



BANCO CENTRAL DE RESERVA DEL PERÚ

How does climate change impact financial stability? Policy Panel

Climate Change and Disaster Risk: What do they imply for Emerging market Central Bank

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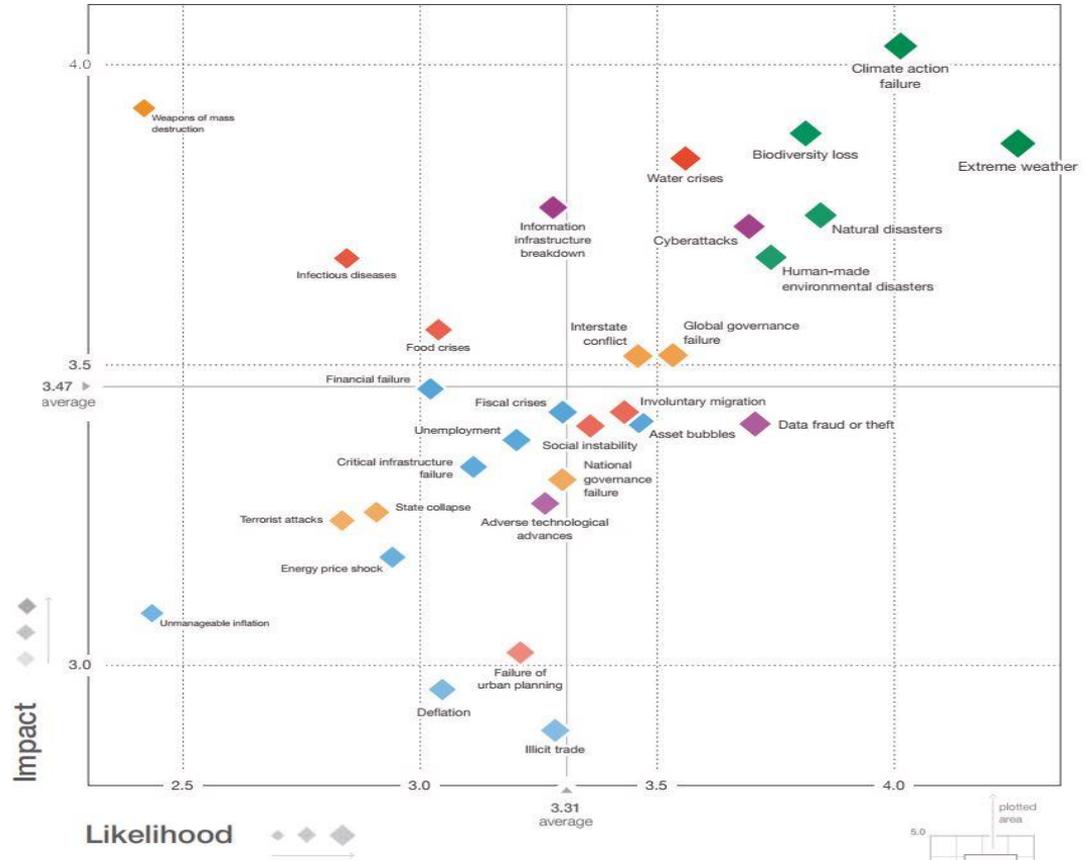


According to the World Economic Forum, Climate change is one top 5 global risks for 2020 in terms of likelihood and impact

Top 5 Global Risks in Terms of Likelihood

2018	2019	2020
Extreme weather	Extreme weather	Extreme weather
Natural disasters	Climate action failure	Climate action failure
Cyberattacks	Natural disasters	Natural disasters
Data fraud or theft	Data fraud or theft	Biodiversity loss
Climate action failure	Cyberattacks	Human-made environmental disasters

Source: World Economic Outlook

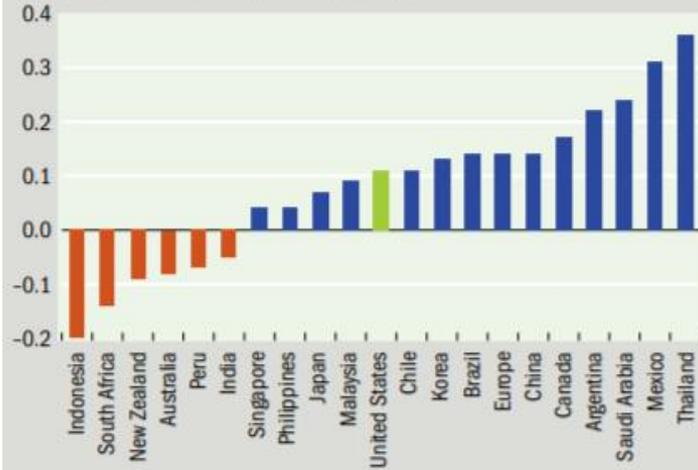


In Peru, El Niño is one of the most significant climatic risks for financial stability and the macroeconomy.

