

The 5th IMF-Japan High-Level Tax Conference for Asian Countries

Energy (and Related) Taxes and Charges



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PRINCIPLES...

Why tax energy use?

Use for **final consumption** by households?

- Should be subject to general consumption tax (e.g. VAT) in usual way

Use as **business input**?

- General principle that don't want to distort business decisions...
 - Implies no tax that 'sticks': just usual VAT

...unless:

- Environmental damage from energy use creates case for “corrective” (“Pigovian”) price—to ensure polluter takes this harm into account

This should:

- ‘Stick’ on business use: so not a VAT, but an excise
- Be at same rate whatever the use of the energy
 - Because damage is the same
- Be in specific form (i.e. fixed amount per unit)
 - Because quantity, not value, determines damage

Preferred energy tax system

- Usual VAT (at standard rate)
 - Though some countries restrict input tax credit on gas/diesel because final consumption may be disguised as business use
- and
- Specific excise, on all use, that reflects environmental damage
 - levied before the VAT
 - So VAT changes do not affect relative price of energy

What environmental damage?

Mainly:

- Climate change
 - CO₂ emissions
- Local pollution
 - Fine particulates (SO₂ (coal); NO_x (all fossil fuels)), noise
- Vehicle externalities
 - Congestion
 - Accidents
 - Road damage

Tax or Regulation?

Why price rather than e.g. limit access to city center by license plate, emission standards?

- Achieves given pollution reduction at least cost
- Can often be better targeted to source of harm
 - unlike e.g. rebound effect with standards
- Relatively efficient source of revenue

