January 31, 2019

Oil Supply Risks Abound as Venezuela Falls into Crisis and the Rest of OPEC Reverses Gear

- **The prices of most commodities have improved through January as the worst of market's bearish macro sentiment was reversed, though political uncertainties continue to dominate investors' thinking.**
- **Oil prices are up roughly 25% from their Christmas Eve lows but sentiment remains relatively bearish despite still-healthy demand expectations and rising supply risks.**
- **The leadership crisis in Venezuela and subsequent US sanctions against the Maduro regime's oil exports present a significant risk to global oil supply, particularly heavier crudes currently consumed by US Gulf Coast refineries.**
- **Markets have yet to price in a material disruption of Venezuelan shipments given the recent whiplash on the impact of Iranian sanctions, but US sanctions against Venezuela's state-owned oil company PdVSA will almost certainly add further weight to already collapsing production levels (chart 1).**
- **Any Venezuelan heavy crude displaced from the US Gulf Coast will further narrow the already tight light-heavy quality differential; Canadian producers are expected to benefit from a price lift, and the Alberta government's decision to loosen output controls in February will help facilitate slightly more Canadian crude reaching the US Gulf Coast.**
- **Global oil demand growth forecasts remain strong, US shale production growth is expected to slow given lower prices and weaker rig counts, and Saudi Arabia is expected to reduce February output by nearly 1 MMbpd relative to the all-time high reached in November.**

The prices of most commodities have improved through January as the worst of the market's bearish macro sentiment was reversed, though political uncertainties continue to dominate investors' thinking. Between ongoing general concerns regarding global economic growth, the US-China trade dispute, and recent developments in Venezuela, commodity prices are once again expected to be driven over the coming month more by policy announcements than a renewed focus on longer-term fundamentals.

Oil prices continued to climb back from their Christmas Eve low and WTI contracts are up more than 25% into the mid-$50s. We expect that WTI will grind higher through the first quarter of 2019 and average $58/bbl for the year as market supply expectations are lowered. While improved, sentiment toward the oil complex remains depressed despite still-healthy demand expectations and rising supply risks. Supply concerns at this stage can be broadly broken out between 1) the rapidly deteriorating situation in Venezuela, 2) a sharp U-turn in Saudi crude output, and 3) downward revisions to flexible US production given lower prices.

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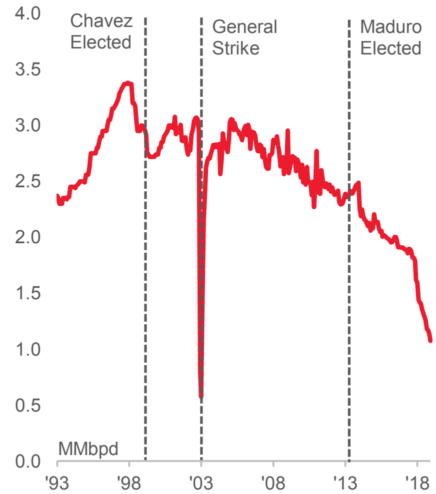
Chart 1

Venezuela's Oil Production Was Already Collapsing Before Latest Crisis



Sources: Scotiabank Economics, OMI.

Scotiabank Commodity Price Index

December 2018	(% change)		
	M/M	Y/Y	YTD
All Commodity*	**7.1**	**-5.5**	**5.8**
Industrials	**9.2**	**-5.9**	**6.9**
Oil & Gas	38.2	-12.6	4.5
Metal & Minerals	-1.0	-2.5	2.9
Forest Products	-2.1	-1.6	17.8
Agriculture	**-1.4**	**-3.7**	**1.1**

January 2007 = 100	2018		
	Dec	Nov	YTD avg.
All Commodity	**105.9**	**98.9**	**115.4**
Industrials	**102.2**	**93.6**	**112.3**
Oil & Gas	73.4	53.1	86.5
Metal & Minerals	119.5	120.7	122.8
Forest Products	145.0	148.2	160.8
Agriculture	**126.3**	**128.1**	**132.6**

* Weights: Oil & Gas (39.9%), Metal & Minerals (30.1%), Forest Products (14.7%), Agriculture (15.3%); Full technical note on page 7.

