Dealing with oil price volatility

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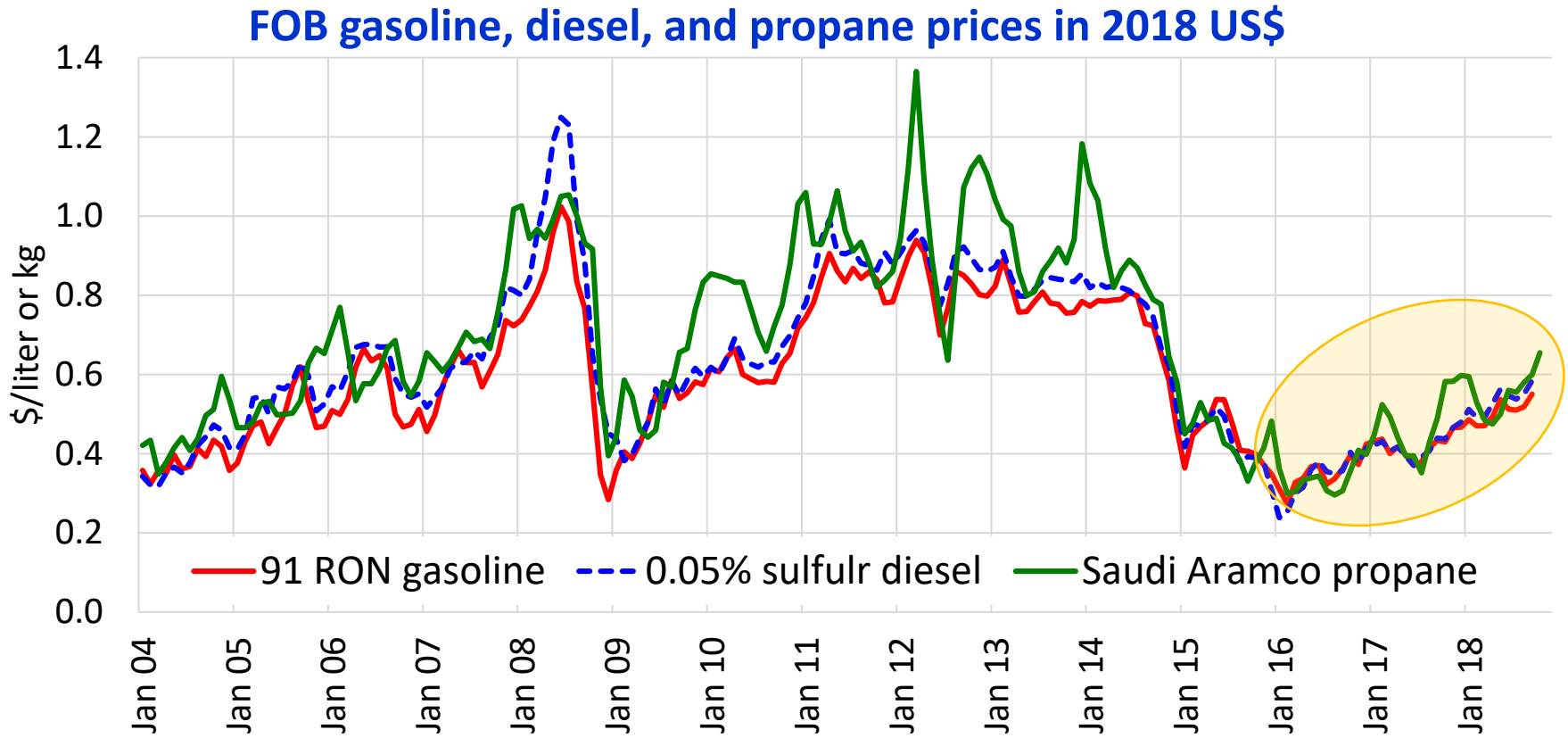
Oil price movement since 2004

- Oil prices have shown steady increases as well as sharp drops since 2004.
- LPG price volatility has been particularly pronounced.



