Commodity Price Index Naughty & Nice List

Best & Worst Commodity Performers of 2018

Nice — Best Performers	Naughty — Worst Performers
1. Henry Hub Natural Gas (+22%)	1. AECO Natural Gas (-43%)
2. Palladium (+19%)	2. Lumber (-28%)
3. Canadian Heavy Crude (-4%)	3. Cobalt (-24%)

NOT A GREAT YEAR FOR COMMODITIES

It has not been a great year for commodities and that our third best performer of the year is actually down from January 1st is a testament to that fact. As a group, industrial and precious commodities are down 12% year-to-date and, while there have been some commodities that have beat the trend, the top performers—Henry Hub natural gas (+22%), palladium (+19%), WCS crude (-4%)—are far from inspiring. Losses, meanwhile, have been much more pronounced—AECO natural gas (-43%), lumber (-28%), cobalt (-24%)—see Chart 1. It was also an exceptionally volatile year. Lumber prices moved from +45% in May to -28% today, WCS shifted from bull market (+68%) to bear market (-61%) to more-or-less neutral (-4%), while year-to-date AECO losses exceeded 90% on multiple occasions.

HENRY HUB NATURAL GAS: COMEBACK KID

It's been quite the turnaround year for Henry Hub, North America's primary natural gas benchmark, which took the top spot among core industrial and precious commodities (+22%) in 2018 following last year's bottom-of-the-pack showing (-27%). After a prolonged spell of underperformance, Henry Hub natural gas prices experienced a volatile series of jumps higher, with daily movements at times approaching 20% (Chart 1). Prices reached \$4.84/MMBtu in mid-November—the highest level in four years—before the bull run was reversed; front-month contracts have since fallen to around \$3.60/MMBtu, down 26% from their recent peak but still up roughly 22% year-to-date.

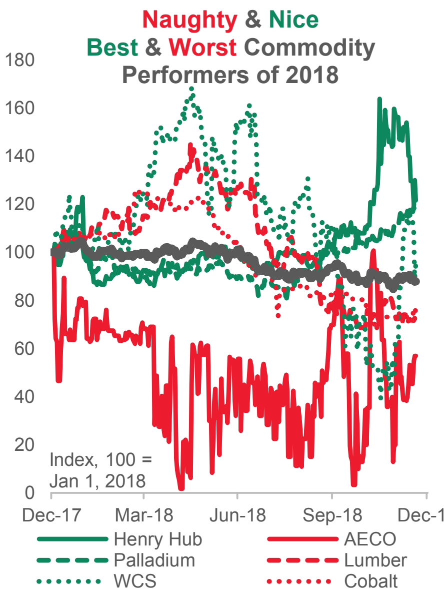
This bullish volatility came on the back of perilously scarce US natural gas inventories, which are currently sitting at decade-low levels on a seasonal basis (Chart 2). Inventories are typically at their highest this time of year in anticipation of the seasonal spike in winter heating demand. And while relatively low natural gas inventories have been a feature of the US gas market for most of 2018, prices have failed to response. This muted price response came on the back of surging US production and a view that pretty well any gaps in the market could be filled with new, cheap gas at prices not far above \$3/MMBtu without much challenge.

It took a cold snap in November through the beginning of December to shock the natural gas market out of its complacency, with a surge in residential, commercial, and industrial heating demand coming alongside the frigid blast of weather. A colder than average 2017–18 winter coupled with an extremely warm summer kept demand for natural gas high and didn't allow much gas to enter inventory, sowing the seeds of the late-2018 rally. Rapidly growing natural gas exports, both in liquid form via the US' growing fleet of LNG export terminals as well as via pipeline exports south to Mexico, added further pressure to an already tightening market.

CONTACTS

Rory Johnston, Commodity Economist
416.862.3908
Scotiabank Economics
rory.johnston@scotiabank.com

Chart 1



Sources: Scotiabank Economics, Bloomberg.

Scotiabank Commodity Price Index

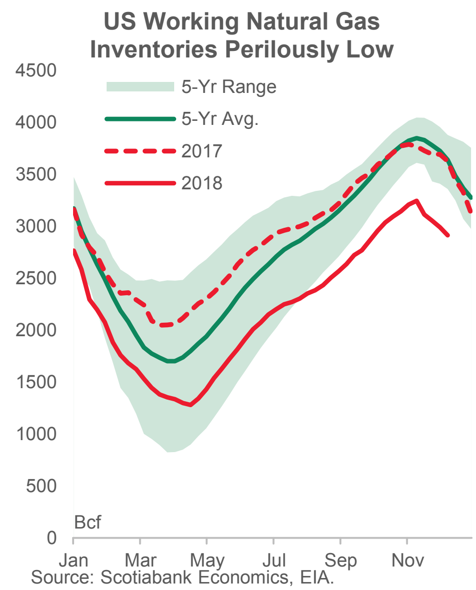
November 2018	(% change)		
	M/M	Y/Y	YTD
All Commodity*	**-6.7**	**-15.3**	**6.8**
Industrials	**-8.0**	**-17.8**	**7.9**
Oil & Gas	-25.3	-45.4	5.7
Metal & Minerals	-0.7	0.0	3.5
Forest Products	0.8	-2.2	19.7
Agriculture	**-1.1**	**-3.6**	**1.5**

	January 2007 = 100		
	2018		
	Nov	Oct	YTD avg.
All Commodity	**97.7**	**104.7**	**116.1**
Industrials	**92.2**	**100.2**	**113.1**
Oil & Gas	49.5	66.3	87.3
Metal & Minerals	121.4	122.3	123.2
Forest Products	148.2	147.1	162.2
Agriculture	**128.1**	**129.5**	**133.2**

* Weights: Oil & Gas (39.9%), Metal & Minerals (30.1%), Forest Products (14.7%), Agriculture (15.3%); Full technical note on page 8.

