Executive Summary

This report presents data on selected agricultural commodities for the second quarter of 2011 (April through June). It provides a summary of recent changes and price trends, demand, supply, and market conditions for key agricultural commodities. There are three graphs for each commodity (except fertilizer and cashews, which do not trade in futures):

1. Average monthly prices, overlaying each of the past three years for inter-annual comparison
2. Daily price trend over the past three years
3. Futures curve, the trend in futures prices over the current contracts due to expire within one year.

This report summarizes changes in the prices of the benchmark futures contract for each commodity. This is typically the exchange trading the highest volume of the good. The respective ticker symbols are reported below each chart. We use daily closing futures prices on the first futures contract (the nearest to expiration on that given day), generally accepted as the best approximation of historical spot prices. Additionally, in this report, we include the average monthly value and three-year daily value of the U.S. dollar.¹

Highlights of this report include:

- The FAO Food Price Index was stable this quarter with falls in sugars and oils counteracting rises in meat, dairy, and cereals.
- Wheat prices were volatile this quarter, with price rises due to unfavorable weather and a weakening dollar, and falls after Russia lifted the wheat export embargo.
- Maize prices reached record highs in April, before falling with other commodities in May and again later in June on reports of higher than expected U.S. plantings.
- Rice remains the commodity outlier with stable prices despite high global production. Increasing African demand and potential changes in Thailand’s price support policies keep prices from falling more.

¹ Appendix 2 includes this data
• Soybean price decreased slightly with high production and record inventories, while globally, demand has fallen significantly. Adverse weather conditions for the current U.S. crop supports prices from falling further.
• Cocoa prices fell over 8% with the normalization of activities in Côte d'Ivoire and bumper crops throughout West Africa increasing supply.
• Coffee prices peaked in April on unfavorable weather reports, but began to fall throughout the rest of the quarter as weather improved in Colombia and Brazil and signs appeared of decreasing demand.
• Cashew prices continued to rise with higher production costs and limited supply. In June prices increased additionally in advance of the wedding season2 in Asia.
• Cotton prices were highly volatile during the quarter, responding to falling demand, particularly in China, and record levels of crop abandonment due to drought in the U.S.
• The FAO dairy price index rose only 1%, though the Bloomberg data indicated volatile prices and a 6% increase over the same period. Prices fell with herd expansion and increased output, but rose with June’s record prices of forage.
• Crude oil prices peaked in April with continued concern over crude supplies, but began to fall with the news of Osama bin Laden’s death and later with the International Energy Agency’s (IEA) June announcement of opening reserve stocks.
• All fertilizer prices increased over the quarter on rising energy costs and increasing demand as farmers attempted to increase production to take advantage of higher prices.

2 Cashews are a staple of wedding celebrations.
FAO Food Price Index

The FAO Food Price Index is a composite measure of changes in average food prices over time. It consists of an average of the five commodity group indices (meat, dairy, cereals, oils and fats, and sugar) weighted by global export shares. The composite food price index decreased only marginally, less than 1%, but is still 39% higher than the June 2010 average. Relative to the previous quarter, meat (6%), dairy (1%), and cereal (4%) indices gained in value, while oil (5%) and sugar (16%) indices fell.

Source: FAO

FAO Food Price Index, Annual Averages

Source: FAO; 2011 through March
Cereals & Oilcrops

The FAO Cereals Price Index rose about 4% from the first quarter to the second quarter of 2011. In contrast, the FAO Oils Price Index fell for the first time in a year, down more than 5% from the previous quarter. Both indexes are still well above second quarter levels from a year earlier, with a 70% increase in the cereals price index and a 51% increase in the oils price index.

Source: FAO
Wheat

Wheat prices were volatile during the second quarter of 2011, with prices increasing during the beginning of April and May and decreasing otherwise. Price declines outweighed increases, and the quarterly average wheat price decreased over 5% from the first quarter of 2011. The average price in June was $6.96 per bushel, about 16% below the record high ($8.32 per bushel) reached in February of this year. Prices still remain high, with June 2011’s average price almost 55% higher than a year ago.

