

Mercator Research Institute on
Global Commons and Climate Change

Emissions pricing in Low- and Middle Income Countries

How to make it work?

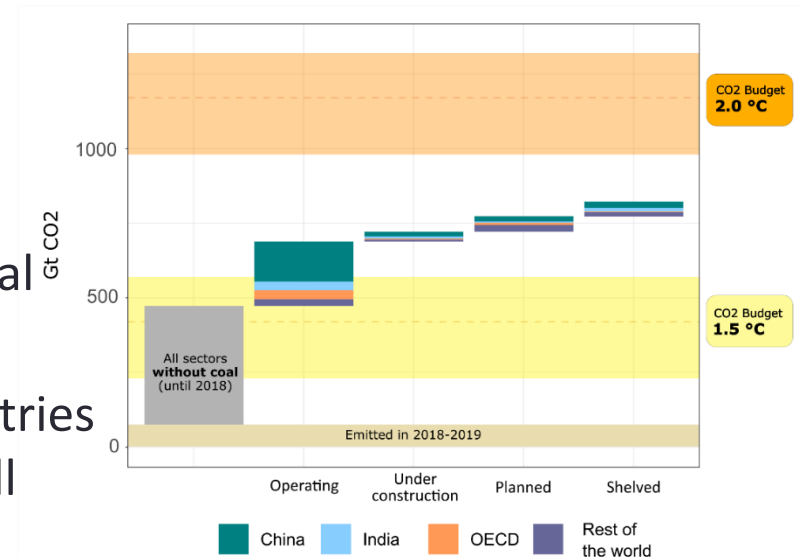
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3D Seminar

December 17, 2020

Setting the scene

- LMIC already emit more than 60% of global emissions, 80% of committed emissions
 - Energy demand in LMIC will increase
 - Global coal investments still increase
 - Existing and plants under construction and planned are incompatible with international global targets
 - Climate policy in Low Middle Income Countries will need to avoid lock-ins as much as it will need to reduce existing emissions.
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- Currently: Incentive structure is upside down. Globally on average CO2 is subsidized by USD 150 per tonne (including externalities)
→ Without changing this, climate policy will remain an uphill battle!



How do we make it work?

- Inertia to energy system transformation can be expected due to political resistance:
 - Broad-based resistance, e.g. to rising energy prices
 - Immediate price increases can lead to large protests that have the power to stop the reform
- Interests groups that lose from policy reforms can be expected to lobby against it (Arent et al. 2017; Trebilock 2014; Sovacool et al. 2016; Jakob et al. 2020)
 - Energy users
 - Workers
 - Fossil fuel owners
 - Industry
 - Specific regions
 - ...



Indonesia, 2012



Ecuador, 2019



Iran, 2019



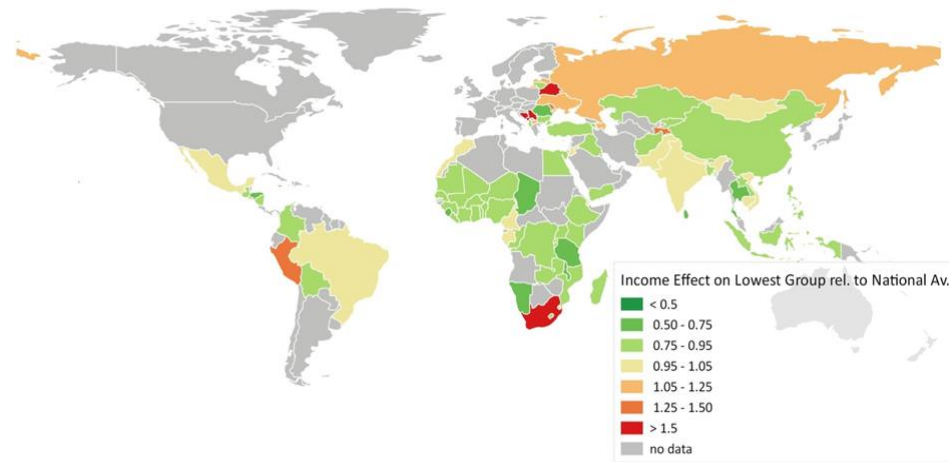
Nigeria, 2020 (latest)

How do we make it work?