Varied impact

The effects of an El Niño shock on real GDP growth vary considerably across countries.

(real GDP growth response, percentage point)



Source: Authors' estimates.

Note: Figures are real GDP growth responses (averaged over the first year) to an El Niño shock.

El Niño phenomenon: general impact in South America

- Losses in agricultural and fishing industries. Adverse impact on production and exports.
- Power generation limitations.
- Wildfires increase in certain areas.
- Floods.
- River flow reductions.
- Lower atmospheric pressure.
- Tropical storms.
- Environmental conditions change for marine ecosystems.

Peru, and especially its agricultural sector, is one of the regions bearing the most severe impact from El Niño.



In 2017, El Niño phenomenon severely affected Peru and the solvency of small financial institutions specialized in providing credit to SME and agriculture.

SECTORAL DAMAGES AND EXPOSURE ESTIMATES ACROSS PERU FOR THE 1982/1983 AND 1997/1998 EL NIÑO EVENTS (FRENCH AND MECHLER, 2017) AND 2017 EL NIÑO COSTERO EVENT (INDECI, 2017)

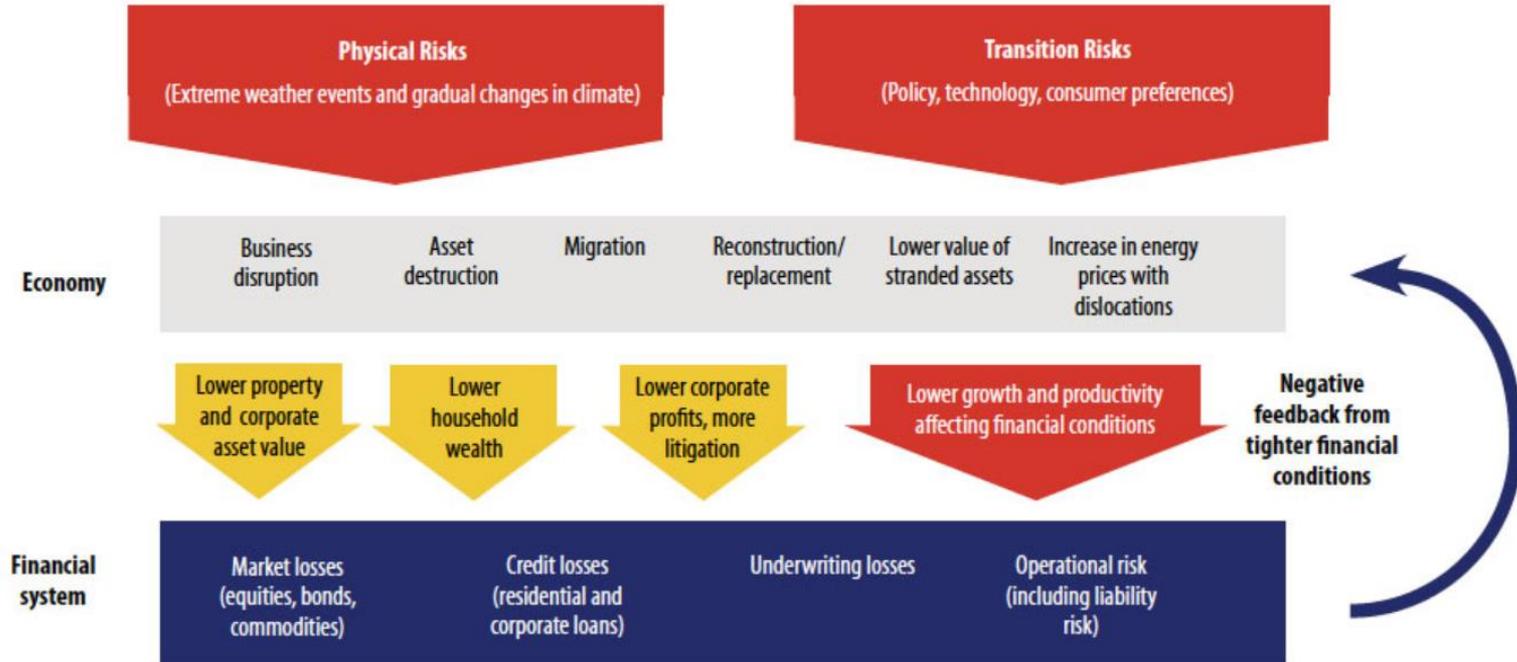
	1982-83 El Niño	1997-98 El Niño	2017 El Niño Costero
Population	512 deaths, 1.27 million affected	366 deaths, 0.53 million affected	114 deaths, 1.08 million affected
Transportation	2,600 km of roads, 51 bridges	3,136 km of roads, 370 bridges	4,931 km of roads, 881 bridges (489 total destroyed)
Housing	98,000 homes destroyed; 111,000 damaged	48,563 homes destroyed; 108,000 damaged	38,728 collapsed, 372,020 damaged, 27,635 rendered uninhabitable
Education	875 schools damaged	2,873 schools damaged	2,150 schools damaged
Health	260 health posts damaged	580 health posts damaged	726 health posts damaged
Total Losses in US\$	3.28 billion (in 1998 USD)	3.5 billion (in 1998 USD)	-3 to 9 billion (in 2017 USD)



