



DUFF & PHELPS

Webcast:  
Coronavirus Update – Impact on Valuing Private Investments

*22 July 2020*

# Panelist Bios



# Hakim Abdeljaouad

## Director, Valuation Advisory, Duff & Phelps



Duff & Phelps, Ltd  
Dubai  
+971 (0)56 1156 109  
Hakim.Abdeljaouad@duffandphelps.com

Hakim is a Director in the Abu Dhabi office and lead the Valuation Advisory practice in Middle East. Hakim has more than 11 years of experience in valuation and corporate finance, and specializes in the valuation of illiquid securities, businesses and intangible assets.

Hakim has performed valuations of equity and debt instruments across a broad spectrum of industries and geographies under the IPEV Guidelines. His clients have included a range of alternative investment fund managers, including private equity, private debt fund managers, hedge fund managers and sovereign wealth funds. His experience includes assisting a broad range of international clients in determining values for financial reporting, tax, business strategy planning and restructuring, transaction advisory support and merger and acquisition purposes.

In addition, Hakim has worked on numerous assignments valuing intangible assets for IFRS 3, IAS 36 and IAS 38 requirements (and U.S. equivalents) including the valuation of customer and other relationships, contracts, licenses, assembled work forces, covenants not to compete, patents, technology, and trade names.

Hakim assisted clients in valuation matters including:

- Assisting alternative fund managers in establishing valuation policies and procedures that meet investor and regulator standards of top tier governance and independence
- Providing independent third-party valuations of the underlying assets of alternative funds
- Performing fairness opinions
- Purchase price allocations and asset valuations under IFRS and US GAAP
- Estimating the Fair Value of intangible assets and goodwill impairment tests
- Equity and asset valuations for tax purposes

Before relocating to the UAE, Hakim was part of the Valuation Advisory practice in London. Prior to joining Duff & Phelps, he was a manager in the valuation department of EY's global financial services practice in London. Previously, Hakim worked as an analyst in the financial advisory services division of Houlihan Lokey and a credit analyst at Bank of America Merrill Lynch.

Hakim is fluent in Arabic, English and French and holds an MSc in Finance from the Kedge Business School (France).

# Ryan McNelley

## Managing Director, Alternative Asset Advisory, Duff & Phelps



Duff & Phelps, Ltd  
London  
+44 (0)20 7089 4822  
Ryan.McNelley@duffandphelps.com

Ryan McNelley is a managing director in the London office of Duff & Phelps, and part of the Portfolio Valuation service line within the Alternative Asset Advisory business unit. Ryan's clients primarily include alternative investment fund managers, including private equity and private debt fund managers, hedge fund managers, infrastructure fund managers, real estate debt fund managers, etc., in both Europe and in the U.S. Ryan assists such clients in all matters related to valuation:

- Assisting alternative fund managers in establishing valuation policies and procedures that meet investor and regulator standards of top tier governance and independence
- Providing independent and objective third-party valuations of the underlying assets of such funds in order to validate whether the fund manager's valuations are fair and reasonable
- Assisting with the valuation of the carried interest of the fund for tax or management incentive purposes
- Performing fairness opinions when assets are transacted between related parties
- Benchmarking the returns of the fund, with the aim of identifying and quantifying the manager's unique contribution to value creation

Ryan is a regular speaker at conferences across Europe and is part of several industry working groups and trade organisations. Most notably, Ryan was a contributing author to the Alternative Investment Management Association's (AIMA) Guide to Sound Practices for Hedge Fund Valuation, and is a member of Invest Europe's Working Group on Accounting Standards, Valuation and Reporting. In addition, Ryan has been regularly quoted in the financial press, including in publications such as the Wall Street Journal, the Financial Times, Private Equity News, Private Debt Investor, and others. Ryan specializes in the valuation of illiquid ("hard-to-value", or Level 3) investments, typically under the IFRS 13, ASC § 820 or other local GAAP Fair Value standards used by alternative investment managers. Ryan's experience includes the valuation of the following asset types:

- Senior, subordinated and mezzanine debt; revolving lines of credit, delayed draw facilities, asset backed loans
- Common equity, preferred equity, convertible preferred equity and hybrid instruments
- Non-performing loans and loan portfolios
- Litigation claims
- Fund management companies and limited partner interest

Ryan's past experience includes seven years in various finance and business management roles at Maxim Integrated Products, a Silicon Valley semiconductor company. Ryan received his B.S. in Business and Economics from Saint Mary's College of California in 1997, and his M.B.A. with a specialization in Corporate Finance from Cornell University in 2006

DUFF & PHELPS



# Duff & Phelps

Duff & Phelps is the global advisor that protects, restores and maximizes value for clients in the areas of valuation, corporate finance, disputes and investigations, cyber security, claims administration and regulatory issues. We work with clients across diverse sectors on matters of good governance and transparency.



# Enhancing Value Across a Range of Expertise

## VALUATION ADVISORY

Valuation and consulting for financial reporting, tax, investment and risk management purposes

- Valuation Services
- Alternative Asset Advisory
- Real Estate Advisory
- Tax Services
- Transfer Pricing
- Fixed Asset Management and Insurance Solutions



## CORPORATE FINANCE

Objective guidance to management teams and stakeholders throughout restructuring, financing and M&A transactions, including independent fairness and solvency opinions

- M&A Advisory
- Fairness and Solvency Opinions
- Transaction Advisory Services
- ESOP and ERISA Advisory
- Private Equity - Financial Sponsors Group
- Distressed M&A and Special Situations
- Private Capital Markets and Debt Advisory
- Financial Restructuring



## GOVERNANCE, RISK, INVESTIGATIONS AND DISPUTES

Combined Duff & Phelps and Kroll risk management and mitigation, disputes and other advisory services

- Business Intelligence and Investigations
- Global Disputes Consulting
- Global Restructuring Advisory
- Cyber Risk
- Legal Management Consulting
- Security Risk Management
- Compliance Risk and Diligence
- Compliance and Regulatory Consulting



## BUSINESS SERVICES

Leading global provider of complex claims administration and business services through its proprietary software and industry leading management team.

