

Seminar on Climate Risk Assessment in the Financial Sector

Climate change and biodiversity loss risks to the financial system

Opening Speech

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- Welcome to the Seminar on Climate Risk Assessment in the Financial Sector that CEMLA co-organizes with the FSI and the Banco Central do Brasil. It is always a pleasure to collaborate with one of our Member Central Banks.
- Allow me to thank both co-organizers, who have contributed to form a comprehensive program. I would also like to thank Serafín Martínez Jaramillo from CEMLA, who worked tirelessly on this endeavor.
- On this occasion, the FSI, as well as the Banco Central do Brasil, attracted some of the speakers. Moreover, Stefano Battiston, one of the academic speakers, has collaborated with Serafín on a stress testing framework for environmental related transition risks, which will be published in the Journal of Financial Stability.
- CEMLA sees climate change and biodiversity loss risks as extremely important topics for our Membership, and thus we will continue promoting initiatives in the coming years jointly with international financial institutions and/or central banks, ranging from conferences like the one that took place in 2019 “*Climate Change and its Impact in the Financial System*”, to more focused seminars like this one and, possibly, future research projects.

Climate change and central banks

- The climate is changing, and human activity is the most likely driver, as has been documented in reports produced by the Intergovernmental Panel on Climate Change (IPCC).¹
- The recent occurrence of extreme weather events might be a direct consequence of climate change. For various reasons, not least of them geographical ones, many countries in Latin America and most, if not all in the Caribbean, are very exposed to their adverse effects.
- However, according to data from the World Bank, LAC countries were responsible in 2016 for only 5.1% of the world’s CO2 emissions, less than a fifth and almost a third of the biggest and

¹ See IPCC (2014) and IPCC (2018) for example.

the second biggest CO₂ emitting countries individually. Furthermore, these figures do not account for the history of emissions.

- During his participation at the aforementioned 2019 conference, Dr. José Sarukhán stressed that climate change and the loss of biodiversity are self-reinforcing phenomena. Moreover, less diverse ecosystems are less resilient to exogenous harmful events, particularly in productive areas that are vital for human and other species' food supplies. Also, new interactions among species due to the loss of their habitats create channels for the transmission of previously unseen diseases.
- The level of our understanding of the economics of climate change is, I believe, rather good, and is certainly increasing. More generally speaking, and certainly applicable to monetary policy, the **key challenge is the implementation of policies to address it.**
- In effect, as has been discussed elsewhere, a fundamental problem is that it pertains the provision of a global public good, namely, a stable climate. There is, of course, the challenge of reducing the emission of pollutants at a sufficiently swift pace. This implies significant costs to societies, most of which are associated with benefits that will be enjoyed mostly by future generations. There is also present the urgent need to coordinate, between individuals, institutions and countries.
- **Indeed, the problem is colossal!!** In particular, addressing climate change involves a significant transfer of wealth, from the current generation to future ones. Thus, there is a clear need for altruism in the present generation. A fundamental tension is that different generations consider distinct horizons when assessing their decisions. In effect, an infant today has no say or voting rights, although she or he will most probably be substantially affected in the future if we do not address climate change. This is akin to the problem of policy makers' planning horizon compared to the socially optimal one.
- Now, an important question for all of us in this seminar is: why should central banks and financial authorities be concerned about climate change and biodiversity loss? The first and foremost important answer surely is that environmental risks represent a formidable threat to most human activities, and the economic ones are not the exception. But, more specifically for central banks, in one way or another climate change is *already* impacting central banking, and this will increase exponentially in the coming years.
- For the purpose of this intervention, I will briefly touch upon three areas where I believe climate change has already started to have an impact on central banks, and will do so in an accelerated way going forth.
- **First, we have monetary policy.** The problems of climate change and the policies to combat it are, for the most part, well-recognized. For instance, emissions trading systems (or ETSs) and the associated taxes can be effective measures for the reduction of emissions.
- Having said that, if continuously rising prices from carbon related activities induce a central bank to repeatedly raise interest rates to slow inflation down, this will ultimately affect economic activity adversely, at least for possibly several years. While doing so could lower welfare in the

short and medium-runs, in the long-run *not doing so* would be even more problematic. I am convinced that central banks will have to act assertively to mitigate the adverse impact on inflation of policies designed to combat climate change. Of course, if the latter are not implemented, then we will soon find ourselves in a whole different ballgame.

