

Commodity Price Outlook & Risks

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This monthly report presents a price outlook and risk assessment for selected commodities as depicted from futures and options markets.

Outlook. Oil futures markets continue showing a modest increase in prices over the next year. However, uncertainty about its outlook is still substantial following strong supply by OPEC countries and slower oil demand. Also, the potential comeback of Iran's oil export market has added downward pressure. Metal prices are expected to remain flat owing to continued slow demand, especially in China, and new supplies. Gasoline prices are still expected to follow seasonal patterns, as they will decline in the colder months and rise throughout the next summer. U.S. natural gas prices are projected to follow seasonal patterns as well, they are expected to rise through the coming winter and decline thereafter. Agricultural commodity prices are mostly upward-trending owing to supply concerns, particularly heavy rains in the U.S. that have affected output expectations.

Risks. The likelihood of per-barrel prices for WTI falling below \$40 in the next 12 months is 17 percent, about 10 percentage points higher than last month, and the likelihood of Brent falling below \$40 is 10 percent, about 6 percentage points higher than last month. The likelihood of WTI and Brent oil prices rising above \$80 decreased, signaling a downward shift in price uncertainty, reflecting smaller price fluctuation in the past few months.

The likelihood of per-MMBtu U.S. natural gas prices below \$2 (12 months forward) decreased to 8 percent from 10 percent, while the probability of prices rising above \$4 increased to 7 percent from 5 percent last month, signaling an upward shift in price uncertainty.

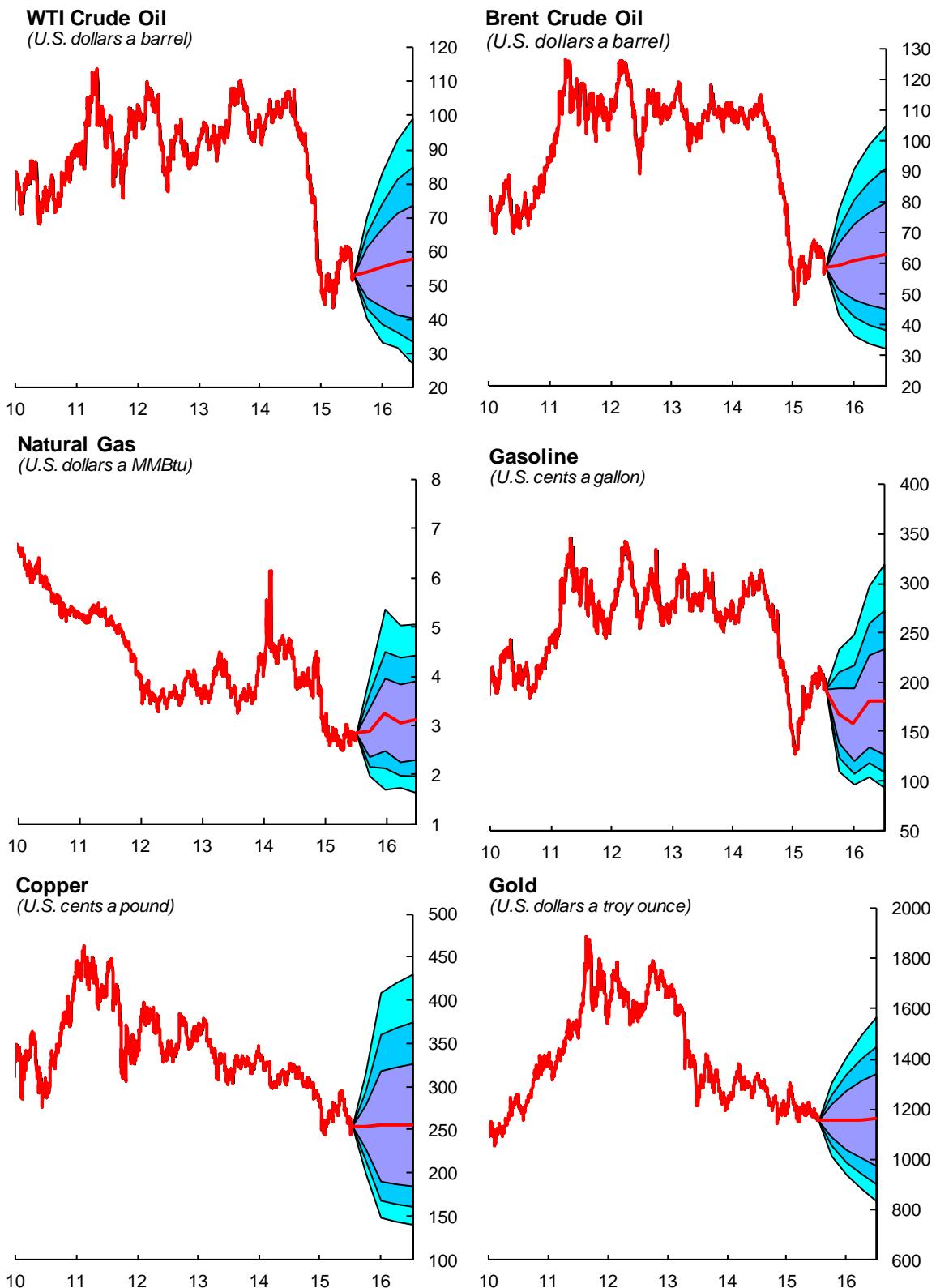
For metals, the risk of copper prices falling below \$1.5 a pound increased to 4 percent compared to June, while the probability of prices increasing above \$3.50 a pound remained broadly unchanged at 5 percent. The probability of gold prices falling below \$900 a troy ounce remained broadly unchanged at 8 percent from a month ago, while the probability of an increase beyond \$1400 slightly decreased to 7 percent from 8 percent, reflecting a drop in price uncertainty.

