

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 declining or remaining flat over the next 12 months, with the exception of wheat, coffee and corn. Natural gas prices are expected to rise through the coming winter and decline thereafter, reflecting seasonal demand patterns. Other fuel price prospects are downward-trending owing to ample supplies, while gold futures prices remain flat. Copper prices are expected to decline slightly over the next year amid concerns of slowing Chinese demand. Wheat prices are expected to increase by about 7 percent by next May owing to supply concerns in the key growing areas, namely U.S., Canada, and Ukraine. Similarly, coffee prices are expected to rise by 7 percent over the next 12 months as adverse weather is expected to curtail supply in Brazil.

Risks. The likelihood of per-barrel prices for WTI falling below \$90 and Brent below \$100 in the next 12 months is about 37 percent and 39 percent, respectively, which is slightly lower than a month ago. The likelihood of WTI prices falling below \$60 has risen modestly since April, while the probability of WTI prices rising above \$140 remained unchanged, indicating little change in the overall WTI balance of risks. The distribution of Brent price risks narrowed marginally since last month.

The likelihood of per-MMBtu U.S. natural gas prices below \$3 (12 months forward) has dropped to 6.5 percent from 7.6 percent, while the probability of prices rising above \$7 dropped to 1.1 percent from 1.5 percent since April, reflecting seasonal patterns. Copper price tail risks (12 months forward) have eased on both ends of the price distribution, while the gold balance of risks widened slightly since last month. The widening of the gold price probability spread partly reflects the import-policy uncertainty following recent elections in India, a key consumer of the metal.

