



Freight Forward Agreements

Risk Management and Trading



Agenda

- What is an FFA
- How does it work
- Why use them
- Who trades them and why
- How to trade

Forward Freight Agreements



- Paper swap deal between 2 companies or cleared
- Tailor made
- **No physical delivery**
- Bought and sold at an agreed Worldscale rate
- Fixes a price today for settlement against an agreed future period
- Position closed out against Baltic Exchange index or Platts average

Worldscale system



- Unifies system for establishing payment of freight
- Introduced in 1952
- Makes it easy to compare voyages with different duration

Net income = $WS * \text{Tonnes} * \text{Flatrate}$

TCE = Net income / voyage duration

Like all paper trading it starts with an Index

- **All except two routs are priced against Baltic index**

The Baltic panellists

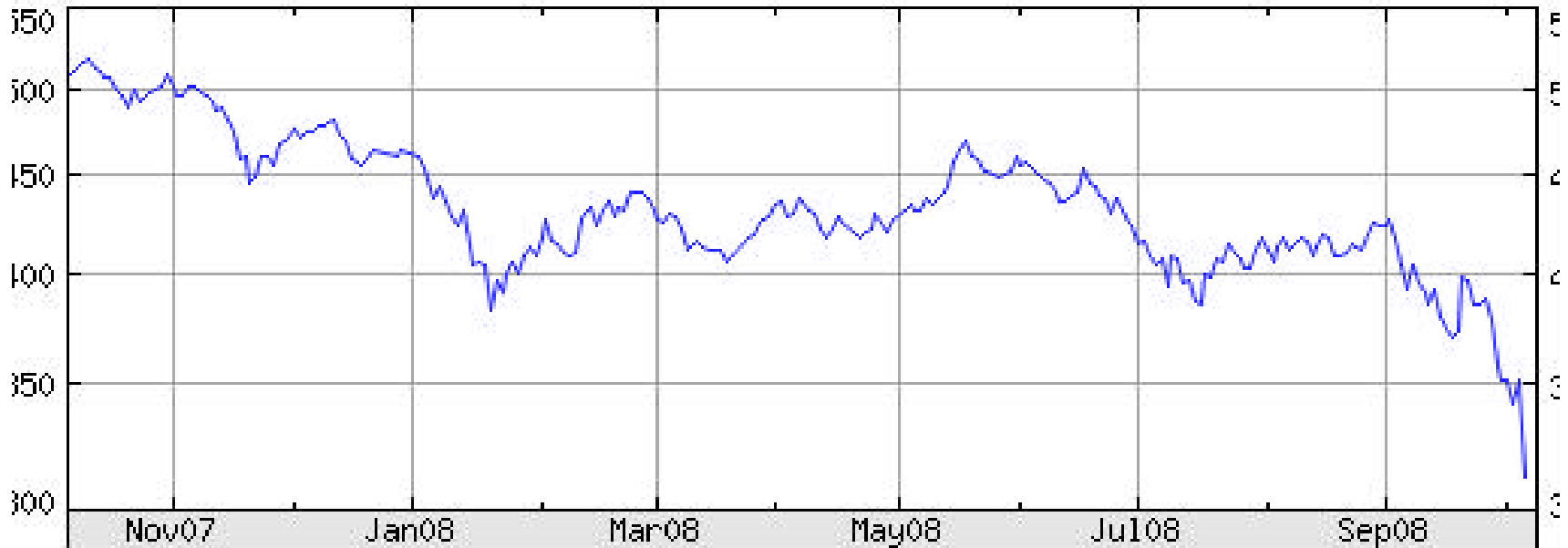


- International shipbroking firms
- No Principals
- Actively engaged in the markets they report
- Members of the Baltic Exchange
- Geographical spread
- Not exclusive representatives or *particularly influential* in relevant trades

Index

- What does that mean?

IMX COPENHAGEN 20
as of 6-Oct-2008



Baltic Dirty Tanker Index



Route		Route description	Indicative Route
TD1	280,000mt	AG to US Gulf	Ras Tanura to LOOP
TD2	260,000mt	AG to Singapore	Ras Tanura to Singapore
TD3	260,000mt	AG to Japan	Ras Tanura to Chiba
TD4	260,000mt	West Africa to US Gulf	Bonny to LOOP
TD5	130,000mt	West Africa to USAC	Bonny to Philadelphia
TD6	130,000mt	Black Sea / Mediterranean	Novorossiysk to Augusta
TD7	80,000mt	North Sea to Continent	Sullom Voe to Wilhelmshaven
TD8	80,000mt	Kuwait to Singapore	Mena al Ahmadi to Singapore
TD9	70,000mt	Caribbean to US Gulf	Puerto la Cruz to Corpus Christi
TD10D	50,000mt	Caribbean to USAC (DH)	Aruba to New York
TD11	80,000mt	Cross Mediterranean	Banias to Lavera
TD12	55,000mt	ARA to US Gulf	Antwerp to Houston
TD14	80,000mt	SE Asia to EC Australia	Seria to Sydney
TD15	260,000mt	West Africa to China	Bonny to Ningbo
TD16	30,000mt	Black Sea to Med	Odessa to Augusta

