

## Commodities Marching Higher

Slowing global growth and dollar strength remain near-term headwinds

The **BMO Capital Markets Commodity Price Index** increased 2.4% in March with mixed performance across segments. Energy and base metals prices gained, seemingly undeterred by cuts to the global growth forecast, while hog prices soared amid increasing concern regarding African Swine Flu in Asia. Still, despite the strong momentum so far in 2019 and relatively positive hand-off to April, each commodity segment remains below year-ago levels.

The **Oil & Gas Index** rose for the third consecutive month in March, climbing 5.9% on increases for both crude oil and natural gas. Crude oil markets have continued to tighten amid good compliance by OPEC+ with its production curtailment agreement as well as the ongoing collapse in Venezuelan output and disruptions to production in Libya stemming from civil strife. Oil continued to rise through the first three weeks of April, receiving support from the U.S. withdrawal of waivers on Iran sanctions. The natural gas market has turned surprisingly bearish, given that inventories are well below seasonal norms (see Focus).

The **Metals & Minerals Index** gained 1.0% in March, rising for the fourth consecutive month. Despite an increasingly patient stance from the Federal Reserve and lower real Treasury yields, bouts of U.S. dollar strength weighed on precious metals prices, as gold fell below \$1300 by month-end, before tumbling to its lowest level of the year, around \$1272, by late-April. Base metals have remained strong, though recent upward momentum has stalled amid signals of slowing global growth. Nonetheless, improved March economic data from China have allayed fears of a more serious downturn.

The **Forest Products Index** slid 7.4% in March, weighed down by a \$32 decline in lumber prices to \$369/mbf. The move was entirely due to base effects stemming from price volatility in February; weekly prices were mostly flat in March. Builders and suppliers continue to assess the effects of a cold and soggy first quarter on overall activity, limiting price action in lumber and OSB markets.

The **Agriculture Index** dropped 5.9% in March to its lowest level since the end of 2017 amid renewed weakness in crop commodities. Wheat prices declined 9.2% during the month on already-large global stockpiles and generally supportive weather in key growing regions, while canola prices dropped 5.1% as China halted purchases of the crop from Canada. On the other side of the ledger, hog prices surged 23% as African Swine Fever continued to ravage supply in China, the world's largest producer.

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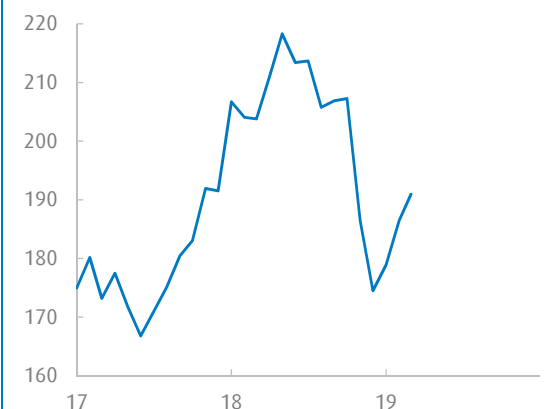
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**BMO CAPITAL MARKETS  
COMMODITY PRICE INDEX  
(2003 = 100)**

### All Commodities Index



	Mar. Level (2003=100)	% Change from Mth. Ago	% Change from Yr. Ago
All Commodities	190.9	2.4	-6.3
Oil & Gas	169.7	5.9	-6.8
Metals & Minerals	260.4	1.0	-1.7
Forest Products	127.2	-7.4	-31.7
Agriculture	136.6	-5.9	-6.9



## Commodity Focus: Natural Gas Responsiveness of shale production caps prices

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Natural gas prices temporarily spiked during the autumn due to an early onset of cold weather, with Henry Hub rising as high as US\$4.80 per million British thermal units (mmbtu) in late November.

However, it quickly retreated (*Chart 1*), recently falling below \$2.55/mmbtu despite much lower than normal inventories for this time of year. This reflects the market's expectation that improving technology and falling costs of production have substantially enhanced output flexibility. For instance, when seasonally-low inventories during the first half of 2014 (*Chart 2*) caused prices to rise sharply, U.S. producers quickly ramped up output (*Chart 3*). This, along with the restraining impact at that time of high prices on demand, normalized storage and led to a decline in prices. Even though an unusually large increase in U.S. domestic consumption and accelerating exports of natural gas in 2018 caused inventories to fall 22% below their seasonal five-year average, prices have remained subdued as production has once again accelerated sharply, with year-over-year growth during the past three quarters averaging 12.5%.