But in some cases regulation needed: e.g. where threshold effects important

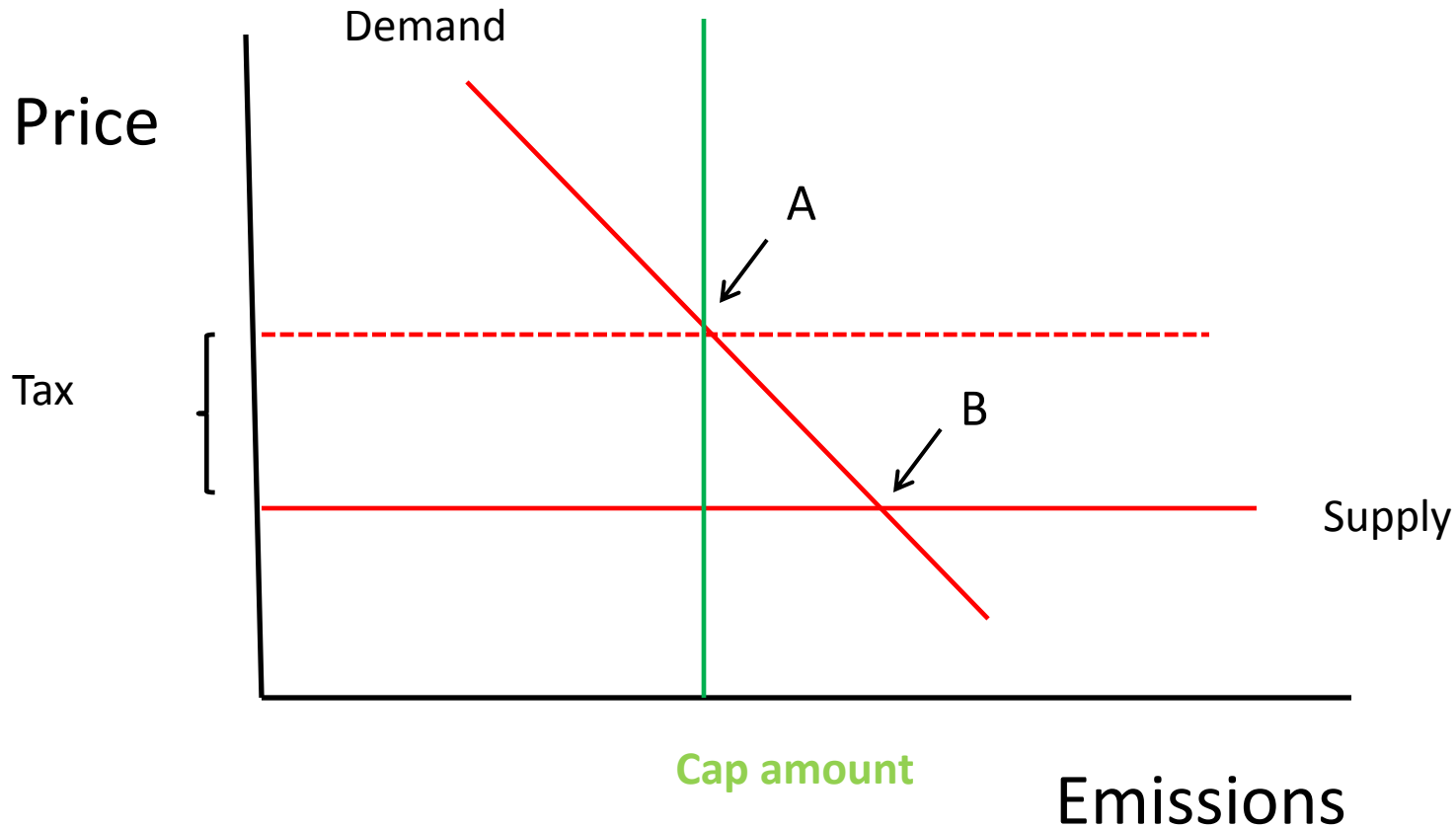
Climate

Carbon price = charge on carbon content (at the same specific rate) of all fuels (gas, coal...)

Can be implemented as either:

- Carbon tax
 - straightforward extension of straightforward excises
- Cap-and-trade
 - Issue licenses to emit up to some level, and allow companies to buy and sell them

- Broadly equivalent—if permits auctioned



- Some differences—e.g. price volatility under cap-and-trade—but either can be effective

What is the right carbon price?

- Many uncertainties, but US government puts at \$35 per ton CO₂
 - About \$13 per barrel of oil, 70% of coal price
- Damage is the same wherever emissions occur
- So should carbon price be the same in all countries?
 - Leave aside historical responsibility

Not necessarily, given lesser ability to pay

Local pollution

Appropriate charge depends on:

- Inhalation of emissions
- Link with mortality
- Valuation of health effects

Administration?

- Reflect in fuel excises
- Rebate/credit for power stations using control technologies

Vehicle Externalities

Congestion

- Ideally time-varying charges for road use
 - Could even allow a cut in gas prices
- Simple variant a charge on city entry
 - Singapore a pioneer
 - Useful source of local finance for mega-cities?
- In the meantime, reflect in price of gasoline

Accidents

- Charge to reflect uninsured risks

Diesel versus gasoline

Diesel is:

- More polluting, per liter
- Used more by trucks that congest and harm roads

But:

- Truck's lower fuel efficiency means marginal liter of diesel adds less to km.s traveled and hence congestion

Diesel tax should not be substantially below gas

What role for vehicle taxes?

- in addition to sales (and/or wealth) tax?
- With efficient charges on gasoline use, no further taxation needed
- Failing that, annual charge on capacity/age may be warranted but is blunt
- Charge by emissions per mile (on annual inspection) better targeted

Example: Corrective Motor Fuel Taxes (€/liter)

	<u>Gasoline (cars)</u>		<u>Diesel (trucks)</u>	
	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

