

Crude Oil Trading Patterns: Trends and Tonne Mile Assessments

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Outline

- Crude Oil Tonne Miles:
 - What are they ?
 - How are they measured?
- Key Tanker Fleet and Seaborne Crude Oil Trade Trends:
 - Volumes & Tonne Miles by Fleet Segment and Trade Route
- Summary Observations



The screenshot shows the top section of the International Maritime Statistics Forum website. On the left is the IMSF logo, which features a globe with an anchor and the letters 'I M S F' below it. To the right of the logo is the text 'International Maritime Statistics Forum'. Below this is a navigation menu with the following items: Home, Next Annual Meeting, Previous Annual Meeting, Papers & Reports, Useful Links, and About IMSF. The main banner area has a dark background with a ship's structure and the text 'Promoting harmonization & improving the quality & scope of statistics within the international maritime industry...'. Below the banner is a blue call-to-action: 'JOIN US IN GOTEORG 11-13 OF MAY!'.

*“...There is one issue that may be a topic for such a group and that is **inconsistency in shipping data.***

*Last year I received **tonne miles** figures from different sources and they were quite different. Tonne miles and fleet data are basic shipping data....*

*Could there be some way **shipping could synchronize their data.***

*I have received **tonne miles** figures from only one source so far for **2014** and they are **down** both from crude and products which **may not be logic considering fleet increase (small) and average rate improvement.***

I sometimes find it difficult to find data that can substantiate various developments.”...

Tonne Mile - Definition

- “A tonne-mile is defined as one ton of freight (trade) shipped one mile, and therefore reflects both the volume shipped (tonnes) and the distance shipped (miles)”
- “It is what you get when you multiply the number of tonnes by the distance you ship them.”
- Assertion
 - *“A measure of true demand for ships”*

Measurement Issues:- Trade

- Sources:
- **Foreign Trade** e.g. (Import/Export) Statistics
 - *Issues*
 - No Consistent Global *Seaborne* Foreign Trade Statistics
 - Lack of Routeing detail:
 - Multi Coast Export Countries e.g. Russia exports from Barents, Baltic, Black Sea and East Sea(Far East). Saudi exports split between Red Sea and Persian Gulf terminals
 - Canal/Cape Routeing
 - Indirect Trade e.g. German crude pipeline imports via Italy. Iraqi exports via Ceyhan (Turkey)

Measurement Issues:- Trade cntd

- Not all crude oil tanker shipping activity is covered by official trade statistics:
 - Seaborne Domestic Trade
 - Offshore Movements
 - Lightering
 - Ship to Ship (STS) transfers
 - Pipeline trade via Sumed
 - Transhipments
- Multiple handling of the same crude by different tankers!

Lli Approach

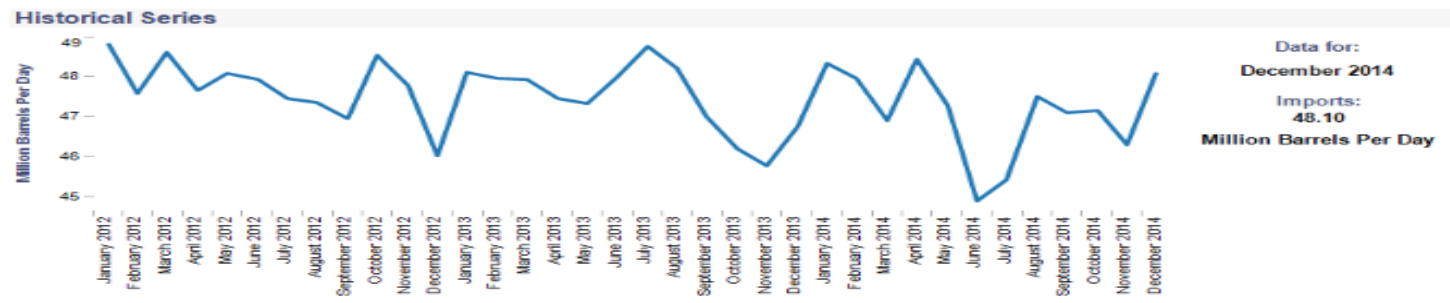
- Cargo Details
 - **Analysis of Petroleum Exports Database (APEX)**
 - Daily analysis of all seaborne crude oil shipments worldwide
 - By Vessel
 - By Load and Discharge Port
 - By Actual Route
 - By Activity