- Restructuring
- Global Corporate Actions
- Settlement Administration
- Notice Media Solutions
- Contract Review and Contract Management



The Economic Impact Felt in the GCC Countries

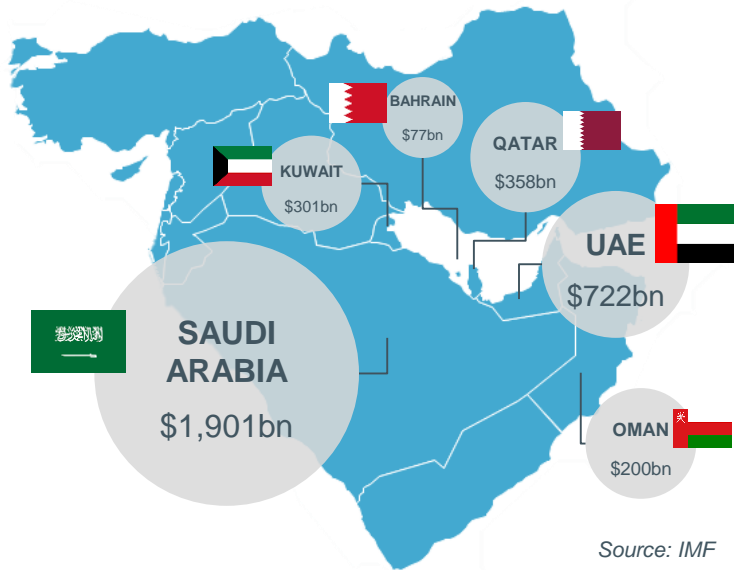




# Gulf Cooperation Countries (GCC) Economic Overview

## Gulf Cooperation Council (GCC) Members

Total 2019 GDP



## Key stats on GCC GDP Growth:

As of June 2020

**- 4.4%**

Overall real GDP  
Growth/(Contraction) in 2020

**- 5.3%**

Oil GDP Growth/(Contraction) in 2020  
Due to OPEC+ production-cut agreement

**- 3.8%**

Non-Oil GDP Growth/(Contraction) in 2020  
Due to virus-containment measures, plunge in oil prices,  
and lower public spending

Source: International Institute of Finance

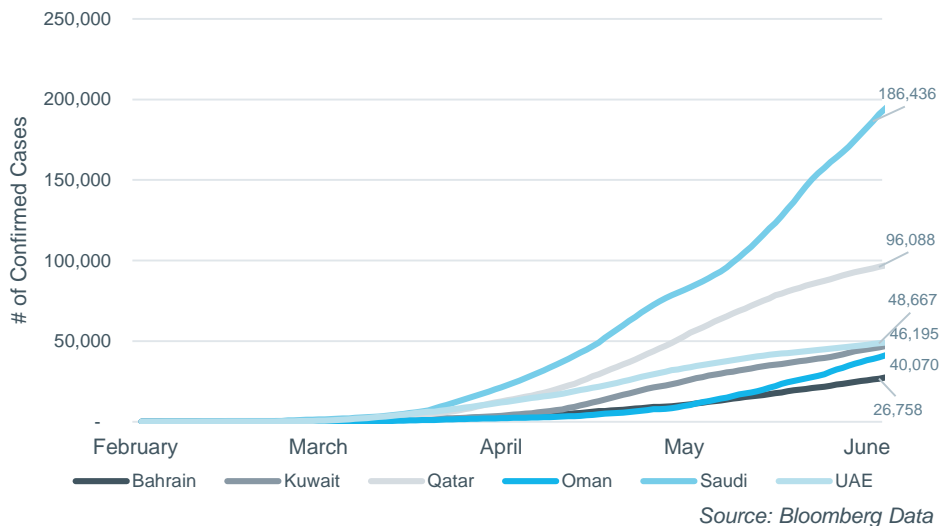
## Current Scenario and Impact of COVID - 19

- The Gulf Cooperation Council (GCC) members, having a relatively high dependence on oil as a source of income, are experiencing a dual shock: the COVID-19 pandemic and lower oil prices. The pandemic is having tragic human consequences. The necessary containment measures are having detrimental effects on the global economy and world trade. Overall demand is shrinking. Production and productivity are dropping. The pandemic's economic effect has been termed as the biggest economic challenge faced by GCC in its history.
- A decline in hydrocarbon revenue from **\$326 billion in 2019 to \$200 billion in 2020** is also projected. Saudi Arabia, Kuwait, Qatar, and the UAE, with large public foreign assets, are better placed to accommodate large deficits than Bahrain and Oman.
- In Saudi Arabia, the **Vision 2030** initiative outlining reforms that had been planned to achieve income diversification would have to be stalled, with the government beginning to implement austerity measures including a steep hike in value-added tax.
- The hit taken by airline and hospitality sectors due to the pandemic has deeply impacted the UAE which is the most diversified economy of the region with 71% of its GDP accruing from non-oil sectors. S&P Global warned that Dubai's economy was set to shrink 11% this year, as the Middle East's trade and tourism hub, has been hit hard by coronavirus-containment measures and is set for an economic contraction almost four times worse than during the global financial crisis in 2009.