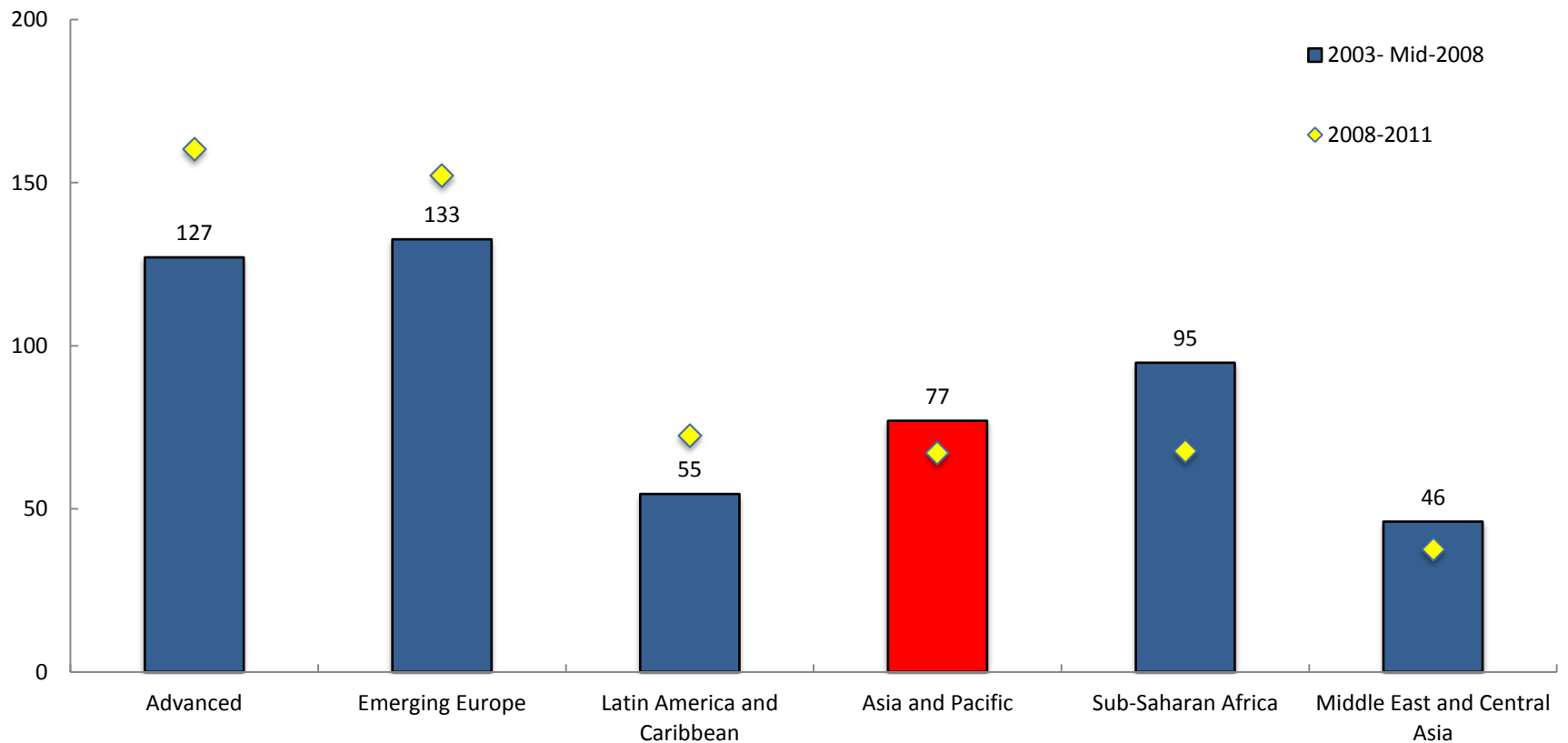
Some pitfalls to avoid

- Earmarking
 - Over-constraining if it bites, non-transparent if it does not
 - But last resort?
- Excessively blunt instruments
 - E.g. electricity tax does not encourage switch to cleaner fuels
- Subsidizing good things instead of taxing bad

In practice...

