SSRP
SUSSEX SUSTAINABILITY RESEARCH PROGRAMME

Financial crises, environmental sustainability and the attainment of the SDGs

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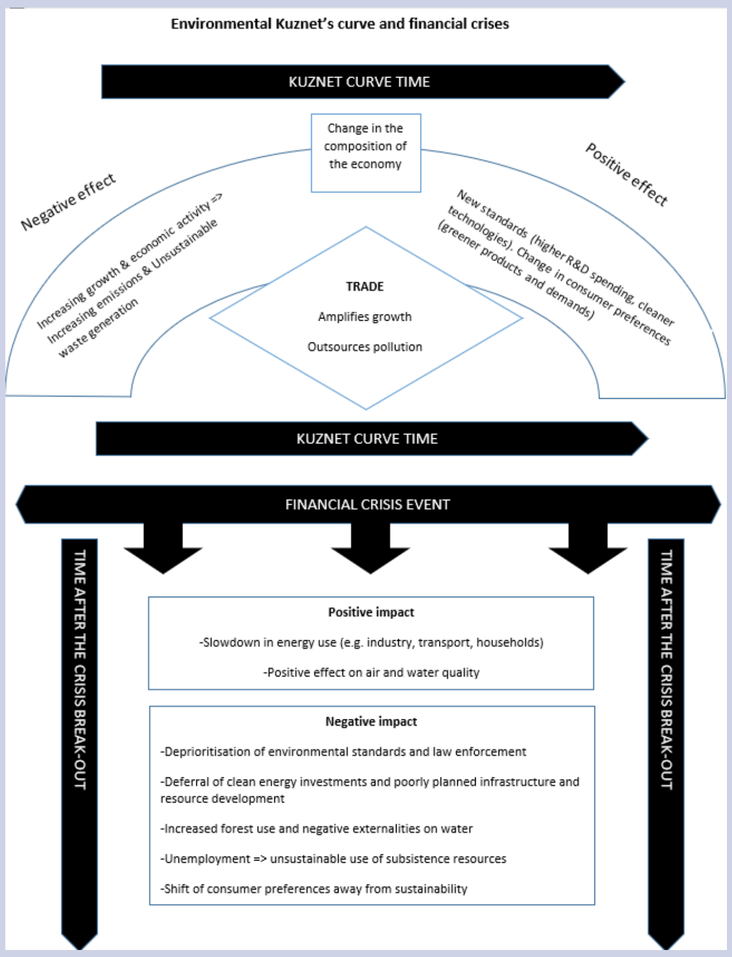
BACKGROUND

This project sheds new light on the interplay between financial crises and sustainable development. What is the impact of financial crises on environmental sustainability? What is likely to be the impact of growing global indebtedness on the implementation of SDGs? Can we study the impact of financial crises on SDGs in an integrated way? What's the cost of action/ inaction against rising global indebtedness? What needs to be done to bring SDGs back on track?



METHODS

The project develops an adjusted Multidimensional Poverty Framework (MPF) approach. This allows us to assess the impact of financial crisis on different SDGs (income, basic needs, health, education, environment) in an integrated way. At an empirical level we base our econometric analysis on a large dataset of financial crises with 462 crises, in >150 countries, over 1970-2017. We also use machine learning techniques (Exponential Triple Smoothing) and Data Envelopment Analysis (DEA), and plan to employ small-N comparative studies.

Adjusted Multidimensional Poverty Framework

Dimensions of Poverty	Indicators	Associated SDG Goals
Income	Poverty headcount at $1.90 a day	**1.1**
	Poverty gap at $1.90 a day	1.1
Basic Needs	Access to safe drinking water	1.4, 3.9 & **6.1**
	Access to basic sanitation	1.4, 3.9 & **6.2**
	Access to electricity	1 & **7.1**
Health	Infant mortality rate (per 1,000 live birth)	**3.2**
	Maternal mortality ratio (per 100,000 live births)	**3.1**
	Carbon dioxide damage (current US$) - health costs	9.4, 11.6 & 13
	Particulate emission damage (% of GNI) - health costs	11.6 & 13.2
Education	Children out of school (% of primary school age)	1 & 4.1
	Government education expenditure (current USD$)	4
Environment	Agricultural land (1000ha)	**2.4** & 13
	Net forest land CO2 emissions/removals (terragrams)	15.2
	Forest rents (% of GDP)	15.2 & 12.2
	Terrestrial protected areas (global biome weights)	**15.4**