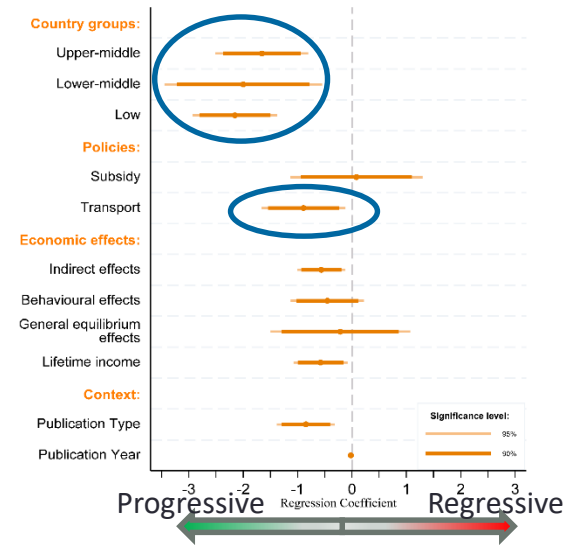
- Distributional effects: Who is affected?
- Compensation schemes: How to use revenues?
- How to ensure effectiveness?
- How to support internationally?

Understanding distributional effects

Effects on Households



Empirical analysis based on World Bank Global Consumption Database, covering 87 countries



Meta analysis of existing literature covering 39 countries

Key result: Carbon pricing more progressive in poorer countries

Key mechanism: Differences in energy expenditures drive result

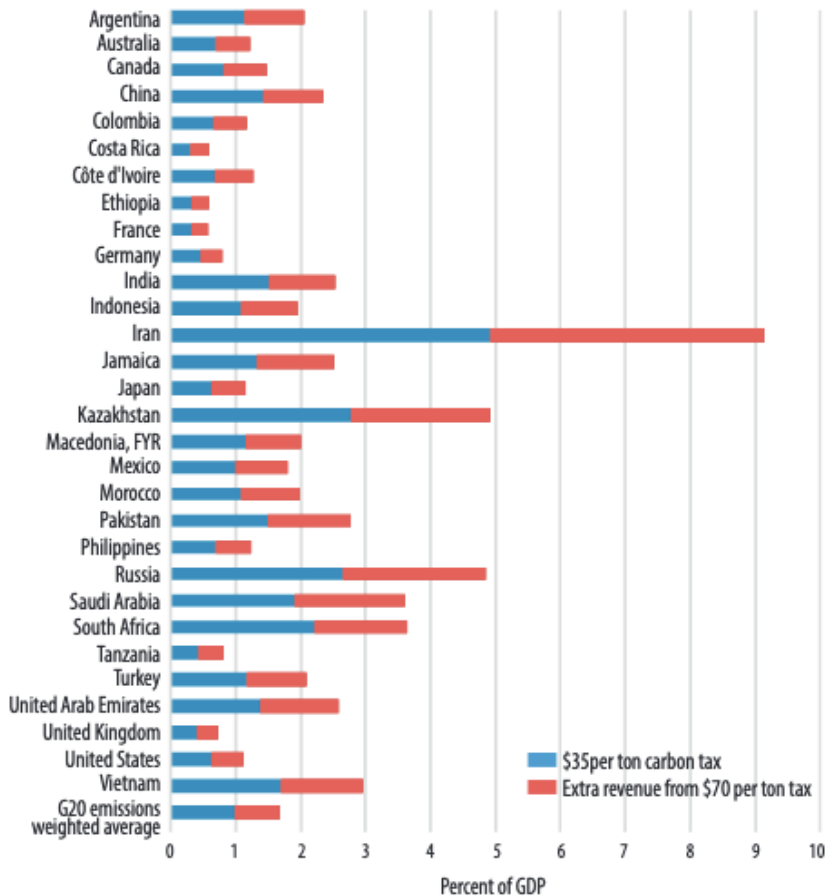
But: Horizontal effects, Poverty implications & Development effects

Carbon prices can increase the tax base

Chart 2

Raising revenue

Carbon taxes could raise a significant amount of revenue, which could be used to lower other taxes or fund green initiatives and other productive investments.

