Oil's Road to Balance is Paved with False Starts

The Scotiabank Commodity Price Index gained 2.0% m/m in April as strong oil & gas (+8.6% m/m) and forest products (+5.4%) performance more than compensated for a minor sell-off in metals markets (-4.4%).

- **The 9-month extension of a supply deal between OPEC and likeminded oil-producing states (OPEC+[1]) was a necessary step in the still fragile rebalancing of the oil market.**
- **Pipeline construction delays may postpone expected natural gas supplies from the Marcellus and Utica basins, providing a boost to an already tightening North American market.**
- **Iron ore prices fell from unsustainable highs as Chinese demand cools, while Metallurgical coal prices eased after infrastructure damage from Cyclone Debbie was repaired and Australian shipments resumed.**
- **The fifth iteration of the Canada-US softwood lumber dispute will lead to higher prices as Canadian supply is pushed further up the cost curve, but it is US homebuilders and buyers that will pay the price.**

OIL & GAS: OPEC+ AGREES TO 9-MONTH EXTENSION, GAS MARKET OUTLOOK TIGHTENS ON SUPPLY-SIDE DELAYS

OPEC+ members agreed to a 9-month extension of their supply agreement when they met in Vienna on May 25, keeping 1.8 million barrels of oil per day (Mbpd) off the market until the end of March 2018. Prior messaging from Saudi Arabia and Russia had primed the market to expect a 9-month extension, and prices fell in the absence of any addition concessions such as deeper cuts or the inclusion of additional non-OPEC members. Despite this initial reaction, we maintain our view that a continuation of OPEC+ cuts at current levels will facilitate the drawdown of excess OECD inventories through the end of the year and offset some of the seasonal weakness in the first quarter of 2018.

Our base case outlook is that the oil market is already in a mild supply deficit (Chart 1) and that the glut of OECD inventories will begin to sustainably draw in the latter half of 2017. That outlook rests on four key assumptions: 1) a nine-month extension of the OPEC+ supply deal and similar levels of compliance (confirmed in Vienna), 2) flat-to-declining output in non-OPEC countries outside the US, and 3) average demand growth of 1.3–1.5 Mbpd y/y in 2017/18, which will together offset our 4) aggressive US production forecast that has growth reaching 1 Mbpd y/y by the end of the year. We expect that these factors will bring OECD industry stocks back down to more typical levels by mid-2018, after which OPEC will need to determine the best method of returning restrained production to a high US supply growth market without overwhelming demand once more.

[1] OPEC+ refers to the larger informal group of OPEC and non-OPEC producers that agreed to collectively reduce oil production by 1.8 Mbpd in a November supply deal. Output cuts were relative to October 2016 levels, with OPEC contributing 1.2 Mbpd and non-OPEC countries including Russia, Kazakhstan, and Oman agreeing to hold back the remaining 0.6 Mbpd.

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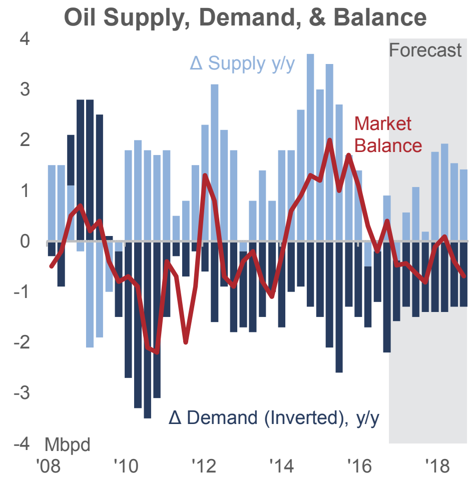
Chart 1



Source: Scotiabank Economics, Scotiabank GBM, IEA. EIA. JODI. OPEC.

Table 1

Scotiabank Commodity Price Index			
April 2017	**(% change)**		
	M/M	Y/Y	YTD
All Commodity*	**2.0**	**26.9**	**34.2**
Industrials	**2.3**	**33.9**	**42.5**
Oil & Gas	8.6	48.5	72.7
Metal & Minerals	-4.4	31.2	37.2
Forest Products	5.4	18.2	14.9
Agriculture	**0.5**	**1.9**	**5.5**
	April 2007 = 100		
	2017		
	Apr	Mar	YTD avg.
All Commodity	**111.5**	**109.3**	**110.6**
Industrials	**108.4**	**106.0**	**107.6**
Oil & Gas	87.1	80.1	85.4
Metal & Minerals	123.8	129.5	127.3
Forest Products	134.8	127.9	127.4
Agriculture	**128.4**	**127.8**	**126.9**

* Weights: Oil & Gas (39.9%), Metal & Minerals (30.1%), Forest Products (14.7%), Agriculture (15.3%); Full technical note on page 11.

