**Broad Equity Markets**

Indexed to 12 Months Ago

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<th>Index</th>
<th>Oct-19</th>
<th>Dec-19</th>
<th>Feb-20</th>
<th>Apr-20</th>
<th>Jun-20</th>
<th>Aug-20</th>
<th>Oct-20</th>
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<td>60</td>
<td>70</td>
<td>80</td>
<td>90</td>
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Performance of Canadian and US oil & gas equities are compared against each other.

Source: Bloomberg, ARC Financial Corp.

**Canadian Currency Exchange**

Indexed to 12 Months Ago

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<td>0.72</td>
<td>0.74</td>
<td>0.76</td>
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The performance of Canadian oil and gas service and midstream equities are plotted in tandem with the corresponding US Oilfield index.

Source: Bloomberg, Petroleum Services Association of Canada

**Oil and Gas E&P Indices**

Indexed to 12 Months Ago

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<td>120</td>
<td>130</td>
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Much of Canada’s oil and gas production is sold in US dollars. As such, the exchange rate significantly impacts corporate revenues and profits.

Source: Bloomberg

**Oil & Gas Service and Midstream Indices**

Indexed to 12 Months Ago

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<th>Oct-19</th>
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The mix of oil vs gas rigs has shifted towards gas.

Source: Bloomberg, Petroleum Services Association of Canada

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**United States: New and Active COVID-19 Cases**

Daily (5-Day Rolling Average); March 9, 2020 to Current

Daily infection rates and active cases of COVID-19 will determine reopening and recovery of the world’s largest economy. Source: Worldometer

**United States: Daily New Deaths**

Deaths per Day (5-Day Rolling Average): March 9, 2020 to Current

The growth rate of daily deaths is a useful statistic for tracking the progress of COVID-19 and predicting healthcare needs. Source: Worldometer

**TomTom Traffic Index: Chicago, U.S.**

Congestion Level Relative to 2019

Traffic congestion levels show a real-time picture of the number of vehicles on the road; an indication of gasoline demand and economic recovery. Source: TomTom International BV

**TomTom Traffic Index: Beijing, China**

Congestion Level Relative to 2019

Traffic congestion levels show a real-time picture of the number of vehicles on the road; an indication of gasoline demand and economic recovery. Source: TomTom International BV

**U.S. Weekly Jobless Claims**

Initial and Continuing Claims

Jobless claims are an important leading indicator on the state of the employment situation and the health of the economy. Source: US Labor Department

**TSA Checkpoint Screening Numbers**

Number of Travelers in 2020 as % of Same Period in 2019

Monitoring the daily number of passengers screened at TSA checkpoints in the United States is a leading indicator of recovery in air travel. Source: Transportation Security Administration
North American crude oil prices can sometimes disconnect from global prices depending on regional supply and demand dynamics. **Source:** Bloomberg

The differential should reflect quality differences and transportation costs. Greater discounts can result from infrastructure or refinery outages. **Source:** Bloomberg

Natural gas liquids have become critical contributors to producer’s cash flow. Prices are influenced by the price of oil as well as local supply and demand. **Source:** Bloomberg, ARC Financial Corp.

Long contracts take the position that WTI oil price will increase, while short contracts expect a decline. **Source:** Bloomberg, U.S. Commodity Futures Trading Commission
US crude oil stock levels can affect crude oil prices. Stock levels for the current year are represented by the blue line.
Source: U.S. Energy Information Administration

Total stocks of gasoline, diesel and jet fuel are shown. Stock levels for the current year are represented by the blue line.
Source: U.S. Energy Information Administration

Refinery utilization rates change the supply of refined products, impacting price. Utilization for the current year is blue.
Source: U.S. Energy Information Administration

Gasoline, diesel and jet fuel consumption represent the majority of oil use in the US.
Source: U.S. Energy Information Administration

Weekly production is modelled by the EIA. It is less accurate than monthly reported numbers, but is instructive of up to date changes.
Source: U.S. Energy Information Administration

Tracking US oil drilling by major play provides insight into the composition of US oil supply and growth trends.
Source: Baker Hughes
Crude oil imports from Canada are taking market share from overseas imports.  
*Source: U.S. Energy Information Administration*

The advancement of drilling and completion methods is increasing US crude oil production.  
*Source: Bloomberg, U.S. Energy Information Administration*

Most of Canada’s oil production comes from Alberta; split between oil sands and conventional production.  
*Source: Alberta Energy Regulator*

OPEC’s production levels relative to its sustainable and spare capacity influences global crude prices. Note: scale has been expanded. 
*Source: Petroleum Intelligence Weekly*

OECD stock levels can affect crude oil prices. 
*Source: International Energy Agency*
### 29 Near-Month North American Natural Gas Prices

