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Oil Supply Risks and Opportunities: The big moving parts

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Feast to famine: new oil risks

Is a supply crunch imminent?

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Market narrative has shifted

- Loose has become tight

	OPEC/Non-OPEC cuts
+	Strong demand
=	OECD stock glut gone
=	Balanced market and price rally

- *Immediate danger of rallying price is not a slump but overheating – and risks are mounting*

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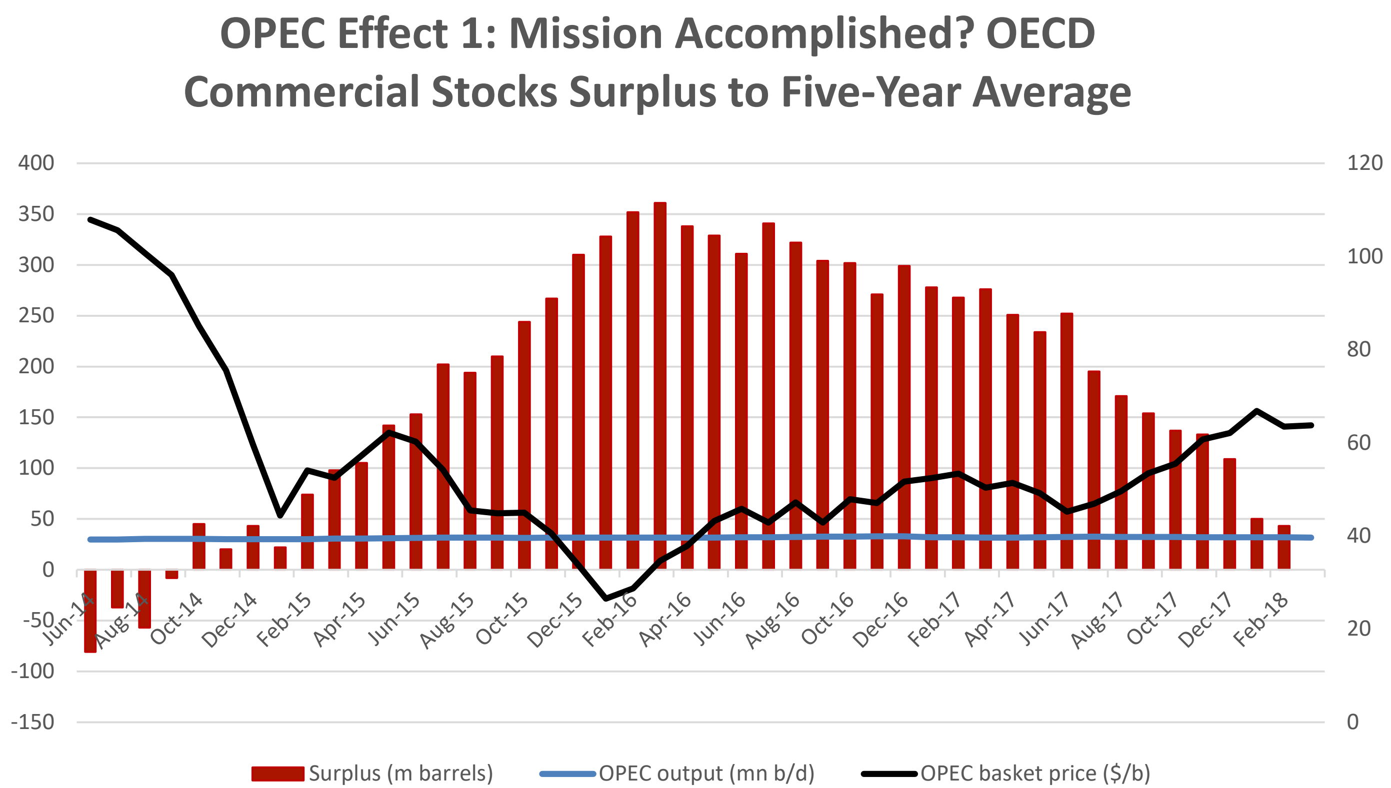
OPEC and partners met their target…

- Defied sceptics
- KSA helped by Venezuela, Angola, Mexico
- But momentum now is starting to look a bit dangerous