The wheat market remains tight and subsequently highly volatile. Recent forecasts project a 3 million ton annual decrease in worldwide stocks.\(^5\) Despite a projected 2.8% increase in worldwide production from 2010, wheat consumption is increasing at a higher rate, particularly for feed purposes.\(^6,7,8\) Unfavorable weather across Europe and the United States and a weakening dollar supported prices in separate rallies in April and May.\(^9,10\) Wheat prices fell due to a combination of events including a strengthening dollar, declines in crude oil, and improved weather.\(^11,12,13\) Wheat prices increasingly fell after announcements by Russia to end its wheat export ban July 1\(^{st}\) and by Ukraine to lift export quotas.\(^14\)

Historic Wheat Prices, Monthly Averages

Source: Bloomberg, Chicago Board of Trade (CBOT), generic wheat futures contract W 1
Note: 1 wheat bushel = 60 lbs; 1 metric tonne = 36.74 bushels

Historic Daily Wheat Prices

Source: Bloomberg, Chicago Board of Trade (CBOT), generic wheat futures contract W 1
Wheat Futures Curve,
Contracts Coming Due Within 1 Year

Source: Bloomberg, Chicago Board of Trade (CBOT), wheat futures contracts W U1, W Z1, W H2, W K2, & W N2
July 25, 2011
Maize

Maize\textsuperscript{15} prices reached a record monthly average high in April, $7.53 per bushel, before falling somewhat in May and June. Each monthly average in the second quarter of 2011 exceeds the June 2008 high ($6.99 per bushel) by at least 3%, or 20¢. This represents more than a 9% increase from the first quarter of 2011 and a 106% increase from the second quarter of 2010.

The maize market is characterized by increasing demand. Despite anticipated record production, consumption continues to accelerate, reducing worldwide stocks. Estimates project a 20 million ton decrease in stocks in the 2010-2011 harvest, and another 3 million ton fall in the current 2011-2012 harvest year.\textsuperscript{16,17} Increased feed use and ethanol expansion account for much of the increase in consumption.\textsuperscript{18,19} April’s rally in maize prices resulted from a sliding dollar and worries over exceedingly wet weather in the U.S.\textsuperscript{20} May and June prices were volatile with prices falling as the dollar appreciated in value, and then rising again to record highs on reports of lower than anticipated plantings.\textsuperscript{21,22} June maize prices ended on a slide based on improved U.S. weather conditions and reports of higher than anticipated planted acreage and beginning stocks.\textsuperscript{23,24}

\textsuperscript{15} Corn and maize are synonymous terms used interchangeably and have the same FAO commodity code. The benchmark contract is traded in the U.S. and referred to as corn, though internationally it is more commonly referred to as maize.


\textsuperscript{22} FAO. (2011 June). *Crop Prospects and Food Situation (No. 2)*. Retrieved from http://www.fao.org/docrep/014/a979e/a979e00.pdf


Historic Maize Prices, Monthly Averages

Source: Bloomberg, Chicago Board of Trade (CBOT), generic corn futures contract C 1
Note: 1 corn bushel = 56 lbs; 1 metric tonne = 39.37 bushels

Historic Daily Maize Prices

Source: Bloomberg, Chicago Board of Trade (CBOT), generic corn futures contract C 1
Maize Futures Curve,
Contracts Coming Due Within 1 Year

Source: Bloomberg, Chicago Board of Trade (CBOT), corn futures contracts C U1, C Z1, C H2, C K2, & C N2
July 25, 2011
Rice

Rice prices remained relatively stable throughout the second quarter, with the quarterly average decreasing about 1% from the first quarter of 2011. Prices rose slightly during April and May before falling somewhat in June to $14.13 per cwt. While June’s average price is 32% higher than the average of June 2010, it still remains about 36% below the record high in April 2008.

