

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. Futures markets show most commodity prices remaining flat or declining over the next 12 months, with the exception of several food products, namely corn, coffee and wheat. Gasoline prices are expected to rise through the spring (reflecting low stocks and seasonal patterns) but decline thereafter. Oil price prospects are downward-trending owing to rising non-OPEC supplies, while copper and gold futures prices remain flat. Coffee prices are expected to recover from their recent slump due to weather-related supply concerns surrounding the Brazilian harvest. The prospect of a large South American crop continues to drive down futures prices for soybeans and soybean meal. Wheat and corn prices, on the other hand, are expected to rise due to tighter supply prospects emanating from higher estimates for Asian import demand.

Risks. The likelihood of per barrel prices for WTI falling below \$90 and Brent below \$100 next year (12 months forward) is about 50 percent and 40 percent, respectively, down about 10 percent for both since a month ago. The likelihood of WTI falling below \$60 has declined to less than 1 percent from nearly 3 percent, while the probability of WTI rising above \$140 has picked up marginally to 0.6 percent from 0.4 percent, indicating a slight upward shift in the balance of risks. The probability of Brent prices rising above \$160 has also declined to 0.6 percent from 0.7 percent month ago, while the probability of Brent below \$60 is 1.2 percent compared to 1.9 percent a month ago, indicating a slight decline in overall price risks for Brent futures.

The likelihood of per troy ounce gold prices below \$900 (12 months forward) has declined to 1.6 percent from 3.8 percent a month ago, and the probability of gold above \$1800 has risen to 3 percent from 1.4 percent a month ago reflecting a rebound in investor demand. Copper price tail risks (12 months forward) have increased on both ends of the price distribution as the likelihood of per pound prices below \$2.0 rose to 0.7 percent from 0.2 percent a month ago, and the likelihood of copper above \$5.0 reached 0.6 percent compared to 0.3 percent in January.

The likelihood of per bushel soybean prices below \$8 has decreased to 2.3 percent from 2.6 percent, while prices above \$17 rose to 0.6 percent from 0.2 percent a month ago, showing that an uptick in prices is more likely than last month. The likelihood of corn prices below \$3.00 has dropped to 2.2 percent from 4.8 percent, and prices above \$7.50 remained unchanged since January at 1.3 percent, reflecting expectations of higher import demand.

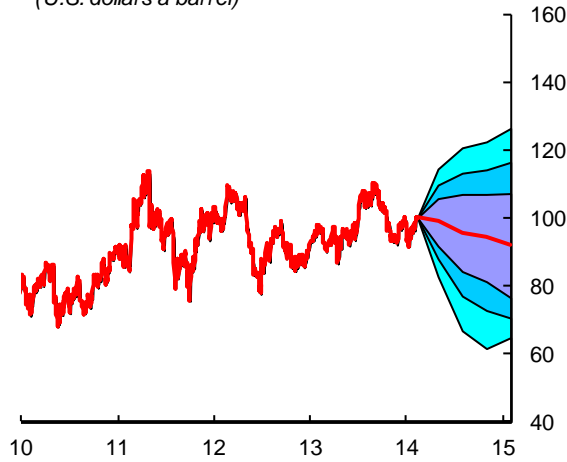
Contents. Fan charts (pages 2-3) show historical and forward futures prices (red line), with calculated confidence intervals of +/- 2 standard deviations (in purple/blue). Confidence intervals are derived from prices of options on February 13, 2014. Likelihoods of spot prices rising/falling from specified 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).

¹ Prepared by Marina Rousset with assistance from Daniel Rivera Greenwood and Akito Matsumoto.

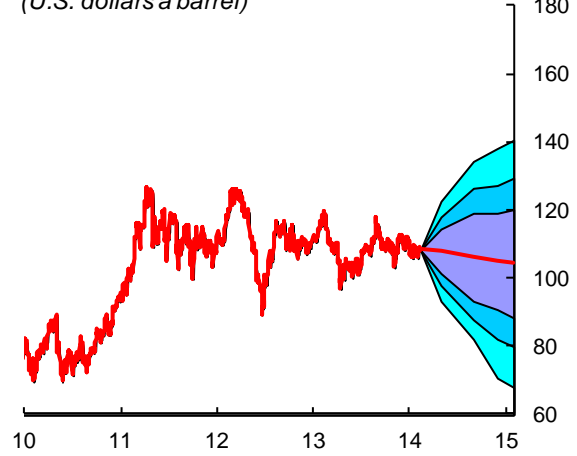
Selected Commodities—Market Price Outlook and Risks

