

ADDRESSING THE MACRO-ECONOMIC CHALLENGES OF CLIMATE CHANGE



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Seminar on Climate Change: Challenges and Opportunities after the 2015 Paris Conference

Tokyo, December 15, 2015

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Presentation Structure

- Why climate change matters for macroeconomic stability
- Fiscal Measures for Mitigation
- Broader Macro-Financial Implications
- The role of the IMF

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Climate Change and Macroeconomic Stability

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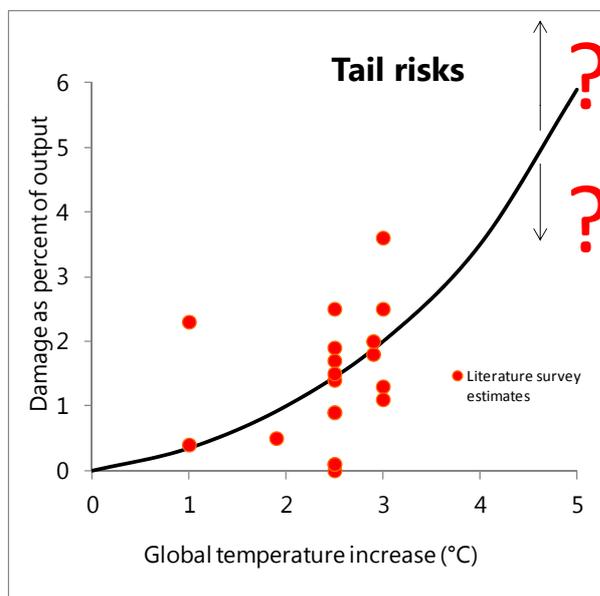
“Climate change has potential to do significant economic harm, especially to some of the poorest countries, and poses worrying tail risks.”

From the Statement of IMF Managing Director Christine Lagarde on the Role of the IMF in Addressing Climate Change (available at <https://www.imf.org/external/np/pp/eng/2015/112515.pdf>)

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Estimated Output Losses

Impact on World Output



Source: Nordhaus 2013; Tor 2012

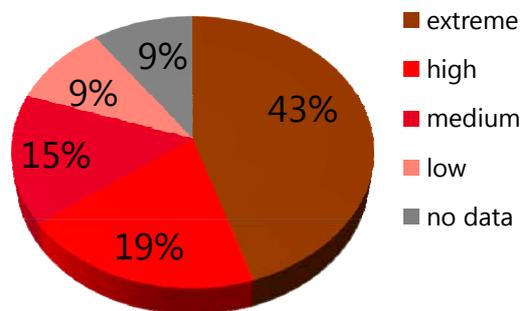
- Temperature increases
- Changing precipitation patterns
- Greater frequency of extreme weather events
- Sea level rise

Output losses through climate sensitive sectors (agriculture, forestry, tourism, real estate) and indirect impact (e.g. negative impacts on health, ecosystems, and infrastructures reduce human and public capital)

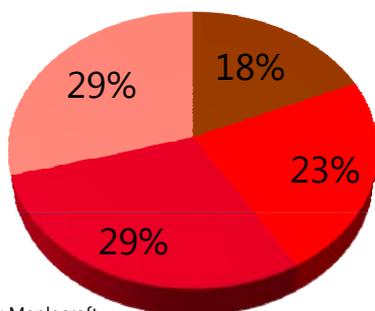
Large variability of estimates (especially for tail risks).

LICs and Small States are most vulnerable...

LICs: Climate Change Vulnerability index in 2015 (Percent share of countries with vulnerability)

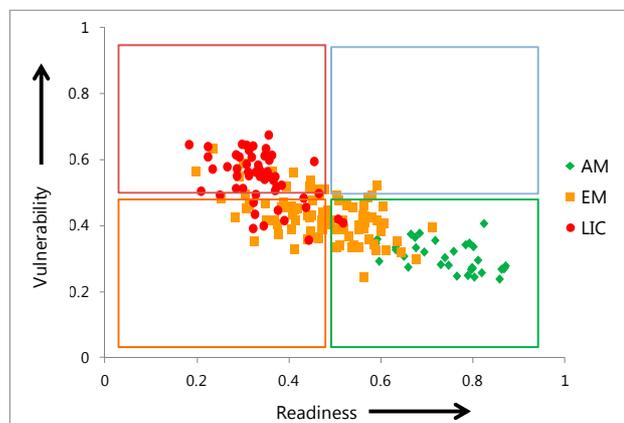


Rest of the World



Source: Maplecroft.