Last year, natural gas delivered to end users in the United States soared 10.5%, far exceeding its two-decade trend of 0.9%, with all major sectors recording strong gains: power generation (14.9%), residential and commercial space heating (11.7%), and industrial usage (4.2%). Additionally, U.S. exports of natural gas surged 13.8% on a more than 50% jump in shipments of liquefied natural gas (LNG) and continued strong growth in pipelined sales to Mexico. U.S. export growth is expected to remain robust, with LNG liquefaction capacity expected to rise to close to 9.0 billion cubic feet per day (bcf/d) by the end of 2019 from under 3.0bcf/d in 2017. However, domestic consumption growth is likely to revert towards its longer-term trend this year and next. Thus, market expectations that continued double-digit growth in production should be sufficient to replenish inventories over the summer injection season will keep pricing low.

We expect Henry Hub to decline from an average of \$3.17/mmbtu in 2018 to \$2.85 in 2019 and then rise moderately to \$3.00 in 2020 on growing exports and increasing utilization in industry and power generation. In Canada, pipeline bottlenecks and growing competition in traditional eastern Canada gas markets by imports from the Marcellus field in the U.S. northeast have significantly widened the discount on natural gas at the AECO hub. Since 2016, the discount has averaged 46%, rising to as high as 67% during the second half of 2018, far above its 2005-2015 norm of 13%. The bloating of natural gas inventories in western Canada has been augmented by strengthening production in the

CHART 1: NATURAL GAS PRICES  
(US\$/mmbtu)

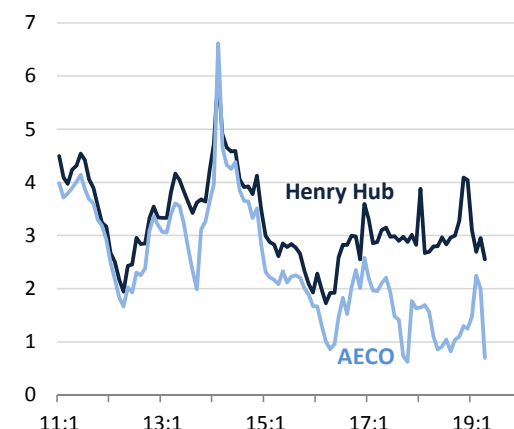


CHART 2: U.S. NATURAL GAS INVENTORIES  
(Per Cent Deviation From 5-year Average)

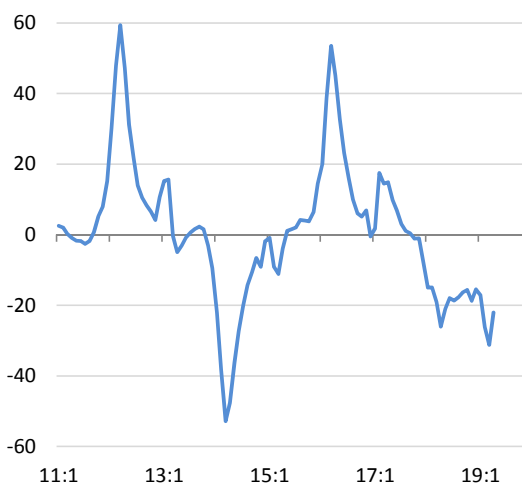
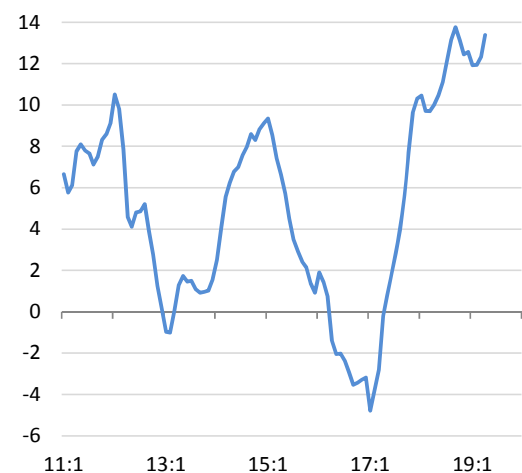


CHART 3: U.S. NATURAL GAS OUTPUT  
(% Change; 3M centred moving avg.)



prodigious Montney Formation that straddles Alberta and British Columbia. Though pipeline infrastructure enhancements are currently underway and natural gas-fed petrochemical facilities are being developed in Alberta, a large discount on Canadian gas will likely remain in place at least through the end of 2020. We project AECO to average US\$1.30/mmbtu in 2019 and US\$1.60/mmbtu in 2020.