Venezuela has dominated oil industry headlines over the past few weeks. Oil prices have more or less dismissed recent developments and the market, still feeling the whiplash of the White House's Iran flip-flop, seems to be waiting to see the impact of US sanctions against the Venezuelan oil industry before pricing in material supply disruptions. And while the situation in Caracas is evolving and volatile at the moment, at least temporary disruptions feel inevitable and a more rapid decline in the country's oil production is likely.

The head of Venezuela's National Assembly, Juan Guaidó, declared that he was assuming the office of interim president, claiming that current president Nicholas Maduro's 2018 electoral victory was illegitimate. The presidential contestation is splitting the international community between supporter's of Guaidó (Canada, the US, Colombia, Peru, Chile, Brazil and many EU nations) and those who back the incumbent Maduro (Russia, China, Cuba, Bolivia, etc.). Countries in the Guaidó camp both question the legitimacy of 2018 presidential election and highlight Venezuela's widespread corruption, collapsing economy, and humanitarian decline. Over the past five years, Venezuela's GDP has contracted by more than 50%, hyperinflation has reached an eye-watering annualized estimate of more than one million percent on the back of the regime's rampant money-printing, food has become increasingly scarce and more than half of Venezuelans reported losing an average of 25 lbs in 2017 alone, and roughly 10% of the country's population (~3 million Venezuelans) have fled the country for lack of basic services and mounting urban violence.

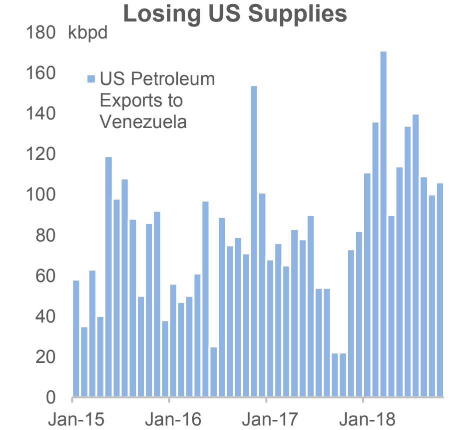
The economic and human cost comes alongside the increasingly dilapidated state of the country's oil industry, which accounts for more than 90% of the country's foreign earnings and is run by state-owned energy company PdVSA. Despite sitting on the world's largest proven reserves of crude oil—estimated at roughly 300 billion barrels—Venezuela's oil production has been in decline for two decades. The politicization of PdVSA by the Chavez and Maduro governments, the lack of investment, and general operational mismanagement all contributed to the current state of the industry. Crude output has fallen from nearly 3.5 MMbpd in the late-90s, gradually declined under the Chavez government to around 2.5 MMbpd by the time Maduro took over in 2013, to nearer 1 MMbpd today (chart 1 on front page). Even before the current leadership crisis flared up, we expected that PdVSA's production would continue to slide in 2019 and likely end the year 200–300 kbpd lower than where it began. The addition of US sanctions is expected to hasten that decline.

The extent of Venezuela's production decline, and thus the impact of global crude balances, is going to be driven by PdVSA's ability to 1) source new diluent supplies now that traditional US supplies have been cut off (chart 2), and 2) find new customers for the roughly 500 kbpd of heavy crude currently purchased by US Gulf Coast refineries (chart 3).