Climate change can generate physical and transitional risks that affect financial stability

Physical and transition risks

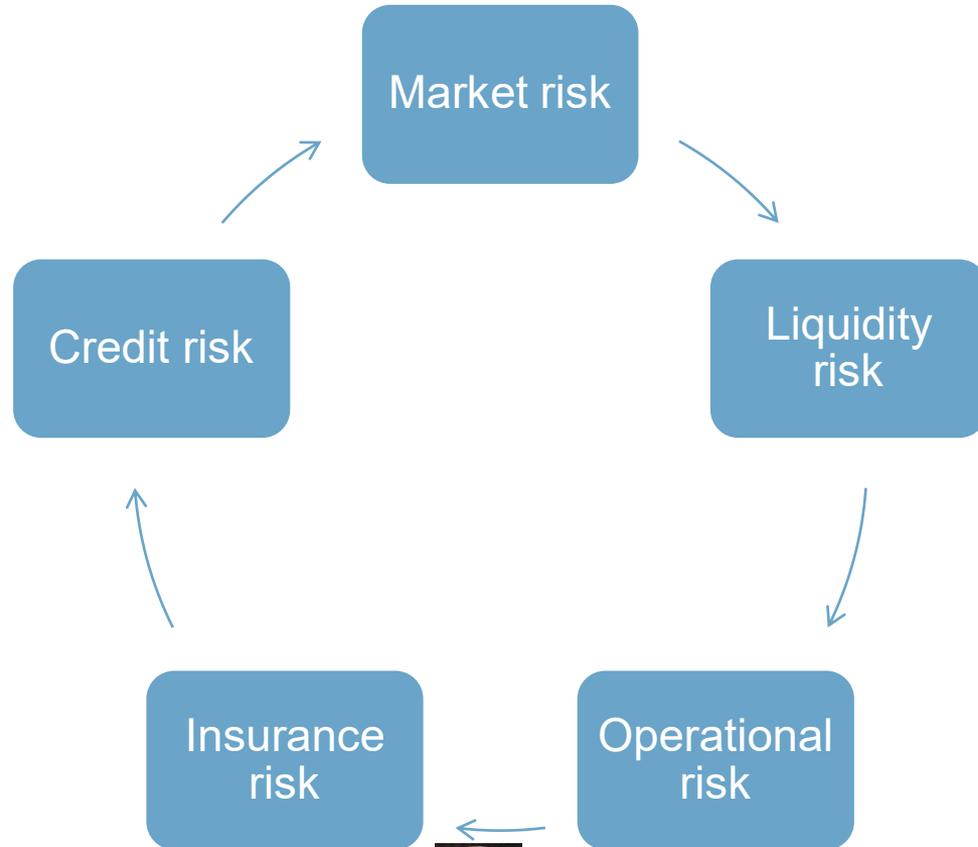
The risks from climate change to the economy have two basic channels, but many potential impacts.