Seaborne Oil Trade Flows

Global Overview Exports Imports Trade Data

Selections - Use the boxes below to filter the data

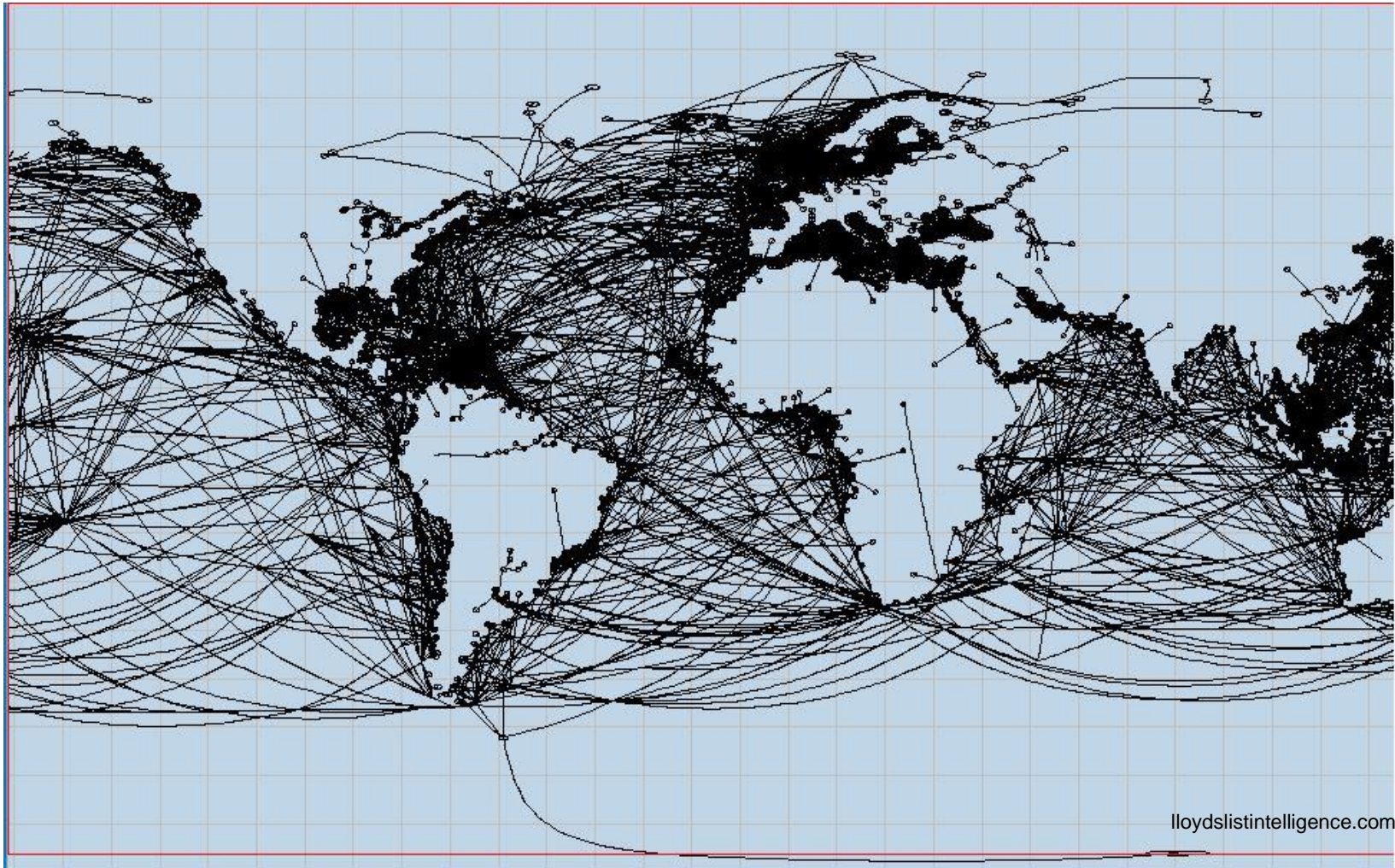
Select Unit: Million Barrels Per Day
 Exp/Imp or Domestic: Exports/Imports
 Include: Not SUMED SUMED
 Exports or Imports: Imports
 Crude: 40.17 Dirty: 3.67 Clean: 4.27
 VLCC: 19.72 Suezmax: 10.40 Aframax: 14.79 Panamax: 4.10 Handy: 0.16



Trade Matrix

Import Area	Export Area											
	Asia Far East	Baltic	Black Sea	Caribbean	East Africa	Indian Subcontinent	Middle East	North Africa	North America	North Sea	South America Atlantic	South and Central America
Africa	0.07	0.05	0.03			0.20	0.24		0.03	0.28		
South East Asia & Oceania	0.56	0.08	0.21			0.17	2.25		0.13	0.17	0.14	
Middle East		0.01	0.04			0.13	0.55		0.01	0.09	0.02	
South and Central America Atlantic				0.03		0.10	0.08	0.03	0.05	0.02	1.02	
North Europe & Baltic	0.04	1.58	0.29	0.03		0.09	0.98	0.37	0.10	2.17	0.16	
South Europe & Black Sea	0.01	0.15	1.66	0.26	0.03	0.08	1.48	0.74	0.09	0.06	0.26	
Asia Far East	0.96	0.23	0.18	0.22		0.07	9.91	0.07	0.08	0.04	0.64	
US/Canada Atlantic	0.01	0.04	0.02	0.14		0.05	0.06	0.08	0.53	0.07	0.08	
US Pacific	0.05			0.02		0.02	0.53	0.02	0.04		0.04	
US Gulf/Caribbean	0.02	0.26	0.04	1.03		0.01	0.91	0.08	0.03	0.10	1.61	
Indian Subcontinent				0.13		0.01	2.61	0.03			1.15	