Rice continues to be the exception to the rising commodity prices. Global production reached record highs in the 2010/11 year, mostly due to larger crops in Southeast Asia; record harvests continue to be projected for the 2011/12 season in Egypt and Western Africa.\textsuperscript{25,26,27} Coupled with record production is smaller global consumption, and stocks continue to grow to their largest volume in eight years.\textsuperscript{28,29} Increasing demand in Africa and potential price support policies in Thailand have supported the market from further price falls.\textsuperscript{30}

\begin{center}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline
\textbf{Month} & \textbf{US$/cwt} & \textbf{2008-2009} & \textbf{2009-2010} & \textbf{2010-2011} \\
\hline
July & 18 & & & \\
August & 17.5 & & & \\
September & 17 & & & \\
October & 16.5 & & & \\
November & 16 & & & \\
December & 15.5 & & & \\
January & 15 & & & \\
February & 14.5 & & & \\
March & 14 & & & \\
April & 13.5 & & & \\
May & 13 & & & \\
June & 12.5 & & & \\
\hline
\end{tabular}
\end{center}

Source: Bloomberg, Chicago Board of Trade (CBOT), generic rice futures contract RR1

Historic Daily Rice Prices

Rice Futures Curve,
Contracts Coming Due Within 1 Year

Source: Bloomberg, Chicago Board of Trade (CBOT), generic rice futures contract RR1

Source: Bloomberg, Chicago Board of Trade (CBOT), rice futures contracts RRU1, RRX1, RRF2, RRH2, RRK2, & RRN2, July 25, 2011
Soybeans

Soybean prices remained stable through the quarter. Quarterly average soybean prices decreased about 1% from the first quarter of 2011 to the second quarter. Nonetheless, these prices still represent the high end of prices observed over the past three years. June’s average soybean price of $13.60 per bushel is 43% higher than the price a year ago, and among the top five monthly averages since the peak in July 2008.

Rising stocks and declining demand have stabilized the soybean market in this quarter. Many countries are reporting record high stocks, while China, the largest global importer, reports record-level inventories in their major ports.\textsuperscript{31,32,33} Demand has dropped in Africa, Mexico, Japan, and the European Union.\textsuperscript{34} More significantly for the market, China lost many livestock, including hogs due to disease and fish due to drought, leading to cancelled soybean imports.\textsuperscript{35} Concerns over adverse weather in the U.S., however, supported prices.\textsuperscript{36}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{Historic_Soybeans_Prices.png}
\caption{Historic Soybeans Prices, Monthly Averages}
\end{figure}

\textit{Source:} Bloomberg, Chicago Board of Trade (CBOT), generic soybean futures contract S 1

\textit{Note:} 1 soybean bushel = 60 lbs; 1 metric tonne = 36.74 bushels

Historic Daily Soybeans Prices

Source: Bloomberg, Chicago Board of Trade (CBOT), generic soybean futures contract S 1

Soybeans Futures Curve,
Contracts Coming Due Within 1 Year

Source: Bloomberg, Chicago Board of Trade (CBOT), soybean futures contracts S Q1, S U1, S X1, S F2, S H2, S K2, & S N2 July 25, 2011
Other Softs\textsuperscript{37}

Cocoa

Cocoa prices fell to more conventional levels with the end of the conflict in Côte d'Ivoire. The June 2011 monthly average is less than .1% above the June 2010 average. The quarterly average retreated almost 8% since the first quarter of 2011. From the peak in February, cocoa prices have decreased over $450 dollars per metric tonne.