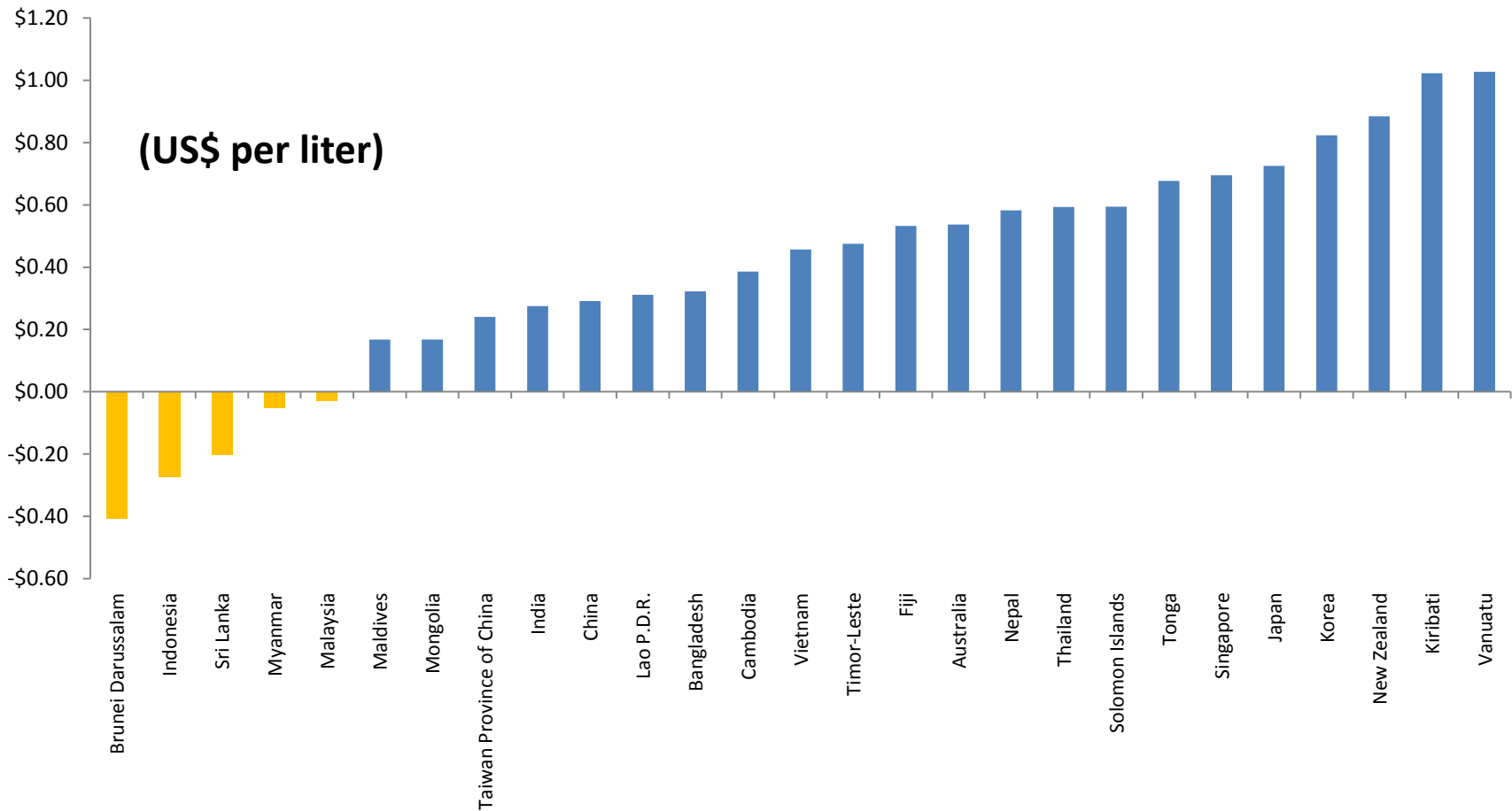
Many countries subsidize fuels

...with 'pass through' of