# Impact of COVID-19 and Oil Price Crash on the GCC Countries

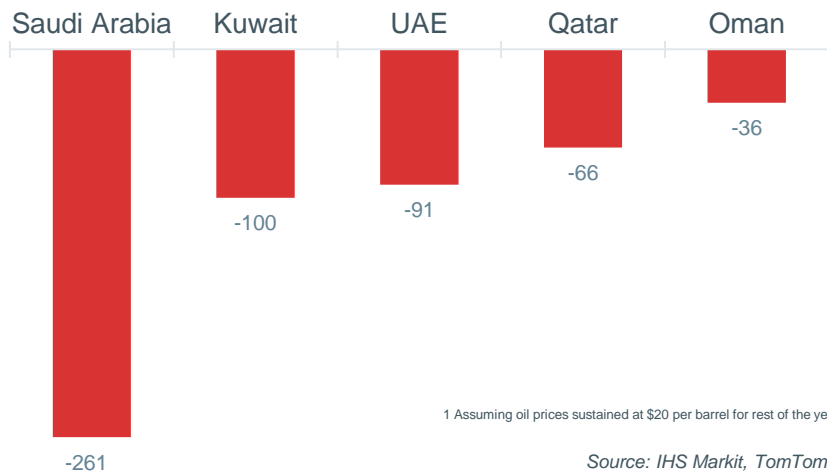
## COVID-19 Confirmed Cases

(Gulf Cooperation Countries since March 1, 2020)



## Loss in state oil revenue for 2020<sup>1</sup>

(US\$ millions/day)



## Scenario

- The Covid-19 pandemic coupled with oversupply resulted in oil prices reaching their lowest in decades with Brent futures down to \$16 a barrel.
- It forced OPEC countries to commit to oil production cuts with a 23% cut in output for May and June 2020 relative to an October 2018 baseline (also used in the previous two rounds of cuts).
- Oil production cuts will ease to 18% for the second half of 2020 then 14% throughout 2021. The scale and duration of the agreement is unprecedented.
- However, it has not been enough to compensate for the short-term demand shock from lockdowns so Saudi Arabia has voluntarily reduced its production by a further 1m b/d for June (to 7.5m, more than a third below its peak output of 12m in April) and other Gulf states have also made further cuts.

## Effect on Fiscal Deficit

- Most Middle Eastern countries were running a fiscal deficit even when average oil prices were at \$64 per barrel. Therefore, forecasts for oil prices to be at a maximum of \$36 per barrel throughout 2020 poses a challenging situation in terms of controlling the fiscal deficit.

## GCC Fiscal Deficit Forecasts (% of GDP)

**- 10.3%**

IMF (April 2020)

**- 9.3%**

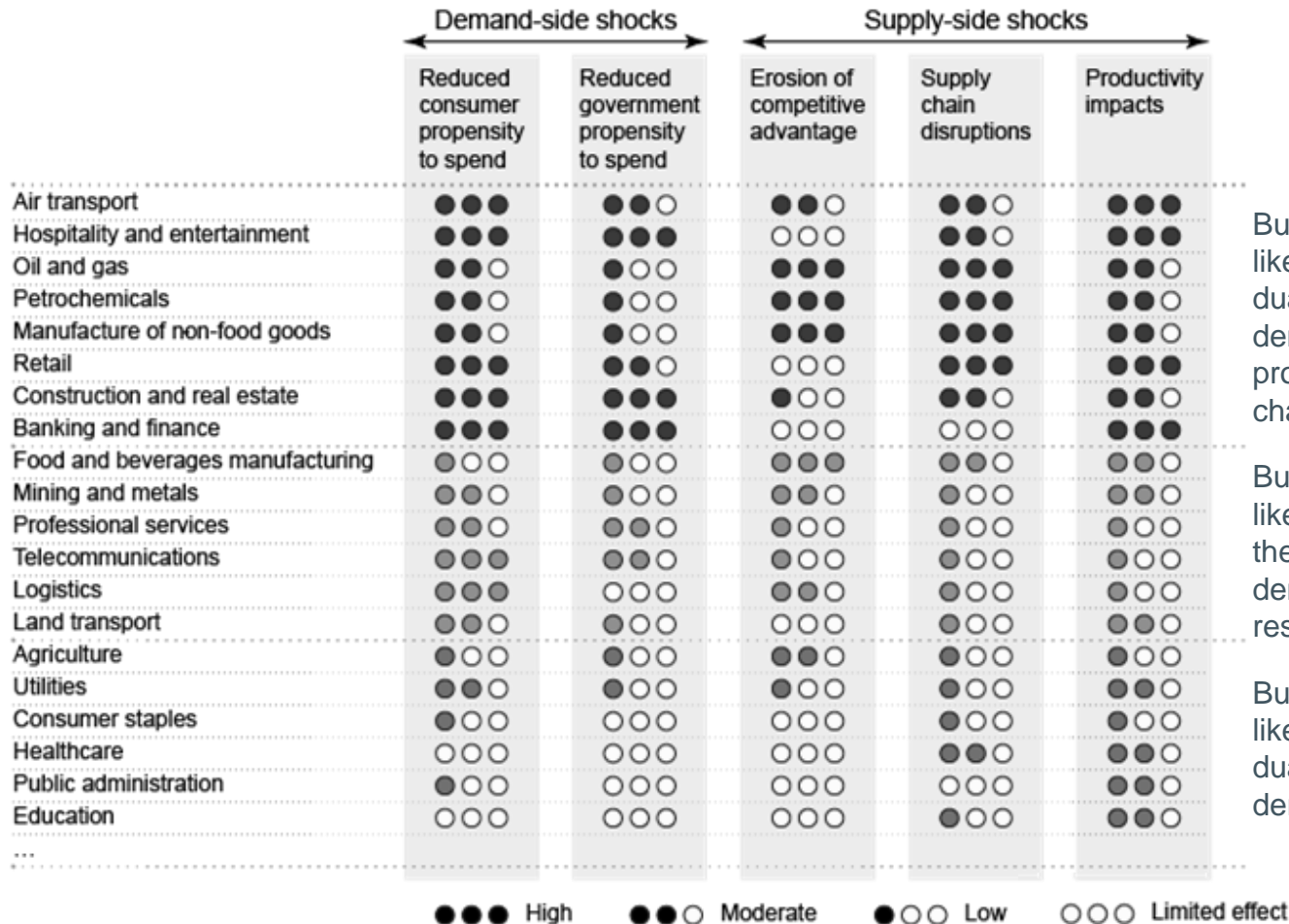
World Bank (April 2020)

**- 6.5%**

Average change vs October 2019

# Sectors Impacted by the COVID-19 Pandemic

GCC's seven worst-affected sectors are expected to endure large and prolonged economic disruption, requiring government support.