Baltic Clean Tanker Index



Route		Route description	Indicative Route
TC1	75,000mt	MEG to Japan	Ras Tanura to Yokohama
TC2	37,000mt	Continent to USAC	Rotterdam to New York
TC3	38,000mt	Caribbean to USAC	Aruba to New York
TC4	30,000mt	Singapore to Japan	Singapore to Chiba
TC5	55,000mt	MEG to Japan	Ras Tanura to Yokohama
TC6	30,000mt	Algeria to Euromed	Skikda to Lavera
TC7	30,000mt	Singapore to EC Australia	Singapore to Sydney
TC8	65,000mt	AG to UK/Cont	Jubail to Rotterdam
TC9	22,000mt	Baltic to UK/Cont	Ventspils to Le Havre

The most traded dirty routes

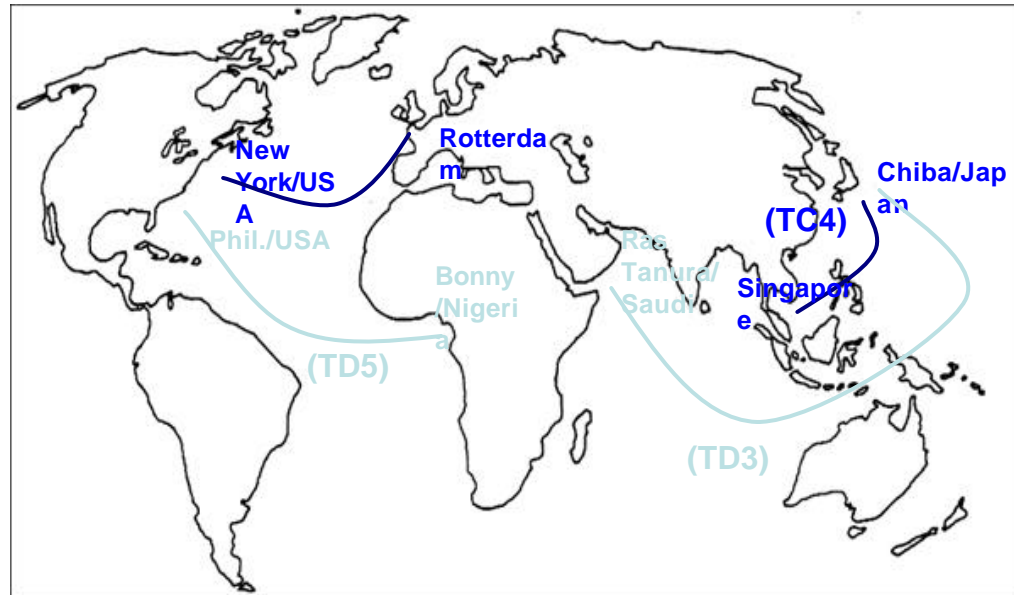


Tanker Dirty 3 (TD3): Saudi – Japan

- Ship: VLCC 260 000 mtons
- Carries crude oil from Saudi to Japan.

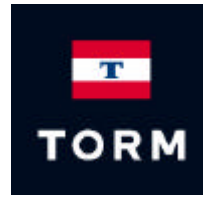
Tanker Dirty 5 (TD5): Nigeria – USA

- Ship: Suezmax 130 000 mtons
- Carries crude oil from Nigeria to USA.



Correlation

The most traded clean routes

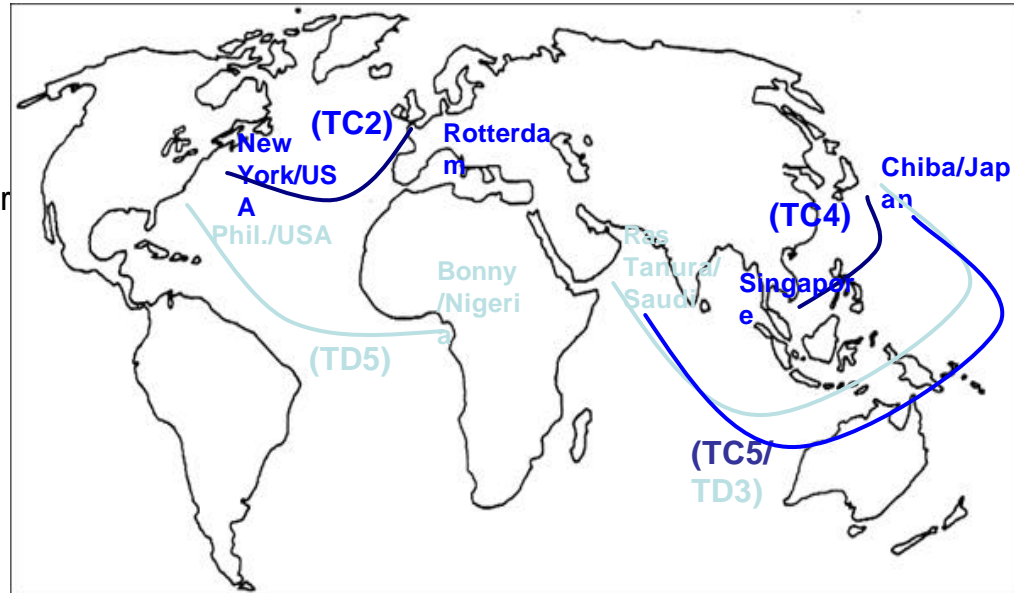


Tanker Clean 2 (TC2): Rotterdam - USA

- Ship: Medium Range 37 000 mtons
- Cargo: Clean products (gasoline/light destilates)
- Freight element of the cross Atlantic gasoline arbitrage trade.

