

*PwC report for
World Economic Forum on
IMF's International Carbon Price
Floor Proposal*

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IMF International Carbon Price Floor Proposal (1/6)

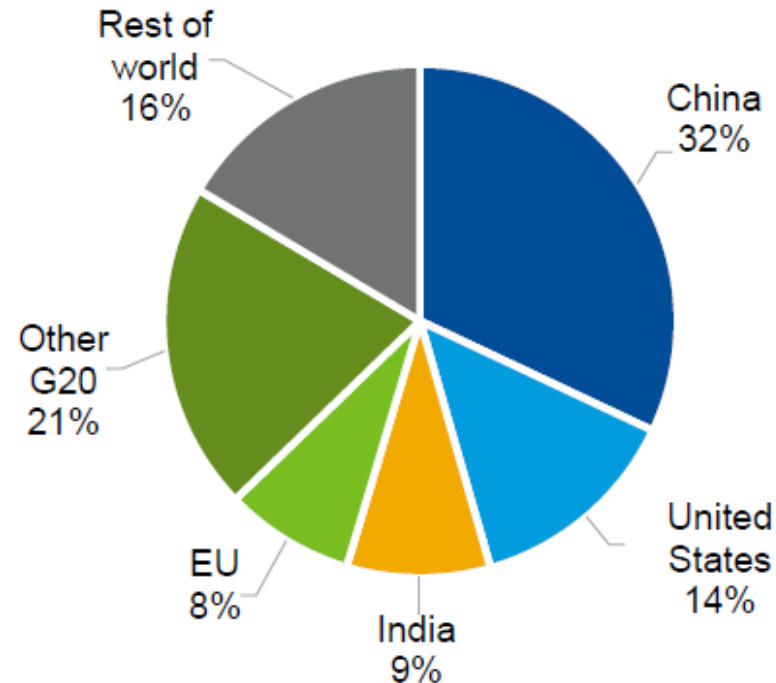
Overview

- In view of the gap between the Paris Agreement emissions goals and nationally determined commitments (NDCs), the IMF proposed an International Carbon Price Floor (ICPF), *differentiated by level of economic development*
 - High/Middle/Low-income countries at \$75/\$50/\$25 mtCO₂e (2030 price in 2018\$)
 - Since PwC did the study: the price of
 - Crude oil has increased by about \$50/bbl (\$115/mtCO₂)
 - Natural gas in the Netherlands has increased by about \$184/MWh (\$200/mtCO₂),
 - Coal (Newcastle contract) has increased by about \$250/mt (\$125/mtCO₂)
- The ICPF could be implemented through carbon taxation, emissions trading, or other equivalent measures
- To allow regions and industries time to adapt, the price floors would be phased in between 2022 and 2030
- A relatively small portion of the revenues from the ICPF in high-income countries would be sufficient to offset the economic cost of the ICPF in low-income countries
- The IMF, OECD, and WTO have voiced support for the ICPF concept. Unlike carbon border adjustments, the ICPF does not create a risk of retaliatory trade measures.

IMF International Carbon Price Floor Proposal (2/6)

- The G20 countries account for about 85% of projected global CO₂ emissions in 2030
- Participation in an ICPF agreement by a relatively small number of large countries could cover a large share of global CO₂ emissions

Projected Global Share of Baseline CO₂ Emissions by Country and Region, 2030



Source: IMF staff calculations.

Note: Baseline refers to projected emissions without new, or tightening of existing, policies. G20 = Group of Twenty.

IMF International Carbon Price Floor (ICPF) Proposal (3/6)

Potential advantages

- **Economic efficiency:** Carbon pricing is the most efficient approach to achieving a given level of emissions reductions
- **Flexibility:** Can accommodate the 64 existing carbon tax and emissions trading systems (and potentially non-pricing systems)
- **Fairness:** The proposal recognizes the principle of “differentiated responsibilities” for lower-income countries
- **Transparency:** Monitoring compliance with an ICPF is easier than for NDCs
- **Revenues:** Revenue stream from carbon pricing can be used by governments to address regressivity, support a “just transition,” and finance research to develop decarbonization technologies
- **Addressing carbon leakage without tariffs:** The ICPF limits carbon leakage without carbon border adjustments that risk trade retaliation and likely are ineffective because exports typically account for only a very small portion of national emissions.
- **Comparison to other internationally coordinated approaches:**
 1. **Carbon Club** (Nordhaus): Would impose across-the-board tariffs on non-club members, violating WTO rules
 2. **Globally linked trading systems:** Would require countries to switch from carbon taxes to cap-and-trade systems and would not accommodate differentiated responsibilities
 3. **International carbon tax:** Would require countries with cap-and-trade systems to adopt a carbon tax or otherwise support a minimum allowance price

