AACO – Trends in Jet Fuel Prices and Product Flows

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AGENDA

Recent trends in global jet fuel prices

The Middle East as the primary exporter to the global market

The industry's response to the fall in prices

Platts – An introduction

Jet Fuel Prices Collapse

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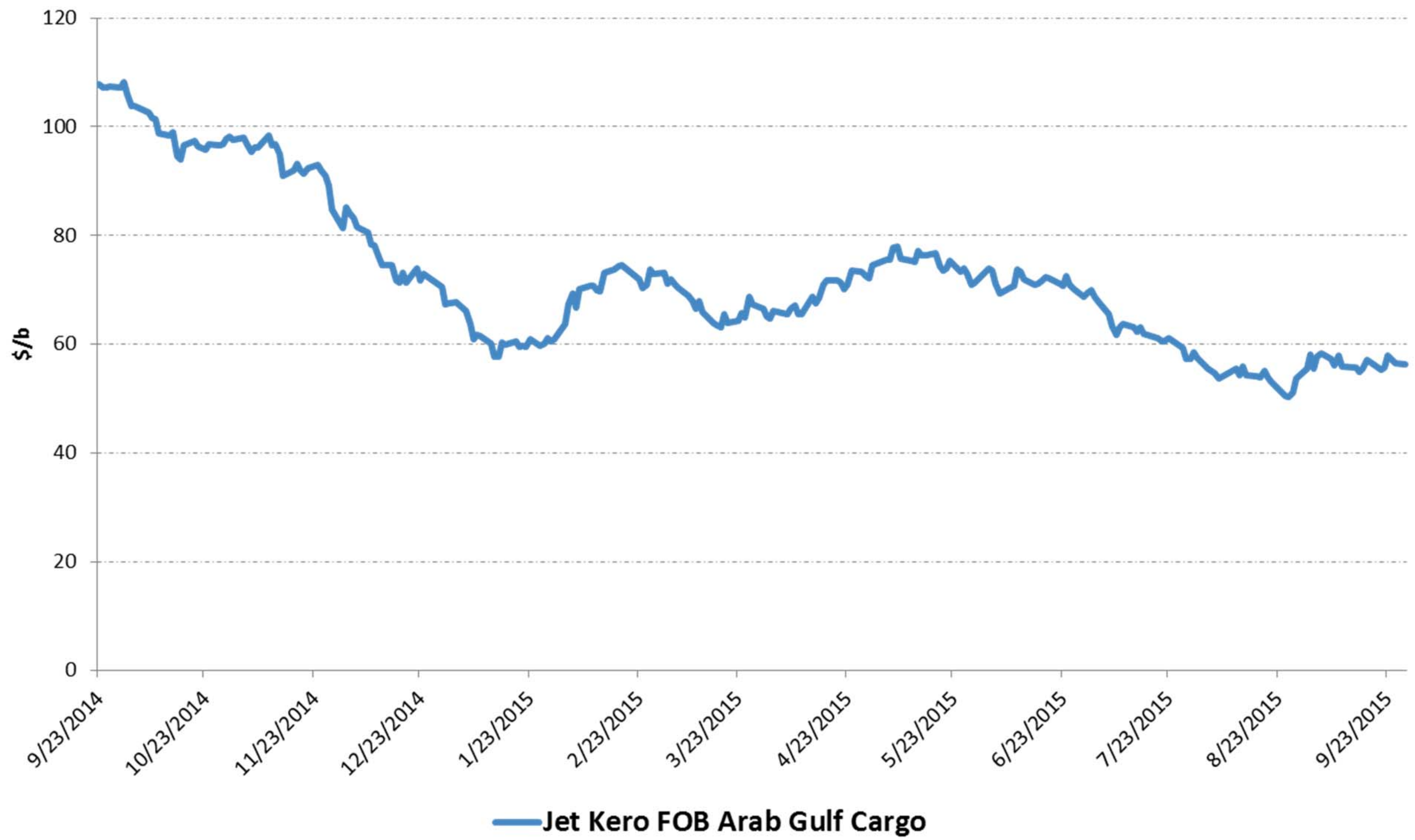