## Energy and Materials

		Crude Oil	Natural Gas		Lumber
		(WTI)	(Henry Hub)	(AECO)	
		US\$/bbl	US\$/mmbtu		US\$/mbf
	2006	66.10	6.74	5.76	290
	2007	72.36	6.98	6.02	245
	2008	99.57	8.86	7.79	215
	2009	61.69	3.95	3.48	177
	2010	79.43	4.39	3.89	255
	2011	95.08	4.00	3.67	255
	2012	94.20	2.75	2.39	299
	2013	97.93	3.73	3.09	356
	2014	93.26	4.39	4.08	349
	2015	48.69	2.63	2.12	277
	2016	43.21	2.52	1.63	305
	2017	50.91	2.99	1.67	401
	2018	64.84	3.17	1.19	480
	y-t-d 2019	55.03	2.92	1.91	370
<b>2018</b>	April	66.26	2.80	1.10	552
	May	69.99	2.80	0.86	634
	June	67.33	2.97	0.91	609
	July	70.97	2.83	1.04	564
	August	67.99	2.96	0.82	468
	September	70.20	3.00	1.04	414
	October	70.76	3.28	1.10	323
	November	57.00	4.09	1.29	337
	December	48.95	4.04	1.25	320
<b>2019</b>	January	51.47	3.11	1.48	347
	February	54.96	2.69	2.55	401
	March	58.14	2.95	1.81	369
	m-t-d April	62.06	2.75	n.a.	n.a.
<b>Forecast</b>	2019 Avg.	<b>62.00</b> ↑	<b>2.85</b> ↓	<b>1.30</b> ↓	<b>360</b>
	2020 Avg.	<b>62.00</b> ↑	<b>3.00</b> ↓	<b>1.60</b> ↓	<b>330</b>

Commodity price forecasts are by BMO Capital Markets Economics and are independent of those used by BMO Capital Markets Equity Research.

↑ and ↓ indicate annual forecast changes from last month.

## Base and Precious Metals

	Copper	Aluminum	Zinc	Nickel	Gold	Silver
	US\$/lb			US\$/oz		
2006	3.05	1.17	1.48	11.00	605	11.58
2007	3.23	1.20	1.47	16.89	697	13.40
2008	3.15	1.17	0.85	9.57	872	15.01
2009	2.34	0.75	0.75	6.64	973	14.67
2010	3.42	0.99	0.98	9.89	1225	20.16
2011	4.00	1.09	0.99	10.38	1570	35.11
2012	3.61	0.92	0.88	7.96	1668	31.15
2013	3.32	0.84	0.87	6.81	1411	23.83
2014	3.11	0.85	0.98	7.65	1266	19.08
2015	2.50	0.75	0.88	5.37	1160	15.70
2016	2.21	0.73	0.95	4.35	1248	17.10
2017	2.80	0.89	1.31	4.72	1258	17.06
2018	2.96	0.96	1.33	5.95	1270	15.71
y-t-d 2019	2.82	0.84	1.23	5.62	1304	15.56
<b>2018</b>						
April	3.10	1.02	1.45	6.32	1334	16.60
May	3.09	1.04	1.39	6.51	1304	16.45
June	3.15	1.02	1.40	6.85	1282	16.51
July	2.83	0.95	1.21	6.25	1238	15.71
August	2.74	0.93	1.14	6.09	1202	15.00
September	2.73	0.92	1.10	5.68	1199	14.27
October	2.82	0.92	1.21	5.59	1215	14.58
November	2.81	0.88	1.18	5.10	1221	14.36
December	2.76	0.88	1.19	4.91	1250	14.67
<b>2019</b>						
January	2.69	0.84	1.16	5.19	1292	15.61
February	2.85	0.84	1.23	5.74	1320	15.81
March	2.93	0.85	1.29	5.92	1302	15.32
m-t-d April	2.93	0.85	1.35	5.94	1290	15.09
<b>Forecast</b>						
2019 Avg.	<b>3.10</b>	<b>0.93</b> ↓	<b>1.22</b> ↑	<b>5.80</b>	<b>1285</b>	<b>15.90</b> ↓
2020 Avg.	<b>3.30</b>	<b>0.99</b>	<b>1.23</b>	<b>5.90</b>	<b>1260</b>	<b>16.95</b> ↓