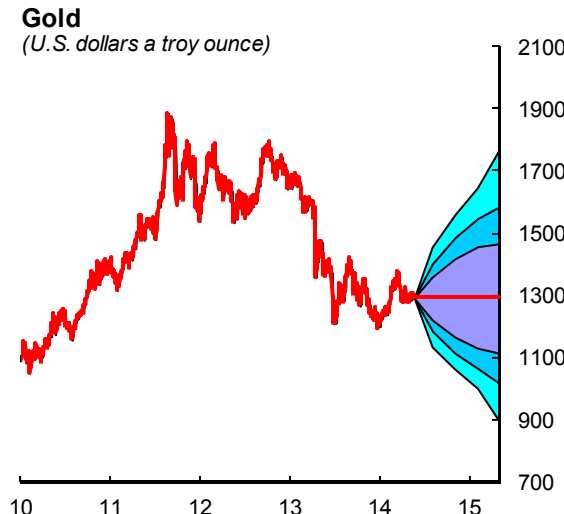
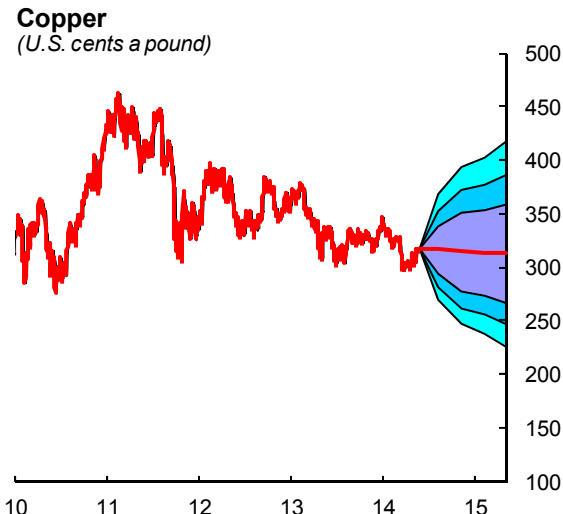
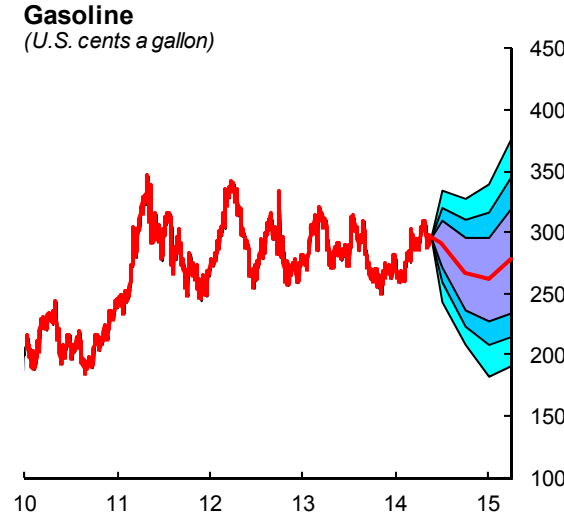
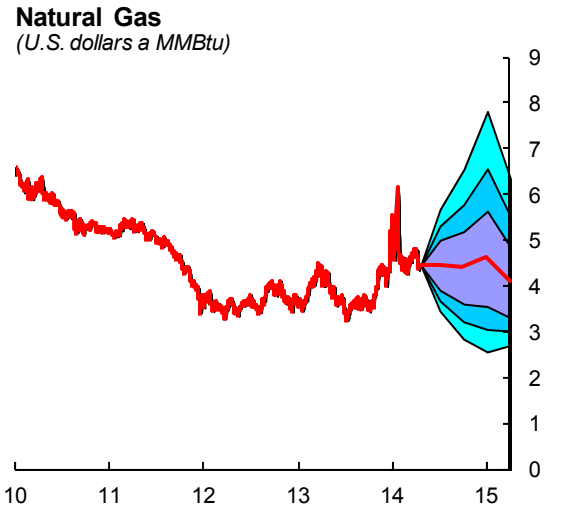
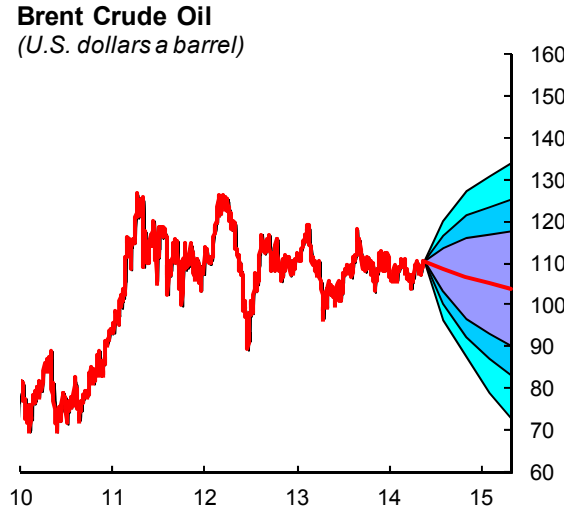
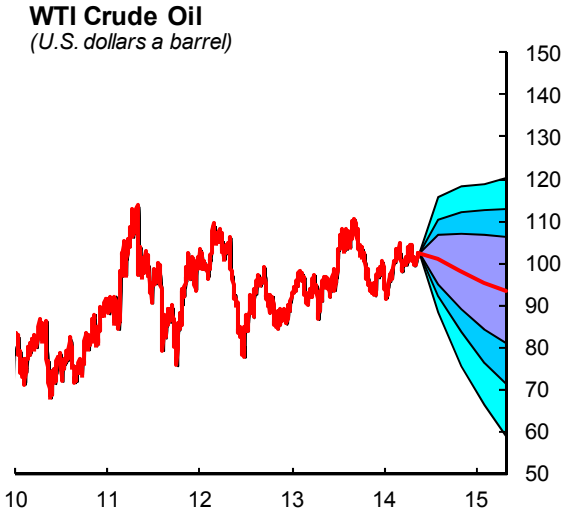
The likelihood of per-bushel wheat prices below \$4 declined to 0.7 percent from 1.2 percent while prices above \$12 slipped to 1 percent from 2.1 percent in April, reflecting reduced uncertainty about the U.S. winter-wheat harvest currently underway. The likelihood of corn prices below \$3.50 has increased to 8.5 percent from 7.6 percent, while the probability of prices above \$7.50 fell to 2.6 percent from 4.5 percent previously, reflecting a downward shift in the balance of risks as supply concerns abated.

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 May 19, 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 and Daniel Rivera Greenwood, with assistance from Akito Matsumoto and Shane Streifel.

