

Global Energy: Q3 2018 webcast

October, 2018

Tim Guinness (Co-manager)

Will Riley, CA (Co-manager)

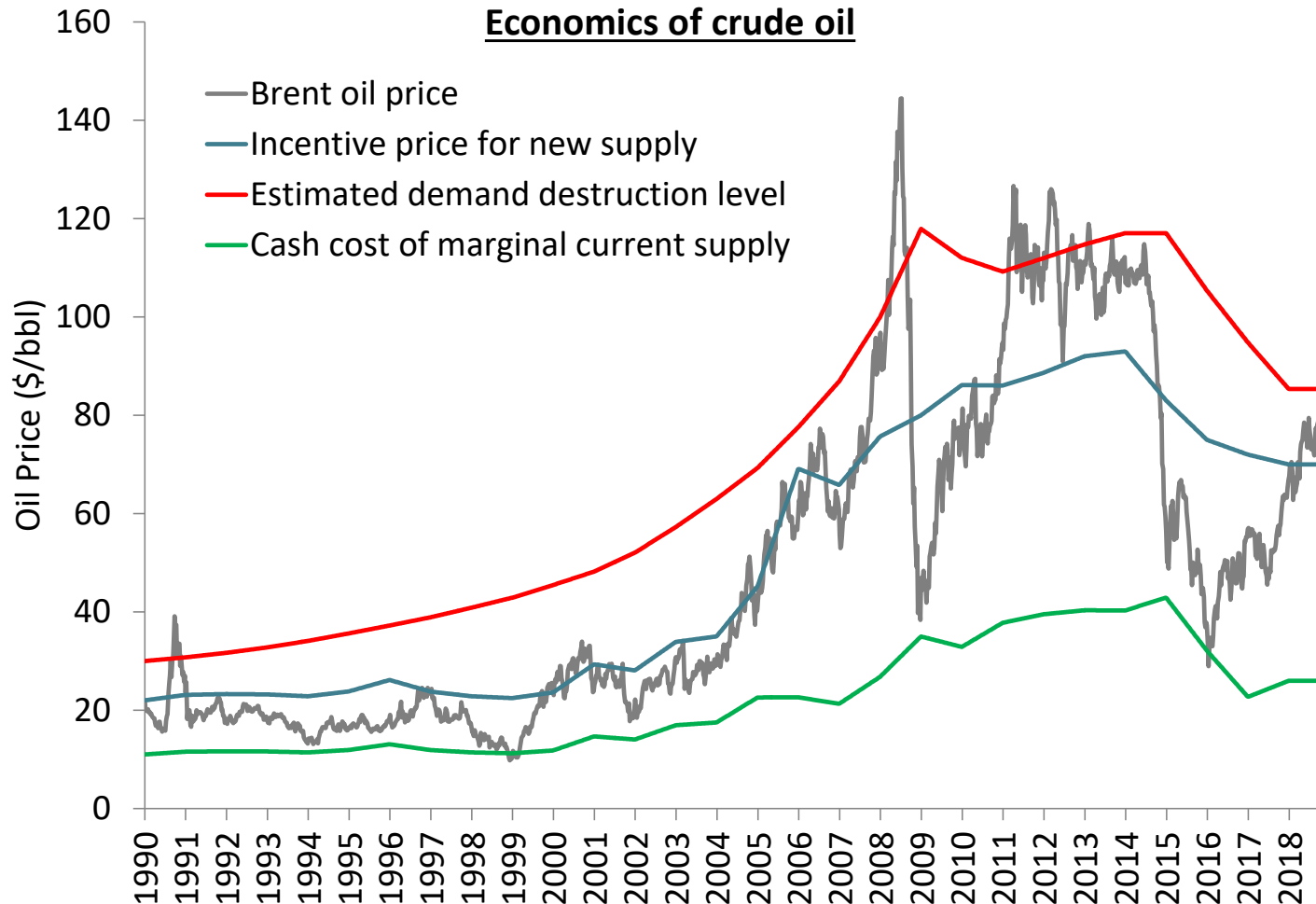
Jonathan Waghorn (Co-manager)



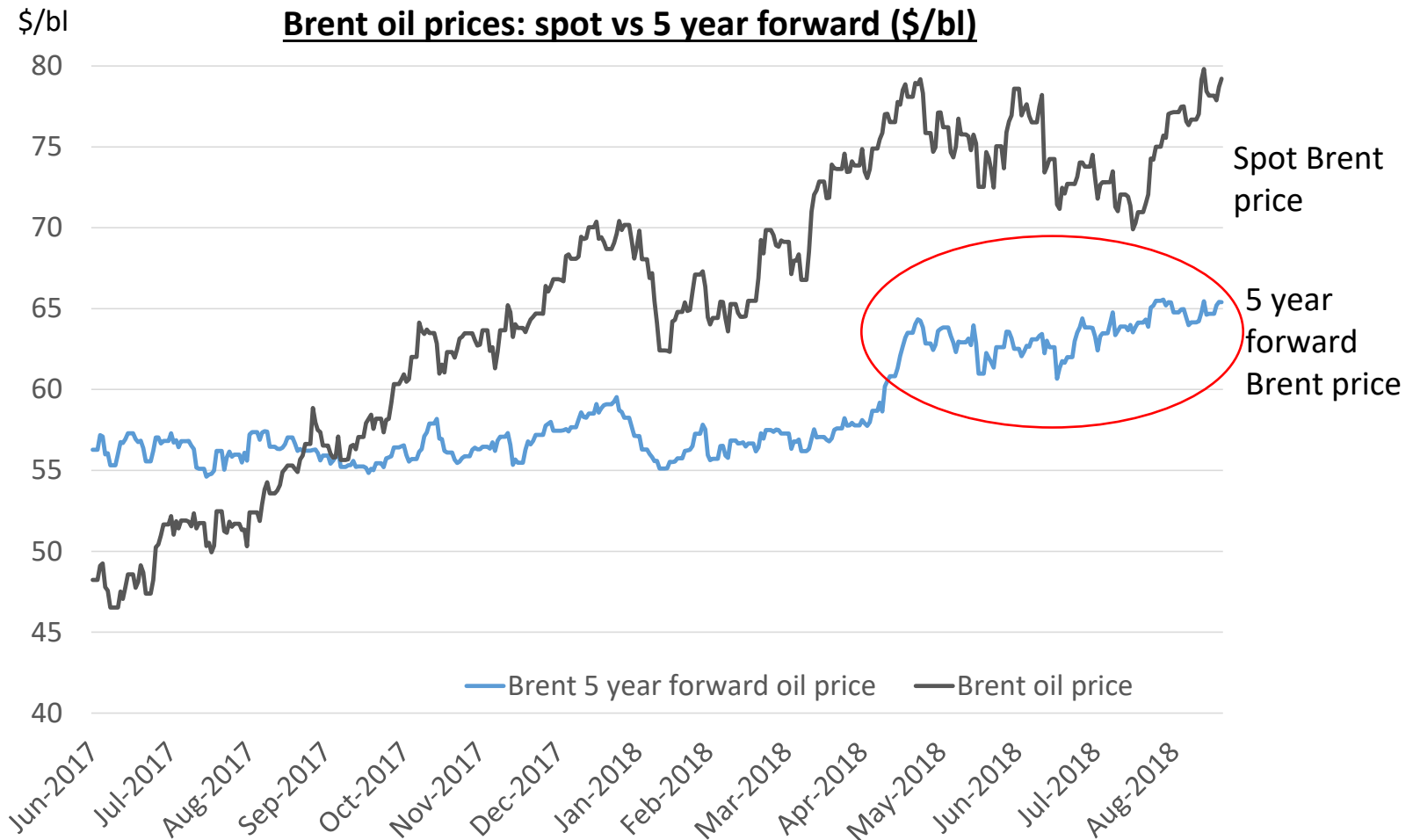
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- **Oil inventories** continue to tighten, keeping spot oil prices elevated above \$70/bl
- **Global oil demand growth** for 2018/19 has seen positive revisions, despite EM troubles
- **US shale supply** growing as expected, though Permian infrastructure constraints have emerged, which will limit growth in 2019
- **OPEC** now raising production to prevent an oil price spike, in the face of collapse in Venezuelan production and renewal of sanctions against Iran
- **Free cashflow** generation improving for energy equities, with capital discipline generally being rewarded by the market over growth
- **Energy equities** ahead of broad market over the last year but lagging oil price – FCF/ROCE improvements imply material upside in the sector, as do oil price valuation sensitivities

- The oil price trades between the cash cost of supply and the price at which demand falls
- Marginal cost tends to determine the oil price in the longer term



- Outperformance from energy equities in Q2 2018 coincided with a rise in **5 year forward** oil prices, which is more important than spot. 5 year forward prices still rising



Near term oil demand: world oil demand up 1.4m b/day in 2018

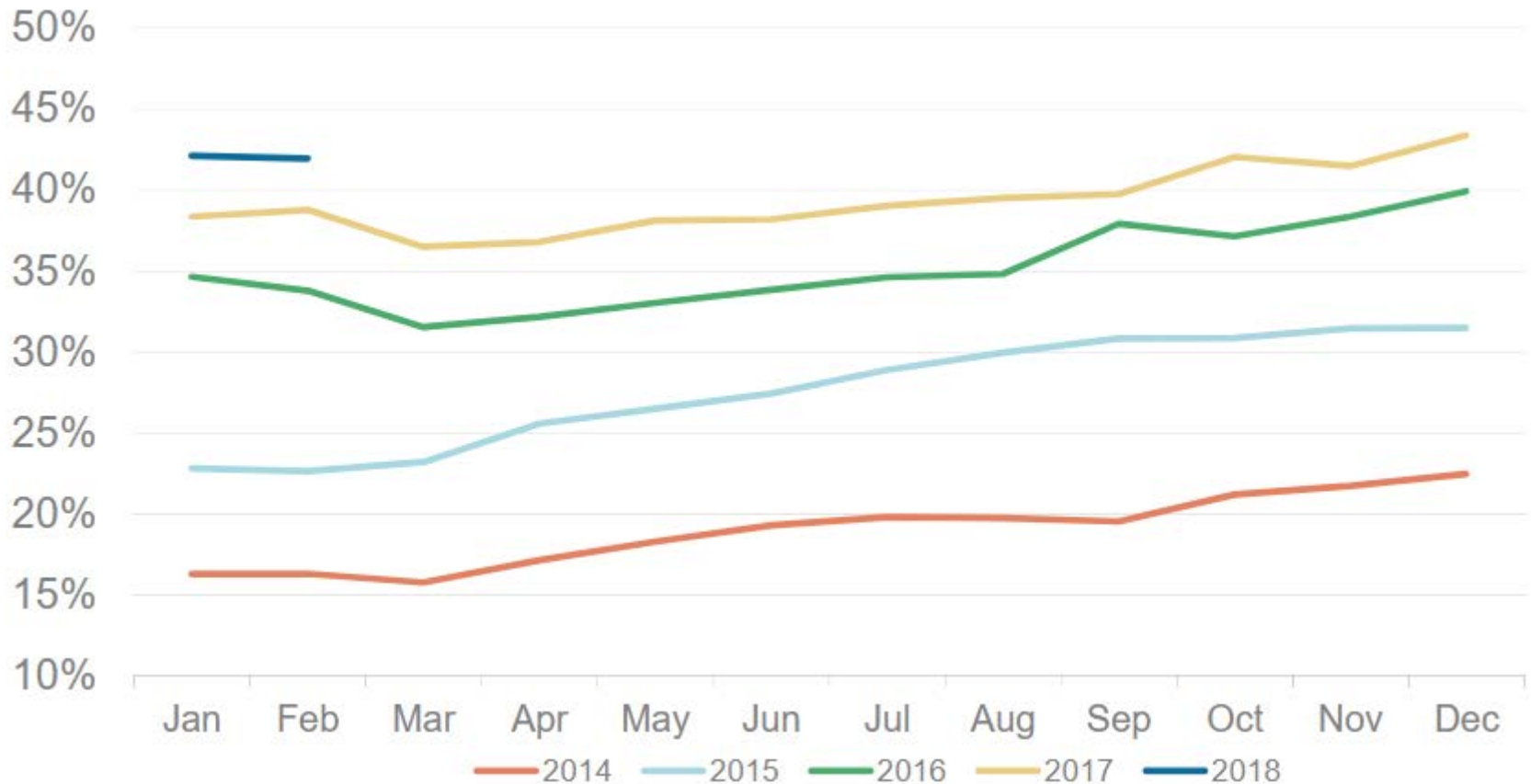
- 2018 world oil demand up around 12.1m b/day on pre-recession peak (2007)
- Non-OECD demand has grown unchecked for over a decade, not unseated by financial crisis
- Estimates for 2018 and 2019 indicate healthy demand growth of 1.4 / 1.5m b/day – mostly non-OECD