Lli Port to Port Routeing Generator – 405,000 Routes



Lli Port to Port Distance Database – 405,000 Routes

Origin	Origin Place	Origin Country	Origin Alpha	Destination	Destination Name	Destination Country	Destination Alpha	Canal	Distance
4865	Es Sider Terminal	Libya	NAF	143	Helsinki	Finland	SCN	N	3775.22
4865	Es Sider Terminal	Libya	NAF	151	Chittagong	Bangladesh	IND	N	11938.24
4865	Es Sider Terminal	Libya	NAF	151	Chittagong	Bangladesh	IND	S	5533.82
4865	Es Sider Terminal	Libya	NAF	167	Salalah	Sultanate of Oman	RED	S	2775.91
4865	Es Sider Terminal	Libya	NAF	167	Salalah	Sultanate of Oman	RED	N	10297.11
4865	Es Sider Terminal	Libya	NAF	185	Jebel Ali	United Arab Emirates	ARA	S	3699.14
4865	Es Sider Terminal	Libya	NAF	185	Jebel Ali	United Arab Emirates	ARA	N	11178.76
4865	Es Sider Terminal	Libya	NAF	190	Oranjestad	Aruba	SAA	N	5085.48
4865	Es Sider Terminal	Libya	NAF	205	Gothenburg	Sweden	SCN	N	3144.68
4865	Es Sider Terminal	Libya	NAF	207	Puerto Quetzal	Guatemala	CAM	N	12164.23
4865	Es Sider Terminal	Libya	NAF	207	Puerto Quetzal	Guatemala	CAM	P	6602.18
4865	Es Sider Terminal	Libya	NAF	273	Manzanillo(MEX)	Mexico	CAM	P	7436.6
4865	Es Sider Terminal	Libya	NAF	273	Manzanillo(MEX)	Mexico	CAM	N	12622.51
4865	Es Sider Terminal	Libya	NAF	298	Kingston(JAM)	Jamaica	CAR	N	5310.23
4865	Es Sider Terminal	Libya	NAF	303	Port Vila	Vanuatu	AUS	N	13513.57
4865	Es Sider Terminal	Libya	NAF	303	Port Vila	Vanuatu	AUS	S	9752.26
4865	Es Sider Terminal	Libya	NAF	311	Vancouver(CAN)	Canada	USP	N	14829.54
4865	Es Sider Terminal	Libya	NAF	311	Vancouver(CAN)	Canada	USP	P	9745.54
4865	Es Sider Terminal	Libya	NAF	333	Cartagena(ESP)	Spain	SEU	N	1130.31
4865	Es Sider Terminal	Libya	NAF	490	Guayaquil	Ecuador	SAP	P	6485.52
4865	Es Sider Terminal	Libya	NAF	490	Guayaquil	Ecuador	SAP	N	11123.9
4865	Es Sider Terminal	Libya	NAF	497	Farjsundet	Aland Islands	SCN	N	3673.25
4865	Es Sider Terminal	Libya	NAF	535	Male	Republic of Maldives	IND	S	3961.81
4865	Es Sider Terminal	Libya	NAF	535	Male	Republic of Maldives	IND	N	10425.32
4865	Es Sider Terminal	Libya	NAF	576	Antwerp	Belgium	NEU	N	2698.6
4865	Es Sider Terminal	Libya	NAF	674	Pago Pago	American Samoa	AUS	N	12861.24
4865	Es Sider Terminal	Libya	NAF	674	Pago Pago	American Samoa	AUS	S	10939.91
4865	Es Sider Terminal	Libya	NAF	686	Limassol	Cyprus	EMD	N	825.84
4865	Es Sider Terminal	Libya	NAF	689	Novorossiysk	Russian Federation	BLK	N	1296.82
4865	Es Sider Terminal	Libya	NAF	699	Sault Ste. Marie	Canada	CAN	N	5344.46
4865	Es Sider Terminal	Libya	NAF	731	Gibraltar	Gibraltar	SEU	N	1347.69
4865	Es Sider Terminal	Libya	NAF	821	Piraeus	Greece	SEU	N	529.67

Crude Oil Trade - Annual

Year	Tonnes (Mil)	%	Tonne Miles (Bil)	%
2012	2351		8941	
2013	2293	-2.5%	8758	-2.05%
2014	2280	-0.6%	8622	-1.55%