Businesses in these sectors are likely to be **heavily affected** by the dual shock, with great reductions in demand and disruptions to productivity, input costs, and supply chains

Businesses in these sectors are likely to be **moderately affected** by the dual shock, with reductions in demand and disruptions to key resources

Businesses in these sectors are likely to be **lightly affected** by the dual shock, with limited shock to demand and supply

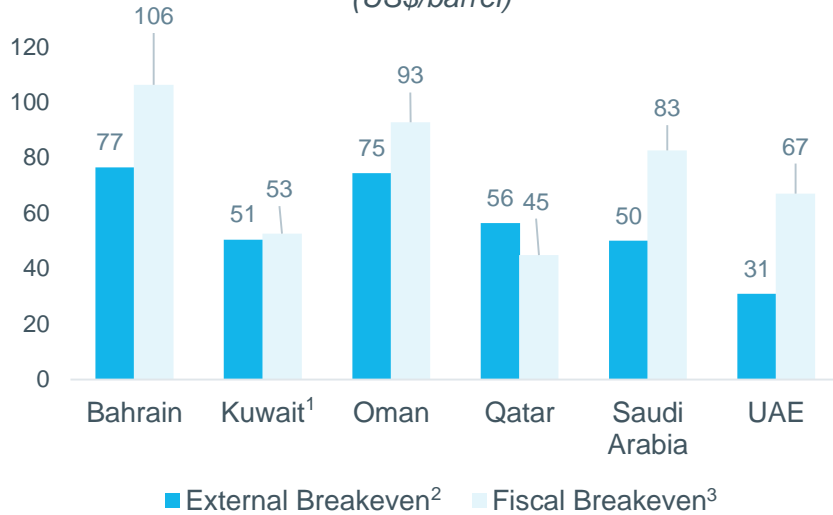
Source: Strategy& analysis

# Sectors Impacted by the COVID-19 Pandemic

Affected Sectors	Potential Impact
 <b>Healthcare</b>	<p>The healthcare sector is expected to experience a short-term decline of about 15%-20% in revenues in 2020. This will be a result of reduced consumption caused by delays in elective surgery and lower purchases of medicines due to fewer prescriptions. Shortages in medical devices like ventilators and test kits and operational issues, including the disruption of clinical trials and inadequate virtual care, will further exacerbate challenges.</p>
 <b>Travel &amp; Tourism</b>	<p>The travel and tourism sector accounted for \$245bn or 8.6% of total GDP in 2019, according to World Travel and Tourism Council (WTTC). For Middle East carriers, the forecasted revenue loss stands at \$24bn, with UAE airlines alone projected to face a loss of \$6.8bn and a passenger drop of 31 million. At a minimum, travel demand may not return to what it was before this pandemic until the end of 2021 and most probably into the later part of 2022. The containment measures have dented the kingdom's plans to diversify its economy away from oil, and have tourism contribute 10% of gross domestic product by 2030.</p>
 <b>Real Estate</b>	<p>Real estate is an important part of the UAE's activity. The current supply-demand imbalance in the sector, particularly in Dubai, has been exacerbated by the pandemic's effects. International demand for property in the UAE is expected to be subdued and the fall in residential prices to be steeper than expected, and lingering well into 2021. According to Alvarez &amp; Marsal, in Dubai, transactions were rising with volumes up 41.0% year-on-year in February. However, volumes for March dropped roughly 25 per cent year-on-year, pointing to a significant contraction in the market as potential domestic and overseas buyers stay at home. Many of the listed REITs have seen a steep decline in their share prices and market capitalisations.</p>
 <b>Capital Markets</b>	<p>Spikes in global risk aversion and the flight of capital to safe assets have led to a decline in portfolio flows to the region by near \$2 billion since mid-February. Equity prices have fallen, and bond spreads have risen. Increased interest rates have made raising capital for companies extremely expensive and unviable. Such a tightening in financial conditions could prove to be a major challenge, given the region's need to refinance an estimated \$35 billion of external sovereign debt maturing in 2020. With the secondary markets in decline, there are concerns about IPO valuations, subscription and price discovery.</p>
 <b>Mobility Sector</b>	<p>Ongoing uncertainties will have a short, sharp impact on the mobility sector. Consumer traffic in physical showrooms is expected to dip by 70%-80% with an up to 24% drop in new car sales in 2020. Demand for vehicle servicing and parts, short-term car rentals and shared mobility services will wane steeply. However, moderate pick-up in GCC new vehicle sales is expected in 2021, reinforced by the fact that the 3.5 million vehicles purchased during the peak years of 2014-15 will need to be replaced within the next 2-3 years.</p>