Finding new diluent suppliers poses the larger challenge, in our view. Current petroleum imports from the US of roughly 100 kbpd are mostly being used to dilute ultra-heavy Venezuelan to the point that it can be effectively flow through pipes, into tankers, and on to exports markets. The latest round of US sanctions are expected to sever this relationship, which means that PdVSA is going to need to find a new supplier. Europe is potential alternative, though European suppliers are likely to get squeamish at the thought of operating too close to potential US financial sanctions entanglements. Russian supplies could also fill in, but while Moscow has served as the Maduro regime's loudest international cheerleader, some private Russian oil firms

Chart 2

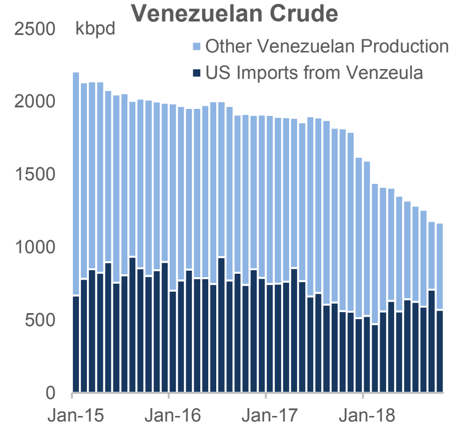
Venezuela Needs to Find A New Source of Diluent for Ultra-Heavy Crude After Losing US Supplies



Sources: Scotiabank Economics, EIA.

Chart 3

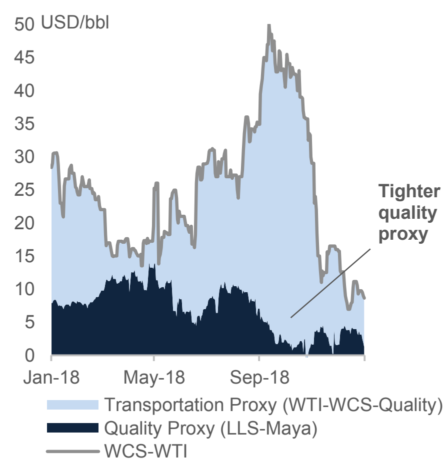
US Refineries Have Been Relatively Steady Source of Demand for Venezuelan Crude



Sources: Scotiabank Economics, OMI, EIA.

Chart 4

Heavy Crude Scarcity Has Already Benefitted WCS Prices



Note: Breakeven ranges assume constant quality discount of $8-10/bbl.
Source: Scotiabank Economics, Bloomberg.

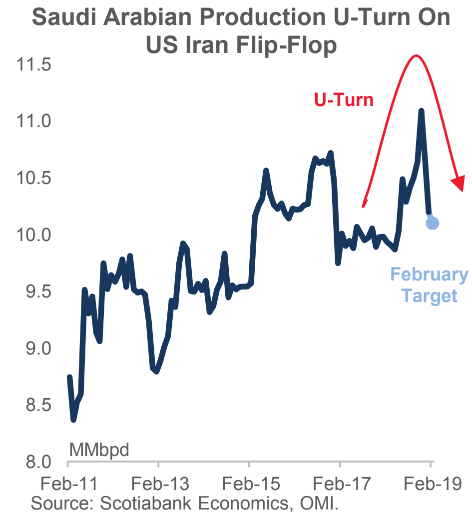
are also erring on the side of caution at this stage and cutting off shipments. If that crude can make it to market, however, finding new consumers for Venezuela's crude is expected to be an easier task. Refineries in China and India will likely be willing to accept the displaced heavy crude in exchange for hefty discounts, which represent the direct economic damage done to the regime by the sanctioned exports.

The displacement of Venezuela's barrels from US refineries is also likely to further exacerbate the ongoing scarcity of heavy crude around the US Gulf Coast. The light-heavy differential has already fallen from a normal level of $8–10/bbl to nearer $3/bbl (chart 4), and further heavy barrel losses could push that to zero or even lower (i.e. a heavy premium). This would benefit alternative suppliers of heavy crude like Mexico and Canada's oil patch. Canadian producers are expected to benefit as the relative value of heavy crude increases, but direct capture of traditional Venezuelan market share will be difficult given ongoing transportation constraints and the Alberta government's production curtailment. However, the recently announced loosening of provincial output controls could allow some additional barrels to head south; the provincial production ceiling has been lifted by 75 kbpd in February relative to a 325 kbpd total cut that took effect in January.