The likelihood of soybean meal prices rising above \$400 a short ton sharply increased to 15 percent from 5 percent. The likelihood of per-bushel soybean prices below \$7 decreased to 3 percent from 12 percent last month, and the probability of an increase above \$12 increased to 12 percent from 7 percent. The likelihood of per bushel corn prices below \$3 decreased to 5 percent, while prices above \$5.5 increased to 11 percent from 3 percent, owing to weather related concerns.

Contents. Fan charts (pages 2-3) show historical and forward futures prices (red line), with calculated confidence intervals of +/- 2 standard deviations (in purple/blue). Confidence intervals are derived from prices of options on Jul 14, 2015. Likelihoods of spot prices rising/falling from specified price thresholds occurring at the 3-, 6-, 9- and 12-month forward (or closest available) horizons for each commodity are shown in tabular form (pages 4-5). In addition to price thresholds, the probability of each commodity spot price rising/falling by a certain percentage is shown (pages 6-7). Relevant contract specifications for each commodity are also shown (page 8).

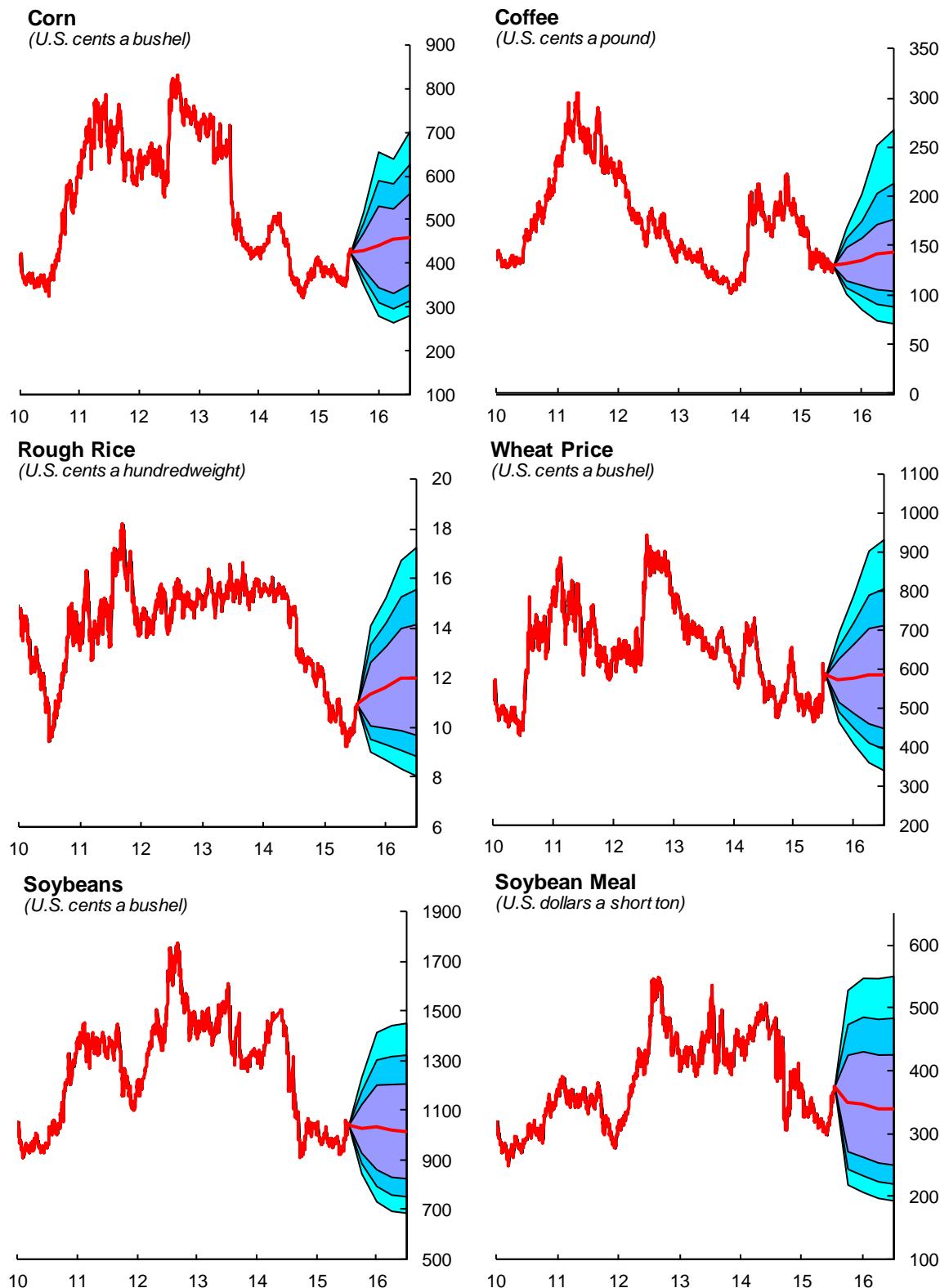
Selected Commodities—Market Price Outlook and Risks

■ 95% confidence interval ■ 86% confidence interval ■ 68% confidence interval ■ Futures



Selected Commodities—Market Price Outlook and Risks (concluded)

█ 95% confidence interval
 █ 86% confidence interval
 █ 68% confidence interval
 █ Futures



Options-based Price Thresholds

WTI Crude Oil

(probabilities in percent; prices in U.S. dollars a barrel)

Threshold Prices	Months Forward			
	3	6	9	12
< 20	0.0	0.0	0.0	0.1
< 30	0.0	1.0	1.4	3.5
< 40	2.7	10.2	15.7	17.4
< 50	36.3	40.8	46.8	44.6
> 60	15.6	23.6	24.9	27.6
> 70	1.6	6.3	9.4	11.0
> 80	0.1	1.4	3.1	3.8
> 90	0.0	0.3	0.9	1.3
> 100	0.0	0.1	0.3	0.4
> 110	0.0	0.0	0.1	0.2
> 120	0.0	0.0	0.0	0.1