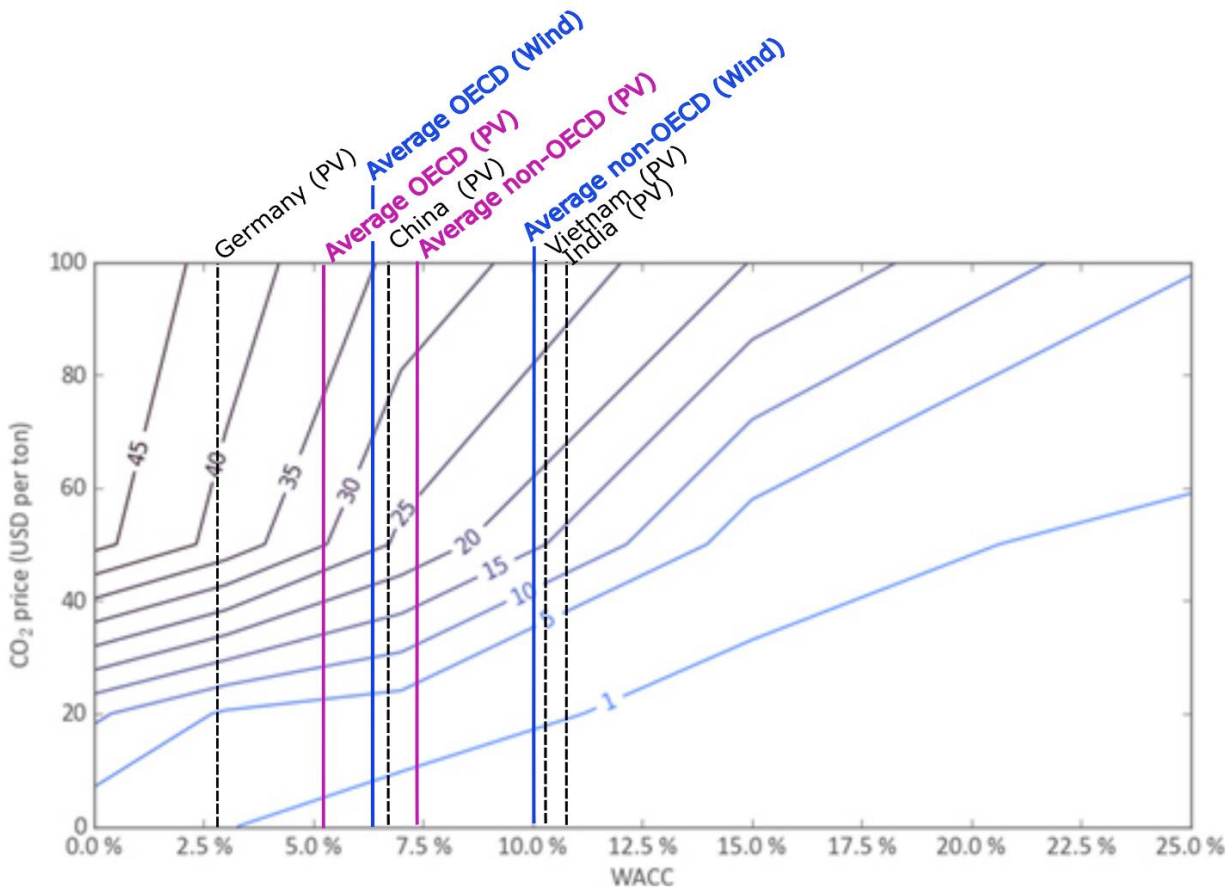


Source: IMF staff calculations.

Note: G20 = Group of Twenty.

- Comes against the background of LMICs struggle to tax (e.g. due to informal economy)
- Higher revenue could help offset of higher energy prices
- Higher revenues might be used for lowering distortionary taxes, funding public investment
- Governments could use the money to support disproportionately affected workers and communities as well as industries
- Many governments can use their established transfers schemes