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

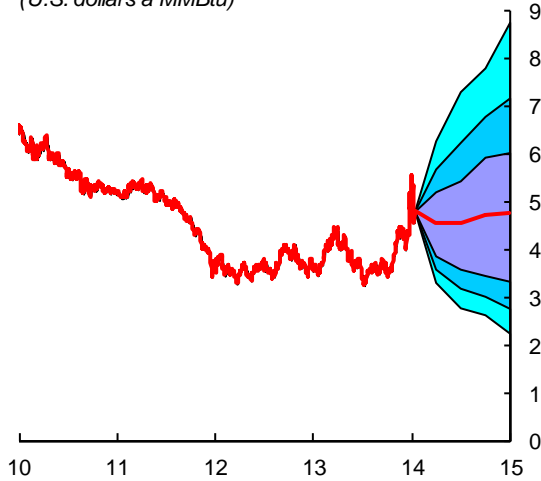
WTI Crude Oil
(U.S. dollars a barrel)



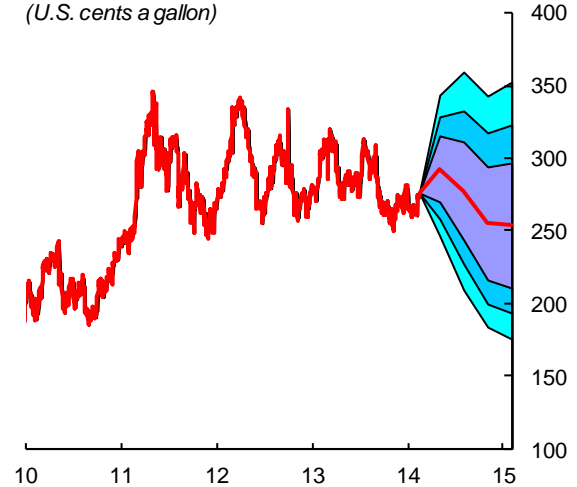
Brent Crude Oil
(U.S. dollars a barrel)



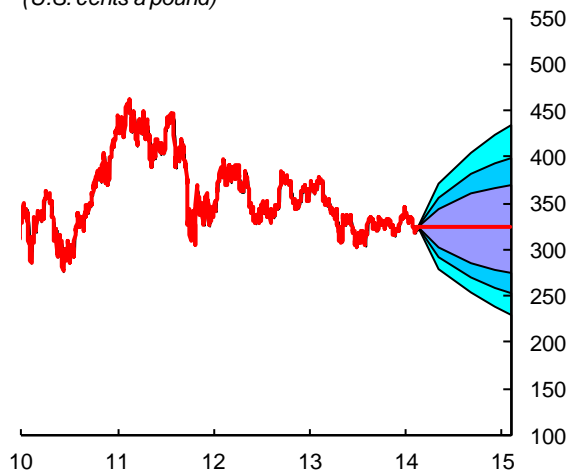
Natural Gas
(U.S. dollars a MMBtu)



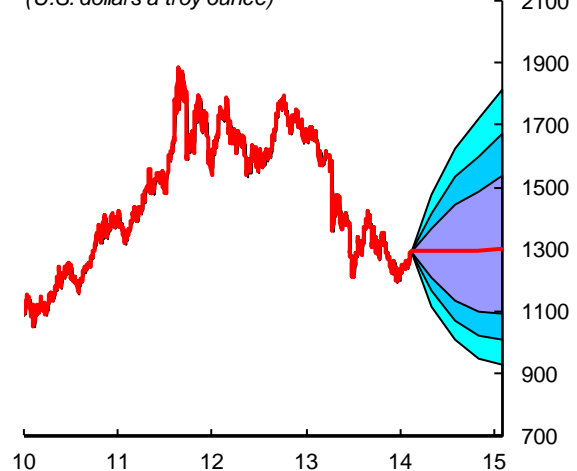
Gasoline
(U.S. cents a gallon)



Copper
(U.S. cents a pound)