Brent Crude Oil

(probabilities in percent; prices in U.S. dollars a barrel)

Threshold Prices	Months Forward			
	3	6	9	12
< 20	0.0	0.0	0.0	0.0
< 30	0.1	0.5	0.8	1.2
< 40	1.4	4.8	7.6	9.7
< 50	13.5	24.0	28.0	30.5
> 60	37.5	40.5	41.5	42.0
> 70	6.2	14.2	17.7	19.9
> 80	0.9	3.8	6.1	7.9
> 90	0.2	1.0	1.9	2.8
> 100	0.1	0.3	0.6	1.0
> 110	0.0	0.1	0.2	0.3
> 120	0.0	0.0	0.1	0.1

U.S. Natural Gas

(probabilities in percent; prices in U.S. dollars an MMBtu)

Threshold Prices	Months Forward			
	3	6	9	12
< 1.00	0.0	0.0	0.0	0.0
< 1.50	0.1	1.0	0.5	1.1
< 2.00	3.1	5.6	8.5	8.3
> 2.50	71.2	79.0	66.4	70.4
> 3.00	29.7	48.6	36.2	40.6
> 3.50	7.3	21.0	15.6	18.0
> 4.00	1.3	7.2	5.8	6.6
> 4.50	0.2	2.3	2.0	2.2
> 5.00	0.0	0.8	0.6	0.7
> 5.50	0.0	0.3	0.2	0.2
> 6.00	0.0	0.1	0.1	0.1

Gasoline

(probabilities in percent; prices in U.S. dollars a gallon)

Threshold Prices	Months Forward			
	3	6	9	12
< 1.00	0.6	2.4	1.2	2.7
< 1.25	6.7	17.9	9.7	13.8
< 1.50	27.6	45.4	30.4	34.9
> 1.75	34.8	27.1	44.0	41.7
> 2.00	9.6	10.2	23.4	23.4
> 2.25	2.3	3.4	11.1	12.1
> 2.50	0.7	1.2	4.8	5.9
> 2.75	0.3	0.5	2.0	2.8
> 3.00	0.1	0.2	0.8	1.3
> 3.25	0.0	0.1	0.3	0.6
> 3.50	0.0	0.0	0.1	0.3

Copper

(probabilities in percent; prices in U.S. dollars a pound)

Threshold Prices	Months Forward			
	3	6	9	12
< 1.0	0.0	0.0	0.0	0.0
< 1.5	0.0	2.5	3.2	3.8
< 2.0	2.8	24.1	25.8	27.0
< 2.5	49.5	60.6	61.0	61.2
> 3.0	3.9	14.4	14.9	15.4
> 3.5	0.2	4.2	4.6	5.1
> 4.0	0.0	1.0	1.3	1.5
> 4.5	0.0	0.2	0.3	0.4
> 5.0	0.0	0.1	0.1	0.1
> 5.5	0.0	0.0	0.0	0.0
> 6.0	0.0	0.0	0.0	0.0

Gold

(probabilities in percent; prices in U.S. dollars a troy ounce)

Threshold Prices	Months Forward			
	3	6	9	12
< 800	0.0	0.0	0.4	1.5
< 900	0.3	1.0	4.0	7.9
< 1000	2.1	10.1	17.3	23.4
< 1100	22.1	36.8	41.7	45.9
> 1200	21.8	30.1	32.2	32.1
> 1300	2.2	9.5	14.1	16.2
> 1400	0.4	2.1	5.0	7.1
> 1500	0.1	0.3	1.5	2.8
> 1600	0.0	0.0	0.4	1.0
> 1700	0.0	0.0	0.1	0.3
> 1800	0.0	0.0	0.0	0.1