less than 100 percent

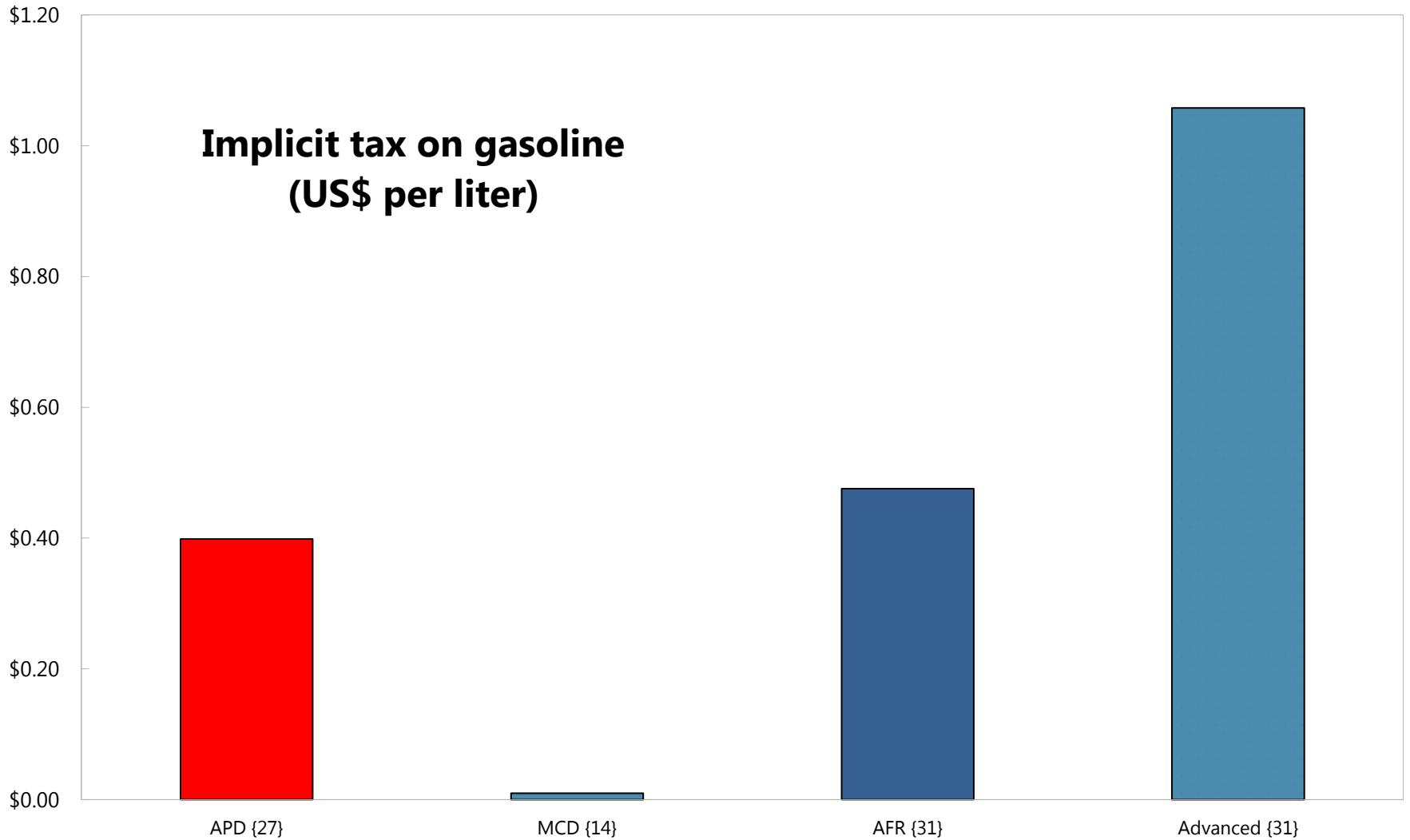


...including in the region

