

Relationship between bunker prices and freight rates

Hedging fuel price risk

Agenda

1. Relationship between bunker prices and freight rates

- Energy – Sources and Uses
- Freight rates vs. Bunker Prices
- Impact of bunker cost

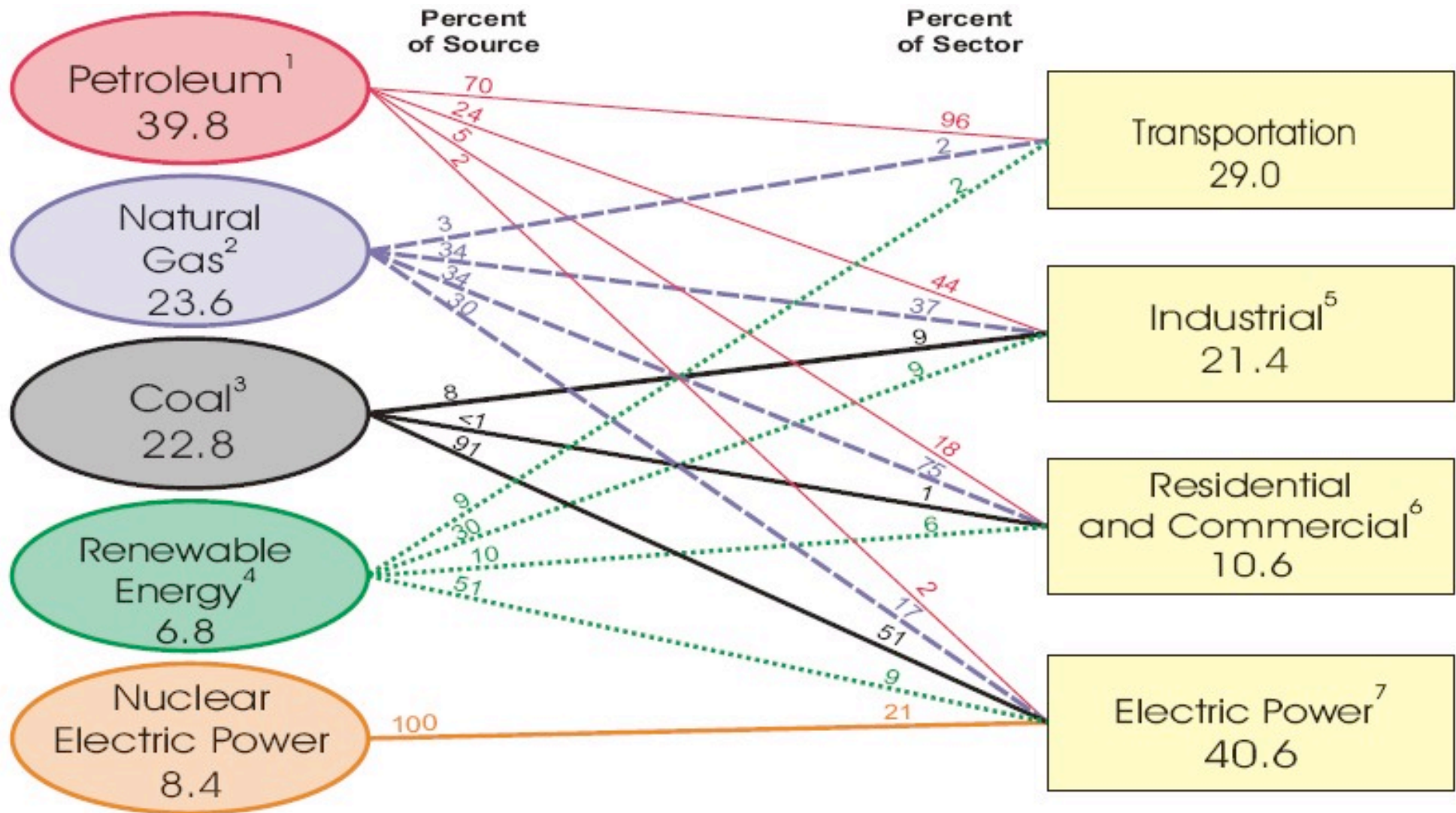
2. Hedging fuel price risk

- Hedging process
- Model hedging strategy
- Tools for hedging bunker cost

3. Questions and Answers

Relationship between bunker prices and freight rates

Energy – Sources & Uses

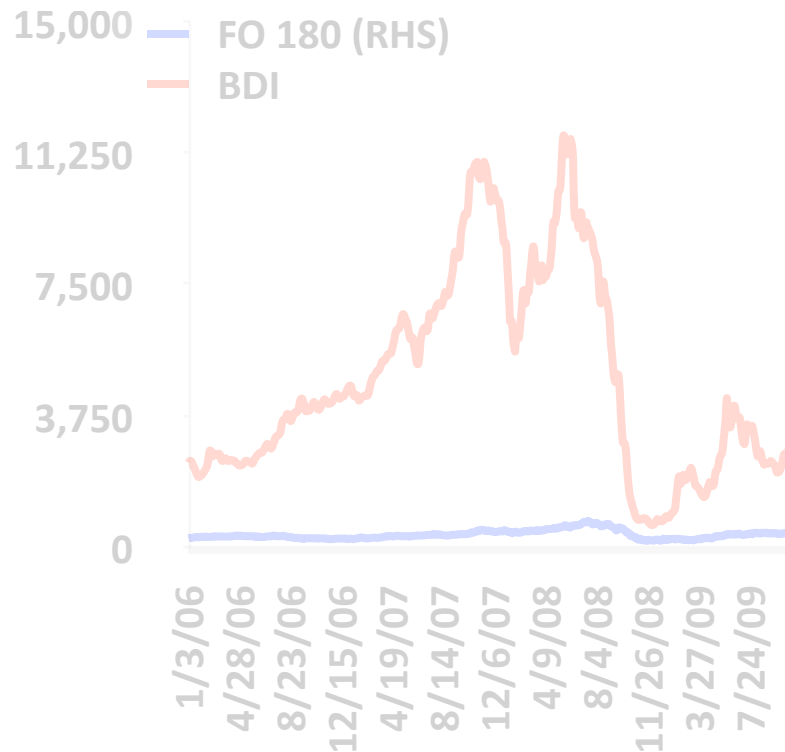


Source : EIA

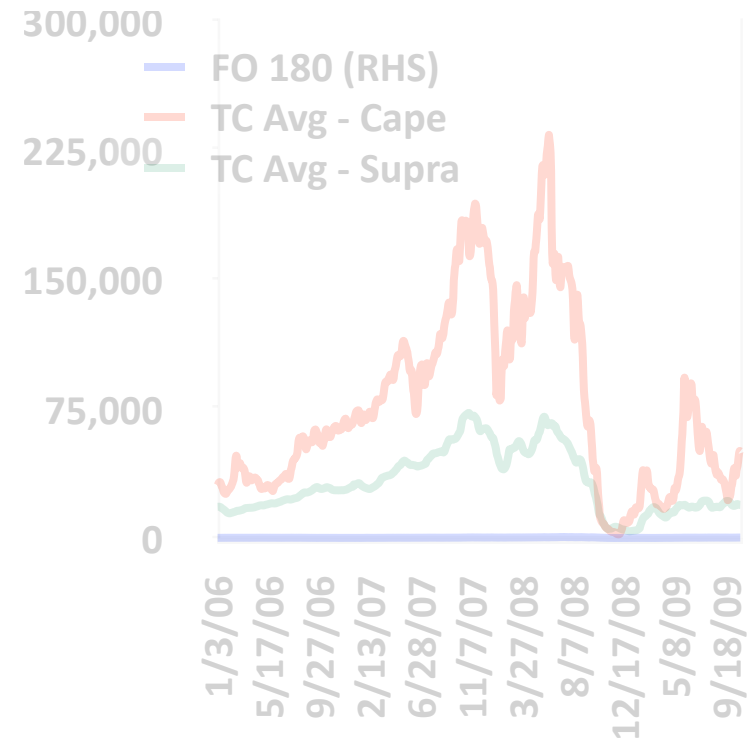
Freight rates vs. bunker prices

(Amount in USD)

BDI vs. Bunker Prices



Spot TC rates vs. Bunker Prices



1. Bunker - Most significant variable operating cost
2. High bunker costs may significantly erode margins for vessel operators
3. Ability to protect against bunker price fluctuations through hedging

Impact of bunker costs

Example – Charter Base calculation

(Amount in USD)

	Bunker @ 300/MT	Bunker @ 600/MT
Duration	42	42
Quantity	55,000	55,000
Rate/MT	20.00	20.00
Freight	1,100,000	1,100,000
Quantity	900	900
Rate	300	600
Bunker Cost	270,000	540,000
Port Cost	160,000	160,000
Charter Base	670,000	400,000
Charter Base/ day	15,952	9,524

Assumptions:

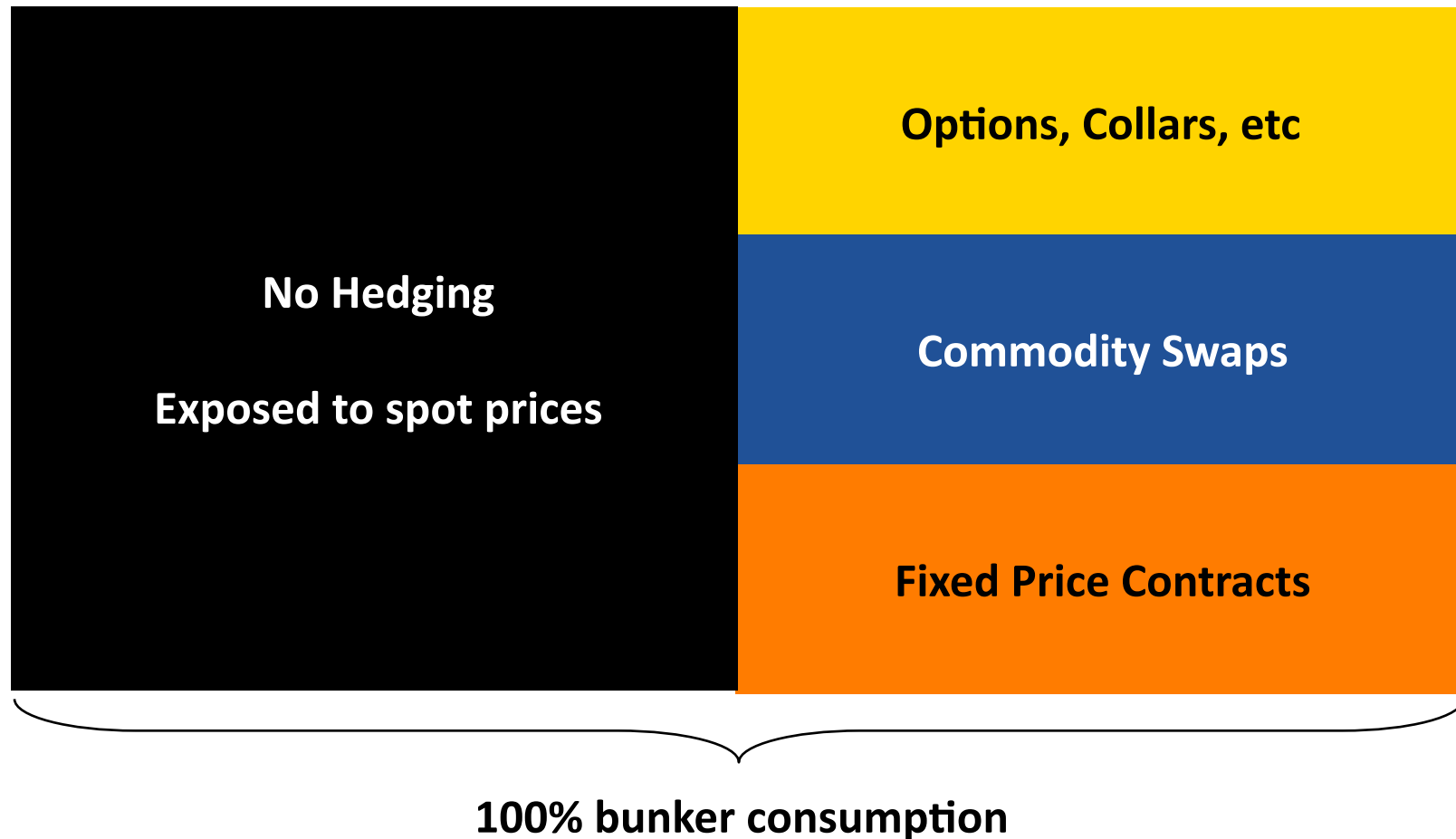
- Supramax trip from Australia to India
- Freight rate of US\$ 20/MT

- Approx. 70% of variable operating cost
- Other costs relatively fixed, hence fluctuations to directly impact charter base
- In the given example, a change in bunker prices can change the charter base by approx. 40%
- In a low margin environment, control on bunker prices can make the difference between profit and loss
- In an voyage charter arrangement (without BAF), fluctuations in bunker prices falls on ship owners and operators
- Vessel operators may factor perceived fluctuations in bunker rates in quoting freight rates

Hedging fuel price risk

Hedging Process

1. Determine total open exposure quantity
2. Determine the period for which hedging exercise to be carried out
3. View on bunker price movements during the period
4. Determine the quantity to be hedged
5. Determine the hedging mechanism to be used
6. Shortlist the counterparties with whom to hedge
7. Complete documentation requirements
8. Set target levels and execute trades
9. Monitor trade position periodically
10. Unwind the hedge upon physical procurement