- And therein lies a dramatic challenge for central banks. As the need for actions and efforts to combat climate change will probably have to be sustained for years, if not decades to come (that is, until the transition to renewable energies is complete), this could introduce adverse biases for both economic growth and inflation in the foreseeable future, that is, a bias for both, lower growth *and* higher inflation. Indeed, central banks will possibly be confronting a lose/lose situation. Acting might damage its reputation, but doing nothing would be even worse.
- I think that the outlook for central banks is even grimmer than previously thought. For instance, there seems to be a consensus that natural interest rates in Advanced Economies have been falling for several decades. Many attribute this to the presence of a secular stagnation. Indeed, market expectations are for interest rates to remain low for a long time. Clearly, this would give some room for central banks to increase rates in the future, particularly in Advanced Economies.
- However, I am not sure how much comfort we should draw from this. Even if natural rates were to remain low for long, inflation expectations may very well rise in the case of continued carbon taxation or related policies to deter the use of fossil fuels. Thus, nominal interest rates, as well as term premia, will probably rise considerably. And, to top it all off, real rates will probably also have to rise, as a tighter monetary policy stance will be needed to address increasing inflation expectations.
- **The second front, where central banks will have to deal with climate change has to do with asset valuation and the operability of monetary policy.** Evidently, climate change has not been fully reflected in asset prices and financial risk management. The financial sector must, sooner rather than later, dramatically reduce its exposures to the carbon intensive sectors of the economy. *Central banks can play a crucial role in setting the right incentives for this to take place.* Indeed, central banks should encourage financial institutions to be cognizant of environmental risks by modifying their loans portfolios, collateral and financial assets classifications to account for these risks.
- Of course, technological advances on green technologies can positively contribute, but relying (or wishfully thinking) for the appropriate speed of these endogenous, market determined advances, without the presence of the adequate incentives for them to take place, might very well turn out to be insufficient to effectively address climate change on a timely basis.
- In that respect, setting certain “green” criteria or standards for the assets with which day to day central banking operations are made can be very relevant. These entail several ones such as for the assets that can be acquired through asset purchase programs, or for the assets that can be used as collateral or otherwise by financial institutions to have access to the different facilities or windows of a central bank. Needless to say, this has to be well thought out and, most probably, only gradually (if firmly) implemented, as there are risks of overdoing it in some way or another. Indeed, the medicine could kill the patient if not adequately administered.

- Additionally, it is clear that there should be coordination amongst central banks for this. As Tirole (2019) has highlighted “...while divestment has expressive content, its efficacy is limited by the leakage problem: it has little impact if other investors jump at the opportunity of undervalued fossil fuel stocks and bonds.”
- **The third front where climate change and/or the policies to combat it can affect central banks is financial stability.** Climate change related risks pose potential direct and indirect negative effects to the financial system through various channels. According to the Bank of England (2018), there are several types of risks that could have an impact on the banking sector, like physical and transition ones, among others.
- **It is worth underscoring that this seminar focuses mainly on this front.**
- In the case of **physical risks**, for instance, a natural disaster can impose direct losses to the insurance sector. In tandem, it will affect uninsured households and firms and, thus, indirectly, the banking sector. For its part, the banking sector might also reduce lending, affecting the recovery of the affected areas and sectors. Additional losses might emerge from asset fire sales arising from portfolio adjustments. Conversely, the financial system can also have an impact on physical risks (Batten et al., 2016).
- **Transition risks** can build up from the increasing misalignment between the current trajectories of some sectors of the economy and the trajectories required by the 2° Celsius targets. The slower the alignment of these sectors to these 2° trajectories, the more abrupt the adjustment will have to be and the larger the losses these sectors would have to bear (as shown in Roncoroni et al., 2020).
- Arguably, there is a growing gap between climate objectives and the allocation of financial capital (2-degrees Investing Initiative (2012), Batten et al. (2016) and Clark et al. (2018)). Narrowing this gap requires, among other elements, enhancing standard financial risk metrics to encompass climate change risk. Moreover, given the interconnectedness of today's businesses, these enhanced metrics of risk and impact need to consider further aspects such as network effects of investment chains.
- Now, it is true, paraphrasing Weidmann (2020), that monetary policy cannot be a substitute for putting the right price tag on carbon emissions. He highlights three reasons. Conflicts with central banks' primary objective of price stability may arise. Correcting market distortions need strong democratic legitimacy and are a matter for governments, which have the right tools at their disposal. Also, central banks should beware of mission creep.
- However, I believe that the above reasoning applies to ordinary times. We are fast approaching extraordinary ones, and should be thinking about these issues more and more “outside the box”. Let me finish my remarks by giving you two reasons for what is, in my view, the urgent need for a more active involvement of central banks in the topic at hand.
- First, although in most cases price stability is the primary responsibility of central banks, in many countries acting as an economic advisor to its Government is also an important, if not

crucial, role. In fact, in some countries, this mandate is specifically included in its central banks' charters, laws or even at a constitutional level. Given the high levels of human capital concentrated in central banks, I believe that in many cases, they are well, if not uniquely positioned or suited, to do this when it comes to climate change and the policies to combat it.

- Second, given the top-notch reputation that central banks enjoy in most cases, it is perhaps time to “cash in” on it. Indeed, the technical skills are there, not to mention its political neutrality and, specially, the right incentives to do so. Failing to act on time could be catastrophic.
- I should stop here. I would like to invite you to participate actively in the initiatives that CEMLA will be launching related to environmental risks in the coming months. It goes without saying that if you need anything from CEMLA, feel free to approach us as we will be willing to accompany you on environmental risks related projects. Thank you very much and I wish you a very successful seminar.

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