



RAPIDAN
ENERGY GROUP

BUCKLE UP: VOLATILE OIL MARKETS AND GEOPOLITICS

**Address to the United States Energy
Association's 12 Annual Supply Forum**

October 2, 2019 Washington, DC

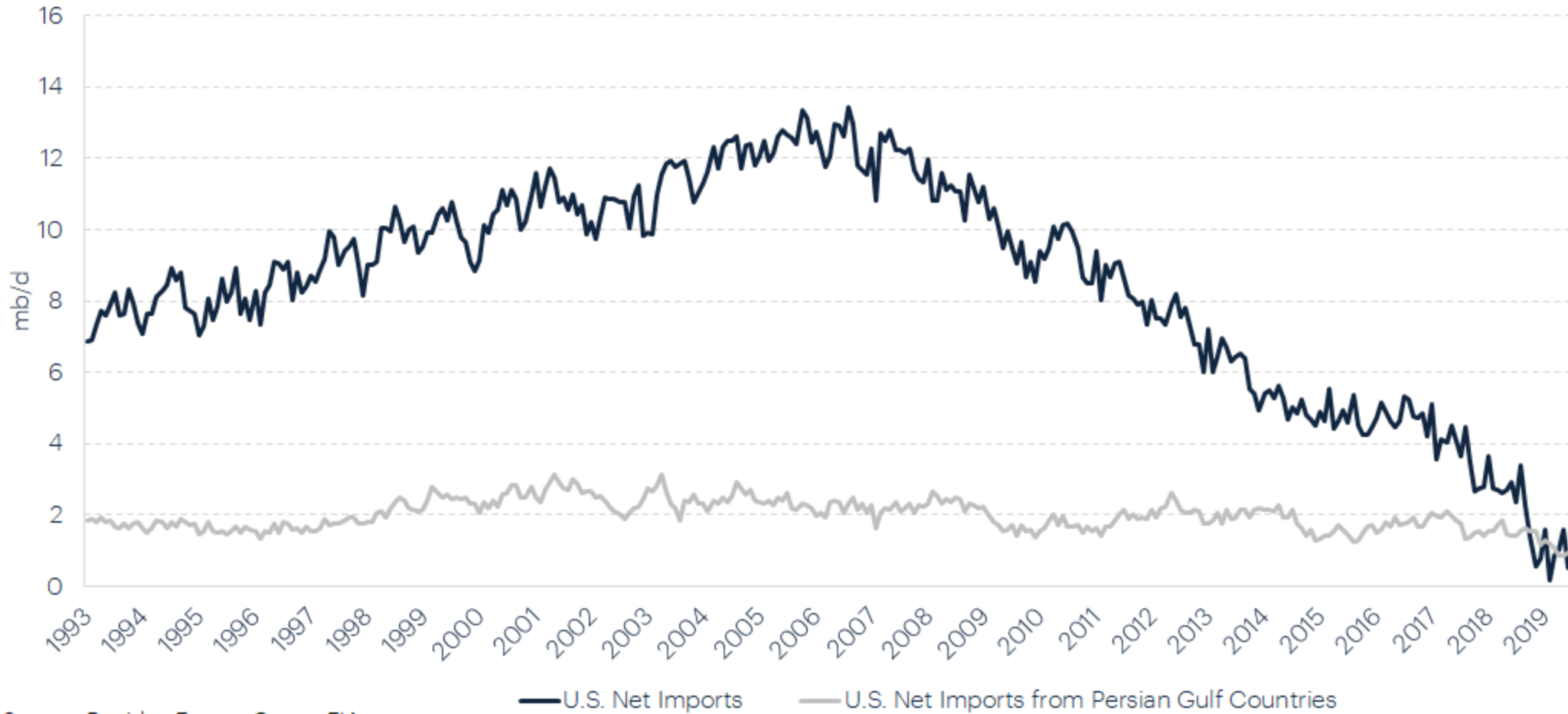
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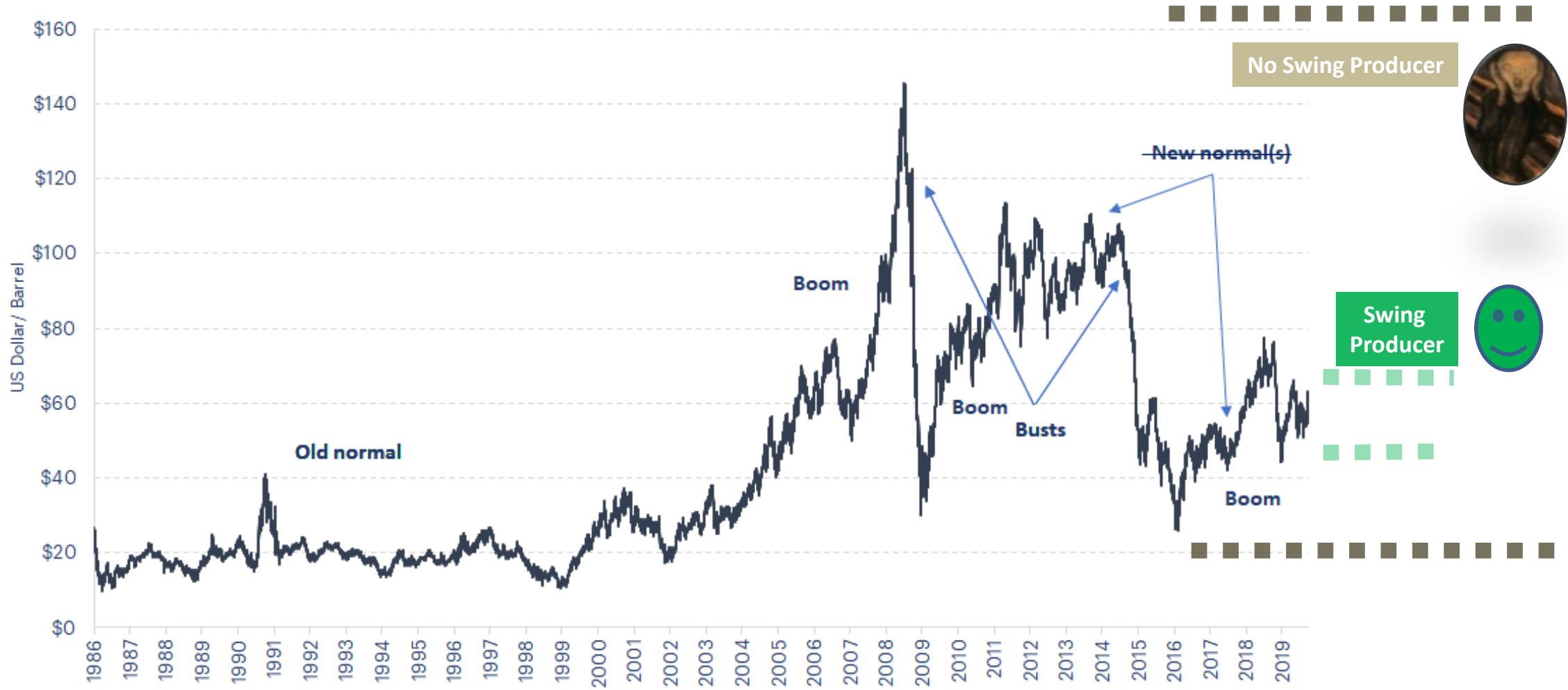
WASHINGTON, DC