As expected, the situation in Côte d'Ivoire began to normalize in April. While the country worked to re-organize logistics and finances, the EU eased sanctions against the country.\textsuperscript{38} By the end of May, large volumes of cocoa beans began leaving Côte d'Ivoire ports. Additionally, Ghana reported record levels of production, sending prices lower.\textsuperscript{39} The strengthening of the dollar in June, coupled with reports of a bumper crop across Western Africa, decreased cocoa prices further.\textsuperscript{40}

Unique among the soft commodities, there are two benchmark cocoa contracts: one on the NYBOT ICE exchange and one on the London Liffe exchange. We report historical prices based on NYBOT ICE prices in US dollars. Current futures contracts are reported on both exchanges. Cocoa prices are linked to both the value of the US dollar and the British pound, though in general prices on the two exchanges track one another.\textsuperscript{41}

\textsuperscript{37} Soft commodities refer generally to agricultural commodities that are grown, as opposed to livestock, mined commodities, or financial instruments. While grains and oilseeds are technically also soft commodities, they are usually reported separately and the “softs” grouping is usually referring to coffee, cotton, cocoa, and orange juice.


Historic Cocoa Prices, Monthly Averages

Source: Bloomberg, New York Board of Trade ICE, generic cocoa futures contract CC1

Historic Daily Cocoa Prices

Source: Bloomberg, New York Board of Trade ICE, generic cocoa futures contract CC1
Cocoa Futures Curve,
Contracts Coming Due Within 1 Year

Source: Bloomberg, New York Board of Trade ICE, cocoa futures contracts CCN1, CCU1, CCZ1, CCH2, CCK2, & CCN2  April 27, 2011

Cocoa Futures Curve,
Contracts Coming Due Within 1 Year

Source: Bloomberg, London Liffe Exchange, cocoa futures contracts QCU1, QCZ1, QCH2, QCK2, & QCN2  July 26, 2011
Coffee

Coffee prices peaked in April, reaching the highest recorded average since June 1977, before decreasing through the end of the quarter.\(^{42}\) On the whole, the second quarter price average represented a 6% increase from the first quarter of 2011. The quarterly average was 95% higher than the second quarter a year ago.

High rainfall in Colombia, the world’s second largest producer, led to major bean losses in April.\(^ {43}\) Coupled with the lower producing year in Brazil’s two-year coffee production cycle, prices reached record highs in April and the beginning of May.\(^ {44}\) Coffee prices fell with other commodities as the dollar strengthened and with fears of an economic slowdown.\(^ {45}\) Prices continued to fall with signs of decreasing demand and as weather conditions improved in both Colombia and Brazil.\(^ {46,47,48}\)

Source: Bloomberg, New York Board of Trade ICE, generic coffee futures contract KC1

---


Historic Daily Coffee Prices

Coffee Futures Curve,
Contracts Coming Due Within 1 Year

Source: Bloomberg, New York Board of Trade ICE, generic coffee futures contract KC1

Source: Bloomberg, New York Board of Trade ICE, coffee futures contracts KCU1, KCZ1, KCH2, KCK2, KCN2

April 27, 2011
Cashews

Cashew prices increased slightly during April and May before rising 11% in June, ending at a three-year high of 516.18 Rupees/kg. June 2011’s average price represents a 42% increase from the previous year. The 2011 second quarter average is almost 7% higher than the first quarter average.

The current cashew market is very tight, with slowing supply and rising demand. Increased competition for cashews from Vietnam and Brazil has largely supported the consistent rise in prices. Additionally, longer than normal transit from Africa has created supply problems.\(^4\) Within India, higher processing costs have contributed about 30-40% to the rise in cashew prices.\(^5\) Rising domestic demand as the wedding season approaches contributed to June price increases.\(^6\)

Source: Bloomberg, India Commodity, Cashew Spot Price Index COMICA32

Note: 1.00 USD to 44.8187 as of June 6, 2011, Bloomberg; 1 lb = 2.2046 kg


Source: Bloomberg, India Commodity, Cashew Spot Price Index COMICA32
Note: 1.00 USD to 44.8187 as of June 6, 2011, Bloomberg; 1 lb = 2.2046 kg
Cotton

Cotton prices were volatile during the second quarter of 2011. Prices reached a record high in April, retreated in May, rose sharply at the beginning of June, and then fell through the end of the quarter. On average, prices in the second quarter were almost 9% higher than the first quarter of 2011, and over 68% higher than the second quarter average price in 2010.