Elsewhere in OPEC, Saudi Arabia is taking an aggressive approach to its production cuts, dropping production from more than 11 MMbpd in November to a target of 10.1 MMbpd by February (chart 5). Riyadh's abrupt U-turn is a mirror of US sanctions policy toward Iran. Saudi Arabia only lifted production to all-time high levels late last year to fill in for the expected loss of Iranian supplies on the back of hawkish sanctions implementation; however, rising oil prices spooked the White House and the final hammer on Iranian exports was replaced by sanctions exemption waivers for importing nations. Saudi Arabia is not keen to repeat this process and is expected to be much firmer in its support of higher oil prices, which is why Riyadh's response to US hints that the Kingdom could help fill in for disruptions stemming from sanctions against Venezuela was that Washington could sort out its own problem by releasing oil from the strategic petroleum reserve (SPR)—which is roughly how you pronounce "that's your problem, not mine" in the lingo of an OPEC swing producer.

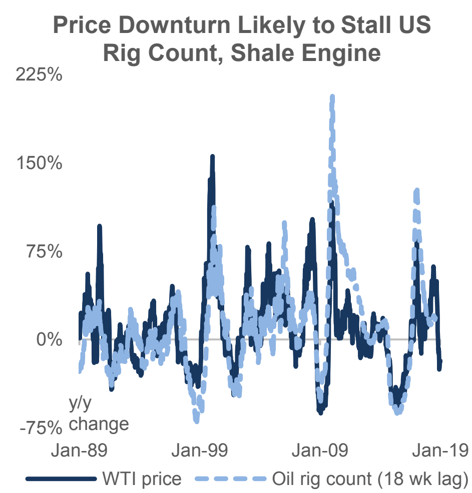
Lastly, growth in the US shale patch is expected to slow from last year's blistering pace and come in far lower than most were fearing in 2019 now that WTI prices are trading in the low-$50s rather than the low $70s per barrel. US producers will continue to drive production higher but even maintaining current output requires considerable drilling activity due to the rapid decline rates associated with tight oil wells. Furthermore, the productivity boost shale was receiving over the past few years has petered out, with organic innovation barely keeping pace with worsening geology as companies move out of "sweet spots" in the shale plays—all putting more pressure on healthy rig counts, which will have a far harder time keeping up that growth pace amid lower prices (chart 6).

Chart 5



Source: Scotiabank Economics, OMI.

Chart 6



Sources: Scotiabank Economics, Bloomberg, BH.

Shifting to metals markets, Vale, the Brazilian bulks miner, has announced that it plans to shut in 40 mt of iron ore production at ten Brazilian mines following the catastrophic collapse of a mine waste dam that has left at least 84 dead and many more missing. Iron ore prices rose quickly on the news, up to over $85/t relative to our prior forecast for the steelmaking ingredient to average $65/t in 2019. Vale has additional mine capacity that it may be able to ramp up in order to make up for the shortfall, but it is likely that we'll see at least some reduction in seaborne export tonnage that will keep prices tight over the next few months. The impact on iron ore pellets, which trade at a premium to the price of 62% fines that is typically quoted when discussing iron ore, will be particularly acute given that production out of the mines in question account for a larger share of the pellet sub-market than the broader iron ore trade.