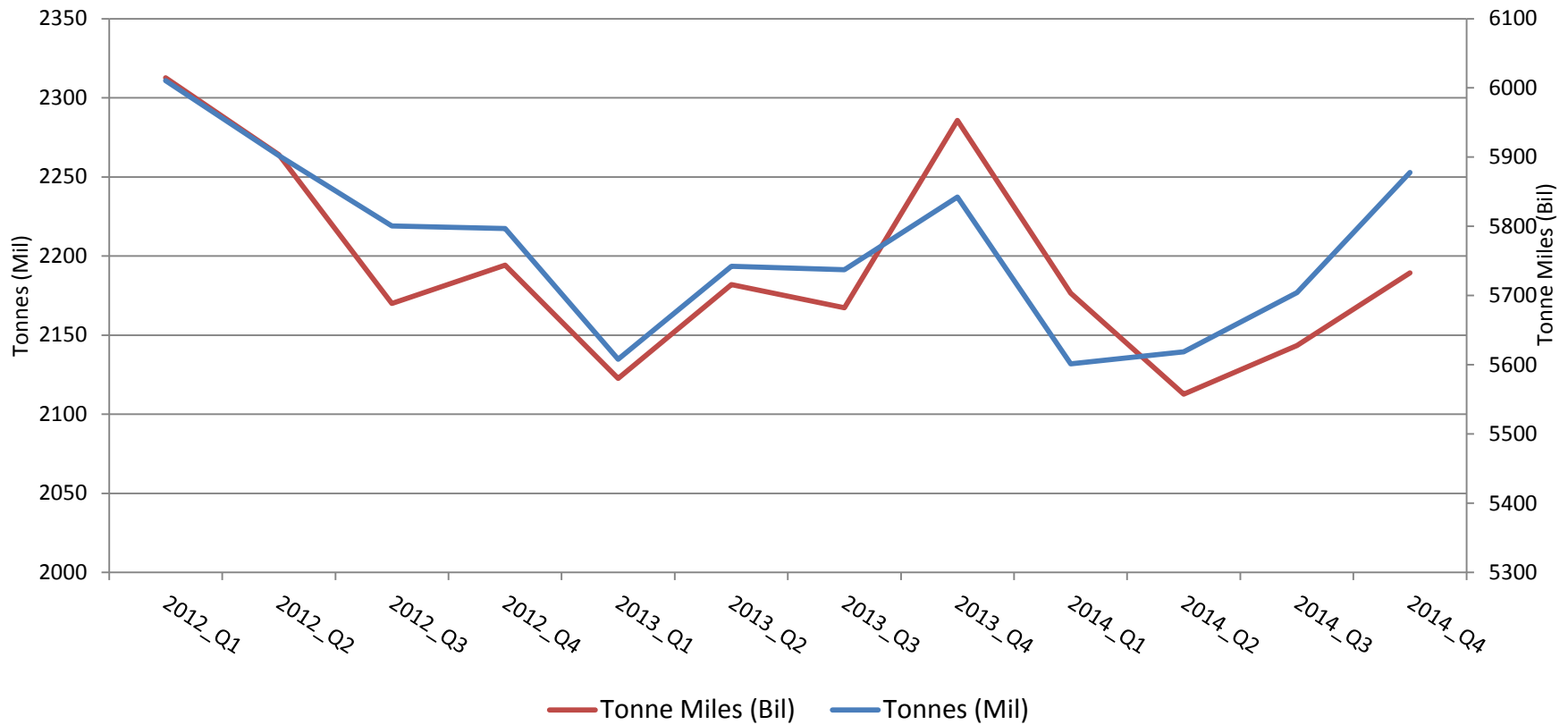
Baltic Dirty Tanker Index

Contrast between growth in annualised 2014 Baltic Dirty Tanker Index and decline in tanker tonne miles

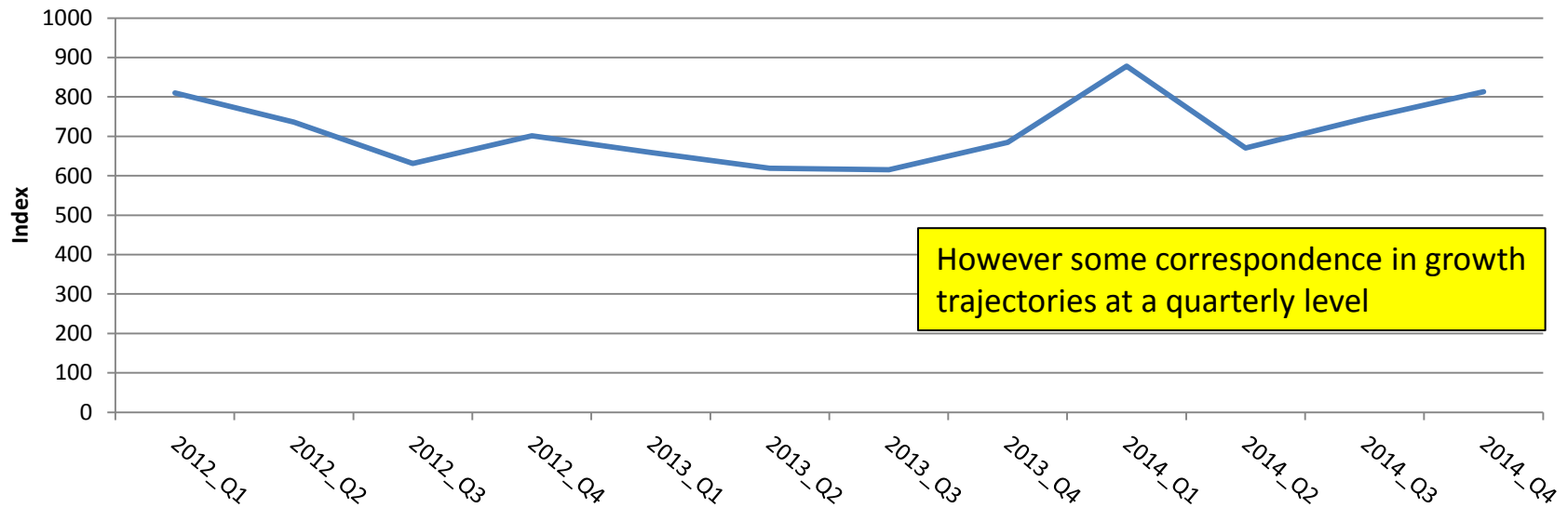
Year	Index	%
2012	719.2651	
2013	641.92	-11%
2014	776.848	21%

