



Green growth

Some reflections about what we know and what we would like to know

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What are we talking about?

Green Growth means fostering economic growth and development, while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies.

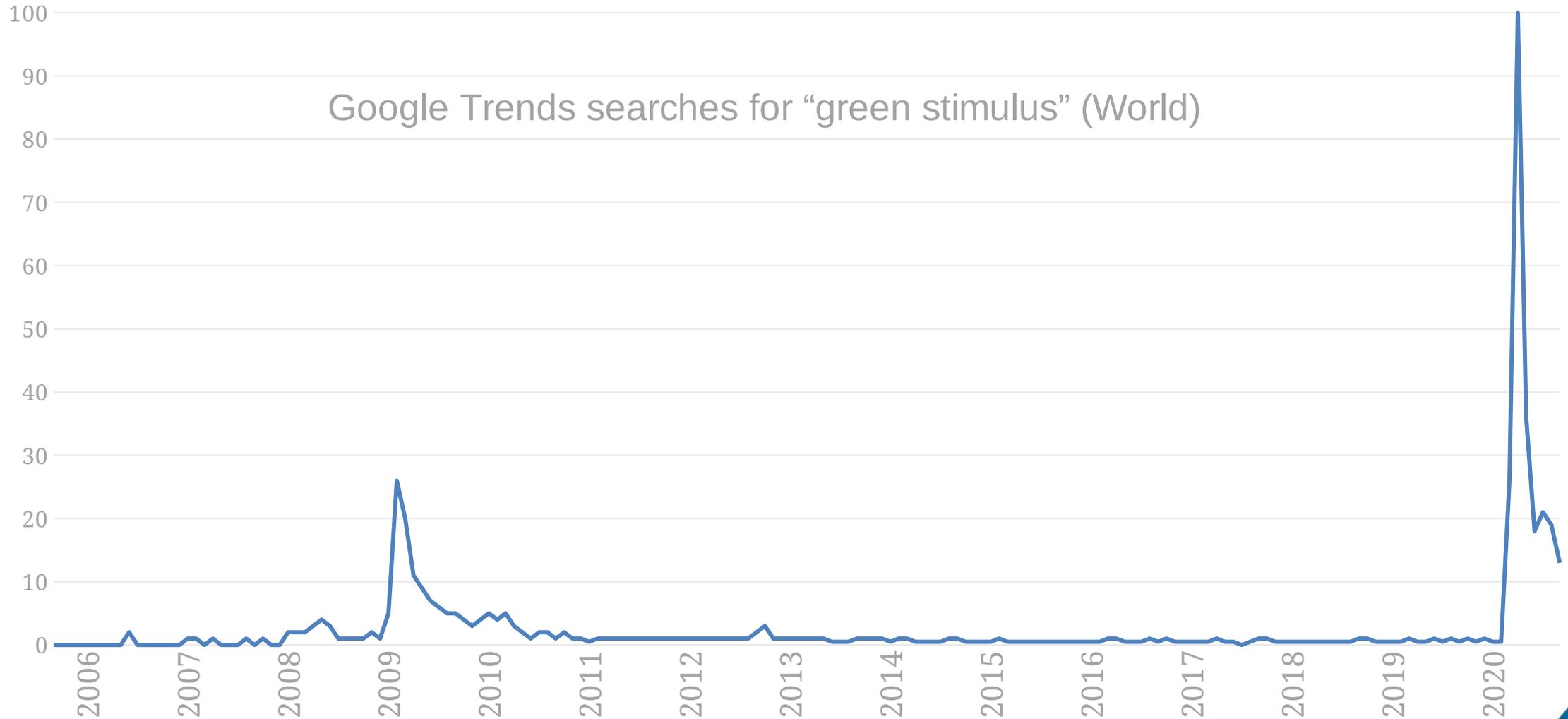




- COVID-19 and a green recovery:
 - Are we learning from the Global Financial Crisis?
- Micro-evidence on Green Growth
 - Environmental policies and the firms
 - What do we really know?
 - What should we know?
 - How can we better use research in policy advice?