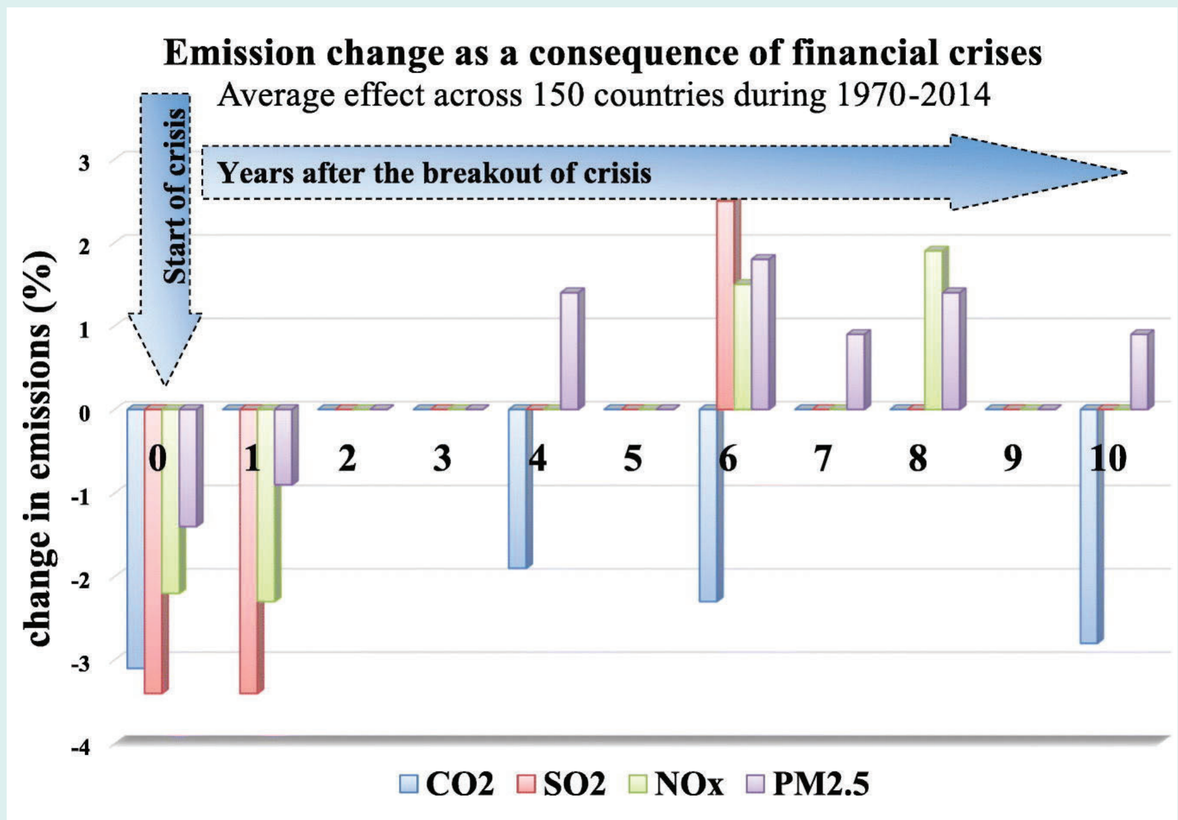
NOTE: Bold in the column 'Associated SDG Goals' demonstrates that the indicator is an official SDG indicator.

FINDINGS

We produce new estimates on the anticipated impact of current financial distress dynamics on SDGs targets related to: income, basic needs, health, education and the environment. Notably, in Low-Income Countries (LICs) financial crises are associated with a 9.89% higher poverty headcount, 9.82% wider poverty gap, 5.28% lower access to electricity, 17.72% lower government education expenditure, and 0.85% reduction in terrestrial protected areas. The adverse impact of crises is not limited to LICs. We find, for instance, that crises are associated with a 25.24% reduction in government education expenditure, and a 1.05% reduction in terrestrial protected areas in upper-middle income countries.

We offer new evidence on the evolution of 'vulnerability-resilience nexus' (VRN) in developing countries, in the context of SDGs. Our findings point to a significant increase in the resilience of LICs in key poverty areas such as, access to basic water and infant mortality. A cause for optimism, but not complacency, for what concerted international efforts can achieve. Using a Multidimensional Poverty Framework approach helps us understand the dynamic linkages between different aspects of poverty.

New results on the effect of financial crises on air pollution. We find a 1.4-6.2% fall in CO2, SO2 and NOx emissions shortly after a crisis breakout. Yet, this positive crisis effect disappears or reverses (1-2% increase) one or two years after the start of crisis. We find no short-term impact of crises on PM2.5 emissions; in contrast, we observe 0.9-1.8% medium term increases. Thus, the 'punctuated degrowth' caused by financial crises offers no long-term solution to environmental sustainability.



CONCLUSIONS

This project shows that current financial distress dynamics in developing countries, especially LICs, not only make SDGs unattainable, but are likely to reverse progress achieved during the MDGs. We suggest that the implementation of SDGs should be remodelled in a way that addresses this financial distress challenge head on.

References

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