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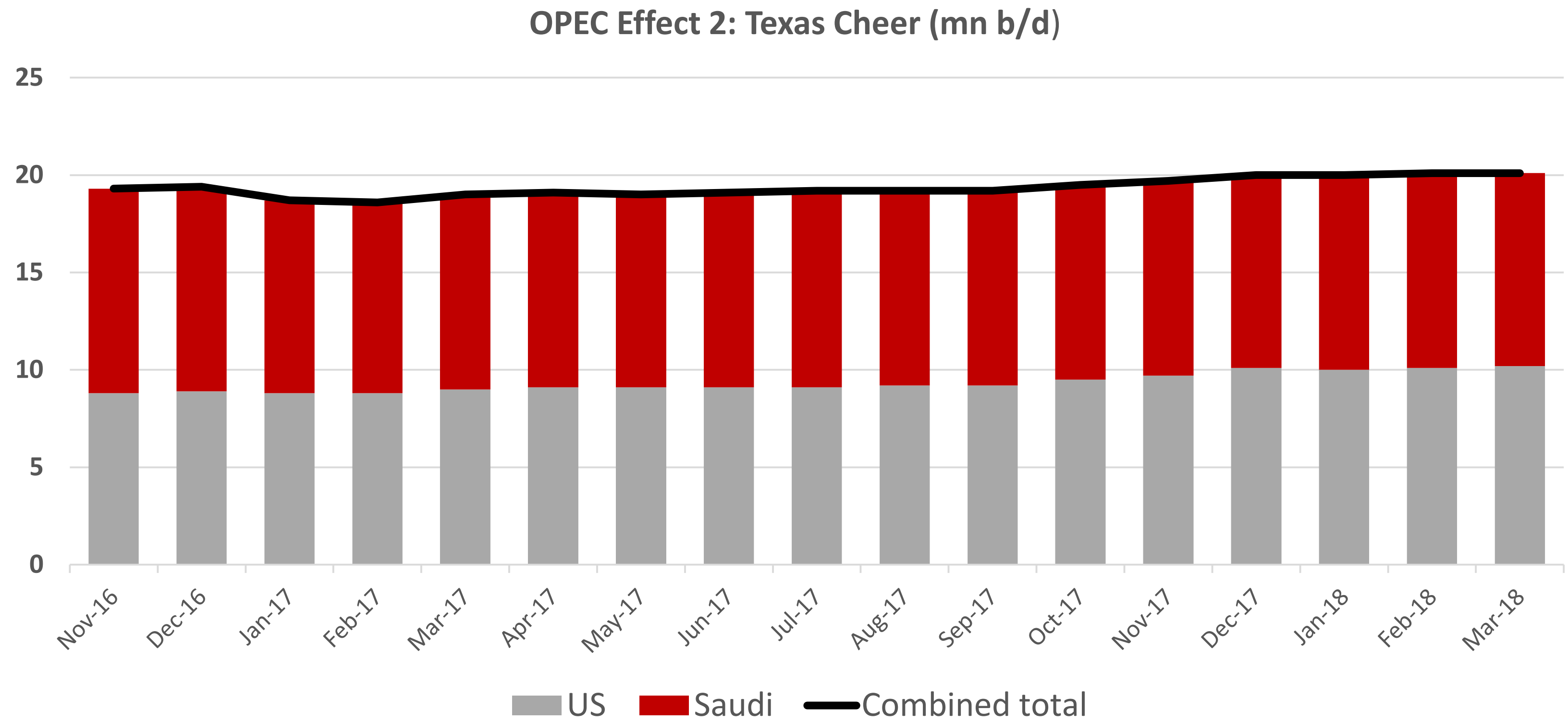
… But US output remains robust