Global oil demand (m b/day)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018E	2019E
OECD demand															IEA	IEA
North America	25.7	25.8	24.5	25.8	24.5	23.7	24.1	24.0	23.6	24.2	24.2	24.6	24.9	25.1	25.4	35.6
Europe	15.6	15.7	15.7	15.6	15.5	14.7	14.7	14.3	13.8	13.6	13.5	13.8	14.0	14.3	14.3	14.3
Pacific	8.8	8.9	8.7	8.7	8.3	8.0	8.2	8.2	8.5	8.3	8.1	8.1	8.1	8.1	8.0	8.0
Total OECD	50.1	50.4	48.9	50.1	48.3	46.4	47.0	46.5	45.9	46.1	45.8	46.5	47.0	47.4	47.7	47.9
<i>Change in OECD demand</i>		0.3	-1.5	1.2	-1.8	-1.9	0.6	-0.5	-0.6	0.2	-0.3	0.7	0.5	0.4	0.3	0.2
NON-OECD demand																
FSU	3.8	3.9	4.0	4.0	4.2	4.0	4.1	4.4	4.6	4.5	4.6	4.6	4.5	4.6	4.7	4.8
Europe	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8
China	6.4	6.7	7.2	7.6	7.7	7.9	8.9	9.3	9.9	10.4	10.8	11.6	12.0	12.6	13.2	13.6
India	2.6	2.6	2.7	2.9	3.1	3.2	3.3	3.5	3.7	3.7	3.8	4.2	4.6	4.7	5.0	5.2
Other Asia	6.4	6.4	6.6	6.9	6.8	7.1	7.5	7.6	7.6	7.9	8.0	8.2	8.4	8.7	8.8	9.0
Latin America	4.9	5.0	5.2	5.3	5.6	5.7	6.1	6.2	6.5	6.6	6.8	6.7	6.4	6.5	6.4	6.5
Middle East	5.5	5.9	6.1	6.4	6.7	7.1	7.3	7.5	7.9	8.0	8.4	8.4	8.5	8.5	8.5	8.6
Africa	2.8	2.9	2.9	3.3	3.3	3.4	3.5	3.5	3.8	3.8	3.9	4.3	4.3	4.3	4.3	4.4
Total Non-OECD	33.1	34.1	35.4	37.1	38.1	39.1	41.4	42.7	44.8	45.6	47.4	48.6	49.4	50.5	51.6	52.8
<i>Change in non-OECD demand</i>		1.0	1.3	1.7	1.0	1.0	2.3	1.3	2.1	0.8	1.8	1.2	0.8	1.1	1.1	1.2
Total Demand	82.5	83.8	85.1	87.2	86.4	85.5	88.4	89.2	90.7	91.7	93.1	95.1	96.4	97.9	99.3	100.8
<i>Change in demand</i>		1.3	1.3	2.1	-0.8	-0.9	2.9	0.8	1.5	1.0	1.4	2.0	1.3	1.5	1.4	1.5

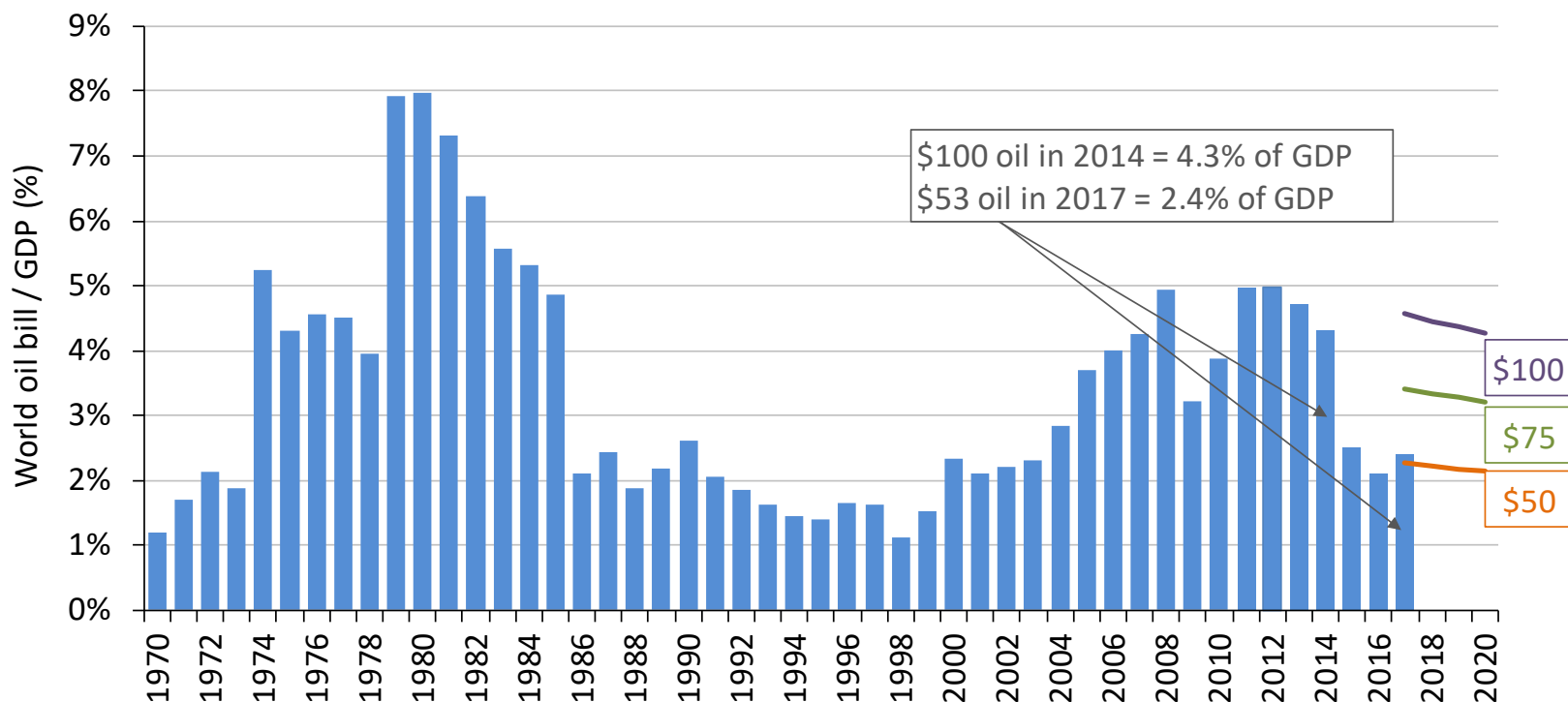
- China oil consumption boosted by change in consumer behavior in vehicle market

China SUV sales as % of total vehicle sales



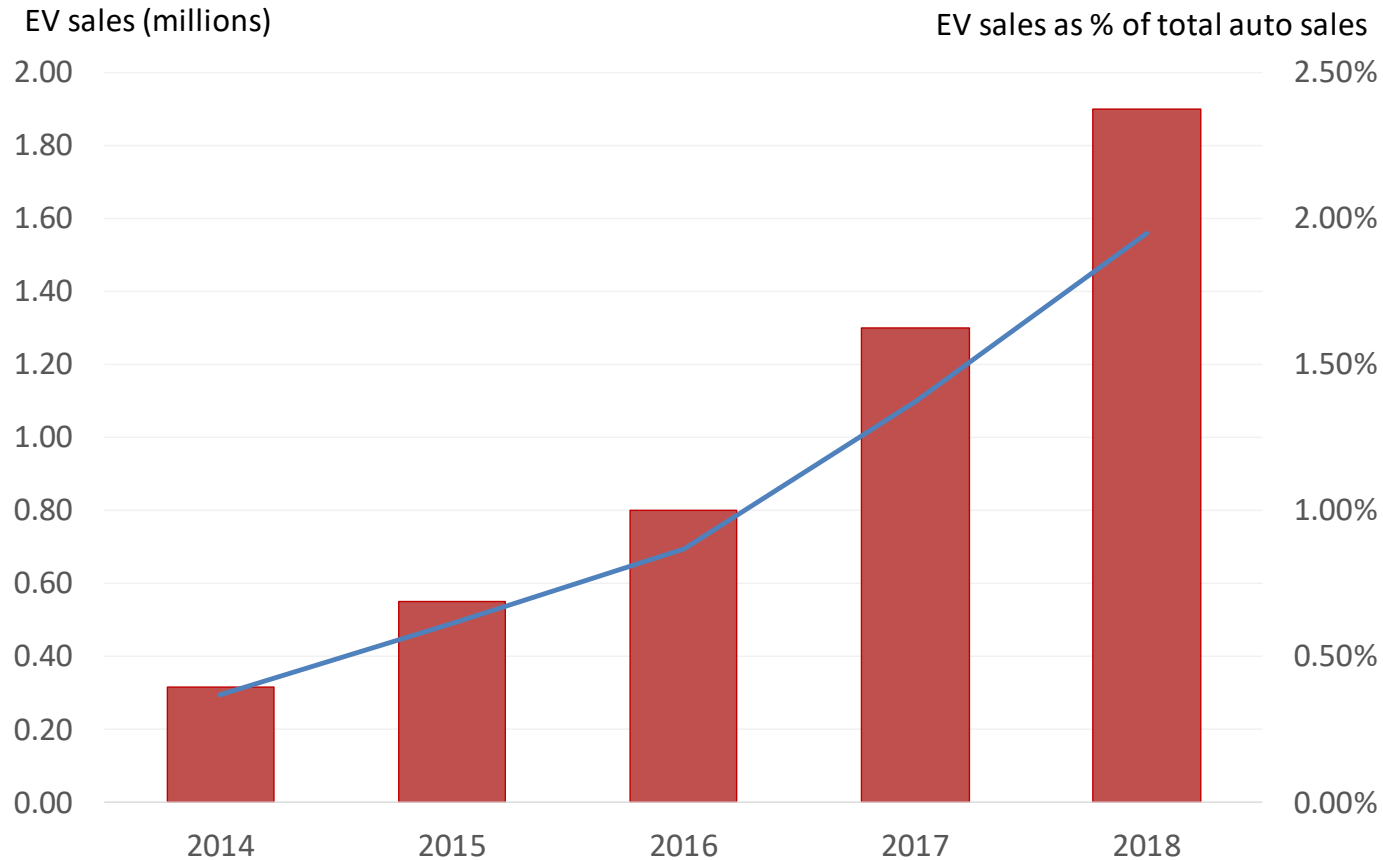
- We believe Saudi is targeting a price that gives a “reasonable” world oil bill
- Ten year average world oil bill is 4.2%, 20yr average is 3.2%, 30yr average is 2.8%
- If oil averages \$75 it will mean in 2020 the world oil bill is 3.1% of GDP
- If oil averages \$50 it will mean in 2020 the world oil bill is 2.1% of GDP

The world oil ‘bill’ as a percentage of world GDP



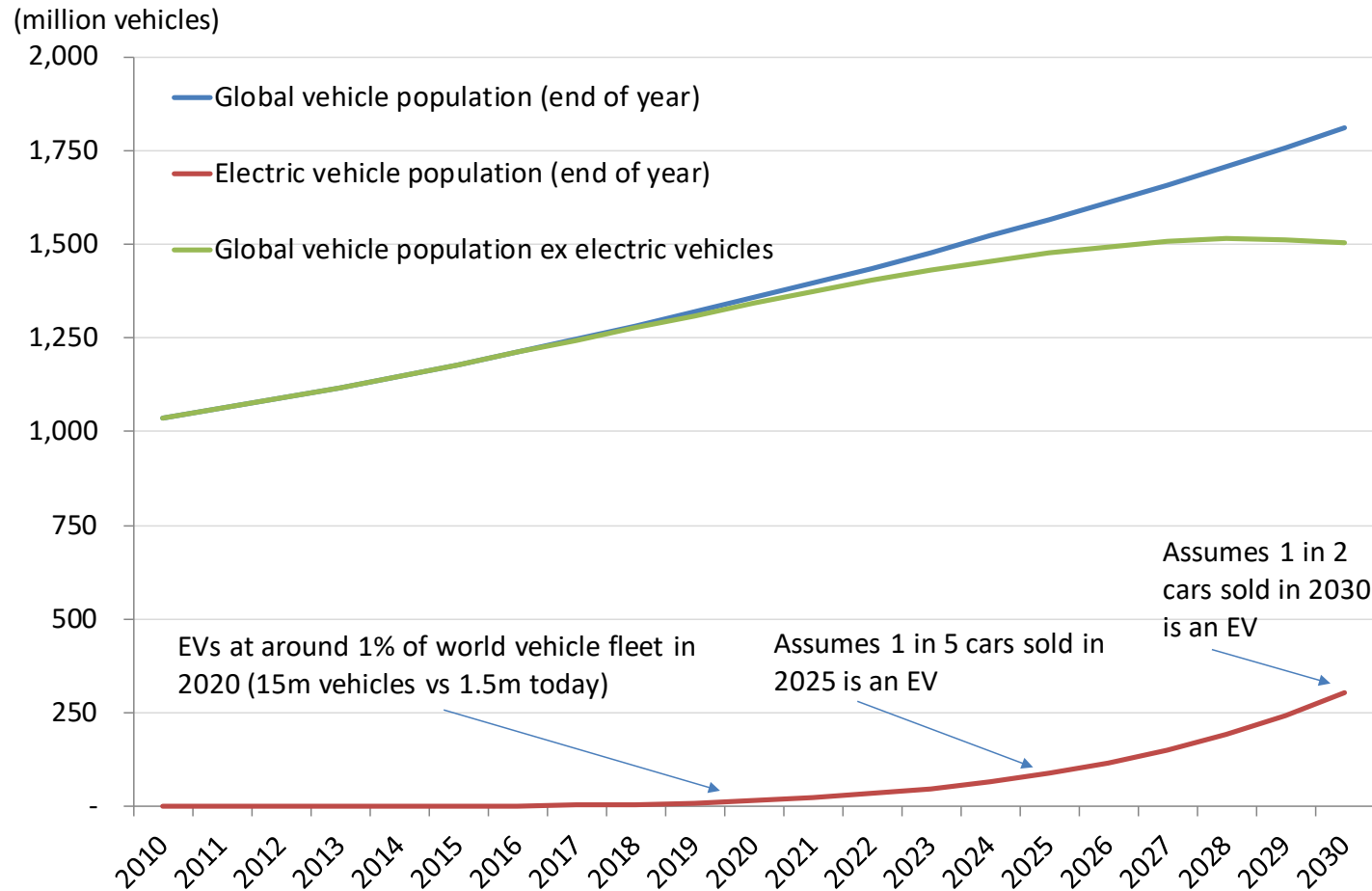
- Electric vehicle sales are expected to reach 1.9m units in 2018, up from 1.3m in 2017
- EV sales this year will comprise around 2.4% of total passenger vehicle sales

