

Scotiabank

Commodity Price Index

Rory Johnston 416.862.3908
rory.johnston@scotiabank.com

Commodities Lift Off Unsustainable Lows, But Pace Appears Overheated

- Oil and iron ore prices are likely getting ahead of underlying fundamentals.
- WTI expected to reach \$45-50/bbl by year-end, but interim prices may ease slightly from current levels.
- Chinese exchanges move to blunt potentially speculative activity in overheated metals markets.

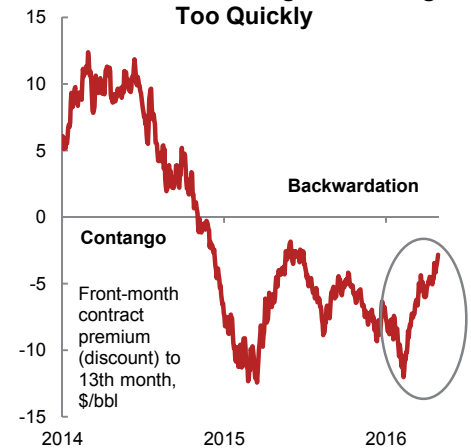
Volatility abounds and sharp rallies have elevated most commodities off recent bottoms. Scotiabank's **Commodity Price Index** lifted off a more than 12-year low in February, rallying 7.8% m/m in March. **While the direction of this recent price activity is in line with Scotiabank Economics' view, the frenetic pace of these rallies is aggressive based on our reading of the fundamentals. There is a risk of a short-term correction in prices, though we expect commodity prices will rise further as the year progresses.** That said, it is also unlikely that prices re-test the exceptionally low levels reached earlier this year given that they were also likely the result of speculative momentum.

Oil & Gas

The **Oil & Gas Index increased by 26.5% m/m** as crude oil lifted off its February lows. West Texas Intermediate (WTI) rose from \$26.19/bbl on February 11 to average \$37.55/bbl in March. **Oil prices are forecast to continue rising: Scotiabank Economics expects WTI to reach \$45-50/bbl by year-end and average \$42/bbl in 2016 before reaching an average of \$53/bbl in 2017 and \$55-60/bbl by end-2017.** In the meantime, the light sweet inland benchmark continues to test fresh yearly highs (\$46/bbl as of writing) but these recent gains are at risk of near-term retracement. **We do not believe that the current pace of appreciation — driven more in our view by financial activity rather than slower-moving fundamentals — is sustainable and prices may fall again before continuing their gradual path back to finding new equilibrium levels.**

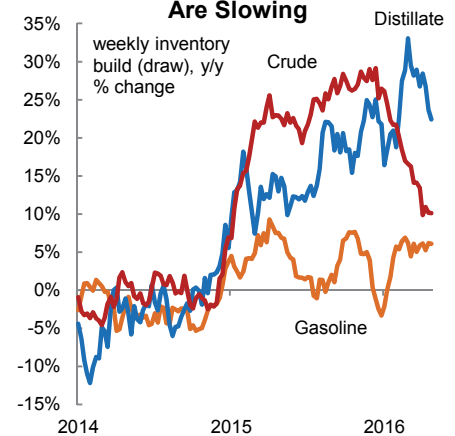
While the spot price of WTI has risen sharply off its February 11 low (+78% as of writing), thirteen-month forward contracts have risen at a far more subdued pace (+30%) over the same period. This has caused a significant narrowing of the contango (the front-month contract discount relative to the thirteenth-month), from \$11.53/bbl on February 11th to \$3.72/bbl today (Chart 1). Given that the oil market remained oversupplied by an estimated 1.5-2.0 mbpd in 16Q1, inventories will continue to swell — albeit at a reduced pace (Chart 2) — throughout the remainder of the year and spot prices may need to fall in order to compensate for necessary storage costs. We anticipate subdued supply and healthy demand growth over the

Chart 1: WTI Contango Narrowing Too Quickly



Source: Bloomberg, Scotiabank Economics.

Chart 2: US Crude Inventory Builds Are Slowing



Source: EIA, Scotiabank Economics.

Scotiabank Economics

Scotia Plaza 40 King Street West, 63rd Floor
 Toronto, Ontario Canada M5H 1H1
 Tel: 416.866.6253 Fax: 416.866.2829
 Email: scotia.economics@scotiabank.com

This report has been prepared by Scotiabank Economics as a resource for the clients of Scotiabank. Opinions, estimates and projections contained herein are our own as of the date hereof and are subject to change without notice. The information and opinions contained herein have been compiled or arrived at from sources believed reliable but no representation or warranty, express or implied, is made as to their accuracy or completeness. Neither Scotiabank nor its affiliates accepts any liability whatsoever for any loss arising from any use of this report or its contents.

™ Trademark of The Bank of Nova Scotia. Used under license, where applicable.

Scotiabank
Commodity Price Index

next 18 months to close the gap by 17H2, at which point the market will begin digesting inventories accumulated during the glut. Commercial crude inventories remain at 87-year highs in the U.S., but the pace of builds has slowed considerably from almost 30% y/y in November to a more manageable 10% y/y in April.

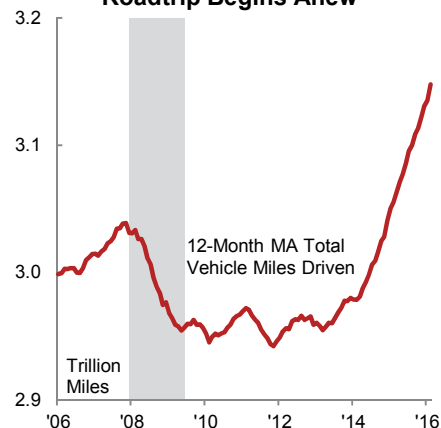
There are definite areas of strength in the oil market, despite the near-term price risks. U.S. gasoline demand set a new March record at 9.25 Mbpd as motorists kicked off the spring/summer driving season early and with a bang (Chart 3). Petroleum demand in India is also booming — up over 600 kbpd y/y in March to 4.33 Mbpd (+16.4% y/y) — and the country is poised to be the single-largest contributor to global demand growth this year.