The fallback in prices from their recent highs reflects a temporarily warmer outlook through the end of December, though some weather models are showing a rising probability of another disruption of the polar vortex in January. The particularly intense cold associated with polar vortex disruptions are a doubly effective boost for natural gas prices because they spur heating demand while at the same time hampering supply due to “freeze offs”—when cold temperatures inhibit gas flow at the wellhead. US natural gas supply is also likely to feel the weight of falling oil prices, which will depress oil-directed drilling demand and result in less associated gas production. On top of all these potential supply limitations and upside demand risks, inventories still remain near all-time lows and the recent bout of volatility is expected to continue through winter until some inventory cushion can be rebuilt.

Chart 2



Source: Scotiabank Economics, EIA.

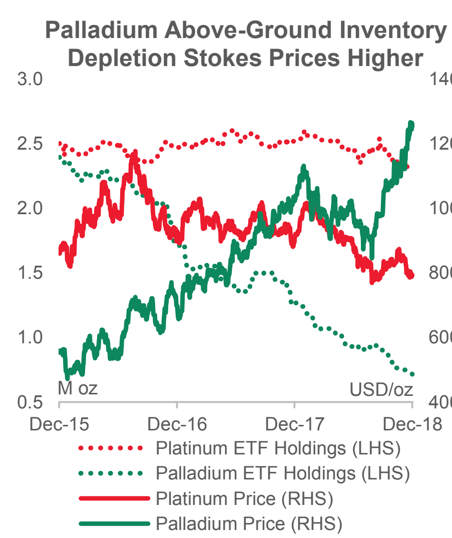
PALLADIUM: SECOND YEAR IN THE SECOND-TO-TOP SPOT

In an encore of last year’s showing, palladium took the number two spot again in 2018 (+19% following last year’s 51% gain) and experienced the top performance among peer precious metals—overtaking gold for the first time since late-2002. Palladium’s now multi-year bull-run has been supported by weak production growth, steady-to-rising demand, pronounced supply deficits, and rapidly falling inventories.

Palladium demand is intimately linked to the state of the global auto industry and related environmental policies, with more than 80% of the metal’s annual tonnage consumed in the auto catalysts of gasoline-propelled vehicles to reduce emissions intensity. While global auto sales have been relatively sluggish—particularly on the back of weakness in China and a US market coming off its prior highs (see my colleague Juan Manuel Herrera’s latest Global Auto Report for more detail on these trends)— palladium has benefitted from both 1) the switching momentum toward gasoline over diesel vehicles following the European diesel emissions scandal, and 2) the continued pressure to increase the environmental performance of commuter vehicles—particularly in emerging markets like China where smog is topping the social agenda—which increases the per-vehicle intensity of catalysts like palladium.

Meanwhile, supply continues to underperform demand but that’s not new—this is the eighth consecutive annual supply deficit, and inventories are falling fast. Palladium is primarily sourced as a by-product of other mining streams—typically nickel in Russia and platinum in South Africa—which makes the metal relatively unresponsive to its own price signals. The dearth of palladium has pushed consumers to buy it off exchanges, and ETFs that hold the metal have seen volumes drop as metal meant to serve as a proxy for the market ends up being needed in manufacturing processes (Chart 3). As in the case of so many commodity rallies, palladium’s fundamentally-driven march higher has been supercharged by significant inflows of speculative money betting that prices will go still higher; after more-or-less rationalizing to a neutral state in August, managed money turned aggressively bullish again and net speculative positioning is back at a level it was earlier in the year when palladium was still in the midst of its earlier bullish run.

Chart 3



Sources: Scotiabank Economics, Bloomberg.

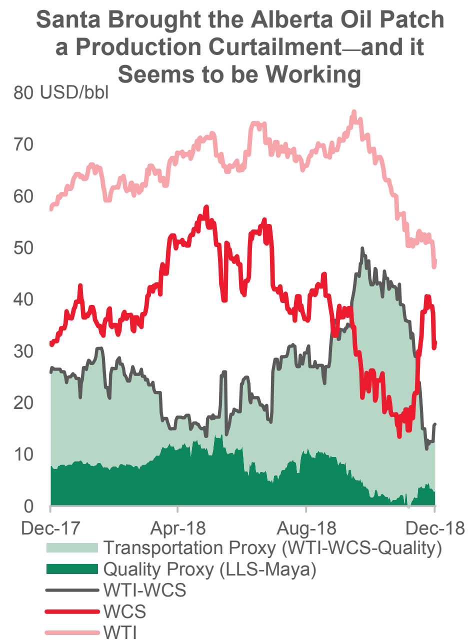
These high prices will ultimately be palladium’s undoing—a good deal of the demand for palladium came from substitution away from platinum, given that the latter has almost always traded at a steep premium to the former. However, the reverse can now occur as pricey palladium pushes manufacturers back toward platinum, though this would likely take 1–2 years as processes are retooled.