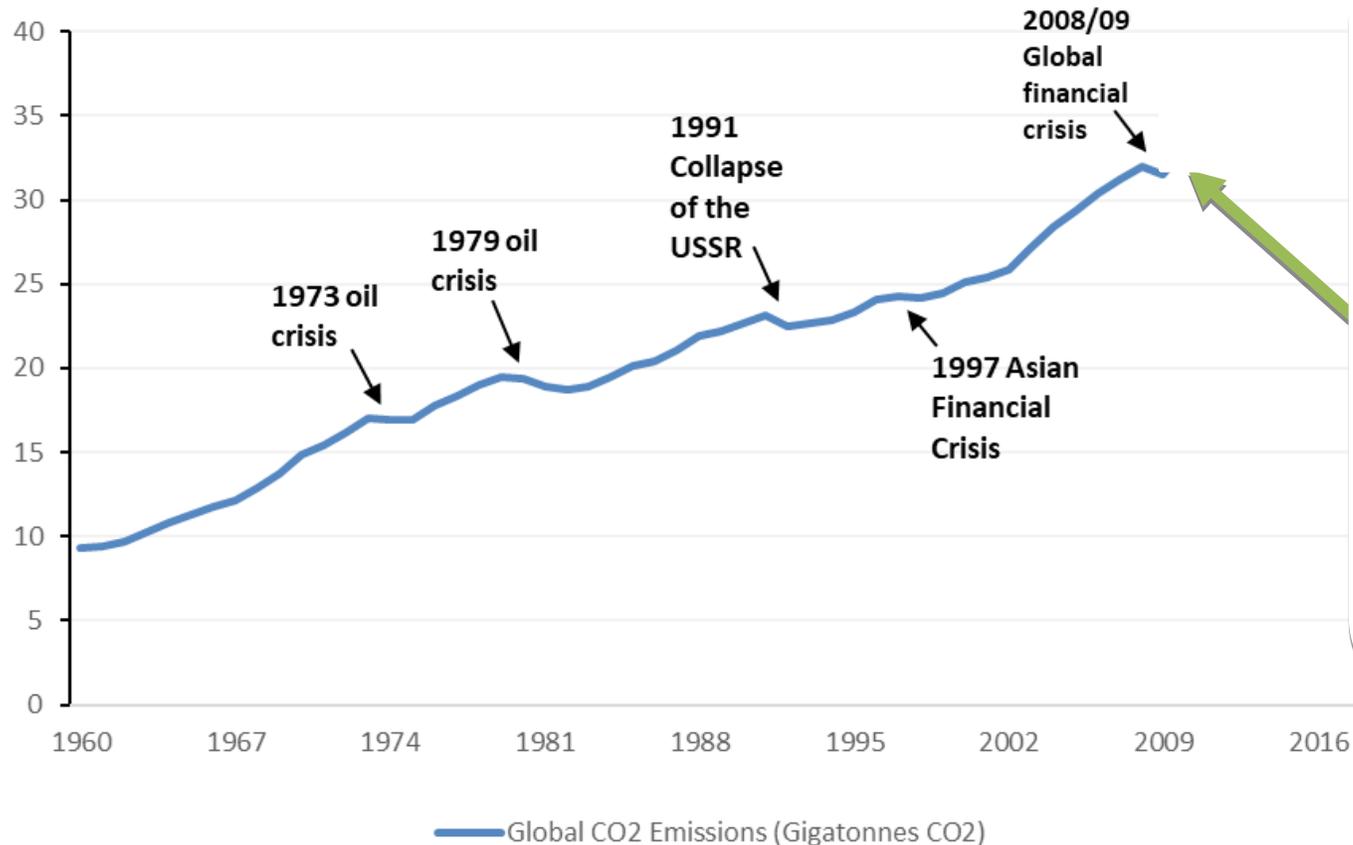
With the COVID-19 pandemic, the idea to “rebuild better” is back





Emissions fall during crises, then rebound

CO₂ emissions and past economic crises



OECD Green Growth Strategy (2009-2011)

UNEP Green Economy Initiative (2008)

World Bank Inclusive Green Growth (2012)



Green Stimulus following the Global Financial Crisis

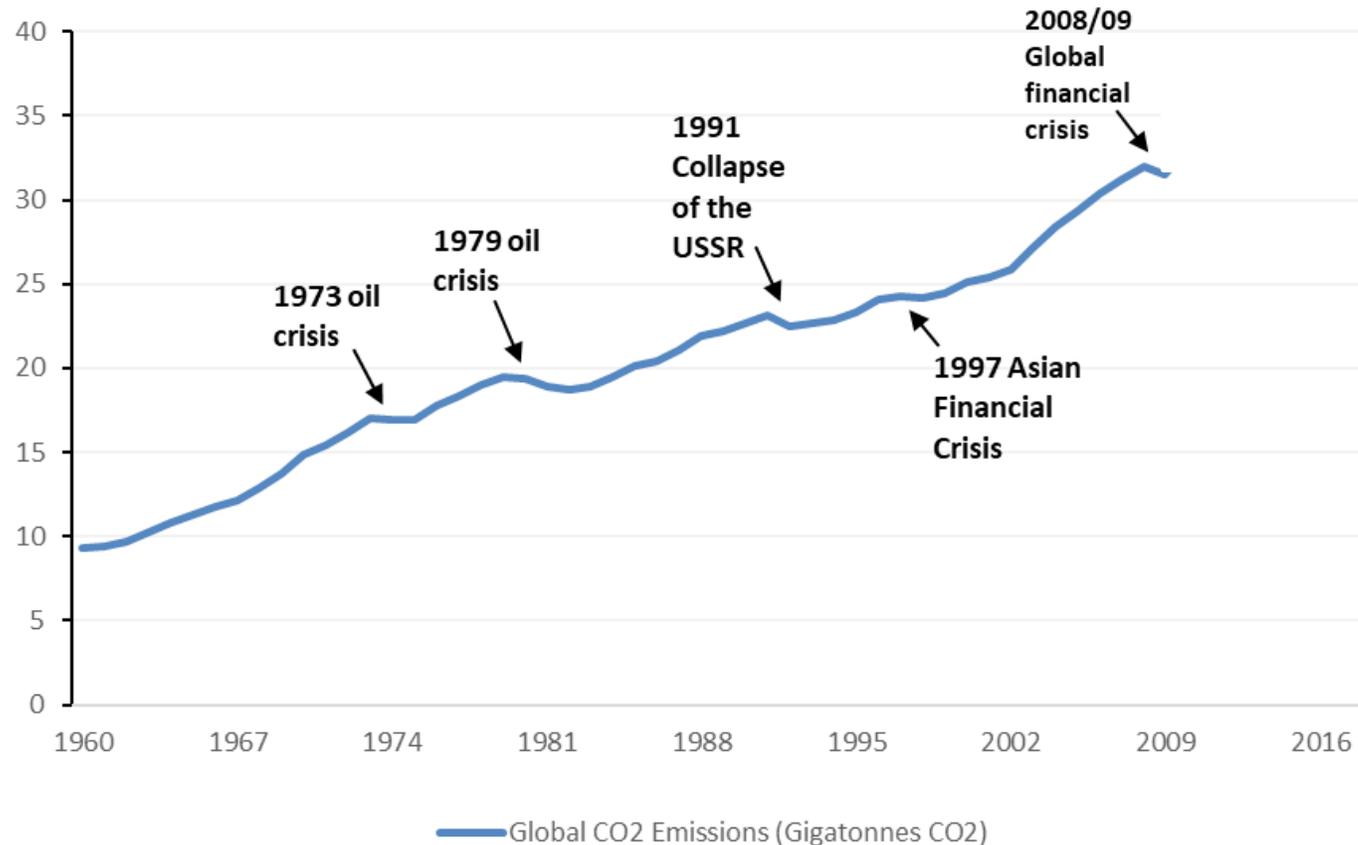
“Over 16% of all Global Financial Crisis related fiscal stimuli (totaling over half a trillion USD) were directed at green activities targeting renewable energy generation, energy efficiency in buildings, scrappage payments for vehicles with low fuel efficiency, clean technology development support, mass transit, nature conservation and water resource management.”