Meanwhile, U.S. crude production continues to slip, down almost 300 kbpd year-to-date and more than 650 kbpd since production peaked last June. Similarly, China and Mexico are also showing signs of production strain amidst the lower price environment, down 185 kbpd and 60 kbpd year-to-date, respectively. Finally, recent unplanned supply outages — Kuwaiti strike, attacks on Nigerian and Iraqi pipelines, ongoing strife in Libya, and Venezuela's acute power crisis — highlight that spare capacity remains extremely tight and the current surplus is only a few geopolitical misfortunes away from an acute deficit.

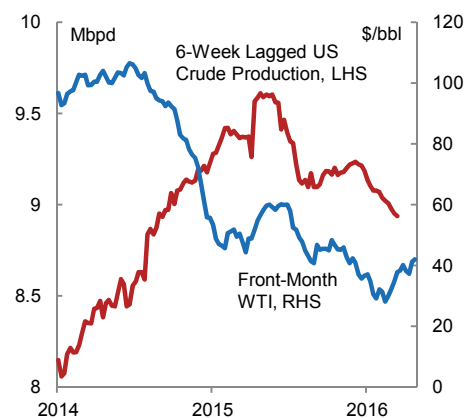
Headwinds remain, however. Another way of looking at those unplanned supply outages is that they are not inherently permanent; the owners of those wells have every incentive to restart production and return to the market if circumstances allow, further glutting the system. Furthermore, the magnitude of the current rally may breathe new life into U.S. tight oil producers, with a similar price bump last year temporarily reversing initial output declines (Chart 4). This is unlikely to fundamentally reverse the declining trend, but it may slow its pace and further delay market balance. Indeed, it appears that many companies are already taking advantage of higher prices and selling forward large volumes of production, which may also help explain the less dramatic price gains further along the curve.

China also remains a key concern and general question mark. China accounted for roughly half of global demand growth over the past decade (Chart 5), but demand growth this year is expected to slow to less than 300 kbpd (+2.5% y/y) from more than 600 kbpd last year. Despite this slowdown, Chinese crude imports are soaring, up an average of 1.4 Mbpd y/y (22%) through February and March. Refinery throughput volumes, however, have failed to keep pace and China has absorbed 1.35 Mbpd of “excess” crude (domestic production plus net imports minus refinery throughputs) over that same period, with those barrels likely finding a home in strategic reserves or speculative storage (difficult to differentiate due to the lack of inventory transparency). Low prices make filling strategic reserves attractive, and it is possible that the same speculation seen in Chinese metals markets (see Metals & Minerals section) has resulted in large volumes being purchased on the gamble that prices rise considerably in the future. It is important to differentiate this type of speculative storage from a safer, essentially intertemporal-demand-shifting, carry-trade where an investor locks in a return by buying deeply discounted spot cargoes and selling them forward (spot-future spread minus storage and interest costs = profit).

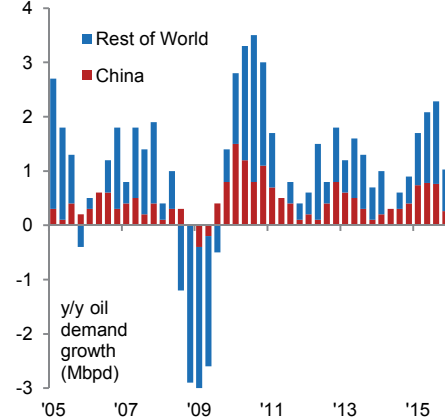
Finally, many questions remain regarding the future production path of major OPEC producers. Saudi Arabia's fiscal break-even price, the crude price that

Chart 3: The Great American Roadtrip Begins Anew


Source: FRED, Scotiabank Economics.

Chart 4: Premature Rally May Prolong US Supply Adjustment


Source: EIA, Bloomberg, Scotiabank Economics.

Chart 5: China Has Driven Global Crude Demand Over Past Decade


Source: IEA, Scotiabank Economics.

Scotiabank
Commodity Price Index

is required to balance its budget, dropped sharply to \$66.70/bbl in 2016 from \$94.80 in 2015, according to the IMF. While the Kingdom has shown a willingness to run significant deficits (net foreign assets fell by US\$115 billion in 2015), this move further buttresses state finances against a lower-for-longer price outlook. Add to this Riyadh's unwillingness to compromise on Iran's post-sanctions export plans (which recently precipitated the collapse of the major producer meeting in Doha, Qatar) and the Kingdom's newest Vision 2030 strategy aimed at dramatically reducing economic oil dependence. Meanwhile, both Iraq and Iran are expected to further increase production this year, with exports from the latter returning to the market faster than had been originally expected despite lingering sanctions-related complications.

Metals & Minerals

The **Metal & Mineral Index advanced by 3.2% m/m in March** on the back of significant price gains across the board (Iron Ore +19.7% m/m; Copper +7.7%; Zinc +5.4%; and Nickel +5.0%).

Iron ore (62% Fe delivered to Qingdao) experienced frenzied price momentum, jumping from \$51.44/t at the beginning of March to a high of \$70.46/t mid-April. A good deal of this strength can be chalked up to booming steel prices on the back of Chinese government credit stimulus and restocking before summer construction. However, there have also been exceptionally high trading volumes — recent sessions have seen daily iron ore trading volumes exceed annual imports and the average holding period for these contracts is steadily declining (Chart 6), raising suspicions of increased speculative activity. In an effort to tamp down speculation, the Dalian Commodity Exchange and the Shanghai Futures Exchange increased trading margin requirements for iron ore, hot rolled coil, and steel rebar; prices have since fallen from highs reached earlier this week. It will be difficult for iron ore to maintain current price levels with new low-cost supply coming online in both Australia (Roy Hill, 55 Mt/y) and Brazil (S11D, 90 Mt/y).