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## Agriculture

	Wheat	Canola	Cattle	Hogs
	US\$/bushel	US\$/tonne		US\$/cwt
2006	4.02	257	86.23	64.08
2007	6.38	378	93.92	65.56
2008	7.98	527	93.60	66.05
2009	5.30	371	83.85	58.11
2010	5.81	429	94.95	75.60
2011	7.10	566	114.54	90.34
2012	7.50	601	122.65	84.93
2013	6.84	545	126.40	89.33
2014	5.88	400	151.50	105.83
2015	5.08	371	146.49	69.40
2016	4.36	366	118.61	65.60
2017	4.36	393	117.90	69.87
2018	4.95	389	114.64	65.26
y-t-d 2019	4.89	355	126.95	62.40
<b>2018</b>				
April	4.75	416	117.21	61.01
May	5.17	414	104.96	71.13
June	5.01	398	107.63	80.01
July	5.07	379	107.13	72.90
August	5.38	384	108.63	54.74
September	5.04	378	111.77	57.80
October	5.11	378	113.36	61.13
November	5.05	361	116.04	57.61
December	5.17	357	119.83	58.44
<b>2019</b>				
January	5.17	362	125.31	60.78
February	4.99	361	127.44	55.71
March	4.53	342	128.22	68.57
m-t-d April	4.63	343	126.23	78.18
<b>Forecast</b>				
2019 Avg.	<b>4.80</b> ↓	<b>350</b> ↓	<b>120.00</b>	<b>78.00</b> ↑
2020 Avg.	<b>5.40</b> ↓	<b>390</b> ↓	<b>122.00</b>	<b>79.00</b> ↑

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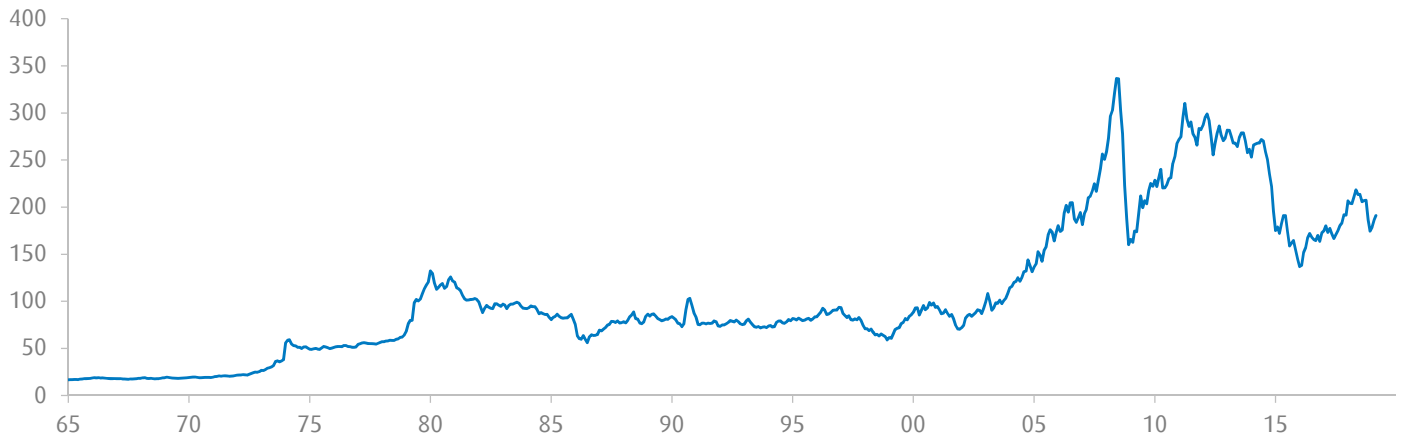
## Commodity Indices and Forecasts