OPEC: SUPPLY DEAL EXTENSION SUPPORTS THE OUTLOOK

The extension of the OPEC+ supply deal keeps 1.8 Mbpd of supply off the market as well as any production growth these countries would have otherwise experienced. OPEC is leading the deal and compliance among the 11 members that agreed to participate (excluding Libya and Nigeria) has been surprisingly high, at 105% through the first four months of the agreement vs an historical average of nearer 60% (Chart 2). OPEC supply surged ahead of the deal as many members attempted to sop up additional revenue and inflate output levels to gain a stronger negotiating position vis-à-vis production targets; this oil took a while to make its way to markets due to lengthy seaborne transit times, which has delayed inventory draws.

Libya and Nigeria, exempt from the supply deal due to domestic militancy, have recently increased production levels as port and pipeline infrastructure comes back online, offsetting some of the output reduction elsewhere in the cartel. However, due to their recent history of volatile output, we consider Libya and Nigeria to be functionally OPEC-adjacent for the duration of this supply deal—another pipeline bombing or political development could just as quickly take these barrels back off the market.

While the second leg of the production deal will benefit from no preceding output surge, the high compliance we've witnessed thus far has in large part been achieved by bringing forward maintenance. An extension of the cuts will carry a higher opportunity cost for most OPEC members the longer they are maintained, which could weaken compliance but only from an unexpectedly high base.

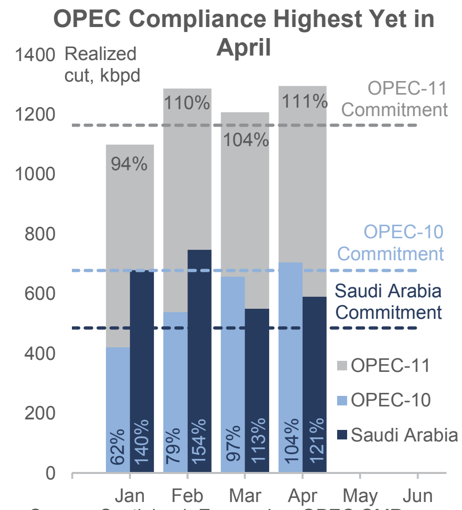
Supply and demand numbers can be wrong, however, and **OPEC members as well as the broader market will be watching for how quickly statistically transparent industry oil inventories in OECD nations begin to draw back down to five-year average levels**. Those inventories were 261 Mbbl above their five-year average as of March, but most of the remaining glut resides in US tank farms, which will likely be the last to draw due to their low cost and proximity to refining infrastructure. Meanwhile, we see evidence that less visible, more expensive petroleum stocks such as floating storage and independent tanks in the Caribbean are drawing (Chart 3), and are likely showing up in US storage reports en route to processing in US refineries. We expect that more pronounced OECD inventory draws will follow the depletion of these less visible stocks if supply deficits are maintained.

NON-OPEC: IN THE SHALE ERA, IT'S INCREASINGLY THE US AND THE REST

The non-OPEC supply outlook is split between the expected surge in US supply and the generally anemic production outside the US. The OPEC deal successfully raised prices into the $50–55/bbl range and allowed US shale producers to hedge most of their production through 2017 and into 2018 at a profitable return; this price certainty, coupled with ever-rising rig counts and efficiency gains, has prompted us to adopt an aggressive US production forecast. US supply growth is expected to reach roughly 1 Mbpd y/y by the second half of 2017 and continue through 2018 (Chart 4), and the Energy Information Administration (EIA)'s base case outlook is catching up after five consecutive monthly upgrades. Much about the

