

Product Tanker Outlook

6th Chemical and Product Tankers Conference
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Topics for discussion

- **Macro & Demand Outlook**
- **Refining Developments**
- **Product Trade**
- **Product Tanker Supply**
- **Freight & Asset Price Outlook**
- **Conclusions**



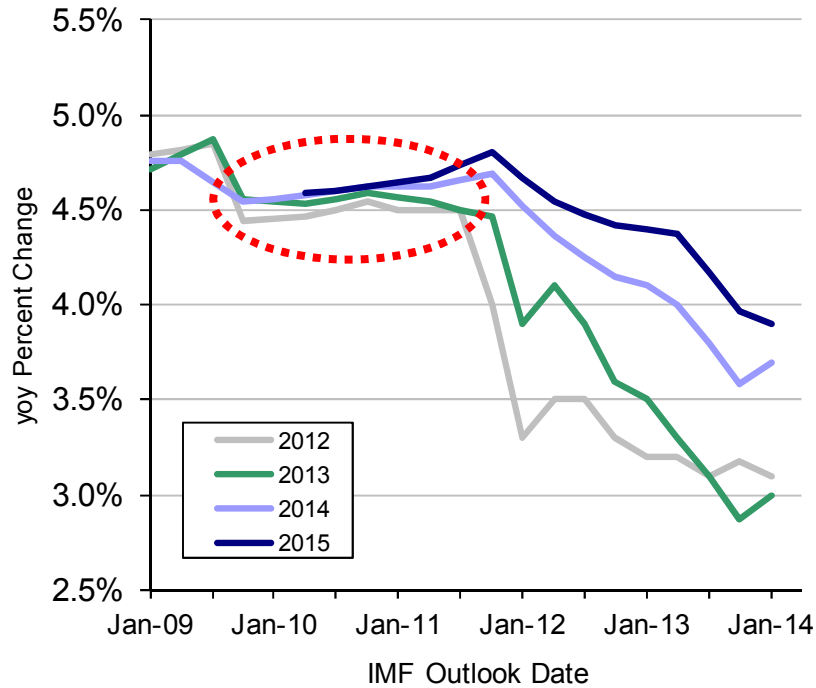
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Macroeconomic & Oil Demand Outlook



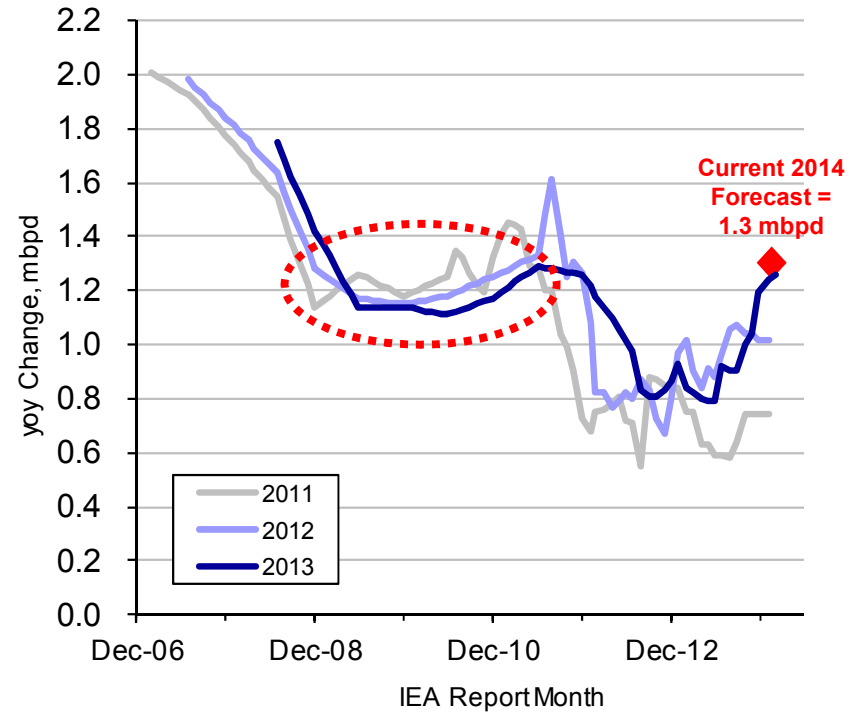
Faced with slowing global performance, IMF finally abandoned its “4.5% forever & ever” global GDP growth forecasts

IMF Global GDP Growth Forecasts, by Report Date



Source: IMF

IEA Global Oil Demand Growth Forecasts

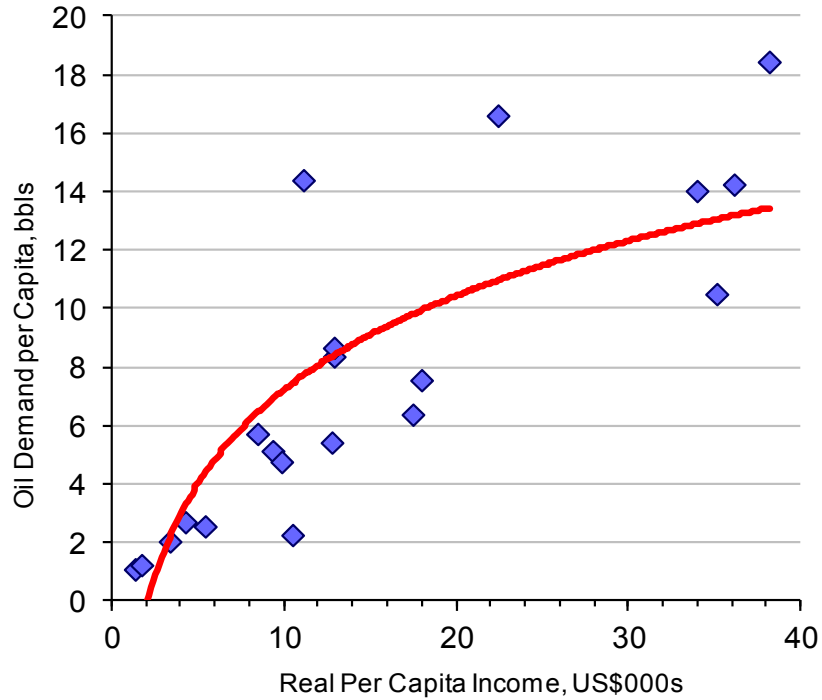


Source: IEA

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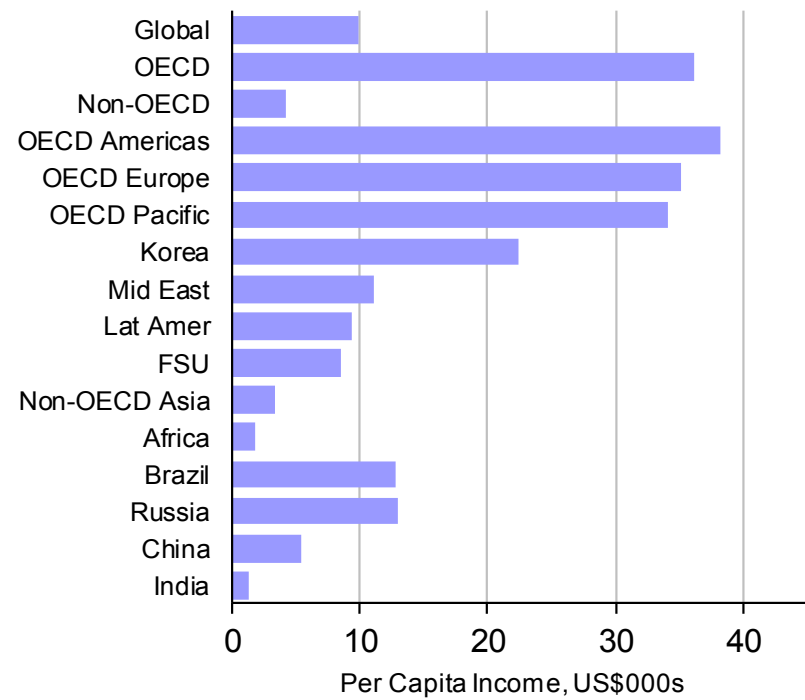
Non-OECD economies approaching per capita income levels with accelerating oil demand