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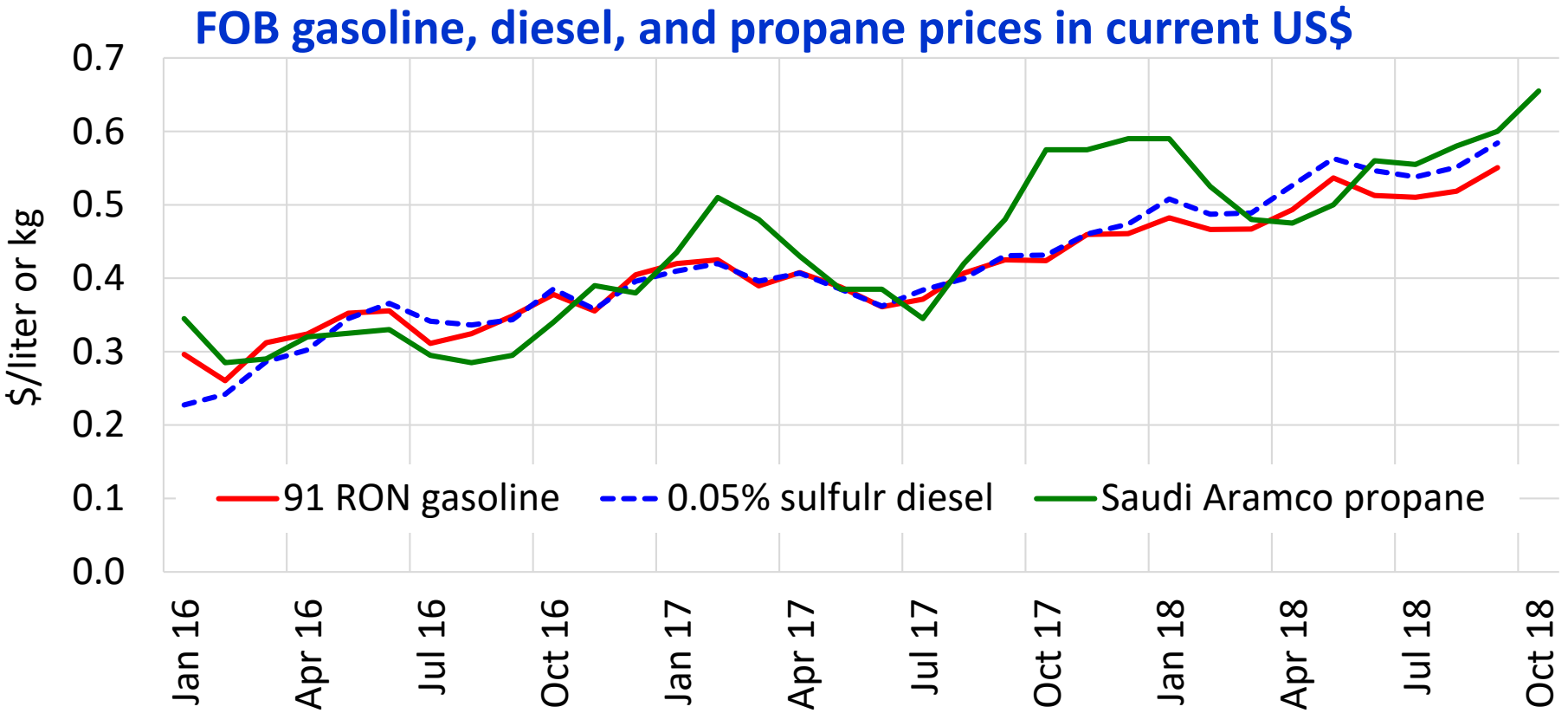
LPG = liquefied petroleum gas; FOB = free on board

Oil price rebound since 2016

- From the lowest level in more than a decade in early 2016, petroleum product prices have doubled since.
- LPG prices continue to be most volatile.



Exchange rate volatility

- In many countries, oil price increases have been amplified by currency depreciation.
- Since 2014, most countries have seen their currencies depreciate against the dollar.

Currency appreciation to September 2018

Starting month	Jan 16	Jan 15	Jan 14
Maximum depreciation	-87%	-98%	-98%
Maximum appreciation	22%	19%	5%
Median	0%	-2%	-15%
Average	-3%	-11%	-19%
Depreciation (# of countries)	75	115	159
Appreciation (# of countries)	91	50	7

Commitment to subsidy elimination

- In both 2009 and 2015, several governments with price subsidies took advantage of low world prices and announced commitments to eliminating subsidies.
- Some countries increased prices (Angola, Nigeria), but several countries lowered prices as part of “automatic” price adjustments to move with world prices.
- When world prices began to rebound, some did not increases prices, citing socioeconomic reasons.
- In 2018, some governments that had earlier eliminated price subsidies re-introduced them (Brazil, Malaysia).