Source: Platts

Jet Fuel refining margins under pressure

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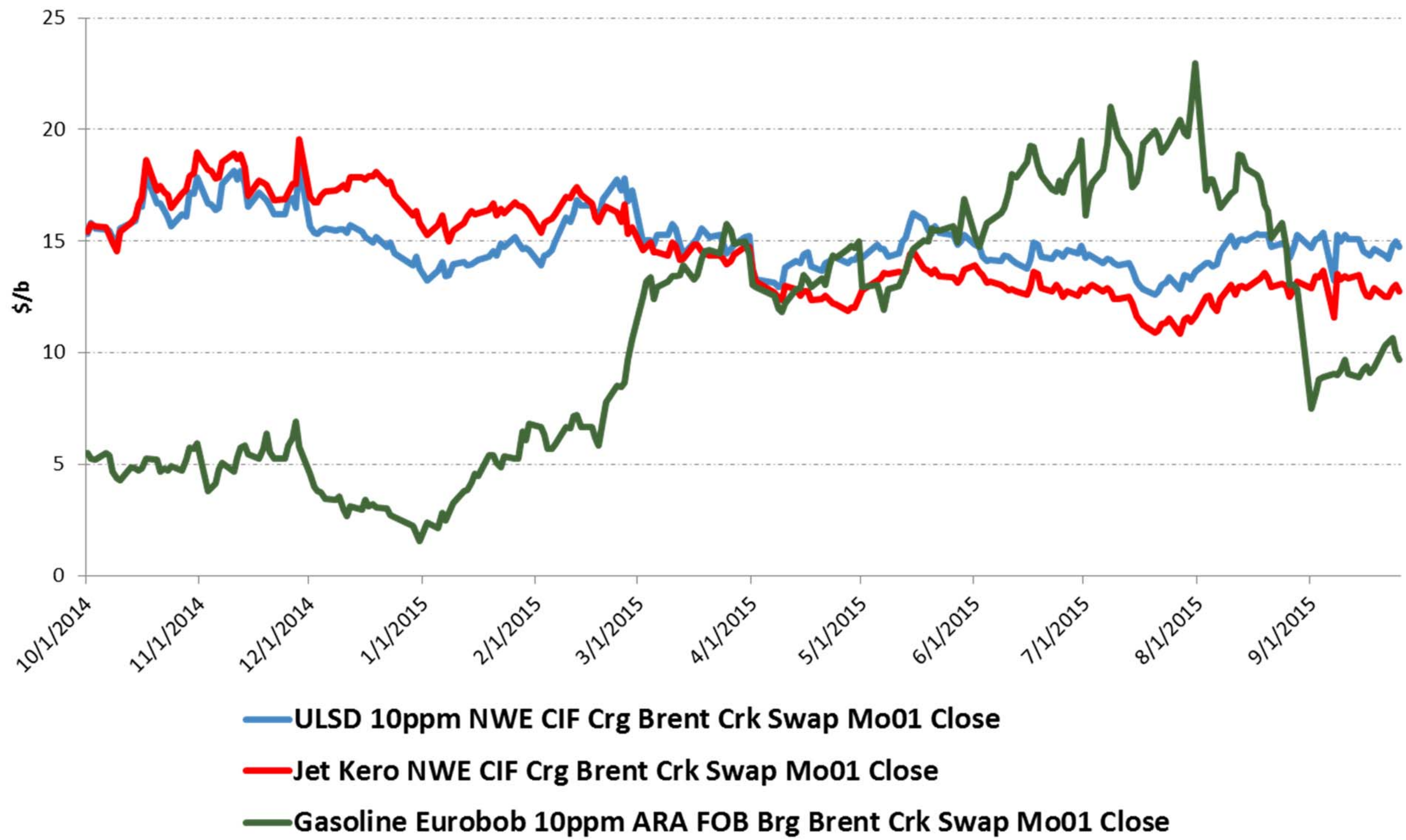

Source: Platts

Global refining margins buoyant

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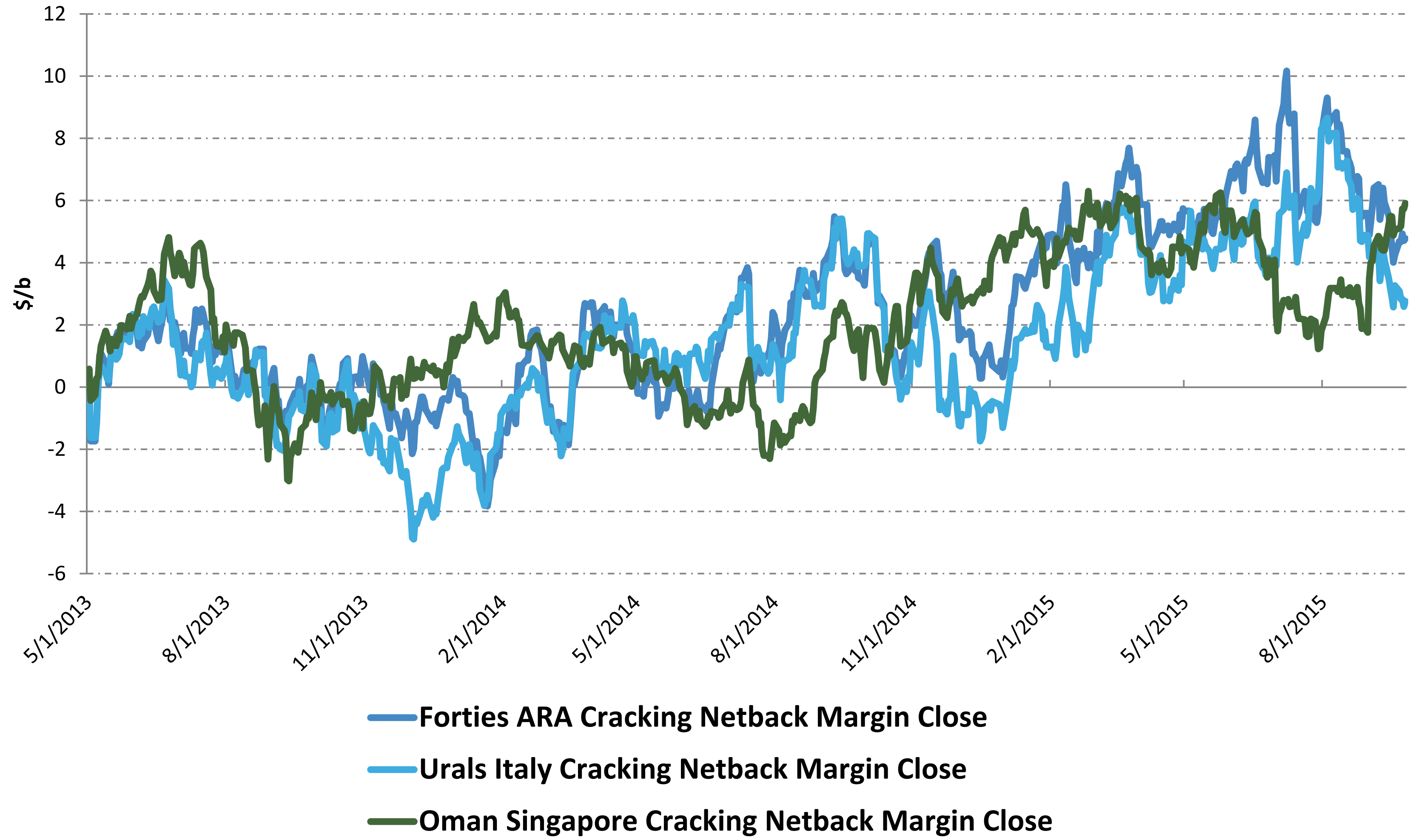

Source: Platts

Incremental changes in Jet deficit (million mt/mo)