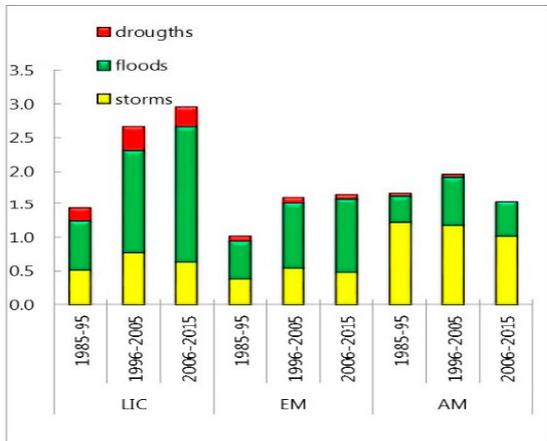
Vulnerability and Readiness Index



Source: NG Gain Global Adaptation Index, 2013.

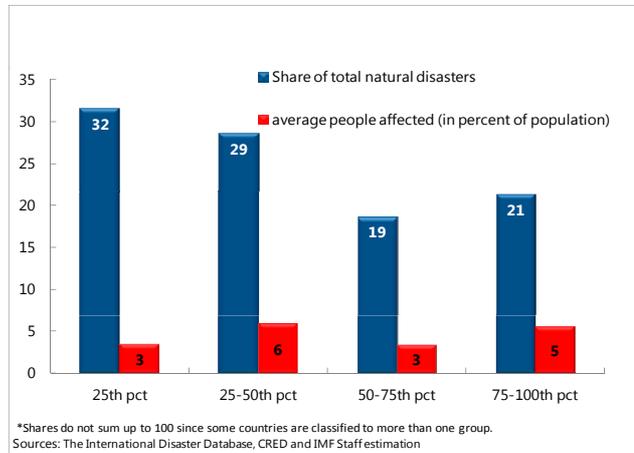
...and hardest hit by natural disasters...

Occurrence of Natural Disasters
(average annual number per million sq k)



Source: EM-DAT and IMF estimates.

LICs: Natural Disasters by Income Distribution



Fiscal Measures For Mitigation

Statement by IMF Managing Director Christine Lagarde on the COP 21 Climate Accord

Press Release No. 15/558

“The Paris Agreement is a critical step forward for addressing the challenge of global climate change in the 21st century. Governments must now put words into actions, in particular by implementing policies that make effective progress on the mitigation pledges they have made.

“That is why my key message is to price carbon right and to do it now. Charging for the emissions of fossil fuels puts in place the needed incentives for low-carbon investments; it also provides revenues to safeguard the poor, reduce debt, and lower the burden of other taxes on households and businesses. We look forward to dialogue on carbon pricing and helping governments put this vital policy into practice.”

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“...the International Monetary Fund’s staff have recommended a three-part strategy on carbon fuel: “price it right, tax it smart, and do it now”. Each component is essential

From the Project Syndicate column by the IMF Managing Director Christine Lagarde on “The Right Price for Preserving Our Climate” (available at <http://www.project-syndicate.org/commentary/climate-change-carbon-price-smart-tax-by-christine-lagarde-2015-11>)

PRICE IT RIGHT

IF...

Governments put a higher price on carbon-based fuels to promote incentives for using cleaner fuels and saving energy:

THEN...



Expect to see energy demand decline as businesses and households switch to more energy-efficient products.



Expect to see users switch to cleaner fuels (e.g., from coal to natural gas in power generation and from these fuels to zero-carbon fuels—wind, solar, hydro).



Expect to see a reduction in carbon emissions with less reliance on carbon-based fuels.



Expect to see a reduction in local outdoor air pollution which, the World Health Organization says, causes over 3 million premature deaths a year.