Tanker Clean 5 (TC5): Ras Tanura - Japan

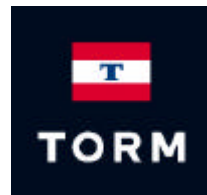
- Ship: Long Range 55 000 mtons
- Cargo: Clean products (naphta condasate)
- Carries destillates from Ras Tanura to Yokohama.



Correlation



Who trades



Overview – the physical side

Shipping Companies



- Rather fragmented industry with a few larger players and many smaller ones

Oil Traders



- “The speculators”
- Large privately owned companies

Oil Producers



- Consolidated industry with some very large players

Clearing house "Norsk Oppgjørssentral members



GG Sundal Collier ASA

EN AMRO Bank N.V.

merican Eagle Tankers

P. Møller - Maersk A/S

dax BV

mpskibsselskabet TORM

cadia Petroleum Ltd

mada (Singapore) Pte Ltd

Klaveness Chartering

VB (Geneva) SA

vilco ASA

arclays Bank Plc

umarine AS

ltest Shipping Company Ltd

rgen Bunkers AS

rgesen Worldwide Gas ASA

nor Tankers Limited

IP Billiton Marketing AG

icimar International NV

G Bominflot (...) Mbh & Co

tannic Energy Trading Limited [BP]

Bulkhandling Handymax AS

C Transport Panamax Ltd

Calyon Financial SNC

Cargill International SA

Cargoship Maritime Corporation

Carnegie ASA

Castalia Springs Limited

Castor Petroleum Limited

Cetragpa G.I.E

Charbons Et Fuels

Chemoil International Pte Ltd

Chevron

Clarksons Hedge Fund Limited

Colonial Oil Industries Inc.

Concord Energy Pte Ltd

ConocoPhillips Company

Constellation Power Source Inc.

Daeyang Shipping Co Ltd

Dampskibsselskabet NORDEN A/S

Dannebrog Rederi A/S

Deutsche Bank AG, London

Dresdner Bank AG

Duke Energy Merchants LLC

ED&F Man Shipping Ltd

EDF Trading Limited

Elsam Kraft A/S

Essar International Limited

Eurotrade Inc

Expedo Shipping Corporation

First Olsen Tankers Ltd

First Rand Bank Ltd

Freight Trading Ltd

Frontline Tankers Ltd

FR8 Derivatives Ltd

General Maritime Corporation Inc.

Glencore Commodities Ltd

Golden Ocean Group Ltd.

Hanjin Shipping Co Ltd

Hanwha International (S) Pte Ltd

Heidenreich Marine Inc

Hess Energy Trading Company LLC

Highlander International Trading Asia Pte Ltd

Clearing house "Norsk Oppgjørssentral members



C Shipping Inc
Industrial Carriers Inc.
Aron and Company
L. Uglund Dry Bulk AS
Sch Supply & Trading LLP
The Korea Development Bank
Prentzen Skibs AS
Louis Dreyfus Corporation
Pan Financial Limited
Maritime 24 Pte Ltd
Arabeni International Petroleum
Equarie Bank Limited
Mercator Lines (Singapore) Pte Ltd
Mercuria Energy Trading SA
Merrill Lynch Commodities (Europe) Ltd
Mitsui & Co Energy Risk Management Ltd
Montan Capital GmbH
Morgan Stanley Capital Group Inc
Mottia Compagnia Di Navigazione Spa
Novios Corporation
OCF Futures Corp
Oste Oil
Nord Marine Ltd
Ooble Chartering Inc
Orebank Finland Plc

Oak Bulk Carriers Inc.
Oceanic Hedge Fund
Okeanos Shipping Fund
Oldendorff Carriers GmbH & Co. KG
OMI Corporation
Pacific Carriers Limited
Pioneer Metals Logistics Co. Ltd
Prime Marine Corporation
Projector S.A.
Rothko Limited
RWE Trading GmbH
Sector Speculare AS
Sempra Energy Europe Ltd
Seoul Futures Co Ltd
Shell Trading International Limited [STIL]
SK Shipping Europe Ltd
Skaugen Petrotrans Limited
Sokana Trading Ltd
Standard Bank PLC
Statoil ASA
Stena Bulk AB
Swiss Marine Corporation Ltd
T.K.B. Shipping A/S
T. Klaveness Shipping AS
Torms Petroleum Limited

Team Shipping ASA
Teekay Chartering Ltd
Titan Ocean Pte Ltd
Tongyang Futures Trading Co Ltd
Total Oil Trading S.A.
Trafigura Derivatives Ltd
Tschudi Shipping AS
Verney Services Ltd [Ocean Bulk]
Vitol Inc
Vitol SA
VOC Shipping NV
Western Baltic Inc
Western Bulk Carriers AS
Westport Petroleum Inc
Wilhelmsen Maritime Services AS
Woori Futures Co Ltd
Total Oil Trading S.A.
Trafigura Derivatives Ltd
Tschudi Shipping AS
Verney Services Ltd [Ocean Bulk]
Vitol Inc
Vitol SA
VOC Shipping NV
Westport Petroleum Inc
Woori Futures Co Ltd



Why Trade

Why trade FFAs (pros)?

