ENVIRONMENTAL TAX REFORM

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Major Environmental Costs of Energy

- Carbon emissions
  - Projected warming 3-4°C by 2100

- Local air pollution
  - 3.2 million deaths a year

- Motor vehicles
  - Congestion, accidents, road damage
Plan of Talk

• Case for energy tax reform
• How far are we from efficient prices (global perspective)?
Taxes Should be Center Stage

- Effective at reducing environmental harm
  - If targeted at the right base

- Raise substantial revenues
  - Can be used to reduce taxes on labor and capital

- Balance environmental benefits and costs
  - If taxes aligned with environmental damages
Efficient Taxes: A Closer Look

• Carbon
  • Fuel charge = CO$_2$ emissions rate × damage/ton

• Air pollution
  • Fuel charge = emissions rates × environmental damages/ton
  • Credits for control technologies (e.g., SO$_2$ scrubbers)

• Vehicle externalities
  • Kilometer-based taxes (e.g., peak pricing on congested roads)
  • Interim: reflect externalities in fuel taxes
Measurement of Environmental Costs

- Environmental costs (> 150 countries)
  - $CO_2$: $35/ton (illustrative value)
  - *Air pollution*: uses country estimates of population exposure to pollution and WHO evidence on exposure/mortality risks

- Environmental costs uncertain
  - Spreadsheet shows implications of other assumptions
How far from Efficient Energy Prices?

• Measured by energy subsidies, defined broadly
  • Undercharging for supply costs
  • Undercharging for environmental costs
Global Energy Subsidies are $5.3 trillion

In US$ trillions

- 2011: $4.2
- 2012: $4.6
- 2013: $4.9
- 2014: $5.2
- 2015: $5.3

In percent of global GDP

- 2011: 5.8%
- 2012: 6.3%
- 2013: 6.5%
- 2014: 6.7%
- 2015: 6.5%

Undercharging for supply costs
Global Subsidies by Component, 2015

- Local pollution: 52%
- Vehicle externalities: 12%
- Foregone revenue: 6%
- Undercharging for supply costs: 6%
- Global warming: 24%
Global Subsidies by Fuel, 2015

- Coal: 59%
- Petroleum: 28%
- Natural gas: 10%
- Electricity: 3%
Global subsidies by country/region, 2015

- USA $0.7 trillion
- Japan $0.2 trillion
- Russia $0.3 trillion
- EU $0.3 trillion
- China $2.3 trillion
- India $0.3 trillion
Energy price reform can generate substantial health benefits...

Reduction of fossil-fuel emissions-related deaths, 2015

Emerging Europe
E.D. Asia
CIS
MENAP
S.S. Africa
Advanced
LAC

Percent reduction

Global average: 57 percent
...and carbon emission reductions...

Reduction of fossil-fuel related CO$_2$ emissions, 2015

Global average: 24 percent

Percent reduction

- MENAP
- E.D. Asia
- LAC
- CIS
- S.S. Africa
- Emerging Europe
- Advanced
...and a significant fiscal dividend
Concluding

- Environmental taxes better than
  - Regulatory approaches
  - Trading systems

- Environmental tax reform
  - Is in countries own interests
  - Contributes to emissions pledges for COP 21

- Finance ministers have key role