Dueling forces of unfavorable weather and falling demand account for this quarter’s volatility. China has experienced adverse weather, while the U.S. is recording the highest rate of crop abandonment due to historic drought conditions. Despite falling production associated with these conditions, global stocks are expected to increase almost 6%. Demand has fallen dramatically with cancelled export orders exceeding sales in 14 of the past 15 weeks. Chinese demand has plunged as the government tightens lending. Large stocks of surplus yarn and substitutions into cheaper synthetic fibers in Asia also account for falling demand.

Source: Bloomberg, New York Board of Trade – ICE Futures Softs, generic cotton futures contract CT1
Note: First trade on this contract made April 1, 2008
Daily Historic Cotton Prices

Source: Bloomberg, New York Board of Trade – ICE Futures Softs, generic cotton futures contract CT1

Cotton Futures Curve,
Contracts Coming Due Within 1 Year

Source: Bloomberg, New York Board of Trade – ICE Futures Softs, cotton futures contracts CTV1, CTZ1, CTH2, CTK2, & CTN2, July 25, 2011
Dairy

The FAO dairy price index remained stable over the second quarter of 2011, with a quarterly average less than 1% higher than the previous quarter. However, the Bloomberg data suggests more volatility in the market, with prices falling in April and May, and then rallying in June. On the whole, Bloomberg suggests that dairy futures sold over 6% above this quarter compared to the first quarter average price. The monthly average price in June was 40% higher than the average price of June 2010.

Dairy prices fell at the beginning of the quarter and rose towards the end. Prices initially declined in April when concerns over New Zealand’s weather started to fade. China and Russia had built up stocks in advance of the expected lower production, and thus, further buying was curtailed.\(^5^9\) Prices also decreased as farmers responded to high prices by expanding the herd and increasing per cow production. However, increased global demand and June’s record forage prices supported dairy prices at the end of the quarter.\(^6^0\)


Historic Dairy Prices, Monthly Averages

![Historic Dairy Prices, Monthly Averages](chart.png)

Source: Bloomberg, Chicago Mercantile Exchange (CME), generic milk contract DA1

Historic Daily Dairy Prices

![Historic Daily Dairy Prices](chart.png)

Source: Bloomberg, Chicago Mercantile Exchange (CME), generic milk contract DA1
Milk Futures Curve,
Contracts Coming Due Within 1 Year

Source: Bloomberg, Chicago Mercantile Exchange (CME), milk contracts DAN1, DAQ1, DAU1, DAV1, DAX1, DAZ1, DAF2, DAG2, DAH2, DAJ2, DAK2, DAM2, & DAN2 July 25, 2011
Energy

Crude oil

Crude oil prices ended their 10-month rally, peaking in April, then tapering out over May and June. The quarterly average reached $117.17 per barrel, over 11% higher than the previous quarter, and only 5% lower than the highest quarterly average on record (2nd quarter 2008).

Crude oil prices rose through most of April in response to supply issues. OPEC supplied less as the conflict in Libya worsened, and industry stocks declined significantly.\(^{61}\) However, crude oil fell significantly on news of Osama Bin Laden’s death, and further still with a strengthening dollar.\(^{62}\) Prices again rose due to a weakening dollar and increased demand, before falling as IEA announced a coordinated release of strategic stocks in response to the Libyan crisis.\(^{63,64,65}\)

![Historic Crude Oil Prices, Monthly Averages](image)

*Source: Bloomberg, New York Mercantile Exchange (NYMEX), Brent Crude Oil generic futures contract CO1*


Historic Daily Crude Oil Prices

Source: Bloomberg, New York Mercantile Exchange (NYMEX), Brent Crude Oil generic futures contract CO1