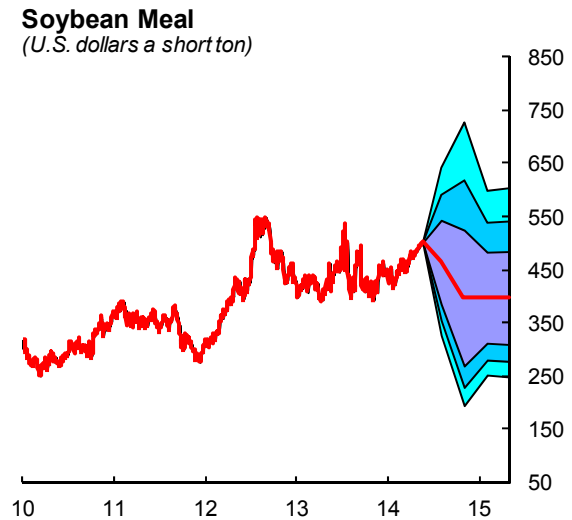
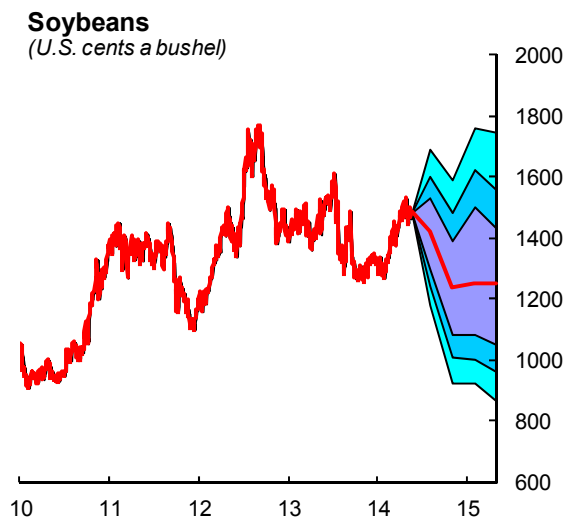
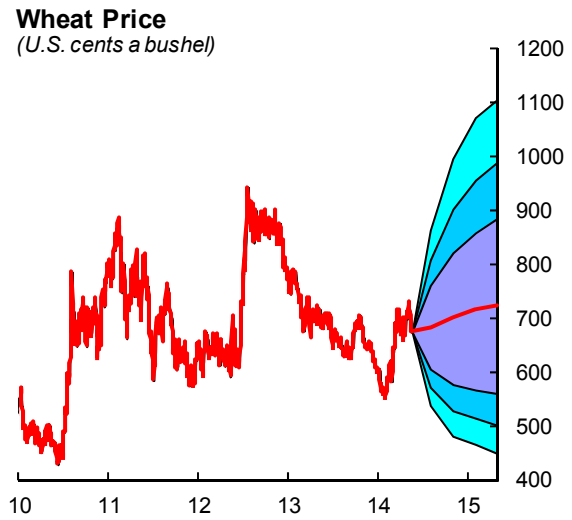
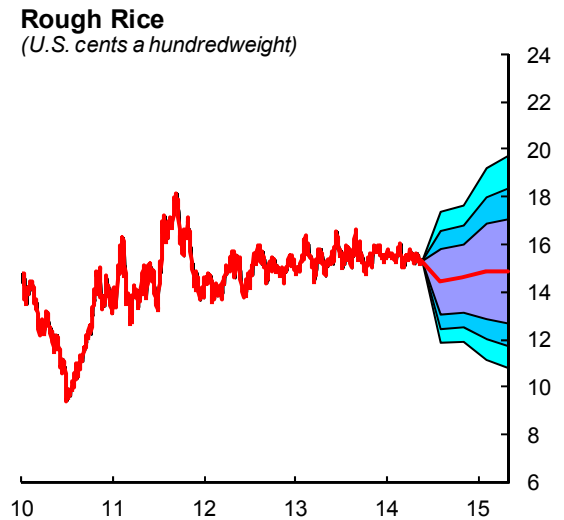
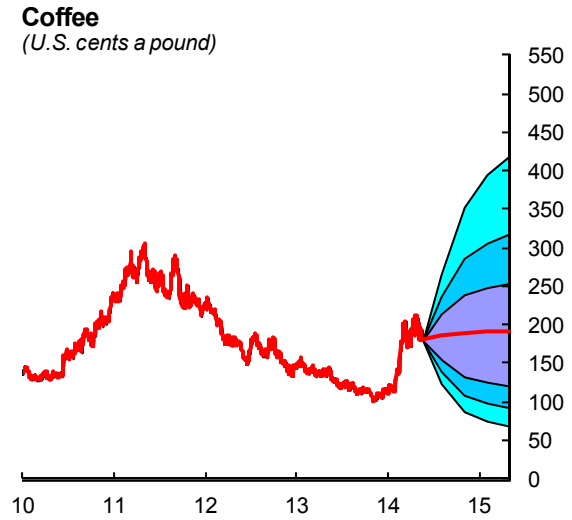
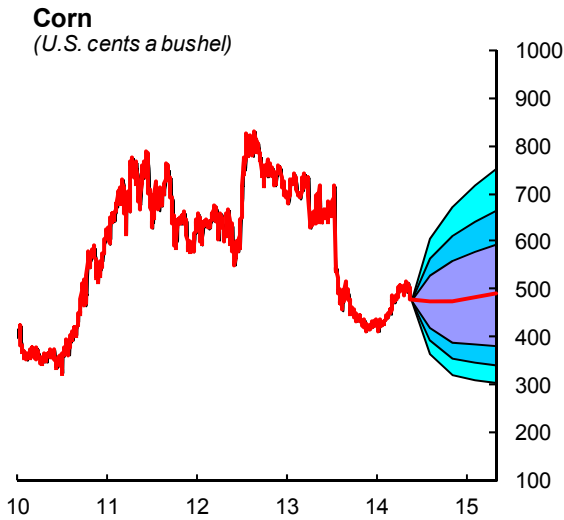
Selected Commodities—Market Price Outlook and Risks