Crude Oil Trade – By Quarter

Upward trend in Tonne Mile growth during 2014. Two quarters of consecutive growth in Q3 & Q4



Baltic Dirty Tanker Index

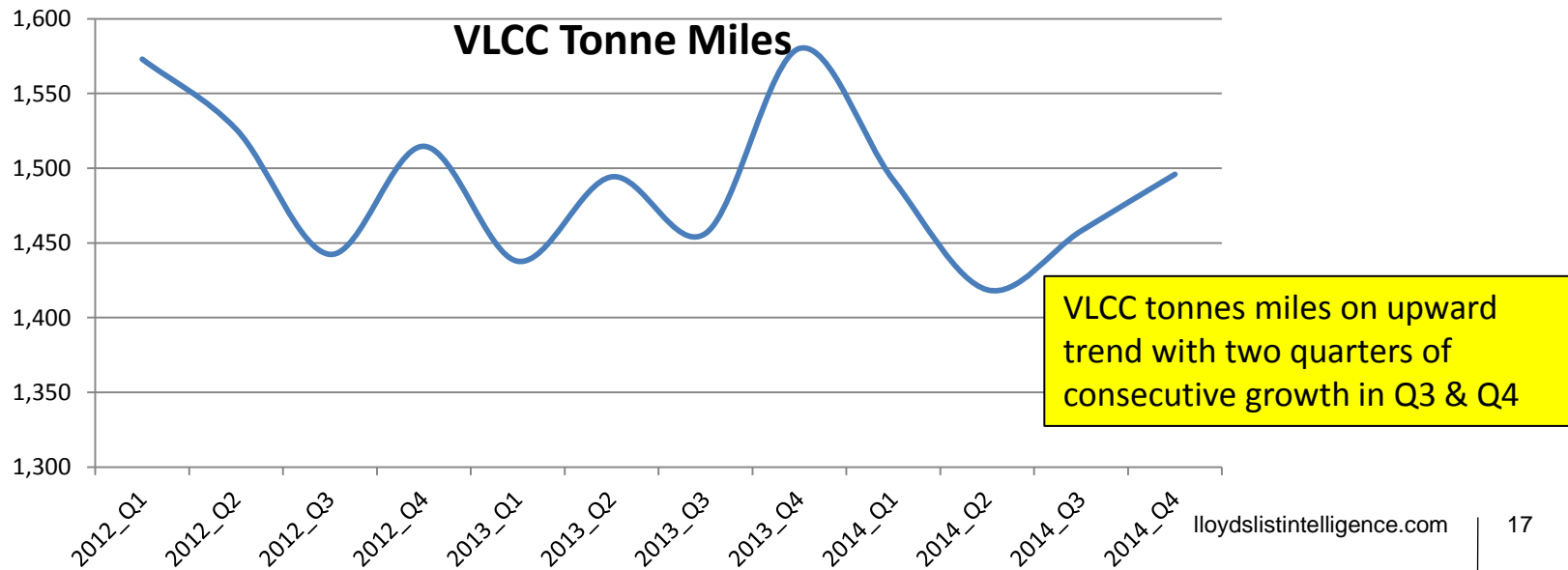


Tanker Fleet Growth – DWT (Mil)

	Aframax	%	Suezmax	%	VLCC	%
2013	94.18		73.60		186.59	
2014	93.81	-0.40%	73.81	0.29%	188.65	1.10%