Agrawala, S., D. Dussaux and N. Monti (2020), "What policies for greening the crisis response and economic recovery?: Lessons learned from past green stimulus measures and implications for the COVID-19 crisis", *OECD Environment Working Papers*, No. 164, OECD Publishing, Paris, <https://doi.org/10.1787/c50f186f-en>.



The outcome was somewhat disappointing perhaps...

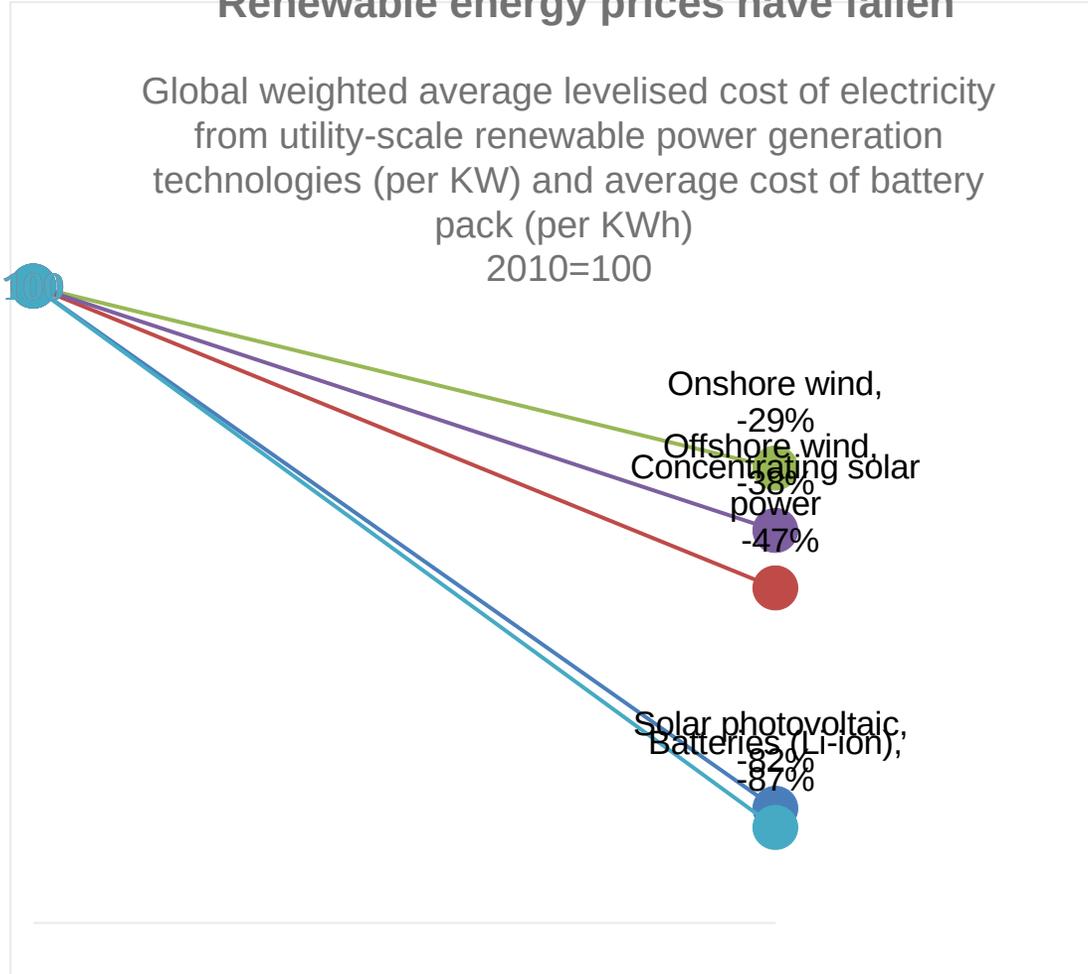
CO₂ emissions and past economic crises