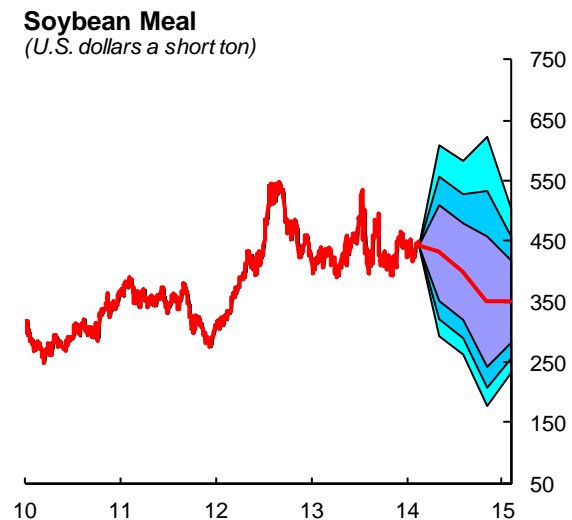
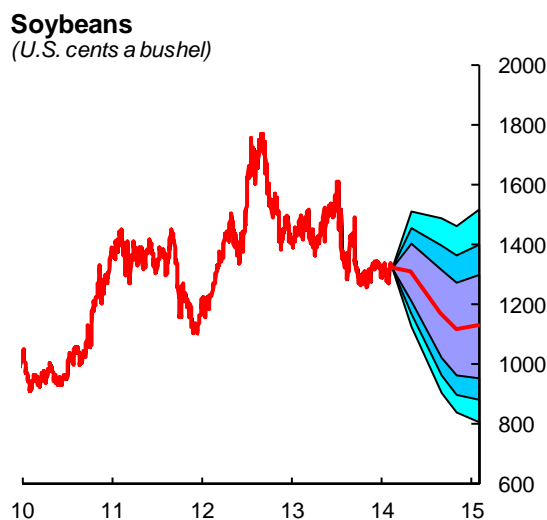
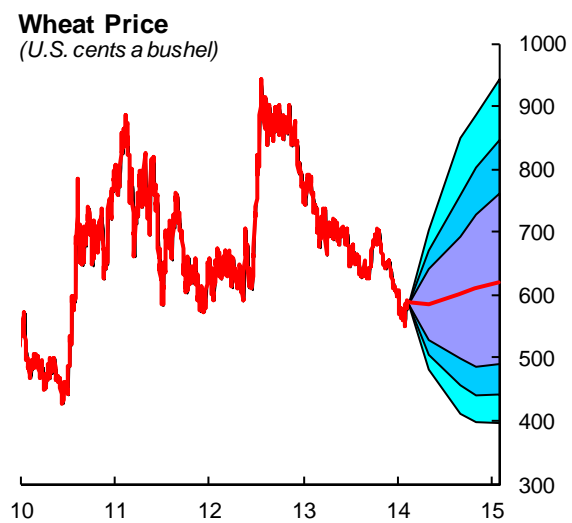
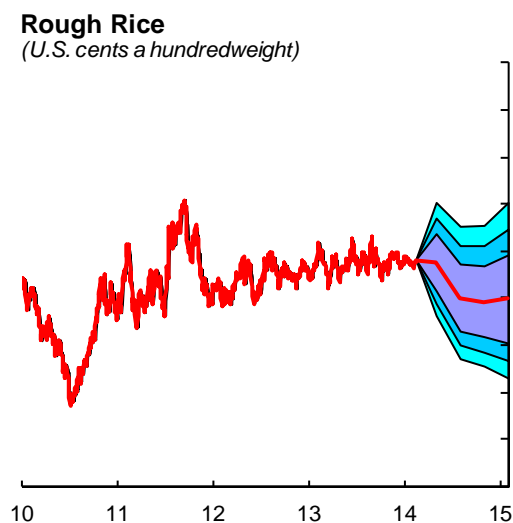
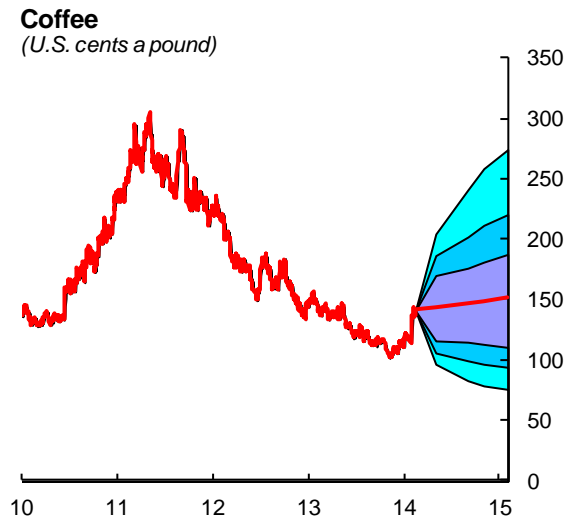
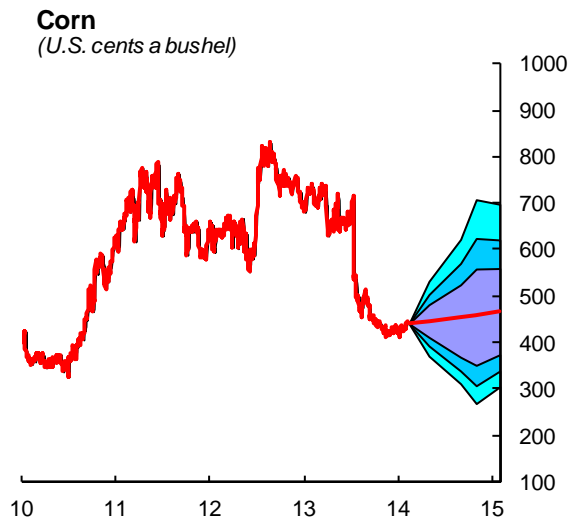