WESTERN CANADIAN SELECT CRUDE: BETTER PRICING, FOR NOW

Western Canadian Select (WCS), Canada's main heavy crude benchmark, had a rough year but level prices ended more or less neutral for 2018 (-4%), helped by a dramatic improvement in differentials to US benchmarks but weighed down by the generally poor performance of global crude prices (Chart 4). WCS contracts traded at their widest-ever discount to West Texas Intermediate (WTI) in 2018, at the worst of times fetching $50/bbl less than the US benchmark. These discounts were at their core the result of insufficient pipeline capacity out of Western Canada. Lacklustre oil-by-rail pickup, over-brimming storage tanks, and the steepest Midwest refinery maintenance period in more than a decade all contributed further pain and exacerbated the impact of bottlenecked midstream infrastructure. Abnormally wide Canadian crude differentials were costing the upstream industry tens of billions in foregone annualized revenue and the Alberta provincial government billions in lost royalty receipts, as we outlined in our earlier report. The pain prompted outcries from industry and the public, and tackling the discount jumped to the top of the provincial government's agenda.

Over the course of the past month, Alberta's provincial government announced the purchase of 120 kbpd of additional oil-by-rail tank car capacity, doubled down on programmes to bolster in-province petrochemical and refinery capacity, and ordered an across-the-board production curtailment beginning in January 2019 to help drain the regional supply glut. These efforts accelerated the improvement in discount that was already taking place, narrowing from more than $50/bbl under WTI in early-November to $30/bbl on the Friday before the Alberta Premier's Sunday evening curtailment announcement, to less than $20/bbl the following Monday. In the weeks since news of the production cut broke, the WCS discount has narrowed further, crashing past the $20/bbl that most had assumed as a floor toward $10–15/bbl, a lower level facilitated by the tighter light-heavy quality discount seen around the US Gulf Coast (Chart 4). WCS contracts are experiencing renewed pressure as WTI prices plunge below $50/bbl for the first time this year

Chart 4



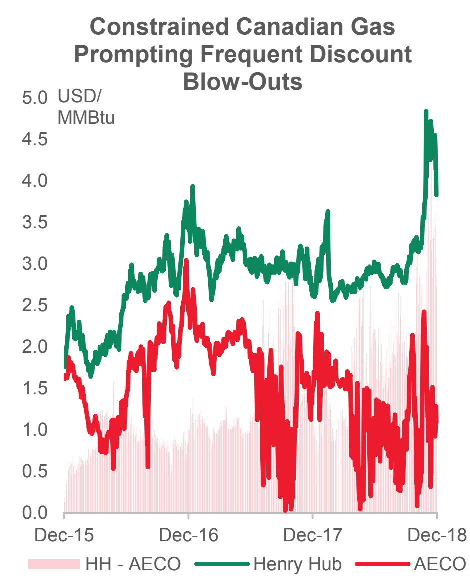
Source: Scotiabank Economics, Bloomberg.

AECO: CANADIAN GAS FAR CHEAPER THAN SANTA'S COAL

The worst performer of the year is the Canadian cousin of our top performer, with AECO natural gas (-43%)—Western Canada's primary natural gas benchmark—at times experiencing year-to-date losses of more than 90% through 2018 due to pipeline bottlenecks and stiff competition from a surging US shale patch.

The surging growth of low-cost northeast US shale gas has pushed Western Canadian supply out of its traditional marketplace in northeastern North America. And while US natural gas demand is keeping pace with rising domestic supplies, much of the new demand centres are on the wrong side of the continent—around the US gulf coast in the form of LNG export terminals, pipelines to Mexico, or growing petrochemical capacity—for Western Canadian gas to take advantage. The promising news regarding the LNG Canada investment that broke earlier in the year provides some light at the end of the tunnel for Western Canadian gas that is desperately looking for access to new overseas customers, but that Canadian LNG capacity still a few years away. Canadian producers have in recent years shifted their exports from the east to the Midwest and US west coast, but this tactic has more or less run its course with little end-customer switching flexibility remaining in the system.

Chart 5



Sources: Scotiabank Economics, Bloomberg.

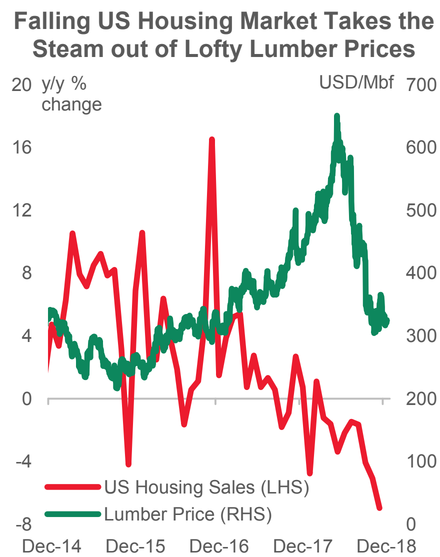
Western Canadian natural gas production continues to show relatively strong growth despite the fact that many producers have at times shut-in production due to the occasionally atrocious pricing environment. Much of the existing infrastructure was meant to take gas produced in southern Alberta and transport it east toward major demand centers in central Canada. Today, most of the natural gas production is coming from the north-western portion of Alberta and north-eastern BC, which adds to the transportation challenges facing the regional gas price.