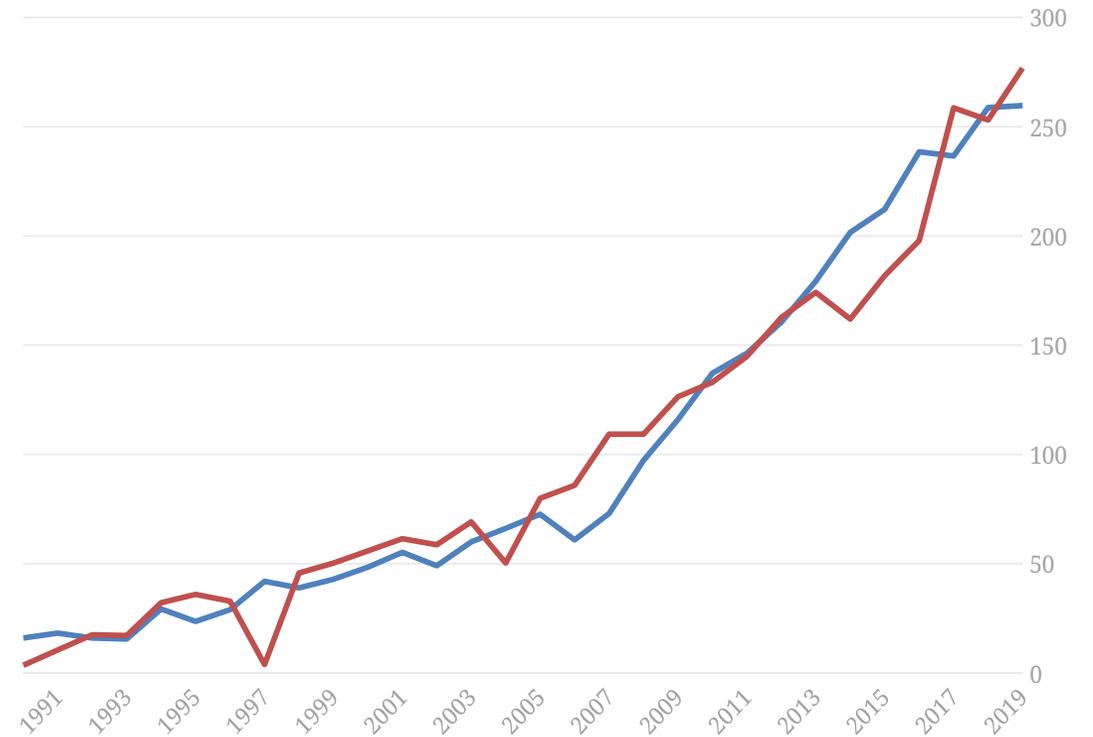


But some benefits are materialising...

Renewable energy prices have fallen



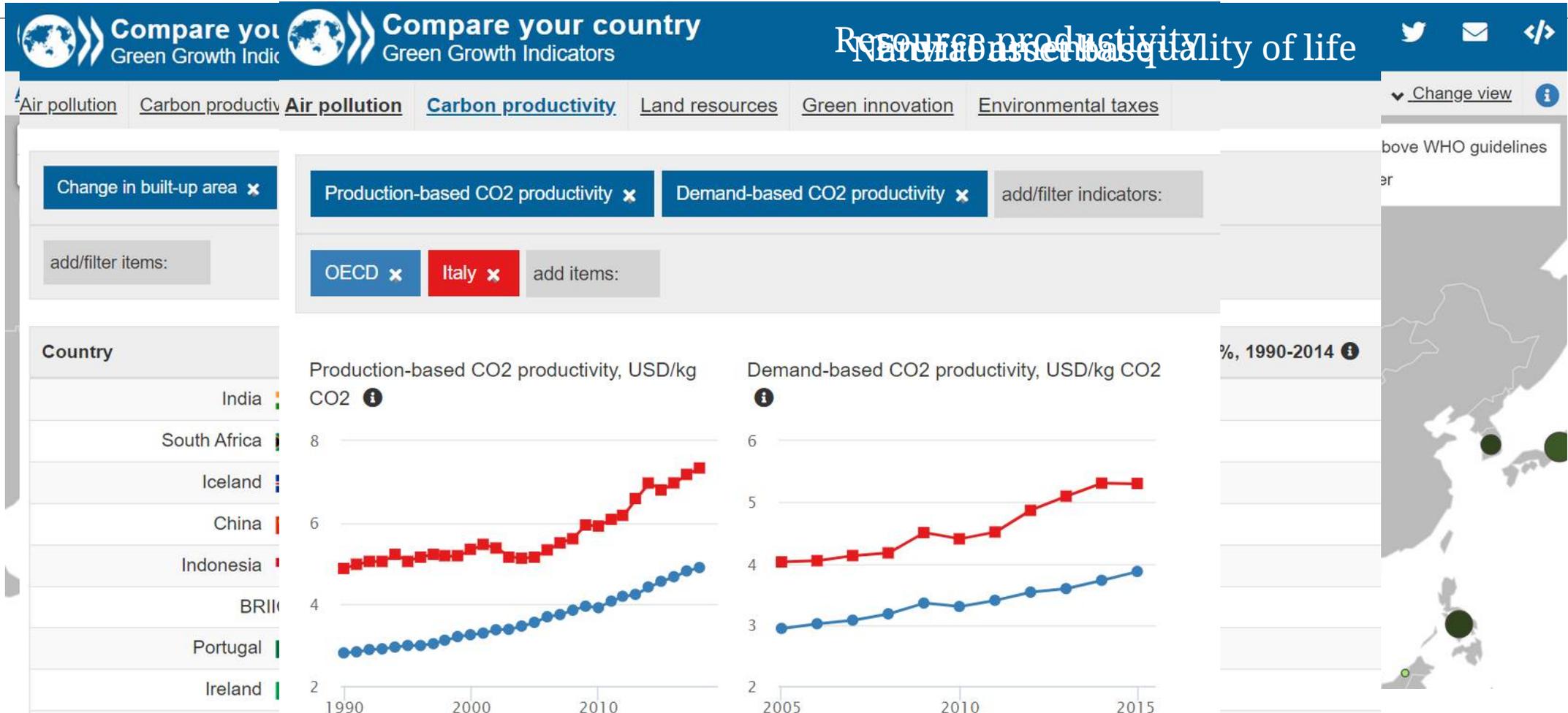
Research articles in economics containing "Environment" + "Policy" (period average = 100)



Source: IRENA (2020), Renewable Power Generation Costs in 2019, International Renewable Energy Agency, Abu Dhabi. Bloomberg New Energy and Finance, <https://about.bnef.com/blog/behind-scenes-take-lithium-ion-battery-prices/>