The base metals are also being swept up in the generally bullish commodity sentiment as well as benefitting from China's most recent stimulus push. Copper continues to experience near-term weakness but longer-term prospects are strong as developing markets increase electrical distribution network density and carbon-conscious global policies push for increased copper-intensive renewable energy market share. Codelco, the world's largest copper producer, is aiming to reduce production costs by roughly 9% to \$1.26/lb this year from \$1.39/lb in 2015. Meanwhile, zinc remains a market with fundamental support and prices are forecast to rise materially through 2017. The closing of the Century (Australia) and Lisheen (Ireland) zinc mines as well as Glencore's decision to idle roughly 500 kt of supply until prices recover have left the zinc concentrates market in deficit.

Scotiabank Commodity Price Index

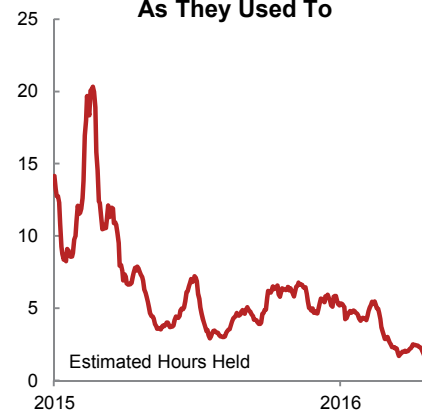
March 2016	Growth Trends	(per cent change)	(Compound Annual Growth Rates)				
			Weights	One Month	One Year	Three Months	One Year
All Commodity Price Index	100.0	7.8	145.7	10.0	-15.4	-12.0	
Industrials	84.7	9.8	205.7	8.2	-17.2	-13.3	
Oil & Gas	39.9	26.5	1577.5	1.6	-28.0	-19.9	
Metal & Minerals	30.1	3.2	46.6	10.3	-16.0	-12.0	
Forest Products	14.7	3.4	50.0	13.8	-0.5	-0.8	
Agriculture	15.3	1.3	16.3	16.6	-8.4	-5.9	

Index: January 2007 = 100

	2016			2015	
	Mar	Feb	Jan	Dec	Mar
All Commodity Price Index	84.7	78.6	78.9	82.7	100.2
Industrials	78.2	71.2	72.3	76.6	94.4
Oil & Gas	53.2	42.0	45.4	52.9	73.8
Metal & Minerals	94.6	91.7	90.4	92.4	112.6
Forest Products	112.3	108.6	108.4	108.8	112.9
Agriculture	120.9	119.4	115.1	116.3	132.0

Re-designed Index: Net export weights in 2010, data re-estimated back through 2007, January 2007=100. As of March 20, 2015, the 'London Gold Fix', was replaced by the 'LBMA Gold Price'. The Bank of Nova Scotia - Scotia Mocatta is one of seven initial participants in the 'LBMA Gold Price' auction.

Chart 6: Investors Aren't Holding Iron Ore Contracts As Long As They Used To



Source: Bloomberg, Scotiabank Economics.
 Note: 10-trading day MA estimated av. hold period for an iron ore contract on Dalian Commodity Exchange; open interest / volume x trading hours.

Forest Products & Agriculture

Forest Products also experienced strong gains (+3.4% m/m) as lumber prices rallied ahead of the spring building season. Inventories were kept lean after recent harsh winters pushed back building demand and led to inventory hangovers; however, this year's mild winter has seen demand rise early, putting increased pressure on replenishment buying in February and March. The **Agricultural Index** advanced 1.3% m/m on the back of a rally in canola (+5.2% m/m) and beef (+2.6% m/m). Beef prices have since eased slightly due to a small oversupply of fed cattle but demand is expected to ramp up ahead of barbeque season.

Industrial Commodity Price Outlook

	<u>1999</u>	<u>2000</u>	<u>2008</u>	<u>2009</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016F</u>		<u>2017F</u>
								<u>Apr 28</u>	<u>Avg F</u>	
OIL & GAS										
West Texas Intermediate Crude Oil	19.25	30.20	99.62	(U.S. dollars per barrel)						
				61.78	98	93	49	46.03	42	53
Brent Blend Spot	17.86	28.47	97.95	(U.S. dollars per barrel)						
				62.26	109	99	54	48.14	43	54
Natural Gas, Average Alberta Plantgate	2.55	4.50	7.88	(Cdn dollars per mcf)						
				3.85	3.74	4.22	2.56	1.92	2.00-2.25	2.25-2.50
				(Feb)						
Nymex Natural Gas	2.31	4.32	8.90	(U.S. dollars per mmbtu)						
				4.15	3.73	4.28	2.63	2.08	2.25-2.50	2.50-2.75
METALS										
				(U.S. dollars per pound)						
Uranium	10.20	8.29	63.17	46.65	38.50	33.50	36.82	27.50	31	37
Zinc¹	0.49	0.51	0.85	0.75	0.87	0.98	0.88	0.85	0.83	1.25
Aluminium¹	0.62	0.70	1.17	0.76	0.84	0.85	0.75	0.75	0.72	0.76
Nickel¹	2.73	3.92	9.57	6.65	6.80	7.65	5.37	4.15	3.90	4.50
Copper¹	0.71	0.82	3.15	2.34	3.32	3.11	2.50	2.23	2.20	2.30
				(U.S. dollars per ounce)						
Gold²	279	279	872	973	1,410	1,266	1,160	1,256	1,190	1,250
FOREST PRODUCTS										
Lumber, Western Spruce-Pine-Fir 2x4s	368	282	215 ⁺	(U.S. dollars per mfbm)						
				178 ⁺	356 ⁺	349 ⁺	277	278	320	350
Oriented Strandboard (OSB)³	259	207	171	(U.S. dollars per thousand sq. ft.)						
				163	315	217	208	247	260	290
Newsprint⁴	510	560	695	(U.S. dollars per tonne)						
				560	608	604	538	545	537	550
				(Mar)						
Pulp⁴, Northern Bleached Softwood Kraft	543	685	856	720	941	1,025	972	950	950	950
				(Mar)						
Supercalendered A Paper⁴ (35 lb. offset)	803	820	866	(U.S. dollars per ton)						
				798	811	781	775	745	745	770
				(Mar)						
Linerboard⁴, 42 lb.	383	453	569	545	728	740	740	725	710	700-710
				(Mar)						