- Hedging
- Secure forward income
- Spread risk
- Portfolio diversification
- Alternative to time chartering
- Speculative trading plays

Why trade FFAs (cons)?



Cons

- **Basis risks**
 - Timing
 - Vessel size
 - Off hire
- Hedger can have unhedged bunker price exposure
- Liquidity risk

Torm Derivative activities



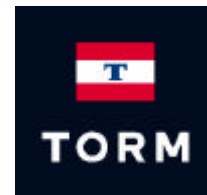
- Why we trade
 - **Well informed through our presence**
 - Organized to transform info into monetary value
 - Culture for market projection
 - Still mostly "opportunistic hedging"



Cleared trading

OTC trading

What is clearing?



- When trading “Cleared” both buyer and seller will have NOS as counterpart. Insurance and Securities Commission.
- More than 193 market participants are members and have approved NOS to be solid counterpart.

IMAREX

TRM, Andreas Thorsen

Instrument	Qty	Bid	Ask	Qty	Last	Close	Instrument	Qty	Bid	Ask	Qty	Last	Close
TD3 SEP08	5	114,00	118,00	5	118,00	116,00	TC2 SEP08	5	326,00			328,00	328,00
TD3 OCT08	10	141,00	148,00	5	148,00	142,00	TC2 OCT08	10	304,00	315,00	5	306,00	310,00
TD3 NOV08	10	146,00	154,00	5	155,00	148,00	TC2 NOV08	10	270,00	293,00	10	280,00	287,00
TD3 DEC08	5	140,00	157,00	5	155,00	150,00	TC2 DEC08	10	264,00	290,00	10	287,00	288,00
TD3 JAN09						99,00	TC2 JAN09					0,00	203,00
TD3 FEB09						96,00	TC2 FEB09						200,00
TD3 Q408	5	146,00	151,00	5	151,00	146,67	TC2 Q408	10	288,00	299,34	5	290,00	295,00
TD3 Q109	5	95,00			106,00	96,00	TC2 Q109			212,00	5	208,00	200,00
TD3 Q209						79,00	TC2 Q209						188,00
TD3 Q309						77,00	TC2 Q309						185,00
TD3 Q409						84,00	TC2 Q409						191,00
TD3 Q110						79,00	TC2 Q110						190,00
TD3 Jun-Dec08							TC2 Jun-Dec08						
TD3 CAL09	5	82,00	86,00	5	88,00	84,00	TC2 CAL09					192,00	191,00
TD3 CAL10						81,00	84,00	TC2 CAL10					184,00

Spot Value:	169,81	TD5 130KT WAF-USAC						
MTD Value:	162,82	Qty	Bid	Ask	Qty	Last	Close	
TD5 SEP08				172,50	5	172,50	170,00	
TD5 OCT08	20	180,00	194,00	10	177,00	189,00		
TD5 NOV08	10	180,00			172,00	188,00		
TD5 DEC08	10	180,00			185,00	187,00		
TD5 JAN09						132,00		
TD5 FEB09						130,00		
TD5 Q408	10	180,00	195,00	10*	183,00	188,00		
TD5 Q109	5	126,00			136,00	130,00		
TD5 Q209						109,00		
TD5 Q309						106,00		
TD5 Q409						115,00		
TD5 Q110						112,00		
TD5 Jun-Dec08								
TD5 CAL09						119,50		
TD5 CAL10						106,50		

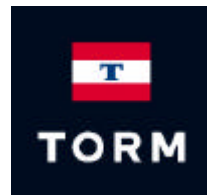
Spot Value:	325,00	TC4 30KT SPO-JPN						
MTD Value:	325,06	Qty	Bid	Ask	Qty	Last	Close	
TC4 SEP08		5	320,00	328,00	5	324,00	324,00	
TC4 OCT08		5	320,00	325,00	5	320,00	324,00	
TC4 NOV08		5	288,00	300,00	5	278,00	296,00	
TC4 DEC08		5	268,00	287,00	5	278,00	268,00	
TC4 JAN09						203,00		
TC4 FEB09						202,00		
TC4 Q408		5	290,00	304,00	5	299,00	296,00	
TC4 Q109				208,00	5	210,00	202,00	
TC4 Q209						189,00		
TC4 Q309						189,00		
TC4 Q409						196,00		
TC4 Q110						210,00		
TC4 Jun-Dec08								
TC4 CAL09						203,00		
TC4 CAL10						192,00		

Spot Value:	196,36	TD7 80KT X-NSEA						
MTD Value:	176,74	Qty	Bid	Ask	Qty	Last	Close	
TD7 SEP08				185,00	10	180,00	180,00	

Spot Value:	360,00	TC5 55KT MEG-JPN						
MTD Value:	349,81	Qty	Bid	Ask	Qty	Last	Close	
TC5 SEP08		10	352,00	360,00	10	354,00	354,00	
TC5 OCT08		5	344,00	350,00	5	344,00	345,00	
TC5 NOV08		5	302,00	307,00	5	302,00	301,00	
TC5 DEC08		5	281,00	295,00	5	282,00	284,00	
TC5 JAN09						193,00		
TC5 FEB09						192,00		
TC5 Q408		5	309,00	313,00	5	309,00	310,00	
TC5 Q109		5	190,00			194,00	192,00	