TIMBER! LUMBER PRICES FALL FROM ALL-TIME HIGHS

Lumber went from top-performer in February and being up 45% in May to ending the year down 28%. Benchmark lumber contracts experienced a bull-run that brought prices to all-time highs of $639 per thousand board feet on the back of weak supply, soaring demand, and tariff costs. Production was hampered by two consecutive and devastating wildfires in British Columbia followed by a record-setting blaze in California, with Canadian rail bottlenecks further slowing the flow of boards south. Tightened supply was made more expensive by softwood tariffs on Canadian lumber imported into the US, which remains a structural importer and thus bears the brunt of the tariff burden leading to upward pressure on US lumber prices. Limited supplies were met with steady demand from the US housing market, creating a perfect storm for lumber prices to set all-time highs.

Then things began to turn, beginning in May and really accelerating through the end of the summer. Transportation bottlenecks eased, bringing more supply to the market just as US housing market conditions began to deteriorate. US housing sales contracted by 7% y/y in November compared to modest growth of 1.8% y/y in 2017 and US homebuilder sentiment has fallen to the lowest level since 2015. Much of this weakness comes on the back of considerable affordability pressures—not helped by soaring lumber prices—and increasingly expensive borrowing rates, though we expect the market to stabilize as house price gains slow, construction material costs fall, and continued labour market strength bolsters spending power.

Chart 6



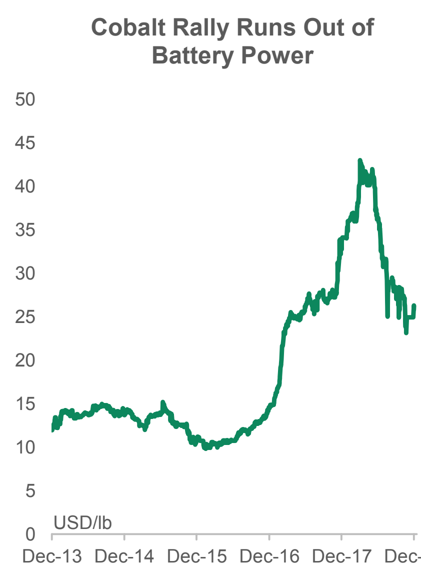
Sources: Scotiabank Economics, Bloomberg.

COBALT: EV DARLING RUNS OUT OF BATTERY POWER

Oh how the mighty have fallen. Cobalt was last year's best performing commodity (+127%) but this year the bullish narrative soured and prices are down 24% year-to-date, primarily on a weakening of the Chinese EV market following the rollback of consumer subsidies combined with the build-out of new production capacity. While the market normally talks about cobalt in its metallic form, battery demand typically comes in the form of cobalt hydroxide which stabilizes battery chemistries and extends useful lifespans. The fallback in EV demand coupled with the build-out of Chinese cobalt hydroxide production capacity has resulted in a localized glut and rising Chinese exports, which have put downward pressure on global prices.

Many risks remain for cobalt supply given that the Democratic Republic of Congo (DRC), one of the world's least secure jurisdictions, is expected to produce 90 kt of the total 135 kt supplied to the market this year. Cobalt prices had reached decade-highs of $43/lb in late-Spring, propelled higher by robust demand from traditional consumers like jet engine manufacturers. While electric vehicles still only account for a small share of cobalt demand today, EV fervour added further momentum on cobalt's way up, leaving further room to fall after EV exuberance naturally fell back from the lofty levels seen earlier this year.