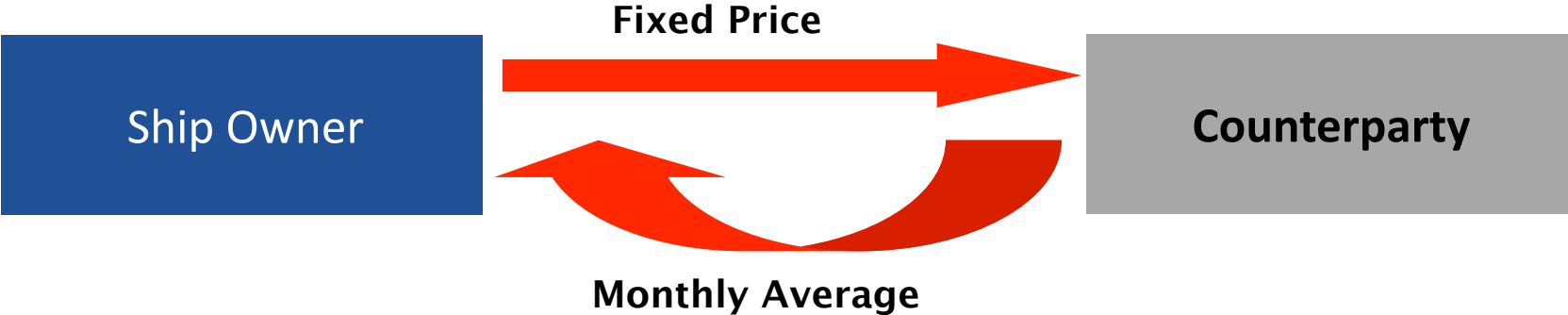


Hedging options

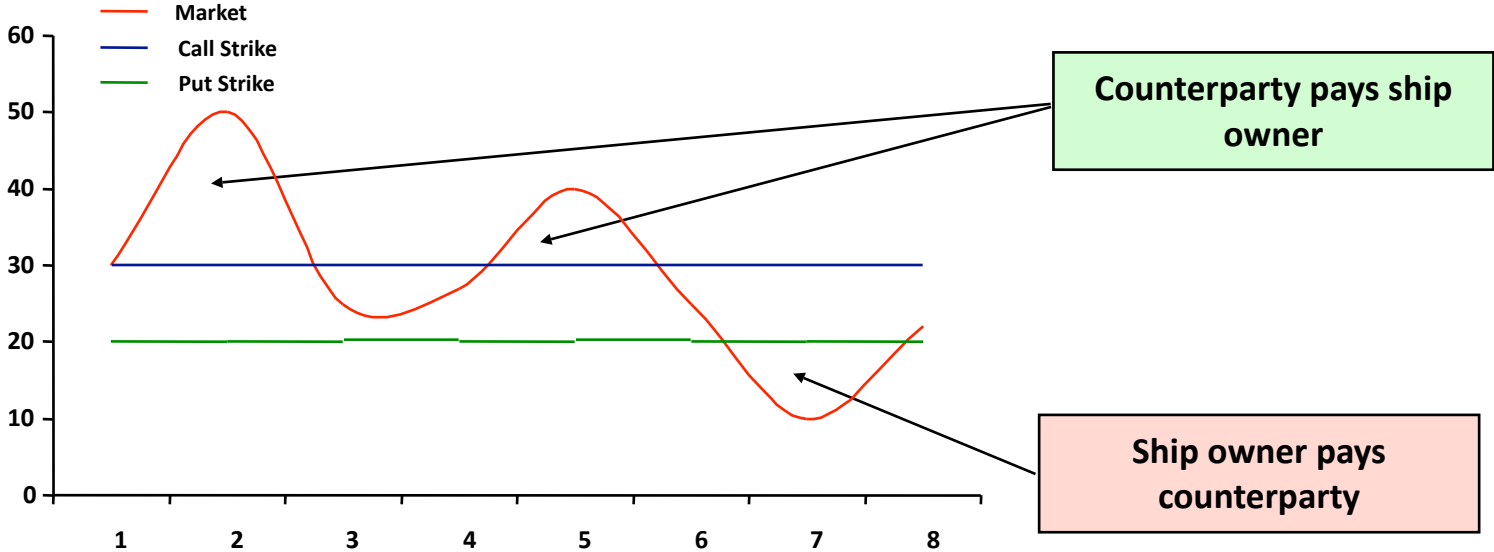
1. Risk mitigation through contract
 - Bunker adjustment factor (BAF) clauses
2. Fixed price bunker purchase contracts
3. Derivative Contracts contracts
 - Commodity swaps
 - Options
 - Exotics – Collars, Caps, Floors

Hedging options

Commodity Swaps



Collars



Hedging options

Fixed Price Contracts

(Buying fixed quantities of bunkers at predetermined prices on future dates)

PROS

1. Protection against rising market
2. More time for core business
 - Physical supply can be taken care of
 - Easy to administer
3. Know the bunker cost in advance
 - No time risk
 - No or less basis risk
4. Flexibility in physical supply

CONS

1. Opportunity cost if market falls
2. Nomination days

Derivative Contracts

(Hedging through the use of derivative instruments)

PROS

1. Flexibility in vessel scheduling
2. Physical delivery not necessary
3. Ability to unwind before settlement

CONS

1. Possibility of basis risk
2. Exposure to Delivery and barge costs
3. Counterparty risk

Thank you