IMAREX

Instrument	Price	Quantity	Unit	Aggressor Compa...
TC5 NOV08	302,00	5	kt's pr ...	S NOS Clearing
TC5 OCT08	344,00	5	kt's pr ...	S NOS Clearing
TC5 NOV08	302,00	5	kt's pr ...	S NOS Clearing

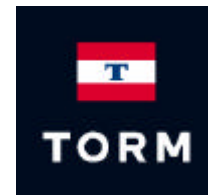


Tanker FFA volumes

	No of trades	Volumes in MT	\$ value of trades
Total OTC	7,139	200,880,440	3,384,223,690
Total cleared	6,312	173,990,000	3,345,291,182
<u>2007 TOTAL</u>	<u>13,351</u>	<u>374,870,440</u>	<u>6,729,514,872</u>
2006	12,758	329,434,250	5,474,277,303
<i>% change</i>	4.7	13.8	22.9

Source: NOS

OTC FFA Trading



- OTC FFAs are traded through a network of specialist FFA brokers. The brokers are members of the Forward Freight Agreement Brokers Association (FFABA)
 - Contract used is either FFABA or ISDA® contract
- Counterparties can be anonymous until just before trade terms are concluded
- Hedges can be offset prior to expiry
- Settlement is between the counterparties in cash within five days following the settlement date.
- The broker, acting as an intermediary only, is not responsible for the performance of the contract. Typically, brokers get commission of 6 cents from each party on the fixed freight volume but that may differ between contracts

Conversation Edit View Actions Help

AA Mayu Sasako - Idle

05 360 unch
 01 340 unch
 07 425 unch

Mayu Sasako: TD3 oct 143@148

IMVironment

Send

Conversation Edit View Actions Help

stian paulsen

sider

stian paulsen: tc2 nov 280/284
stian paulsen: 30 kt på begge sider
stian paulsen: td3 oct 143/148

IMVironment

Send

Conversation Edit View Actions Help

Clarissa Bax

Clarissa Bax: TC6 UC1 305 @ 335
Clarissa Bax: TC6 oct 300 @ 330
Clarissa Bax: tc6 oct 300 @ 320
Clarissa Bax: tc6 oct 300 @ 315

IMVironment

Send

Steve Pritchard (pritchard_ssy) - Inst...

Conversation Edit View Actions Help

Steve Pritchard

6U waftr/usg ws 13U steady
 60 waftr/east ws 115 steady

Steve Pritchard: tc2 oct 305 310
Steve Pritchard: off tc2 oct

IMVironment

Send

Last message received on 23-09-2008 at 11:17

Duncan Farmer (duncanfarmer20) - I...

Conversation Edit View Actions Help

Duncan Farmer

Duncan Farmer: TC2 Oct 305 being, given, come back 300 / 308
Duncan Farmer: TC2 Oct 305 trades again, come back 300 / 308

IMVironment

Send

Last message received on 23-09-2008 at 11:17

Spencer Williams (spennywicap) - Ins...

Conversation Edit View Actions Help

Spencer Williams

subject to archival, monitoring, or review and/or disclosure to someone other than the recipient.

Spencer Williams: tc2 q4 287 bid

IMVironment

Send

Last message received on 23-09-2008 at 11:59

celineueda - Instant Message

Conversation Edit View Actions Help

celineueda - Oriane covering here.

celineueda: Baltic Assessment as of 23rd Sep

C4	326.79	+1.08
C7	343.29	+0.72
C10	55.50	+0.43

IMVironment

Send

Last message received on 23-09-2008 at 11:52

justinboatking king (justinboatking) - ...

Conversation Edit View Actions Help

justinboatking king

justinboatking king: /305 q4 tc2
justinboatking king: 305/310 oct tc2
justinboatking king: 305/308 follow tc2 oct
justinboatking king: 305s trade down again.

IMVironment

Send

Last message received on 23-09-2008 at 11:17

Vy Vuong (vy_radix) - Instant Message

Conversation Edit View Actions Help

Vy Vuong

[Show Recent Messages \(F3\)](#)

Vy Vuong: tc4 q4 290 bid

IMVironment

Send

Last message received on 23-09-2008 at 09:55

What are the risks?



- Credit Risk (Netting Clause)
- Volatility of market
- Limited forward period
 - Usually up to 2-4 years
- Hedging and speculation are different approaches
- Basis risk
- Liquidity risk
- Overall, less risky than physical market