US\$-terms : 2003 = 100		All Commodities	Oil & Gas	Metals & Minerals	Forest Products	Agricultural Products	All Commodities C\$-terms	
<b>Annual</b>								
	2010	234.6	232.7	291.1	92.0	163.4	172.5	
	2011	283.7	275.6	364.8	90.1	205.3	200.3	
	2012	279.7	270.2	353.8	108.4	216.9	199.5	
	2013	271.7	283.0	304.1	128.6	200.1	199.6	
	2014	252.1	271.4	270.5	121.3	170.0	198.4	
	2015	170.9	142.5	244.8	98.3	151.3	155.5	
	2016	160.7	126.9	241.1	110.3	135.9	151.8	
	2017	178.1	149.6	249.4	144.8	139.8	165.0	
	2018	204.3	189.0	257.5	169.5	147.2	188.8	
Forecast	2019	<b>197.8</b>	<b>180.3</b>	<b>263.3</b>	<b>124.9</b>	<b>141.0</b>	<b>187.8</b>	
	2020	<b>200.6</b>	<b>180.6</b>	<b>269.5</b>	<b>116.0</b>	<b>155.8</b>	<b>187.8</b>	
<b>Quarterly</b>								
2017	Q3	175.5	141.8	252.6	149.3	143.8	157.1	
	Q4	188.8	161.9	258.8	165.5	138.0	171.2	
2018	Q1	204.8	183.3	268.2	180.9	144.2	184.6	
	Q2	214.2	196.7	266.8	210.7	150.1	197.2	
	Q3	208.8	202.1	247.8	170.9	148.3	194.9	
	Q4	189.4	173.8	247.3	115.6	146.3	178.4	
Forecast	2019 Q1	185.4	160.4	256.6	128.3	143.2	176.0	
	Q2	<b>200.8</b>	<b>187.7</b>	<b>259.9</b>	<b>125.9</b>	<b>139.5</b>	<b>191.3</b>	
	Q3	<b>202.1</b>	<b>186.8</b>	<b>266.4</b>	<b>124.9</b>	<b>138.2</b>	<b>191.9</b>	
	Q4	<b>202.9</b>	<b>186.1</b>	<b>270.0</b>	<b>120.4</b>	<b>143.2</b>	<b>192.1</b>	
<b>Monthly</b>								
2018	Mar	203.8	182.0	264.9	186.3	146.8	187.8	
	Apr	211.0	192.1	268.4	195.0	148.2	191.7	
	May	218.3	202.6	266.4	222.2	153.0	200.3	
	Jun	213.4	195.5	265.6	214.9	149.2	199.6	
	Jul	213.7	205.4	252.5	198.8	147.1	200.4	
	Aug	205.8	197.3	246.6	165.6	151.6	191.5	
	Sep	206.9	203.6	244.4	148.3	146.2	192.6	
	Oct	207.3	205.8	248.0	116.3	147.8	192.2	
	Nov	186.5	169.2	245.9	118.9	144.6	175.6	
	Dec	174.5	146.5	248.0	111.7	146.5	167.4	
	2019	Jan	178.9	151.4	251.5	120.3	147.9	170.4
		Feb	186.5	160.2	257.9	137.3	145.2	175.9
Mar		190.9	169.7	260.4	127.2	136.6	181.8	

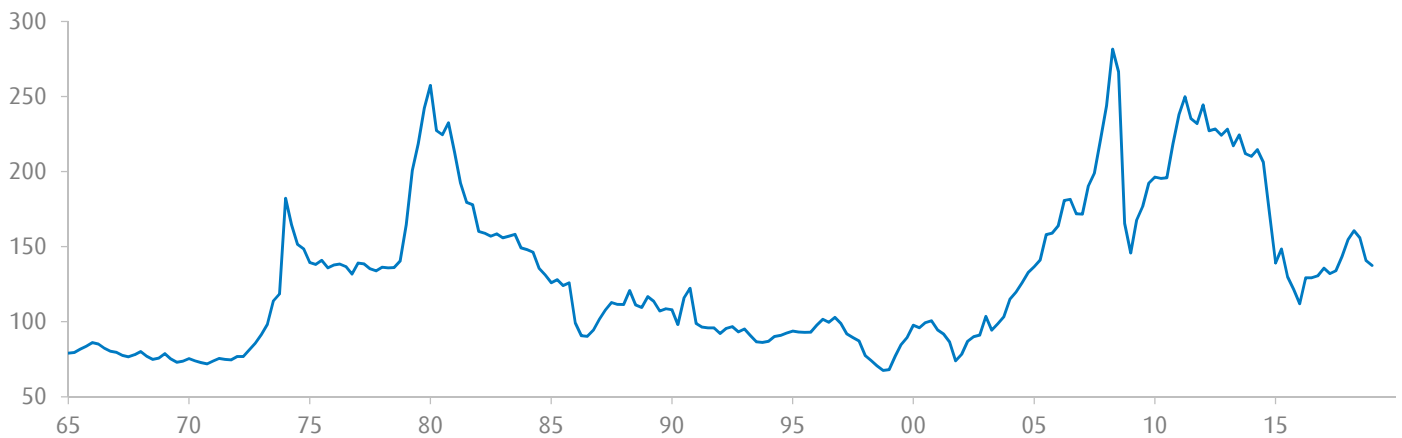
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## Historical Charts: All-Commodity Index