Options-based Price Thresholds (concluded)

Corn		Months Forward				Coffee	
		3	6	9	12		
(probabilities in percent; prices in U.S. dollars a bushel)							
< 2.5	0.0	0.6	1.2	0.7		< 0.6	0.0
< 3.0	0.0	5.6	8.3	5.4		< 0.8	0.0
< 3.5	2.7	20.8	25.5	18.9		< 1.0	2.1
> 4.0	71.3	55.8	51.4	60.1		< 1.2	28.4
> 4.5	25.6	32.8	30.1	38.1		> 1.4	25.5
> 5.0	4.1	16.5	15.5	21.2		> 1.6	4.3
> 5.5	0.3	7.3	7.2	10.6		> 1.8	0.4
> 6.0	0.0	2.9	3.1	4.8		> 2.0	0.0
> 6.5	0.0	1.1	1.2	2.1		> 2.2	0.0
> 7.0	0.0	0.4	0.5	0.8		> 2.4	0.0
> 7.5	0.0	0.1	0.2	0.3		> 2.6	0.0
Rough Rice							
(probabilities in percent; prices in U.S. dollars a hundredweight)							
Rough Rice		Months Forward				Wheat	
		3	6	9	12		
< 0.06	0.0	0.0	0.0	0.1		< 2	0.0
< 0.07	0.0	0.0	0.2	0.4		< 3	0.0
< 0.08	0.2	0.7	1.7	2.8		< 4	0.1
< 0.09	2.9	5.3	7.9	10.4		> 5	88.8
< 0.10	17.0	19.7	22.0	25.2		> 6	25.3
> 0.11	54.1	56.5	57.7	55.2		> 7	1.4
> 0.12	24.7	31.9	36.8	35.8		> 8	0.1
> 0.13	8.0	14.6	20.5	20.7		> 9	0.0
> 0.14	1.9	5.6	10.2	10.9		> 10	0.0
> 0.15	0.4	1.8	4.6	5.3		> 11	0.0
> 0.16	0.1	0.5	2.0	2.4		> 12	0.0
Soybeans							
(probabilities in percent; prices in U.S. dollars a bushel)							
Soybeans		Months Forward				Soybean Meal	
		3	6	9	12		
< 5	0.0	0.0	0.0	0.0		< 100	0.0
< 6	0.0	0.1	0.3	0.4		< 150	0.0
< 7	0.0	1.4	3.0	3.4		< 200	0.8
< 8	0.7	8.8	13.2	14.1		< 250	9.6
< 9	10.9	27.1	32.9	33.9		> 300	66.3
> 10	54.7	48.0	43.6	43.0		> 350	37.0
> 11	18.8	25.9	24.1	24.0		> 400	16.3
> 12	3.6	11.6	11.5	11.6		> 450	6.0
> 13	0.4	4.5	4.9	5.0		> 500	1.9
> 14	0.0	1.5	1.9	2.0		> 550	0.6
> 15	0.0	0.5	0.7	0.7		> 600	0.2
Soybean Meal							
(probabilities in percent; prices in U.S. dollars a short ton)							
Soybean Meal		Months Forward				Wheat	
		3	6	9	12		
< 100	0.0	0.0	0.0	0.0		< 2	0.0
< 150	0.0	0.0	0.1	0.1		< 3	0.0
< 200	0.8	1.6	2.5	2.9		< 4	0.1
< 250	9.6	12.7	15.8	17.0		> 5	88.8
> 300	66.3	62.6	58.5	57.2		> 6	25.3
> 350	37.0	35.5	32.5	31.8		> 7	1.4
> 400	16.3	16.6	15.1	14.9		> 8	0.1
> 450	6.0	6.7	6.2	6.2		> 9	0.0
> 500	1.9	2.4	2.3	2.4		> 10	0.0
> 550	0.6	0.8	0.8	0.8		> 11	0.1
> 600	0.2	0.3	0.3	0.3		> 12	0.0

