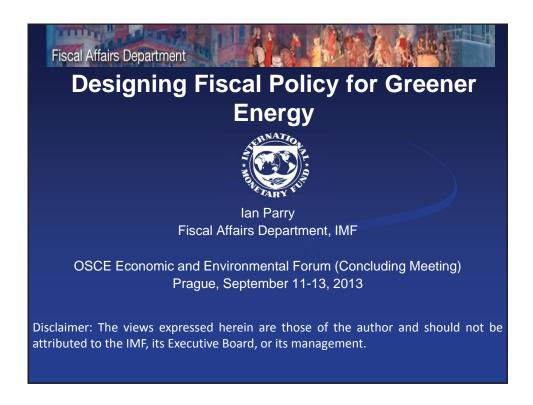
ENGLISH only



Plan of talk



- How to design pricing policies
 - focus on tax policies (rather than ETS equivalent)
- How to gauge appropriate price levels

Major Environmental Problems



- Carbon emissions
 - projected warming 2-7°C by 2100
- Local air pollution
 - 3.2 million premature deaths a year
- Road congestion/accidents
 - London motorists impose congestion cost of €8/liter
 - accidents cause 1.2 million deaths

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Green energy taxes should include three elements

Charge for Carbon Emissions



- Administration
 - charge fuel supply in proportion to emissions factors (extension of motor fuel excises)
- Environmentally effective
 - shifting to cleaner power generation fuels; reducing electricity, motor fuel, heating fuel demand

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Charges for Local Air Emissions



- Fine particulates are most damaging, from
 - coal
 - SO₂ (coal)
 - NO_x (coal, natural gas, petroleum products)
- Administration
 - charge fuel supply in proportion to emissions factors
- Highly effective
 - e.g. (with crediting) promotes emissions control technologies which can cut power plant emissions ≥ 80%

Charges for Congestion, Accidents



- Excessive because motorists do not consider
 - congestion costs
 - pedestrian injuries, property damage, etc.
- Ideal policy: km-based charges
 - for busy roads (for congestion)
 - varying with driver/vehicle risks (for accidents)
- Interim: reflect congestion/accident costs in fuel taxes

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Tax levels should reflect environmental damages

Damages from Carbon



- €25/ton CO₂ (US govt.) or 80% of world coal price, 30% of nat. gas price
 - discounted global damage (e.g., agric., sea level)
 - but sensitive to discounting and extreme risks
- For comparison
 - starting price of €25/ton consistent with 3.0°C target
 - current prices €17/ton (Australia), €5/ton (EU)

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Damages from Air Pollution



- Involves
 - estimating average population exposure to emissions (smokestack emissions travel ≥ 2,000km)
 - inferring health effects (using WHO evidence on pollution/mortality link)
 - monetizing health effects (contentious)
 - use emissions factors to express per unit of fuels

_	Gasoline (cars)		Diesel (trucks)	
	US	Chile	US	Chile
Total	0.25	0.47	0.26	0.42
Contribution of:				
local pollution	0.02	0.12	0.07	0.11
carbon	0.04	0.04	0.04	0.04
congestion	0.10	0.13	0.07	0.11
accidents	0.08	0.19	0.02	0.08
noise	0	0	0.01	0.01
road damage	0	0	0.04	0.08
Current tax	0.08	0.21	0.09	0.07
Revenue from tax reform	US		Chile	
(% of GDP)	0.9		0.8	

Concluding



- IMF report (January 2014) will provide
 - efficient taxes for coal, nat. gas, gasoline and diesel for 187 countries (where data allows)
 - revenue, health, emissions impacts of tax reform
 - user-friendly spreadsheets