IMF International Carbon Price Floor (ICPF) Proposal (4/6)

PwC analysis of ICPF for World Economic Forum

- The economic results were produced using PwC's International Computable General Equilibrium (CGE) model. It estimates how the global economy might react to policy changes accounting for “general equilibrium” effects, i.e., how actions in one sector of the economy affect all other sectors, both within and among countries.
- Using the CGE modeling, each scenario is compared against a business-as-usual (BAU) case based on PwC's estimates of GDP growth and historic rates of improvement in emissions intensity (i.e., GHG emissions per dollar of GDP) in each country.
- The difference between the model results under the tested scenario and the BAU case is the incremental effect of the tested scenario.
- **The “core” scenario assumes:**
 - All greenhouse gases are covered,
 - All countries are covered with a rate of \$75, \$50, or \$25 per mtCO₂e (\$2018) for high-, middle-, and low-income countries, respectively, and
 - Sectors covered: aluminum, cement, fertilizer, iron and steel, electricity, fossil fuel extraction, and refining
 - The CGE model aggregates countries into **16 territories** based on a World Bank measure of per-capita income and geographic contiguity, **14 industry groups** plus the household and government sectors.

IMF International Carbon Price Floor (ICPF) Proposal (5/6)

Key findings

The ICPF, if applicable to all territories, sectors, and GHGs would reduce GHG emissions by 12.3% in 2030

- When combined with countries' pre-COP26 pledges for emission reductions in their NDCs, this would help limit the rise in temperatures to 2°C above pre-industrial levels.
- No single lever will be able to solve the climate crisis but the report shows carbon pricing can play an important role.

An international carbon price could “pay for itself”

- Assuming the revenues raised by the ICPF are returned to households, GDP would decrease by less than 1% across all scenarios tested.
- Over the longer term, much if not all of the GDP loss would be offset by avoided economic losses due to global warming: sea level rise, losses in agricultural productivity, and damage to health.
- Use of revenues to reduce other growth-inhibiting taxes also could mitigate the negative effect of the ICPF on GDP.

Revenues generated by an ICPF could be used to support those most disadvantaged

- An ICPF could increase revenue by up to 3% of GDP in some countries, a portion of which could be used to address impacts on low-income households.
- Only 13% of ICPF revenues in the high-income countries would be needed to offset 100% of the GDP cost of the ICPF in low-income countries.

Carbon leakage can be addressed.

- If only high-income countries are included in an ICPF there would be much higher levels of carbon leakage rates than under the core scenario in which all countries are included, indicating the importance of covering a large percentage of global emissions.

IMF International Carbon Price Floor (ICPF) Proposal (6/6)

Discussions with stakeholders from government, business, and civil society have identified four key challenges:

1

Achieving a just transition and global “buy in”

- Inter-regional transfers need to account for *existing climate finance* and be *transparent* and *secure*.
- The US and China will need to play a significant role to curb emissions.
- World leaders need to be more direct about changes required to combat global warming and why pricing carbon will help.

2

Ensure internationally consistent implementation

- Agreement on the sectors and GHGs to be covered by the ICPF.
- A common approach is needed to identify which measures count towards the ICPF to prevent future uncertainties or unintended competitive advantages.

3

Manage a major economic structural transition

- Governments need to manage economic dislocation and disruption, including how to support redeployment of capital and labor, and assure that businesses and households can manage the economic effect of rising energy costs.

4

How to address innovation and additional policies to change behaviors

- Carbon pricing needs to work in concert with other elements such as financial support for innovation, infrastructure, process development, regulatory measures, etc.