Global EV sales



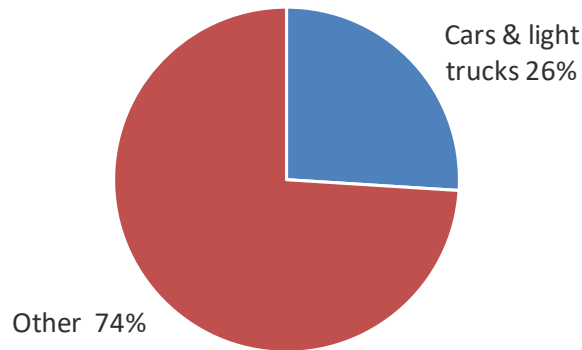
- Crude oil is 60% used in transportation and there are limited substitutes currently
- We expect the global fleet of ICE vehicles to expand by around 20% over next 10 years

Electric vehicles vs non-electric vehicles



- Passenger vehicles account for less than 30% of oil demand. Other key sources of demand (heavy transport; petrochemicals) more closely linked to GDP growth

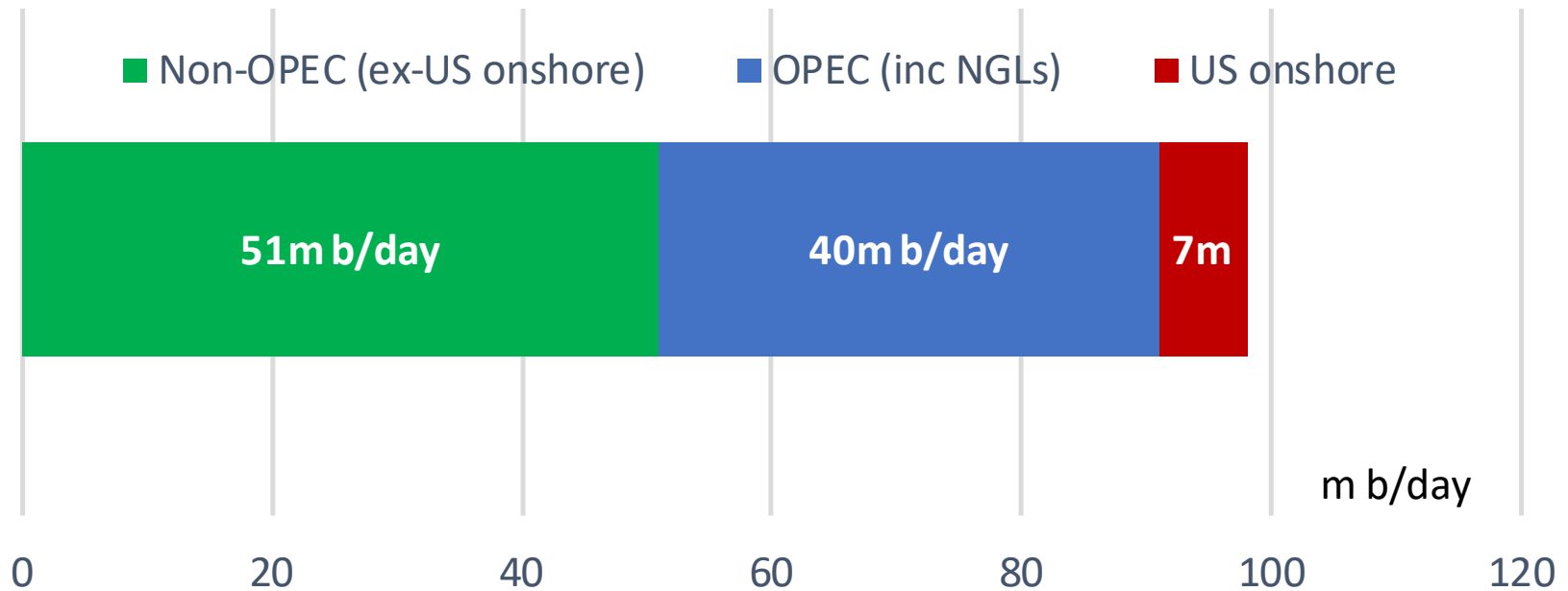
Structure of global oil demand



Source of demand	%
Power	6%
Petrochemicals	13%
Other industry	11%
Cars & light trucks	26%
Heavy vehicles	18%
Air travel	6%
Shipping	6%
Rail	1%
Other	13%
Total	100%

- **Global truck fleet** rising from 377m in 2015 to 600m in 2030 (**approx. 60%**)
- **Air revenue passenger kms** rising from 9trn in 2015 to 15trn in 2030 (**approx.70%**)
- **Seaborne trade** rising from 54trn ton miles in 2015 to 90trn ton miles in 2030 (**approx.70%**)
- **Ethylene demand** rising from 141m tons to 230m tons in 2030 (**approx.65%**)

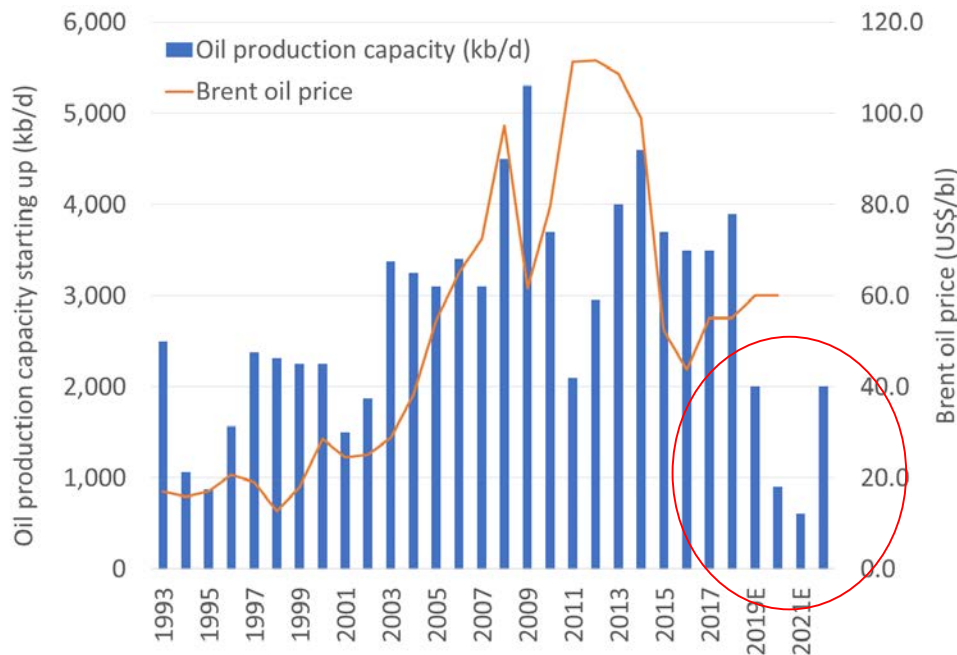
Global oil supply in 2017 (m b/day)



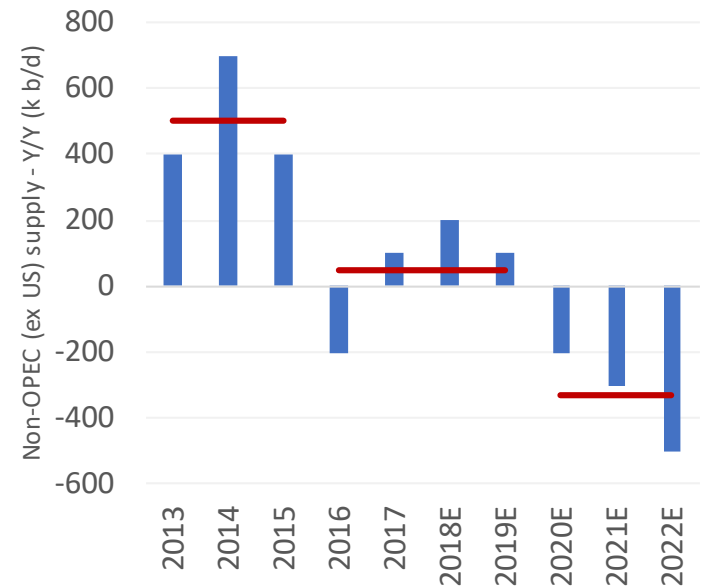
- 1) Non-OPEC (ex-US onshore):** holding up thanks to legacy projects, but facing decline
- 2) OPEC (inc NGLs):** low cost production, but in countries struggling to breakeven fiscally
- 3) US onshore:** shorter cycle, able to grow at \$50/bl

- Non-OPEC supply (ex-US) project start-ups still strong in 2017/18 then sharp drop in 2019/20, resulting from the oil price fall in 2014 and 2015
- There is typically a 3-4 year time lag between project sanction and project start up

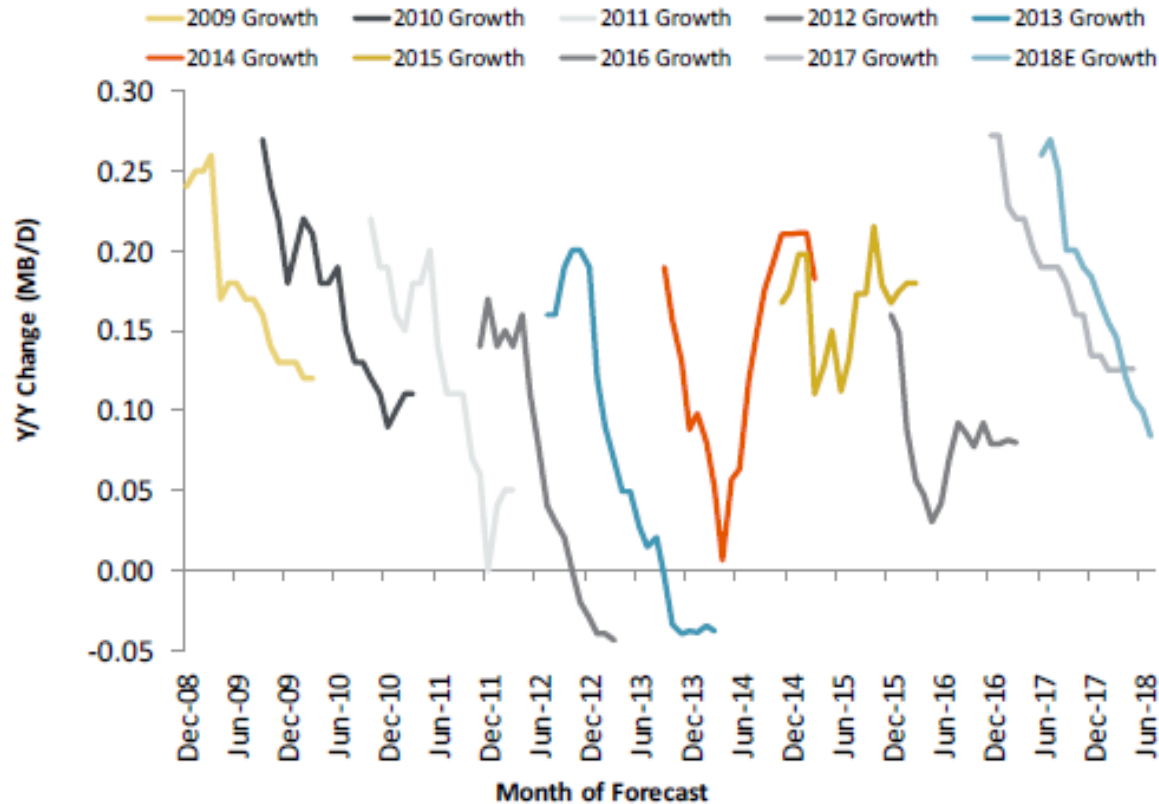
Major non-OPEC (ex-US) project start-up schedule