Chart 7

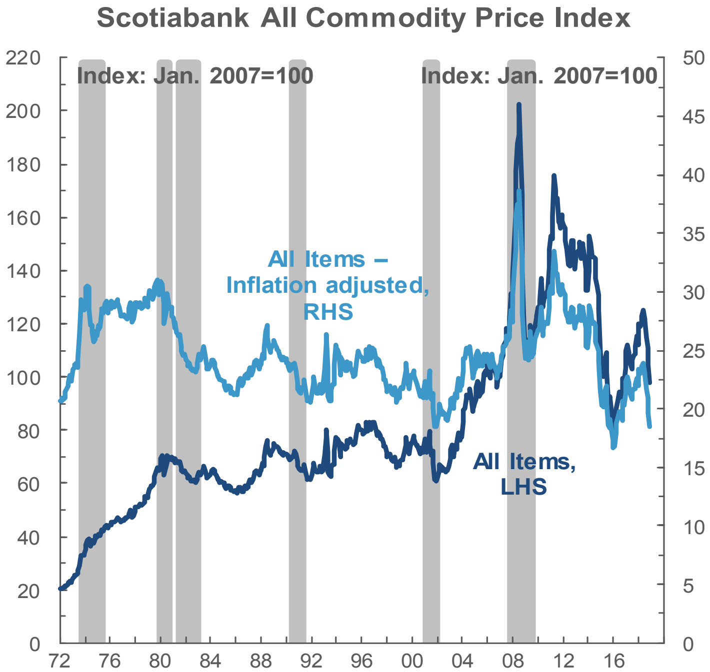


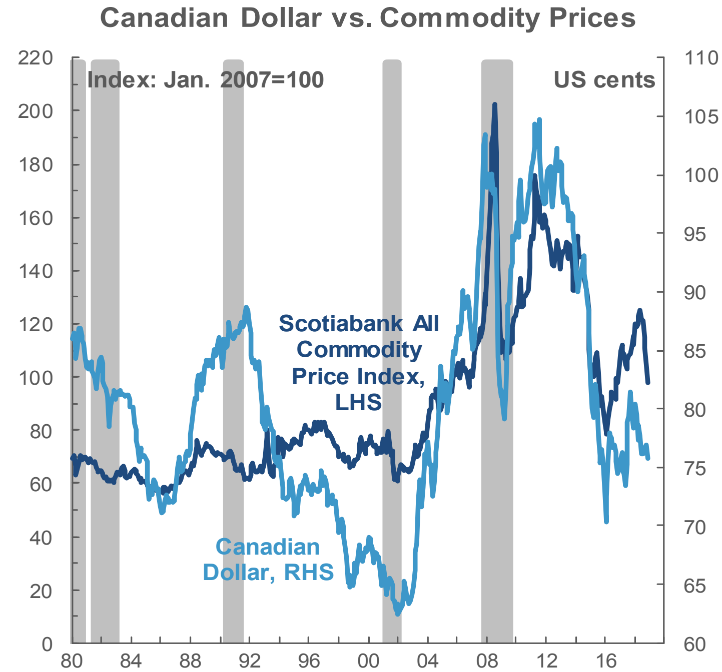
Sources: Scotiabank Economics, Bloomberg.

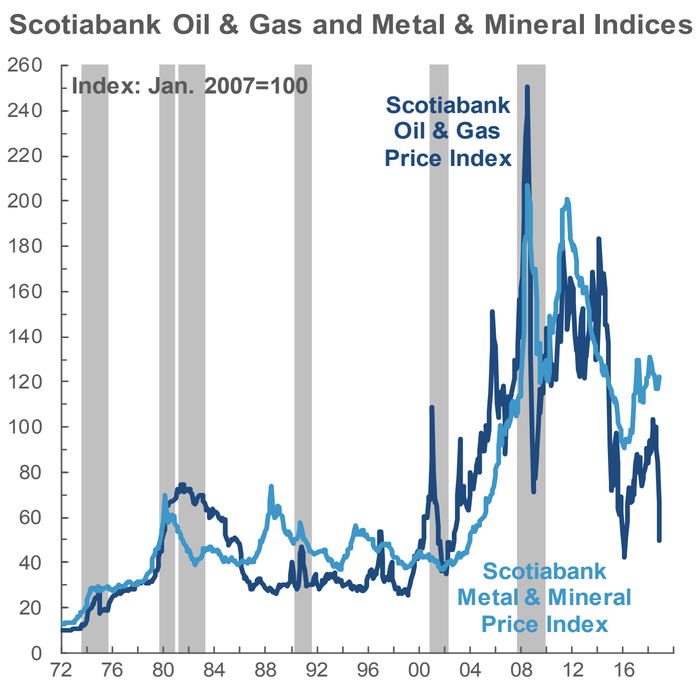
Price Outlook

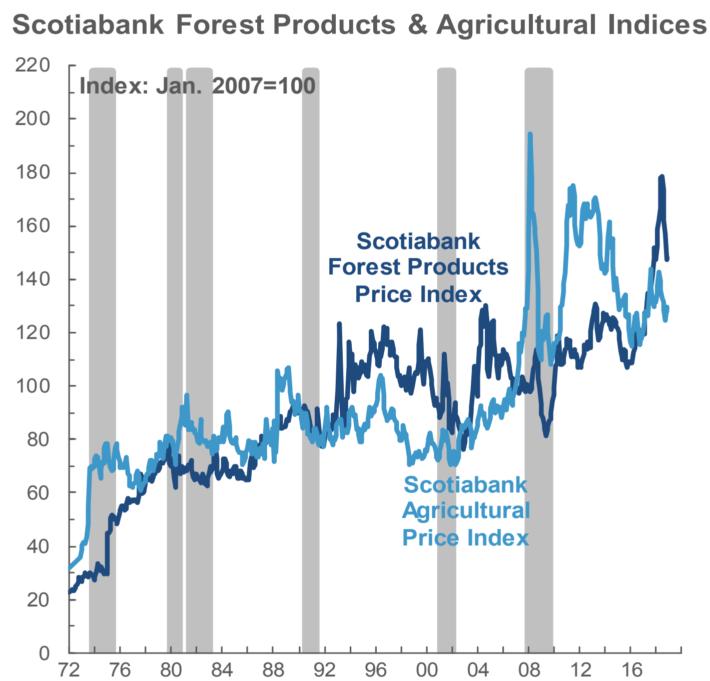
		2000–2016			2017	2018ytd	2018F	2019F
Oil & Gas		Monthly Avg. Low	Period Avg.	Monthly Avg. High				
Crude Oils								
West Texas Intermediate	USD/bbl	19.40	62.70	134.02	50.85	65.47	66	60
North Sea Brent Blend	USD/bbl	19.06	65.53	134.56	54.75	72.21	72	69
WCS - WTI Discount*	USD/bbl	-42.50	-16.85	-5.50	-12.74	-26.57	-27	-20
Natural Gas								
Nymex Henry Hub	USD/MMBtu	1.81	4.94	13.46	3.02	3.06	2.93	2.93
Metals & Minerals								
Base Metals								
Copper	USD/lb	0.62	2.35	4.48	2.80	2.96	2.99	3.00
Nickel	USD/lb	2.19	7.26	23.67	4.72	5.98	6.15	6.50
Zinc	USD/lb	0.34	0.81	2.00	1.31	1.33	1.33	1.30
Aluminium	USD/lb	0.58	0.86	1.39	0.89	0.96	0.95	1.00
Bulk Commodities								
Iron Ore	USD/t	27	108	302	72	70	65	65
Metallurgical Coal	USD/t	39	127	330	188	208	205	175
Precious Metals								
Gold	USD/toz	261	869	1,772	1,257	1,269	1,262	1,300