US Net Imports of Crude Oil and Petroleum Products



Source: Rapidan Energy Group, EIA

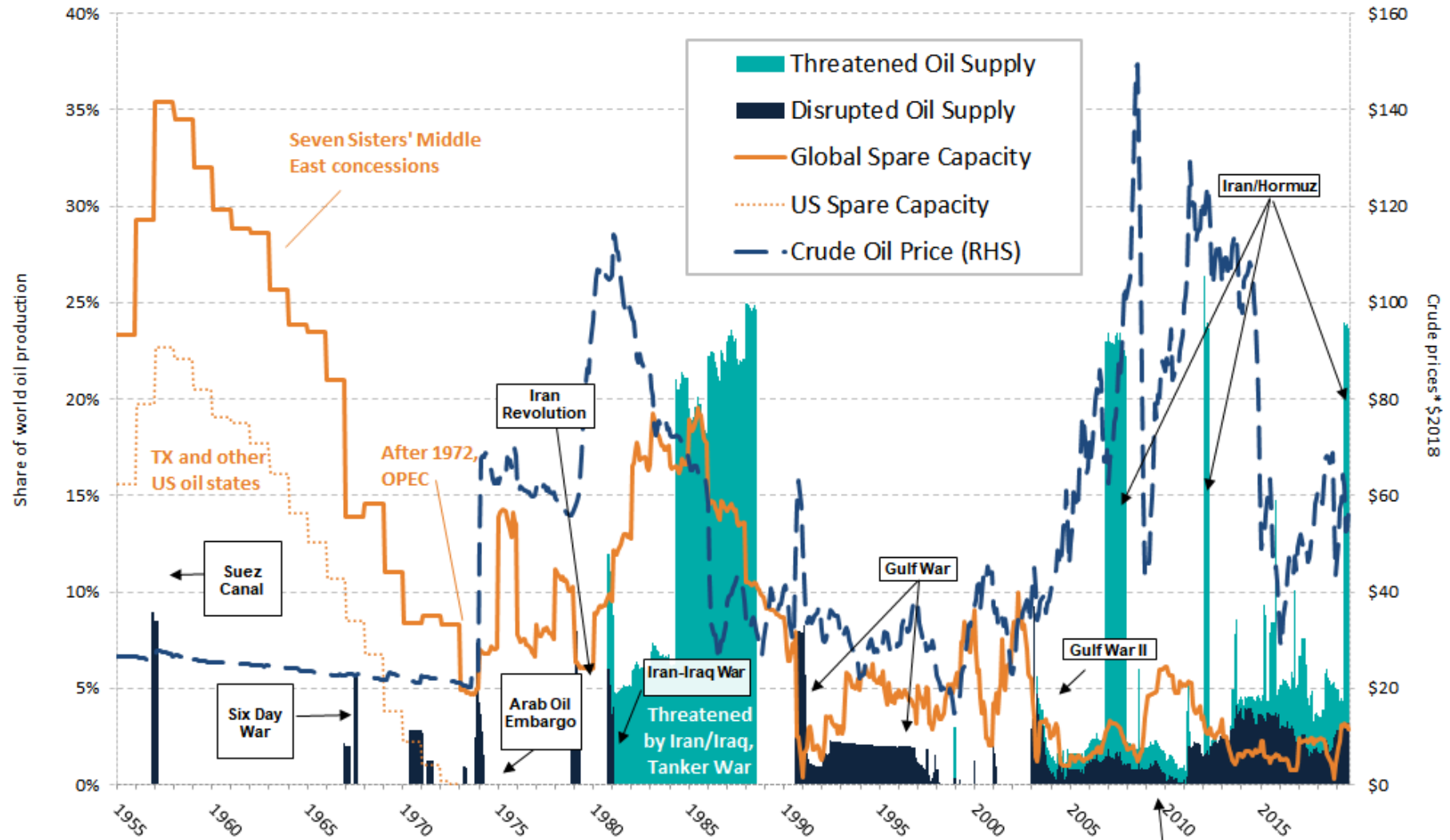
Daily WTI Spot Price



Source: EIA, Rapidan Energy Group

No Spare Capacity, No Peace

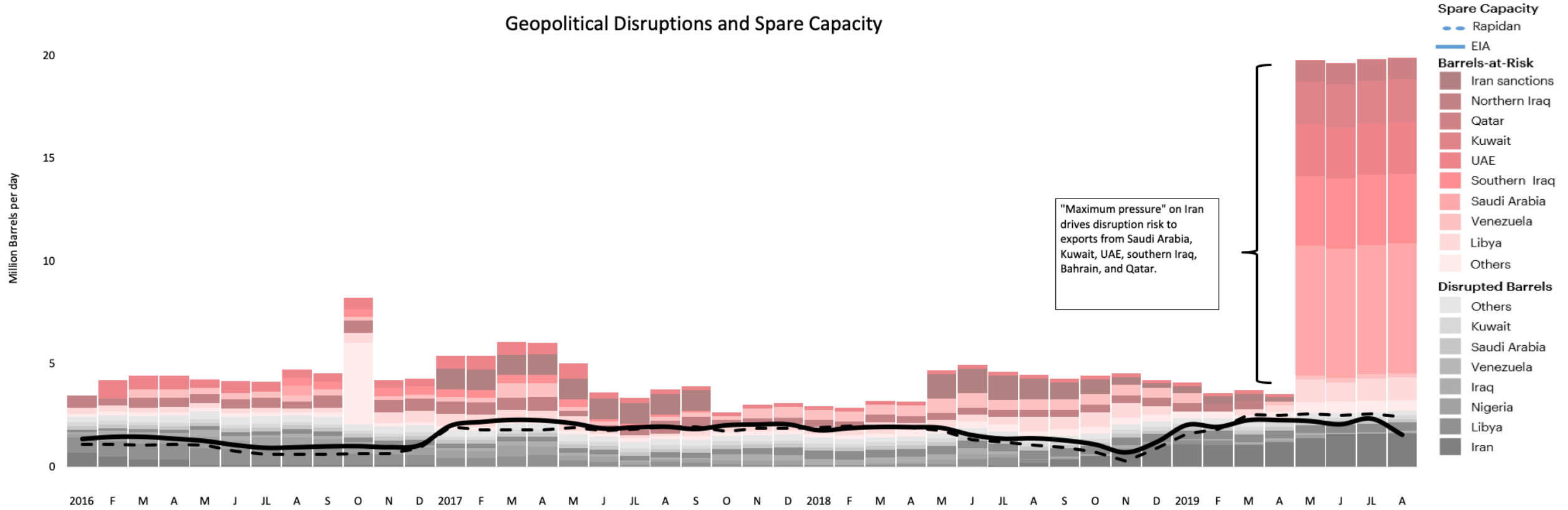
Oil Disruptions, Spare Capacity, and Crude Prices