Typology of pricing policies

Price control status	Examples
No price control, no tax adjustment in response to world price movement	High-income OECD
No price control, tax adjustment in response to world price movement	Automotive fuels in Chile (strictly rule-based) and Mexico
Price control, special fund charging a fee used to subsidize prices	Diesel, biofuel blends and LPG in Thailand (ad hoc), Vietnam (twice a month), pre-mix and fuel oil in Ghana
Price control, regular price adjustment, no subsidies	South Africa (monthly), automotive fuels in Morocco in 2015 (twice a month)
Price control, price adjustment abandoned or frequency not honored	Indonesia (monthly, then quarterly), Nigeria (quarterly)
Two-tier pricing depending on end-use	Diesel: Mozambique, Peru, Sri Lanka Kerosene: India LPG: India, Indonesia, Peru, Tunisia
Price control, ad-hoc price adjustment	Bangladesh, Bolivia, Egypt, Iran, Kuwait, Turkmenistan, Venezuela

Examples of policy issues

Pattern	Pros	Cons
Adjust prices only when costs in local currency change by more than X%	Assures price stability	Depending on X, price changes are not small, making it more difficult politically to raise prices
Charge user fees to fund price stabilization fund	No fiscal burden in principle	Accumulation in times of low oil prices makes it politically difficult to save, even amplifying oil price volatility
Subsidize crude oil price	Helps refineries	Lacks transparency, and complicates subsidy reform
Use an equalization fund	One country, one price	Open to abuse, discourages competition, and hides operational inefficiencies
Subsidize kerosene for household use	Helps the poor	Price difference between kerosene and diesel has led to large-scale diversion
Subsidize fuels for fishing	Helps fisheries	Boats are ideally suited for fuel smuggling

Special role of national oil company

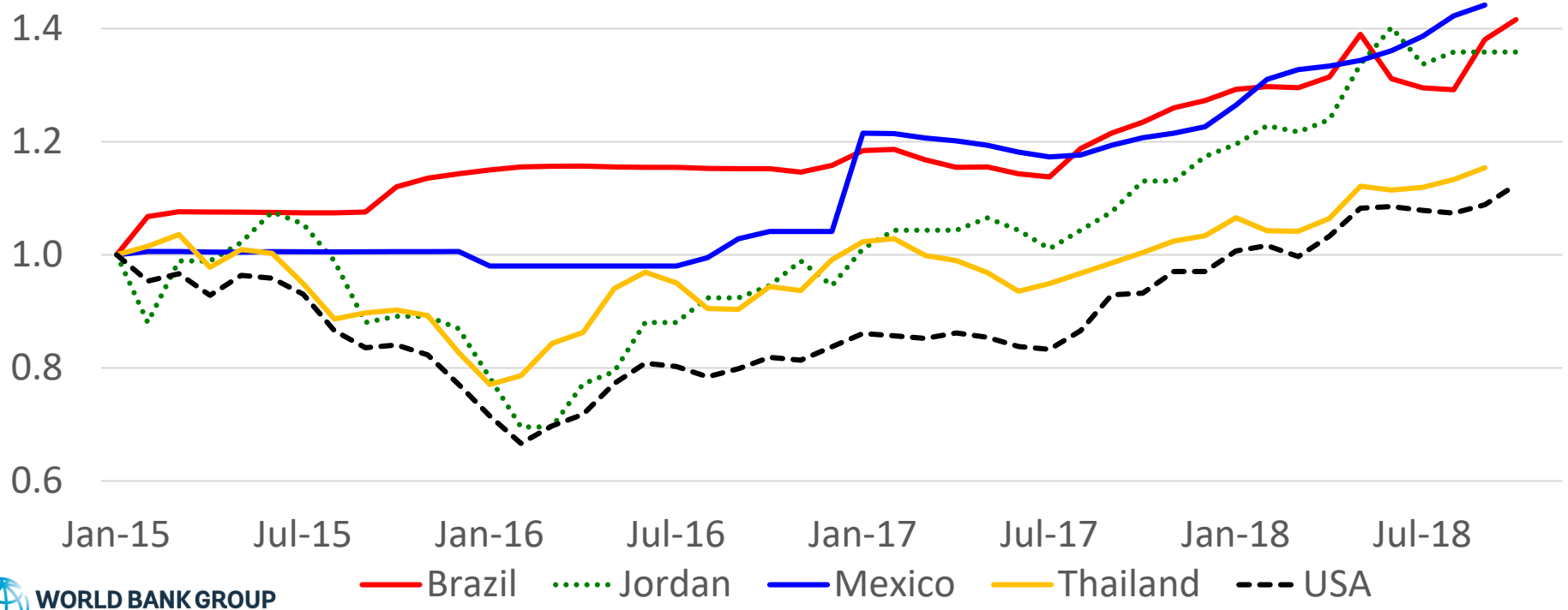
- No budget allocation for price subsidies in Angola, Indonesia, and Nigeria
- National oil companies use upstream oil revenue to cross-subsidize fuel price subsidies

