Oil Markets:
Active Crisis Management in Times of Uncertainty

Prepared for FIRJAN

IHS Markit Consulting

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There has been a significant economic slow down in most of the world and a recession is starting in Latin America

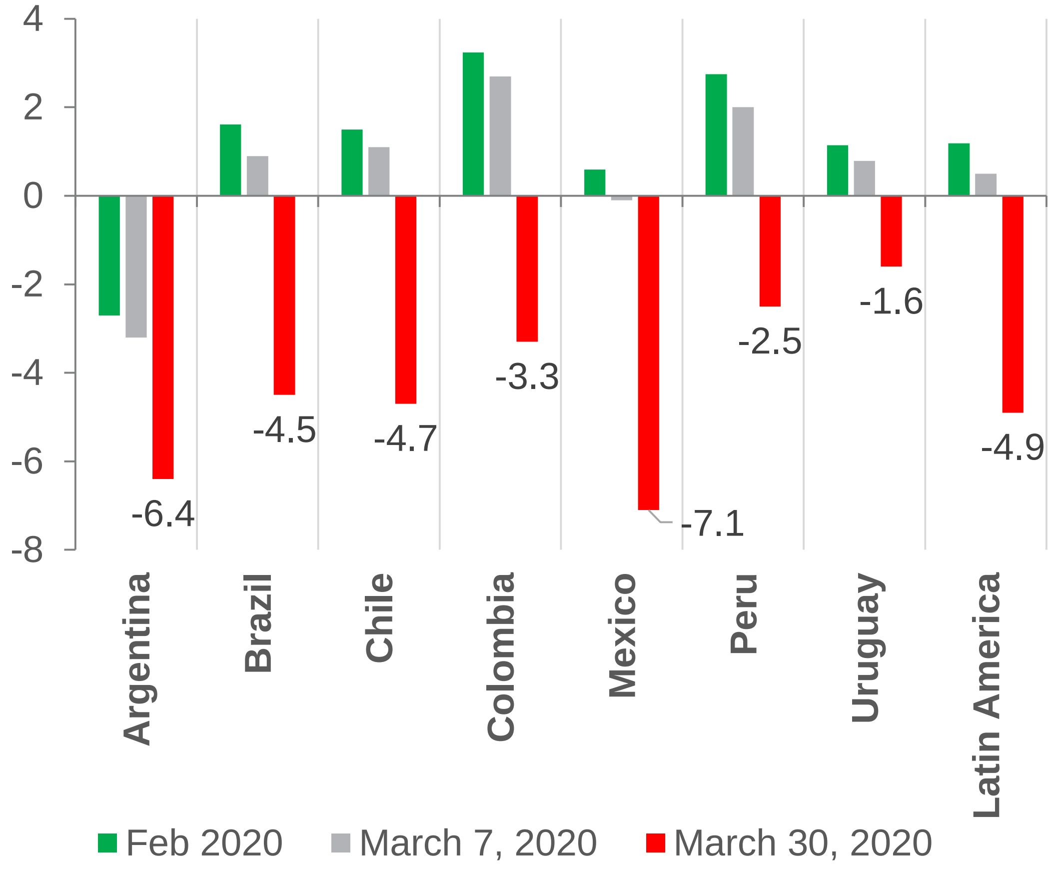
Real GDP growth

Percentage

	2018	2019	2020	2021	2022
World	3.2	2.6	-3.0	3.9	3.6
United States	2.9	2.3	-5.4	6.3	4.0
Canada	2.0	1.6	-5.5	4.9	3.3
Eurozone	1.9	1.2	-4.6	1.2	1.7
Argentina	**-2.5**	**-2.2**	**-6.4**	**0.5**	**0.6**
China	6.7	6.1	2.0	6.3	5.6
Japan	0.3	0.7	-3.3	1.3	0.6
India*	6.1	4.9	-1.0	5.2	7.1
Brazil	**1.3**	**1.1**	**-4.5**	**3.4**	**3.2**
Russia	2.5	1.3	-3.6	0.8	1.9

2020 GDP growth forecast

Percentage



Source: IHS Markit

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And the oil markets are facing a perfect storm