Oil Demand vs. Real Incomes 2012



Sources: IMF, IEA, Makai Analysis

2011 Per Capital Income, by Region

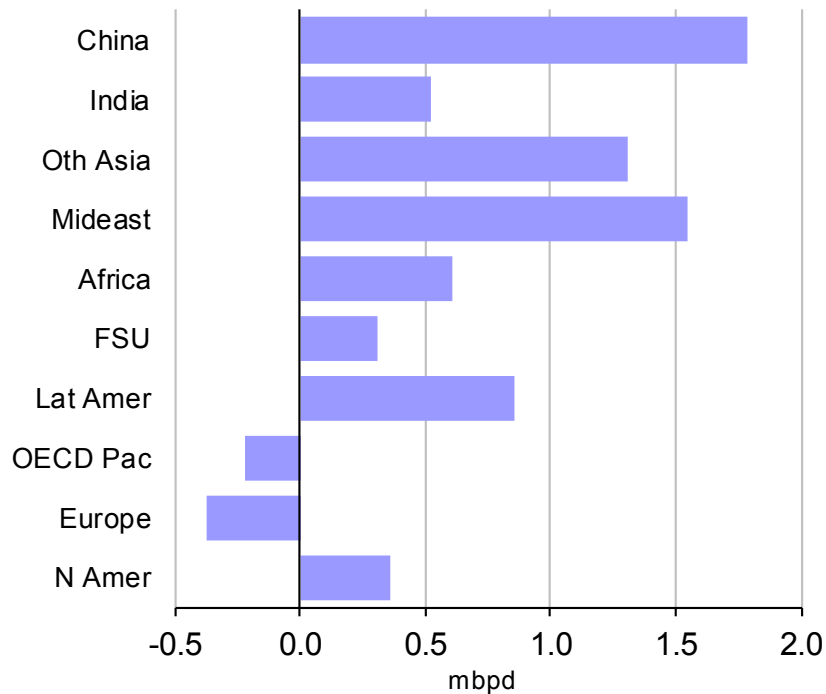


Source: IMF

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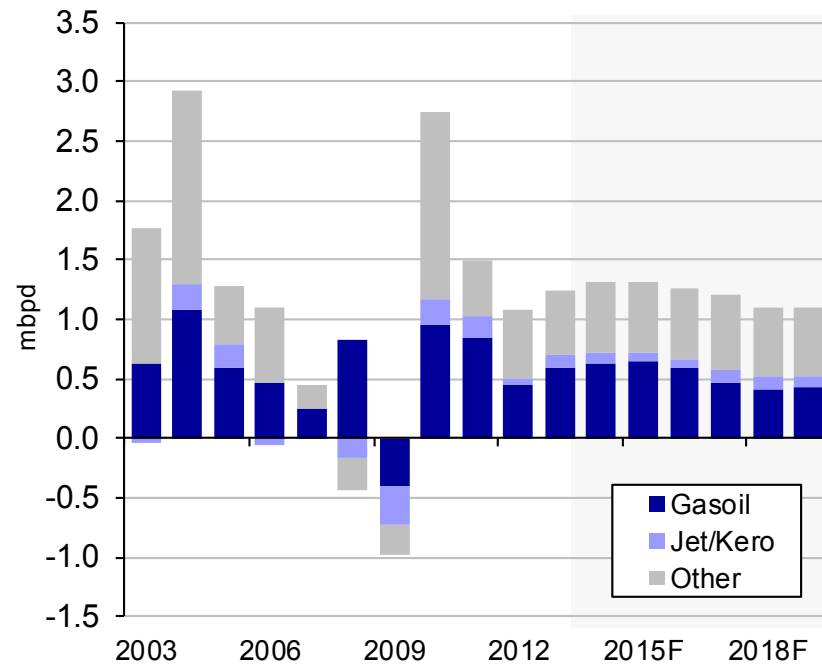
Rapid real GDP growth driving oil demand in non-OECD markets, with heavy reliance on gasoil

Regional Oil Demand Growth 2013-18



Sources: IEA, EIA, Makai Analysis

Global Oil Demand by Grade



Sources: IEA, EIA, Makai Analysis

- Incremental gasoil demand growth to account for 45% of global oil demand growth
- Mid-distillates to take 52% share of incremental growth

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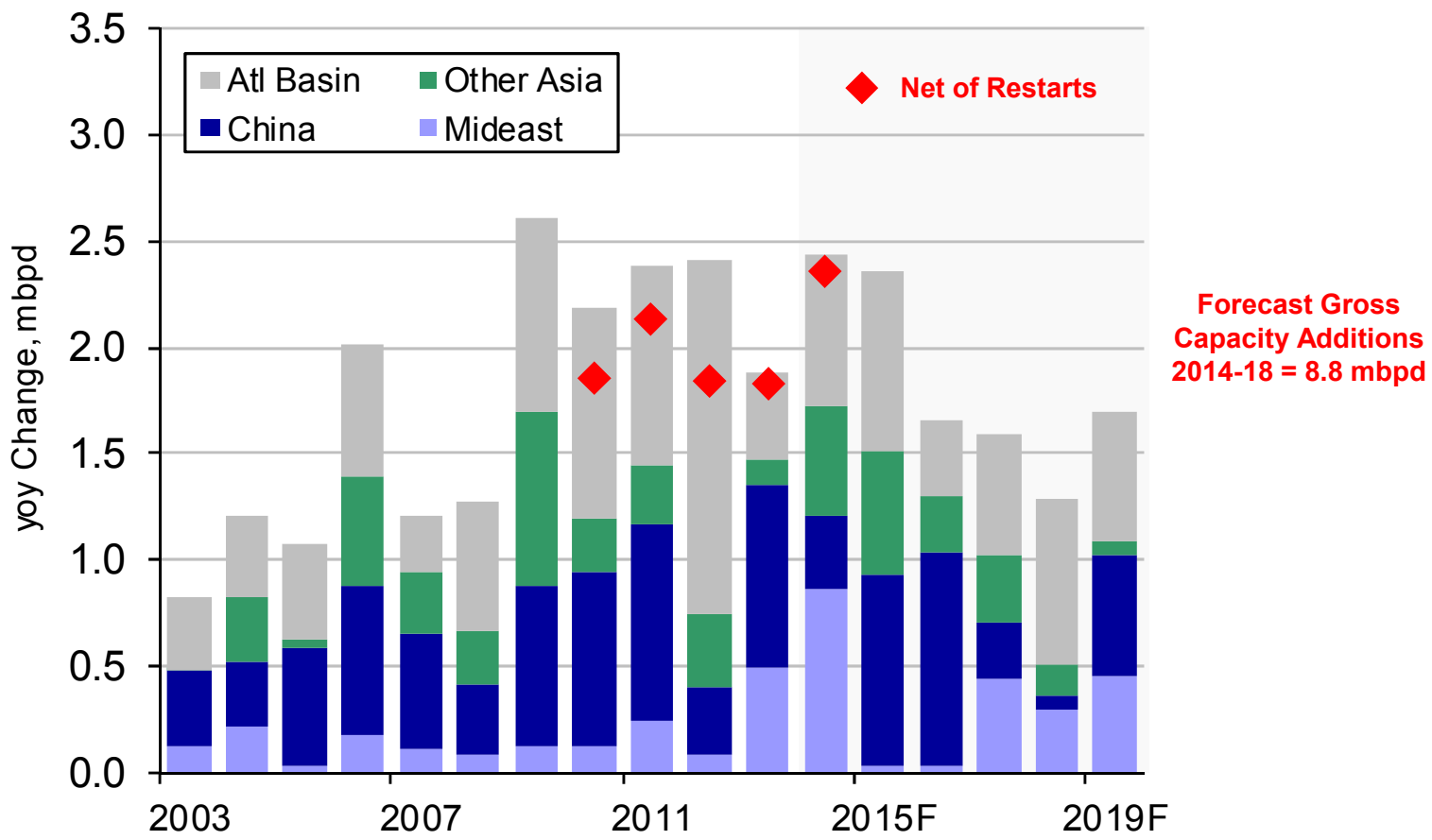


Refining Developments



Mideast and Asian projects dominate forecast gross distillation capacity additions

Global Distillation Capacity, Gross Additions (Including Restarts)

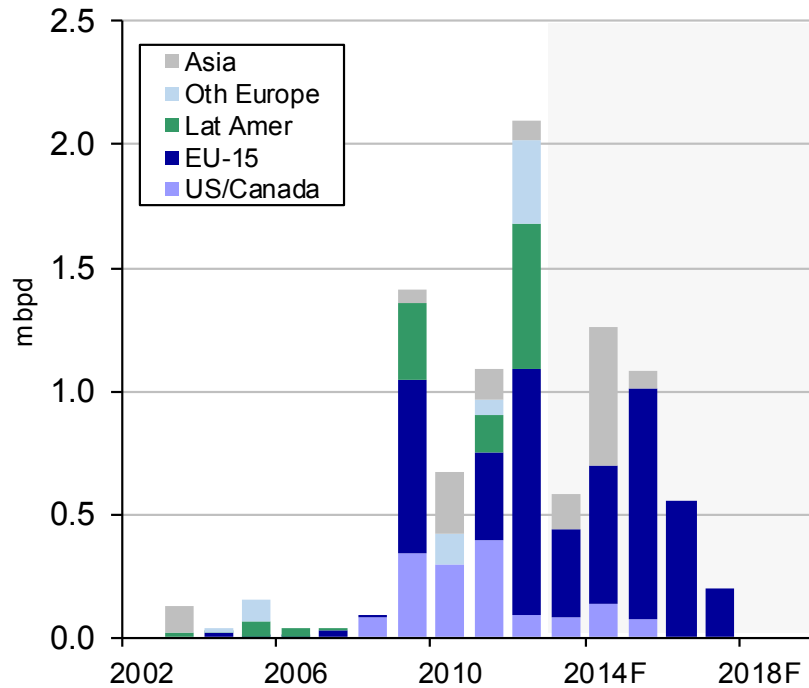


Sources: IEA, EIA, Company Reports

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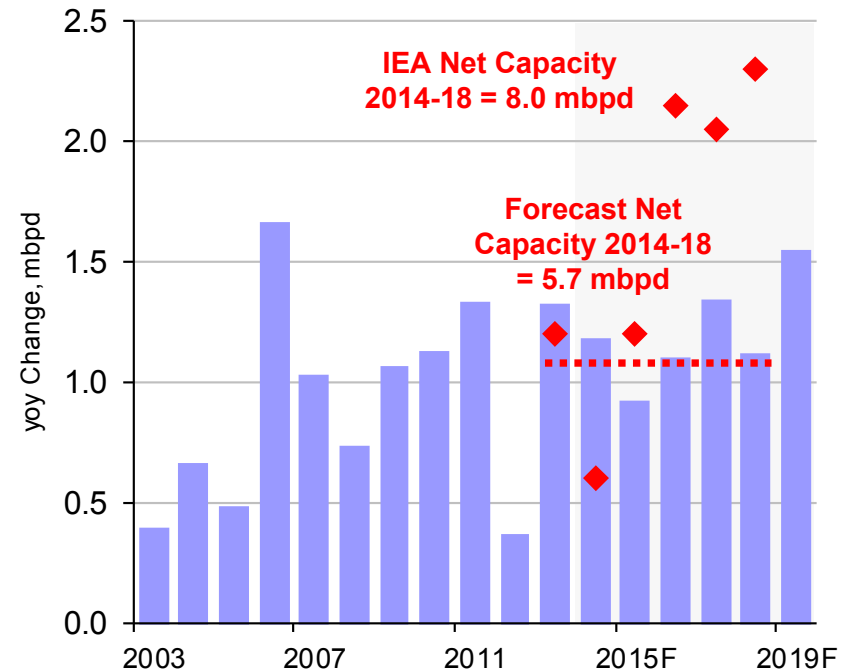
Aggressive capacity additions in weak margin environment will require a new round of refinery closures