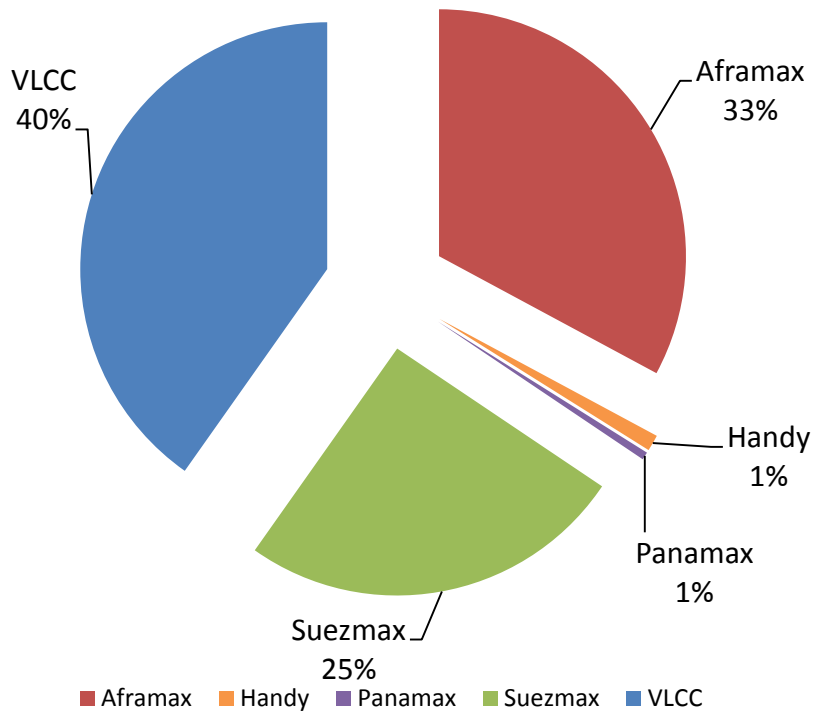
Tonne Miles (Bil) – Vessel Size Range

	Aframax	%	Suezmax	%	VLCC	%
2012	1185		1,673		6,056	
2013	1087	-8%	1,677	0%	5,968	-1%
2014	1017	-6%	1,709	2%	5,865	-2%