How will this crisis unfold?	▪ It begins with consumers drastically curtailing road and air travel. Second, refineries sharply reduce the volume of crude oil they process. Third, storage tanks and tankers fill to capacity. ▪ Producers start shutting in production if and when they can no longer find buyers or storage for their oil
How large is the oil supply surplus?	▪ World oil supply will exceed demand in the first half of the year by ~ 1.2 billion bbl, which is within the available global crude storage capacity after the OPEC+ deal in March. ▪ Most of this previously unimaginable surplus will be concentrated in March, April, and May, when 100 MMbbl or more could be added each week to inventories.
How long will it last?	▪ The economy will eventually recover, and demand will stop falling. Very low oil prices will lead to lower upstream spending and fewer new oil wells drilled, especially in the U.S. ▪ We expect an oil supply deficit in 2021, but a severe stock overhang will keep prices depressed. A severe decline in US production will drain some of the inventory overhang in 2021, and prices will rise, albeit from low levels.

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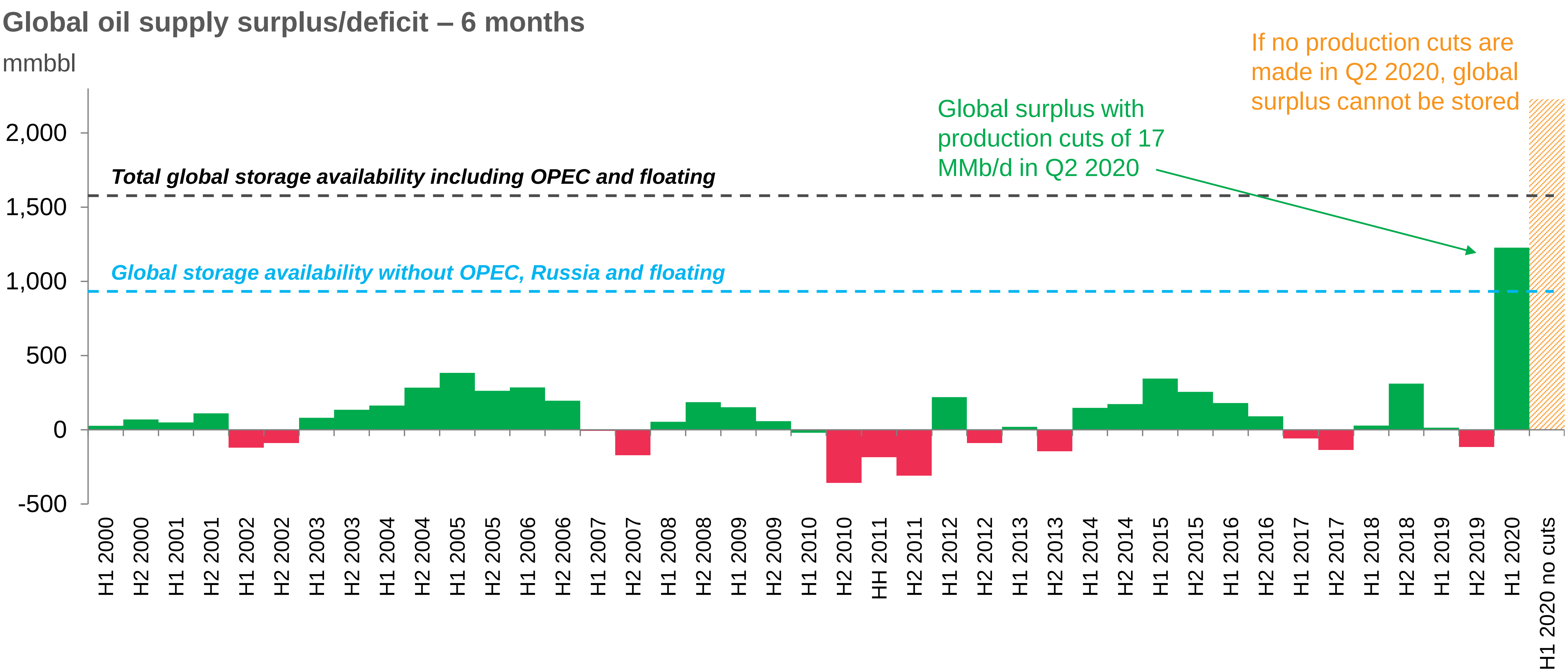
1 All references to China in this report exclude Hong Kong, Macao, and Taiwan, unless noted otherwise.