Gold
(U.S. dollars a troy ounce)



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
< 50	0.0	0.2	0.5	0.0
< 60	0.0	1.0	2.1	0.8
< 70	0.1	3.5	5.4	6.4
< 80	1.4	9.6	13.7	23.0
< 90	10.5	30.3	36.3	48.1
> 100	44.8	35.7	33.4	28.9
> 110	7.1	11.4	12.0	13.2
> 120	1.0	2.9	3.6	5.2
> 130	0.2	0.9	1.2	1.8
> 140	0.0	0.4	0.5	0.6
> 150	0.0	0.2	0.2	0.2

Brent Crude Oil

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

Threshold Prices	Months Forward			
	3	6	9	12
< 60	0.0	0.1	0.7	1.2
< 70	0.0	0.3	2.4	3.0
< 80	0.1	1.7	5.7	6.9
< 90	1.3	9.8	14.7	18.4
< 100	11.2	32.6	36.6	40.6
> 110	37.1	36.9	34.9	34.3
> 120	4.7	15.0	14.9	16.4
> 130	0.7	4.6	5.4	6.7
> 140	0.2	1.1	2.1	2.7
> 150	0.0	0.3	1.0	1.2
> 160	0.0	0.1	0.5	0.6

U.S. Natural Gas

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

Threshold Prices	Months Forward			
	3	6	9	12
< 2.50	0.0	1.1	1.5	4.2
< 3.00	0.6	4.3	6.5	10.0
< 3.50	4.8	13.1	16.8	19.4
> 4.00	78.4	68.8	68.2	67.0
> 4.50	48.8	45.8	51.6	51.2
> 5.00	23.6	27.0	36.4	36.5
> 5.50	9.9	15.3	24.0	24.7
> 6.00	4.1	9.1	15.3	16.8
> 6.50	1.7	5.5	9.5	11.5
> 7.00	0.7	3.4	5.8	8.0
> 7.50	0.3	2.1	3.5	5.7

Gasoline

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

Threshold Prices	Months Forward			
	3	6	9	12
< 1.50	0.0	0.0	0.1	0.3
< 1.75	0.0	0.2	1.3	2.4
< 2.00	0.0	1.3	7.0	9.9
< 2.25	0.2	6.1	22.9	26.4
< 2.50	3.3	20.7	47.5	49.4
> 2.75	77.6	50.8	28.6	28.9
> 3.00	36.2	24.2	13.2	14.6
> 3.25	8.9	9.6	5.2	6.6
> 3.50	1.6	3.6	1.8	2.7
> 3.75	0.2	1.4	0.6	1.0
> 4.00	0.0	0.5	0.2	0.4