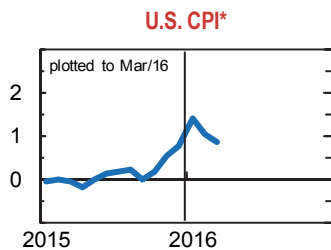
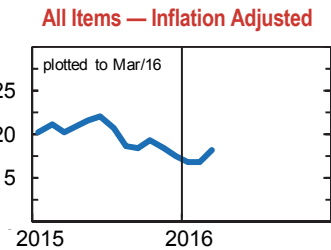
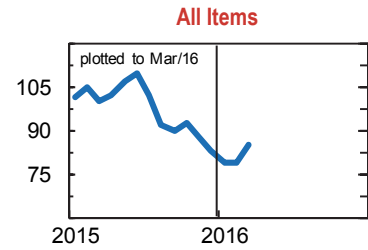
¹ LME Base metals *March 24, 2016 ² London PM Fix and LBMA PM prices ³ U.S. Northcentral region ⁴ Delivered to the Eastern U.S. +FOB mill price including export tax for shipments to the United States.

**Scotiabank
Commodity Price Index**

Scotiabank All Commodity Price Index ¹

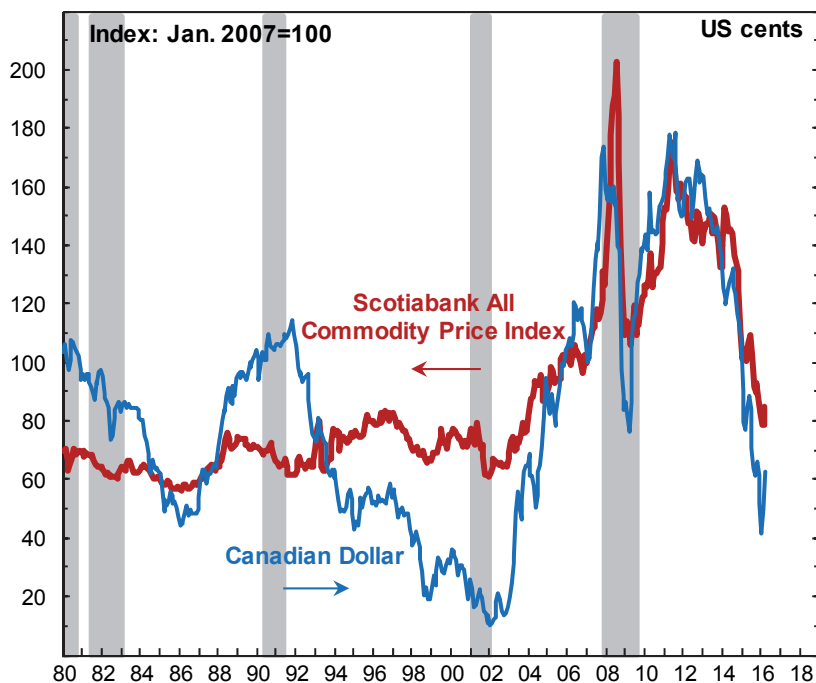


- 1. A trade-weighted U.S. dollar-based index of principal Canadian exports.
- 2. Index deflated by U.S. Producer Price Index for Intermediate Goods.
- Shaded areas represent U.S. recession periods.

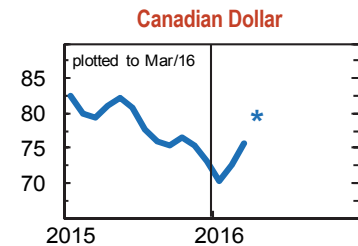


* Year-over-year per cent change.

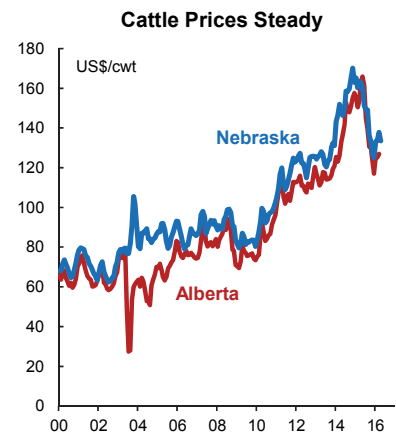
Canadian Dollar vs. Commodity Prices



Shaded areas represent U.S. recession periods.

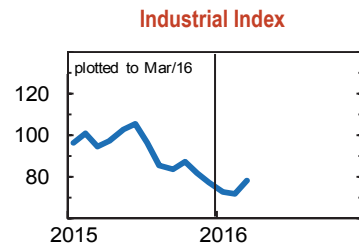


* April 28, 2016: 79.65 U.S. cents.