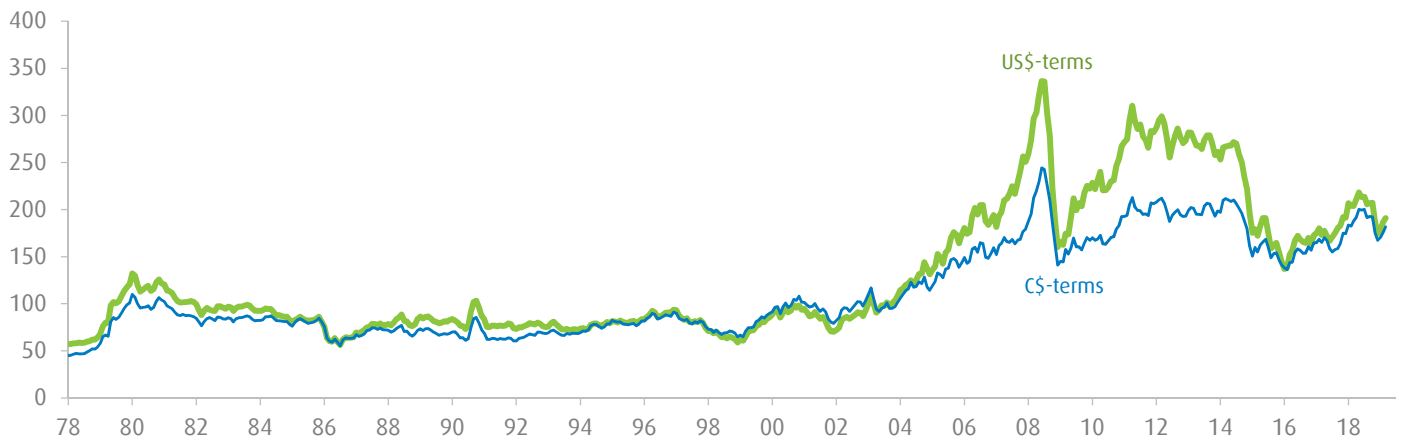
Nominal US\$-Terms (2003 = 100)



Real US\$-Terms (2003 = 100)



Nominal (2003 = 100)





## Technical Note

The BMO Capital Markets Commodity Price Index is a fixed-weight, export-based index that encompasses the price movement of 16 commodities key to Canadian exports. Weights are each commodity's average share of the total value of exports of the 16 commodities during the period 2012-16. Similarly, weights of sub-index components reflect the relative importance of commodities within their respective product group.

**The all-commodities index and sub-indices consist of the following:**

Percent	Weight in All-Commodities Index	Weight in Sub-Index		Weight in All-Commodities Index	Weight in Sub-Index
<b>Metals &amp; Minerals</b>	<b>29.8</b>	<b>100.0</b>	<b>Forest Products</b>	<b>6.5</b>	<b>100.0</b>
Gold	10.6	35.4	Lumber	5.5	84.1
Silver	1.4	4.6	OSB	1.0	15.9
Aluminum	6.4	21.4			
Copper	2.3	7.8	<b>Agricultural Products</b>	<b>9.1</b>	<b>100.0</b>
Nickel	3.2	10.8	Wheat	4.5	49.5
Zinc	0.9	3.0	Canola	3.3	36.6
Uranium	1.3	4.4	Hogs	0.3	3.0
Potash	3.8	12.6	Beef Cattle	1.0	10.9
<b>Oil and Gas</b>	<b>54.6</b>	<b>100.0</b>	<b>All Commodities</b>	<b>100.0</b>	
Crude Oil	47.6	87.2			
Canadian Natural Gas	7.0	12.8			

Unless otherwise specified, all indices reported in this publication correspond to prices in U.S. dollars.

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