Refinery Closures by Region, mbpd



Sources: IEA, Valero, Makai Analysis

Net Distillation Capacity Additions, mbpd



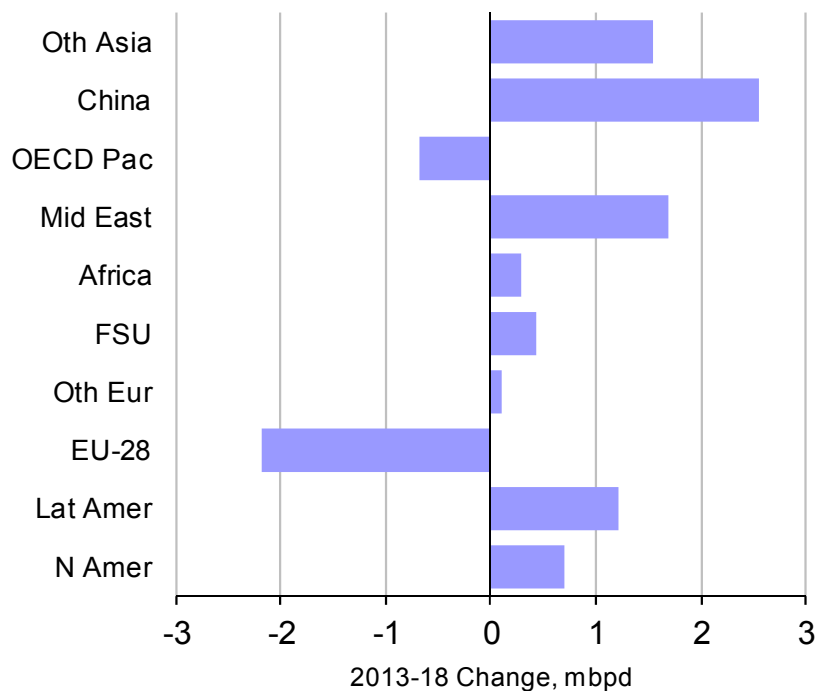
Sources: IEA, Makai Analysis

- Cumulative refinery closures since 2008 = 6.0 mbpd
- Net of 1.2 mbpd of refinery restarts, net closures = 4.8 mbpd
- Additional 3.8 mbpd of closures required to keep net additions near average demand growth

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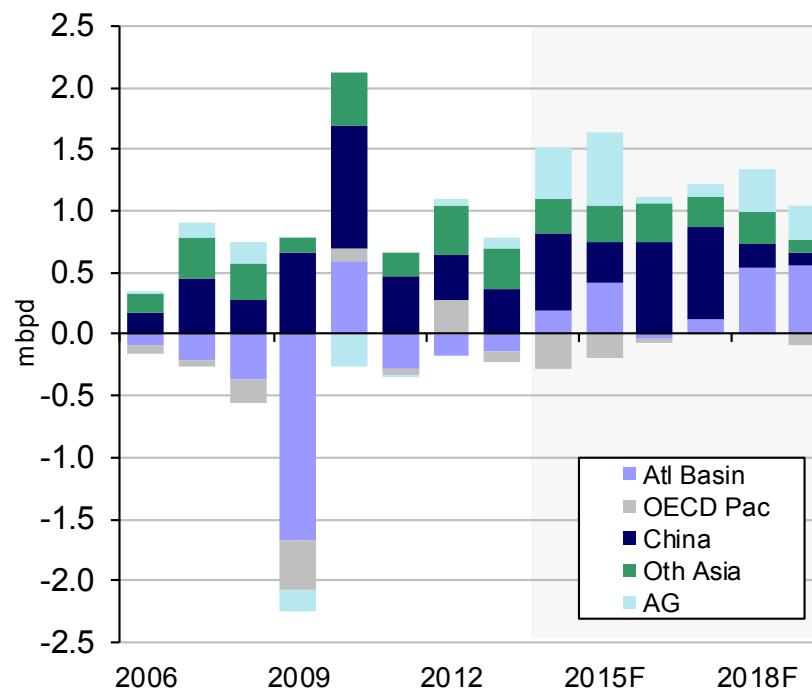
Pacific Basin crude runs to rise sharply with capacity additions and rationalisation in Atlantic Basin

Change in Regional Distillation Capacity 2013-18



Sources: IEA, Makai Analysis

Global Crude Runs by Region, yoy Change



Sources: IEA, Makai Analysis

- Refiners must shed 2.1 mbpd of refining capacity in Europe to keep global net additions at 5.7 mbpd
- With 0.8 mbpd of NGLs, biofuels and direct crude burn bypassing the refining system, crude runs rise by 6.2 mbpd to meet 6.7 mbpd of demand demand growth and stock building

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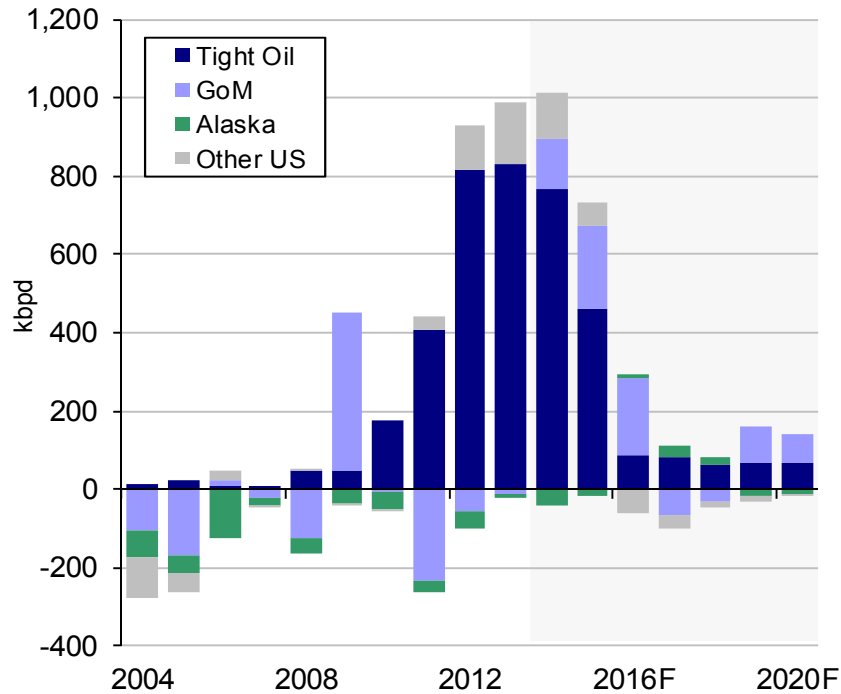


US Refining



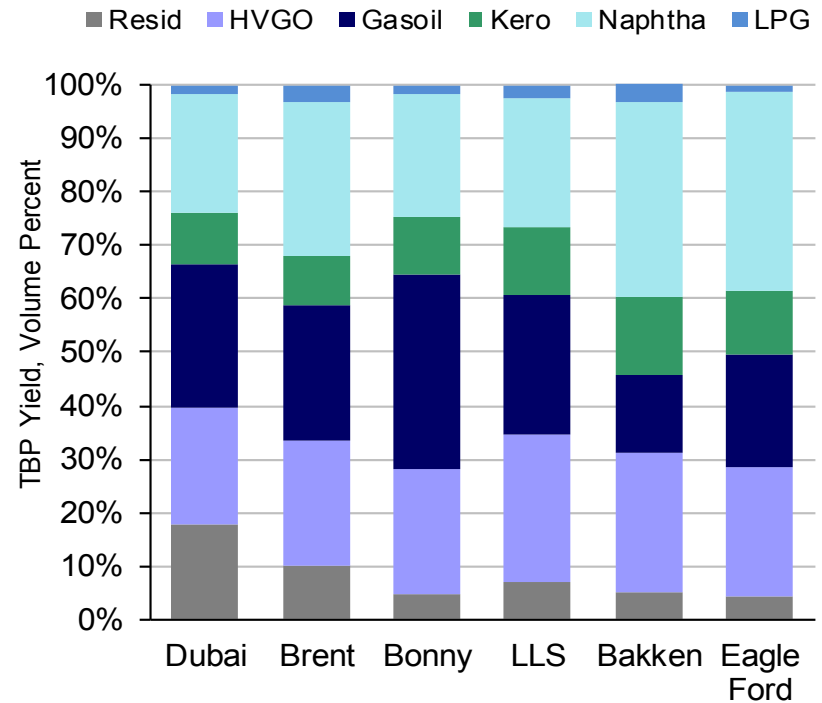
US crude oil production continues to rise from tight oil output, but poses growing challenge for US refiners

US Crude Oil Production



Sources: EIA, Makai Analysis

Distillation Yields for Various Crudes



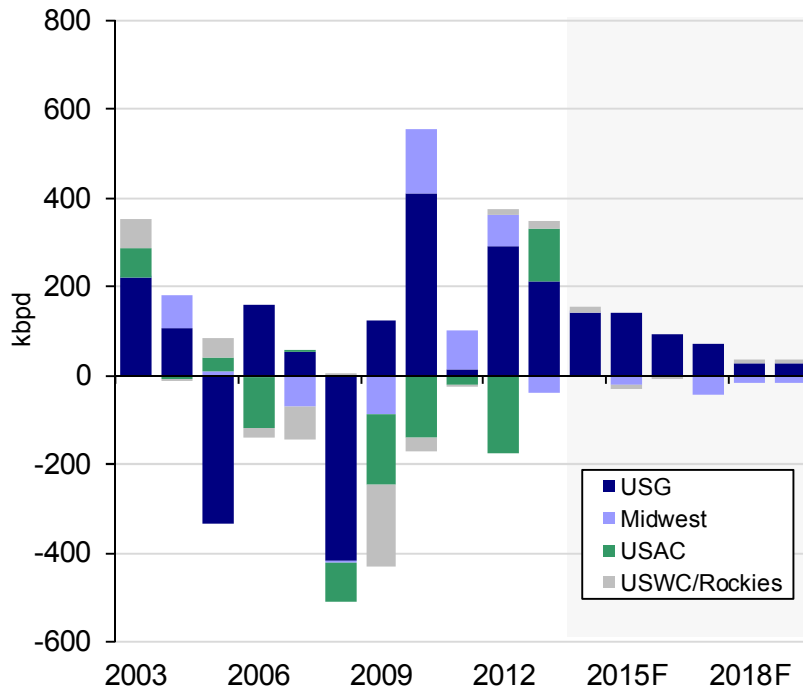
Sources: Platts, BP, Total, Various

- Shale oil are extremely light with API gravities in the 40s (Bakken 41° and Eagle Ford 47°)
- High proportion of light ends a challenge for USG refineries configured for heavy crudes
- Shale oils have relatively-low kero/gasoil yields and are more suitable for gasoline production