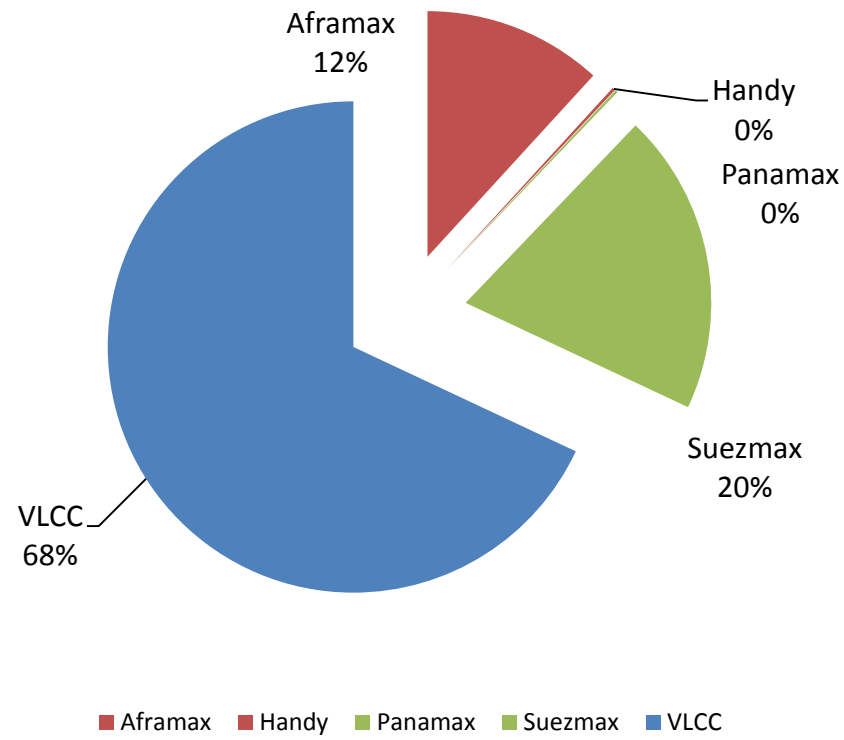


Crude Tanker Employment

Tonnes by Vessel Type



Tonne Mile By Vessel Type



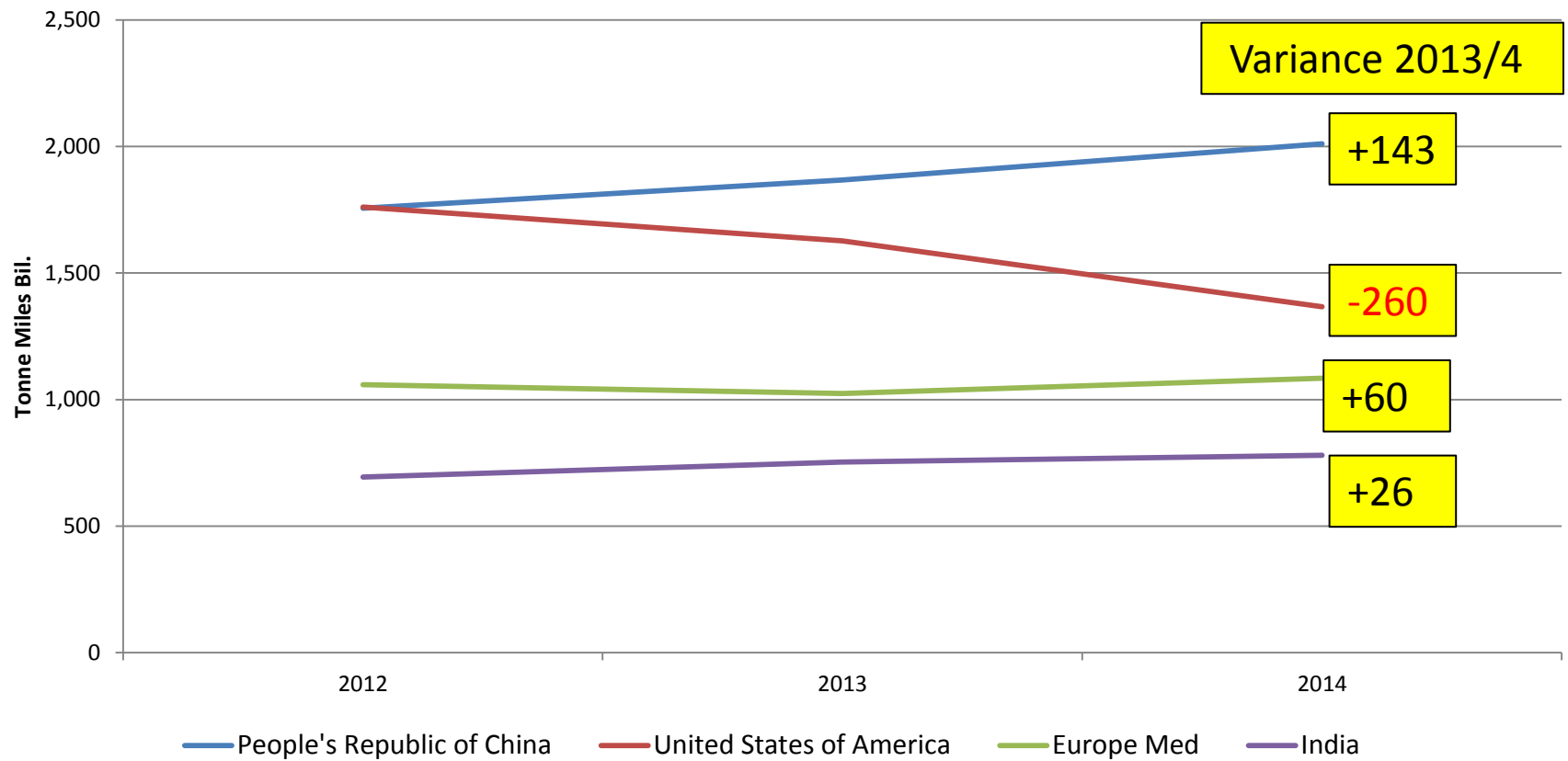
Route Profiles

2014 Tonne Mile increase on certain routes outweighed by declines elsewhere resulting in annualised negative growth - 1.55%