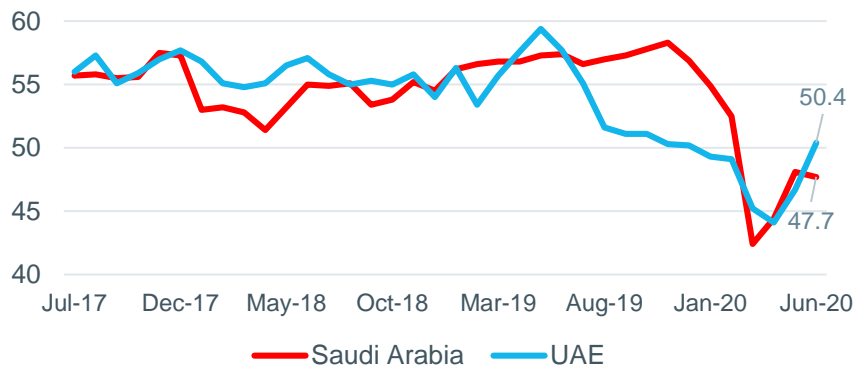
# GCC Countries' Response to Crisis

**2019 Breakeven Oil Prices**  
(US\$/barrel)



Source: IHS Markit

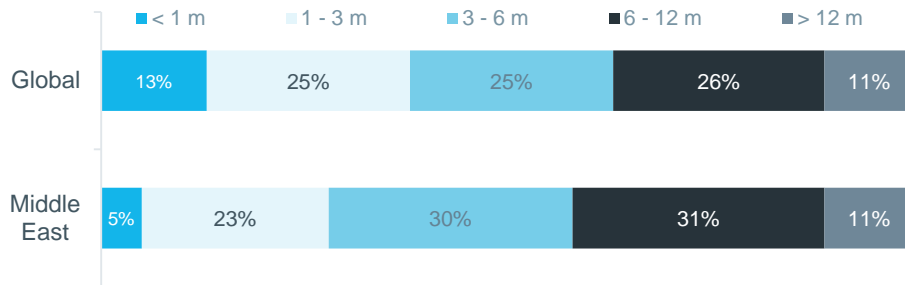
**Purchasing Manager's Index**  
(as of June 2020)



- UAE's central bank announced a raft of stimulus measures focused on facilitating bank lending and easing the burden of loan payments for companies facing a temporary cash crunch, particularly SMEs. It allocated US\$27 billion in liquidity through zero interest loans to banks and cuts in capital reserve requirements.
- Businesses have received some relief from government cashflow management measures. These range from a commitment by the Saudi government to offer US\$13 billion of funding to support banks in deferring loan payments, to the extension of payment deadlines for taxes. Kuwait, for example, has given firms a six-month extension for the payment of corporate social security contributions
- Saudi Arabia announced multiple fiscal consolidation policies including a tripling of VAT, an end to cost of living adjustment benefits and spending cuts, all of which were estimated to total to around SR100bn (US\$27 billion)
- These fiscal moves will inevitably have an impact on economic growth, on top of the direct demand shock from the virus and lockdown. It is notable that the largest net consolidation comes from Oman, the most fiscally constrained state. Saudi Arabia's apparent decision to consolidate (on top of spending cuts already planned in the 2020 budget), despite its reserve buffers and relatively low debt, is particularly notable. Although Bahrain has less fiscal space, expectations of further GCC support may underlie its apparent decision to apply a net stimulus
- **The UAE and Saudi Arabia PMI fell to their lowest points in April 20 and March 20 but have seen an upward trajectory ever since showing a rebound in the non-oil private sector.**

# GCC Countries' Economic Outlook Post COVID-19

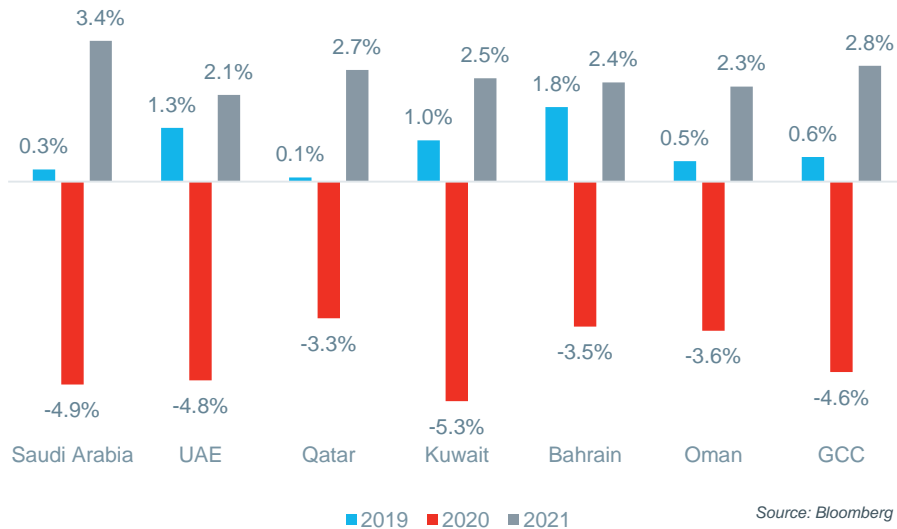
## Expected Business Recovery Timeline<sup>1</sup> (months to return to 'business as usual')



<sup>1</sup> CFO's expected time for their business to get back to "business as usual"

Source: PwC. COVID-19 CFO Pulse

## GCC Countries (real GDP growth, percent change)



Source: Bloomberg

- The GCC states were among the first to respond globally to COVID-19 given their potential exposure from hub airports and expat populations, cancelling flights to China in early February. The road to recovery for the Middle Eastern economies as well is mirroring an elongated U-curve, rather than the bounce-back V-curve that was previously expected.
- In the Middle East, according to a recent survey conducted in June, 72% of CFOs were expecting the recovery to take three months or more, up from 66% in May. Aligned with the increasing recovery timelines, a slightly higher proportion of regional finance leaders expect their company's revenue and/or profits to decrease – 89% compared to 86% in May.
- Fiscal and monetary policy support in response to the pandemic has been swift in large regional economies. Regional growth is expected to resume in 2021 as the impact of the pandemic subsides and investment improves. Risks to the outlook are heavily tilted to the downside and include more widespread regional COVID-19 outbreaks, prolonged weakness in oil prices and global activity, and intensification of regional conflicts.