Cooperation among the world's three largest oil producers helps keep global oil excess supply within the limits of available storage capacity



Regional and local supply/demand/storage issues will be far more problematic

Note: Supply surplus/deficit is calculated by subtracting global oil (liquids) demand from global oil (liquids) supply.
Source: IHS Markit

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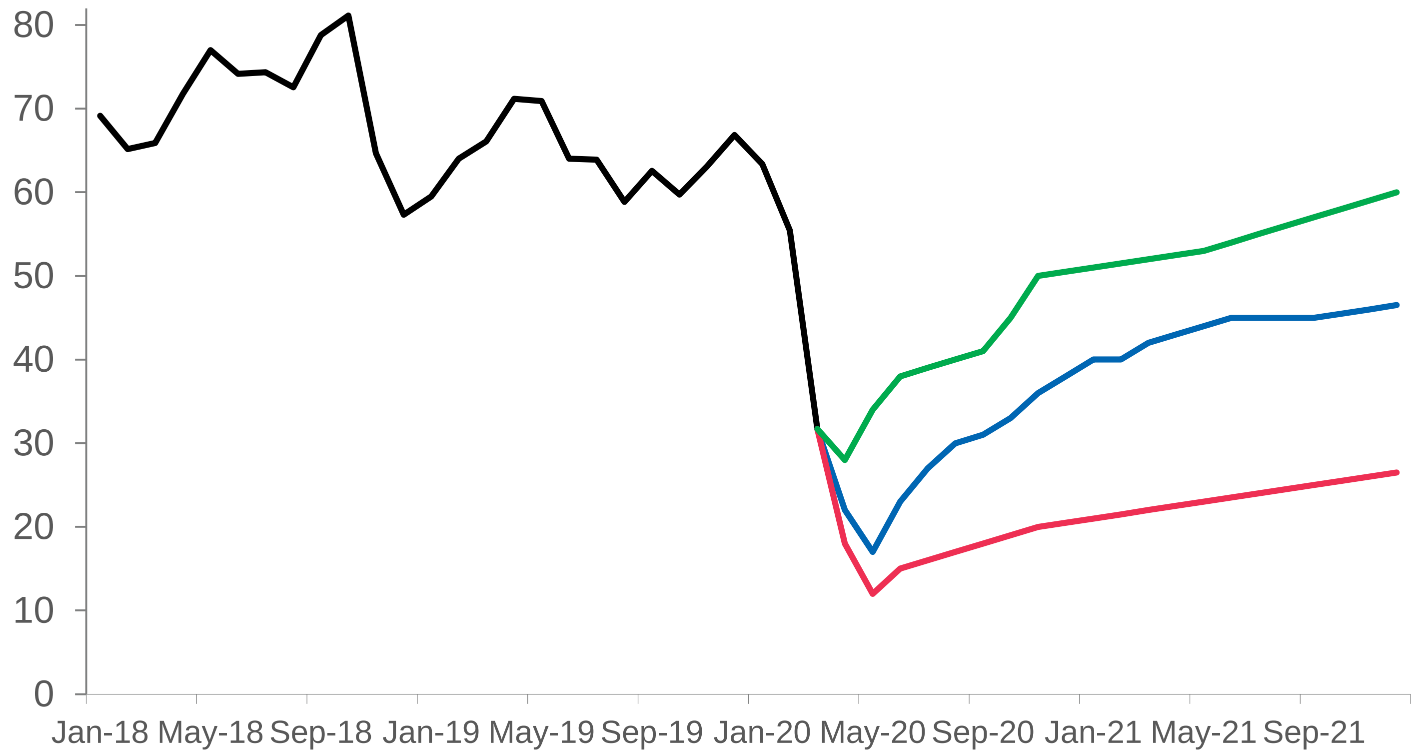
But oil prices are expected to remain low in the next few months to balance the market

IHS Markit Brent price scenarios (April 15th, 2020)

$/bbl



Average price ($/bbl)

	2020	2021
Rapid demand recovery scenario	43	55
Temporary demand decline and supply management scenario	34	44
Prolonged demand decline scenario	26	24

Note: Prices shown are indicative monthly price averages and not intended to project daily/weekly high and low prices.
Source: IHS Markit, Argus Media Limited (historical prices)

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Can some of the best-practices of the 2015 oil price downturn still prove valuable today?