Data: Rapidan Energy Group, EIA, BP, St. Louis Fed, US Senate
 * WTI prices prior to May 1987, Brent from that point forward

VZ '02-'03/'15->, Iraq '03->, Nigeria '03->, Libya '10->, Iran '12-> and others

Geopolitical Disruptions and Spare Capacity





**** Flagging Saudi Arabia's overlooked 7.0 mb/d Abqaiq crude stabilization plant - by far the most important oil facility in the world - amid rekindled concern about vital Middle East oil infrastructure and choke points.** Recent attacks on vessels and pump stations in the Middle East have rekindled market and media interest in the region's vulnerable oil and gas infrastructure. We notice many rundowns of critical infrastructure focus on terminals such as Ras Tanura or Fujairah and chokepoints such as the Hormuz and Bab el Mandeb straits. But they overlook one facility that dwarfs them all in terms of strategic necessity (near and long term) to the oil market and world economy - Saudi Arabia's Abqaiq crude processing facility located in the Eastern Province. Abqaiq's spheroids and 18 stabilizer columns depressurize and desulfurize up to 7.0 mb/d of Saudi crude (primarily light and extra light) so it can be safely exported. While over twice as much oil flows through Hormuz as Abqaiq, Western militaries have the means to quickly reopen Hormuz's systemic vulnerability that cannot be quickly repaired, replaced, or replaced. an attack on the plant would cripple most Saudi production and exports for a long time. Al Qaeda's unsuccessful attack in February 2006 demonstrated the high on the target list for any astute adversary aiming to inflict high damage through an inside job, cyber, missile barrage, and/or precision drone strikes. We add this to this bullet because we have no reason to believe an attack again is unlikely. But if you're making and monitoring a list of critical energy in the region, Abqaiq is at the very top.



May 15, 2019

Global Oil Service

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July 2019

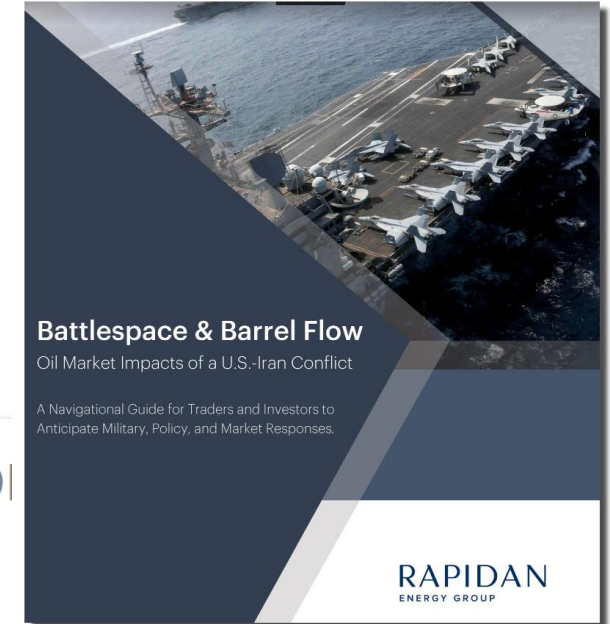
Wild card

Abqaiq processing plant rendered unusable for 6 months

While this report has so far considered only a military escalation that blocks commercial shipping through Hormuz, Iran's military doctrine prioritizes asymmetric attacks on land-based targets, including oil infrastructure. Top land targets include the 3.4 mb/d Ras Tanura and nearby 3.1 mb/d Ju'aymah crude terminals on the Saudi Gulf coast and Yanbu's 6.6 mb/d King Fahd export terminal on the Red Sea. Other targets include the Shedgum gas plant and East-West Pipeline pumping stations (two of which were recently hit by Iranian proxies in May, apparently operating from Iraq).

Abqaiq is a 1.15 square mile complex

By far the most important land target is the 7.0 mb/d capacity Abqaiq crude stabilization plant located in Saudi Arabia's eastern province, near



The World Dodged a Bullet on September 14, But Is Not Out of the Woods