Copper

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

Threshold Prices	Months Forward			
	3	6	9	12
< 1.5	0.0	0.0	0.0	0.0
< 2.0	0.0	0.1	0.3	0.7
< 2.5	0.1	1.7	4.4	5.9
< 3.0	12.1	27.0	31.0	32.7
> 3.5	11.5	23.8	26.2	27.1
> 4.0	0.4	3.4	5.9	7.1
> 4.5	0.0	0.3	1.1	1.7
> 5.0	0.0	0.1	0.3	0.6
> 5.5	0.0	0.0	0.1	0.2
> 6.0	0.0	0.0	0.0	0.1
> 6.5	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
< 900	0.0	0.2	1.0	1.6
< 1000	0.4	2.0	5.2	6.3
< 1100	1.9	10.3	15.8	16.4
< 1200	12.8	29.1	33.4	31.9
< 1300	55.6	54.3	54.0	49.9
> 1400	9.5	23.7	27.8	33.3
> 1500	2.0	10.3	15.2	20.6
> 1600	0.6	3.6	7.3	11.5
> 1700	0.2	1.1	3.2	6.0
> 1800	0.1	0.3	1.3	3.0
> 1900	0.0	0.1	0.5	1.4

Options-based Price Thresholds (concluded)

Corn

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

Threshold Prices	Months Forward			
	3	6	9	12
< 2.5	0.0	0.1	1.4	0.4
< 3.0	0.0	1.6	6.0	2.2
< 3.5	1.0	10.2	16.0	9.7
< 4.0	10.1	30.0	30.9	26.0
> 4.5	44.2	44.7	50.3	52.4
> 5.0	7.6	23.1	31.4	32.1
> 5.5	1.3	10.3	17.8	17.9
> 6.0	0.2	3.9	9.5	9.3
> 6.5	0.0	1.4	5.1	4.7
> 7.0	0.0	0.4	2.7	2.4
> 7.5	0.0	0.1	1.5	1.3

Coffee

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

Threshold Prices	Months Forward			
	3	6	9	12
< 0.6	0.0	0.2	0.5	0.8
< 0.7	0.0	0.8	1.3	1.7
< 0.8	0.2	2.0	2.7	3.2
< 0.9	1.0	4.0	4.9	5.6
< 1.0	3.8	7.2	8.4	9.5
> 1.1	89.9	87.6	86.2	84.3
> 1.2	79.4	79.4	77.9	75.7
> 1.3	65.6	67.5	66.8	65.3
> 1.4	50.6	53.5	54.1	54.2
> 1.5	36.9	40.2	42.1	43.7
> 1.6	25.1	28.6	31.3	34.1

Rough Rice

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

Threshold Prices	Months Forward			
	3	6	9	12
< 0.08	0.0	0.0	0.0	0.0
< 0.10	0.0	0.1	0.2	0.9
< 0.12	0.1	7.2	10.8	14.9
< 0.14	10.5	51.8	56.2	53.5
> 0.16	33.5	8.8	8.6	14.2
> 0.18	2.8	0.6	0.8	2.7
> 0.20	0.1	0.0	0.0	0.3
> 0.22	0.0	0.0	0.0	0.0
> 0.24	0.0	0.0	0.0	0.0
> 0.26	0.0	0.0	0.0	0.0
> 0.28	0.0	0.0	0.0	0.0

Wheat

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

Threshold Prices	Months Forward			
	3	6	9	12
< 4	0.0	1.9	2.5	2.7
< 5	5.4	15.7	19.4	17.8
< 6	61.1	54.4	51.2	46.0
> 7	3.0	15.0	21.6	27.5
> 8	0.1	4.4	7.5	11.5
> 9	0.0	1.5	2.2	4.1
> 10	0.0	0.6	0.5	1.3
> 11	0.0	0.2	0.1	0.4
> 12	0.0	0.1	0.0	0.1
> 13	0.0	0.0	0.0	0.0
> 14	0.0	0.0	0.0	0.0

Soybeans

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

Threshold Prices	Months Forward			
	3	6	9	12
< 8	0.0	0.2	1.1	2.3
< 9	0.0	2.2	7.1	8.8
< 10	0.0	12.2	23.8	24.5
< 11	1.1	33.4	47.9	46.6
< 12	13.0	60.5	71.5	68.7
> 13	52.9	18.8	13.1	16.0
> 14	17.5	7.0	4.9	7.1
> 15	3.3	2.2	1.7	3.0
> 16	0.3	0.6	0.5	1.3
> 17	0.0	0.1	0.1	0.6
> 18	0.0	0.0	0.0	0.3

Soybean Meal

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

Threshold Prices	Months Forward			
	3	6	9	12
< 200	0.0	0.0	5.5	0.3
< 250	0.2	1.4	18.3	5.3
< 300	3.1	9.3	36.8	24.2
< 350	14.9	28.5	55.7	53.1
< 400	37.7	53.8	71.5	77.8
> 450	37.7	25.2	17.6	8.7
> 500	19.1	11.9	10.4	2.9
> 550	8.2	4.9	5.9	0.9
> 600	3.2	1.9	3.3	0.2
> 650	1.1	0.7	1.9	0.1
> 700	0.4	0.2	1.0	0.0