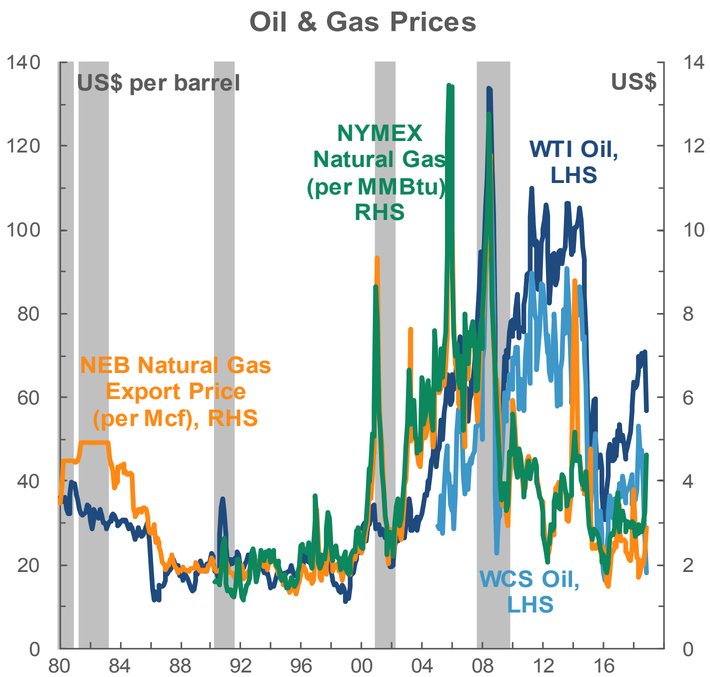
* 2008-16 average.

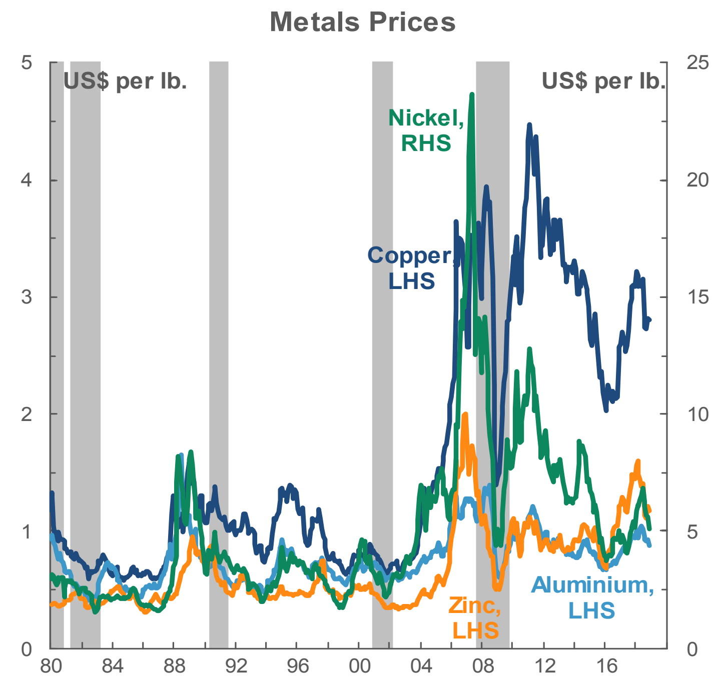

Scotiabank All Commodity Price Index
Index: Jan. 2007=100
Index: Jan. 2007=100
All Items – Inflation adjusted, RHS
All Items, LHS
220
200
180
160
140
120
100
80
60
40
20
0
50
45
40
35
30
25
20
15
10
5
0
72
76
80
84
88
92
96
00
04
08
12
16