Consequences

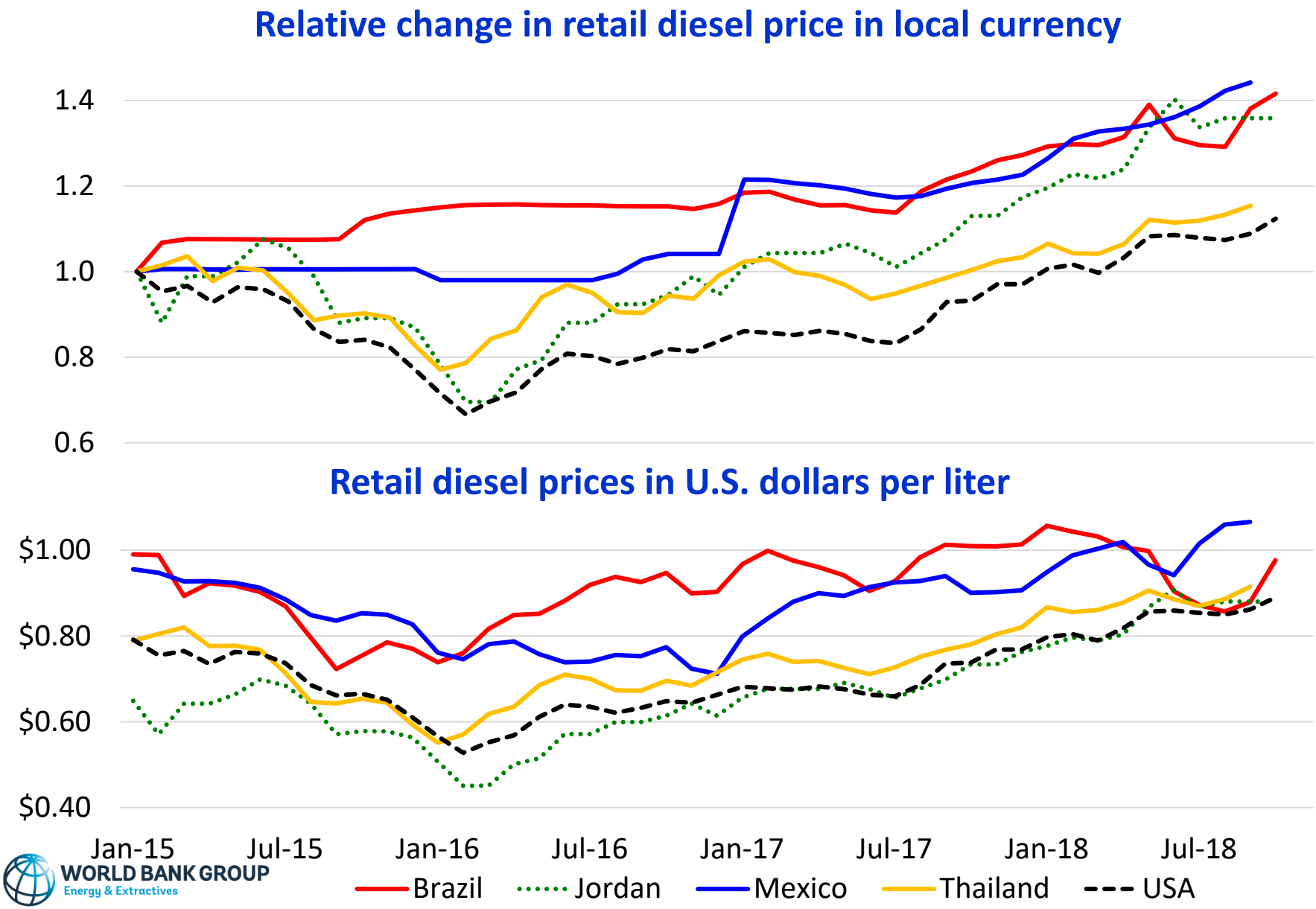
- Entrenches the monopoly power of the national oil company, making future subsidy reform difficult because of absence of competition.
- Subsidies lack transparency
  - Costs are self-reported, making it difficult to separate unavoidable costs from operational inefficiencies.
  - Loss of government revenue from upstream oil production is difficult to calculate and is not subject to scrutiny.