FFAs for Risk Management

Shipping volatility



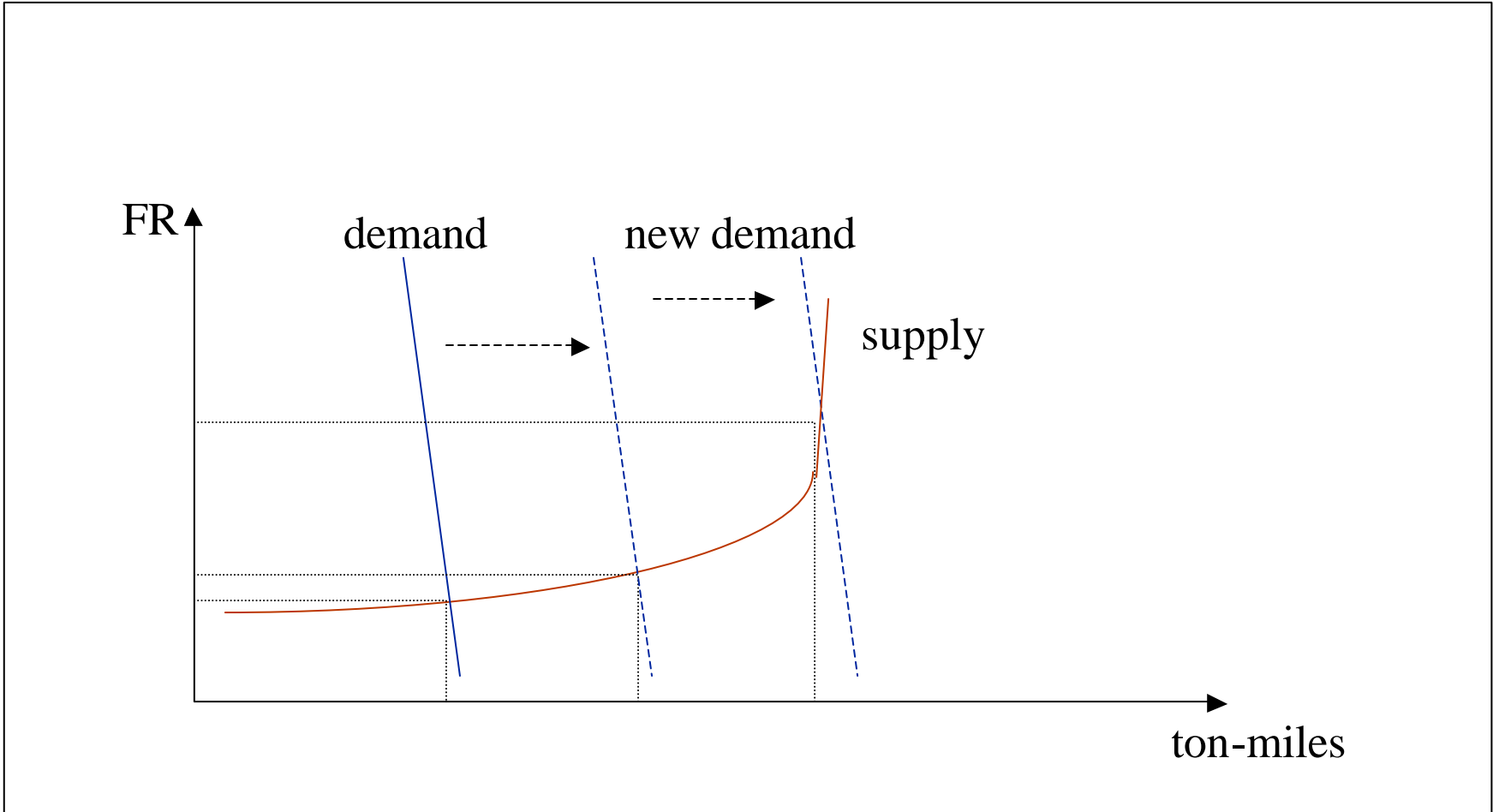
October 2007

- VLCC \$29,000
- MR \$13,000
- Cape \$167,000
- Panamax \$59,000
- ConTex 1000pts
- Dow Jones 14,088

October 2008

- VLCC \$107,000 +270%
- MR \$20,000 +50%
- Cape \$39,000 -77%
- Panamax \$27,000 -54%
- ConTex 692pts -31%
- Dow Jones 10,000 -23%

Freight Rate Formation





Risk management options in shipping

Option A:

Do nothing & fix spot



High risk /
Unpredictable

Option B:

Timecharter, COA or long
term management



Inflexible / inefficient
pricing

Option C:

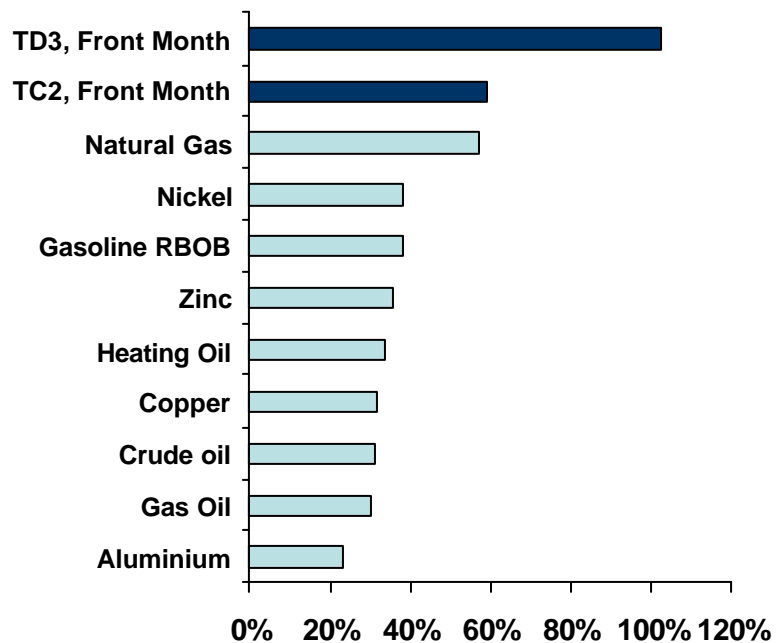
Hedge with FFA and use
profit / loss to pay for
spot physical deal



Opportunities to cover
requirements, quickly
fixed and flexible to
allow you to alter your
position should it change