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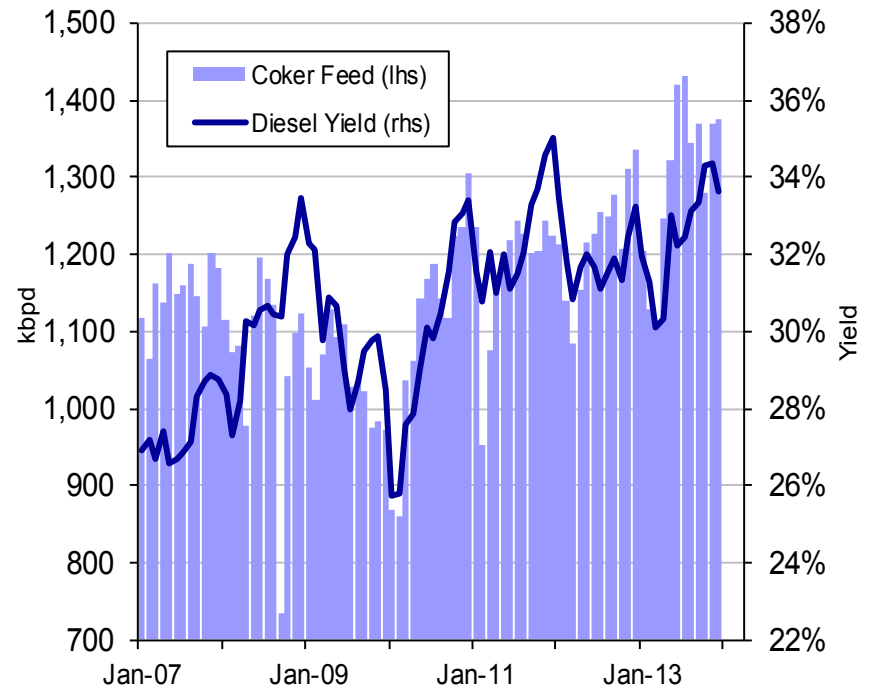
Although refining margins and tight oil supply have supported USG crude runs, other factors also driving gasoil surplus

US Crude Runs by Region



Sources: EIA, Makai Analysis

USG Gasoil Yields vs. Coker Feed Rates



Sources: EIA, Makai Analysis

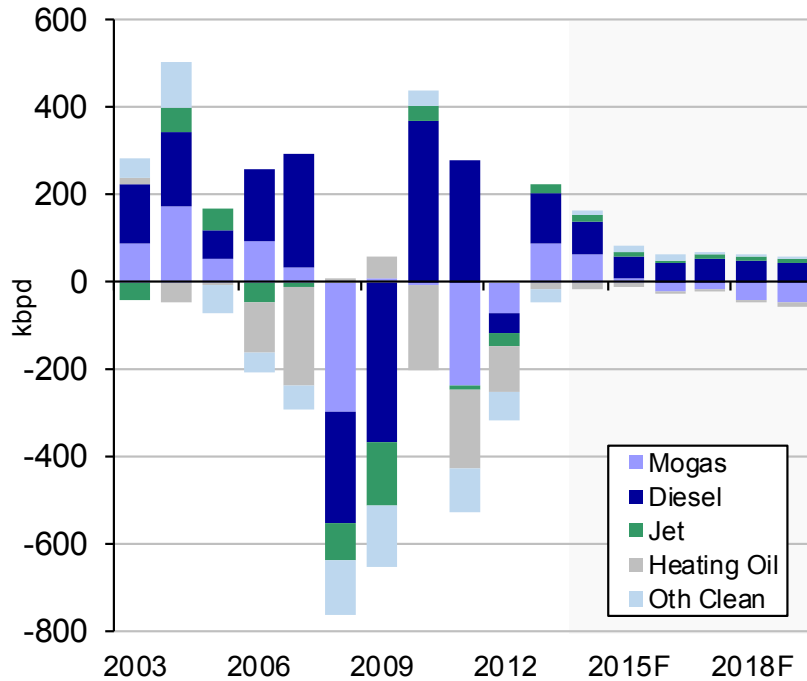
- USG refinery gasoil production jumped 118 kbpd yoy in 2013, versus 214 kbpd rise in crude runs
- Higher USG coker and hydrocracker feed rates boosted gasoil yields
- Unusual decline in regional gasoil demand also lifted product available for export

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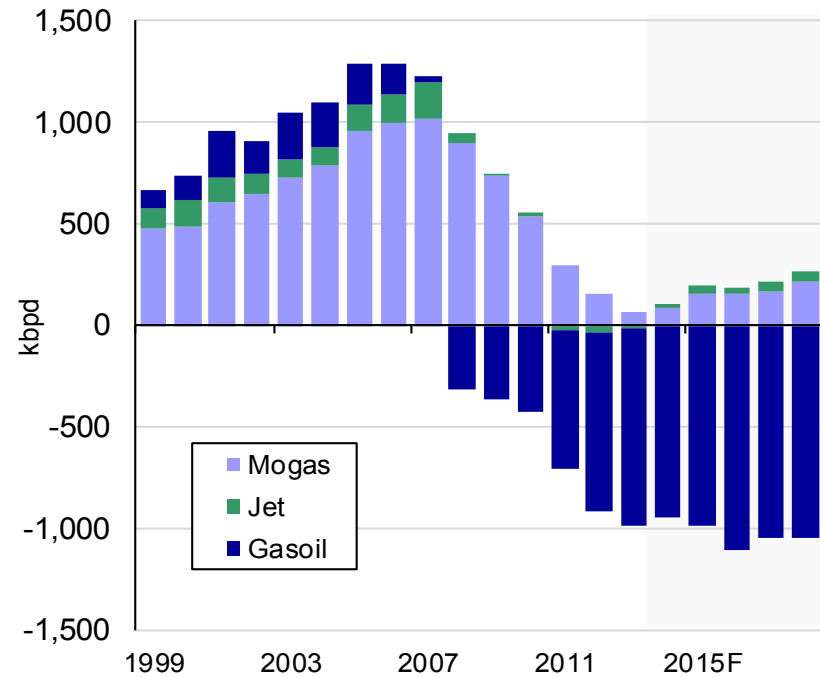
Stabilising crude runs and recovering oil demand should prompt a flattening in US clean product net exports

US Clean Product Demand, yoy Change



Sources: EIA, Makai Analysis

US Clean Net Exports, kbpd



Sources: EIA, Makai Analysis

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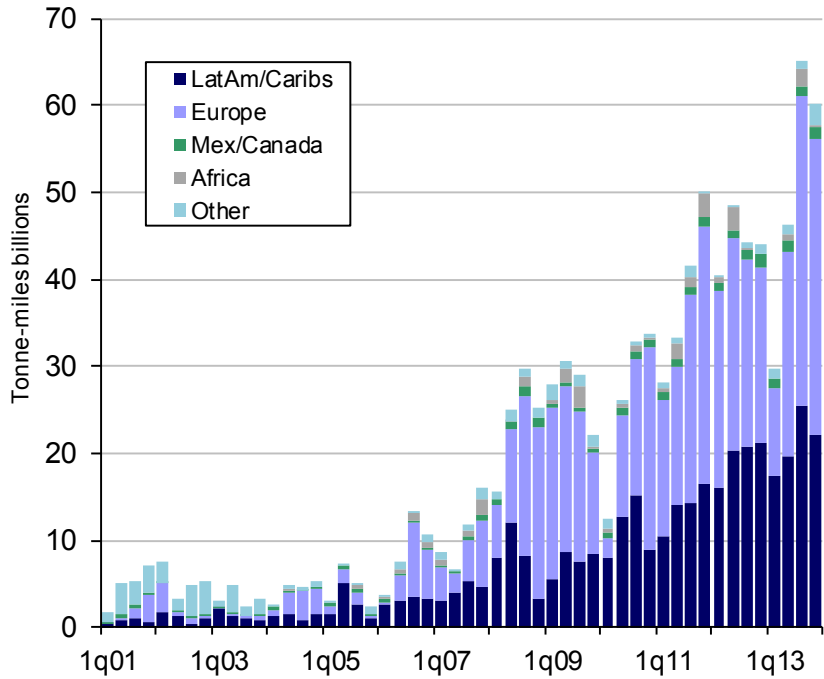


Product Trade



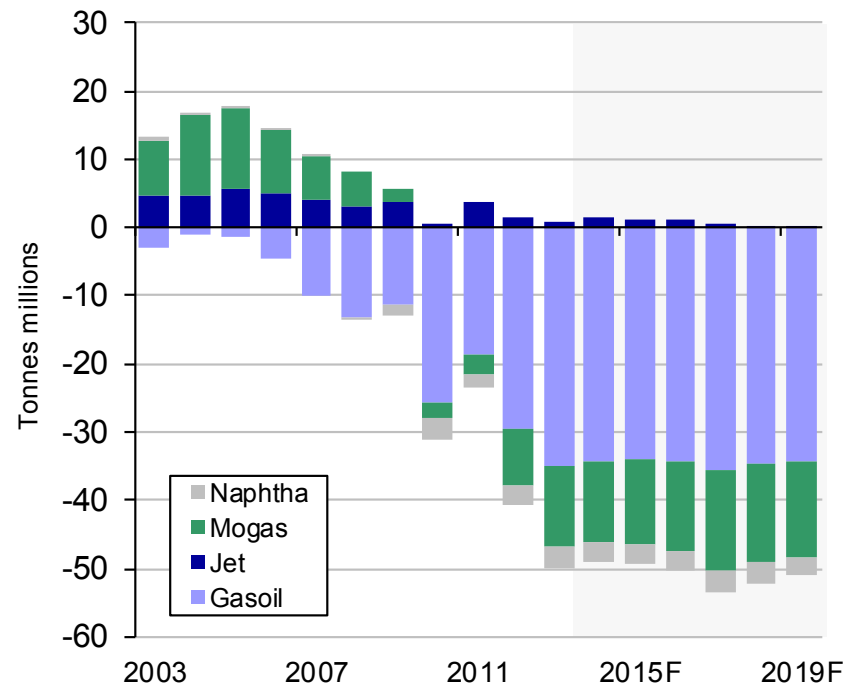
Strong product demand & refinery closures boosted US export demand to Latin America, but balance to stabilise