Relative change in retail diesel prices in local currency

- Brazil: Price stabilization using Petrobras, diesel price subsidy re-introduced in 2018
- Jordan: Regulated price with some temporal cross-subsidies
- Mexico: Use of tax to smooth prices
- Thailand: Use of oil fund to subsidize diesel price in 2018



Comparison of retail diesel prices



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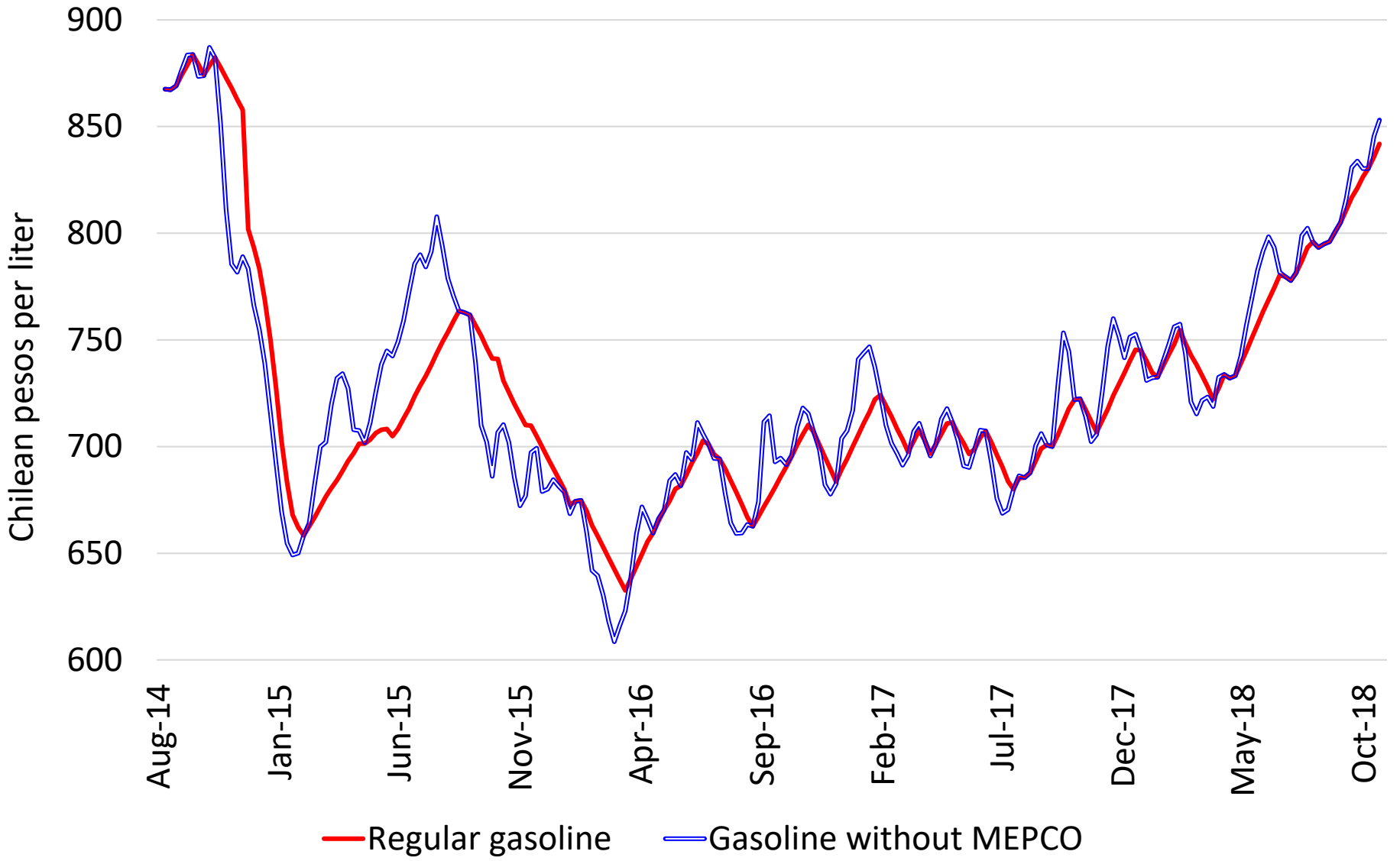
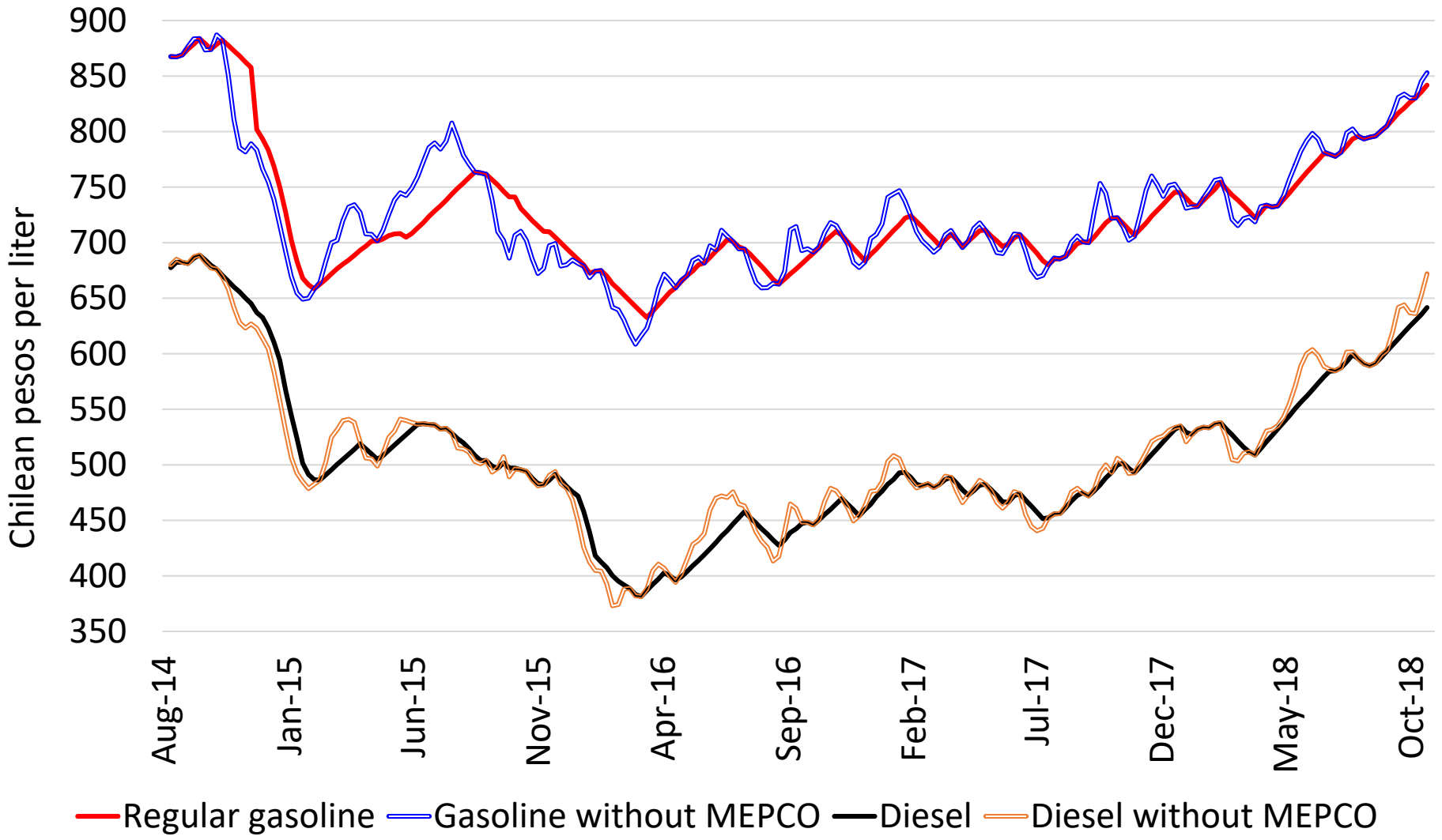
Chilean approach to price smoothing