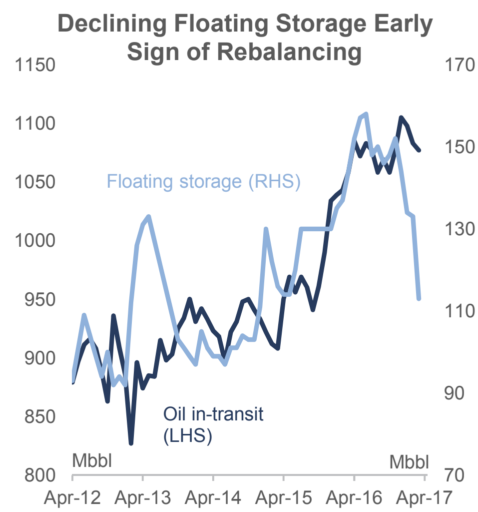
** All Prices in US Dollars

Chart 2



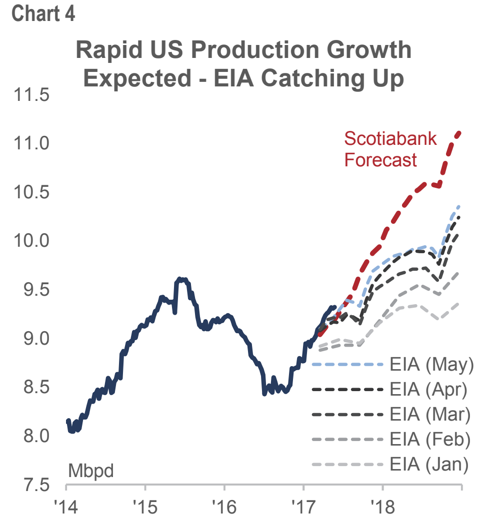
Source: Scotiabank Economics, OPEC OMR.

Chart 3



Source: Scotiabank Economics, OMI.

Chart 4



Source: Scotiabank Economics, Scotiabank GBM, EIA, Bloomberg.

response of US shale remains uncertain given the relative newness of this source of supply, and there is a possibility that service cost inflation (pressure pumping, proppants used in fracking, etc.) could put the brakes on the rebound, though these factors have appeared manageable thus far.

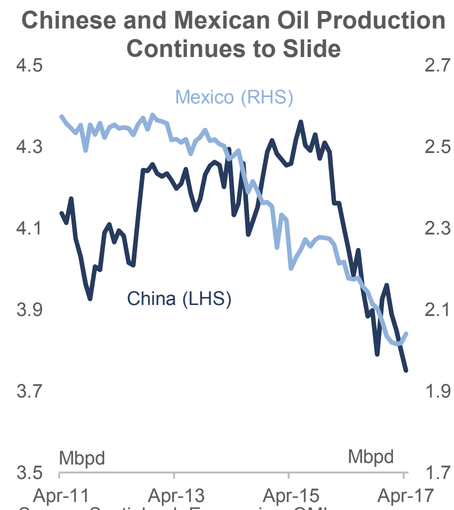
Outside of the US meanwhile, production in large non-OPEC producers like China and Mexico continue to underperform (Chart 5). With upward of $1 trillion worth of planned upstream spending (2015–2020) cut following the collapse in crude prices, we expect to see non-OPEC production continue to struggle outside the US as fewer exploration and production dollars compete against the decline rates of legacy wells. Production from these conventional fields will decline more slowly than in the US shale patch but will also take longer to reverse despite a rising price environment.

NATURAL GAS: STICKY SUPPLY AND PIPELINE DELAYS MAY TIGHTEN MARKET FASTER THAN EXPECTED

The natural gas market is finally tightening after the two warmest winters on record (2015/16) depressed winter heating demand and left North American inventories glutted. Low prices hit US natural gas production, which turned negative y/y in early 2016, just as structural (non-weather) demand growth was accelerating (Chart 6). Higher prices and the anticipated completion of new pipeline take-away capacity in the Marcellus/Utica basins were expected to bring a wall of new gas supply to the market and snuff out any rally (Chart 7), though that supply may now temporarily be at risk due to construction delays. In early-May the Federal Energy Regulatory Commission (FERC) prohibited horizontal drilling associated with the Rover Pipeline—required to minimize surface disturbance and avoid sensitive areas—following the spilling of drilling fluids in an Ohio wetland; the ban will remain in place until FERC is satisfied that the company behind the pipeline complies with anti-spill measures. **If this supply does not make it to the market as expected, balances will tighten faster and more aggressively than what is built into our current outlook, tilting risk to the upside of our current price forecast of $3.10/3.05 per MMBtu in 2017/18**.

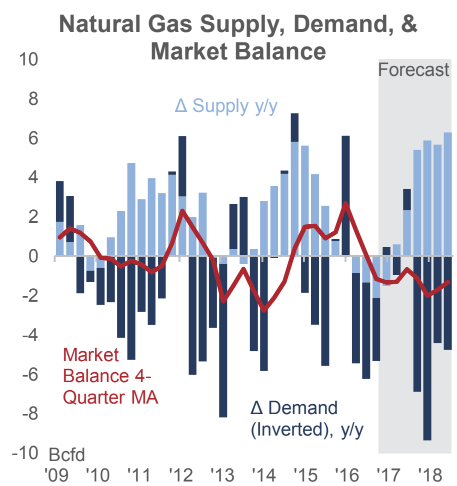
This supply concern comes on the back of significant expected growth in US structural (non-weather) related natural gas demand, both in the form of domestic use (power generation/industrial) as well as gas needed for export (pipeline to Mexico/LNG). Low US natural gas prices incentivized the build-out of significant new natural gas-fired power generation capacity, with expected capacity additions of roughly 10 GW in 2017 and more than 25 GW in 2018 relative to an annual average of 6.9 GW over the past five years. Exports are also expected to continue rising as Mexican demand grows on the back of domestic production contraction (down 14% y/y in March) and new LNG export capacity comes online. US LNG export capacity currently stands at around 2 Bcfd and is expected to rise to nearly 10 Bcfd by the end of 2019 as five more liquefaction terminals begin operations.