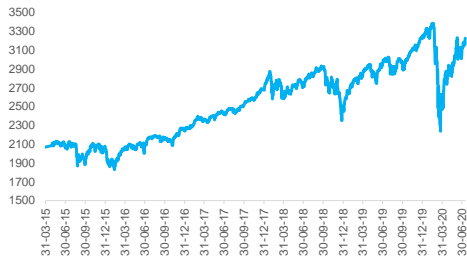
## GCC economies expected to contract in 2020 before a stronger rebound in 2021.

- Saudi Arabia's growth is forecast at -4.9%. In the UAE, real GDP growth is forecast to slip by 4.8%. Qatar's real GDP is projected to fall by 3.3% while Oman's is projected to decline by 3.6%.
- In 2021 a relatively stronger rebound for the regional economies is expected, with an overall real GDP growth of 2.8%. UAE, Saudi Arabia and Kuwait are projected to grow 2.1%, 3.4% and 2.5% respectively. Qatar's economy is expected to grow 2.7% while that of Oman is forecast to grow by 2.3%.

# Middle East Equity Market

## Quarterly Market Changes

S&P 500



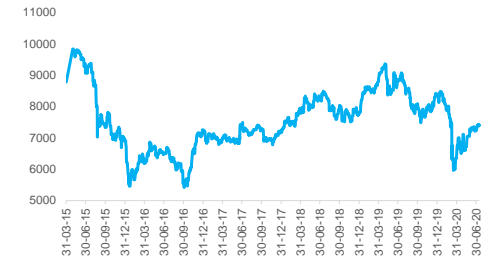
Euro STOXX 50 Index



Dow Jones Industrial Average



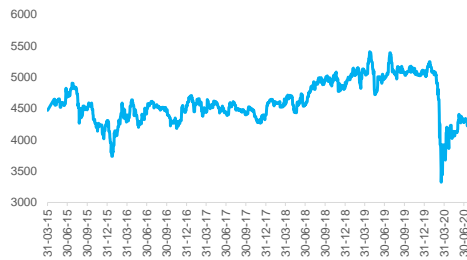
Tadawul All Share Index



DFM General Index



ADX General Index



Bahrain All Share Index



Kuwait All-Share Index



QE Index



MSM 30 Index



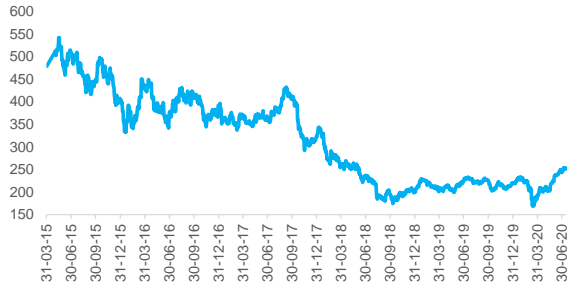
EGX 30 Index



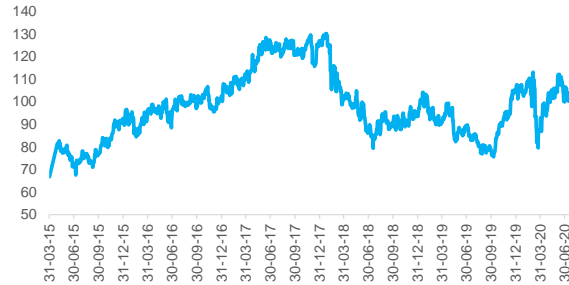
# Middle East Equity Market

## Quarterly Market Changes

MSCI Europe & Middle East Consumer Staples Sector Index



MSCI Europe & Middle East Healthcare Sector Index



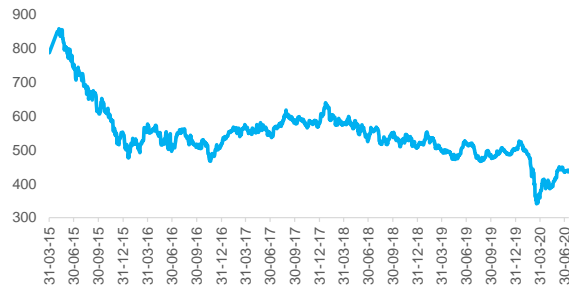
MSCI Europe & Middle East Communication Services Sector Index