- On supply, that's the good news
- Preventing a price surge for time being



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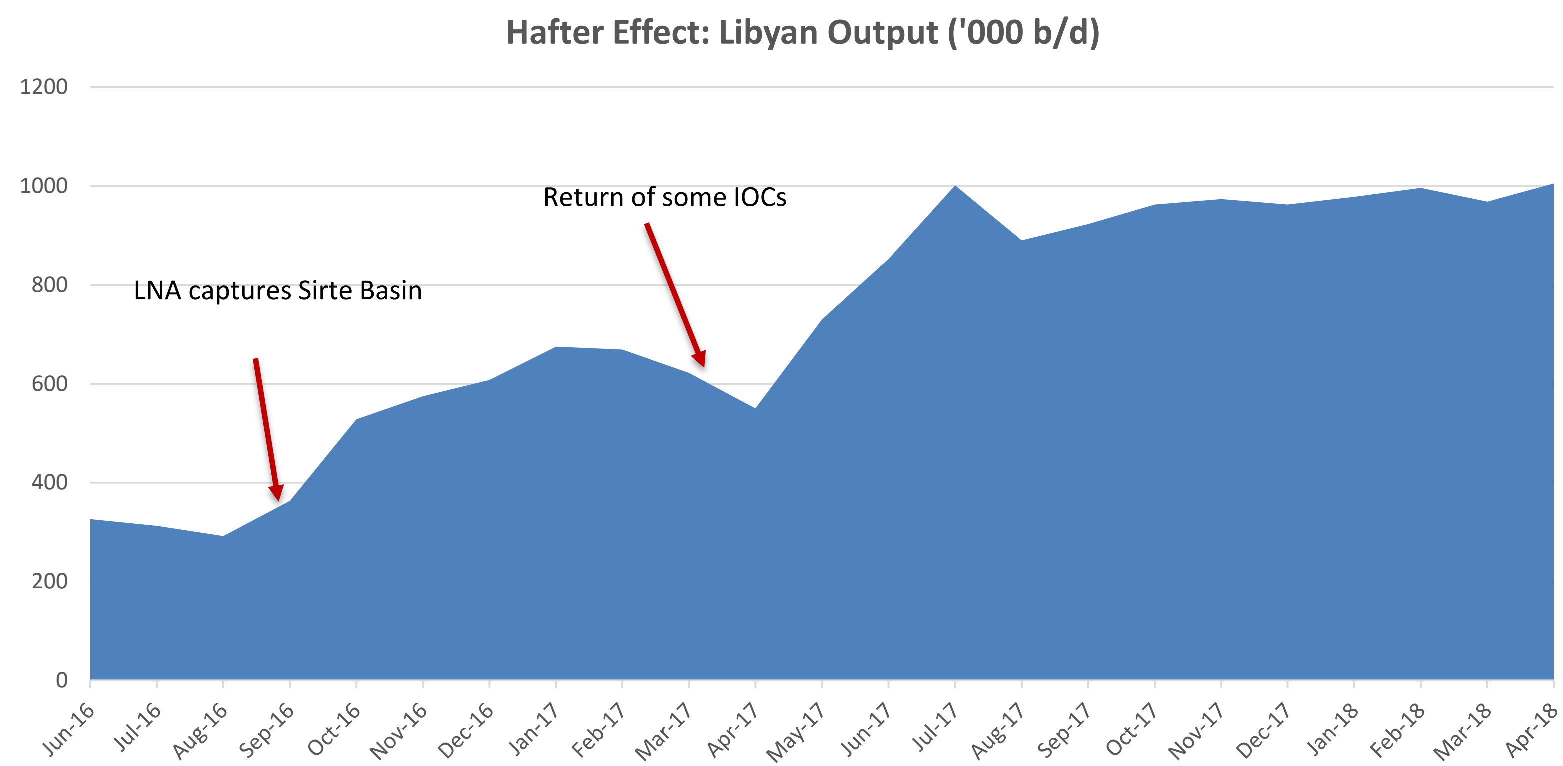
But geopolitical storm brewing

- Tighter market means politics more decisive
  - Impacts of supply-side changes proportionately greater…
  - … leading to more market focus on politics…
  - … adding to volatility
- Price rise hasn't cured problems
  - Budgets strained
  - More income can exacerbate friction