Options-based Probabilities of Price Changes (in percent)

WTI Crude Oil

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.2	0.5	0.0
-30%	0.1	3.6	5.5	6.7
-10%	11.1	31.1	37.0	48.8
+10%	6.3	10.6	11.4	12.6
+30%	0.2	0.9	1.1	1.7
+50%	0.0	0.2	0.2	0.2
+100%	0.0	0.0	0.0	0.0

Brent Crude Oil

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.0	0.3	0.6
-30%	0.0	0.8	4.0	4.7
-10%	6.2	25.8	30.1	34.5
+10%	5.4	15.9	15.7	17.2
+30%	0.1	1.0	2.0	2.5
+50%	0.0	0.1	0.5	0.5
+100%	0.0	0.0	0.0	0.0

U.S. Natural Gas

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.8	1.1	3.5
-30%	3.1	10.2	13.8	16.7
-10%	41.5	46.9	43.2	43.7
+10%	14.2	19.2	28.6	29.0
+30%	2.6	6.9	11.9	13.7
+50%	0.4	2.7	4.6	6.9
+100%	0.0	0.2	0.4	1.5

Gasoline

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.0	0.0	0.1
-30%	0.0	0.8	4.6	7.0
-10%	2.9	19.5	46.1	48.1
+10%	30.7	21.5	11.7	13.2
+30%	0.8	2.5	1.2	1.9
+50%	0.0	0.3	0.1	0.2
+100%	0.0	0.0	0.0	0.0

Copper

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.0	0.0	0.1
-30%	0.0	0.3	1.4	2.3
-10%	7.3	21.2	25.7	27.6
+10%	6.6	18.2	21.1	22.3
+30%	0.1	1.1	2.7	3.6
+50%	0.0	0.1	0.4	0.7
+100%	0.0	0.0	0.0	0.0

Gold

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.0	0.0	0.0
-30%	0.0	0.2	1.1	1.8
-10%	6.2	21.3	26.6	26.0
+10%	6.3	19.8	24.4	30.0
+30%	0.2	1.3	3.7	6.7
+50%	0.0	0.0	0.3	1.0
+100%	0.0	0.0	0.0	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	0.4	0.2
-30%	0.0	2.3	7.2	2.8
-10%	8.3	27.9	29.4	24.2
+10%	14.3	29.3	37.2	38.2
+30%	0.6	6.9	13.5	13.5
+50%	0.0	1.1	4.5	4.1
+100%	0.0	0.0	0.3	0.3

Coffee

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.8	1.3	1.7
-30%	3.2	6.7	7.8	8.8
-10%	29.7	28.3	29.4	31.2
+10%	30.2	33.6	36.0	38.4
+30%	8.2	12.4	15.0	18.0
+50%	1.6	5.4	7.0	8.7
+100%	0.0	0.9	1.5	2.2

Rough Rice

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.0	0.0	0.0
-30%	0.0	0.8	1.8	4.1
-10%	11.2	52.9	57.2	54.3
+10%	9.3	2.0	2.2	5.6
+30%	0.0	0.0	0.0	0.2
+50%	0.0	0.0	0.0	0.0
+100%	0.0	0.0	0.0	0.0

Wheat

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.1	0.0	0.0
-30%	0.0	2.4	3.3	3.4
-10%	14.9	24.8	27.5	24.9
+10%	14.9	28.7	34.9	40.8
+30%	0.3	6.8	11.3	16.1
+50%	0.0	1.9	2.8	5.1
+100%	0.0	0.1	0.0	0.2

Soybeans

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.0	0.0	0.4
-30%	0.0	3.7	10.3	11.9
-10%	10.8	58.0	69.5	66.8
+10%	7.3	3.7	2.7	4.4
+30%	0.0	0.1	0.1	0.5
+50%	0.0	0.0	0.0	0.1
+100%	0.0	0.0	0.0	0.0

Soybean Meal

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.3	10.1	1.3
-30%	4.7	12.6	41.1	30.1
-10%	37.1	53.3	71.2	77.4
+10%	22.8	14.4	11.8	3.9
+30%	5.1	3.0	4.4	0.4
+50%	0.8	0.5	1.6	0.0
+100%	0.0	0.0	0.1	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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