Chart 5



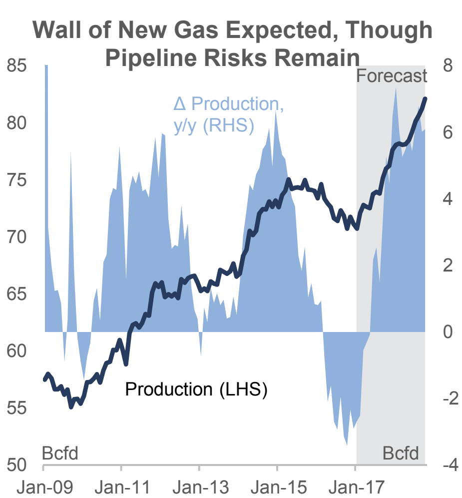
Source: Scotiabank Economics, OMI.

Chart 6



Source: Scotiabank Economics, Scotiabank GBM, EIA.

Chart 7



Sources: Scotiabank Economics, Scotiabank GBM. EIA.

METALS & MINERALS: INDUSTRIALS FALL ON CHINESE DEMAND CONCERNS, BUT SUPPLY FACTORS WILL DETERMINE RECOVERIES

The Metals & Minerals index fell 4.4% m/m in April as industrial metals continued to suffer on the back of some general concerns about the strength of China's economy, with iron ore leading the pack down. However, **we remain of the view that the Chinese economy remains fundamentally sound coming off a high credit-fueled base and that individual metals will continue to see differentiation on the supply-side of the ledger**. Indeed, while the 34% drop in iron ore and 10% drop in copper prices have market participants questioning the industrial demand within the world's largest metal consumer, these routs have only brought prices back down from inflated highs to within our forecast range for the year.

Iron ore's rise to above $90/t was never sustainable, driven by China's credit stimulus and the red-hot domestic steel sector that came along for the ride. Seaborne tonnage is expected to be ample and supplied primarily by the Big-4 (Rio Tinto, BHP Billiton, Fortescue, and Vale) at a cost of around $30/t. The marginal tonne of iron ore supply is found in inefficient domestic Chinese mines, the supply that needs to be phased out by a low-price environment; the recent rally delayed that necessary adjustment (Chart 8). This is not to say that iron ore won't see another bout of bullish enthusiasm—a move by Beijing to support the economy ahead of the 19th National Congress later this year could stoke a similar temporary bounce, though medium-term expectations are for prices to gravitate back toward $50/t. **Metallurgical coal prices have also fallen back from their Cyclone Debbie-fueled spike to above $310/t**, most recently trading around $160/t and nearing the lower bound of the our estimated NDRC target price band (Chart 9).

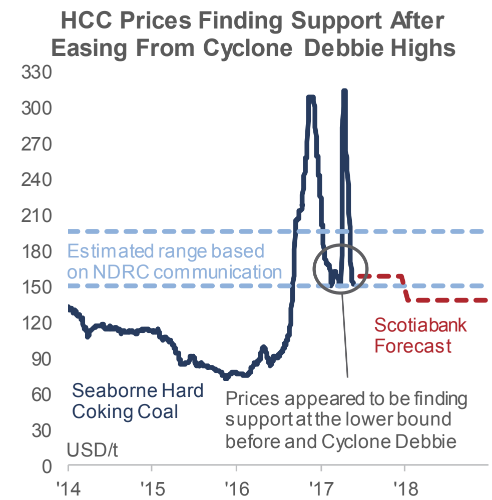
Meanwhile, nickel prices continue to be driven lower by supply considerations after falling from their politically-fueled highs of roughly $5/lb in 1Q17 to nearer $4/lb today as the bull narrative continues to unravel. Despite a moderate supply deficit expected this year and next, the nickel market remains weighed down by high inventory levels following years of surplus production. Political developments in large nickel ore producers, namely Indonesia and the Philippines, had provided traders a short-run reason to bid prices higher. These political factors have moved from bullish to bearish as Indonesia reversed course and relaxed its 2014 ore export ban and the Philippine Commission of Appointments removed Regina Lopez, an environmental hardliner, from her position as head of the Department of Environment and Natural Resources (DENR). Lopez had led an environmental review of the country's mining sector that concluded with the ordered closure of more than half the country's nickel mine capacity; now the industry appears on better footing with the appointment of Roy Cimatu, who has stated an interest in balancing mining and environmental protection, as Lopez's successor.