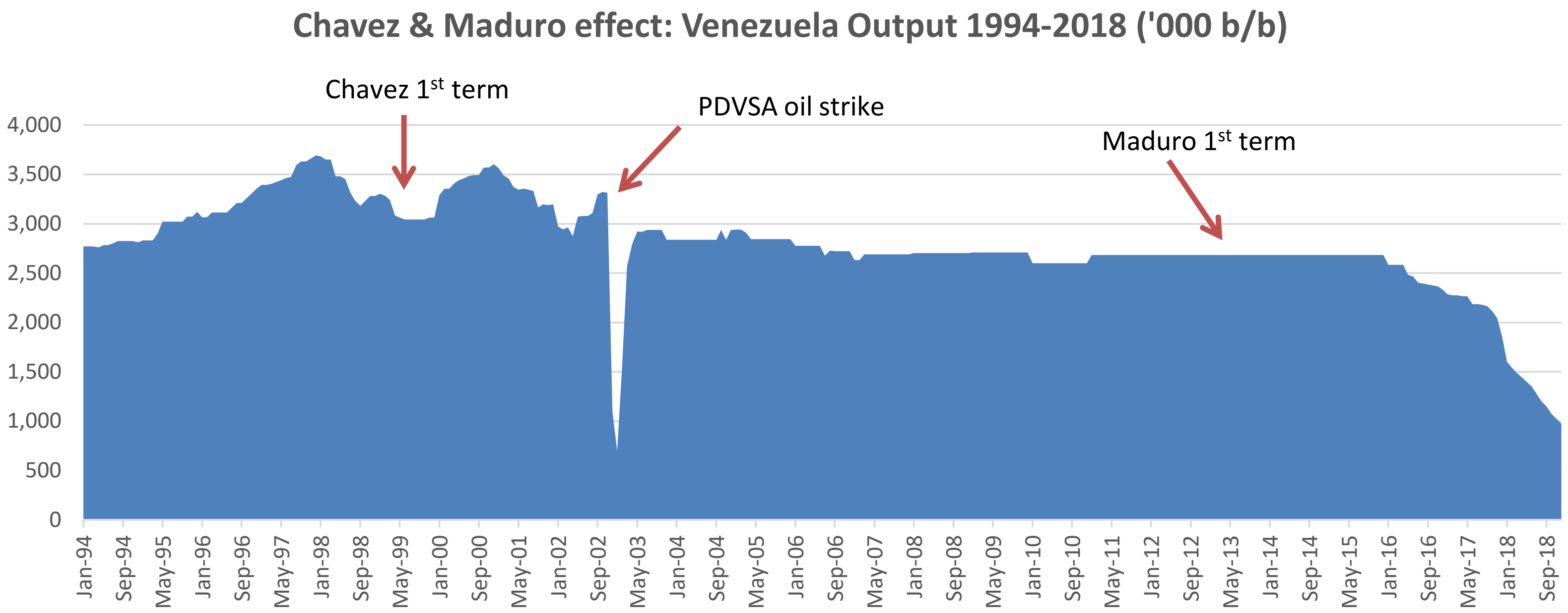
Geopolitics isn't always bad for supply…

- Exhibit A – Libya, where Hafter's ascendency brought supply surge
- Politics, not price, caused surge