Non-OPEC (ex-US) supply: 2013-2022

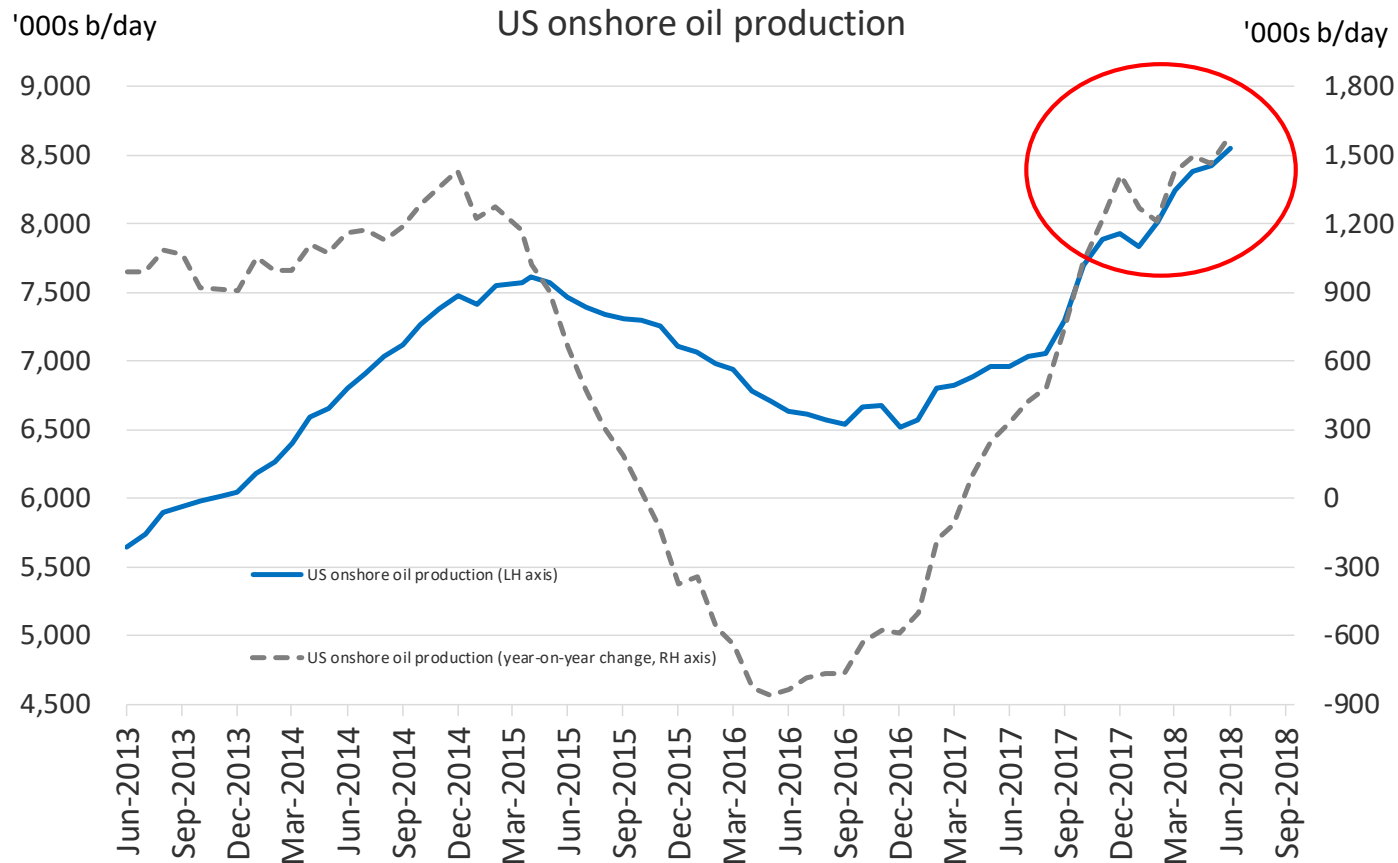


Brazil: actual oil supply growth vs IEA forecast



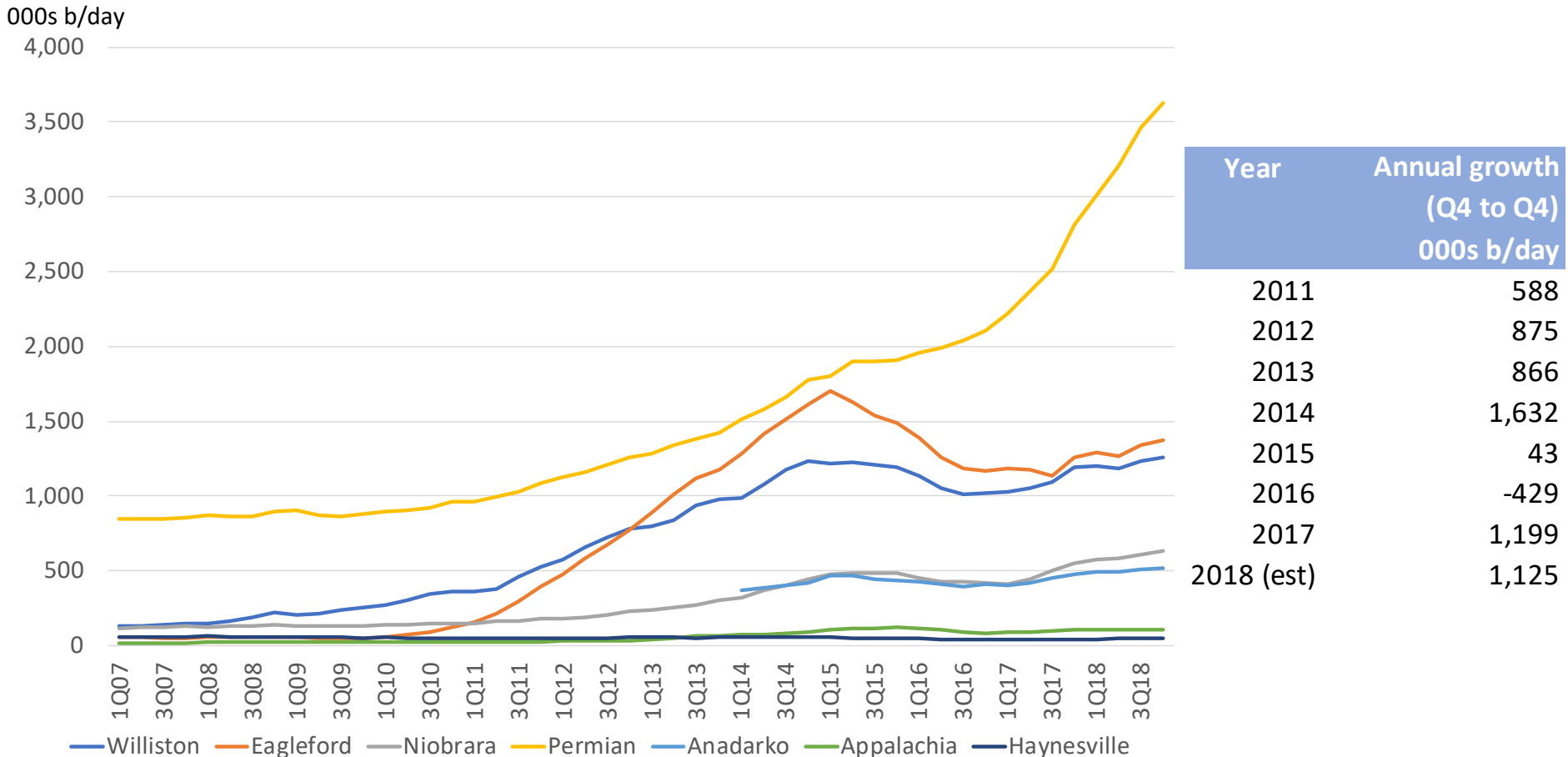
- US onshore shale supply up by 1.5m b/day year-on-year
- US production profile proving lumpy, depending on timing of well completions

US onshore oil production (actual and year-on-year change)

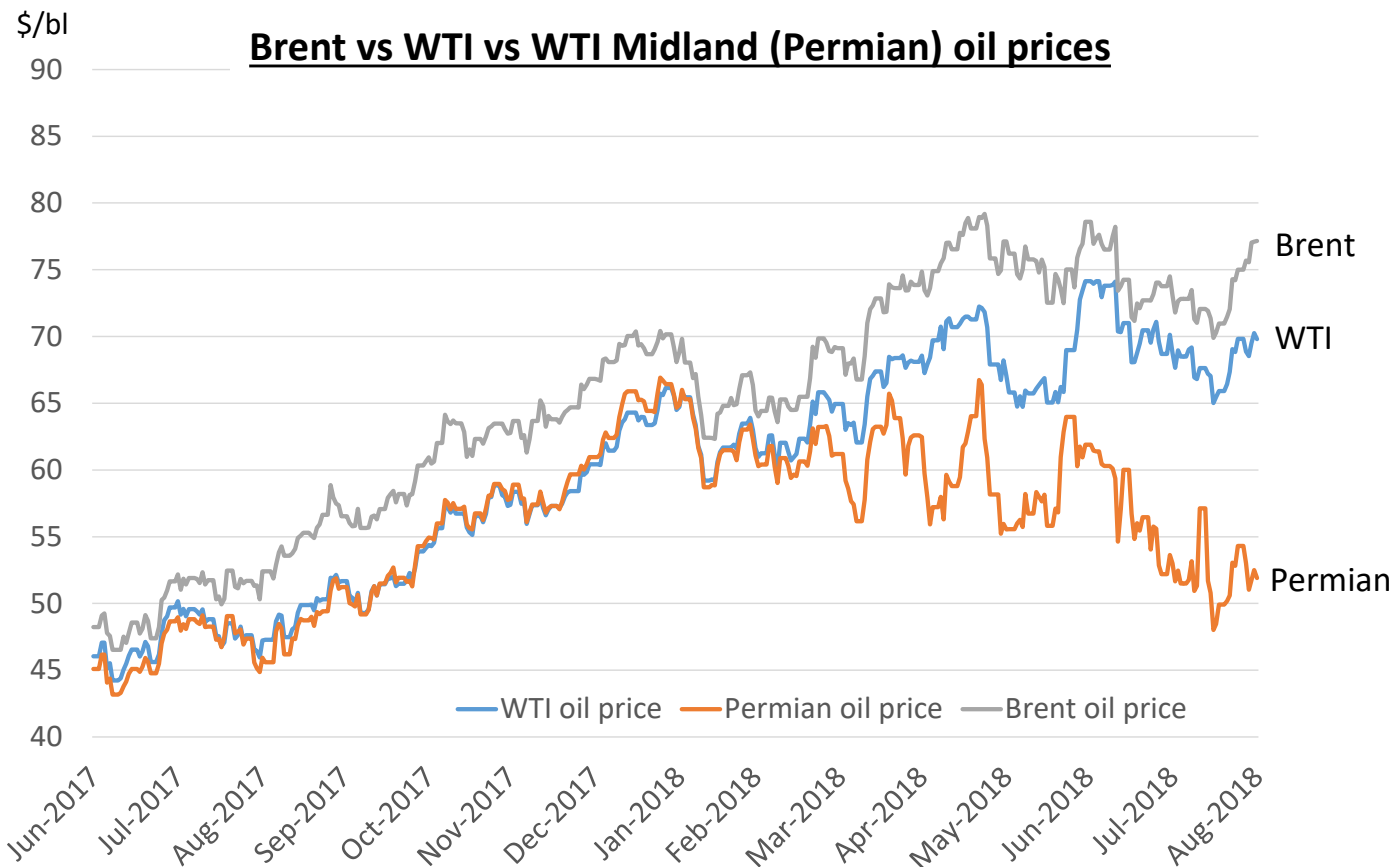


- US shale growth since 2014 dominated by the Permian basin
- Shale supply grew by 1.2m b/day (Q4 to Q4) in 2017; we expect similar in 2018

US onshore oil production by basin

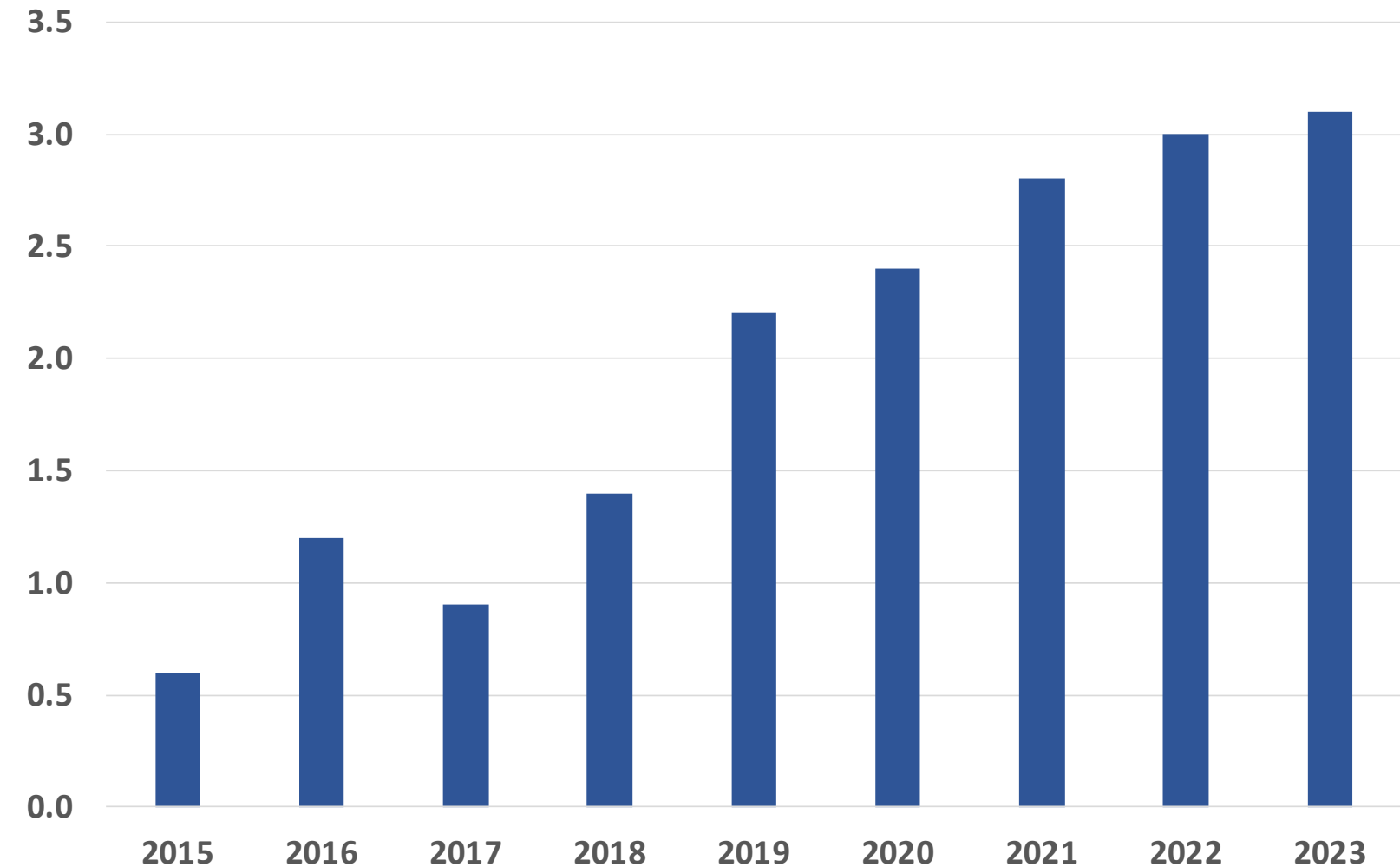


- Rapid oil production growth in the Permian is causing infrastructure constraints
 - The price of Permian oil (WTI Midland) has fallen relative to WTI oil
- New pipelines will be required to export the extra oil and gas from the region
 - Constraints will continue through the remainder of 2018 and much of 2019