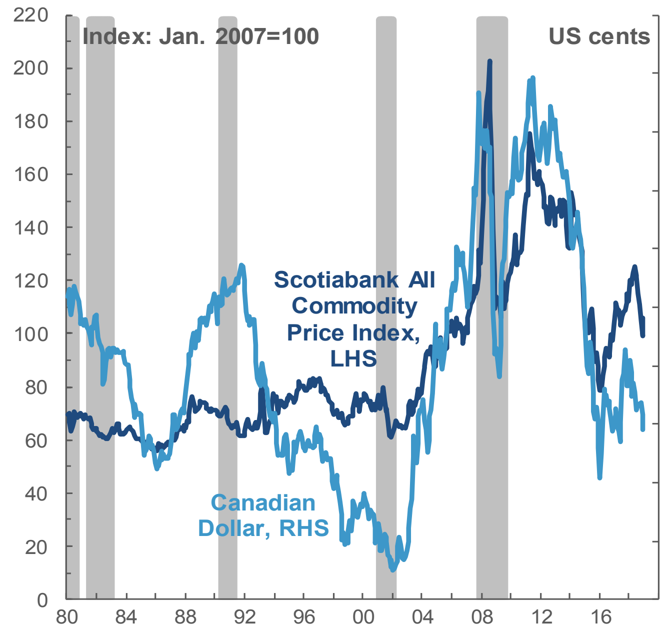
Price Outlook

		2000–2017			2018	2019ytd	2019F	2020F
Oil & Gas		Low	Period Avg.	High				
Crude Oils								
West Texas Intermediate	USD/bbl	17.45	62.05	145.29	64.90	51.59	58	62
North Sea Brent Blend	USD/bbl	17.68	64.93	146.08	71.69	60.25	67	69
WCS - WTI Discount*	USD/bbl	-42.50	-16.43	-5.50	-26.29	-9.60	-20	-20
Natural Gas								
Nymex Henry Hub	USD/MMBtu	1.64	4.83	15.38	3.07	3.10	3.25	2.80
Metals & Minerals								
Base Metals								
Copper	USD/lb	0.60	2.38	4.60	2.96	2.69	3.00	3.20
Nickel	USD/lb	2.00	7.12	24.58	5.95	5.20	5.50	6.00
Zinc	USD/lb	0.33	0.84	2.10	1.33	1.16	1.20	1.20
Aluminium	USD/lb	0.56	0.87	1.49	0.96	0.84	0.90	0.90
Bulk Commodities								
Iron Ore	USD/t	27	108	302	70	76	65	63
Metallurgical Coal	USD/t	39	131	330	208	197	175	160
Precious Metals								
Gold	USD/toz	256	890	1,895	1,268	1,290	1,300	1,300

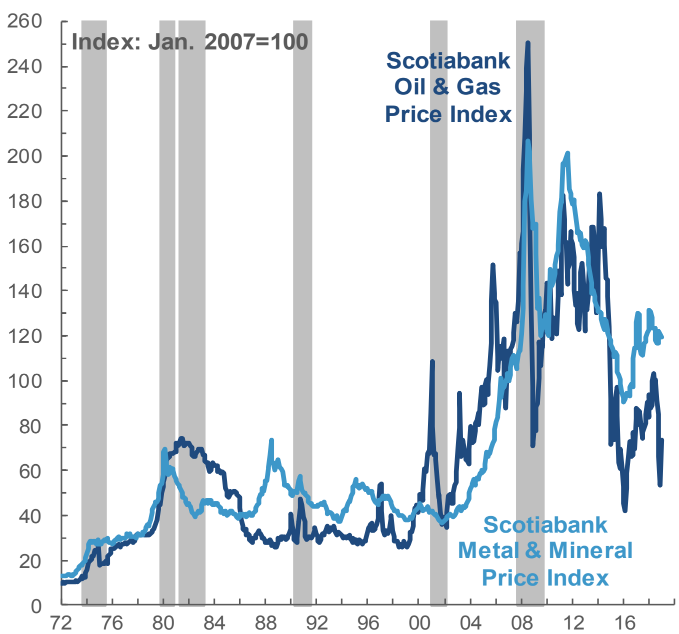
* 2008-17 average.