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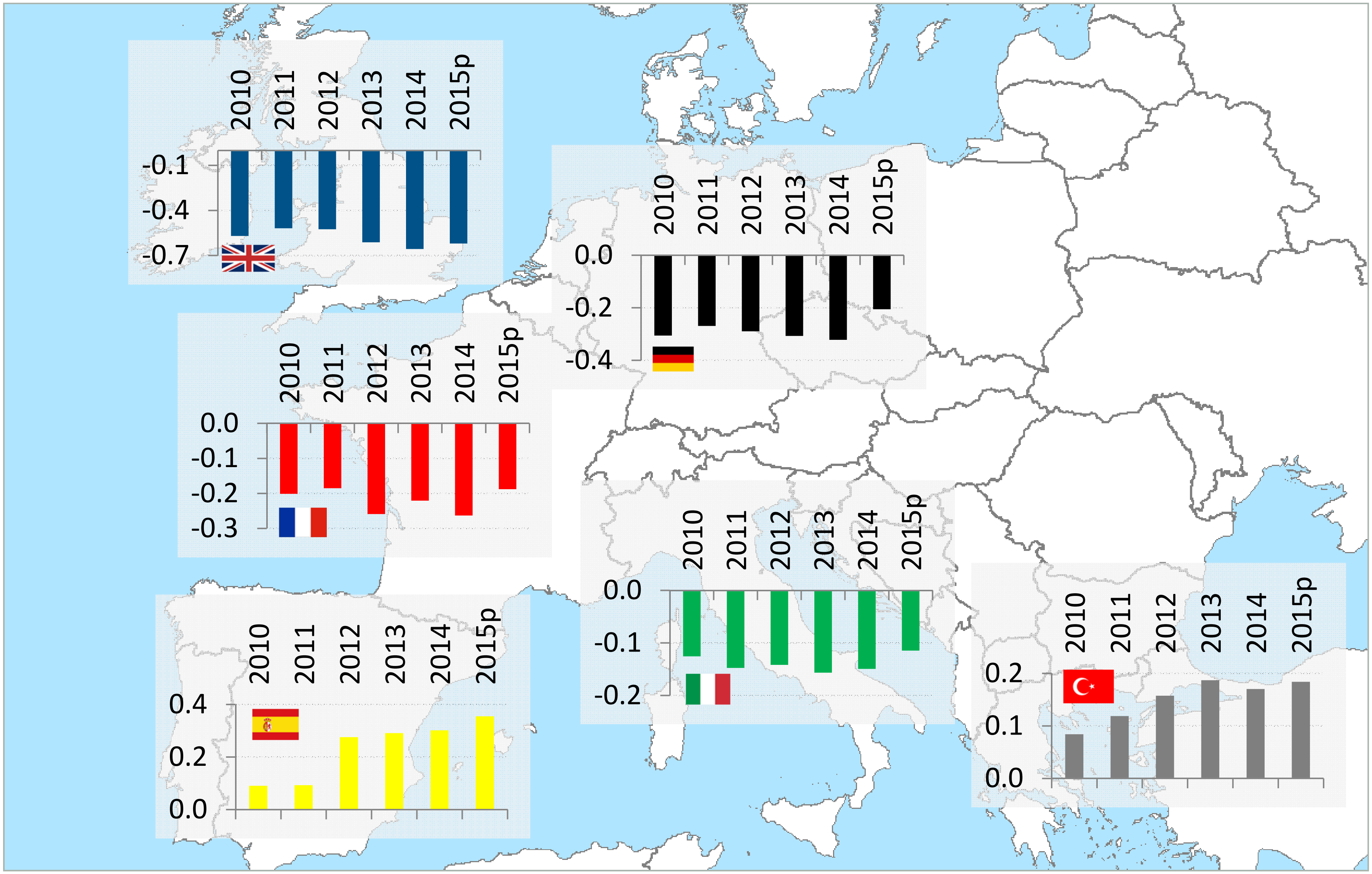

Source: JODI, 'kerosenes'