Source: Bank of England

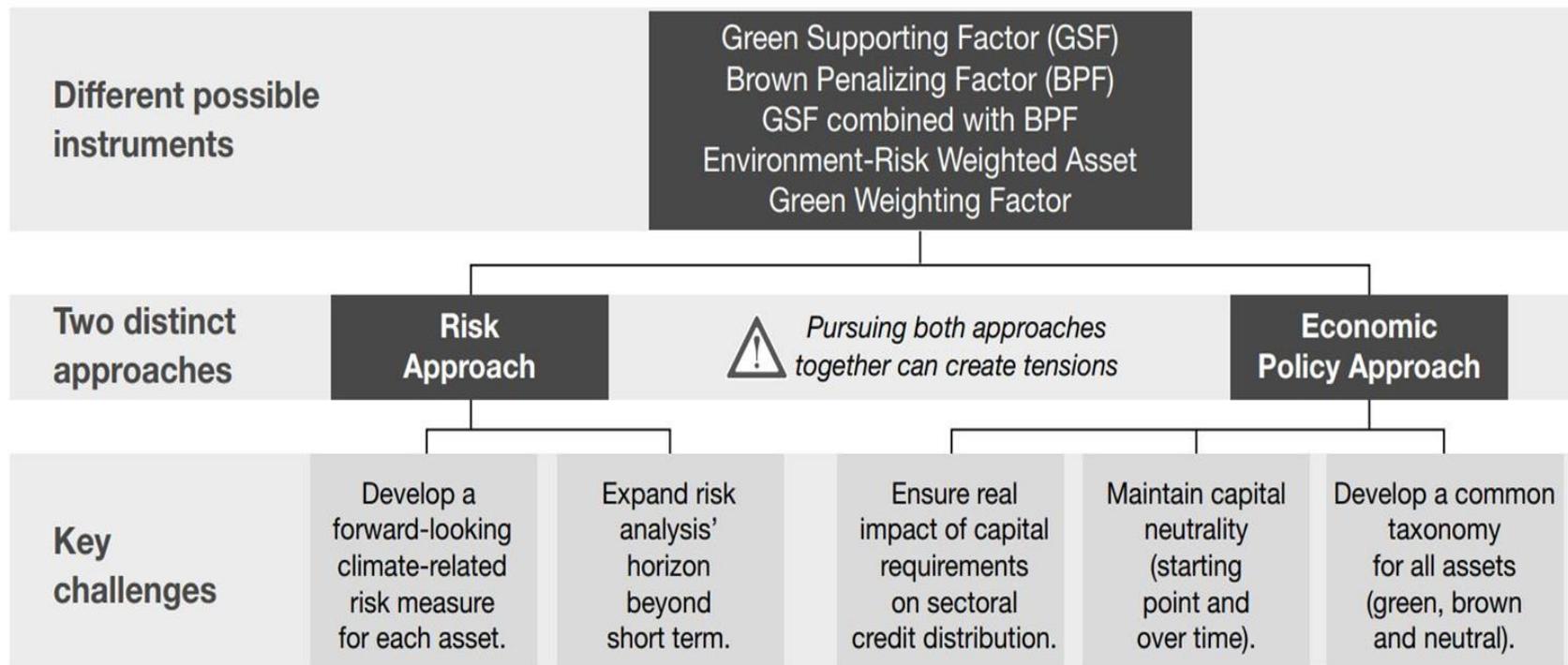


Climate-related risks can induce, through direct or indirect exposure, a deterioration in the ability of borrowers to pay their debts



What are the options for regulators?

DIFFERENT INSTRUMENTS, APPROACHES AND CHALLENGES



Source: IACE.

Integrating Climate-related Risks into Banks' Capital Requirements Paris, March 2020 Authors : Maria Berenguer | Michel Cardona | Julie Evain



Some challenges

- Develop **standard taxonomy** at an international level and check the risk differential between green and brown assets
- Work on **long-term impact analysis methodologies**, as well as having a forward-looking approach so that they are consistent with the unpredictable nature of climate and environmental risks.
- Develop **analytical tools or models** to quantitatively estimate climate or environmental risks.
- Have **data available** to make more complex quantitative analyzes.



How important is climate change for risk management in LATAM banks?

- 12% of banks state that they have advanced knowledge of the TCFD recommendations, 46% basic knowledge, 24% have only heard of these recommendations, and 18% do not know them at all.
- 41% of banks do not have any mechanism to identify, analyze and manage climate risks.
- In 32% of the banks there is a specific work team to supervise climate risks, which improves performance in managing these risks.
- 69% and 44% of banks indicated that the economic sectors that are perceived as being most exposed to climate risks are forestry, agriculture and livestock and power generation, respectively.
- 80% of banks indicated that the main physical risk to be incorporated in their risk assessment and management is "flood", followed by "drought" which was mentioned by 41% of banks.

Source: Cómo los bancos incorporan el cambio climático en su gestión de riesgos. Caracas: CAF.



Regulation in Peru

- The Superintendence of Banks, Insurance and Pension Funds (SBS), published the Regulation for the Management of Social and Environmental Risk (Resolution SBS N ° 1928-2015).
- Financial entities must publish an annual environmental and social risk management report, as well as report quarterly to the SBS information on clients who have purchased the services mentioned in the standard.
- Stress tests performed by the SBS and Financial institutions routinely consider a severe El Niño phenomenon as one of the risky scenarios.



Concluding remarks

- Physical and transition risks can materialize into financial risks, which can have implications for financial stability.
- The measurement of environmental and climatic risks is highly complex and requires to define a standard methodology. Thus, most prudential measures are qualitative, given the limitations of quantitative measures.
- There are several challenges for modeling climate and environmental risks, such as lack of clarity in taxonomies on green or brown assets, lack of detailed information and limited dissemination on environmental issues in banks worldwide.
- In Latin America, the widespread use of Environment, Society and Governance standards is not yet common. Therefore, coordination between the private and public sectors is needed to address this problem.





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