MSCI Europe & Middle East Materials Sector Index



MSCI Europe & Middle East Utilities Sector Index



MSCI Europe & Middle East Industrials Sector Index



MSCI Europe & Middle East Financials Sector Index



MSCI Europe & Middle East Consumer Discretionary Sector Index



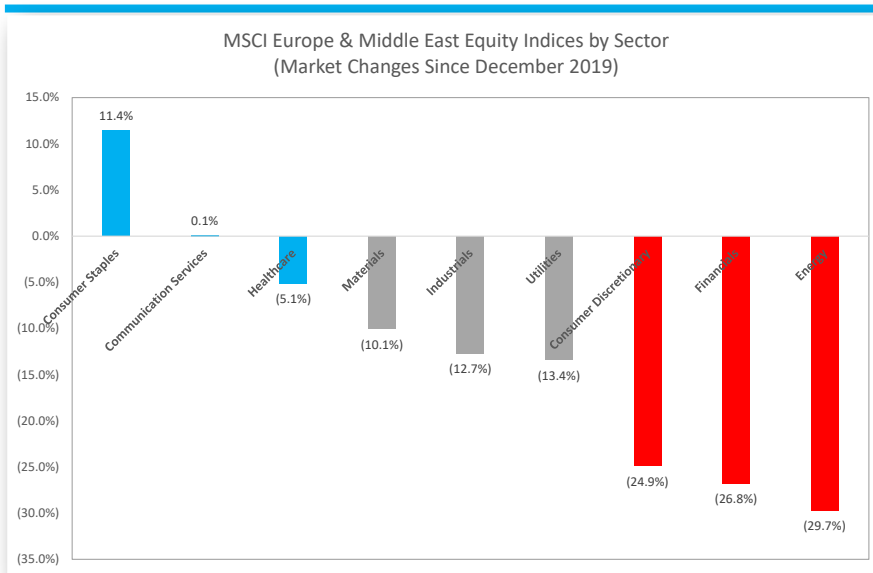
MSCI Europe & Middle East Energy Sector Index





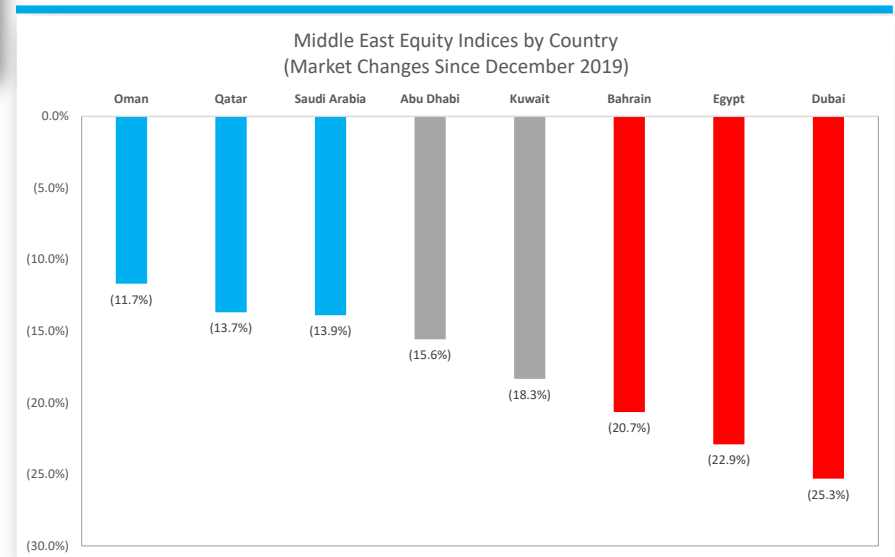
# Middle East Equity Market

## Quarterly Market Changes



- Middle East Equity Market have responded to the COVID-19 pandemic with worrying volatility and slash in stock prices;
- Equity indices in the UAE, Egypt, Bahrain decreased by over 20.0 percent since December 2019;
- As of 30 June 2020, we highlight that the Middle East Equity Markets have rebounded as compared to the lowest point in mid March 2020.

- Middle East Equity indices across all sectors have seen different levels of decline as a result of the escalation of COVID- 19 to a global pandemic;
- Energy, Financials and Consumer Discretionary are the hardest hit sectors; and
- Recession-Resistant sectors such as Consumer Staples, Healthcare and Communication Services sectors are have recovered.



# Private Asset Valuation and Fair Value Considerations in a Dislocated Market



---

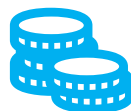
## Update – 30 June 2020: What has changed?

- Sheltering in place requirements are easing or have been removed
- Unemployment rates increased dramatically around the world, some indication of stabilising
- Massive government interventions: Trillions in lending
- Central bank rates close to or below zero
- Public Markets Remain Volatile

# Update – 30 June 2020: What has NOT changed?:

Fair Value Definition under IFRS 13 / ASC § 820

*“... the price that would be received TO SELL an asset or paid to transfer a liability in an ORDERLY transaction between market participants **at the measurement date.**”*



Unit of Account



Market Participant Assumptions



Orderly Transaction



Calibration & Value Accretion

⚠ Fair Value ≠ Fire Sale Price

⚠ Fair Value takes into account current market conditions

⚠ The need for fair value: Investors (LPs) need timely reported fair value based Net Asset Values (NAV) for decision making, financial reporting, exercising fiduciary duty.

---

## What is Known and Knowable at June 30, 2020?

- Public market prices may have increased significantly since March 31, but remain volatile
- Energy prices, in particular the price of oil, has recovered significantly
- Selected industries have been significantly impacted by the response to the pandemic
- Many individuals and companies are facing a liquidity crunch—how long will their cash resources last?
- Uncertainty has increased; and therefore risk has increased; and therefore a market participants required rate of return has likely increased
- Central banks and governments are implementing monetary and fiscal stimulus
- Local governments experiencing a cash crunch (less tax revenue)
- Unemployment has increased significantly, but may be stabilizing or retracting

---

## What is NOT Known and Knowable at June 30, 2020?

- When scientists and public health officials will develop treatments or a vaccine?
- Will we have a second wave of COVID-19 cases
- When will or will unemployment rates return to pre COVID levels
- How will consumers and businesses behave as world economies re-open?
- Is the public market recovery sustainable?
- Will we see a **V-Shaped** economic recovery? **U? W? L? VL?**

---

# Portfolio Company Triage

- Liquidity – is bankruptcy a risk; impact on increase in debt; repayment obligations
- Working capital hole – how large and when/how will it be filled
- Have projections been updated
- Enterprise Value Considerations
  - Revenue
    - » Has customer demand changed
    - » Customer financial health
    - » Customer's customers financial health
  - Supply Chain
    - » Timing and availability of goods
    - » Cost of goods
    - » Supplier financial health
  - Operations
    - » Employee availability
    - » Employee productivity
    - » Additional costs required to keep employees at home or allow them to return to work location