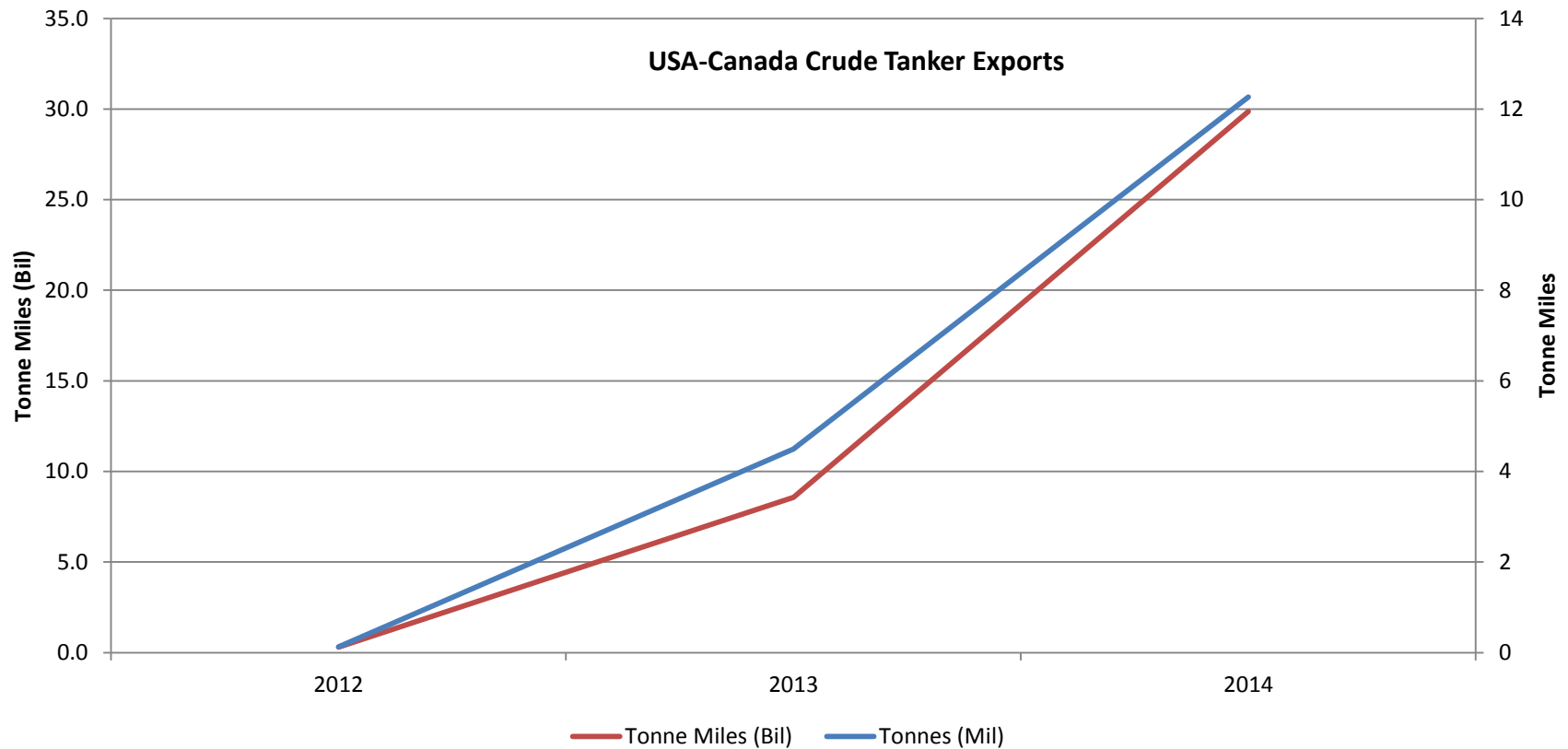
MajorExportArea	MajorImportArea	2014 Tonnes	%	2013 Tonne Miles	2014 Tonne Miles	%
Middle East	Far East	445,502,997	0.6%	2,667,326,163,248	2,661,465,846,318	-0.2%
Caribbean & S America Atl	US Gulf/Car/Cam	124,900,000	1.1%	157,881,063,148	170,546,647,941	8.0%
Middle East	Ind Sb-Cnt	122,327,000	-5.6%	199,146,209,500	188,925,723,650	-5.1%
Caribbean & S America Atl	SAm_Atl	118,833,500	12.2%	40,088,637,311	44,259,688,500	10.4%
North Sea	N Eur	108,635,000	4.5%	50,880,217,500	56,329,117,500	10.7%
N Africa, E Med & Black Se	S Eur	104,465,166	-10.3%	141,521,883,000	130,648,589,733	-7.7%
Middle East	SE Asia & Oceania	90,232,866	-11.1%	412,158,436,275	370,888,647,627	-10.0%
SE Asia & Oceania	SE Asia & Oceania	86,188,308	0.8%	100,755,465,078	102,237,719,179	1.5%
Baltic	N Eur	72,205,000	-16.4%	83,361,826,666	64,815,700,000	-22.2%
Middle East	ARA/RED	70,260,000	2.9%	51,940,360,000	74,271,040,000	43.0%
Can/US	US Gulf/Car/Cam	62,927,500	-11.7%	9,958,312,500	9,819,855,000	-1.4%
West Africa	Far East	61,348,332	0.2%	570,680,215,027	575,075,573,463	0.8%
Middle East	US Gulf/Car/Cam	59,692,500	-21.1%	883,811,412,500	696,837,552,500	-21.2%
West Africa	N Eur	53,840,000	5.1%	206,468,840,064	218,185,240,000	5.7%
Can/US	US Pac	46,880,000	8.3%	41,810,525,762	46,181,063,565	10.5%
N Africa, E Med & Black Se	N Eur	42,388,334	-7.1%	112,110,740,000	104,476,524,032	-6.8%
Caribbean & S America Atl	Far East	37,605,000	16.7%	399,355,587,831	463,400,290,000	16.0%
Can/US	US/Can Atl	36,137,500	37.2%	29,417,390,000	51,229,197,500	74.1%
Caribbean & S America Atl	Ind Sb-Cnt	36,135,000	4.4%	359,100,530,000	366,994,860,000	2.2%
N Africa, E Med & Black Se	Med_BlackSea	35,810,500	6.1%	28,255,058,250	25,172,020,500	-10.9%
SE Asia & Oceania	Far East	34,479,654	-3.5%	82,641,853,657	78,568,844,739	-4.9%
Rus_FarEast	Far East	33,270,000	19.2%	29,396,190,000	33,912,080,000	15.4%
West Africa	Ind Sb-Cnt	28,706,500	11.6%	179,792,916,500	201,534,450,500	12.1%
Middle East	N Eur	27,146,534	20.4%	151,638,380,846	171,580,987,362	13.2%
Others	Far East	25,016,667	10.3%	20,058,235,000	19,106,980,204	-4.7%
Middle East	US Pac	24,705,000	13.3%	247,510,130,000	281,138,577,500	13.6%
West Africa	S Eur	22,740,000	7.2%	86,918,545,000	93,302,620,000	7.3%
Middle East	S Eur	19,531,666	44.0%	56,957,313,346	83,941,872,752	47.4%
Caribbean & S America Atl	N Eur	14,817,000	23.8%	54,270,290,000	67,867,765,500	25.1%

Key Import Trends

Decline in 2014 US Import Tonne Miles not matched by increased import demand from China and India etc



Emerging Trends



Summary Observations

- Tonne Miles can be calculated with a fair degree of accuracy and transparency
- Annualised aggregate macro stats not very illuminating in terms of explaining or predicting market trends or behaviour
- However more detailed analysis of the underlying data could yield some meaningful insights
- In terms of measuring demand for ships necessary to include fleet efficiency, utilisation and deployment factors

Thank You !

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