▬ 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
< 60	0.0	0.1	1.0	2.8
< 70	0.0	1.1	3.7	6.3
< 80	0.3	4.2	9.7	14.5
< 90	3.7	17.7	29.0	37.0
< 100	43.2	57.7	64.0	68.3
> 110	8.1	10.4	10.7	10.7
> 120	1.4	2.0	2.2	2.7
> 130	0.3	0.6	0.4	0.7
> 140	0.0	0.2	0.1	0.2
> 150	0.0	0.1	0.0	0.1
> 160	0.0	0.0	0.0	0.0

Brent Crude Oil

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

Threshold Prices	Months Forward			
	3	6	9	12
< 60	0.0	0.0	0.3	0.8
< 70	0.0	0.1	1.0	2.0
< 80	0.0	0.5	2.7	4.9
< 90	0.6	4.0	10.0	15.2
< 100	6.2	25.9	33.7	39.4
> 110	38.2	34.7	33.1	31.9
> 120	2.8	9.3	11.5	12.9
> 130	0.3	1.5	2.9	4.1
> 140	0.0	0.2	0.8	1.3
> 150	0.0	0.0	0.3	0.5
> 160	0.0	0.0	0.1	0.2

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	0.7	2.0	1.1
< 3.00	0.1	3.9	6.3	6.5
< 3.50	3.1	12.7	14.6	24.4
> 4.00	80.0	68.9	70.4	48.0
> 4.50	45.5	42.6	49.5	25.7
> 5.00	16.7	21.7	30.8	13.6
> 5.50	4.4	10.7	18.7	7.5
> 6.00	0.9	5.3	11.6	4.0
> 6.50	0.2	2.7	7.5	2.1
> 7.00	0.0	1.3	4.9	1.1
> 7.50	0.0	0.7	3.3	0.5

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	0.4	0.3
< 1.75	0.0	0.1	1.8	1.2
< 2.00	0.0	1.1	4.8	3.5
< 2.25	0.5	7.6	13.8	10.6
< 2.50	3.8	29.7	37.5	27.3
> 2.75	81.2	37.9	33.9	49.7
> 3.00	32.9	13.4	14.0	28.2
> 3.25	5.1	3.0	4.9	14.0
> 3.50	0.9	0.4	1.5	6.3
> 3.75	0.2	0.0	0.4	2.7
> 4.00	0.0	0.0	0.1	1.1