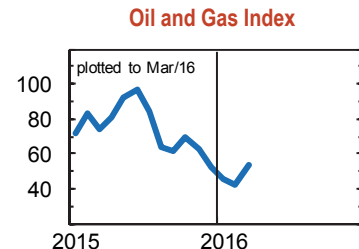
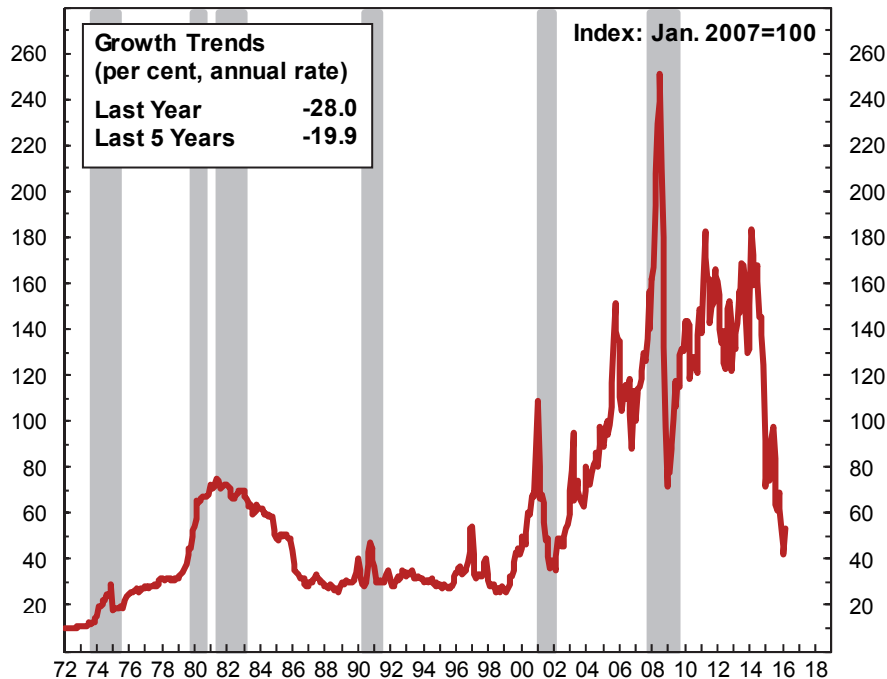
**Scotiabank
Commodity Price Index**

Scotiabank Industrial Commodity Price Index ¹



1. A trade-weighted U.S. dollar-based index of principal Canadian exports; index includes oil & gas, metals and minerals, and forest products.
 - Shaded areas represent U.S. recession periods.

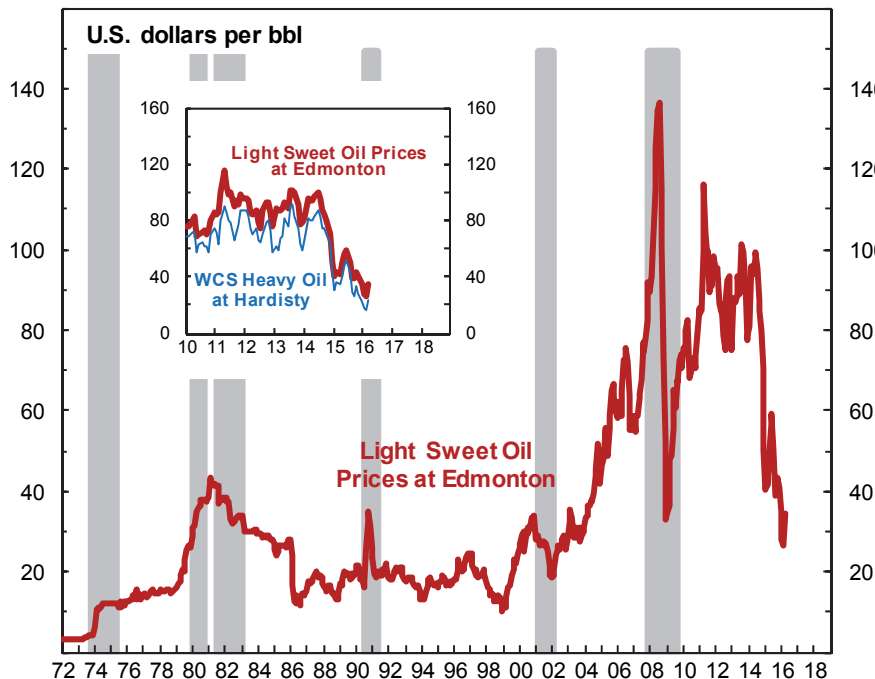
Scotiabank Oil and Gas Price Index



Shaded areas represent U.S. recession periods.