Capital costs can render carbon prices ineffective



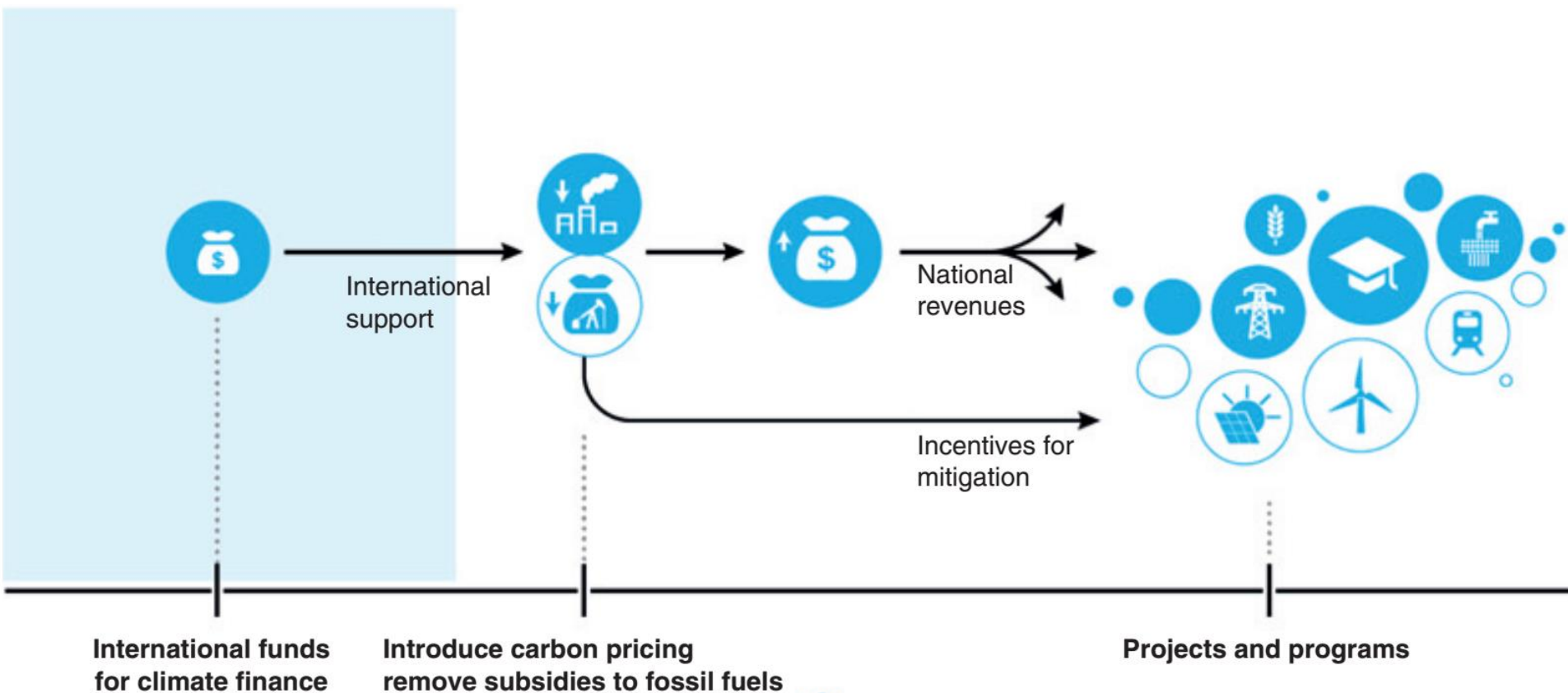
Note: The underlying model calculation (Hirth and Steckel 2016) is calibrated for Shandong province in China

Contour lines show the expected share of renewable energies given a certain CO₂ price and certain capital costs (WACC)

Vertical lines show the average cost of capital for investments in renewables in selected countries and regions

Cost of capital affects the effectiveness of a CO₂ price!

International support for expanding climate policies

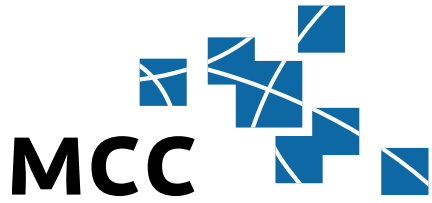


Steckel et al. 2017

- Climate change mitigation
- Sustainable development
- ◉ Climate change mitigation and sustainable development

Summary

- Carbon pricing in LMICs can be justified from a climate and an economic / fiscal perspective
- Carbon pricing in LMICs is most likely progressive, but revenue recycling is still necessary to protect vulnerable groups of the society
- Additional policies are likely needed to increase the political and societal acceptability as well as the effectiveness of a carbon price
- International support to implement policies, rather than projects



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Backup