TAX IT SMART

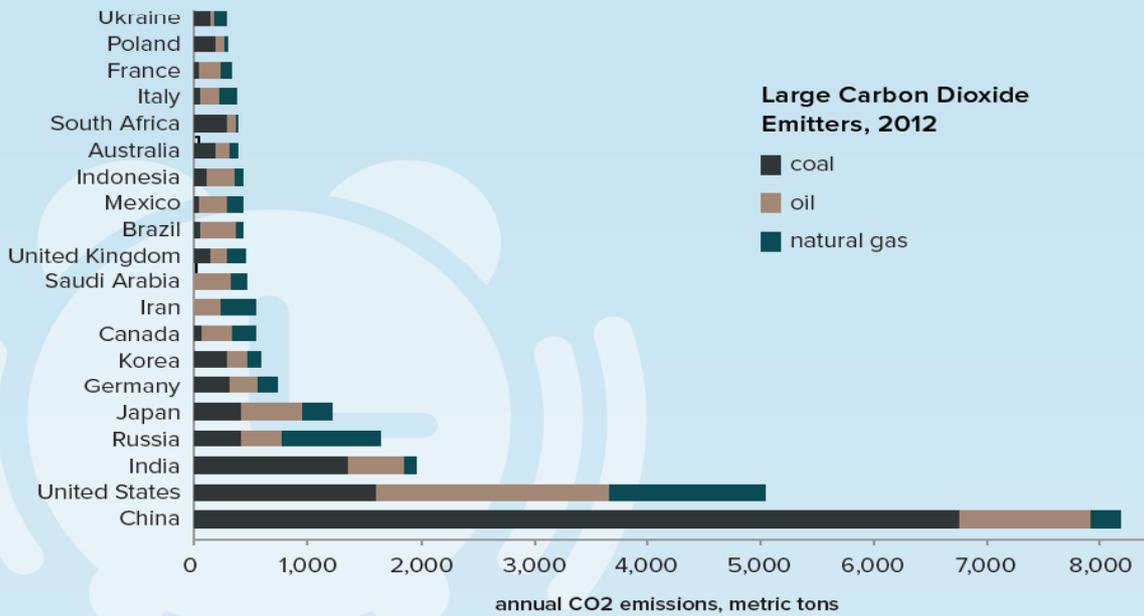


Pricing carbon **can** be about smarter, more efficient tax systems—higher taxes on fossil fuels mean governments can **lower taxes** on households and businesses.