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	0.1
< 2.0	0.0	0.0	0.3	0.8
< 2.5	0.2	2.9	4.8	7.9
< 3.0	22.4	36.1	38.1	40.9
> 3.5	8.5	17.4	18.6	20.9
> 4.0	0.2	2.0	2.9	4.7
> 4.5	0.0	0.1	0.4	1.0
> 5.0	0.0	0.0	0.1	0.3
> 5.5	0.0	0.0	0.0	0.1
> 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	0.0	0.3	2.6
< 1000	0.2	0.5	2.4	6.0
< 1100	1.3	5.1	10.7	13.6
< 1200	9.3	23.0	29.0	30.2
< 1300	54.5	53.3	53.2	53.5
> 1400	7.6	20.0	25.2	25.6
> 1500	1.4	6.1	11.3	12.8
> 1600	0.4	1.4	4.2	6.5
> 1700	0.1	0.2	1.4	3.6
> 1800	0.0	0.0	0.4	2.2
> 1900	0.0	0.0	0.1	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	0.3	0.4	0.4
< 3.0	0.1	1.3	1.9	2.2
< 3.5	1.3	6.1	7.4	8.5
< 4.0	8.9	19.8	20.7	21.7
> 4.5	66.6	58.7	60.0	60.4
> 5.0	30.9	35.9	39.4	41.6
> 5.5	10.1	18.8	23.0	26.1
> 6.0	3.0	8.7	12.4	15.3
> 6.5	0.8	3.8	6.4	8.6
> 7.0	0.2	1.6	3.3	4.8
> 7.5	0.0	0.8	1.7	2.6

Coffee

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

Threshold Prices	Months Forward			
	3	6	9	12
< 1.0	0.2	4.7	7.2	8.7
< 1.2	1.7	10.5	13.5	15.5
< 1.4	7.1	19.8	23.3	25.5
< 1.6	19.7	33.4	36.2	37.9
< 1.8	45.8	50.1	50.8	51.5
> 2.0	27.8	34.8	36.2	36.5
> 2.2	12.9	23.3	25.7	26.7
> 2.4	6.5	15.8	18.4	19.7
> 2.6	3.2	10.9	13.3	14.6
> 2.8	1.5	7.7	9.9	11.0
> 3.0	0.7	5.7	7.6	8.6

Rough Rice

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

Threshold Prices	Months Forward			
	3	6	9	12
< 0.10	0.0	2.3	0.2	1.2
< 0.11	0.0	4.0	1.6	3.6
< 0.12	0.1	8.1	7.4	10.0
< 0.13	1.4	19.4	20.8	22.3
> 0.14	89.8	60.4	59.8	61.4
> 0.15	63.9	35.6	38.3	43.1
> 0.16	30.7	16.5	20.9	27.2
> 0.17	9.5	6.1	9.8	15.7
> 0.18	2.0	2.0	4.1	8.5
> 0.19	0.3	0.6	1.5	4.4
> 0.20	0.0	0.2	0.5	2.4

Wheat

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

Threshold Prices	Months Forward			
	3	6	9	12
< 4	0.0	0.2	0.4	0.7
< 5	0.6	4.0	5.4	6.8
< 6	14.2	21.9	23.5	24.2
> 7	39.4	45.8	49.0	51.3
> 8	8.0	19.6	25.2	29.0
> 9	1.3	7.2	11.4	14.4
> 10	0.2	2.4	4.8	6.5
> 11	0.0	0.7	1.9	2.6
> 12	0.0	0.2	0.8	1.0
> 13	0.0	0.1	0.3	0.4
> 14	0.0	0.0	0.1	0.1

Soybeans

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

Threshold Prices	Months Forward			
	3	6	9	12
< 8	0.0	0.5	0.2	1.2
< 9	0.0	1.9	1.7	3.7
< 10	0.1	6.2	7.0	10.3
< 11	0.6	19.2	18.5	23.8
< 12	3.5	42.6	35.6	43.6
> 13	84.8	33.1	45.9	36.4
> 14	55.3	15.2	29.0	20.2
> 15	23.8	6.1	16.5	10.4
> 16	7.6	2.4	8.6	5.5
> 17	2.3	1.0	4.1	3.2
> 18	0.8	0.5	1.8	2.0

Soybean Meal

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

Threshold Prices	Months Forward			
	3	6	9	12
< 200	0.0	3.2	0.1	0.2
< 250	0.0	11.4	2.3	2.7
< 300	0.7	25.3	12.3	13.1
< 350	6.0	41.9	32.2	33.0
< 400	21.9	57.6	55.7	56.0
> 450	54.2	29.6	25.3	25.4
> 500	30.6	19.8	12.6	13.0
> 550	14.4	12.9	5.7	6.1
> 600	5.8	8.2	2.4	2.6
> 650	2.1	5.2	1.0	1.1
> 700	0.7	3.2	0.4	0.5