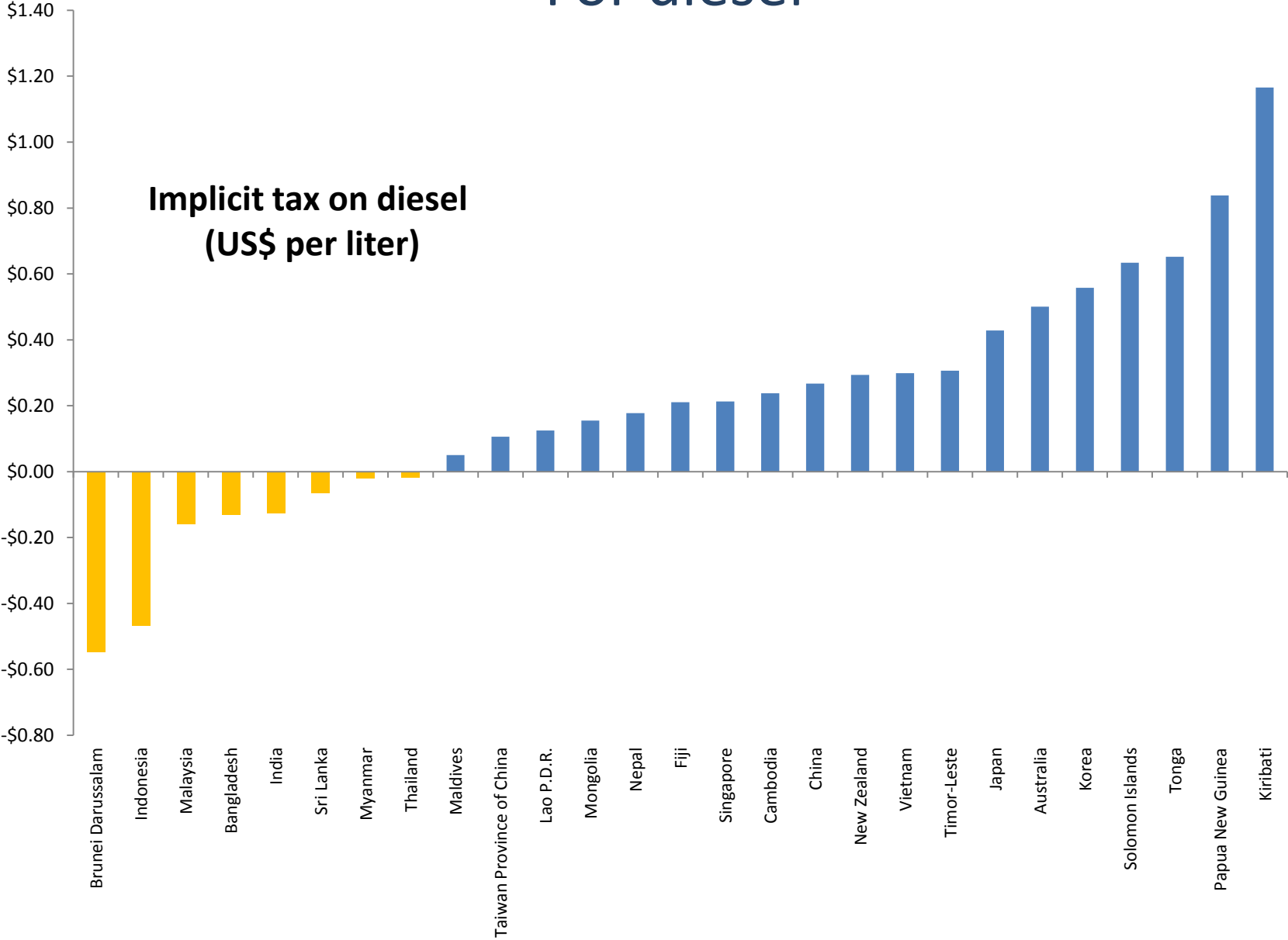
‘Implicit tax rates’ (retail - world prices) for gas of:



Comparing with other regions

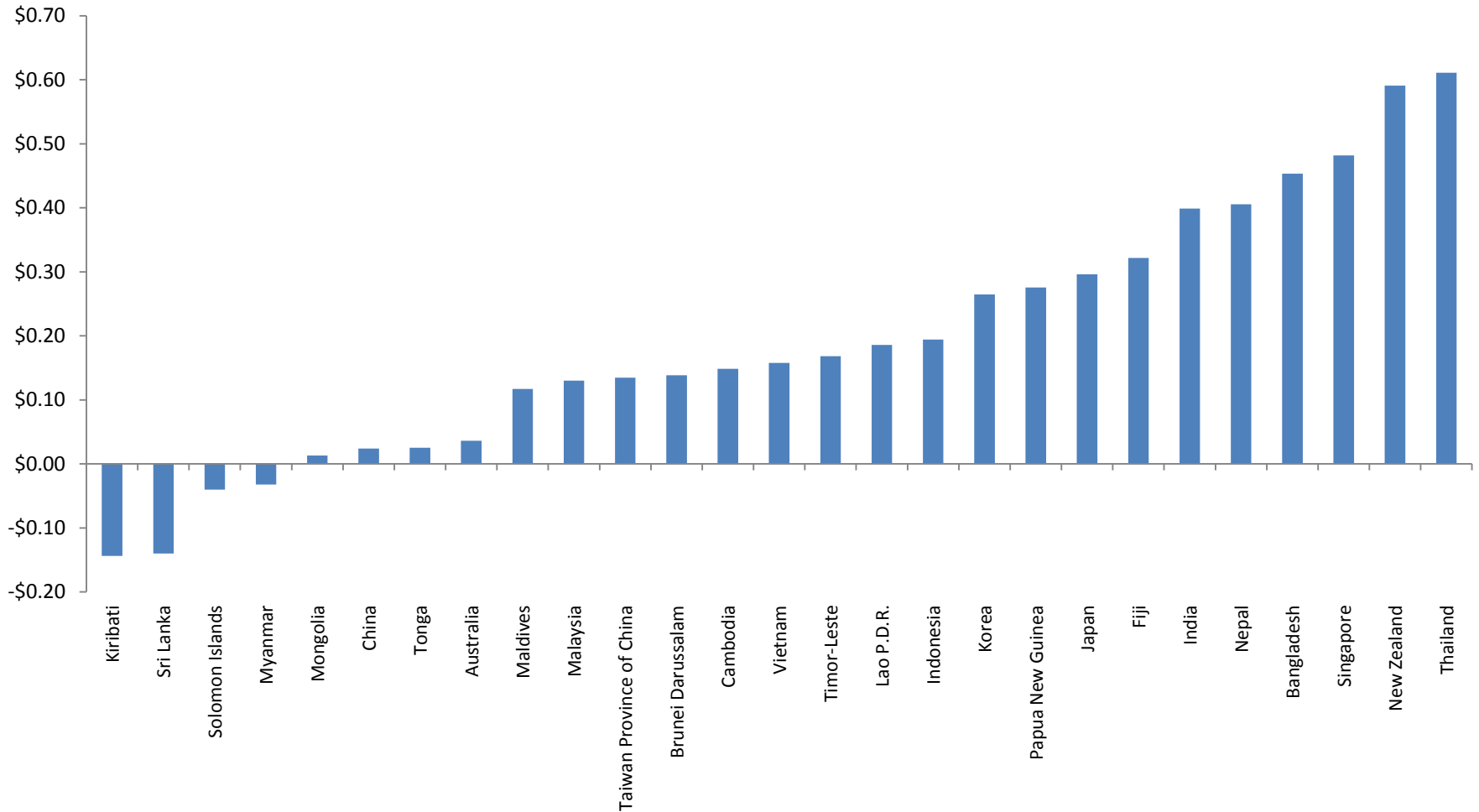


For diesel



Diesel often favored over gas

Excess of gasoline implicit tax over diesel
(US\$ per liter)



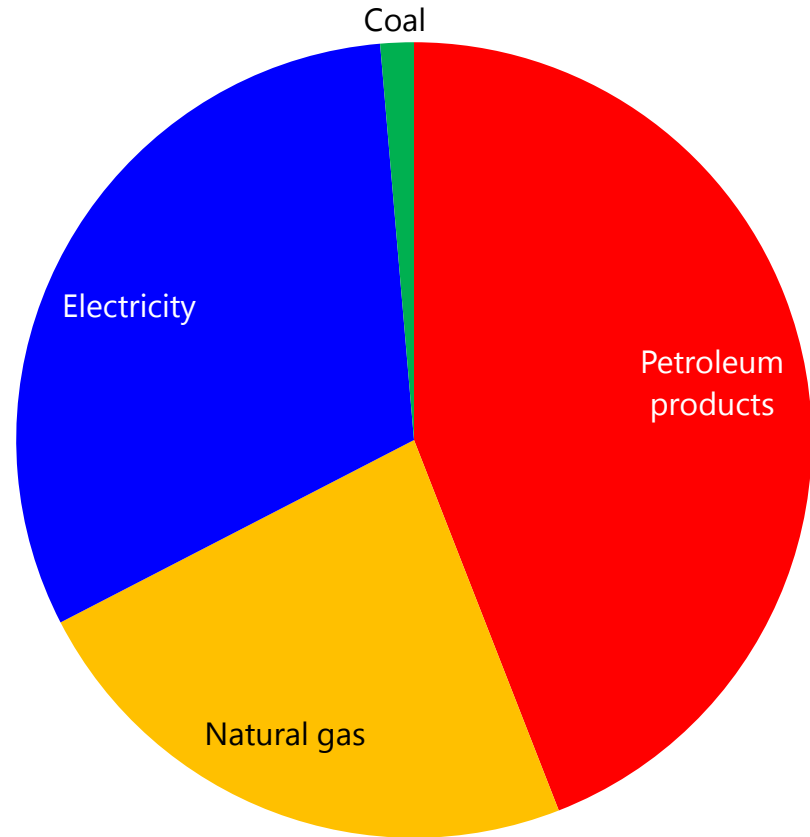
Problems with subsidies well-known:

They cause environmental damage...