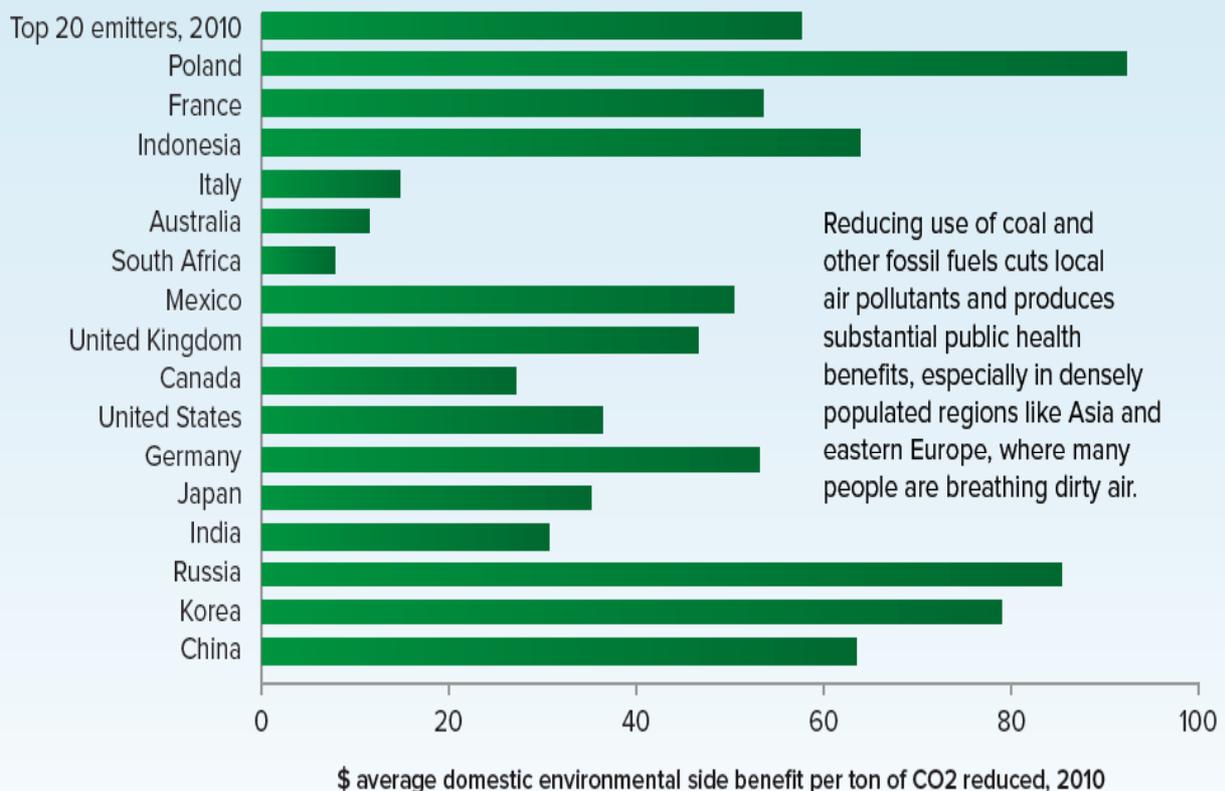
DO IT NOW

Governments must seize the momentum from the Paris climate conference and the window of lower energy prices to put a price on carbon pollution reflecting the environmental damage it causes. The longer we wait, the costlier and more difficult it will be for us, or the next generation, to protect the planet.

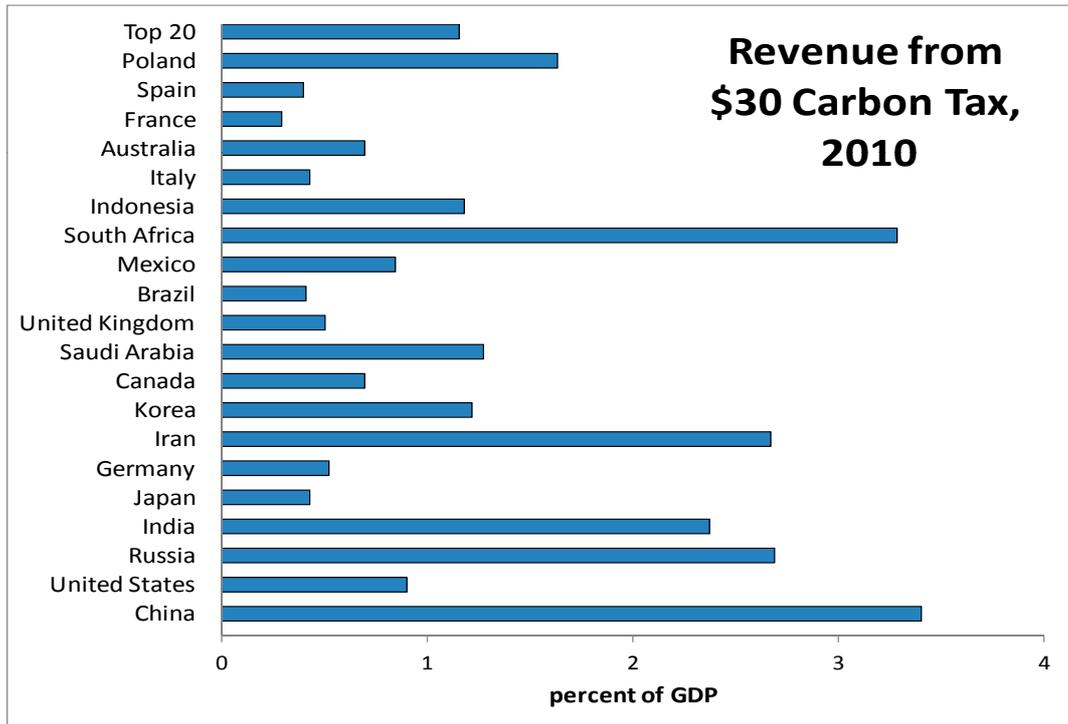
Getting a few of large emitters on board would really help:



For every ton of CO2 saved from less fuel use, the top 20 emitters would receive, on average, nearly \$60 worth of domestic side benefits.