Options-based Probabilities of Price Changes (in percent)

WTI Crude Oil		Months Forward				Brent Crude Oil	
		3	6	9	12		
-50%	0.0	0.3	0.3	1.5		-50%	0.0
-30%	0.8	5.9	9.4	11.9		-30%	1.5
-10%	24.5	32.2	39.2	37.8		-10%	20.2
+10%	21.2	28.4	28.8	31.6		+10%	22.2
+30%	2.1	7.4	10.5	12.2		+30%	2.2
+50%	0.1	1.5	3.2	4.0		+50%	0.3
+100%	0.0	0.0	0.1	0.2		+100%	0.0

U.S. Natural Gas		Months Forward				Gasoline	
		3	6	9	12		
-50%	0.0	0.7	0.3	0.7		-50%	0.4
-30%	2.9	5.5	8.1	8.0		-30%	12.6
-10%	33.4	23.8	37.0	32.8		-10%	63.4
+10%	21.9	40.6	29.9	33.9		+10%	4.6
+30%	3.8	14.1	10.8	12.5		+30%	0.7
+50%	0.5	4.0	3.4	3.7		+50%	0.2
+100%	0.0	0.2	0.1	0.1		+100%	0.0

Copper		Months Forward				Gold	
		3	6	9	12		
-50%	0.0	0.4	0.6	0.7		-50%	0.0
-30%	0.3	11.4	12.9	14.0		-30%	0.0
-10%	18.6	45.4	46.6	47.3		-10%	5.0
+10%	12.2	22.4	22.7	23.0		+10%	4.5
+30%	0.7	6.9	7.4	7.9		+30%	0.1
+50%	0.0	1.7	2.1	2.3		+50%	0.0
+100%	0.0	0.0	0.1	0.1		+100%	0.0

Options-based Probabilities of Price Changes (concluded)

(in percent)

Corn

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.0	0.1	0.1
-30%	0.0	5.0	7.6	4.8
-10%	14.9	35.2	40.0	31.7
+10%	15.3	26.6	24.6	31.9
+30%	0.3	7.2	7.0	10.4
+50%	0.0	1.5	1.6	2.6
+100%	0.0	0.0	0.0	0.0

Coffee

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.3	0.7	0.9
-30%	0.3	3.6	7.0	8.2
-10%	21.7	28.1	32.4	33.7
+10%	20.7	26.1	29.7	30.4
+30%	1.6	5.3	9.3	10.4
+50%	0.0	1.2	3.0	3.6
+100%	0.0	0.1	0.3	0.4

Rough Rice

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.0	0.0	0.0
-30%	0.0	0.2	0.8	1.5
-10%	13.0	16.0	18.7	21.9
+10%	24.9	32.1	36.9	35.9
+30%	1.5	4.6	8.9	9.6
+50%	0.0	0.3	1.4	1.8
+100%	0.0	0.0	0.0	0.0

Wheat

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.1	0.3	0.6
-30%	0.2	2.8	7.3	9.5
-10%	23.4	34.8	41.2	43.9
+10%	8.7	16.6	20.5	20.5
+30%	0.2	2.2	4.9	5.4
+50%	0.0	0.3	1.1	1.3
+100%	0.0	0.0	0.0	0.1

Soybeans

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.0	0.0	0.0
-30%	0.0	2.6	4.9	5.4
-10%	20.3	35.5	41.1	42.0
+10%	9.9	18.8	17.8	17.9
+30%	0.1	2.6	3.0	3.2
+50%	0.0	0.2	0.4	0.4
+100%	0.0	0.0	0.0	0.0

Soybean Meal

Price changes	Months Forward			
	3	6	9	12
-50%	0.3	0.8	1.2	1.5
-30%	14.2	17.8	21.4	22.7
-10%	56.0	58.2	61.6	62.4
+10%	13.0	13.4	12.3	12.2
+30%	2.6	3.2	3.0	3.0
+50%	0.4	0.6	0.6	0.7
+100%	0.0	0.0	0.0	0.0