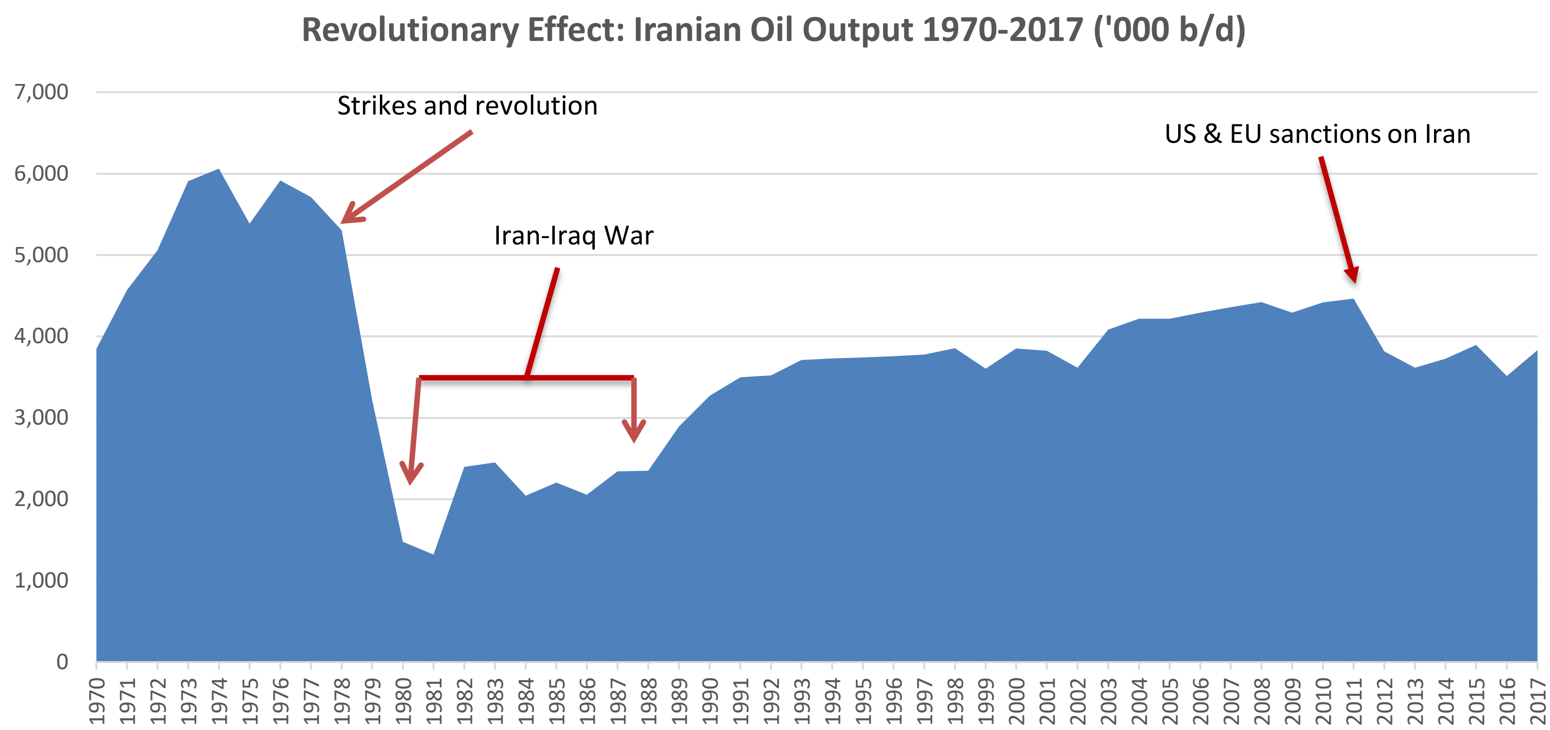
… But usually it is

- Exhibit B: Venezuela and the impact of ruinous policy
- Chavez and Maduro have destroyed capacity
- Key factor in recent price rally



Revolutions & sanctions especially bad

- Exhibit C: Iran's plight
- Output still well beneath 1979 level



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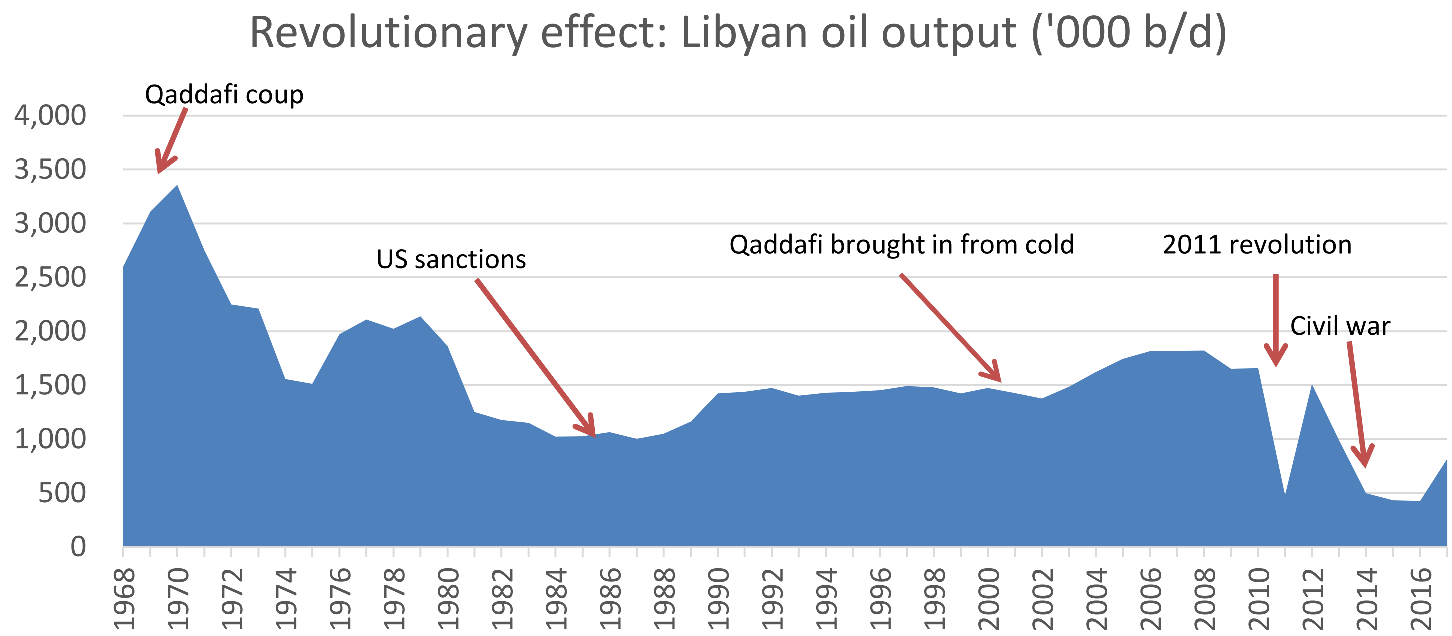
Effect can last decades