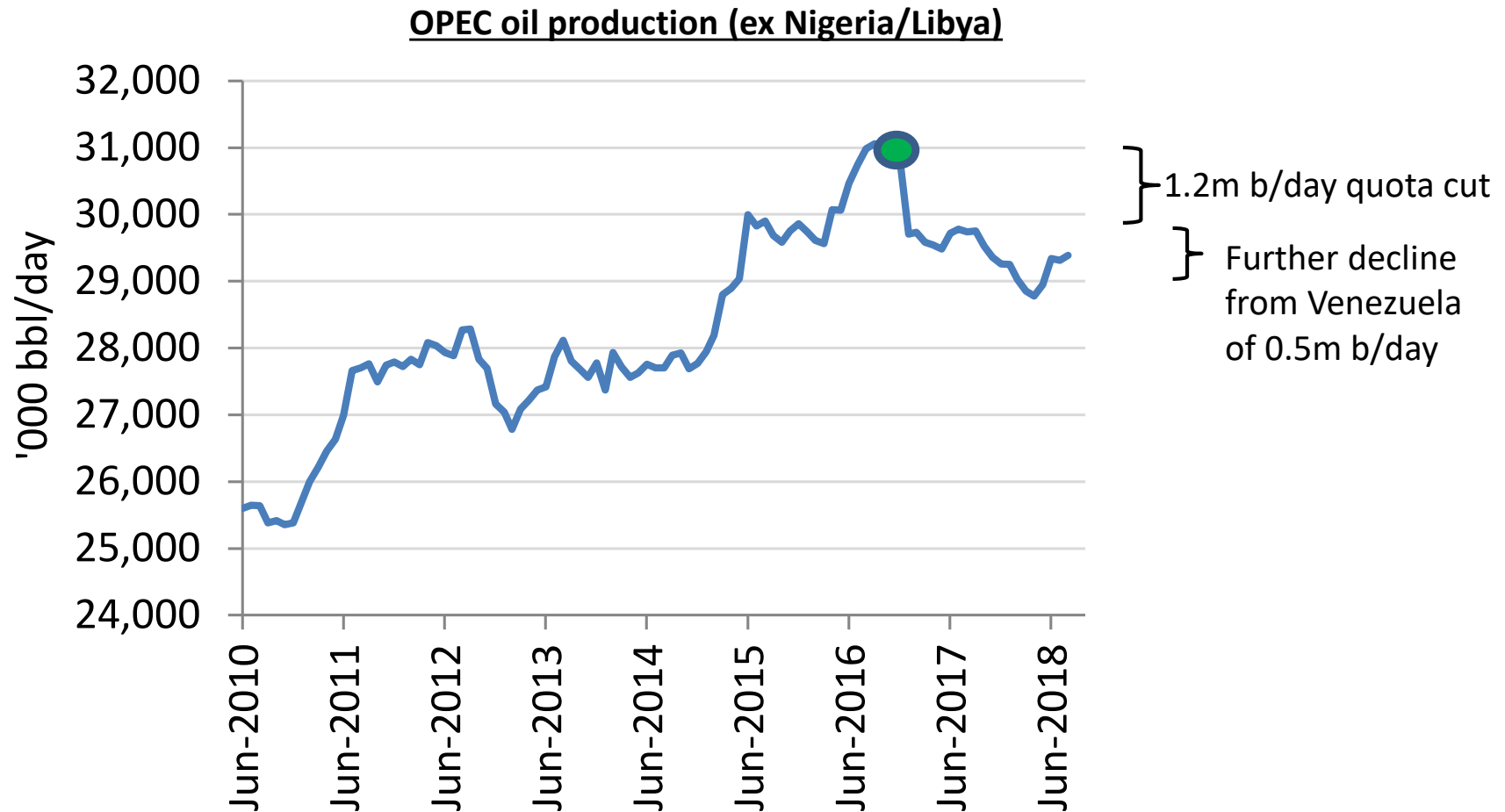


New production required to keep overall US shale production flat (m b/day)

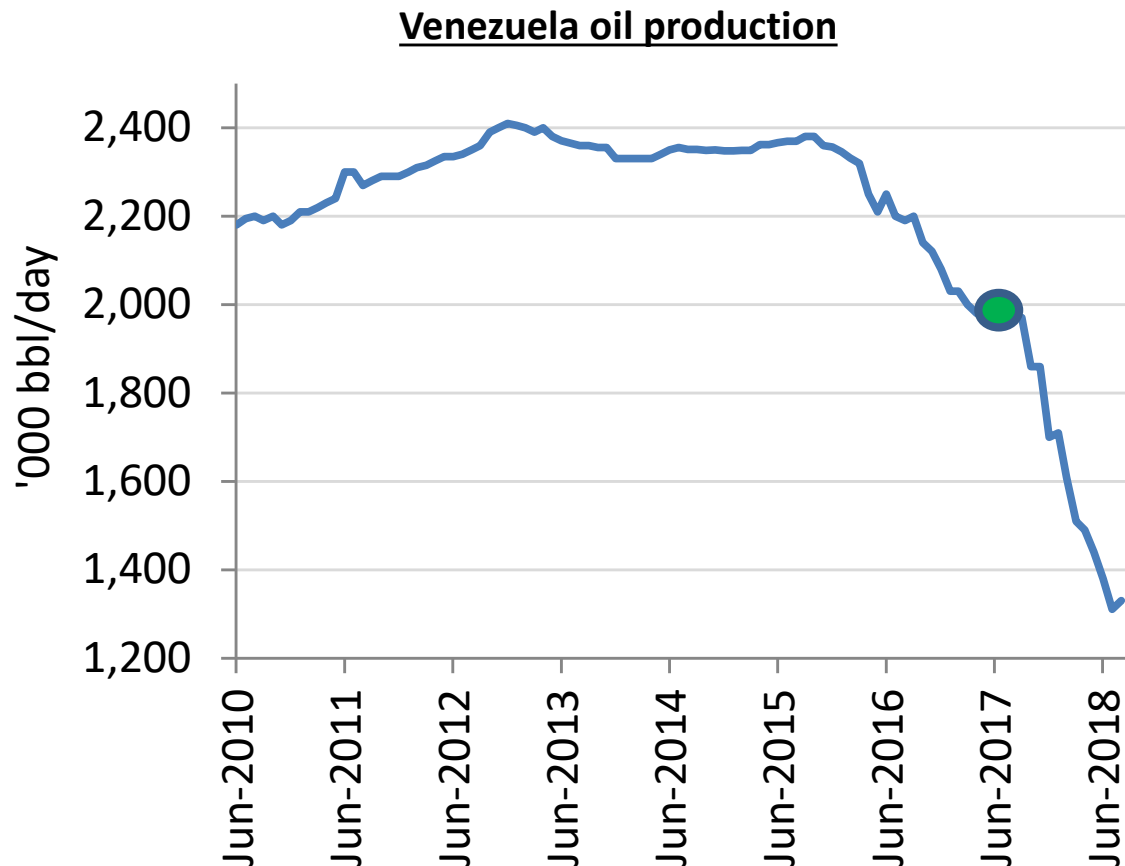
m b/day



- Ex Nigeria & Libya, OPEC cut in 2017 by 1.2m b/day
- 'Core' OPEC now raising production again, to combat Venezuela/Iran shortfalls

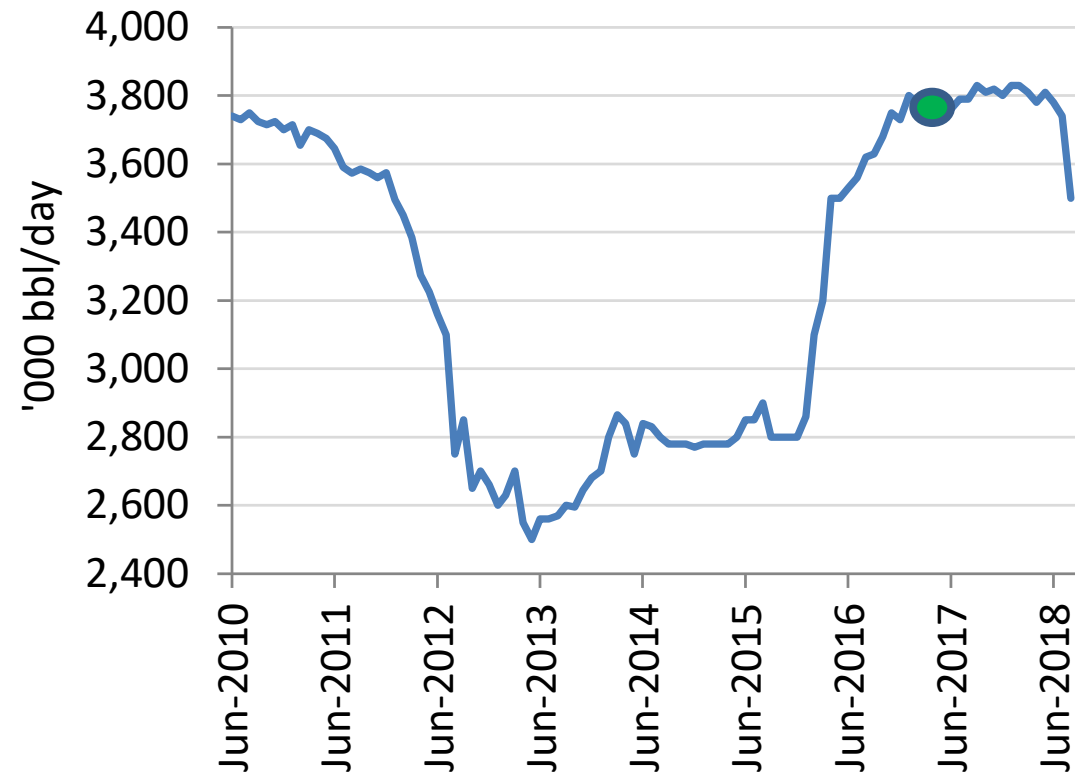


- Venezuela currently producing around 1.3m b/day, well below 1.97m b/day quota
- Deteriorating infrastructure, weak reservoir management and US sanctions contributing to decline
- US refiners increasingly rejecting Venezuelan crude for quality problems

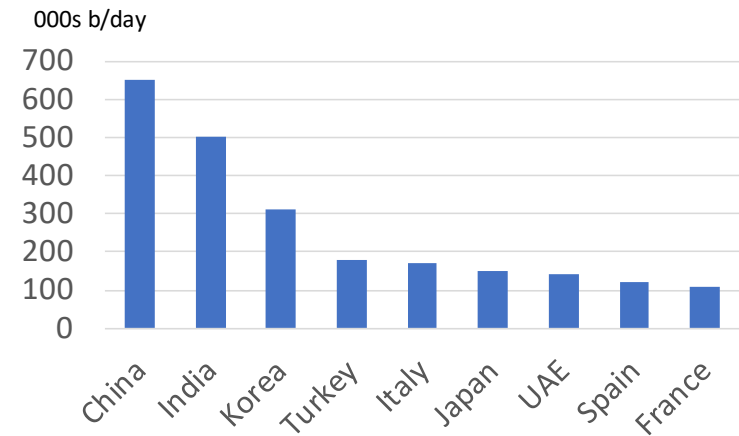


- During the 2012-16 sanction period, Iranian oil exports fell by 1m b/day
- Ahead of the November 2018 sanctions renewal deadline, exports have already fallen by 0.5m b/day
- US placing heavy pressure on Europe/Asian importers to reduce Iranian oil purchases to zero