Middle East refinery expansions

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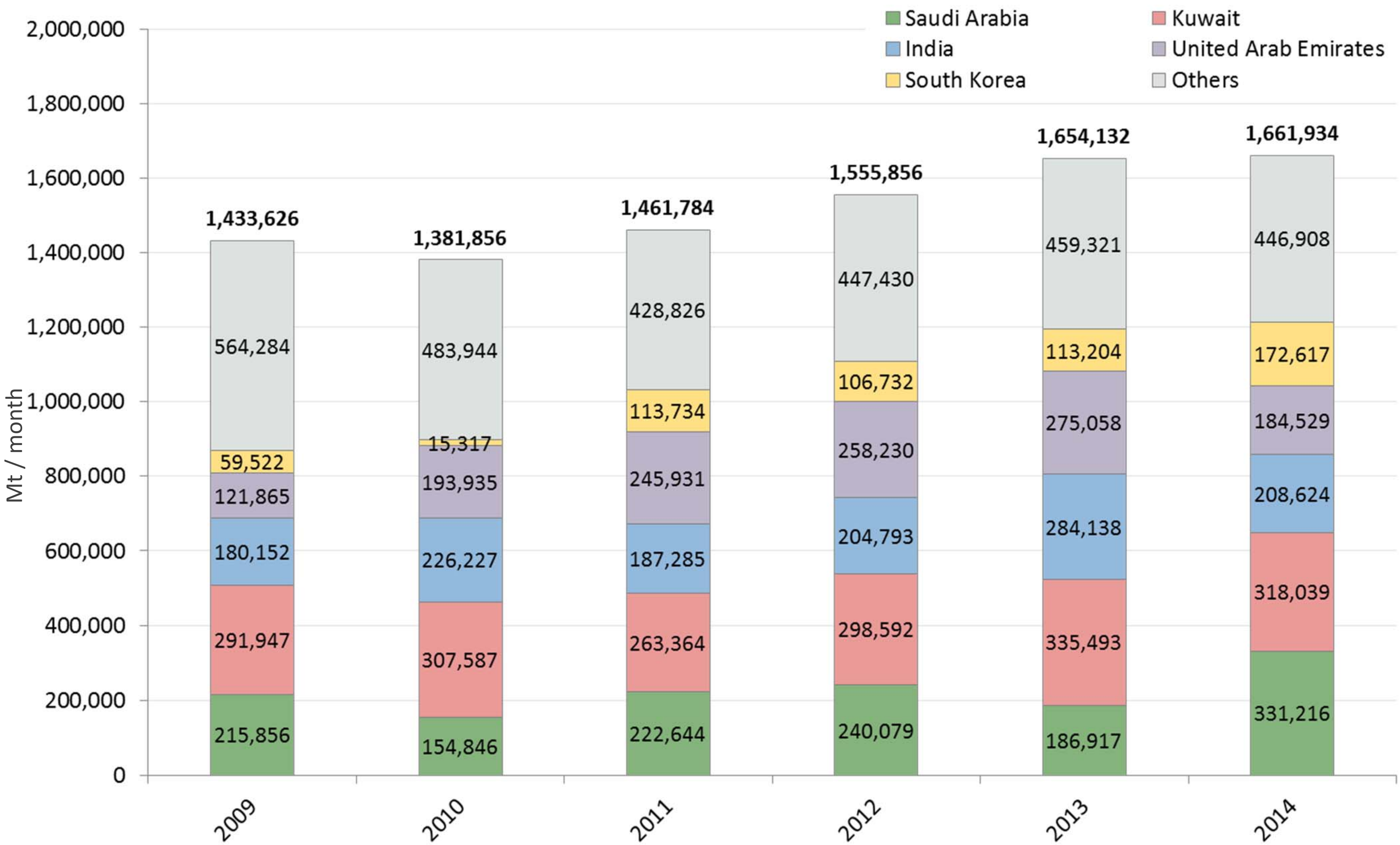
	Refinery	Owner	Capacity/ Expansion	Est. completion
1	Yanbu	Aramco/ Sinopec	400kbd	2014
2	Rabigh	Aramco/ Sumitomo	Upgrade (Phase 2)	2016
3	Jazan	Aramco	400kbd	2018
4	Al Zour	KNPC	615kbd	2019
5	Jubail	Aramco/ Total	400kbd	2013
6	Ras Tanura	Aramco	+400kbd	on-hold
7	Ras Laffan (2)	QP/Exxon/ Total +	146kbd	2016
8	Fujairah	IPIC	200kbp	2016
9	Sohar	ORPIC	+86kbd	2016
10	Duqm	IPIC/OOC	250-300kbd	2018
11	Ruwais	ADNOC	+417kbd	2015

Source: Market Sources

Mid East remains key jet supplier to Europe



Source: Eurostat

Average monthly jet imports/exports to EU-28 nations (2014)