How the oil industry cut costs to make up for lower prices since 2015

- Potentially structural
- Cyclical

Project improvements

Design changes
- Smaller production units
- Switch to subsea tie-backs
- Simplified (standard) design
- Modular concepts

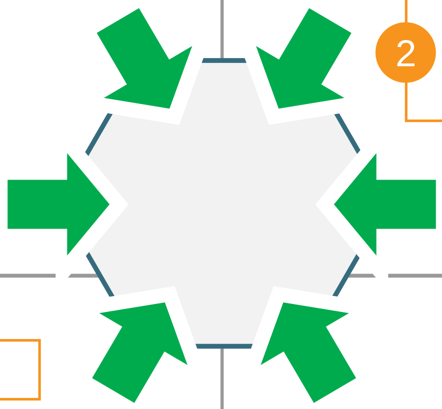
Refinements
- Smaller production units
- Switch to subsea tie-backs

Efficiency gains

Operations optimization
- Shorter drilling days
- Optimized use of drilling consumables
- Less engineering / project management hours

2
- Automation and de-manning
- Remote and condition-based inspection (analytics)
- Improved inventory management (standardization)

Supply chain management
- E&P pressure to reduce supplier margins



Project high-grading

1
- Active portfolio management
- Focus on best projects
- Maximizing value from existing resources
- Drilling only the best wells
- Developing only best part of reservoir

Exogenous forces

Service sector cost deflation
- Oversupplied sectors leading to lower day rates

Currency devaluation
- Local OFS costs reduced in US dollar terms

3
Improved fiscal / contractual terms
- Royalty reductions, accelerate

Source: IHS Markit Strategic Report “Making Ends Meet, How the oil industry is cutting costs to make up for lower prices” (May 2017); “Structural cost reductions: The industry savior” (August 2018)

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Background

- Mr. Cuenca is a Director in IHS Markit Upstream Consulting for Latin America. He is an expert in the regional energy markets, with broad and deep expertise in quantitative modelling, market fundamentals and investment evaluation.
- Prior to joining IHSM, Horacio worked for Wood Mackenzie for over 6 years, where he led the Latin America upstream research group. Prior to that he was part of IHS in London for 5 years and held various positions in Ecuador's NOC and private operators.
- Horacio has a Master's in Economy for the energy industry from Scoula Superior Enrico Mattei in Milan.

Industry experience

- Corporate Strategy / Business Unit Strategy
- Portfolio Optimization
- Country Entry Strategy
- Energy Policy
- Market Studies / Scenario Analysis
- Performance Improvement / Capital Productivity

Selected experience

- **Future technology impact on cost and emissions for offshore developments in Brazil –** led the upstream component of a six-month, multi-industry study looking to reflect the potential for disruptive technologies to reduce costs and emissions in the Brazilian offshore industry.
- **Argentina unconventional benchmarking dashboard** – developed KPIs linked to key drivers of value creation & goals for a operational performance dashboard for the largest shale operator in Argentina.
- **IPO support for Brazilian Independent Oil Company –** To provide an understanding of the economics of the potential exploration and development of 22 offshore blocks in order to support the company's IPO.
- **Brazilian bidding round assistance –** Valuation of selected blocks offered in the 9th Bidding Round 2007 to assist an independent oil company prepare a successful bid.
- **Expert Witness on Valuation.** Arbitration case between a Major and West African State provided an independent commercial evaluation of an offshore block, including undeveloped discoveries and exploration acreage, for the ICSID tribunal.
- **Southern Russia gas supply potential and cost of supply –** estimated the potential cost of supply from all fields and prospects -and the position of possible competitors- to develop an entry strategy for a large player to an area with unknown potential in Southern Russia.

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