Iranian oil production

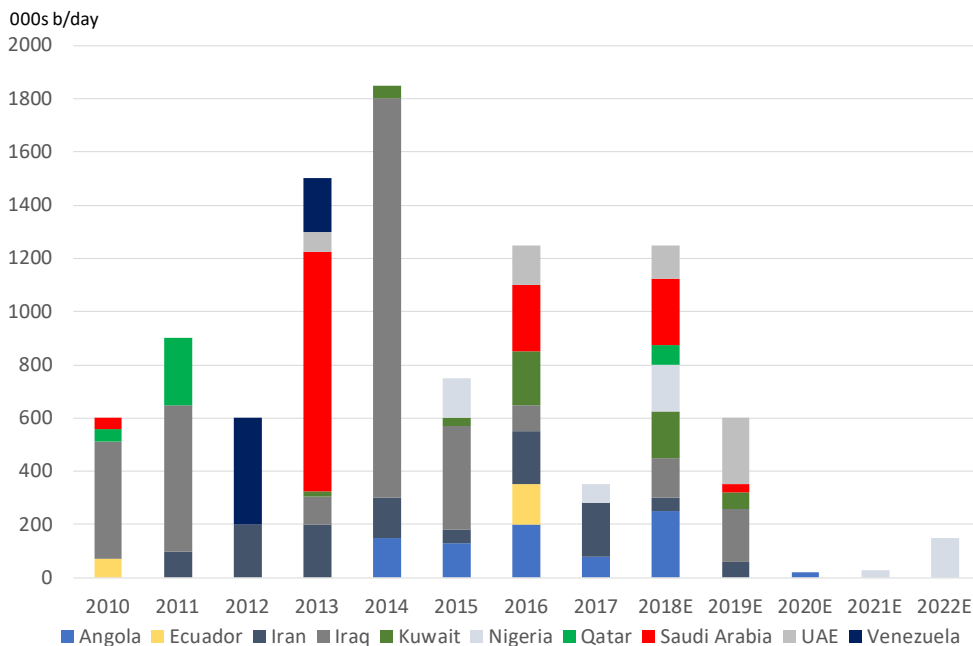


Iranian oil exports: main customers

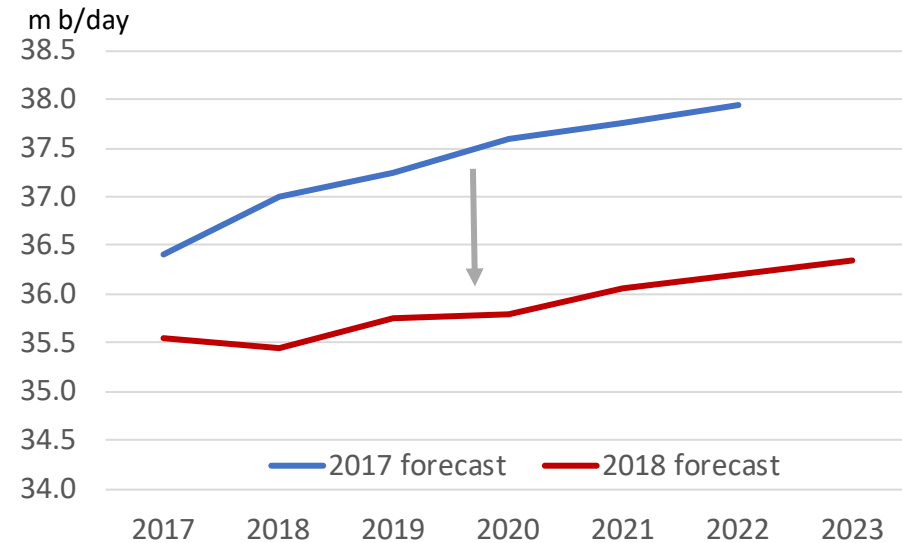


- Average major OPEC project start-ups from 2014 to 2019 average around 1m b/day
- In 2020, start-ups fall away to virtually zero
- OPEC production capacity has recently been downgraded by 1.7m b/day

Major OPEC project start-ups

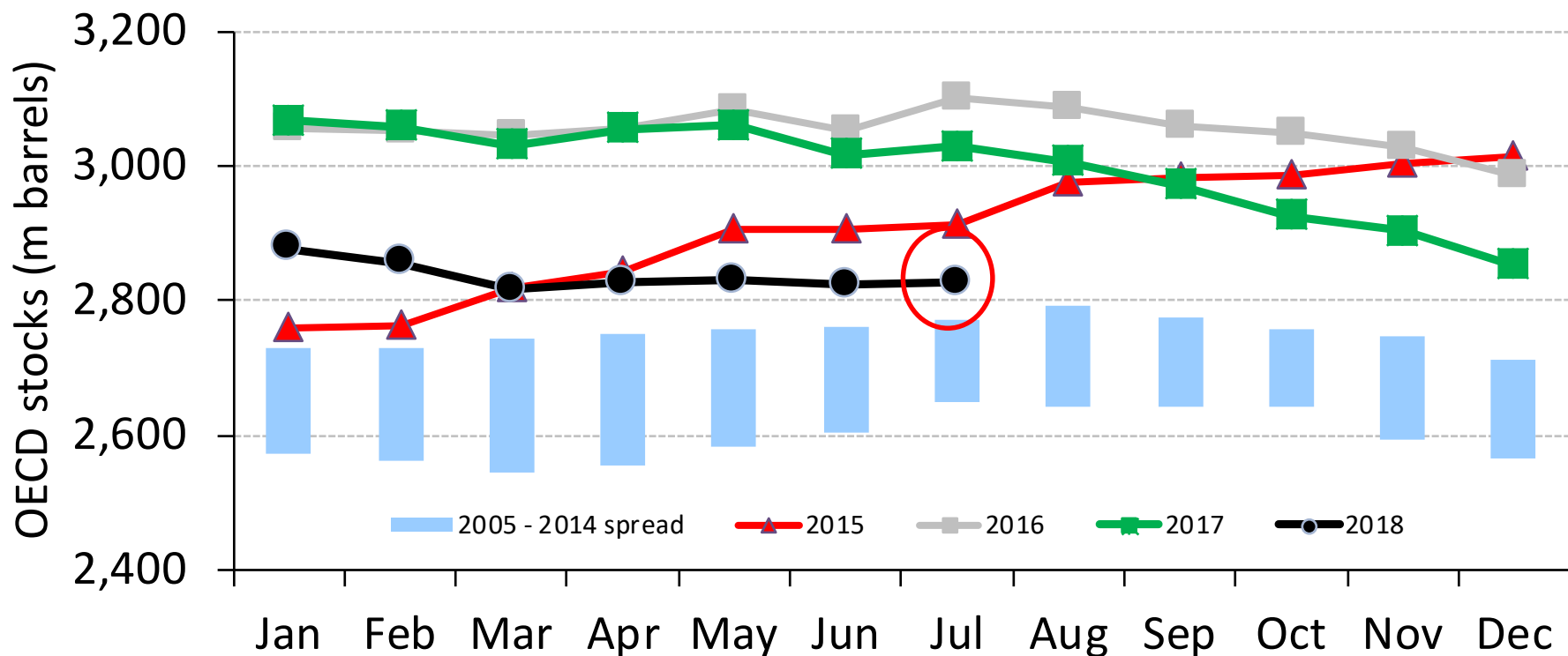


OPEC capacity forecast (per the IEA)

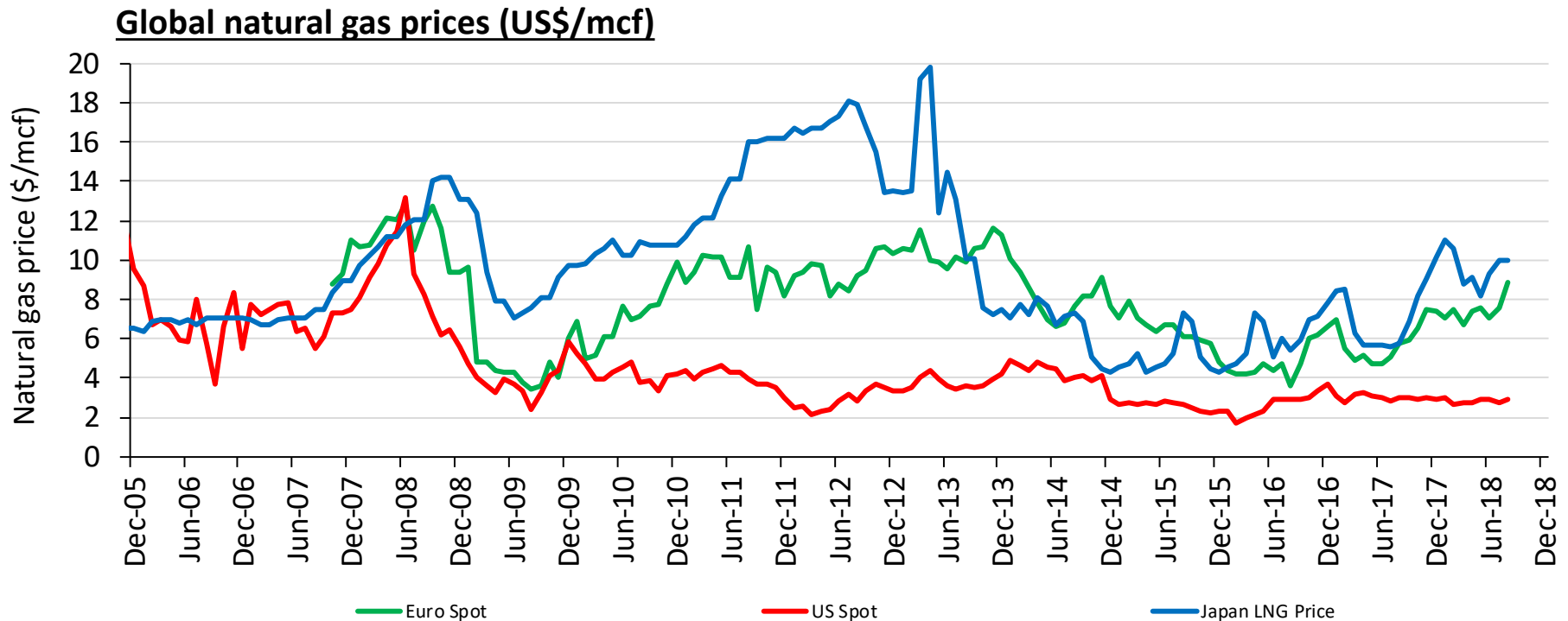


- In 2017, inventory levels started to tighten thanks to OPEC cuts, accelerating in 2H 2017
- Declines have persisted in 2018, bringing inventories closer to the normalized range

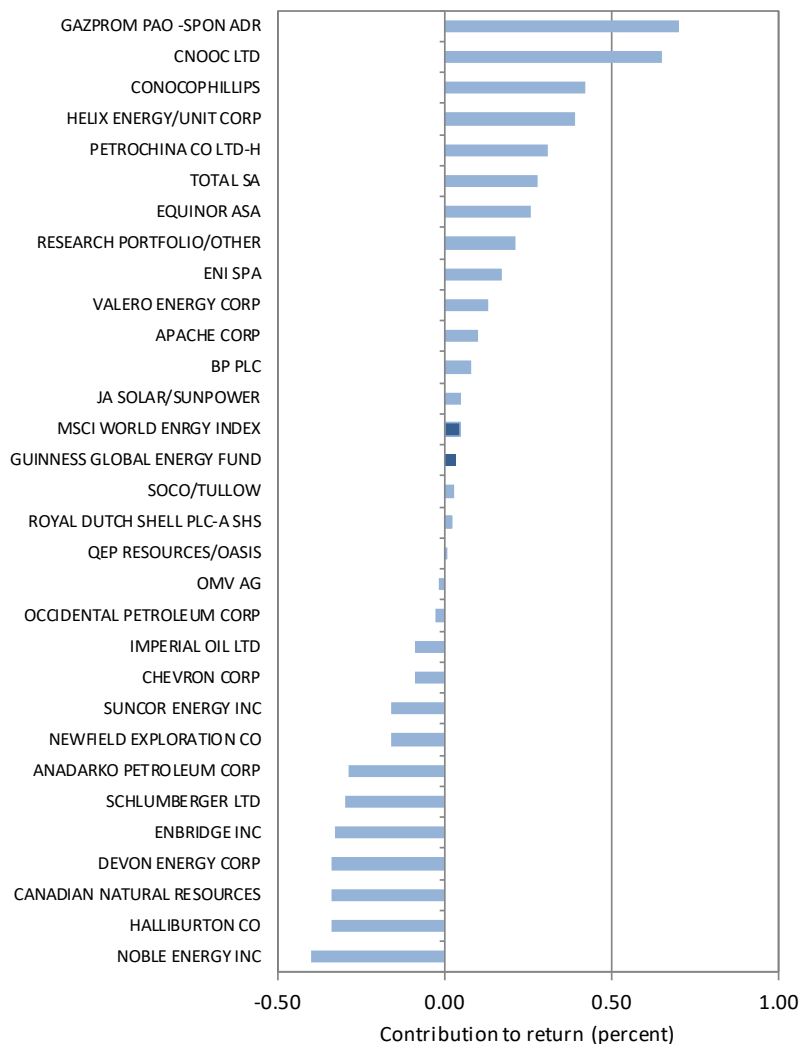
OECD oil inventories (million bbls)



- The gap between US and international gas prices widened in 2017
- US continues to see high levels of new supply, economic at \$3/mcf, from the Marcellus
- New US LNG export facilities starting up over next three years, with major wave in 2019



Q3 2018 indicative contribution



- Q3 2018 Fund performance (USD) +0.5% vs MSCI World Energy Index (USD) +0.8%

• Stronger performers in Q3 2018:

- Emerging market large cap producers
- US refining
- European integrateds

• Weaker performers in Q3 2018:

- US focused E&Ps
- Large diversified service companies

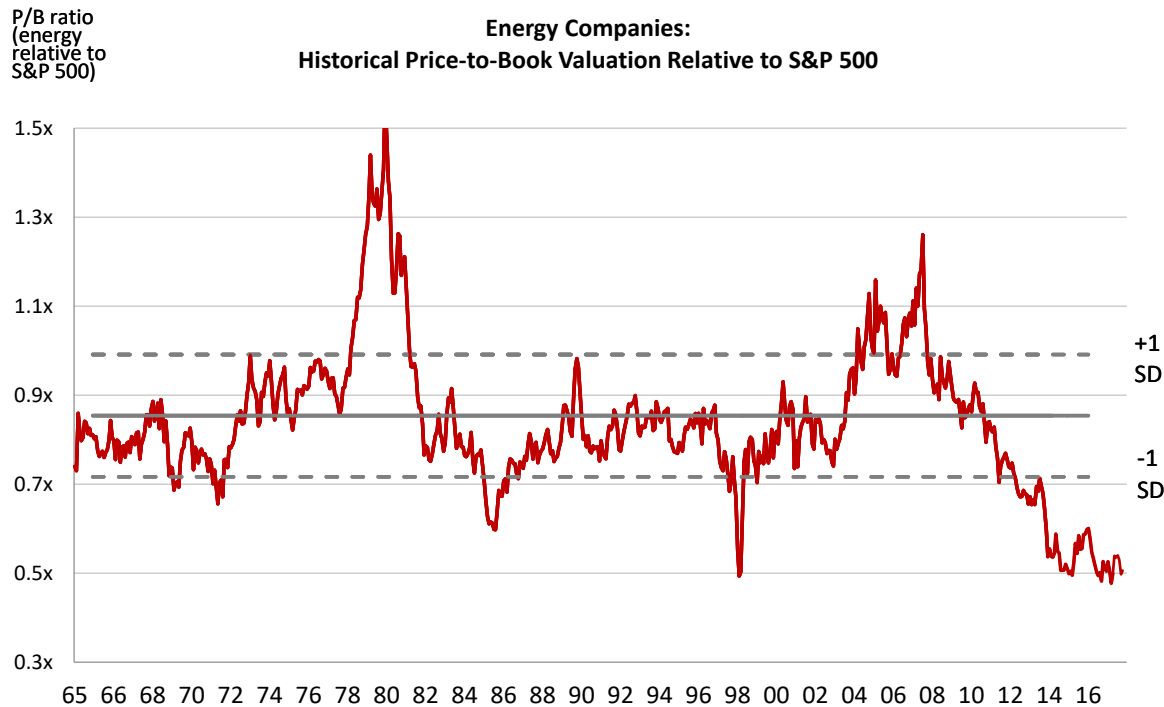
Holdings are subject to change

Source: Guinness Atkinson, Bloomberg, data as of end Sept 2018;

Past performance should not be taken as an indicator of future performance. The value of this investment and any income arising from it can fall as well as rise as a result of market and currency fluctuations as well as other factors.

- The energy sector (at 0.51x the S&P500) is trading >2 standard deviations below its long run average; similar conditions in 1986 and 1998 were good buying opportunities

Energy companies: historic price to book valuation relative to S&P 500



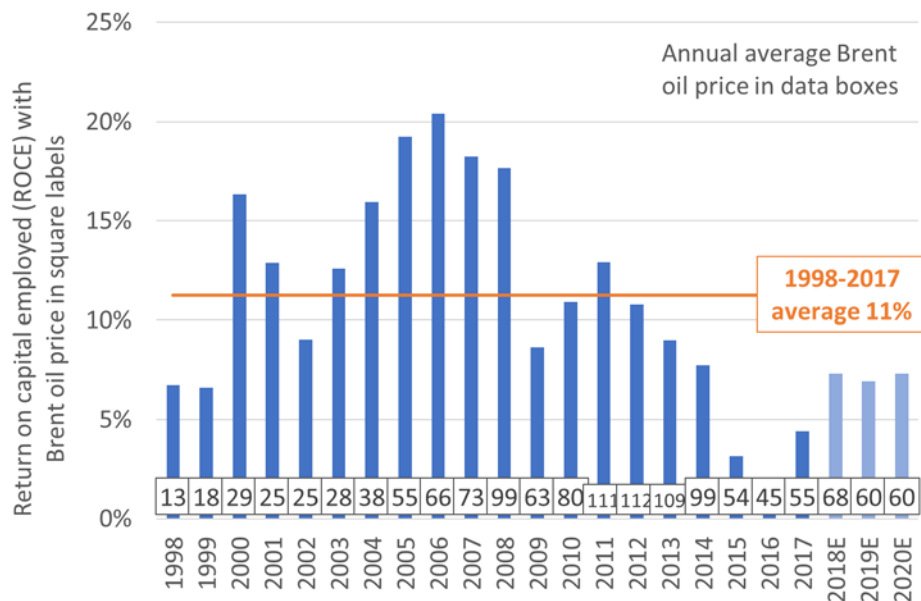
Total return from 30 June 1986	1 yr	2yrs	3yrs	5yrs	Total return from 15 Dec 1998	1 yr	2yrs	3yrs	5yrs
Energy basket*	74.7%	50.5%	83.2%	117.0%	MSCI World Energy Index	26.6%	25.8%	16.8%	39.5%
S&P 500	21.2%	9.0%	26.8%	48.0%	S&P 500	23.1%	15.6%	0.2%	-0.8%
Outperformance (%)	53.5%	41.5%	56.4%	69.0%	Outperformance (%)	3.5%	10.2%	16.6%	40.3%

*Equally w eighted basket of Exxon, Chevron, Hess, Occidental, Murphy, BP, Marathon and Conocophillips

Guinness Atkinson Energy Fund: ROCE expected to rise from trough level

- The combination of lower oil prices and legacy higher cost structures leave ROCE depressed
- We expect reported ROCE to improve as a result of
 - External factors: improvements in oil and natural gas prices
 - Internal factors: Cost deflation, efficiency improvements and M&A activity
- A return to 10-12% ROCE would imply P/B ratio for portfolio in 2019 rising from 1.5x to 2.0x (+35%)

ROCE of current Guinness Asset Mgmt./Guinness Atkinson Energy portfolio



ROCE vs P/B multiple for Guinness Asset Mgmt./Guinness Atkinson Energy portfolio



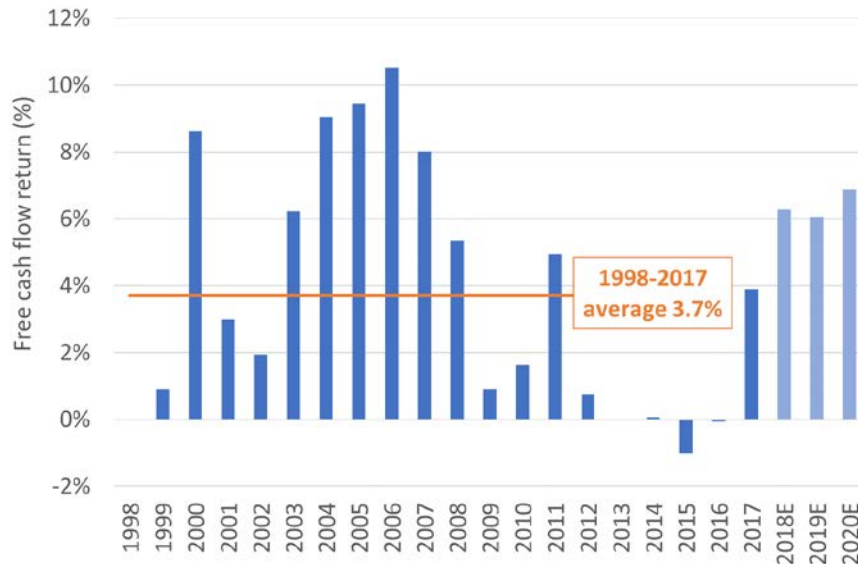
Forecasts are inherently limited and cannot be relied upon

Source: Bloomberg, Company Data and includes analysis of all 'full position' holdings (for which 1998-2016 data is available) in the Guinness Asset Management/Guinness Atkinson Energy fund as of December 31 2017. Data as of October 2018

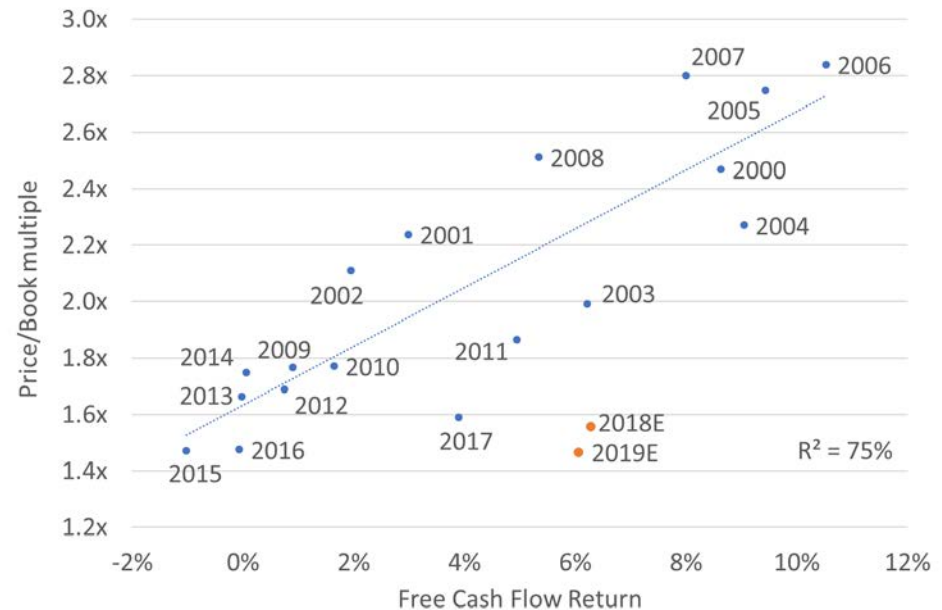
Guinness Atkinson Energy Fund: FCF improvement not fully valued

- FCF (cashflow from operations less CAPEX) return was essentially zero between 2012 and 2016, but has now returned to, and will exceed, the longer-term average, as companies have adjusted
- This is not reflected in the long-term relationship between FCF return and P/B
- A return to the long term correlation would imply P/B ratio for portfolio in 2019 rising from 1.5x to 2.2x (up over 40%)

FCF return of current Guinness Asset Mgmt./ Guinness Atkinson Energy portfolio



FCF return of current Guinness Asset Mgmt./ Guinness Atkinson Energy portfolio

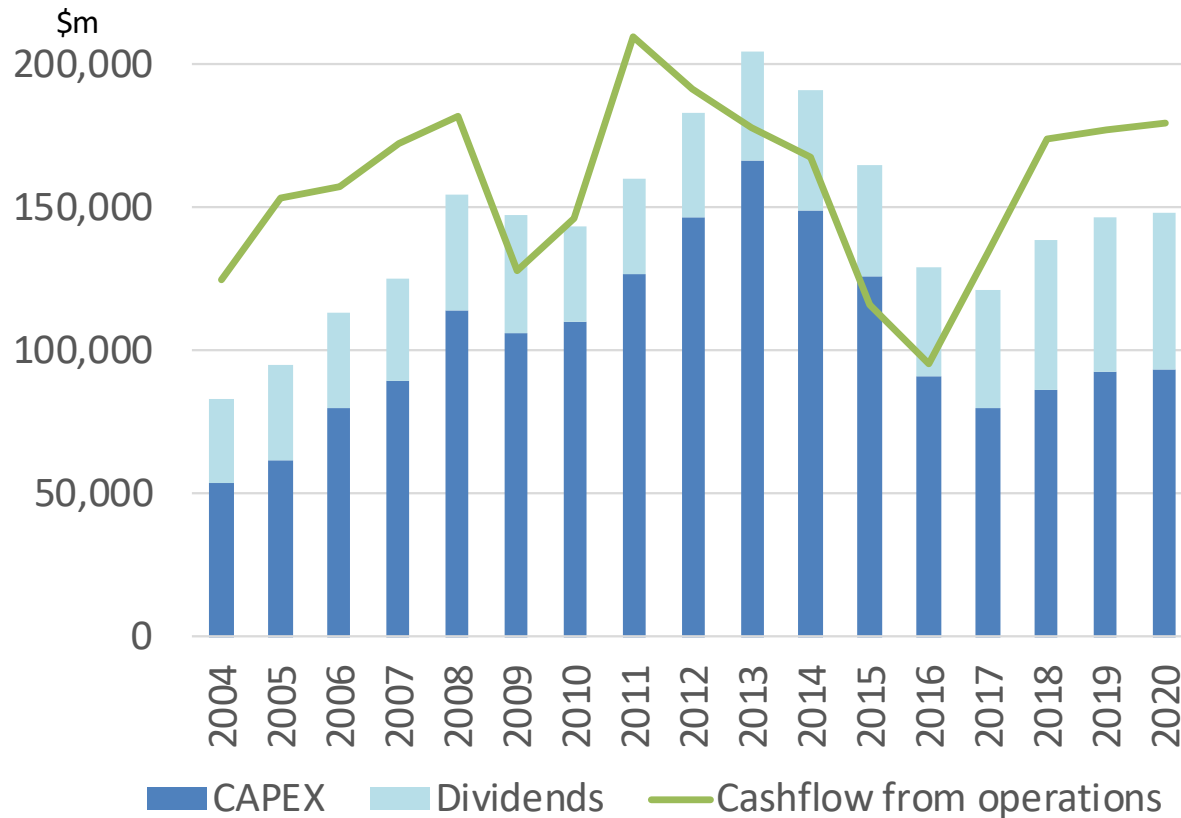


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- Super-major oil and gas companies are emerging from a period in which dividend was being paid by debt to a period where they will have the ability to raise dividends by up to 40% (at \$60 Brent)