US Gasoil Export Tonne-miles



Source: EIA

Latin America Product Balances



Sources: IEA, JODI, Makai Analysis

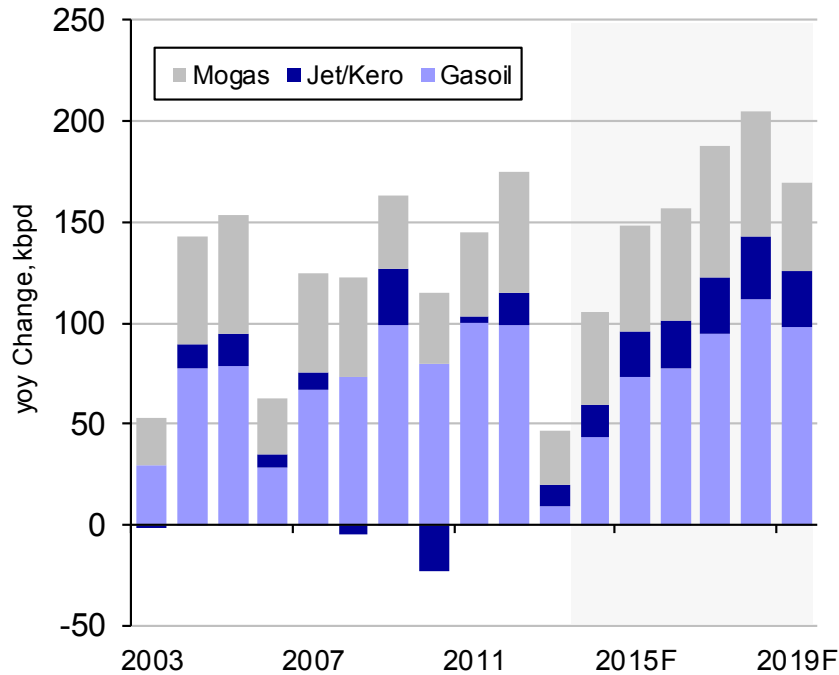
- Europe is actually a stronger tonne-mile contributor to US gasoil exports than Latin America, adding 50 billion tonne-miles since 2010, versus 40 billion tm from Latin America

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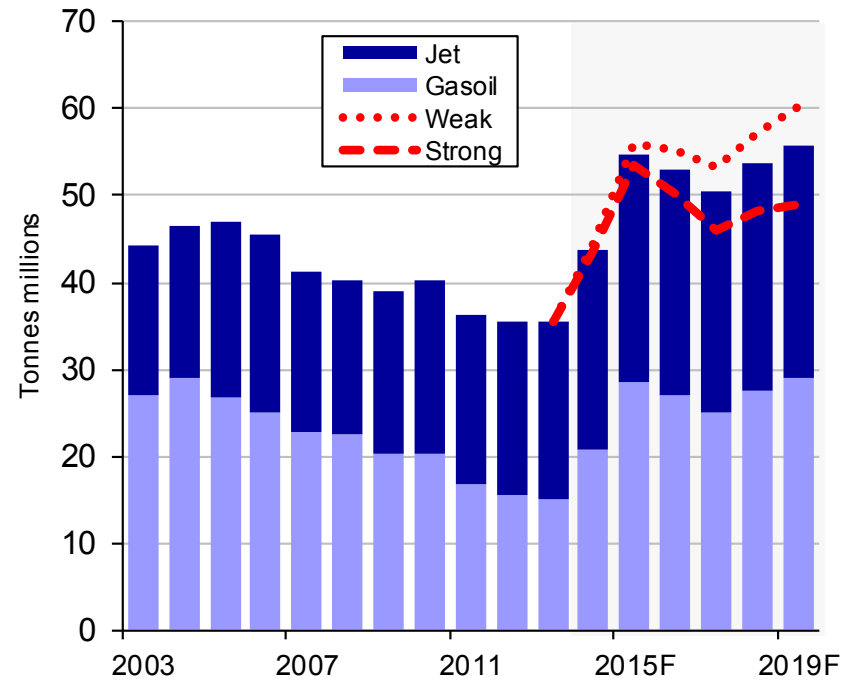
Rapid economic growth in AG drives strong product demand, offsetting impact of export refineries after 2015

AG Clean Product Demand, yoy Chg, kbpd



Sources: IEA, JODI, Makai Analysis

Middle East Mid-Distillate Exports, kbpd



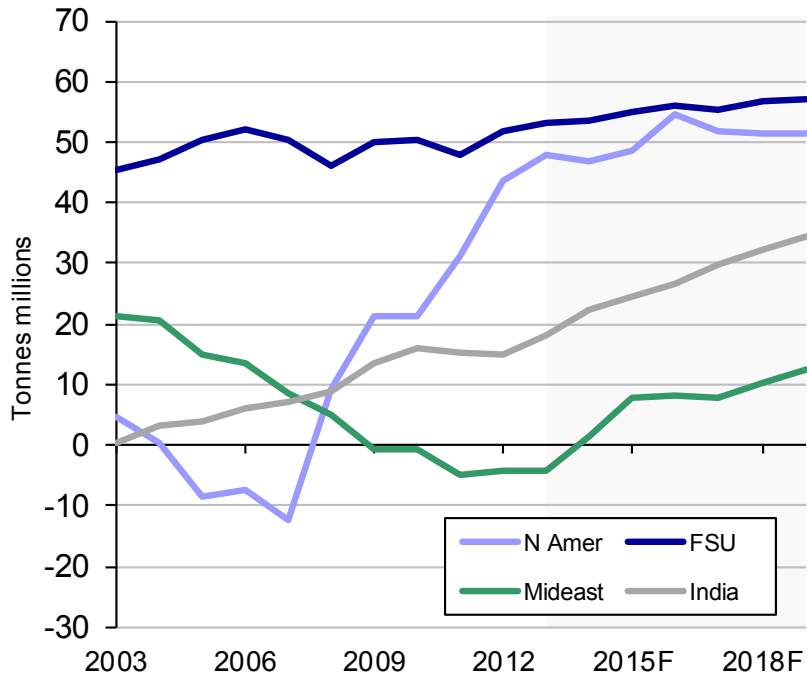
Sources: IEA, JODI, Makai Analysis

- Impact on AG region even more pronounced, as strong demand reverses capacity additions at Jubail, Ruwais and other AG projects by 2017-18

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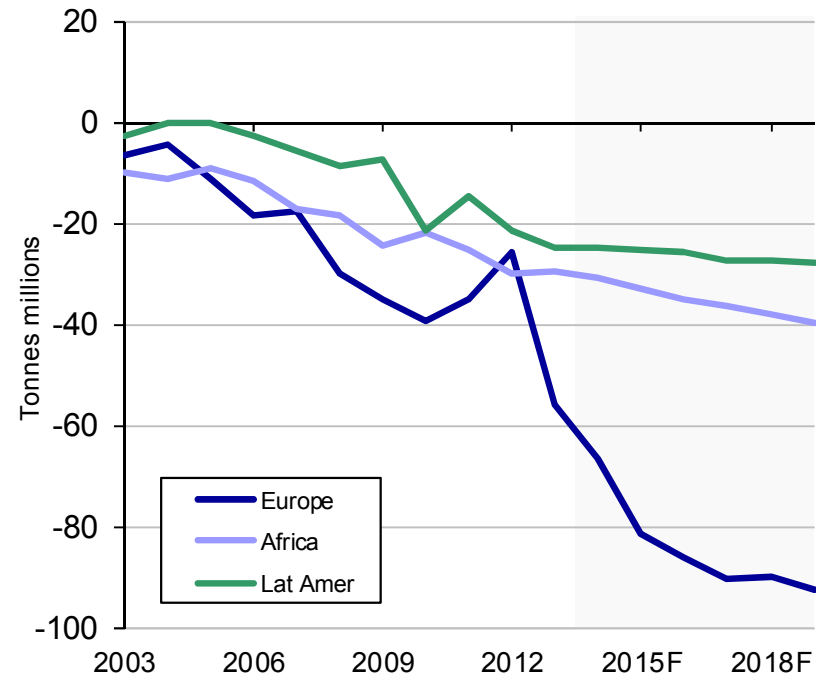
Growing European structural gasoil deficit from refinery rationalisation drives import demand and tonne-miles