---

# Private Equity

- Double counting dilemma:
  - Q1 Problem: Portfolio Companies had not yet registered the CV19 impact in historical financials, and had not yet produced revised 2020 guidance (or beyond)
    - » Thus, we looked to liquid markets for insight into how market participants were reflecting the impact
    - » Drawback was that markets are opaque, ranges were wide, but we avoided double counting
  - Q2 Problem: Today, most Portfolio Companies have started to register CV19 impact in historical results and have provided updated 2020 guidance.
    - » This provides greater and more granular datapoints on which to rely
    - » However, introduces greater risk of double counting
    - » Can conclude on narrower ranges with greater confidence
- Should use multiple approaches and calibration to multiple dates to triangulate on Fair Value**
- Other issues to contend with:
  - Liquidity issues – Level 2 assets dropping in illiquidity
  - Fund leverage facilities: breached covenants increasing significantly



---

# Private Debt Valuation: Misconceptions Revealed in Market Dislocation

## Common Reasons Cited for Maintaining Debt at Par Value rather than Fair Value

---

- ✗ “Our strategy is “hold-to-maturity” and I’m never going to sell the investment.”
  - ✓ Fair Value is the price that you would receive if you were to sell the investment today – irrespective of whether you intend to hold to maturity or not – and it considers current market conditions.
  
- ✗ “Par value is a ‘proxy’ for Fair Value”
  - ✓ Fair Value may or may not be consistent with par value... however, par value should not be used as a default or shortcut. Proper valuation techniques (e.g., a market yield based DCF approach) should be used to robustly determine a Fair Value estimate.
  
- ✗ “Investors don’t want volatility”
  - ✓ It may be true that investors don’t want volatility for the sake of volatility. But they do want transparent, robust and objective information on the state of their investments – especially when economic conditions are as challenging as they are now.



---

## Q2 Valuing Early Stage Investments

- Recent transaction price (especially prices negotiated pre March 2020) may not be indicative of fair value
- Lack of transaction data does not mean value is stable
- Have projections, milestones, exit timing been updated
- What is the impact on cash burn
- What is the cash runway
- Has there been, does their need to be, a pivot in strategy
- Is a new round of financing in the works
- Is it an up/down/or flat round with new investors
- Does a scenario analysis provide greater visibility into potential outcomes

---

# Valuing LP Fund Interests

- Practical Expedient is generally used
  - Has LP concluded that all underlying investments are reported at fair value
  - Does a reporting lag result in a significant difference? 
- What are LPs doing:
  - Contact the General Partner directly
  - Adjust the last reported NAV to account for cash inflows and outflows
  - Apply the impact of market movements to cash adjusted NAV
  - Independently determine the value of the fund's investments
- What factors should be considered when cash adjusting NAV?
  - Add:
    - capital calls or additional commitments
  - Subtract:
    - Cash distributions
    - Returns of capital
    - Distributions of stock
  - Add or subtract changes in fair value of underlying investments (if significant) 

---

## 7 Guiding Principles in the Current Market

1. While some companies will be more impacted than others, no company is immune to the market's "re-pricing" of risk: higher return expectations at a given risk level mean lower asset prices.
2. Guidelines, policies and procedures should be consistently applied, while critically assessing each asset/investment on a case by case basis.
3. Virtually all private asset managers worldwide need to value their 30 June NAVs with "imperfect information" – i.e., without the benefit of portfolio company 2020 re-forecasts and transparency into the duration of COVID impact ("known or knowable").
4. Care should be taken not to double-count with respect to valuation inputs (e.g. if performance metrics have been adjusted to account for lower expected performance, an appropriate multiple should be applied, rather than one derived from peer group performance which has not yet registered a like-for-like adjustment).
5. Market participant views matter. Consider how a market participant may price incremental uncertainty in the current environment. Fair Value does not equal a fire sale price.
6. Continue to consider calibration as a viable triangulation tool.
7. Be cautious in weighting transaction multiples.

For more information about our global locations and services, please visit:

[www.duffandphelps.com](http://www.duffandphelps.com)

Or contact today's presenters:



**Hakim Abdeljaouad**

**Dubai**

+971 (0)56 1156 109

Hakim.Abdeljaouad@duffandphelps.com



**Ryan McNelley**

**London**

+44 (0)20 7089 4822

Ryan.McNelley@duffandphelps.com

## About Duff & Phelps

Duff & Phelps is the global advisor that protects, restores and maximizes value for clients in the areas of valuation, corporate finance, disputes and investigations, cyber security, claims administration and regulatory issues. We work with clients across diverse sectors on matters of good governance and transparency. With Kroll, the leading global provider of risk solutions, and Prime Clerk, the leader in complex business services and claims administration, our firm has nearly 4,000 professionals in 25 countries around the world. For more information, visit [www.duffandphelps.com](http://www.duffandphelps.com).

M&A advisory, capital raising and secondary market advisory services in the United States are provided by Duff & Phelps Securities, LLC. Member FINRA/SIPC. Pagemill Partners is a Division of Duff & Phelps Securities, LLC. M&A advisory and capital raising services in Canada are provided by Duff & Phelps Securities Canada Ltd., a registered Exempt Market Dealer. M&A advisory and capital raising services in the United Kingdom and across Europe are provided by Duff & Phelps Securities Ltd. (DPSL), which is authorized and regulated by the Financial Conduct Authority. In Germany M&A advisory and capital raising services are also provided by Duff & Phelps GmbH, which is a Tied Agent of DPSL. Valuation Advisory Services in India are provided by Duff & Phelps India Private Limited under a category 1 merchant banker license issued by the Securities and Exchange Board of India.