- Despite recent good news…
- Exhibit D: Libyan output still less than a third its level pre-Qaddafi



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New risks mounting, old ones returning

Near term

- Trump Iran decision 12 May
- Iraqi parliamentary elections 12 May
- Venezuela elections 20 May
- OPEC meeting 22 June

Underlying/later

- Israel/Syria/Hezbollah brewing
- Yemen crisis/regional sectarianism
- Libyan elections September?
- Nigeria elections February 2019
- Unpredictable Oval Office

Potential supply at risk

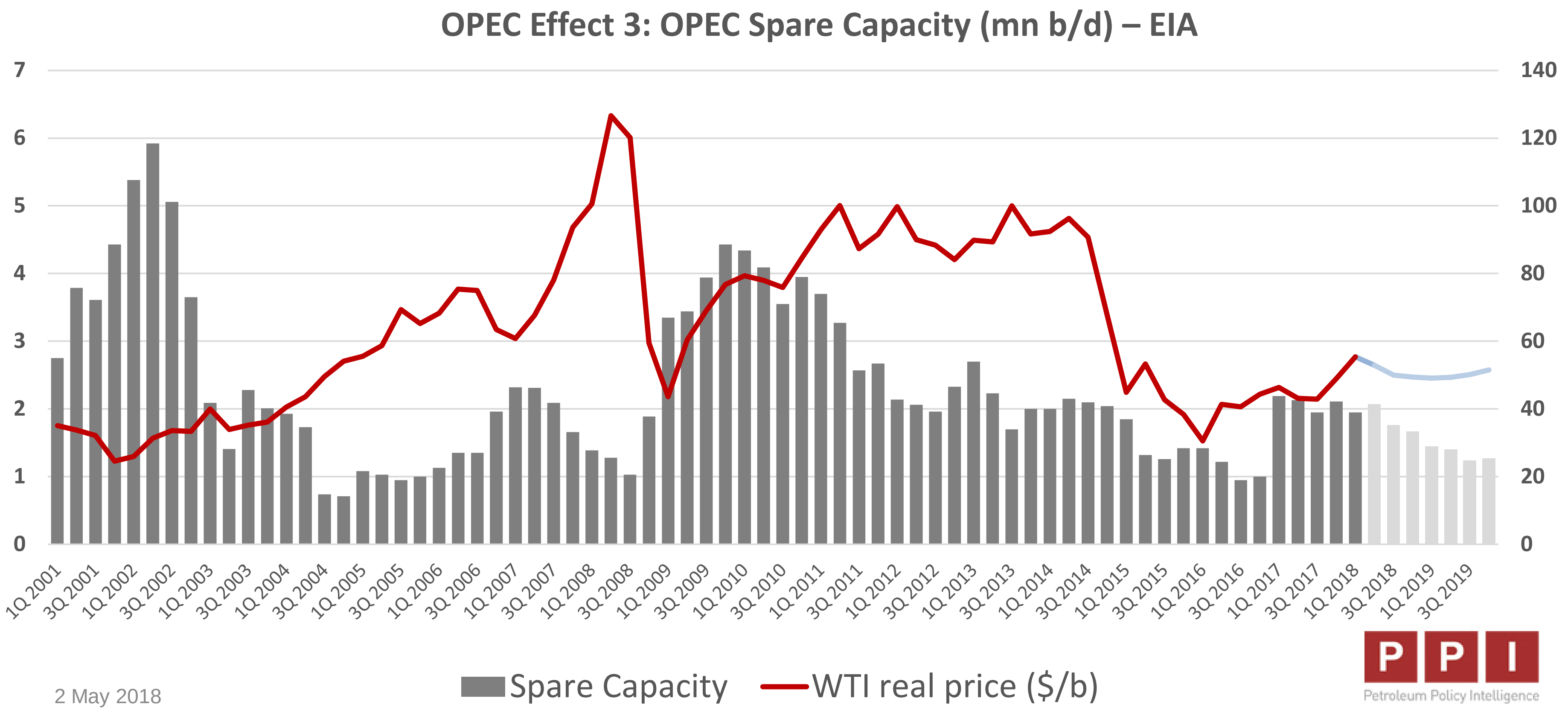
- Fiscal strain in many producer countries still significant
- Security has worsened
- Price impact of any combination would be significant

Stay-awake-at-night risks ('000 b/d)

Country	Supply at risk	Rating	Note
Venezuela	400	5	Baked in?
Iran	1,000	4	Market aware
Libya	800	3	Under-appreciated
Nigeria	400	2	Under-appreciated
Angola	100	2	Under-appreciated
Total	**2,700**		

Can market handle another crisis?