Aluminium prices have followed the rest of the base metals complex down, but remain more than 20% higher than the beginning of 4Q16. Aluminium's rare bullishness stems from the potential idling of Chinese smelters as part of a smog-reduction program, with roughly 3.7 Mtpa of capacity at risk. However, this idling remains a future possibility and Chinese smelters have ramped up supply in response in the interim on the back of rising prices, which were ironically precipitated by concerns about Chinese supply. This additional tonnage is likely to be exported to global markets and stifle any further price appreciation as domestic Chinese prices slip further below the LME (Chart 10), reflecting the surge in domestic supply.

Chart 8

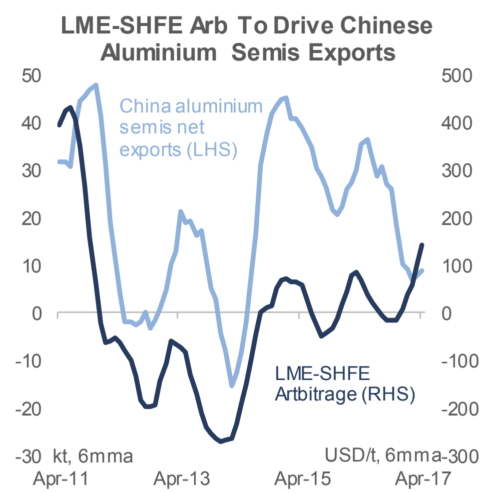
Sources: Scotiabank Economics, NBS, Bloomberg.

Chart 9



Source: Scotiabank Economics, Bloomberg, NRDC.

Chart 10



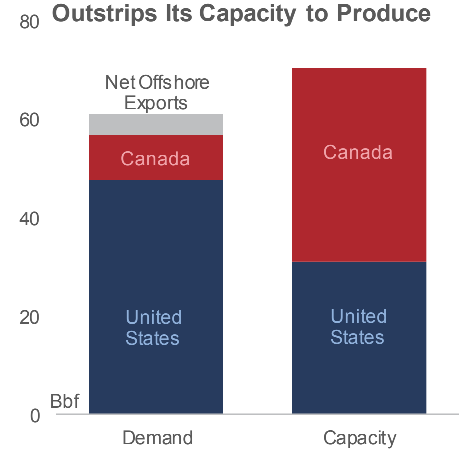
Source: Scotiabank Economics, LME, SHFE, China Customs.

FOREST PRODUCTS: CANADA-US SOFTWOOD LUMBER DISPUTE BEGINS ANEW

The Forest Products index advanced 5.4% m/m in April as the fifth modern iteration ("Lumber V") of the Canada-US softwood lumber dispute gained pace. In late-April, the US Commerce Department announced its intention to impose preliminary countervailing duties (CVD) on Canadian softwood lumber imports, retroactive 90 days. Five Canadian lumber producers were assigned specific tariff rates ranging from 3.02% to 24.12%, with the remainder of the Canadian industry subject to a 19.88% tariff (weighted average of the named producers). This was an expected step in the softwood negotiation process after the one-year grace period expired last October following the end of the 2006 Softwood Lumber Agreement (SLA) in October 2015. The preliminary decision still needs to be finalized by the US Commerce Department and the US International Trade Commission, though is likely to stand given that this is the fifth iteration of the dispute since 1982 and each process tends to follow a similar trajectory. In addition, a preliminary anti-dumping decision is expected in June, which could add further tariffs—in 2002 (Lumber IV), CVD were set at 19% and dumping duties at 8%.