Tanker freight volatility

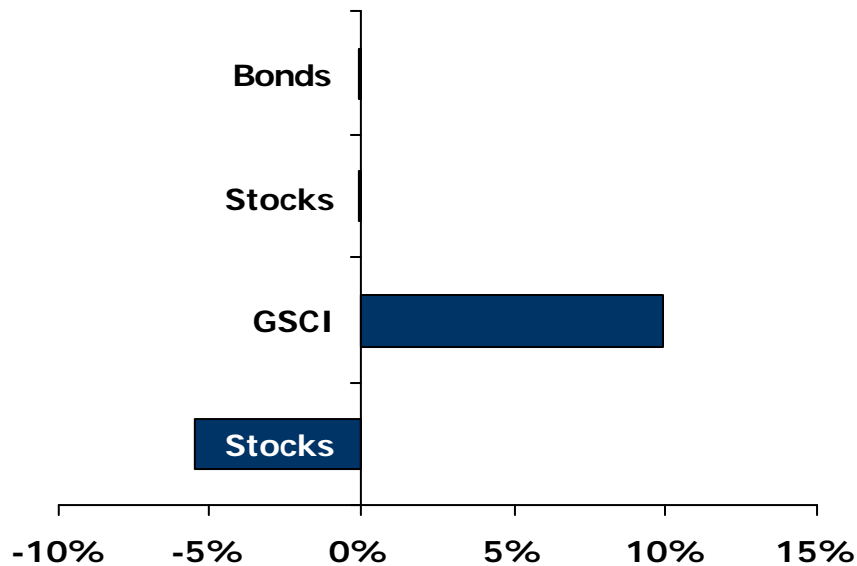
Volatility is extreme...



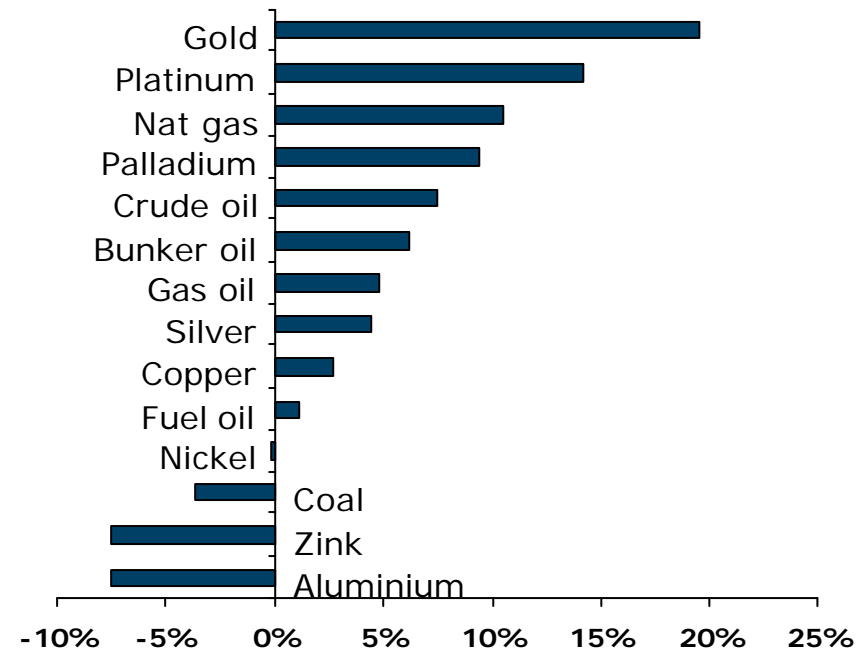
Low correlation with other assets



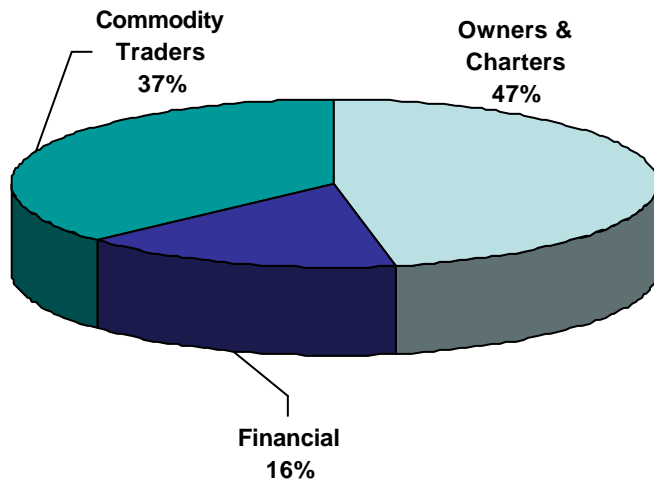
Correlations (asset classes)



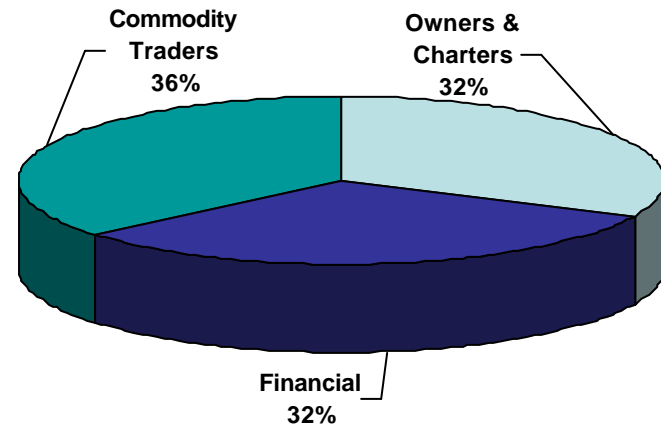
Correlations (commodities)