- Depends on whom you ask
- Short answer: no
- By some measures, OPEC spare capacity is dangerously thin and perilously close to historical price-surge territory



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Can the market cope?

Longer answer: maybe

By other measures, OPEC has larger cushion but uncertainty & just three countries would be key

OPEC effect 4: Who could add?

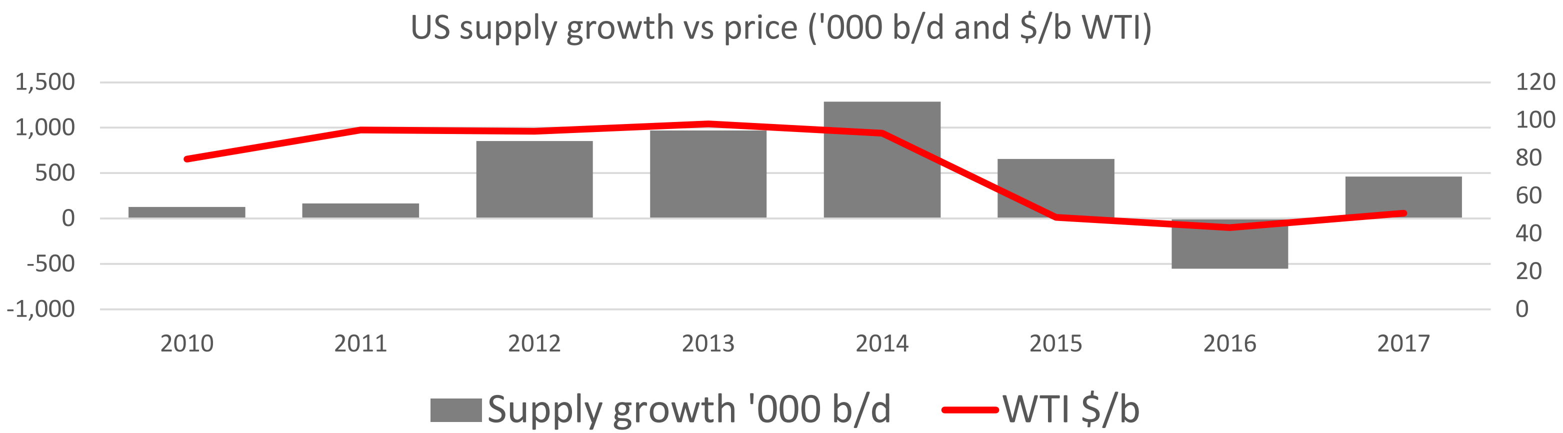
Country	Current	IEA spare estimate	PPI estimate
Algeria	980	1,080	1,050
Angola	1,520	1,600	1,520
Ecuador	520	540	540
Equatorial Guinea	130	130	130
Gabon	210	210	210
Iran	3,810	3,850	4,000
Iraq	4,440	4,750	5,000
Kuwait	2,700	2,940	3,400
Libya	990	1,020	1,100
Nigeria	1,650	1,700	2,000
Qatar	600	640	600
Saudi Arabia	9,920	12,100	11,000
UAE	2,870	3,180	3,180
Venezuela	1,490	1,500	1,300
Total	**31,830**	**35,240**	**35,030**
	Spare	**3,410**	**3,200**

Could non-OPEC rescue?

- Ex-US, fresh investment & supply at >$75 is guaranteed
  - Canadian oil sands, deep-water West Africa, Brazil, Guyana, Gulf of Mexico & Mexico
- Russian supply (sanctions eased?)
  - East Siberia, Bazhenov, difficult-to-extract fields, tax changes
- Arrest declines with more investment
- Ex-tight oil, upstream development has been slow
- *Big supply growth ex-US would take >three years*

US supply surging, but limited?