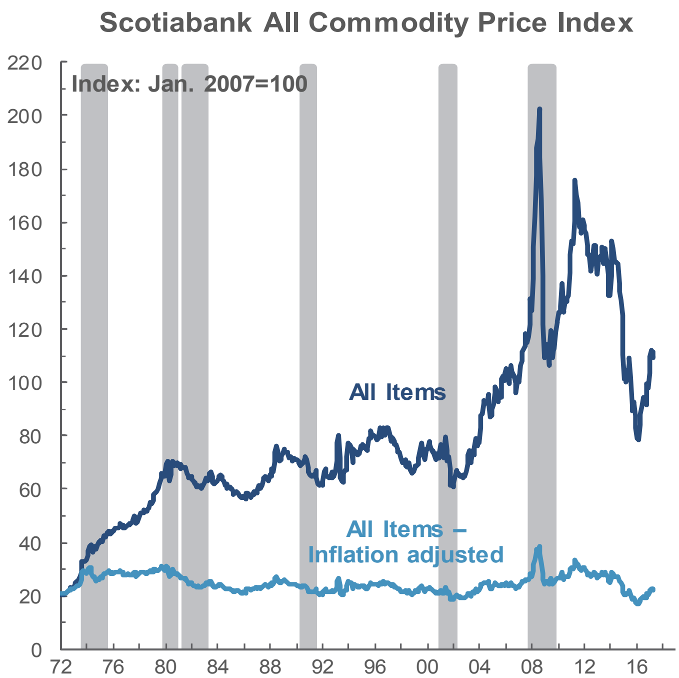
Demand for softwood lumber, used primarily in the construction and refurbishment of houses as well as the manufacture of consumer goods like box springs and couches, is relatively inelastic. Lumber accounts for a small component of aggregate home-building costs and neither homebuilders nor buyers are likely to materially change behaviour due to a $1,000–2,000 increase in the price of a home. The effect of these duties on Canadian softwood lumber exports, then, is a price increase that is absorbed by US consumers as Canadian lumber is shifted higher on the regional cost curve. Past softwood lumber disputes have not materially impacted Canadian exports to the US, though it is likely that exports would be higher absent the drag of US duties and export taxes agreed to in prior SLAs. US softwood lumber consumption far outstrips its domestic capacity (Chart 11) and demand is expected to continue rising on the back of housing sector strength, with US housing starts forecast to advance 6.8% y/y to 1.26 million units in 2017 and 6.4% y/y to 1.34 million units in 2018.

Chart 11 **US Softwood Lumber Demand Outstrips Its Capacity to Produce**



Sources: Scotiabank Economics, RISI.

Price Outlook		Monthly Avg. Low	2000–2015 Period Avg.	Monthly Avg. High	2016	2017YTD	2017F	2018F
Oil & Gas								
Crude Oils								
West Texas Intermediate	USD/bbl	19.40	63.68	134.02	43.47	51.02	53	56
North Sea Brent Blend	USD/bbl	19.06	66.44	134.56	45.13	53.86	56	59
Natural Gas								
Nymex Henry Hub	USD/MMBtu	2.05	5.09	13.46	2.55	3.12	3.10	3.05
Metals & Minerals								
Base Metals								
Copper	USD/lb	0.62	2.35	4.48	2.21	2.61	2.50	2.65
Nickel	USD/lb	2.19	7.45	23.67	4.36	4.52	5.00	5.50
Zinc	USD/lb	0.34	0.80	2.00	0.95	1.23	1.35	1.55
Aluminium	USD/lb	0.58	0.87	1.39	0.73	0.85	0.85	0.85
Bulk Commodities								
Iron Ore	USD/t	12	65	187	58	79	65	55
Metallurgical Coal	USD/t	40	128	330	143	188	170	130
Precious Metals								
Gold	USD/toz	261	842	1,772	1,251	1,232	1,200	1,250