Gasoil Surplus Regions, mtpa



Sources: IEA, JODI, Makai Analysis

Gasoil Deficit Regions, mtpa



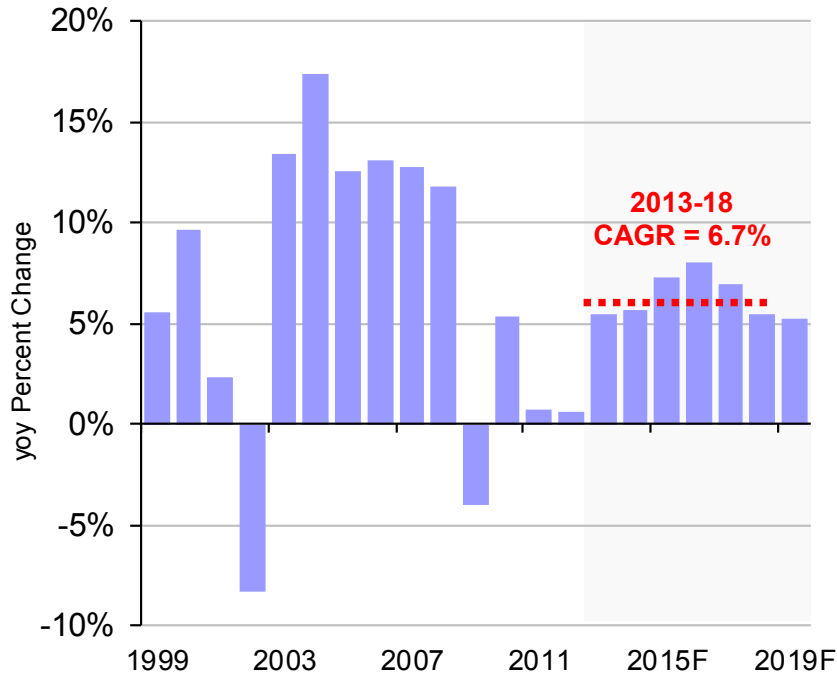
Sources: IEA, JODI, Makai Analysis

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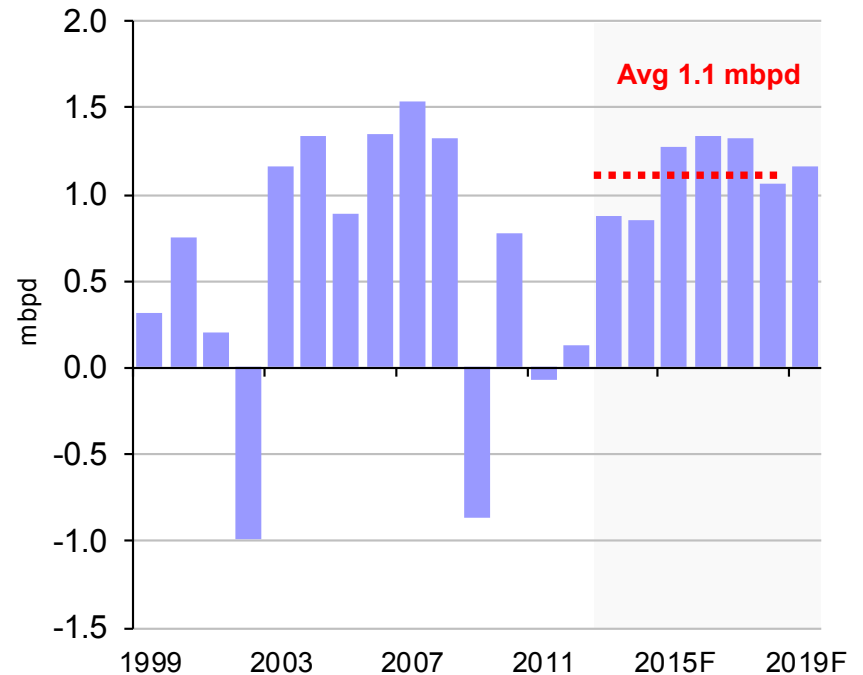
Start-up of AG refineries and further gains in European gasoil imports should boost tonne-mile demand in 2014

Product Tanker Tonne-miles, yoy Pct Change



Source: Makai Analysis

Product Tanker Trade Volume, yoy Change, kbpd



Source: Makai Analysis

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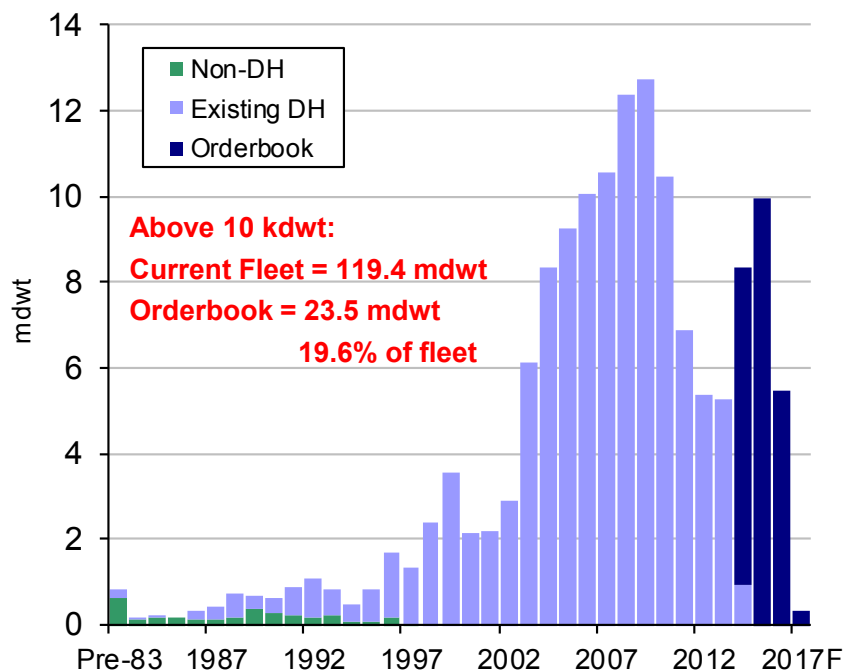


Product Tanker Supply



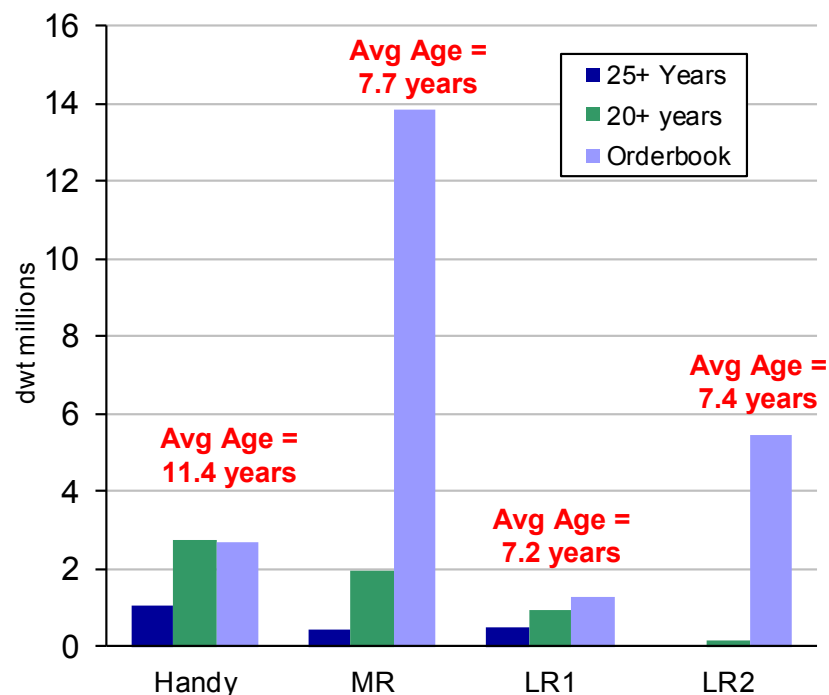
Product tanker deliveries rebounding after 2011-13 pause, but fleet is young, with limited demolition candidates

Clean Fleet Age Profile as of 28 February 2014



Source: Various Brokers

Product Tanker Orderbook vs Older Tonnage



Source: Various Brokers

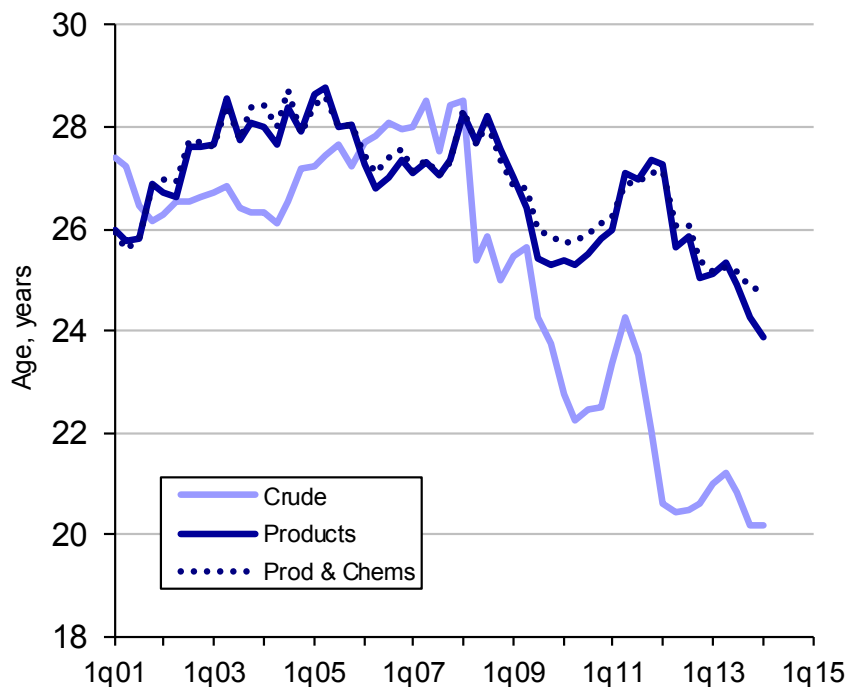
- Average age of fleet (Handysize and above) = 8.5 years
- With only 4.9% of fleet 20 years or older, limited demolition candidates available to provide supply relief
- Sector performance then reliant upon ordering discipline and demand to remain in balance

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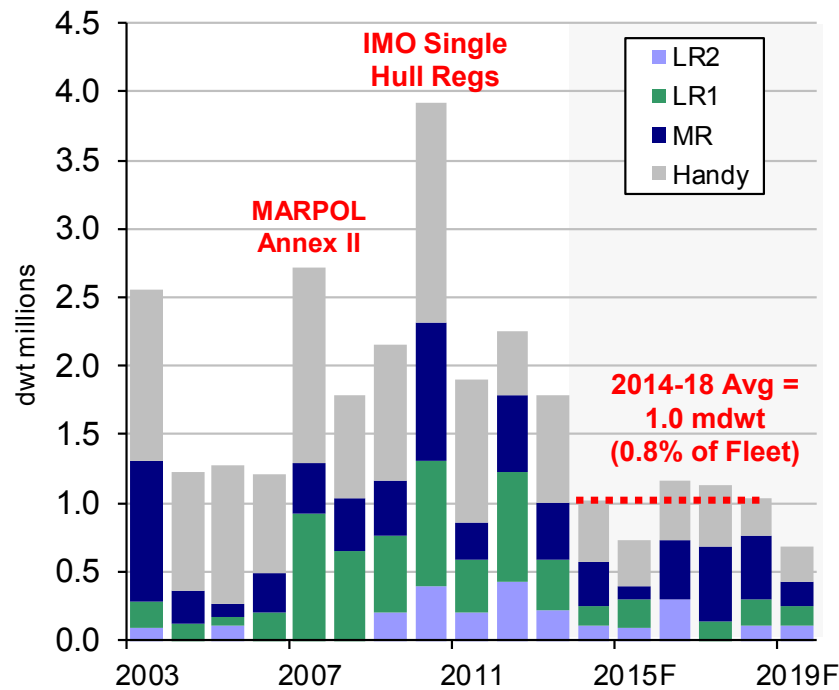
With new fleet, older product tankers facing increasing age discrimination, prompting younger demolition