- US would be critical in short term
- EIA expects growth of 1.3mn 2018 & 750k 2019
- But:
  - Although costs down, they will rise
  - Faster growth = faster depletion
  - Multi-year fast US expansion not guaranteed
  - Since shale take-off, annual total US growth average ~650k b/d



End thought I – Real overheating risks

- Glut gone and market now one geopolitical event away from dangerous price rally
- OPEC shows little willingness to contemplate extra supply
- OPEC spare capacity already quite tight and would depend mainly on KSA

End thought II – At what price demand?

- No consensus:
  - “I have not seen any impact on demand with current prices. We have seen prices significantly higher in the past – twice as much as where we are today… there is the capacity to absorb higher prices.” Khalid al-Falih, Jeddah, 20 April
  - “Strong demand was because of the low cost of oil. You will see an impact on demand if it keeps rising to $80/b.” Patrick Pouyanné, Paris, 20 April

End thought III – Known unknowns

- Fed rate rises
  - Negative for demand?
  - Negative for US supply?
- Global economic growth
  - Trade war(s)
  - Cyclical recession overdue
  - Data starting to look ropey
- Technology breakthrough
- US turmoil
- Producer policy shifts

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Outline: Market context, policy and drivers

Policy versus non-policy oil market drivers

- **Oil market context:** short versus long-term factors
- **Beyond 2018**: rising volatility, supply predictability
- **Technology impact**: where is the marginal barrel?
- **Low cost oil producers**: generic challenges and responses
- **OPEC+ policy drivers**: Saudi Arabia/GCC in the driving seat
- **Iraq:** Deferring growth
- **Iran**: New sanctions threat

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Oil market view: short-term…

Short-term supply risks will pin oil above $60…

- The OPEC+ agreement is solid through end-2018
- More significant are looming 'non-policy' supply risks
- Limited spare capacity

…Longer-term, high prices will erode demand, spark fresh upstream investment

- **A new oil cycle – high prices will erode demand.** Lesson that appears not to have been learned yet risking a new price cycle with the investment dislocation that will bring
- **New upstream investment.** One of the arguments made for continued OPEC+ cuts is that upstream investment is presently insufficient to meet long-term demand growth

Beyond 2018 - rising volatility for price, supply

Beyond 2018, as oil prices and upstream economics settle into a higher range, **oil price volatility will also shift higher**. Why?

- The West's reduced political/security profile in MENA has allowed the proliferation of regional rivalries. These are barely held in check and now even encouraged by the US
- Failing states and civil conflicts (Libya, Syria, Iraq)
- Collapsing oil producer economies, unable to adjust to lower oil prices or diversify away from oil-reliance (Nigeria, Venezuela)

These factors have the potential to restrict oil supply or create perception of looming shortages, spiking oil prices.

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Technology and oil's new marginal barrel

Factors that will erode oil demand growth are driven mostly by **technology advances**, helped by climate change mitigation policies that seek to reduce demand for oil as a transportation fuel. These include:

- EV penetration as production at scale starts, acceptability rises
- Ride-sharing, autonomous vehicles, challenges to the private ownership model
- The use of gas/LNG as a truck, marine fuel. Electrification of bus fleets.
- Emerging campaigns against plastics use

The challenge for low-cost oil producers

Low cost oil producers in OPEC will always compete effectively in terms of the standalone oil economics. The core challenge is their capacity to diversify economies away from reliance on hydrocarbon-related revenue.

Saudi Arabia's reform strategies offer an insight here:

- **Progress on reform strategies**
- In the near term, **cost savings** required to match oil-related income to sustainable oil prices that do not induce cyclicality.
- **Capturing greater value through downstream investments**
- **Privatization of Saudi Aramco**

OPEC+ policy drivers

Saudi Arabia, GCC driving OPEC+ cooperation

- Focus on evolution of OPEC+ pact in the long term
- OPEC committed to multilateralism
- Iran, Iraq – critical OPEC players ex-GCC

Iraq – Deferring growth

Iraq supply growth plans look real

- Election outcome key to upstream progress
- Higher oil prices and loans have patched budget holes
- Iraq formally backs OPEC policy
- Upstream growth plans to add 400-500k b/d by end-2018 are credible
- Post-elections deal with KRG implies extra 300,000 b/d of Kurdish oil?
- How long will Iraq defer growth under OPEC agreement?

Iran – New sanctions threat

US decision on sanctions waiver will set tone

- Iran oil sector growth already stalled
- IPC and new investment sluggish
- Implementation of sanctions relief sub optimal, even if US stays in JCPOA
- Risk of greater sectarian conflict in region will hurt long-term growth plans
- Risk of conflict targeting energy facilities