- Chile has tried price stabilization funds (relying on transfers from a copper fund) and diesel price insurance, but abandoned them.
- Chile rolled out MEPCO in Aug 2014, building upon SIPCO.
- MEPCO is a two-part tax system.
  - MEPCO is for automotive fuels (gasoline, diesel, CNG, and LPG) for small and medium consumers.
  - Its objective is to smooth price volatility, not stabilize prices.
  - The fixed tax component is indexed to inflation.
  - The adjustable tax component limits weekly price increases ***as well as decreases***.
  - Cumulative losses from the adjustable tax cannot exceed US$500 million, above which the formula shifts to reducing losses.

Effect of MEPCO on gasoline prices



Effect of MEPCO on gasoline and diesel prices



Price smoothing by averaging past prices

How would price smoothing by averaging prices over the past so many months have worked in hindsight?

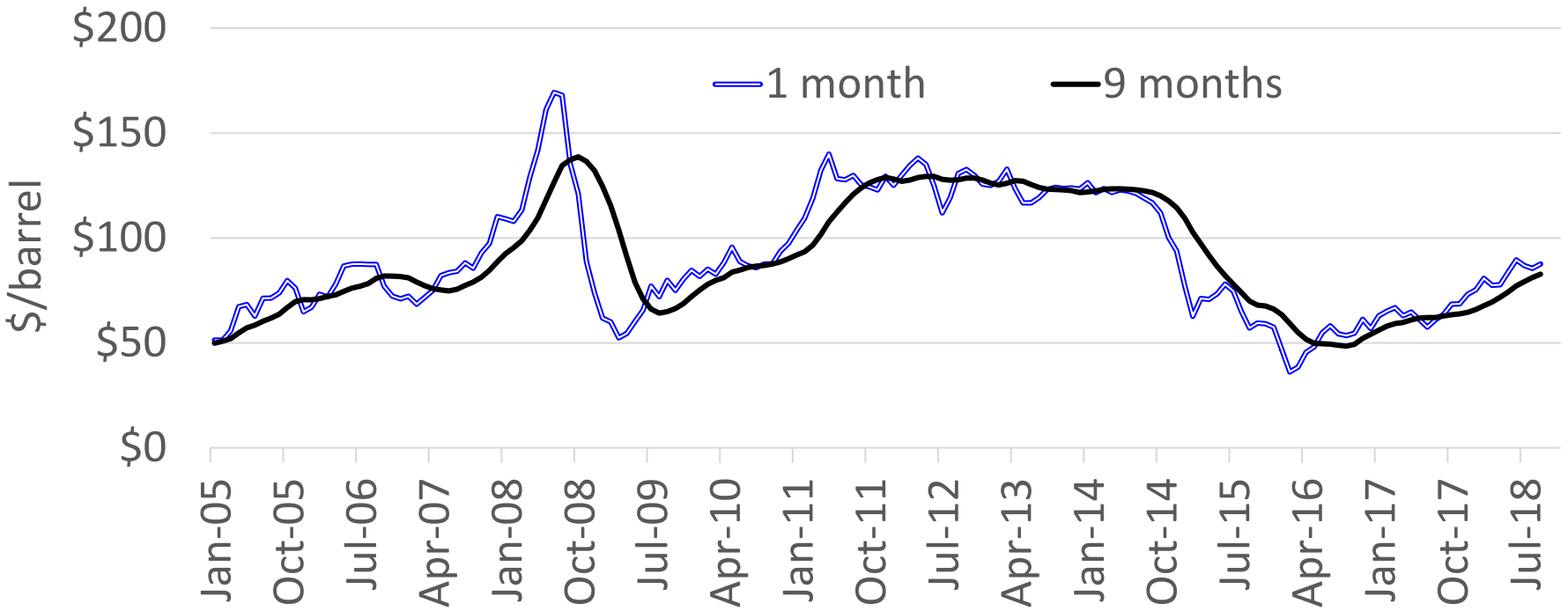
Hypothetical simulation

- After a year of price increases, a government in 2005 decides to smooth prices by averaging FOB prices over the past several months and adding downstream costs to arrive at retail prices.
- The hope is that oil prices "revert to the mean" frequently, and correspondingly under-recoveries and over-recoveries also cancel out frequently, thereby providing a financially neutral way of smoothing oil price volatility.