Scotiabank All Commodity Price Index

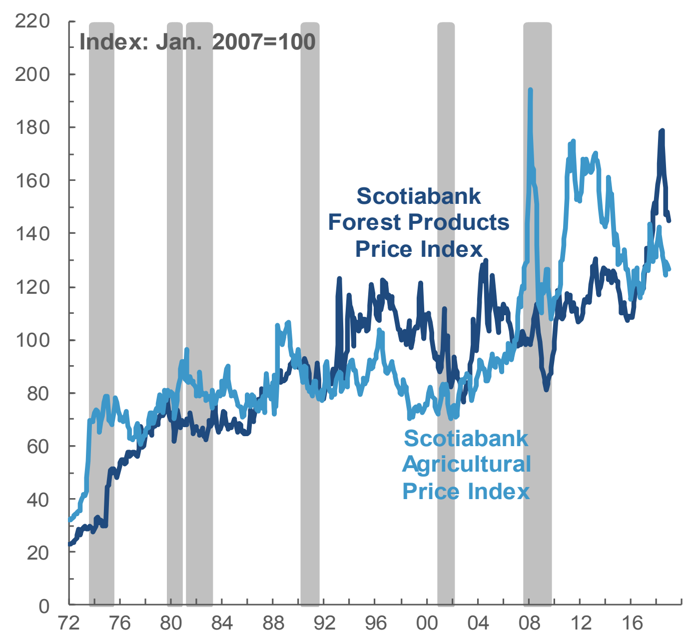
Canadian Dollar vs. Commodity Prices



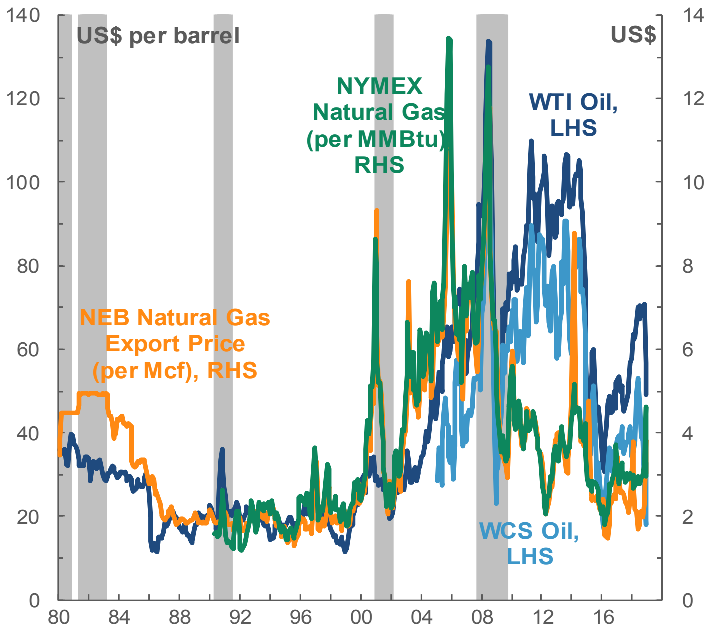
Scotiabank Oil & Gas and Metal & Mineral Indices