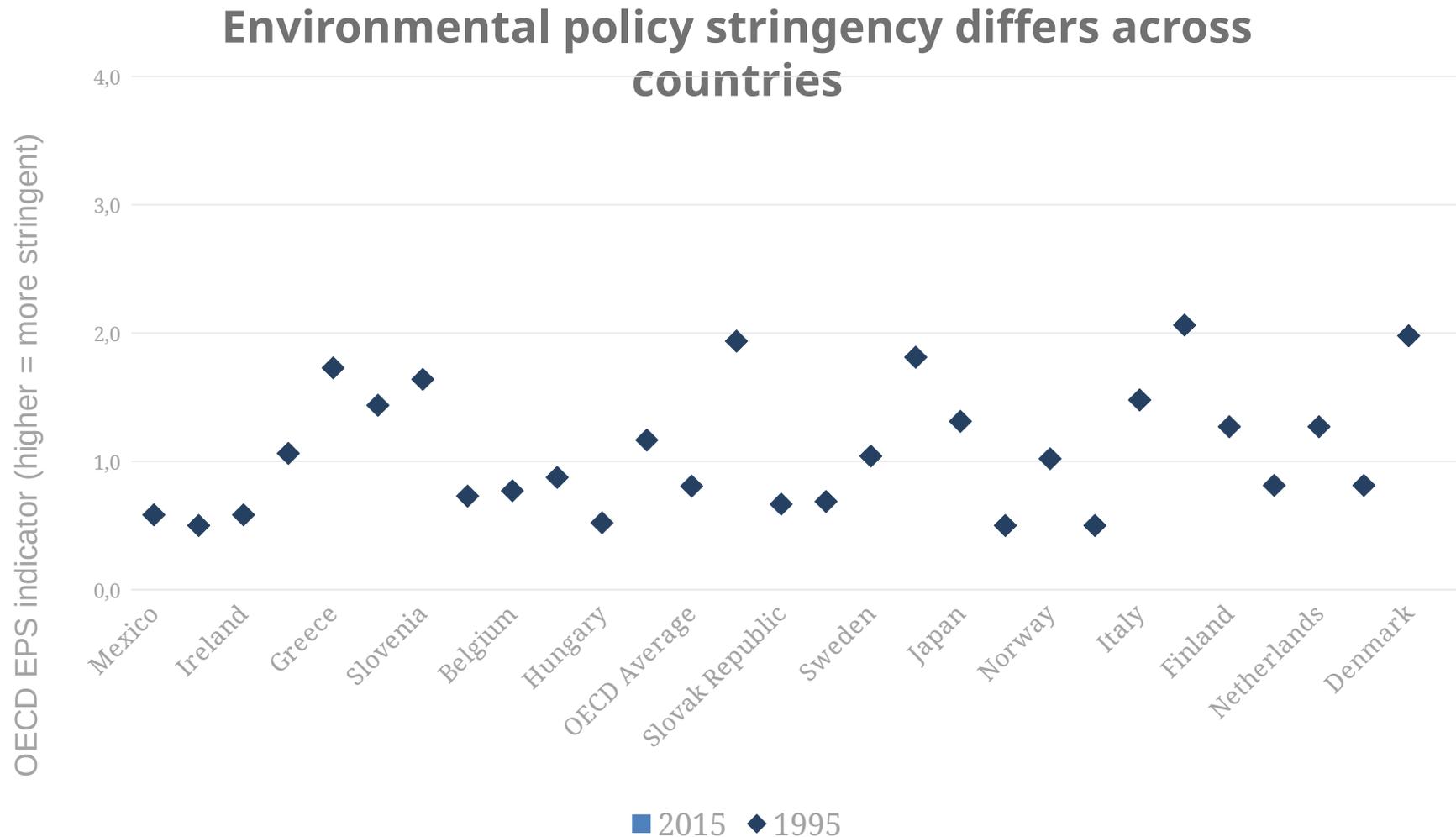
Progress on diagnostics & measurement agenda



For more information, see www.oecd.org/greengrowth/indicators



Progress on diagnostics & measurement agenda

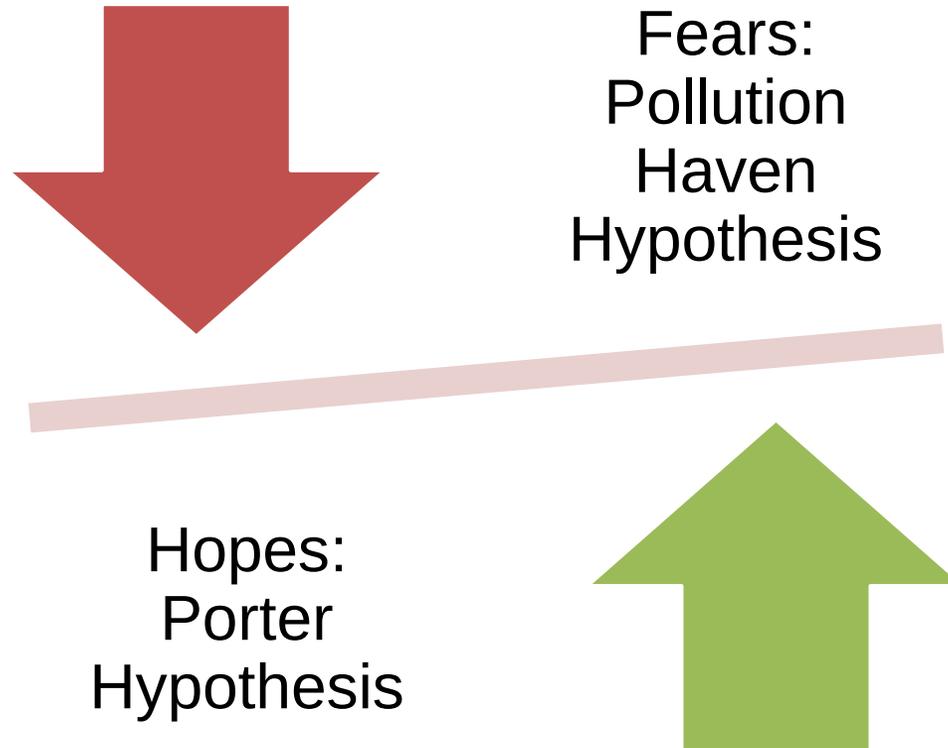


Note: Based on Botta and Kozluk (2014), updated. The figure shows the evolution of environmental policy stringency from 1995 (squares) to 2015 (bars). Where no data was available for 2015, the data of 2012 is used. Slovenia's starting value is from the year 2008. Source: OECD Stats.