Carbon Taxes Could Raise Substantial Revenues...



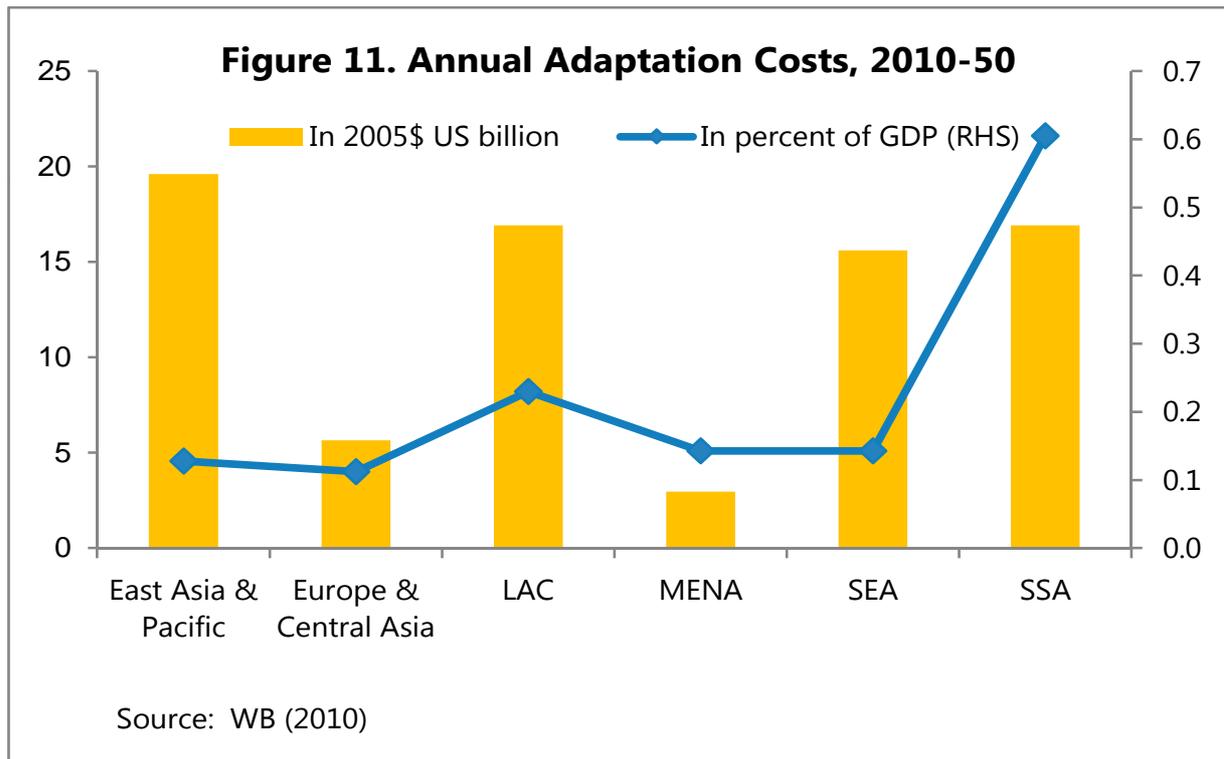
Source: Fund calculations.

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Broader
Macro/
Financial
Implications

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Estimates of Adaptation Costs for Developing Countries



Adaptation: Policy Implications

- Maximize synergies between adaptation and development strategies
- Policy interventions to overcome market failures
- Facilitate private sector adaptation

Adaptation: Policy Implications

- Integrate adaptation costs into macroeconomic frameworks—assessing implications for growth, fiscal and external sustainability
- Financial sector policies (financial instruments can help shift investment from heavy carbon footprint industries to “green” technologies; disaster risk insurance)

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Concluding: Role of the IMF

- Provide technical assistance and training in fuel tax design, tax administration, and energy price reform
- Promote policy dialogue
- Integrate natural disaster risks and preparedness strategies in macroeconomic forecasts and debt sustainability analysis
- Help countries incorporate adaptation strategies in medium-term budget frameworks

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**THANK YOU FOR YOUR
ATTENTION!**

<http://www.imf.org/external/np/fad/environ/index.htm>