**Daily Prices; Rolling 12-Month History**

Near-month prices at AECO track Henry Hub prices, the exchange rate and the cost of transportation. Local factors can also affect price.  
*Source: Bloomberg*

### 30 US Natural Gas Futures

**Nymex (Henry Hub) Next 36 Months**

Forward contract prices are plotted for the next 36 months, and compared against the curve one month prior.  
*Source: Bloomberg*

### 31 Long and Short Contracts – Henry Hub

**Managed Money - Futures**

Long contracts take the position that Henry Hub gas price will increase, while short contracts expect a decline.  
*Source: U.S. Commodity Futures Trading Commission*

### 32 Canadian Natural Gas Futures

**AECO Hub (Bloomberg Estimate) Next 36 Months**

AECO forward prices mimic Henry Hub futures minus a differential.  
*Source: Bloomberg*

### 33 Global Natural Gas Prices

**Japanese LNG, UK NBP, Henry Hub; Average Monthly Prices**

International natural gas prices strongly impact the economics of proposed LNG projects.  
*Source: Bloomberg, Japanese Ministry of Economy, Trade and Industry*

### 34 US Coal and Natural Gas Power Generation Cost

**Converted to a $/MWh Equivalent**

This graph illustrates when it may be economic to begin coal-gas switching in power generation. Average power plant efficiencies are assumed.  
*Source: Bloomberg*
Closing Spot Prices at North American Natural Gas Hubs
Superimposed on Relative Pipeline Flows

All prices in $US/MMBtu

North America has an integrated natural gas market. Prices are determined by regional supply and demand, and pipeline flows. 
Source: Bloomberg

Pipeline Flows Out of Western Canada
Daily; Historical Tracks and Current Year Levels

The ability of gas producers to move gas out of the WCSB to eastern markets and the US is a major factor in local natural gas prices. 
Source: Various Pipeline Companies

US Natural Gas Exports – Excluding Canada
Daily; Historical Tracks and Current Year Levels

Between exports to Mexico and LNG shipments, the US is growing as a natural gas exporter. Robust US supply growth has driven this trend. 
Source: S&P Global Platts
Alberta natural gas demand has grown steadily in recent years, largely driven by new oil sands demand and power generation projects.

Source: TransCanada Pipelines

Total US demand fluctuates in the summer and during the winter as weather is an important driver of consumption.

Source: S&P Global Platts

This includes receipts on the TCPL, Alliance, WestCoast and TransGas pipelines.

Source: Various Pipeline Companies

US production started ramping up in late 2007 and continues to grow year over year.

Source: S&P Global Platts

Canada’s natural gas storage level provides a good metric if the country is well stocked. Abnormally high or low storage can affect the basis.

Source: Bloomberg

The EIA reports changes in US natural gas inventories held in underground storage facilities on a weekly basis.

Source: U.S. Energy Information Administration
ARC Energy Charts

**Canada: Weekly Gas Drilling Activity**
Baker Hughes Drilling Rig Count; Current Year and Historical Range

Unlike US drilling activity, Canadian rigs are dispatched seasonally. Capital allocation by operators is driven by views of future oil and gas prices.

*Source: Baker Hughes*

**United States: Weekly Gas Drilling Activity**
Baker Hughes Gas Rig Counts; 2019 to Present

Tracking US gas drilling by major play provides insight into the composition of US gas supply and growth trends.

*Source: Baker Hughes*

**Canada: Weekly Oil Drilling Activity**
Baker Hughes Drilling Rig Count; Current Year and Historical Range

Unlike US drilling activity, Canadian rigs are dispatched seasonally. Capital allocation by operators is driven by views of future oil and gas prices.

*Source: Baker Hughes*

**United States: Weekly Oil & Gas Drilling Activity**
Baker Hughes Drilling Rig Count; Current Year and Historical Range

Tracking total US rigs provides insight into oil field services demand and total industry activity.

*Source: Baker Hughes*

**Canada: Monthly Wells Drilled**
Current Year vs Years Prior

Total rig-releases for exploratory and development wells are highlighted in this chart. Rig releases for the current year are shown in red.

*Source: Daily Oil Bulletin/JWN*

**United States: Monthly Wells Drilled**
Current Year vs Years Prior

Total wells drilled in US Drilling Productivity Report regions are shown. These are the most active onshore US plays.

*Source: EIA*
### Canadian Industry Metrics: Historical Data and Forecast

#### Canadian Industry Metrics

<table>
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<tr>
<th>Price</th>
<th>Production Volume</th>
<th>Capital Inflow</th>
<th>Reinvestment</th>
<th>Drilling</th>
<th>Well Split</th>
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<td>Cash Flow</td>
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