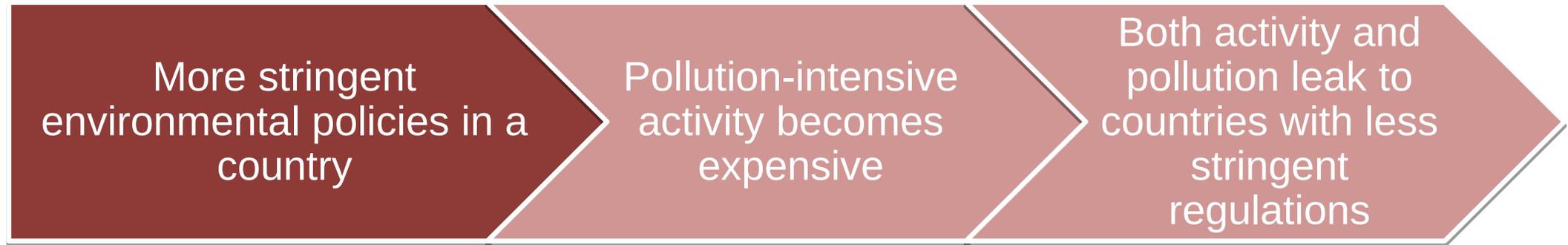
Environmental policies and the firm

- Two pillars of the empirical literature:





Pollution Haven hypothesis





Porter Hypothesis

- **Michael Porter (1991):**

“Strict environmental regulations do not inevitably hinder competitive advantage against foreign rivals; indeed, they often enhance it.”

Stringent environmental policies could stimulate productivity growth via efficiency improvements and innovations aimed at avoiding these cost burdens and meeting the cleaner standards set by public policies



What is has the gross of research focussed on

Introduction, change or presence of an environmental policy

Rethinking of production processes, products and markets, reallocation of resources,

Effects on firm performance (profits, productivity, employment, investment, innovation, exports, sales, etc.)



So, what do we know?

- Effects are not as big as feared:
 - *Most environmental policies don't have large negative effects on firms (on the aggregate)*
- Some caveats:
 - The policies tested – usually small (not always)
 - Winners and losers: some firms will gain, other firms will suffer. Some may fail.
 - Bias towards advanced economies (+China)

But overall, costs seem “small”



But is the “small cost” good news?

It depends!

+++ Small cost is definitely good news if (environmental) benefits are large

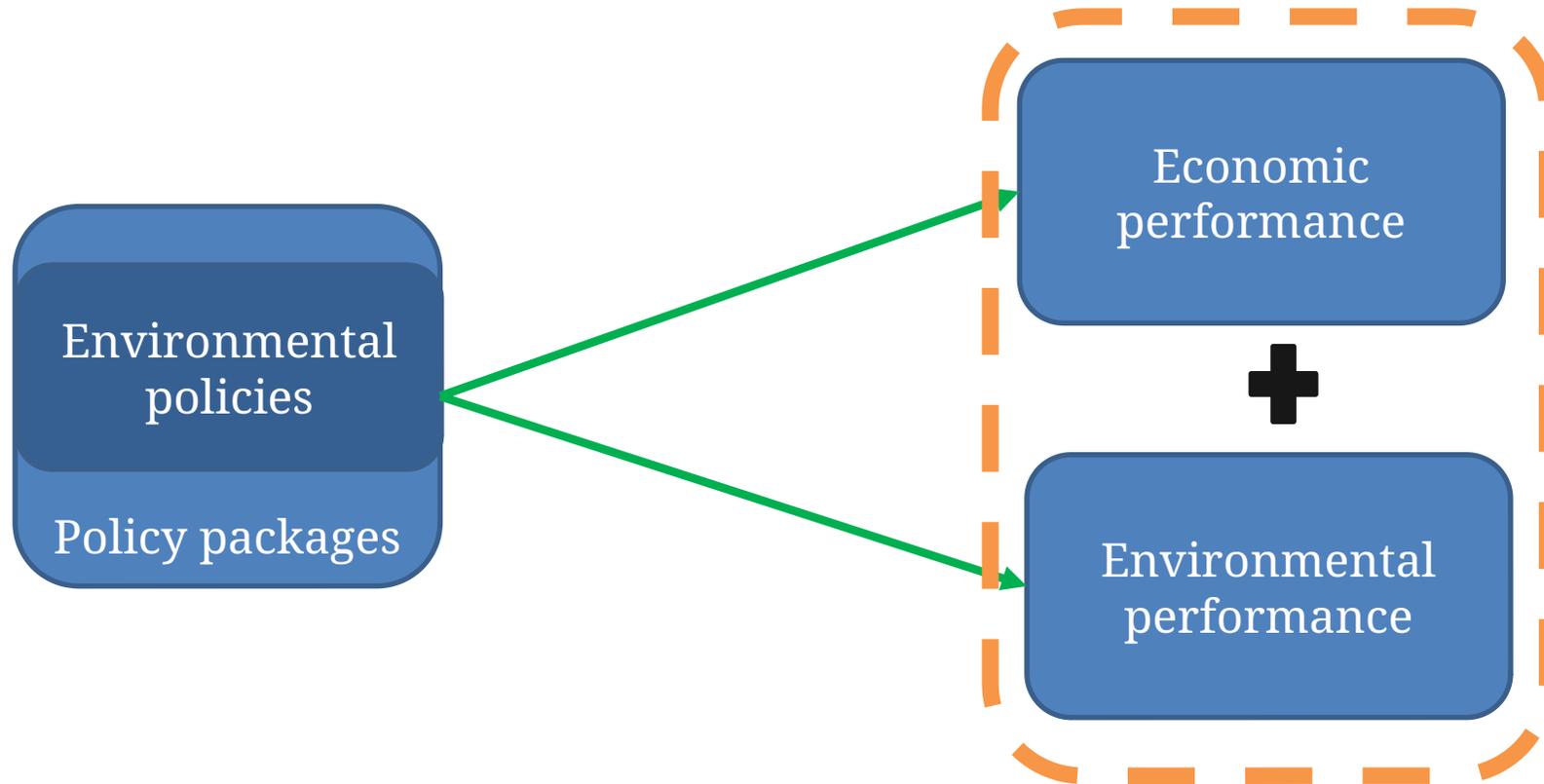
+? Small cost is probably ok, if environmental benefits are small

- - - Small costs are definitely bad news if no benefits.