Commodity Derivative Contract Specifications

Commodity	Exchange	Contract	Physical Characteristics	Contract Size	Pricing Unit	Months Traded
Brent crude oil	ICE Europe	Futures	Light sweet crude oil	1,000 barrels	U.S. dollars per barrel	Consecutive months up to and including February 2020
		Options		One crude oil futures contract of 1,000 barrels		
WTI crude oil	New York Mercantile Exchange	Futures	Light sweet crude oil	1,000 barrels	U.S. dollars per barrel	Consecutive months are listed for the current year and the next five years; in addition, the Jun and Dec contract months are listed beyond the sixth year.
		Options		One crude oil futures contract of 1,000 barrels		
Natural Gas	New York Mercantile Exchange	Futures	Natural gas delivered at Henry Hub, LA	10,000 MMBtu	U.S. dollars per MMBtu	Consecutive months for the current year plus the next twelve full calendar years.
		Options		One natural gas futures contract of 10,000 MMBtu		
Gasoline	New York Mercantile Exchange	Futures	New York Harbor RBOB	42,000 gallons	U.S. cents per gallon	Consecutive months for 36 months
		Options		One gasoline futures contract of 42,000 gallons		
Gold	Chicago Mercantile Exchange	Futures	Gold (a minimum of 995 fineness)	100 troy ounces	U.S. dollars per troy ounce	Current calendar month; the next two calendar months; any Feb, Apr, Aug, and Oct falling within a 23-month period; and any Jun and Dec falling within a 72-month period beginning with the current month.
		Options		One COMEX Gold futures contract		
Corn	Chicago Mercantile Exchange	Futures	Yellow corn grade #2	5,000 bushels (127 MT)	U.S. cents per bushel	Mar, May, Jul, Sep, Dec. The monthly option contract exercises into the nearby futures contract.
		Options		One corn futures contract (of a specified month) of 5,000 bushels		
Coffee	ICE	Futures	Arabica coffee from 19 countries of origin	37,500 lbs	U.S. cents per pound	Mar, May, Jul, Sep, Dec. The monthly option contract exercises into the nearby futures contract.
		Options		One coffee futures contract (of a specified month) of 37,500 lbs		
Rough rice	Chicago Mercantile Exchange	Futures	U.S. #2 long grain rough rice with a total milling yield of 65%+	2,000 hundredweights (CWT)	U.S. cents per hundredweight	Jan, Mar, May, Jul, Sep, Nov. The monthly option contract exercises into the nearby futures contract.
		Options		One rough rice futures contract of 2,000 hundredweights (CWT)		
Wheat	Chicago Mercantile Exchange	Futures	#2 soft red winter wheat	5,000 bushels (136 MT)	U.S. cents per bushel	Mar, May, July, Sep, Dec. The monthly option contract exercises into the nearby futures contract.
		Options		One Wheat futures contract (of a specified month) of 5,000 bushels		
Soybean meal	Chicago Mercantile Exchange	Futures	Meal with minimum protein of 48%	100 short tons	U.S. dollars per ton	Jan, Mar, May, Jul, Aug, Sep, Oct, Dec. The monthly option contract exercises into the nearby futures contract.
		Options		One soybean meal futures contract (of a specified month) of 100 short tons		
Soybeans	Chicago Mercantile Exchange	Futures	Yellow soybean grade #2	5,000 bushels (136 MT)	U.S. cents per bushel	Jan, Mar, May, Jul, Aug, Sep, Nov. The monthly option contract exercises into the nearby futures contract.
		Options		One soybean futures contract (of a specified month) of 5,000 bushels		

Sources: Chicago Board of Trade, ICE, Bloomberg, L.P.



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