times and are instead afraid of the lack of persistence in good times.
If we run a regression between predicted changes in the growth rate and the growth rate itself, we will find that we do not see a perfectly linear and differentiable downward sloping regression line. For the afore-mentioned behavior of investors, if we adjust for ambiguity aversion and misspecification, the curve is going to be flatter to the left of the origin, steeper to the right, with a kink at 0.

Another section is devoted to how uncertainty impacts the economics of climate change.
Emissions are bad for the health of the planet and entail a social cost: the SCC (social cost of carbon). Though, due to the presence of a demand for emissions (as emissions bring also economic opportunities), the market fails to fully catch the SCC. A well designed Pigouvian taxation on emission could correct this negative externality… But how much should this tax be? This is particularly difficult to say, as the value of the SCC is a "social cash flow that reflects the adverse impact of climate change on economic and social outcomes and that depends on the interacting uncertainty about economic damages". Uncertainty again. Uncertainty that hinders the prediction of future variables.

Economic agents and policy makers want to come up with a single lens to use for decision making. Instead, this paper "addresses the need to balance off the implications of multiple stories in decision making", as the Professor writes in the conclusion of his essay. Or, at least, what must be brought home from this lecture is the consciousness of "the sensitivity of quantitative conclusions to model ambiguity and potential misspecification".

Link to the Working Paper:
https://bfi.uchicago.edu/wp-content/uploads/BFI_WP_2020121.pdf