So, how can we know?



One solution: look at economic and environmental outcomes jointly





Needs the right data...

Data on economic performance:

Profits, productivity, investment, employment, innovation, sales, exports, share prices, etc.

- Firm-level



- Commercial data and confidential data (e.g. business registers, tax data, investment surveys) though sometimes publicly available (e.g. stock markets)
- Often to track firms over time

Data on environmental performance:

Emissions, pollutant release, energy use, waste generation, etc.

- Usually plant or installation level



- Publicly or semi- publicly available data (e.g. pollution releases data, emission permits data), commercial data and confidential data (e.g. energy consumption)
- Often track units over time
- Usually “large” units



Types of questions we can hope to address

- **Are firms greening?**
- **Which firms are greening? E.g. small or large?, new or old?,**
- **Are greening/greener firms competitive?**
- **How are they greening? E.g. downsizing, outsourcing, investment, innovation?**



Obviously, some already do this...

– Some initiatives

- StatCan ~2015: The National Pollutant Release Inventory + Greenhouse Gas Reporting Protocol + Annual Survey of Manufactures (NPRI-GHG-ASM)
- Papers using US Toxic Release Inventory (even back to the late 1990s)
- EU Emission Trading Scheme (e.g. Dechezleprêtre, A., D. Nachtigall and F. Venmans (2018))
- National evaluations of energy prices (e.g. Vona & Marin, 2017)



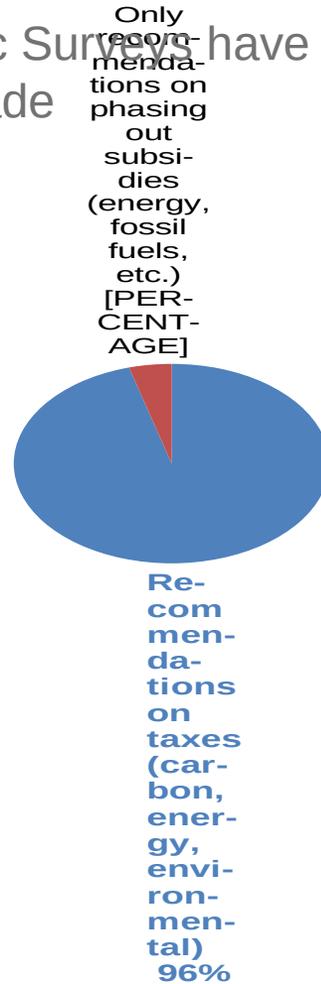
How can we better use research in policy advice?

- Still, we do know quite a bit
- Yet, environmental progress has been limited
- E.g. Paris Agreement (2015) -> globally Zero net emissions by the second half of the century
- NDCs, some ambitious national targets....
- ... but emissions on an upward path prior to crisis,
- Few bold movements, strategies



An example: OECD on carbon pricing/taxes (or environmental taxes more generally)

For most countries, OECD Economic Surveys have recommended increasing/adopting environmental taxes in the past decade



Source: OECD Reform Tracker, based on recommendations in OECD Economic Surveys



In some countries, it was even a priority (prior to the crisis)



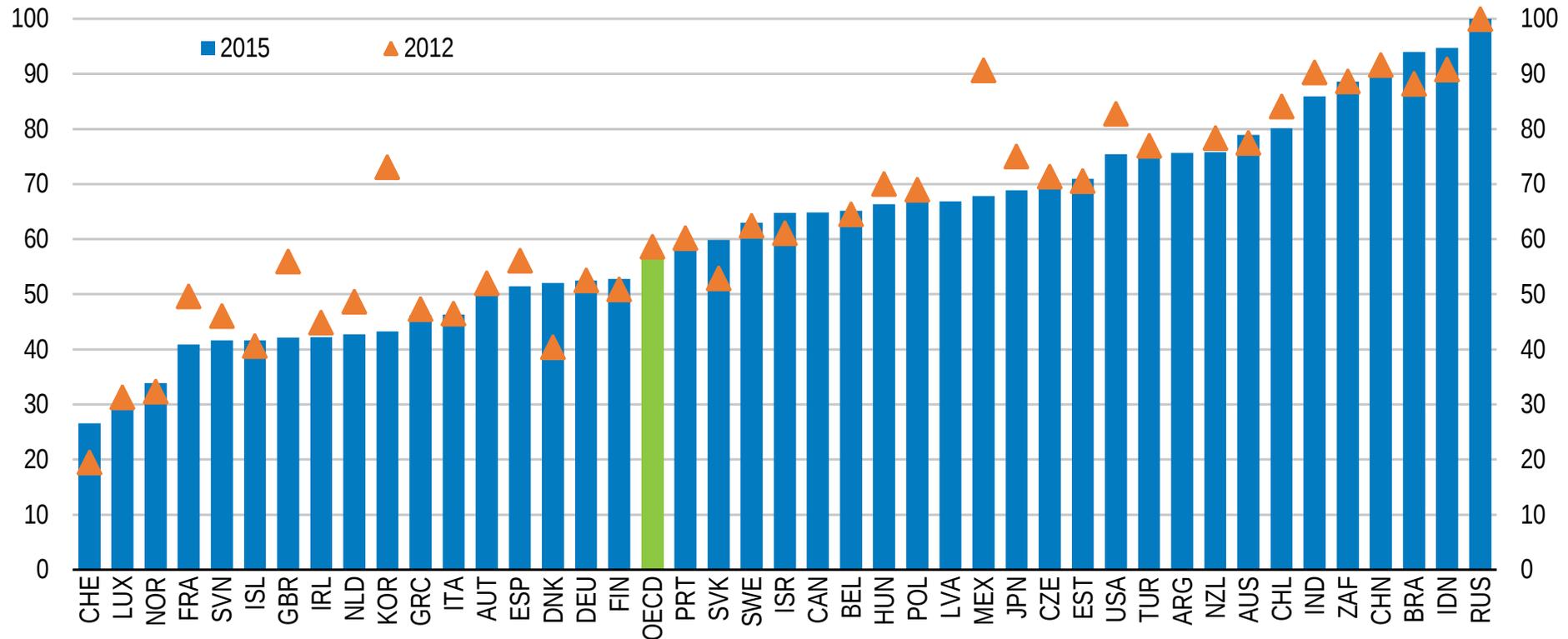
Source: OECD (2019) Going for Growth: The time for reform is now/
Source: <http://econews.com.au/39522/oecd-says-world-needs-big-fat-carbon-tax/>