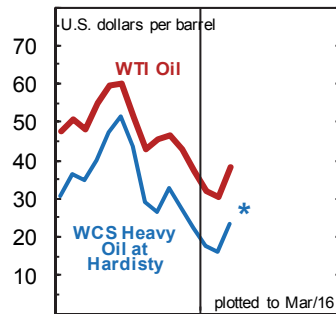
Scotiabank
Commodity Price Index

Western Canadian Oil Prices



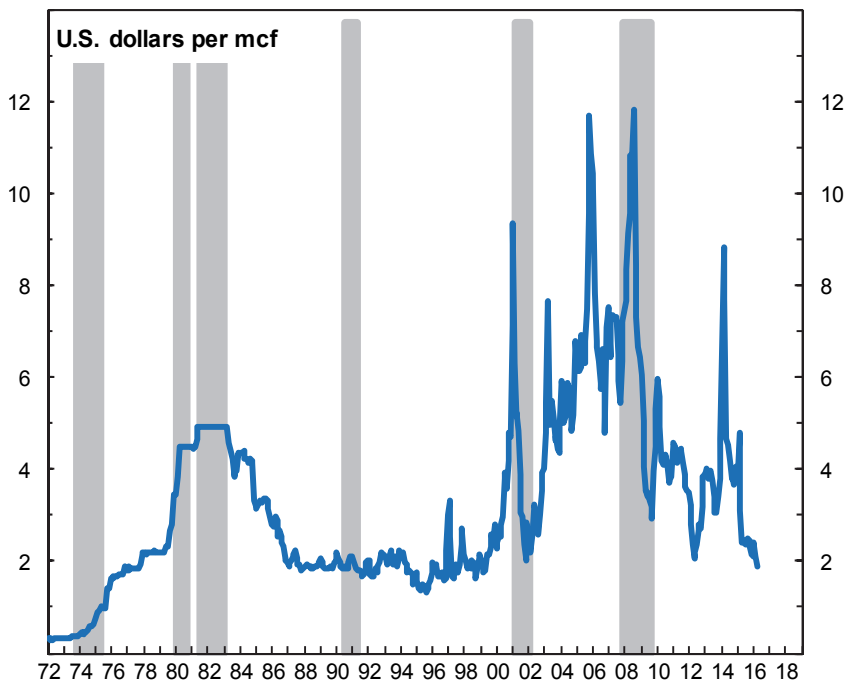
– Shaded areas represent U.S. recession periods.

Crude Oil Prices

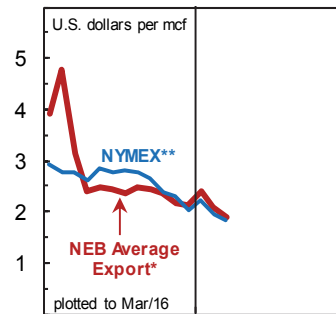


* WCS April 2016: US\$27.91 to date.
TMX/Shorcan Energy Brokers: WCS differentials to WTI Oil futures.

Natural Gas Export Prices



Natural Gas Prices



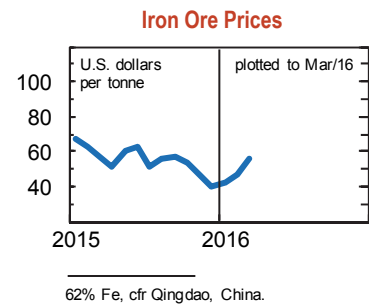
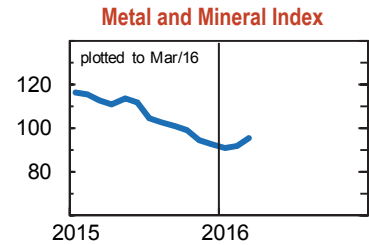
* Average short and long-term contract price; estimate for latest month; U.S. dollars per mcf.
** Monthly average of daily NYMEX nearby futures prices.

Scotiabank
Commodity Price Index

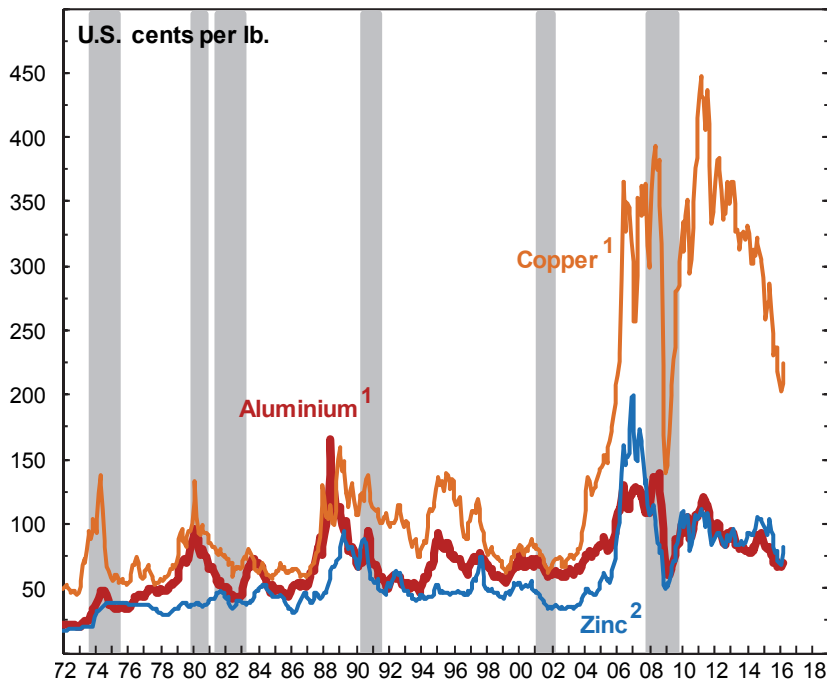
Scotiabank Metal and Mineral Price Index



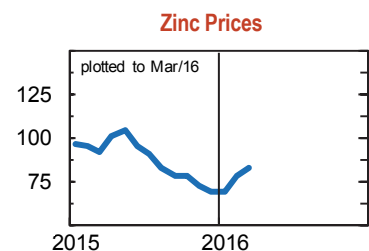
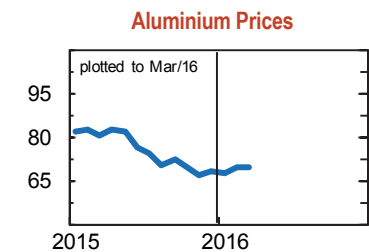
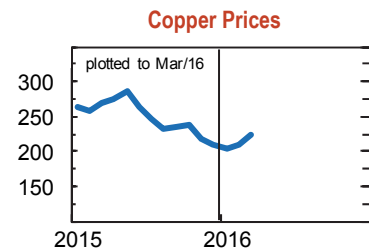
Shaded areas represent U.S. recession periods.