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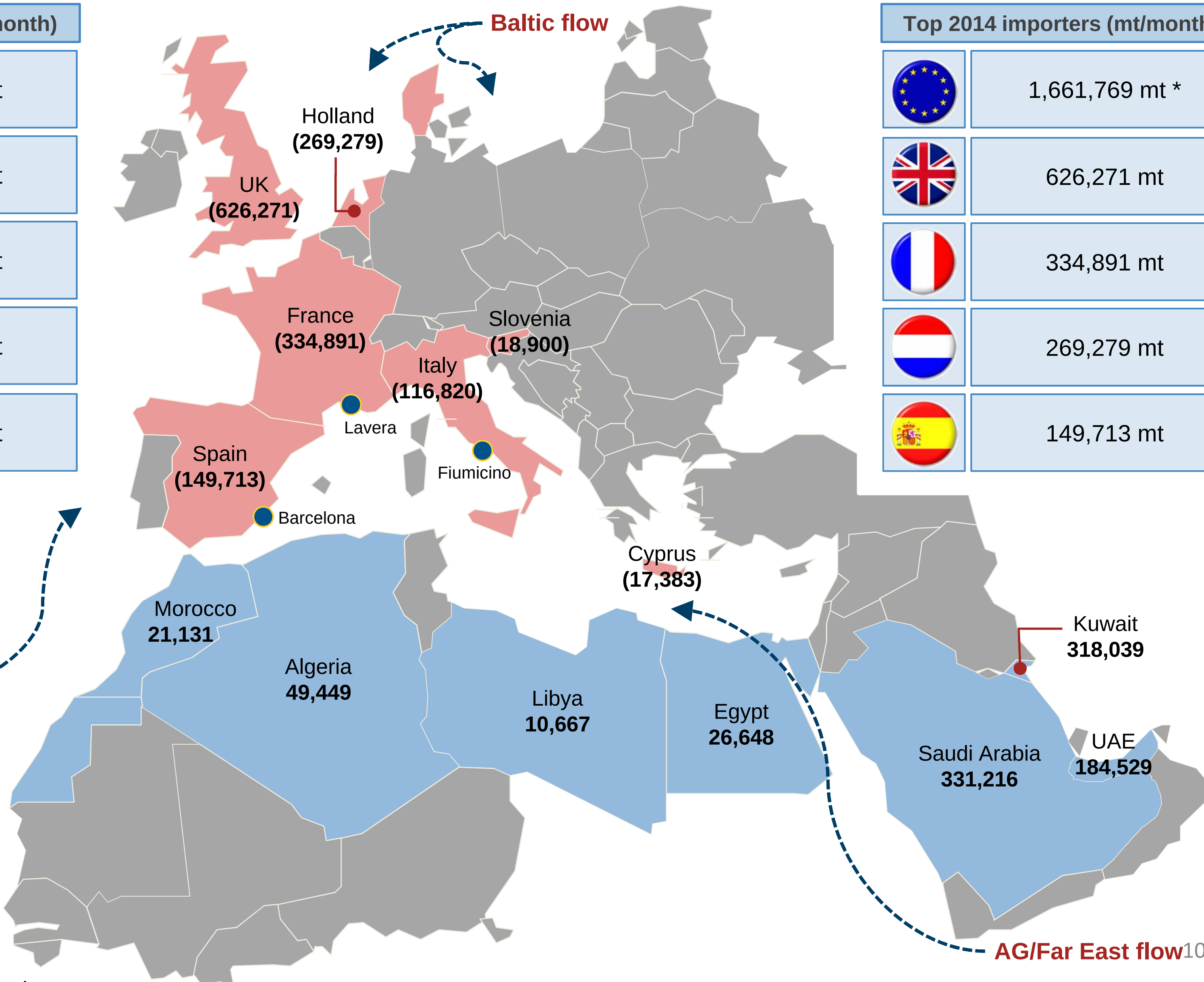
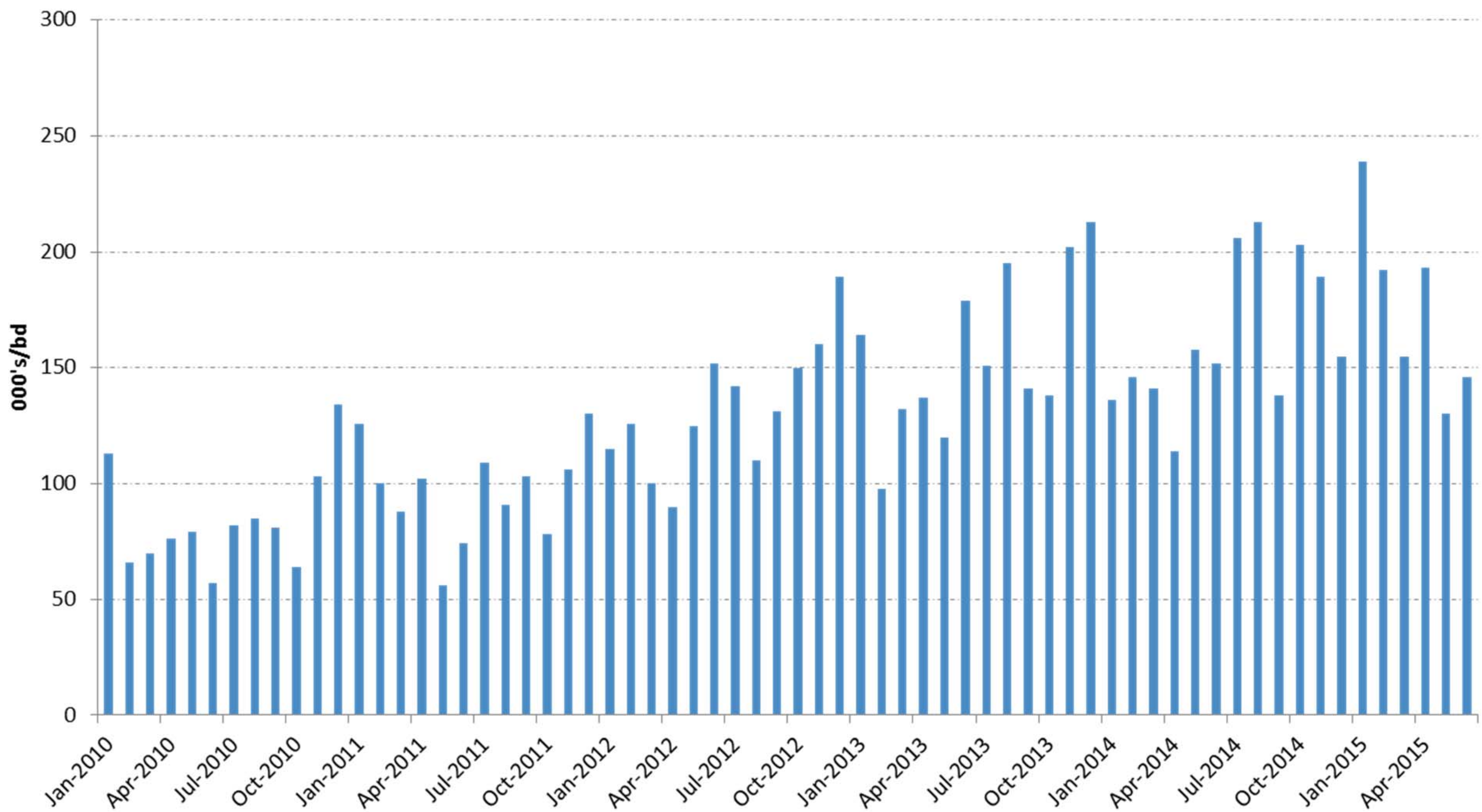
Top 2014 exporters (mt/month)	
	331,216 mt
	318,039 mt
	208,624 mt
	184,529 mt
	172,617 mt



Top 2014 importers (mt/month)	
	1,661,769 mt *
	626,271 mt
	334,891 mt
	269,279 mt
	149,713 mt

Source: Eurostat
**EU-28 imports from non-EU countries*

US jet fuel exports



Source: Platts

Spec difference keeps US flow low

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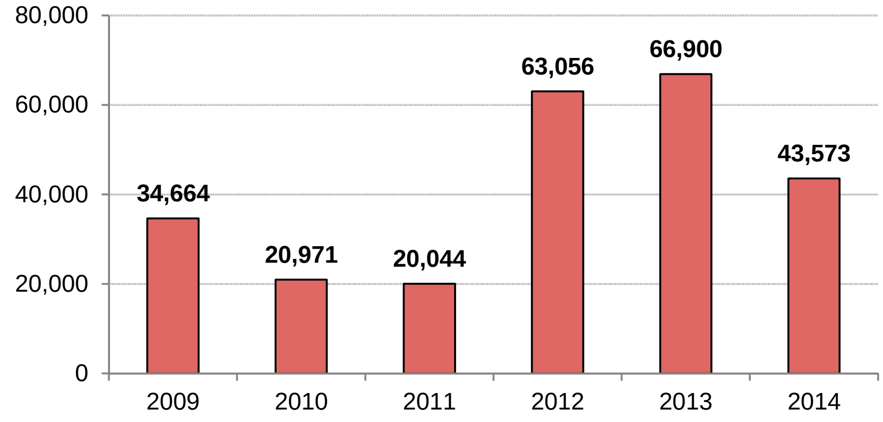
Jet A vs. Jet A-1: main difference on freeze point