Scotiabank All Commodity Price Index
Index: Jan. 2007=100
All Items
All Items – Inflation adjusted
220
200
180
160
140
120
100
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72
76
80
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88
92
96
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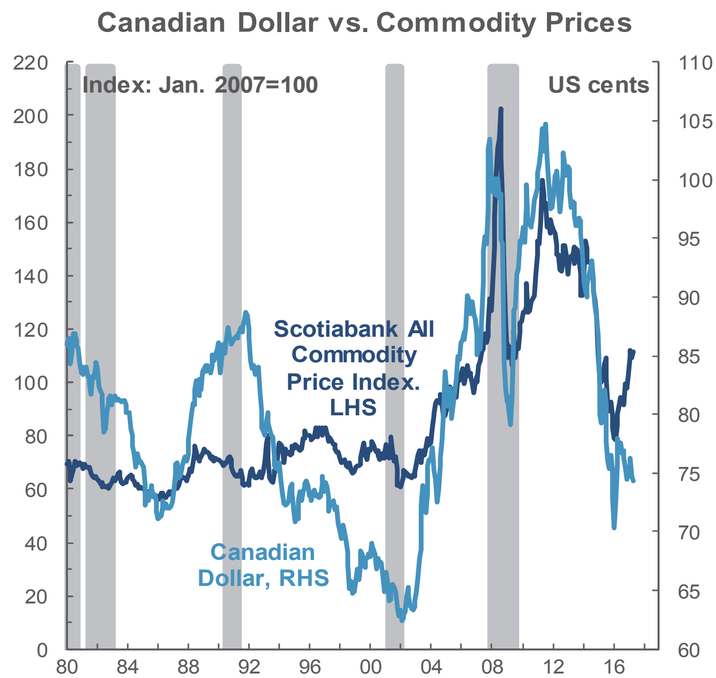
Canadian Dollar vs. Commodity Prices
Index: Jan. 2007=100
US cents
Scotiabank All Commodity Price Index. LHS
Canadian Dollar, RHS
220
200
180
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140
120
100
80
60
40
20
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110
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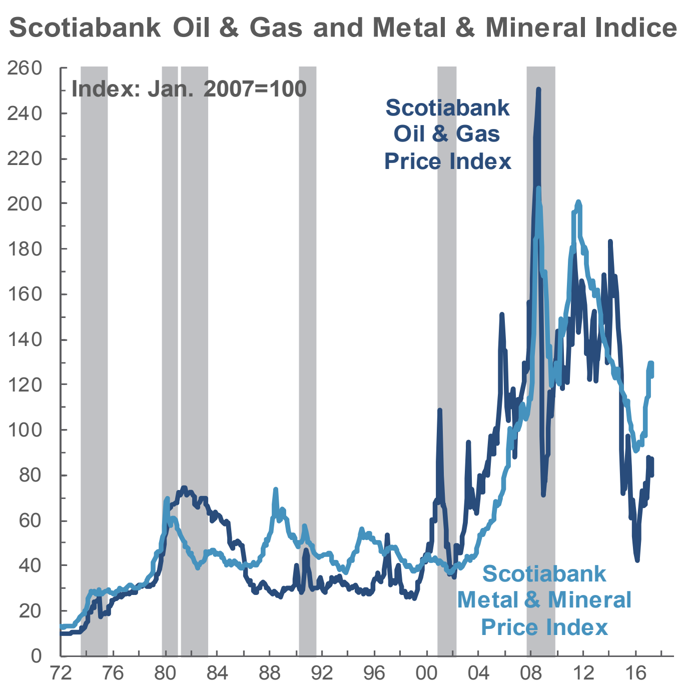
Scotiabank Oil & Gas and Metal & Mineral Indices
Index: Jan. 2007=100
Scotiabank Oil & Gas Price Index
Scotiabank Metal & Mineral Price Index
260
240
220
200
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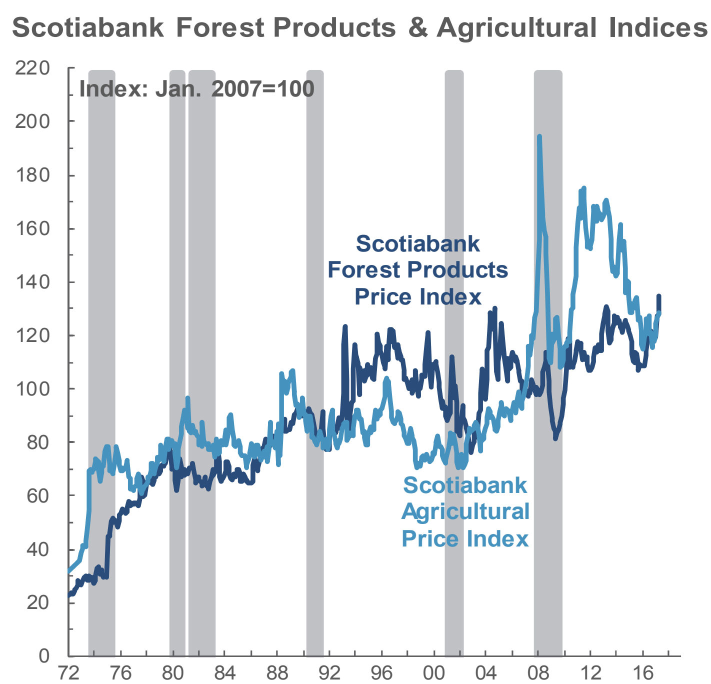
Scotiabank Forest Products & Agricultural Indices
Index: Jan. 2007=100
Scotiabank Forest Products Price Index
Scotiabank Agricultural Price Index
220
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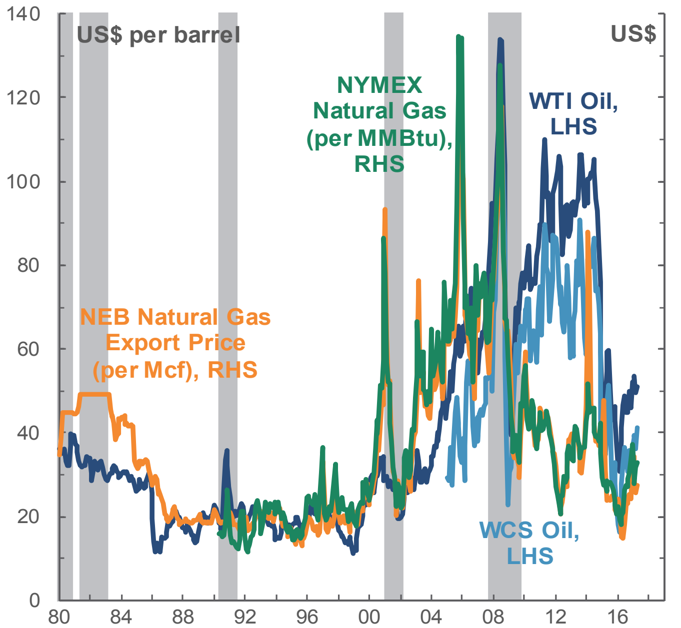
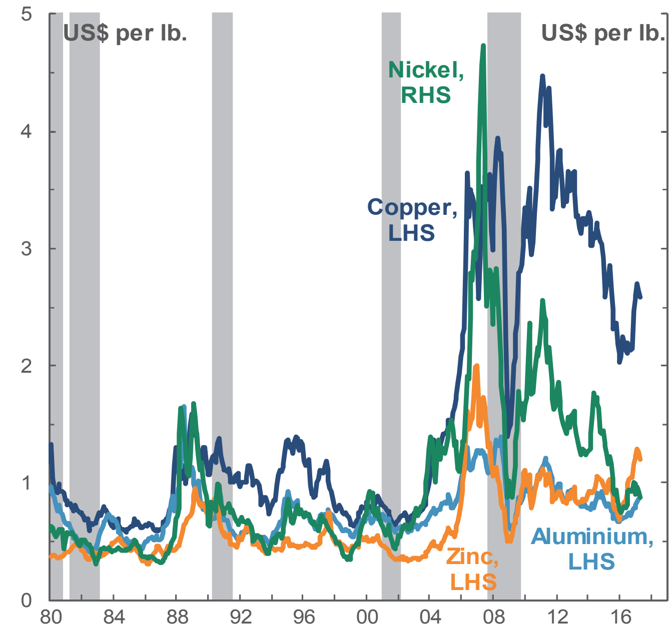
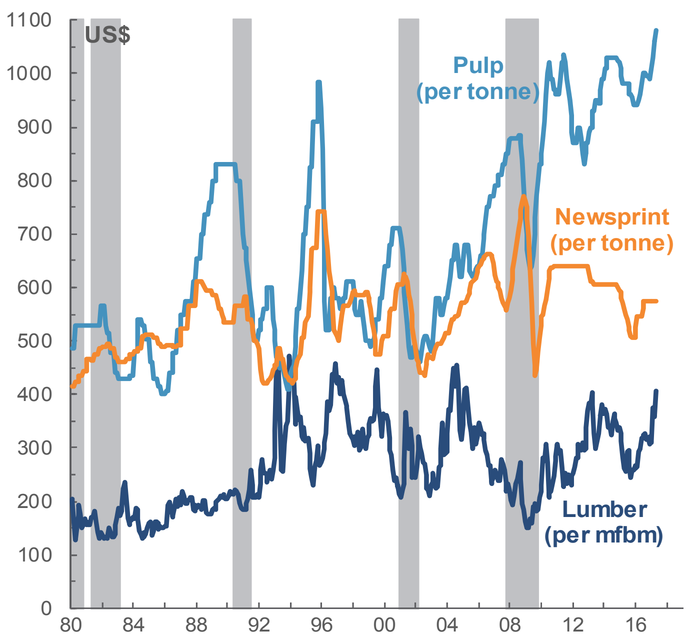
Oil & Gas Prices