Selected Industrial Metal Prices



1. LME cash copper and aluminium.
2. U.S. producers' price zinc to August 1990; LME price thereafter.
- Shaded areas represent U.S. recession periods.



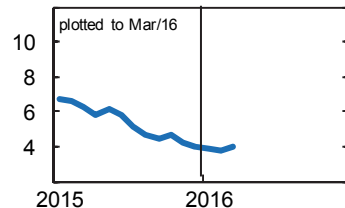
Scotiabank
Commodity Price Index

Nickel Prices

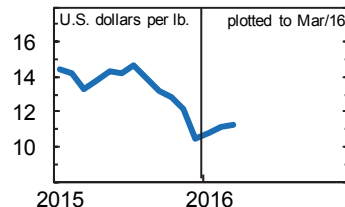


LME cash settlement price since 1980.
- Shaded areas represent U.S. recession periods.

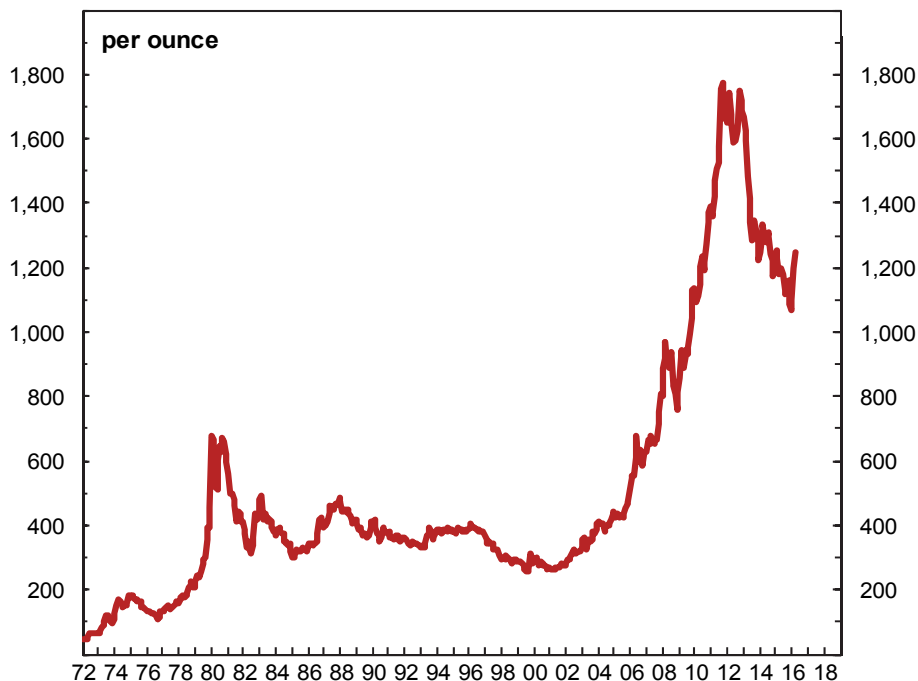
Nickel Prices



Cobalt Prices

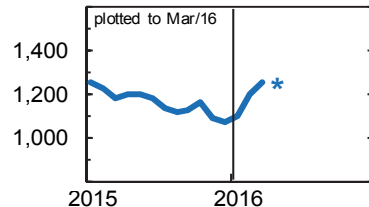


Gold Prices (U.S. Dollar)



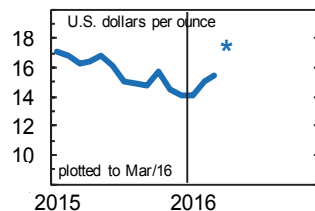
Price on April 28, 2016: 1,256.00 U.S. dollars.

Gold Prices (U.S. Dollar)



* April 28, 2016: 1,256.00 U.S. dollars.

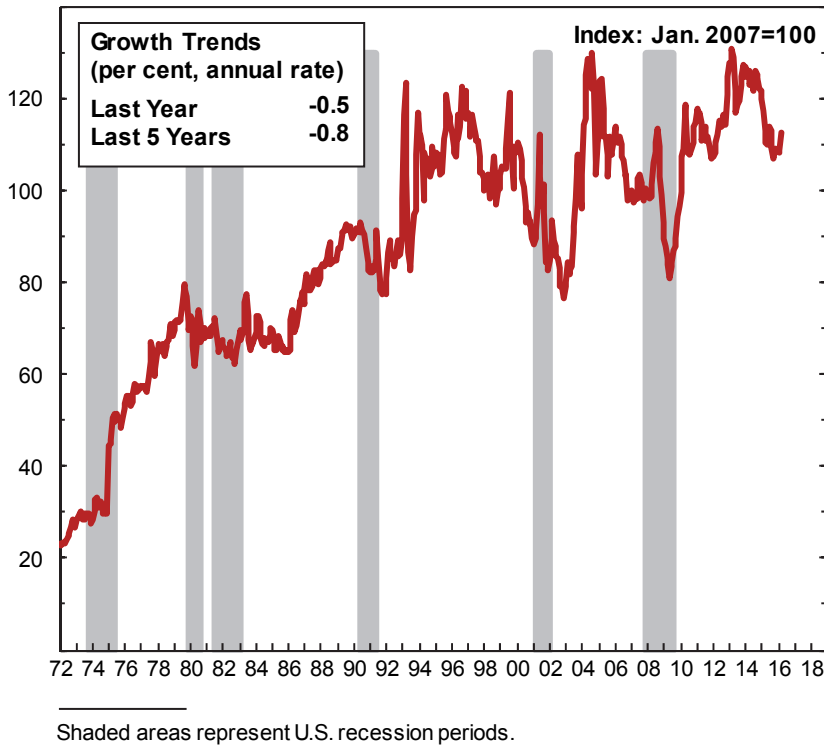
Silver Prices



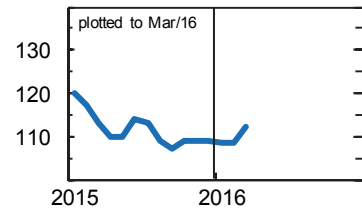
* April 28, 2016: 17.35 U.S. dollars.