Who trade tankers



2005

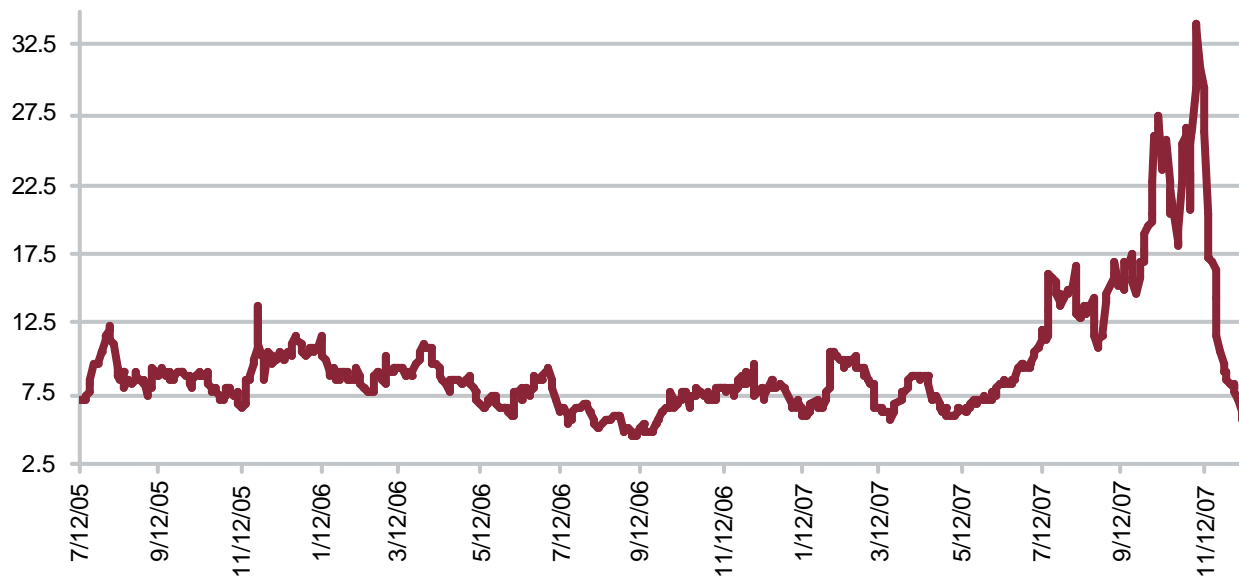


2008

FRO and the FFA Dec spike



Frontline P/E adj. based on 12 M FFA rates





Trading Examples

Hedging example



- It is late September 2008, and TC5 (55,000mt MEG to Japan) is trading at WS 310 for Q4.
- An energy trading company is worried that freight rates will increase over the following 12 weeks, and decides to use FFAs to cover this risk. The company thus **buys** 40 TC5 Q4 contracts @ WS 310 (each contract being for 1,000 tons)
- A shipowner finds the rate attractive and wants to lock in the earnings of one ship at WS310 which gives TCE \$45,500
- At the end of Q4, the settlement price is WS 280 (calculated as the average of TC5 freight rate assessments over Q4)
- The owner will incur lower freight rates in the physical market, but, at the same time, he has made a profit in the FFA market:
- **Net WS** = $310 - 280 = \text{WS}30$
- **Settlement** = **Contracts x Lot Size x Flat Rate x net WS * time**
= $40 \text{ contracts} \times 1,000 \text{ mt} \times \$17,8 * \text{WS}30 * 3 \text{ months} = \mathbf{\$640,800}$

Hedging example



- At the same time spot earnings have been lower, probably close to WS 280
- WS 280 gives \$38,500 per day
- One ship transports 55,000mt per voyage
- As one voyage takes about 42 days means 40,000mt is transported per month
- Settlement = Contracts x Lot Size x Flat Rate x net WS
= 40contracts x 1,000mt x \$17,8 * WS30 = **\$640,800**
- **\$640,800/90 days=\$7000 per day**
- **Total earnings for shipowner \$38,500+\$7000=\$45,500**

Spread Example

- TC4 Calendar 2009 trades at WS 191
- TC2 Calendar 2009 trades at WS 194
- Speculatur trading on historical rates think TC4 is underpriced
- Speculatr trading on segment developments think TC4 is overpriced

Spread Example

- We think it is overpriced so we sell TC4 and buy TC2
 - “sell the (relative) overpriced, buy the (relative) underpriced”
- What happens if TC2 averages 180 and TC4 160, both down?
- What happens if TC2 averages 220 and TC4 217?

Spread Example

- What happens if TC2 averages 180 and TC4 160, both down?
 - Loss TC2 WS 14
 - Gain TC4 WS 31
 - Net gain 17 points
- What happens if TC2 averages 220 and TC4 217?



Spread Example

- What is the minimum profit?
 - 5000mt per month (1/8 ship) * 12 month *
flatrate 10 * WS 14 =\$84,000



Questions?