	Jet A	Jet A-1
Freeze Point, ºC	**-40.0 Max**	**-47.0 Max**
Flash Point, ºC	38 Min.	38 Min.
Sulphur, total, Wt. %	0.3	0.3
10% Distillation, ºC	205 Max.	205 Max.
Final Boiling Point, ºC	300 Max	300 Max

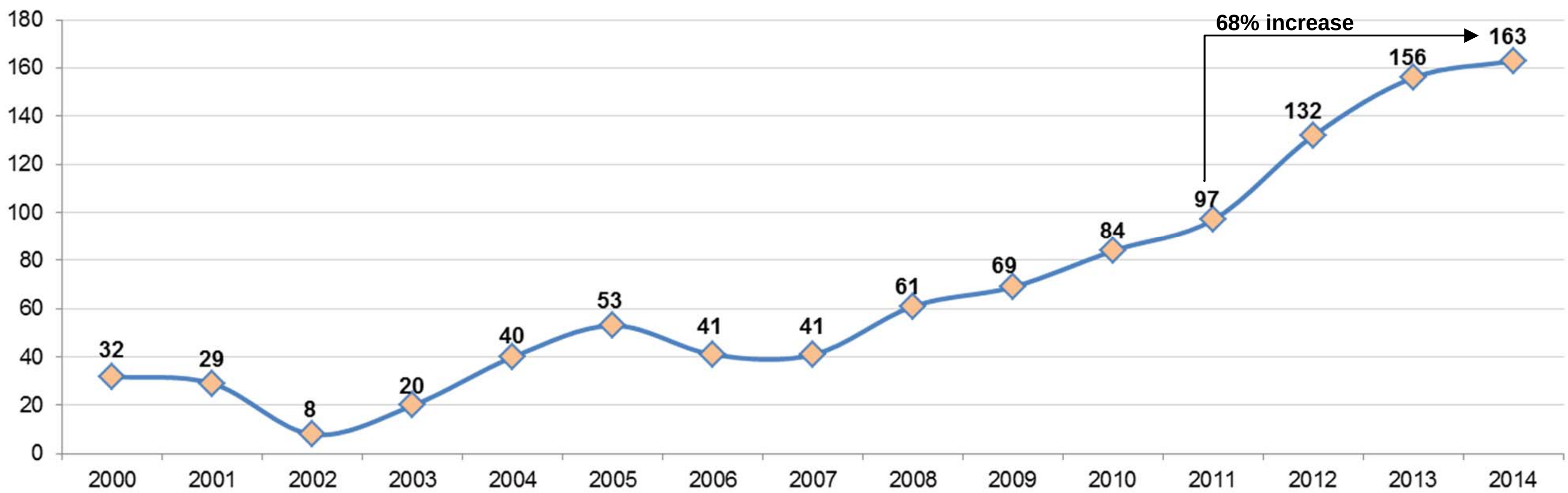
- Many US refineries capable of producing A-1 material
- Jet A does not usually contain static dissipator additive
- In making A-1, a refiner will give up some of the lower end kerosene material to the diesel pool
- Shell Deer Park, ExxonMobil Baton Rouge and Lake Charles heard to be some of the USGC jet export refineries

EU28 imports of US jet fuel (mt per month)



Source: Eurostat

US jet fuel exports steadily on the rise in recent years… but volumes to Europe remain fairly marginal (‘000 b/d)



Source: US Energy Information Administration

Tax maneuver yet to impact Russian jet flows

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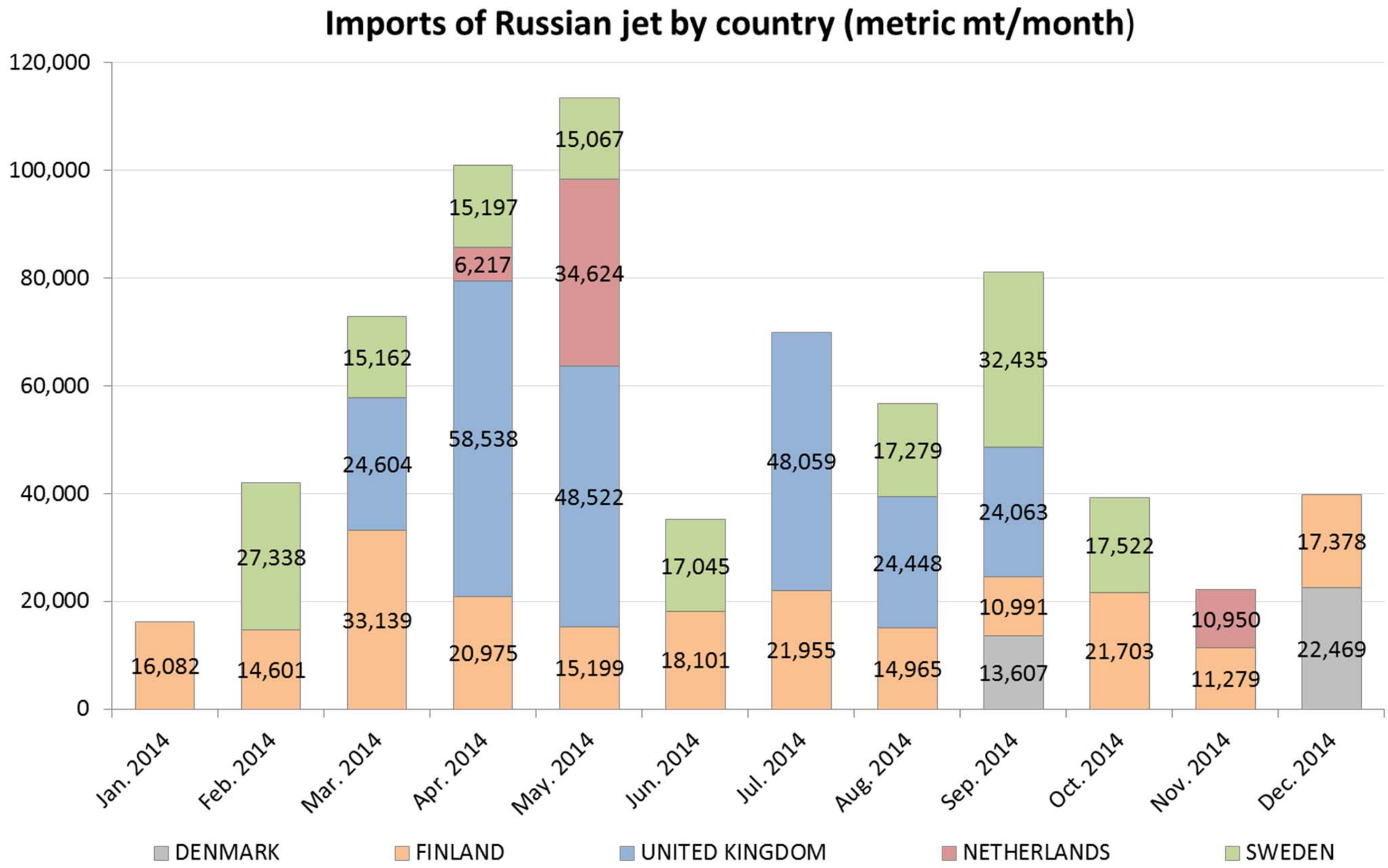