Scotiabank
Commodity Price Index

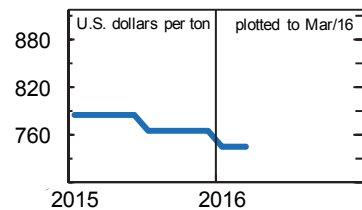
Scotiabank Forest Product Price Index



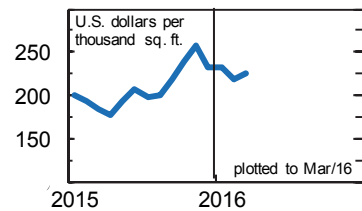
Forest Product Index



Supercalendered Paper



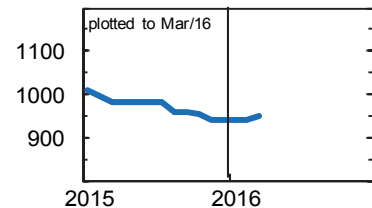
OSB Prices



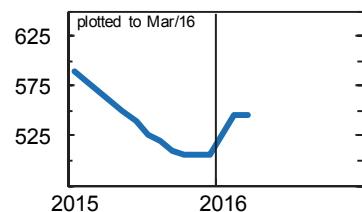
Selected Forest Product Prices



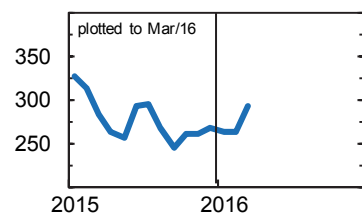
Pulp Prices



Newsprint Prices



Lumber Prices

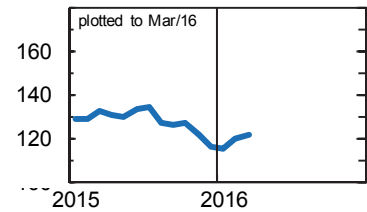


**Scotiabank
Commodity Price Index**

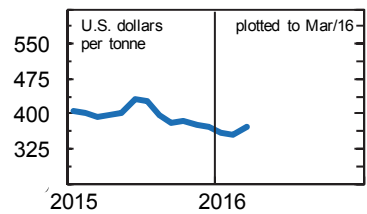
Scotiabank Agricultural Price Index



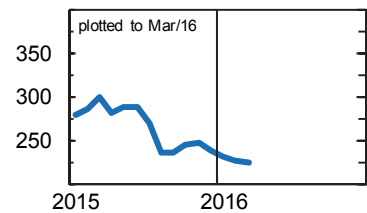
Agricultural Index



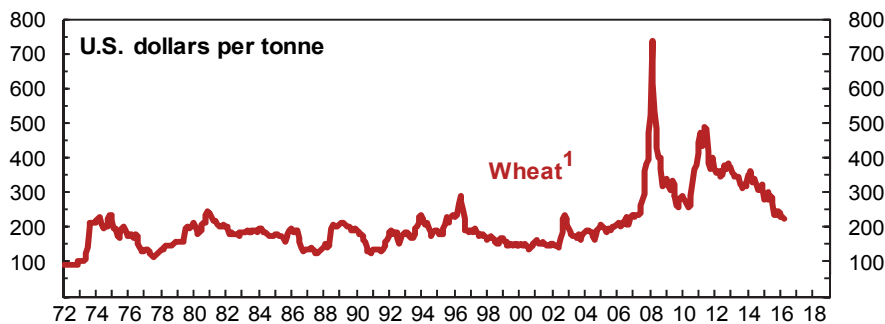
Canola Prices



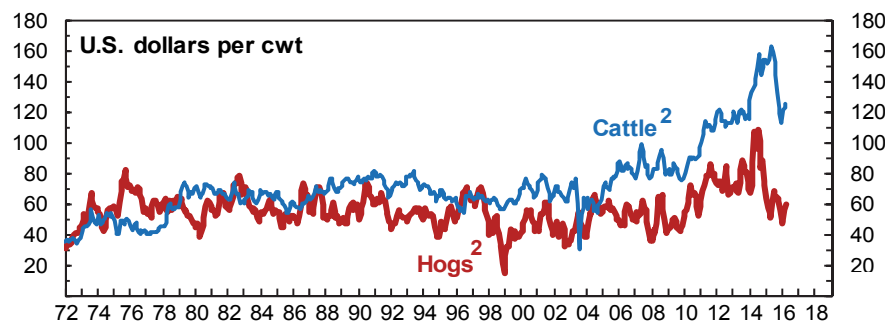
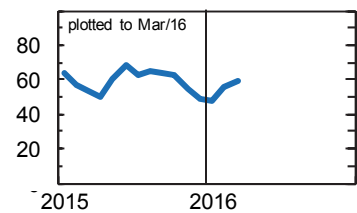
Wheat Prices



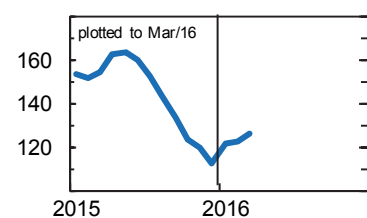
Selected Agricultural Prices



Hog Prices



Cattle Prices



1. Dark Northern Spring, No. 1 14% at Duluth, Minnesota; before April 2011 Canadian Wheat Board asking export price #1 CWRS.
2. Cash cattle and hogs at Toronto; from January 1993 average of Ontario markets.

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 TMX/Shorcan Energy Brokers.

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 dmt) 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) Spot price for U3O8.

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