Options-based Probabilities of Price Changes (in percent)

WTI Crude Oil

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.0	0.2	0.9
-30%	0.0	1.4	4.4	7.2
-10%	6.9	24.9	36.4	44.2
+10%	4.5	6.5	7.0	7.4
+30%	0.2	0.4	0.3	0.4
+50%	0.0	0.0	0.0	0.1
+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	0.1	0.4
-30%	0.0	0.3	2.1	3.8
-10%	5.7	24.9	32.8	38.6
+10%	1.7	6.8	9.0	10.5
+30%	0.0	0.1	0.5	0.8
+50%	0.0	0.0	0.1	0.1
+100%	0.0	0.0	0.0	0.0

U.S. Natural Gas

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.2	0.9	0.3
-30%	0.3	5.4	7.8	9.4
-10%	21.2	32.2	30.5	53.2
+10%	20.6	24.7	33.7	15.2
+30%	1.7	6.9	13.8	5.1
+50%	0.1	2.0	6.3	1.6
+100%	0.0	0.1	1.0	0.1

Gasoline

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.0	0.3	0.2
-30%	0.1	2.1	6.4	4.9
-10%	10.8	51.4	57.1	42.4
+10%	4.8	2.8	4.7	13.7
+30%	0.1	0.0	0.3	1.9
+50%	0.0	0.0	0.0	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	0.2
-30%	0.0	0.2	0.9	2.1
-10%	9.5	22.9	25.5	29.5
+10%	8.5	17.4	18.6	20.9
+30%	0.1	1.0	1.7	3.0
+50%	0.0	0.0	0.2	0.5
+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	0.1
-30%	0.0	0.0	0.3	2.7
-10%	4.2	14.7	21.4	23.2
+10%	4.9	15.7	21.4	22.0
+30%	0.1	0.3	1.7	4.0
+50%	0.0	0.0	0.1	1.1
+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	0.3	0.3	0.2
-30%	0.5	3.7	4.9	5.7
-10%	20.6	31.8	31.5	31.8
+10%	18.1	26.4	30.5	33.3
+30%	1.8	6.3	9.5	12.2
+50%	0.1	1.3	2.7	4.0
+100%	0.0	0.1	0.2	0.3

Coffee

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	2.9	5.0	6.3
-30%	2.8	12.8	16.0	18.1
-10%	22.0	35.2	37.9	39.5
+10%	29.8	36.1	37.3	37.6
+30%	7.8	17.5	20.2	21.4
+50%	2.2	9.2	11.4	12.7
+100%	0.1	2.2	3.7	4.4

Rough Rice

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.3	0.0	0.2
-30%	0.0	3.5	1.0	2.7
-10%	7.3	35.0	36.0	35.1
+10%	11.1	6.9	10.8	16.8
+30%	0.0	0.2	0.5	2.5
+50%	0.0	0.0	0.0	0.6
+100%	0.0	0.0	0.0	0.1

Wheat

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.0	0.0	0.1
-30%	0.2	2.0	2.9	4.0
-10%	16.5	23.8	25.2	25.7
+10%	21.9	33.0	38.0	41.3
+30%	1.9	9.2	13.9	17.2
+50%	0.2	2.1	4.3	5.8
+100%	0.0	0.0	0.2	0.2

Soybeans

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	0.2	0.0	0.6
-30%	0.2	9.7	10.4	14.4
-10%	24.3	74.6	60.8	70.3
+10%	5.1	1.8	6.8	4.5
+30%	0.2	0.2	0.6	1.2
+50%	0.0	0.0	0.0	0.4
+100%	0.0	0.0	0.0	0.0

Soybean Meal

Price changes	Months Forward			
	3	6	9	12
-50%	0.0	10.3	1.9	2.2
-30%	4.7	39.4	28.9	29.7
-10%	41.4	68.4	71.9	71.8
+10%	17.2	14.2	6.9	7.2
+30%	2.8	5.8	1.3	1.4
+50%	0.3	2.3	0.2	0.2
+100%	0.0	0.2	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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