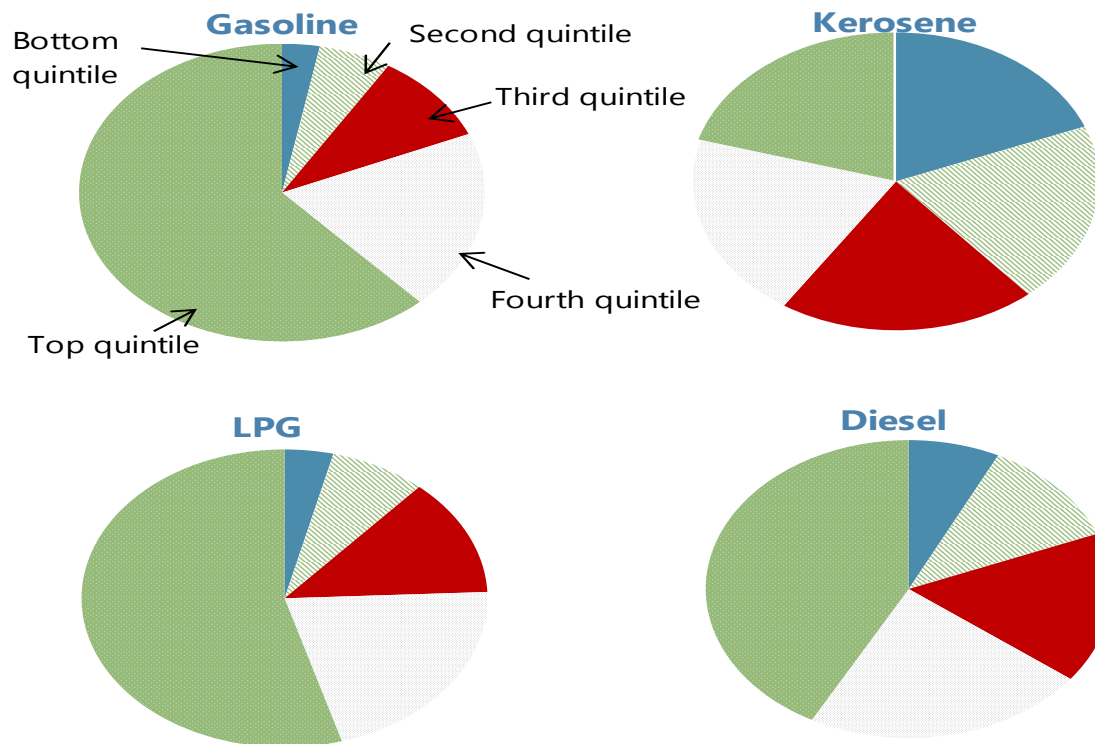
- Phasing out fossil fuel subsidies in developing and emerging might reduce global GHG emissions (relative to BAU) by 6% in 2050
- And would reduce local pollution, too though subsidies for dirtiest fuel (coal) relatively modest

...are hugely expensive...

Globally, \$492 billion
—which is 0.7% of
GDP, of 2.1% of
revenues)



...and benefit mainly the better off

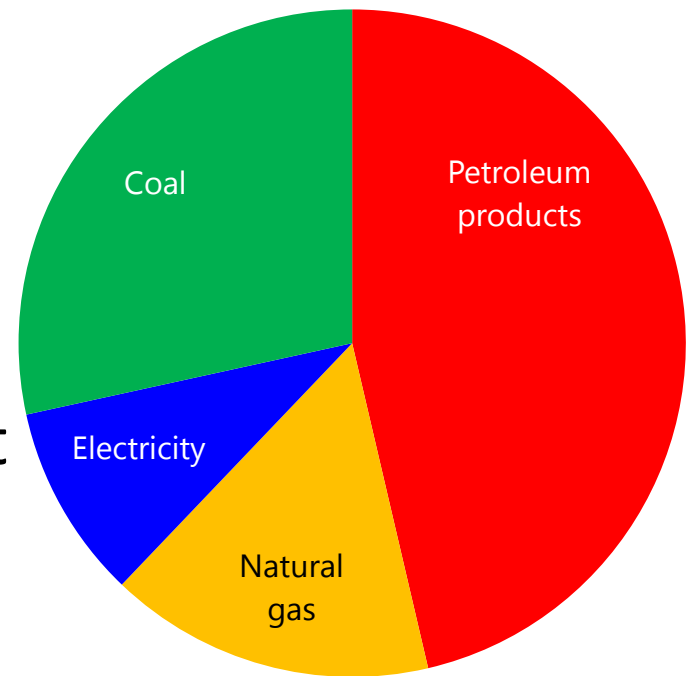


- Poor's gain may still large relative to their income
- ...but are usually better targeted ways to help them

Implicit (“post-tax”) subsidies even larger

Reflecting also failure to charge for external damage:

- \$1.90 trillion (2.7% GDP, 8.1% revenues)
- With coal much more important from this perspective
- And largely local damage as above



Concluding

- Energy taxes among easiest to implement
- Key to addressing environmental concerns
- Taxes on fossil fuels too low in many countries
 - Even where not outright subsidized
- And that is often true even ignoring global climate damage...
- ...So case for raising many such charges need not rely on climate concerns

For more