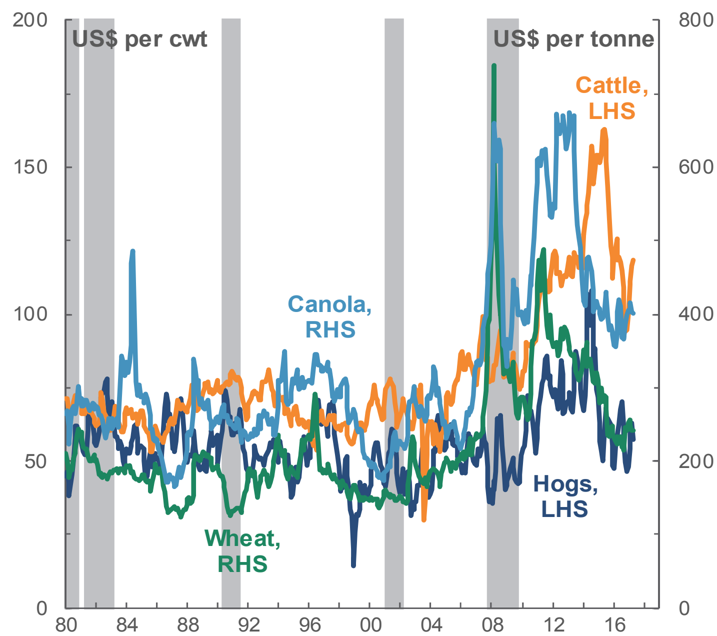
Metals Prices



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 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 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) 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**