Source: Eurostat

Deepening jet contango encourages storage

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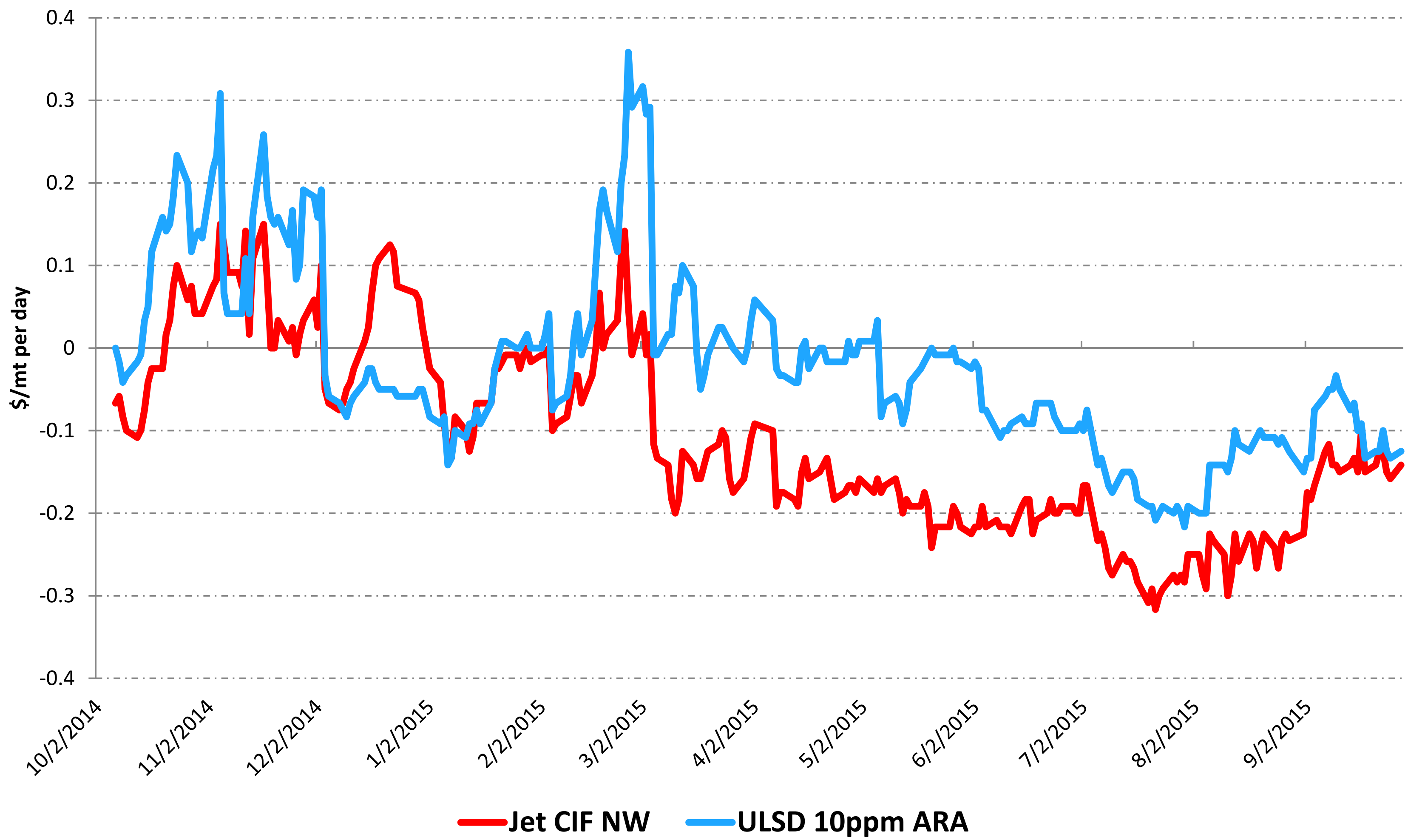

Source: Platts

Ample supply dents jet premiums

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- High refinery margins led to higher domestic output
- Sustained periods of max jet mode exacerbated length
- Arbitrage re-supply remained robust
- Seasonal lull, limited opportunistic buying sustained supply glut
- Well-offered market prevails