But, carbon remains largely undertaxed...

Carbon price gap – share of emissions taxed below 30 EUR/tCO₂

Percentage



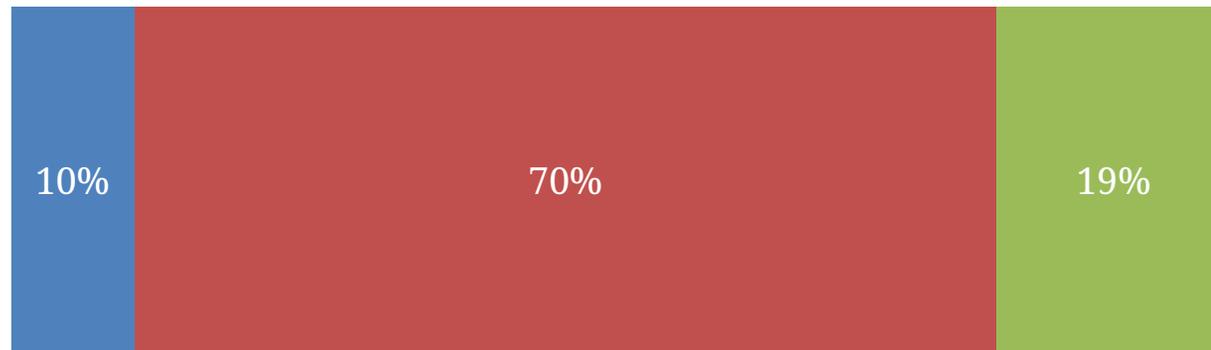
Note: The carbon pricing gap measures how much countries fall short of pricing carbon emissions in line with benchmark values. Carbon pricing gap for EUR 30/tCO₂ is a low end estimate of the carbon costs today.
Source: OECD (2018), Effective Carbon Rates 2018: Pricing Carbon Emissions Through Taxes and Emissions Trading.



Why?

Approval of Tax (and dividend recycling scheme)

Survey sample of 3,002 respondents representative of the French population, February-March 2019.



Source: Thomas Douenne and Adrien Fabre (2020) “French attitudes on climate change, carbon taxation and other climate policies” Ecological Economics Volume 169, March 2020, 106496

Preferences over a Tax & Dividend policy: an increase of 50EUR/tCO₂ in the current French carbon tax, with a uniform lump-sum redistribution of the additional revenue to all adults.



Any chance for carbon taxes?

- British Columbia shows they can be made acceptable...
 - Full revenue recycling: personal and corporate income tax cuts + one-off dividend
 - In place since 2008. Carbon price gradually increased from to CAD 10/tCO₂e to 40/tCO₂e. (plus recent move on federal tax)
 - Recent survey shows 2/3 residents don't believe it has had negative effect on their incomes. Across gender, age, region and political preferences.

Harrison, K. (2013), "The Political Economy of British Columbia's Carbon Tax", OECD Environment Working Papers, No. 63, OECD Publishing.

<http://dx.doi.org/10.1787/5k3z04gkxhkg-en>

Research Co.

https://researchco.ca/wp-content/uploads/2019/11/Tables_CarbonTaxBC_06Nov2019.pdf



But we need to understand perceptions (as well as outcomes)

- How easily can we generalise?
 - Both BC and other papers point to **perceptions of unfairness**. Need to understand distributional effects and their perceptions, to take care of them!
 - For example, Douenne & Fabre (2020) find that payback to all French is least accepted. Carattino et al (2017) find that the Swiss would be against income-tax rebates...
 - Few cross-country insights, comparability is limited
- Perceptions on who loses out and how much don't have to **match the actual effects**

Carattini, Stefano & Baranzini, Andrea & Thalmann, Philippe & Varone, Frédéric & Vöhringer, Frank. (2017). Green Taxes in a Post-Paris World: Are Millions of Nays Inevitable?. *Environmental and Resource Economics*. 68. 10.1007/s10640-017-0133-8.

Thomas Douenne and Adrien Fabre (2020) "French attitudes on climate change, carbon taxation and other climate policies" *Ecological Economics* Volume 169, March 2020, 106496



Green Growth

- Policy making is always under uncertainty and limited information
- We know quite a lot
- Future research – some promising alleys:
 - Micro data on both economic and environmental performance
 - Cross-country insights on attitudes and perceptions
 - Using new technologies to move the measurement agenda



Grazie mille! Thank you!

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