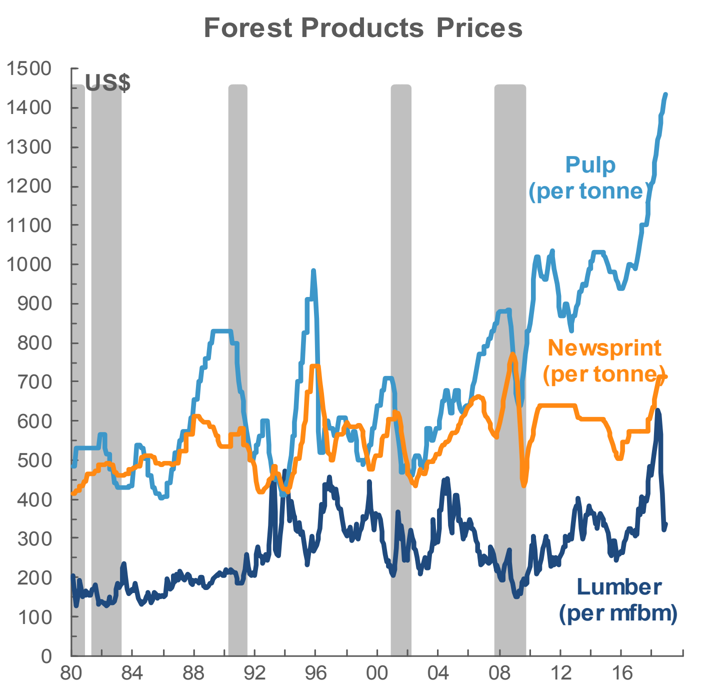

Canadian Dollar vs. Commodity Prices
Index: Jan. 2007=100
US cents
Scotiabank All Commodity Price Index, LHS
Canadian Dollar, RHS
220
200
180
160
140
120
100
80
60
40
20
0
110
105
100
95
90
85
80
75
70
65
60
80
84
88
92
96
00
04
08
12
16

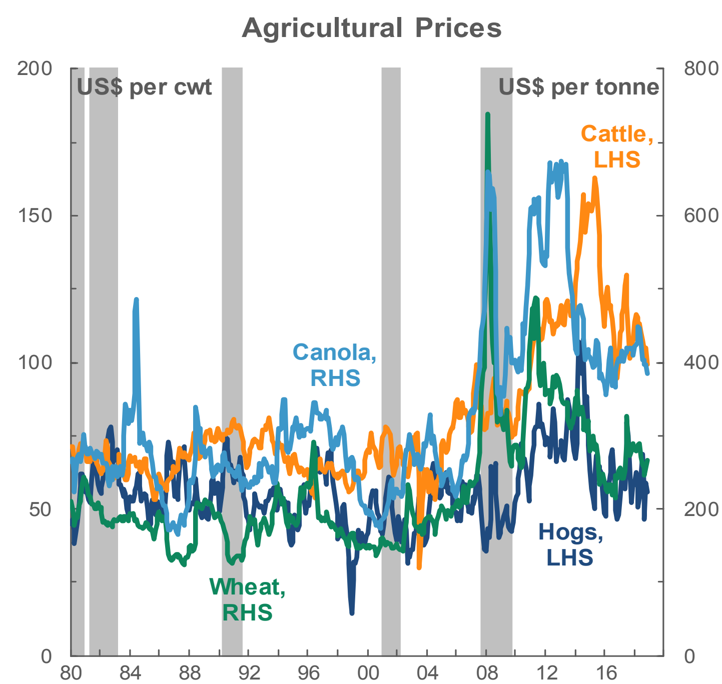

Scotiabank Oil & Gas and Metal & Mineral Indices
Index: Jan. 2007=100
Scotiabank Oil & Gas Price Index
Scotiabank Metal & Mineral Price Index
260
240
220
200
180
160
140
120
100
80
60
40
20
0
72
76
80
84
88
92
96
00
04
08
12
16


Scotiabank Forest Products & Agricultural Indices
Index: Jan. 2007=100
Scotiabank Forest Products Price Index
Scotiabank Agricultural Price Index
220
200
180
160
140
120
100
80
60
40
20
0
72
76
80
84
88
92
96
00
04
08
12
16


Oil & Gas Prices
US$ per barrel
US$
NYMEX Natural Gas (per MMBtu) RHS
WTI Oil, LHS
NEB Natural Gas Export Price (per Mcf), RHS
WCS Oil, LHS
140
120
100
80
60
40
20
0
14
12
10
8
6
4
2
0
80
84
88
92
96
00
04
08
12
16


Metals Prices
US$ per lb.
US$ per lb.
Nickel, RHS
Copper, LHS
Zinc, LHS
Aluminium, LHS
5
4
3
2
1
0
25
20
15
10
5
0
80
84
88
92
96
00
04
08
12
16


Forest Products Prices
US$
Pulp (per tonne)
Newsprint (per tonne)
Lumber (per mfbm)
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
80
84
88
92
96
00
04
08
12
16


Agricultural Prices
US$ per cwt
US$ per tonne
Cattle, LHS
Canola, RHS
Hogs, LHS
Wheat, RHS
200
150
100
50
0
800
600
400
200
0
80
84
88
92
96
00
04
08
12
16

Technical Note
Scotiabank Commodity Price Index — Principal Canadian Exports
January 2007 = 100

This Index has been designed to track the spot or transactions prices paid in U.S. dollars for key Canadian commodities and resource-based manufactured goods in export markets. The weight of each component is based upon its net export value in 2010. Prior to January 2007, the weight of each component was based on its export value in 1995-97, except for crude oil & refined petroleum products, uncoated freesheet paper and linerboard, where net exports were used. Canada imports a significant quantity of these products, and use of their export value alone would have overstated the importance in Canada's trade performance.