Relative resilience of airline stock values

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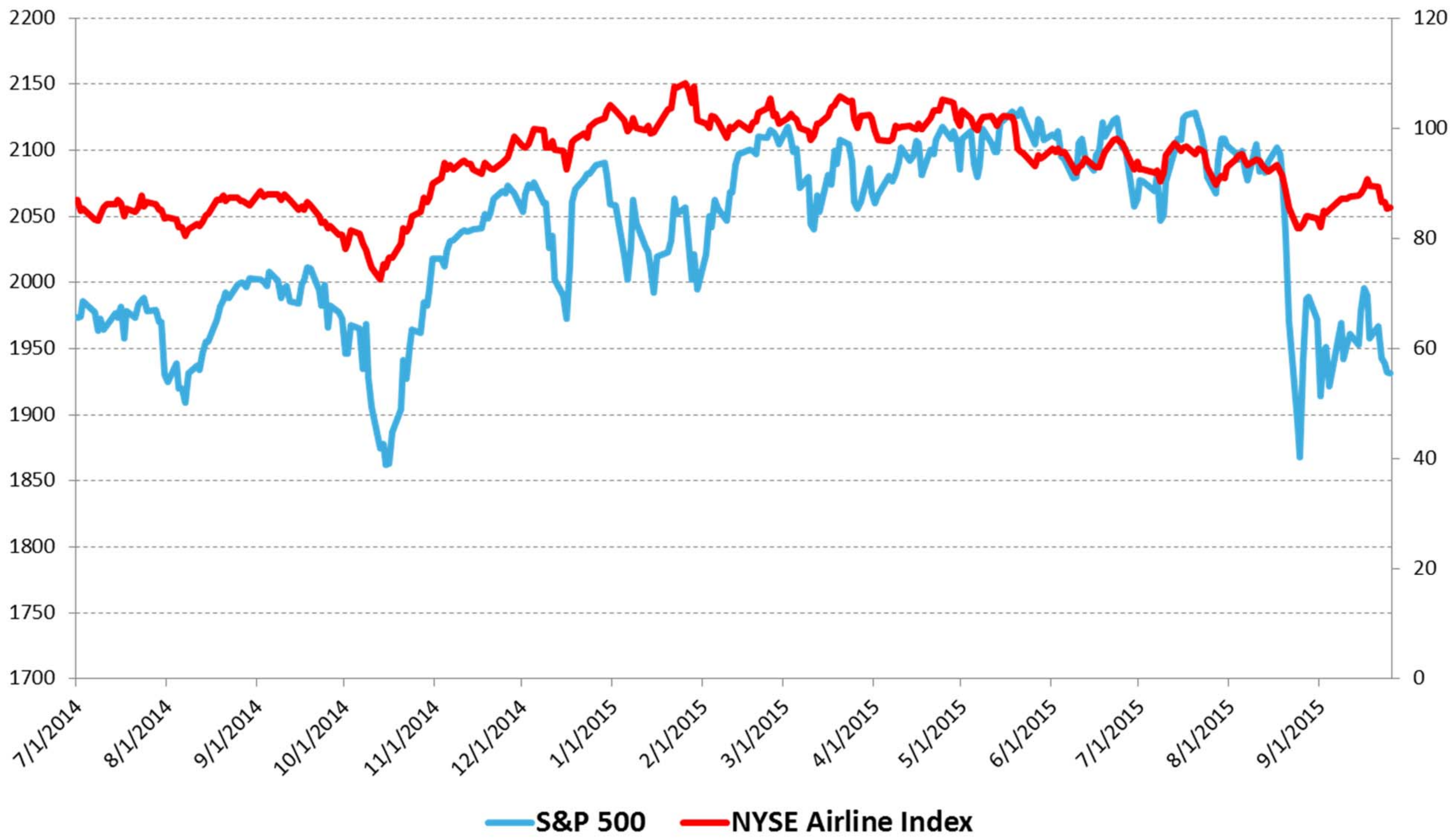

New DEFSTAN implementation varies

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- Effective May 2 DEFSTAN 91-91 increases FA threshold from 5ppm to 50 ppm
- Pipeline operators delay transition to new standard, maintain the previous requirement
- Spec misalignment creates a two-tiered market, stagnates trading

FAME content: How are Europe's pipelines responding to Amendment 3 of DefStan?

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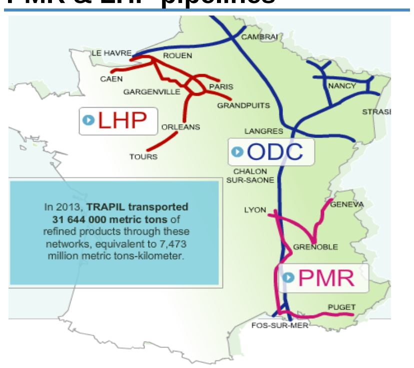
Central European Pipeline System — **Operator**: NATO

Pipeline Length	5,500 km running through Belgium, France, Luxembourg, Germany and the Netherlands
Maximum FAME	**5 ppm current cap** although looking to get in line with the last DefStan amendment as quickly as possible
Network	30 NATO depots, military and civil airfields (including Brussels, Frankfurt and Zurich), refineries, civil depots and sea ports
Misc.	All member nations of the CEPS programme must approve the new cap. At present, 4 of 6 heard to have agreed to 50 ppm limit

CLH-PS (formerly GPSS) — Operator: CLH

Pipeline Length	Approximately 2,500 km
Maximum FAME	**Current status unclear.** As GPSS, a 5 ppm maximum FAME content was enforced. CLH expected to be discussing currently.
Network	Heathrow and Gatwick airports, significant military airfields, and distributes about 40% of all aviation fuel within the UK
Misc.	The UK Ministry of Defence sold the GPSS to CLH in March 2015 for £82 million

PMR & LHP pipelines — Operator: TRAPIL



Pipeline Length	2,140 km (LHP: 1,380 km; PMR: 760 km)
Maximum FAME	**Typical cap of 20 ppm.** Flexibility of up to 40 ppm if TRAPIL notified in advance. Anything above 40 ppm will be rejected.
Network	LHP: 28 pumping stations and 27 delivery terminals. Ties into two other pipeline networks, 5 refineries and supplies 33 depots
Misc.	The LHP is Europe's oldest and largest civilian pipeline

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Q&A