Average Demolition Age, years



Sources: Various Brokers, Makai Analysis

Clean Tanker Removals by Sector, mdwt



Sources: Various Brokers, Makai Analysis

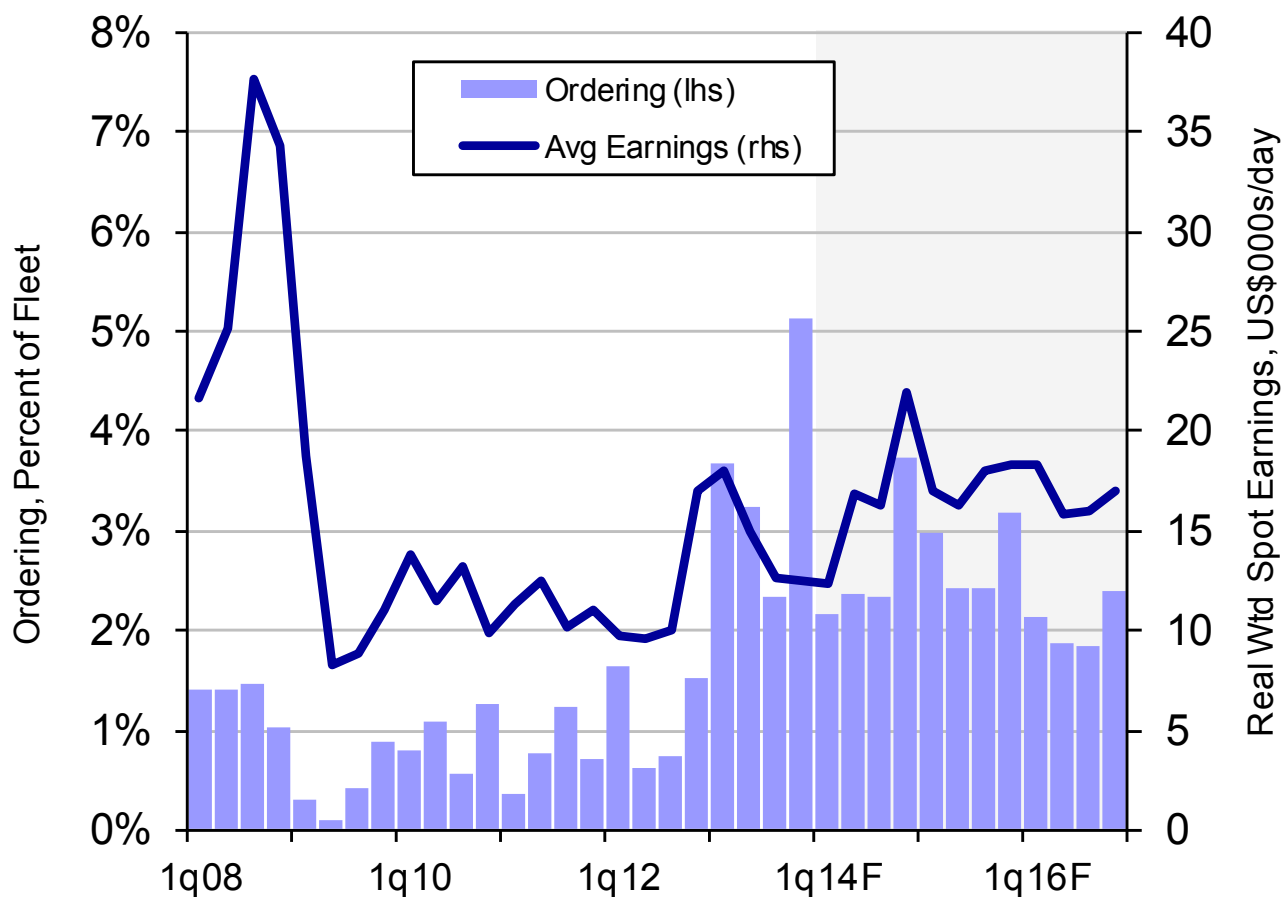
- Tighter vetting standards and the cost of mandated ballast water management systems represent threats to older clean tonnage and potential for earlier demo ages
- Demo at 20 years would raise near-term removal prospects to 2.0-2.5 mdwt per year, or 2% of fleet

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Current orderbook requires ordering discipline, but improving earnings outlook likely to encourage more orders

Clean Ordering vs. Real Spot Earnings



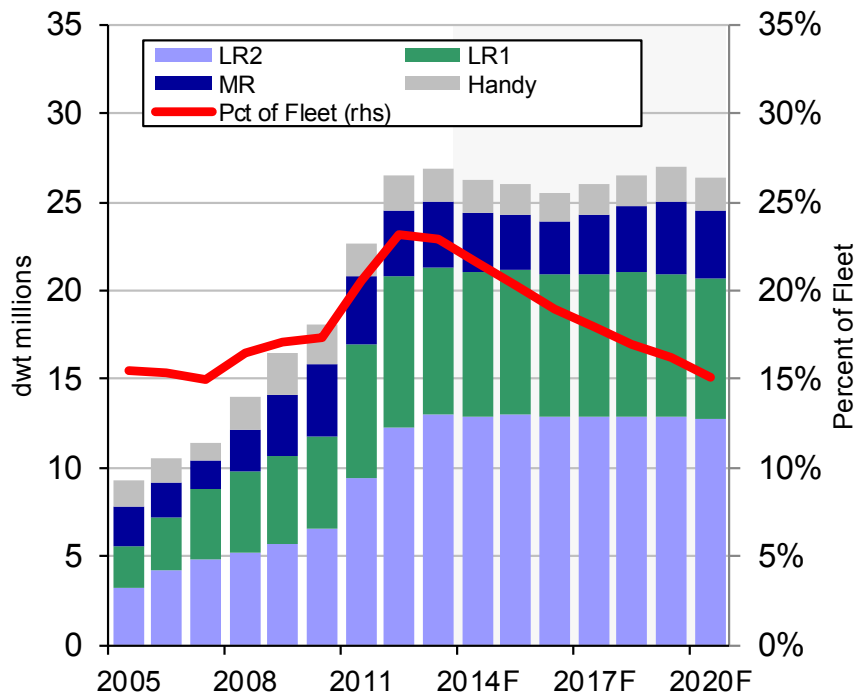
Sources: Baltic Exchange, Various Brokers, Makai Analysis

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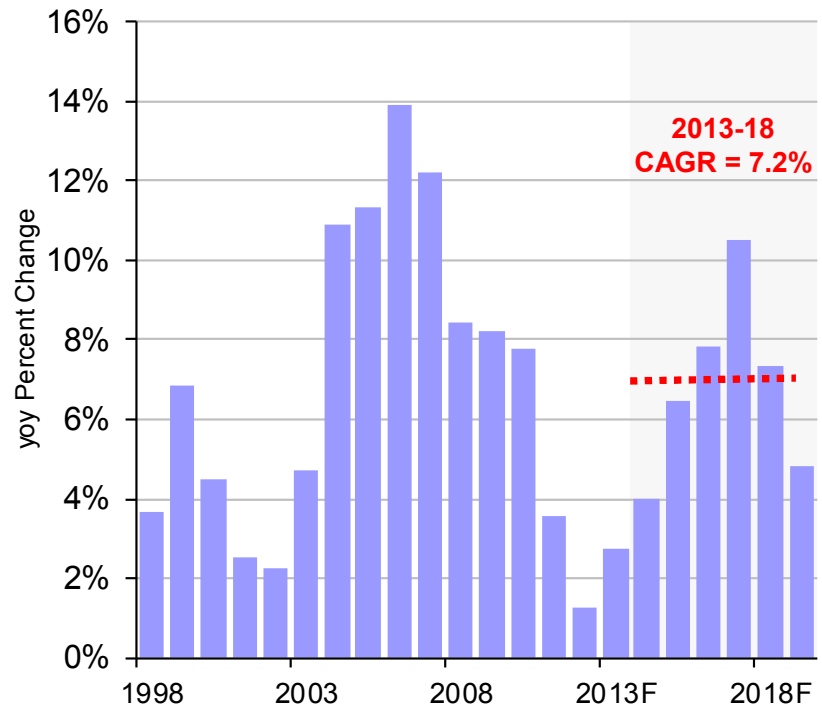
Clean tankers trading dirty represent a potential overhang, but increasing supply should keep them in dirty market

Clean Tankers Trading Dirty, mdwt



Sources: Various Brokers, Company Reports, Makai Analysis

Clean Tanker Operating Fleet Growth, Pct



Source: Makai Analysis

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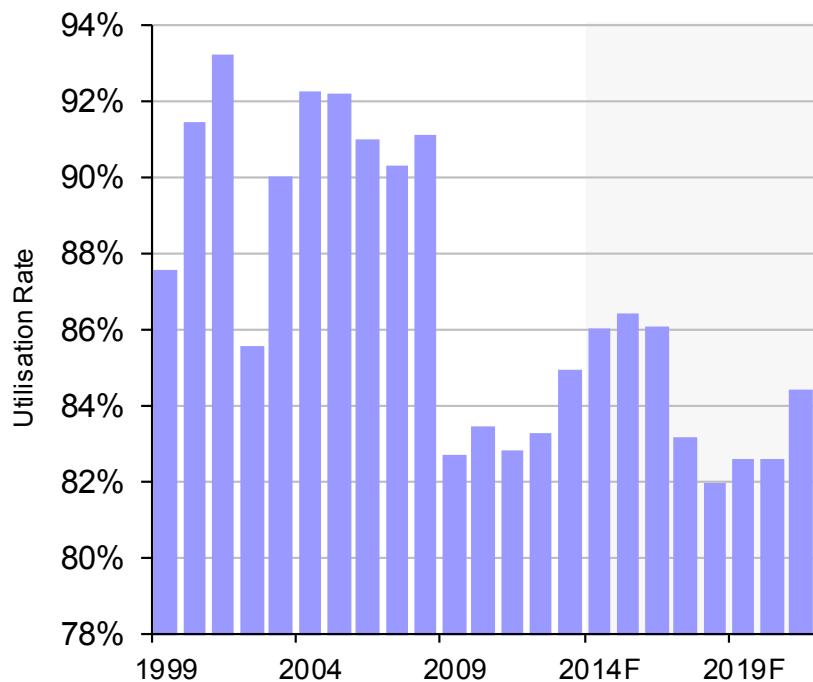