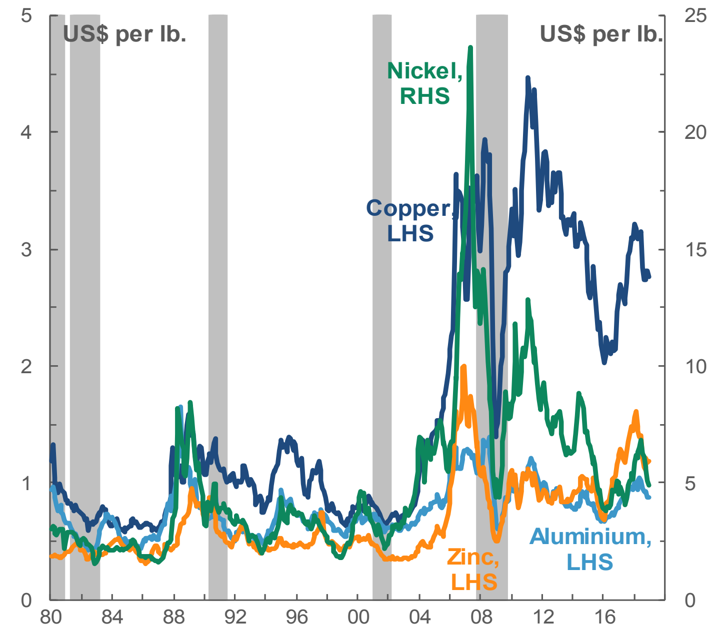
Scotiabank Forest Products & Agricultural Indices



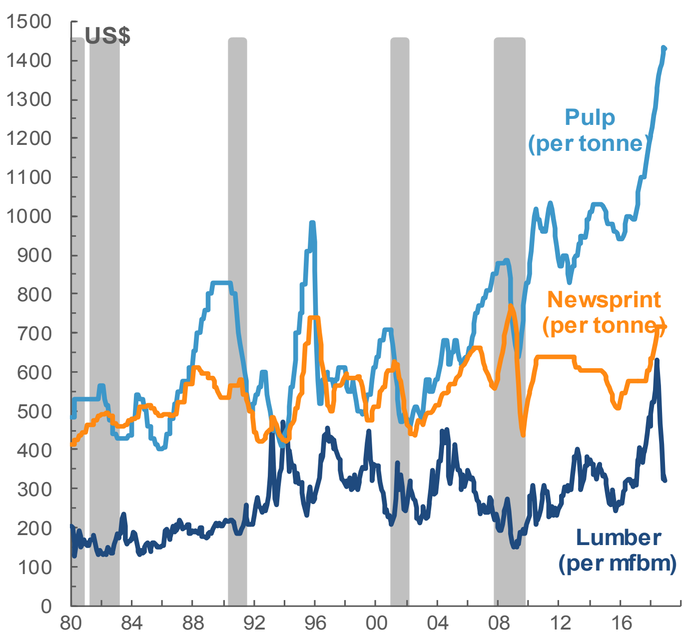
Oil & Gas Prices



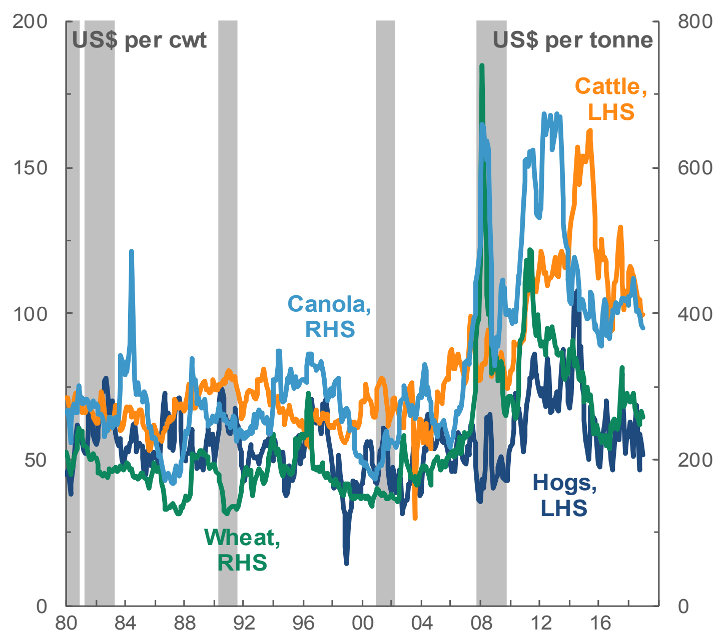
Metals Prices



Forest Products Prices



Agricultural Prices



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**