Super-majors operating cash flow versus capex and dividends

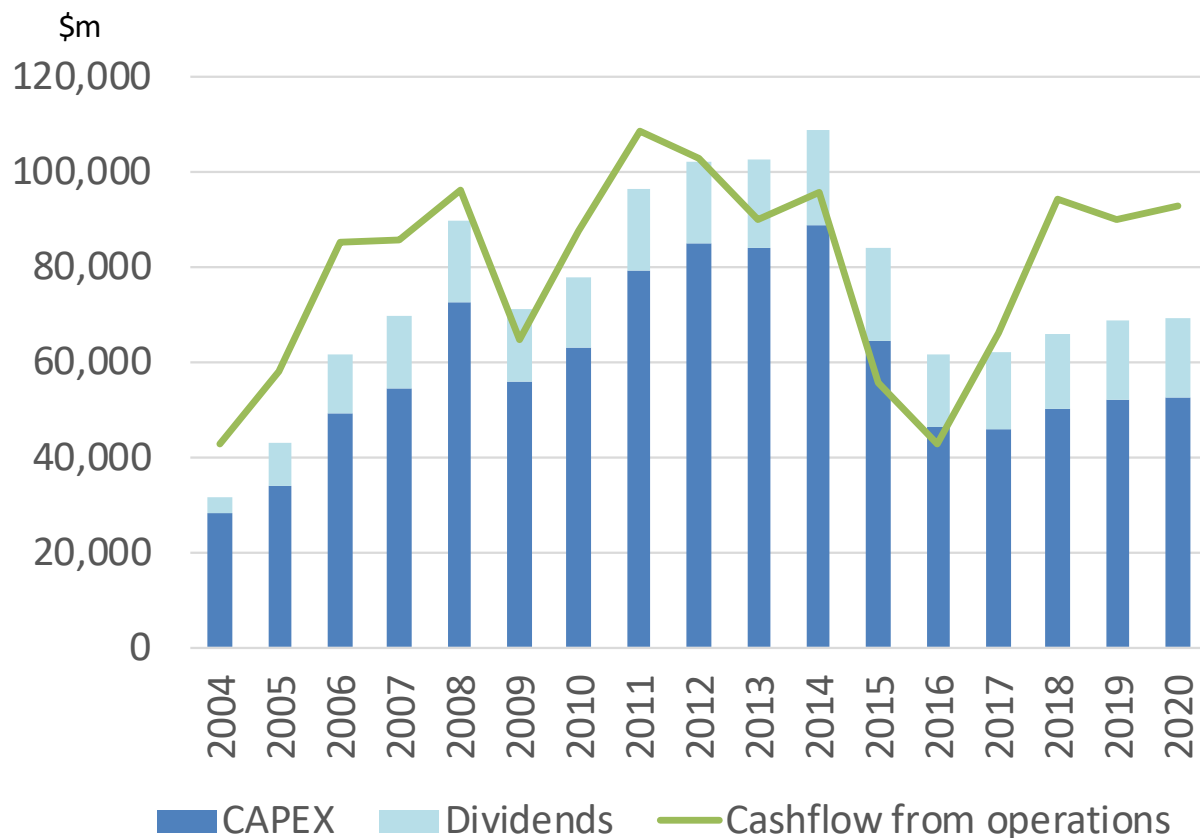


Super-majors have the scope to increase distributions **by about 50%** in 2019/2020 (at \$60 Brent / \$58 WTI)

- Exxon; Chevron; BP; Royal Dutch Shell; Total
















- Other large cap oil and gas companies also emerging from a period in which dividend was being paid by debt to one of expanding FCF – greater scope to expand dividends than majors (at \$60 Brent)

Other large caps operating cash flow versus capex and dividends



Other large caps have the scope to increase distributions **by about 100%** in 2019/2020 (at \$60 Brent / \$58 WTI)

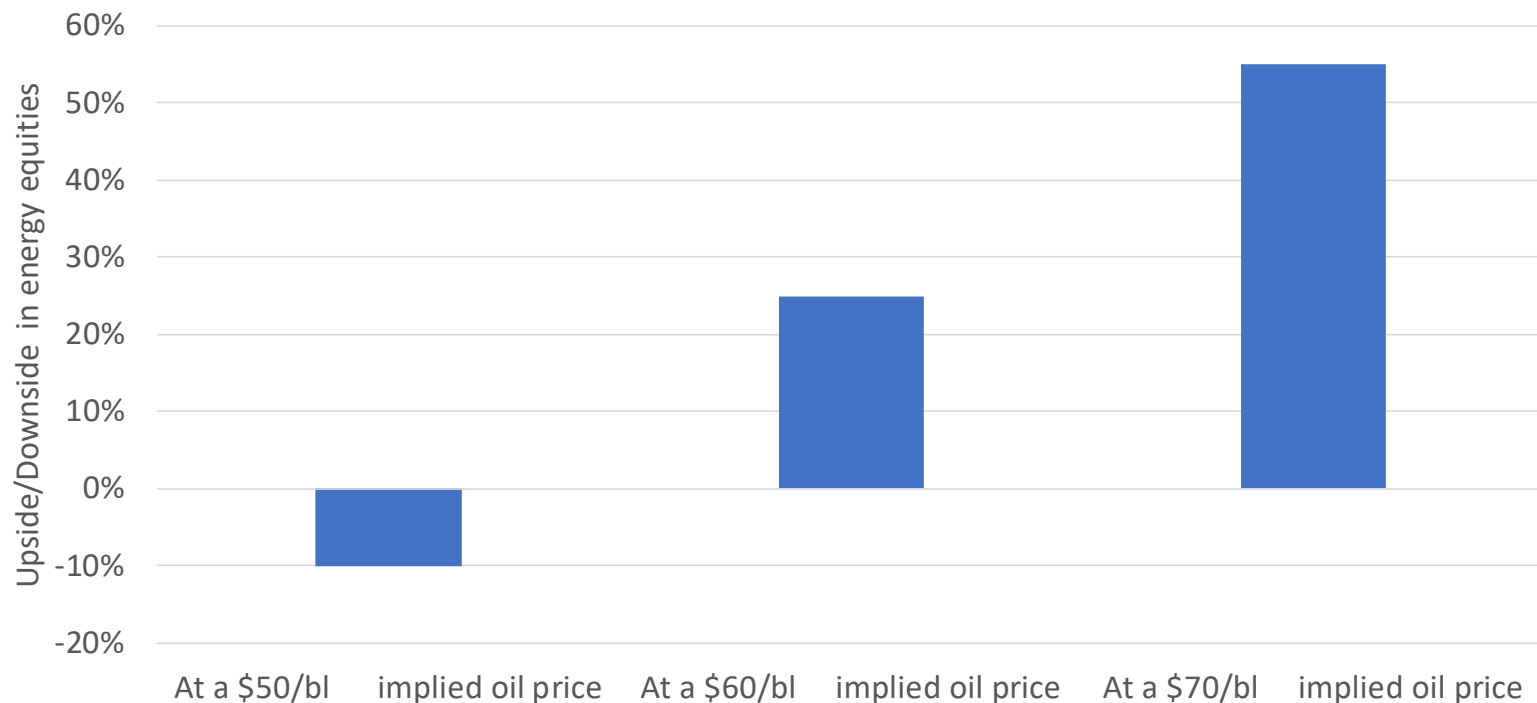
- Statoil; ENI; OMV; Conocophillips; Occidental; Suncor; CNOOC; Imperial Oil; Canadian Natural Resources

Theme	Example holdings	Weighting (%)
1 Expanding free cashflow yields from large-cap oil & gas	  	29.3%
2 North American shale oil & gas growth	  	26.9%
3 Growing return on capital from oil & gas majors	  	18.4%
4 Emerging market natural gas demand growth	 	10.8%
5 Strong refining margins resulting from global GDP growth	 	7.1%
6 Deleveraging balance sheets	 	2.6%
7 Growth in global solar market	SUNPOWER	0.4%
8 Other (incl cash)		4.5%
		100.0%

Top 10 holdings as of 09/30/2018: 1. Gazprom 4.22% 2. CNOOC Ltd 4.06% 3. Apache Corp 4.05% 4. Equinor ASA 3.94% 5. Petrochina Co Ltd 3.80% 6. Conocophillips 3.76% 7. BP PLC 3.74% 8. Royal Dutch Shell PLC 3.73% 9. Total SA 3.66% 10. Imperial Oil Ltd 3.63%

- Energy equities are back to the lows seen in early 2016
- There is 30%+ upside should ROCE and free cash flow normalize and be priced in
- Energy look to be about fair value if oil remains mid \$50/bl range forever
- Energy equities look about 25+% cheap if oil \$60/bl (WTI/Brent) is priced in

Upside/downside for Guinness Atkinson energy portfolio (2 year view)



Fund and index performance, as of Sept 30, 2018

	Q3 2018	1 Year	5 Years*	Since Inception (June 30, 2004)*
Global Energy Fund	0.71	18.62	-2.61	7.31
MSCI World Energy Index (Net Return)	0.78	14.60	0.80	6.23
S&P 500	7.71	17.90	13.95	9.04

Source: Bloomberg

Expense ratio: 1.62% (gross); 1.45% (net) *Periods over 1 year are annualized returns

Performance data quoted represents past performance; past performance does not guarantee future results. The investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original cost. Current performance of the fund may be lower or higher than the performance quoted. Performance data current to the most recent month end may be obtained by calling 800-915-6566 and/or visiting www.gafunds.com

The Advisor has contractually agreed to reimburse expenses (excluding Acquired Fund Fees and Expenses, interest, taxes, dividends on short positions and extraordinary expenses) in order to limit the Fund's Total Annual Operating Expenses to 1.45% through June 30, 2019. To the extent that the Advisor absorbs expenses to satisfy this cap, it may recoup a portion or all of such amounts absorbed at any time within three fiscal years after the fiscal year in which such amounts were absorbed, subject to the expense cap in place at the time recoupment is sought, which cannot exceed the expense cap at the time of the waiver. The expense limitation agreement may be terminated by the Board of the Fund at any time without penalty upon 60 days' notice.

Single sector	Companies engaged in the production and distribution of energy (oil, natural gas, coal, alternative energy, nuclear and utilities)
High conviction	Equally weighted, concentrated portfolio (30 positions)
Unconstrained	No reference to index
Global	Diversified globally
Investment type	Listed equities (long-only)
Investment objective	Long-term capital appreciation



Timothy Guinness

- Executive Chairman and Chief Investment Officer of Guinness Atkinson Asset Management
- Portfolio manager of the Investec Global Energy Fund from November 1998 to February 2008
- Co-founder of Guinness Flight Global Asset Management and, after its acquisition by Investec, chairman of Investec Asset Management until March 2003
- Graduated from Cambridge University in 1968 with a degree in Engineering. After obtaining an MBA at MIT, worked for 10 years as a corporate financier



Will Riley CA

- Joined Guinness Atkinson Asset Management in 2007
- Company valuation expert for PricewaterhouseCoopers 2000-2007
- Qualified as a Chartered Accountant in 2003
- Graduated from Cambridge University with a Masters degree in Geography in 1999



Jonathan Waghorn

- Joined Guinness Atkinson Asset Management in 2013
- Co-portfolio manager of the Investec Global Energy Fund from February 2008 to May 2012
- Co-head of energy equity research at Goldman Sachs from 2000-2008
- Drilling engineer in Dutch North Sea for Shell

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- **Guinness Atkinson Asset Management:** founded in 2003, along with UK sister firm Guinness Asset Management
- **Four core areas of expertise:** Global Equities, Energy, Asia & Financials
- **Guinness Atkinson Group AUM (at Sept 30, 2018): \$1.8bn**
- **Group staff of 30, including 14 investment professionals**
- **Company is 100% owned by employees**

Opinions expressed are subject to change, are not guarantee and should not be considered investment advice.

The Fund's holdings, industry sector weightings and geographic weightings may change at any time due to on-going portfolio management. References to specific investments and weightings should not be construed as a recommendation by the Fund or Guinness Atkinson Asset Management, Inc. to buy or sell the securities. Current and future portfolio holdings are subject to risk. References to other mutual funds should not be interpreted as an offer of these securities.

Mutual fund investing involves risk and loss of principal is possible. The Fund invests in foreign securities which will involve greater volatility, political, economic and currency risks and differences in accounting methods. The Fund is non-diversified meaning it concentrates its assets in fewer individual holdings than a diversified fund. Therefore, the Fund is more exposed to individual stock volatility than a diversified fund. The Fund also invests in smaller companies, which involve additional risks such as limited liquidity and greater volatility. The Fund's focus on the energy sector to the exclusion of other sectors exposes the Fund to greater market risk and potential monetary losses than if the Fund's assets were diversified among various sectors. The decline in the prices of energy (oil, gas, electricity) or alternative energy supplies would likely have a negative effect on the funds holdings.

While the fund is no-load, management and other expenses still apply. Please refer to the prospectus for further details.

The Fund's investment objectives, risks, charges and expenses must be considered carefully before investing. The statutory and summary prospectus contains this and other important information about the investment company, and it may be obtained by calling 800-915-6566 or visiting gafunds.com. Please read it carefully before investing.

You cannot invest directly in an index.

Fund holdings & sector allocations are subject to change and are not recommendations to buy or sell any security.

Diversification does not assure a profit nor protect against a loss in a declining market.

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