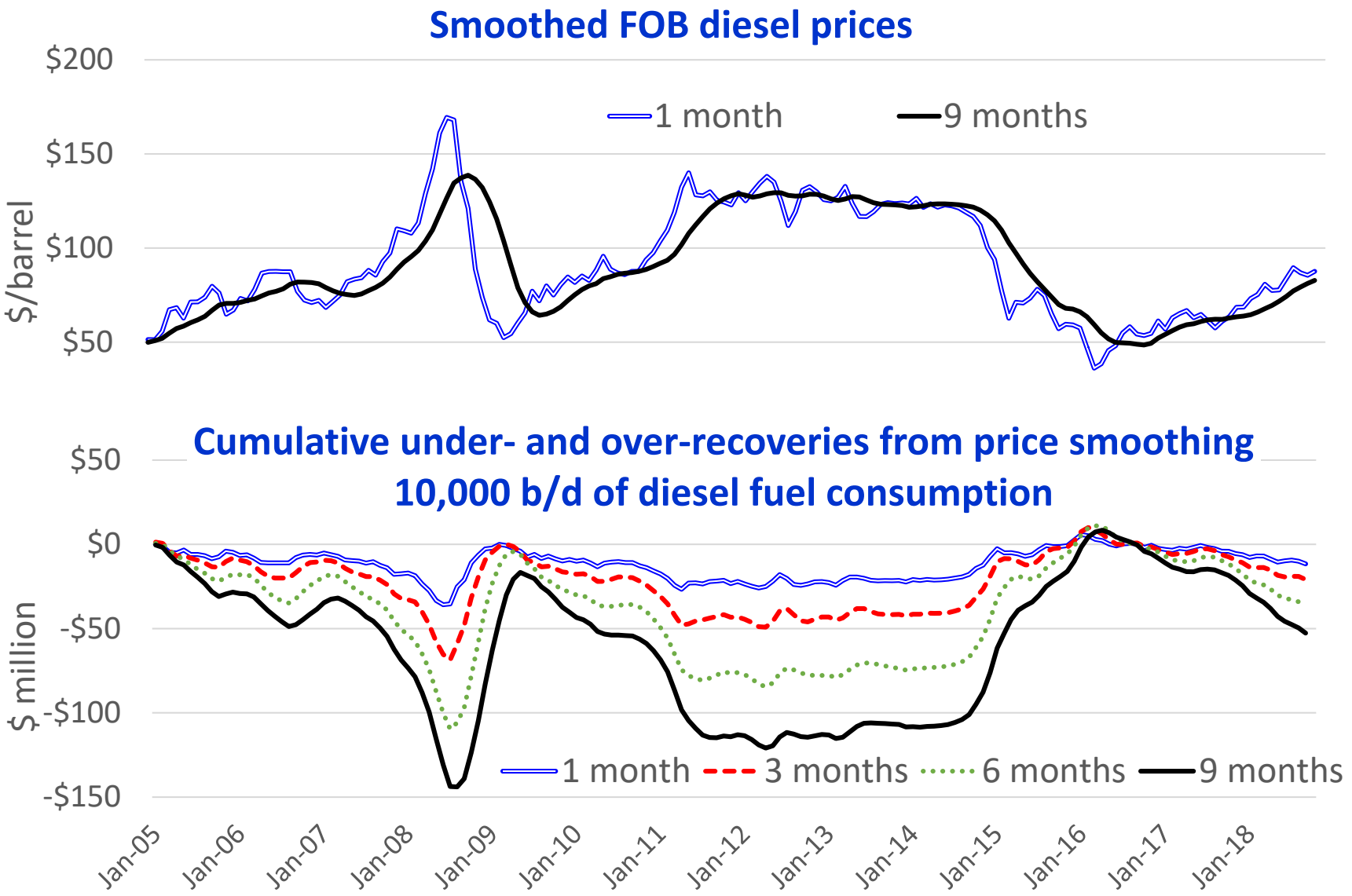
  → Virtual price stabilization fund with no fiscal costs

Smoothing FOB diesel prices

- Take price from last month, average of last 2 months, average of last 3 months, and so on.
- The longer the prices are averaged, the smoother the retail prices, but the greater the departure from world prices.



Effect of price smoothing



Observations and recommendations

- The more frequently prices are adjusted, the less likely that consumer price subsidies are to emerge or grow.

→ Adjust prices frequently and regularly no matter how small the adjustment.

- "Price smoothing" in times of steadily rising oil prices has limitations.
  - Many stabilization funds have required large budgetary transfers.
  - Those that are self-financing charge consumers (Chile, Thailand, Vietnam) and make only relatively small adjustments.
- The higher the unit tax on fuel, the less the impact of world price volatility on end-user prices.

→ Look for opportunities to increase fixed taxes and charges, as in Botswana in 2017, China in 2014–15, India in late 2014, and Rwanda in 2015.

Observations and recommendations (cont'd)

- Seek to establish a competitive market in which efficiency gains are passed on to end-users.

→ Begin by setting price ceilings rather than price levels and gauge competition by the degree of departure from the price ceilings.

- Two particularly difficult challenges to address are ill-targeted subsidies for household fuels (LPG, kerosene) and impact of higher automotive fuels on passenger and freight transport.

→ Consider policy options outside of fuel pricing.

→ For automotive fuels, tackle transport subsidies and policies in parallel, and coordinate communication on fare and fuel price increases.