The following prices are included:

OIL & GAS

Crude Oil & Refined Petroleum Products (US$ per bbl) MSW light sweet crude oil at Edmonton (previously Edmonton Par crude) and Western Canadian Select heavy oil at Hardisty, Alberta; price differentials off WTI near-by futures from Bloomberg.

Natural Gas (US$ per mcf) Average export price quoted by the National Energy Board.

Natural Gas Liquids (NGLs – Propane, Butane, Ethane & Pentanes-Plus) (US$ per bbl), Propane at Edmonton & Sarnia.

METALS & MINERALS

Copper & Products (US$ per lb) LME official cash settlement price for grade A copper.

Zinc (US$ per lb) LME SHG cash settlement: prior to Sept 1990, U.S. producers' price for high-grade zinc delivered.

Lead (US$ per lb) LME official cash settlement price; prior to Jan. 1991, U.S. producers' price for common grade delivered.

Aluminium & Products (US$ per lb) since 1979, LME official cash settlement price.

Nickel (US$ per lb) since 1980, LME official cash settlement price.

Gold (US$ per oz) 'LBMA Gold Price PM' as of March 20, 2015.

Potash (US$ per tonne) Standard potassium chloride, spot price, FOB Vancouver.

Sulphur (US$ per tonne) Solid, spot price, FOB Vancouver.

Metallurgical Coal (US$ per tonne) Contract price for premium-grade hard coking coal, FOB Vancouver.

Iron Ore (US cents per dmtu) Spot price fines 62% Fe, CFR Qingdao, China; prior to Jan 2011, term-contract price for concentrates 66% Fe from Labrador/Quebec to Northern Europe (FOB Sept-Iles).

Uranium (US$ per lb) U_3O_8 near-by-futures from Bloomberg.

Molybdenum (US$ per lb) since March 1992, MW dealer oxide.

Cobalt (US$ per lb) MW dealer price.

FOREST PRODUCTS

Lumber & Wood Products, Western Spruce-Pine-Fir 2x4 No.2 & Btr (US$ per mfbm) FOB mill.

Oriented Strandboard (US$ per thousand sq. ft.), U.S. North Central region, 7/16 inch.

Pulp, Bleached Northern Softwood Kraft (US$ per tonne) Transactions price, delivery USA.

Newsprint (US$ per tonne) Average transactions price, 48.8 gsm, delivery Eastern USA.

Groundwood Specialty Papers (US$ per ton) Supercalendered-A paper, 35 lb., delivery USA.

Linerboard (US$ per ton), delivery Eastern USA with zone discounts.

AGRICULTURE

Wheat & Flour (US$ per tonne), DNS No 1 14% protein Duluth, Minn; prior to April 2011 No.1 CWRS, 13.5% protein at St. Lawrence.

Barley (US$ per tonne), since Dec.1994, No.1 at Lethbridge, Alberta.

Canola & Oilseeds (US$ per tonne) No.1 Canada, in store Vancouver.

Cattle & Beef (US$ per cwt) Steers over 1,051 pounds at Toronto; from Jan 1993, Ontario average.

Hogs & Pork (US$ per cwt) 100 Index Hogs at Toronto; from Jan 1993, Ontario average.

Fish & Seafood (US$ per lb) West Coast silver coho salmon; Atlantic lobster prices; prior to 1986 cod fillets & blocks.

Scotiabank Commodity Price Index — Components And Weights

Index Components	Net Export Value In 2010 (millions of dollars)	Index Weight (per cent)
OIL & GAS INDEX	**46,537**	**39.90**
Crude Oil & Refined Products	33,231	28.49
Natural Gas & LNG	11,741	10.07
NGLs	1,565	1.34
METAL & MINERAL INDEX	**35,109**	**30.10**
Copper	3,160	2.71
Zinc	1,255	1.08
Lead	579	0.50
Aluminium	6,045	5.18
Nickel	4,246	3.64
Gold	4,678	4.01
Coal	4,757	4.08
Iron Ore	3,346	2.87
Potash	5,161	4.42
Sulphur	457	0.39
Uranium	891	0.76
Cobalt	288	0.25
Molybdenum	246	0.21
FOREST PRODUCTS INDEX	**17,081**	**14.66**
Lumber & Wood Products	4,673	4.01
OSB	812	0.70
Pulp	6,818	5.85
Newsprint	2,734	2.34
Groundwood Spec. Papers	1,971	1.69
Linerboard	87	0.07
AGRICULTURAL INDEX	**17,901**	**15.35**
Wheat & Flour	4,693	4.02
Barley & Feedgrains	1,088	0.93
Canola & Oilseeds	5,398	4.63
Cattle & Beef	1,640	1.41
Hogs & Pork	2,378	2.04
Fish & Seafood	2,704	2.32
TOTAL INDEX	**116,643**	**100.00**