Freight & Asset Price Outlook



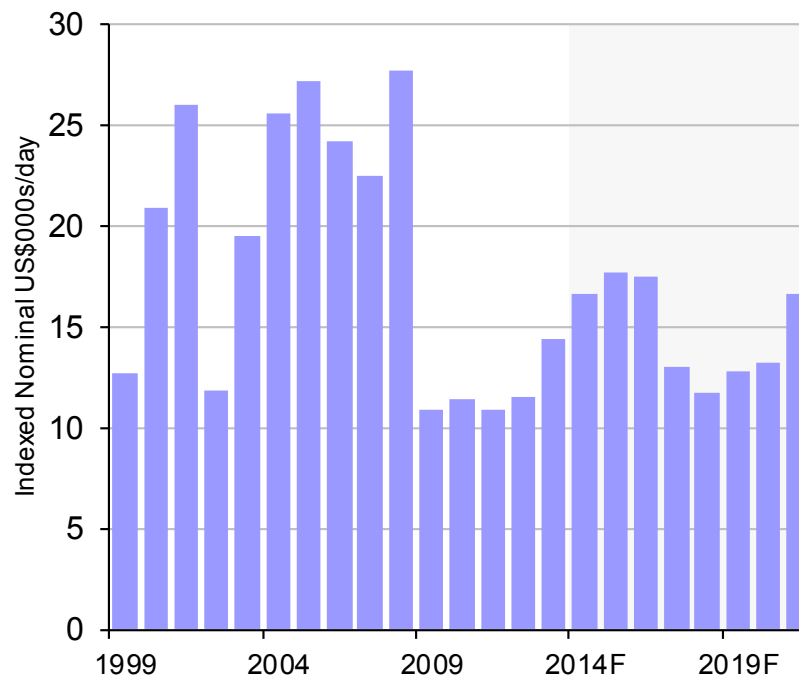
Improving clean tanker demand should allow utilisations to recover and push earnings higher, before next wave of supply

Product Tanker Fleet Utilisation, Percent



Source: Makai Analysis

Product Tanker Spot TCE Earnings



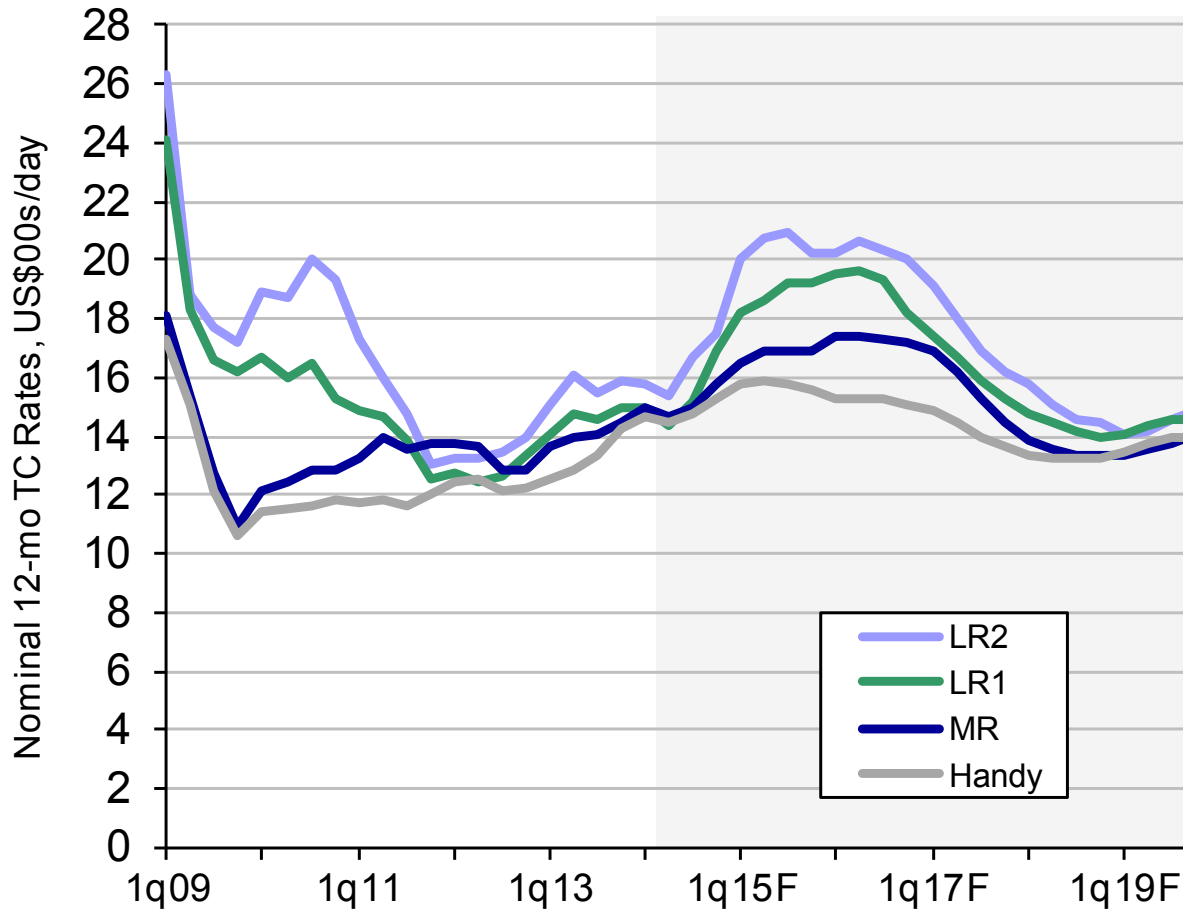
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Spot and period earnings could surge in late-2014 on improved demand, before supply arrives in 2015-17

Nominal 12-mo Time Charter Rates by Sector

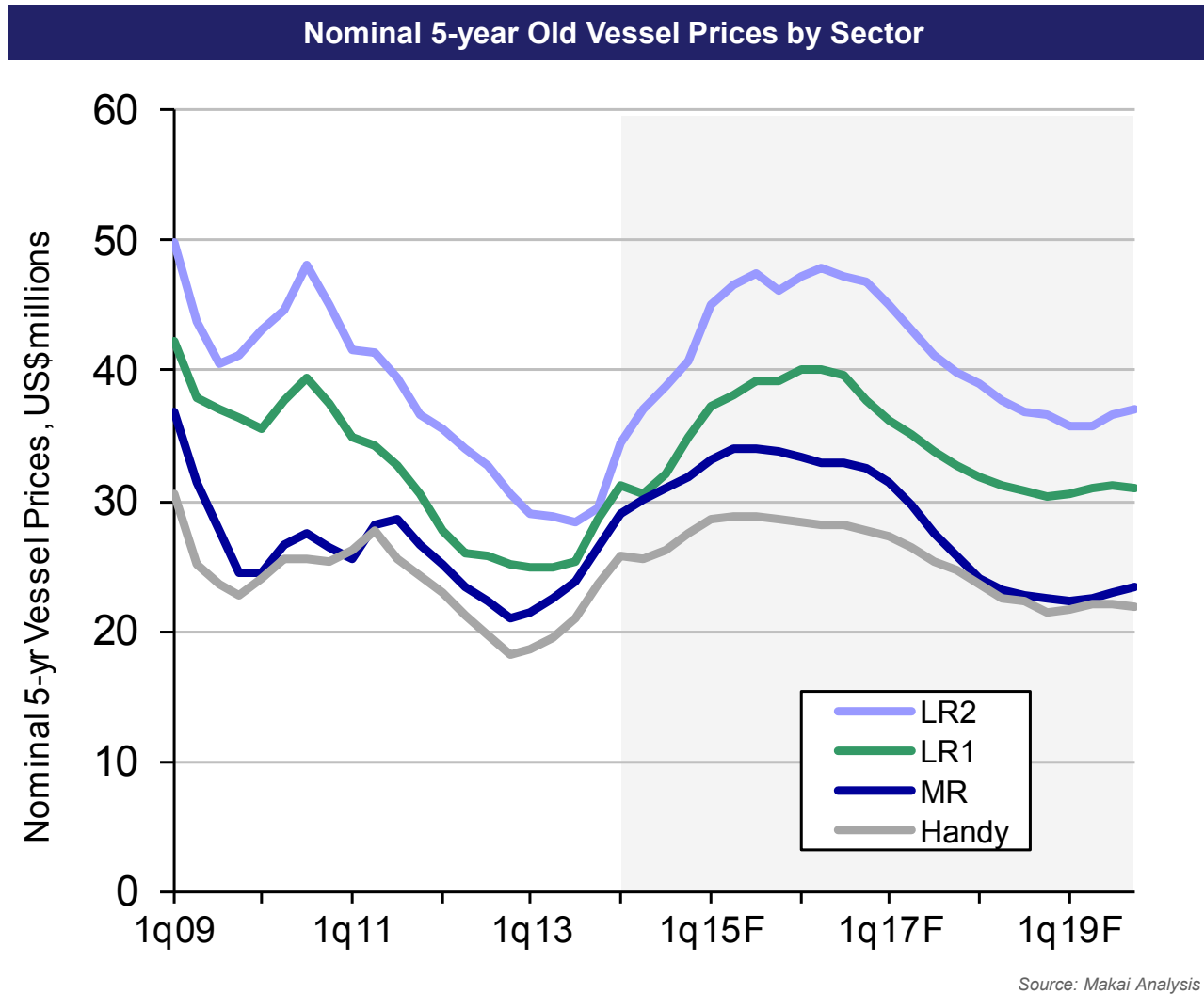


Source: Makai Analysis

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LRs could enjoy rebound in vessel prices, as they return to normal relative valuations versus smaller tonnage



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Key Observations

- Gasoil remains a key driver for product tanker demand
- Refinery geographic displacement hypothesis still intact, with new Pacific Basin capacity likely to prompt Atlantic Basin refinery rationalisation
 - Growing structural mid-distillate deficit in Europe, from rationalisation, is critical element to demand growth
- Strong enthusiasm for product tanker sector in capital markets and private equity sector, based upon this investment hypothesis...
- ...but ardour may be cooling
- Recognition that upcoming supply growth from over-ordering may outpace these positive demand fundamentals
- Ordering discipline could still protect markets from 2018-19 downturn



Thank you! (Mahalo Nui!)

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