Crude Oil Futures Curve,
Contracts Coming Due Within 1 Year

Source: Bloomberg, New York Mercantile Exchange (NYMEX), Brent Crude Oil futures contracts COU1, COV1, COX1, COZ1, COF2, COG2, COH2, COJ2, COK2, COM2, CON2, July 25, 2011
Across the board, fertilizer prices rose from the first quarter of 2011 to the second quarter of 2011. While DAP only increased 2%, the remaining fertilizer prices had double digit increases from the previous quarter ranging from TSP's almost 12% increase, to Potassium chloride's almost 13% increase, to Phosphate rock's and Urea's over 15% increase. Fertilizer price have increased considerably from a year ago: DAP 34%, Potassium chloride 34%, Phosphate rock 46%, TSP 52%, and Urea 72%. However, they still remain well below the peak reached in 2008.

The fertilizer market has been particularly supported by the increase in U.S. maize planting, a fertilizer intensive crop. In contrast, a wave of Chinese urea exports in late 2010 raised inventories and put downward pressure on prices. Urea has benefited from strong demand, particularly in Mediterranean Europe and Latin America and limited supply. DAP supplies remain tight because of global production problems, while phosphate rock has been subject to production outages due to flooding on the Mississippi River.

![Historic Fertilizer Prices, Monthly Averages](image)


---


Conclusion

In the second quarter of 2011 most commodity prices peaked before falling. Global stocks generally remain tight, and a number of crops have been subject to unfavorable weather. However, macroeconomic effects such as the value of the dollar and economic prospects have increasingly influenced commodity prices. Current futures prices suggest that besides cotton, crude oil, and milk, commodities will resume their price gains, but on a slower pace than the past year.

Please direct all comments or questions to Leigh Anderson at eparx@u.washington.edu
Appendix 1: Factors that Contribute to Agricultural Commodity Price Volatility

Agricultural commodity prices are influenced by a variety of complex factors including macroeconomic forces and changes in the fundamentals of demand and supply; such as fluctuations in income, supply shocks resulting from bad weather or crop disease, input costs, government interventions and changes in the prices of related goods.

In general, a weakening U.S. dollar is associated with rising agricultural commodity prices and vice versa. Recently, commodity market analysts have attributed the moderating in agricultural commodity prices in part to gains in the value of the U.S. dollar relative to other currencies. Despite the apparent relationship, it is unclear how much of recent fluctuations in agricultural commodity prices can be attributed to changes in the value of the U.S. dollar.

Recently, the FAO and others have noted that macroeconomic factors including fluctuating exchange rates, volatile oil prices, and rising liquidity from low interest rates have played an increasing role in the fluctuations observed in agricultural commodities markets. They note that although supply and demand will continue to be the primary factors that shape commodities markets in 2010, the global food system has arguably become more susceptible to volatility driven by external, non-food economy events.69

Short-Term Factors

A brief survey of literature from the FAO, USDA and IFAP reveals the main factors that contribute to short-term volatility in agricultural commodity prices.70,71,72 These factors include:

- Changes in demand due to shifts in incomes (purchasing power) and consumption
- Productivity improvements and new technologies
- Shocks to production (weather, disease, war, etc.)
- Changes in global stocks and reserves
- Short term government policies
- Energy and input prices and availability (labor, credit, water, fertilizer, seed, etc.)
- Biofuel policies and technology prospects
- Changes in the value of the U.S. dollar
- Developments in financial markets and speculative fund positions
- New investments in agricultural production
- Spillover effects between commodity prices including crude oil

---

Appendix 2: U.S. Dollar Trends

As noted above, there is an inverse relationship between the value of the U.S. dollar (USD) and commodity prices. Economists suggest this occurs for two reasons. First, most commodities are traded in USD terms. A rising USD suggests a more expensive commodity tamping demand. Second, commodities and dollars are competing investments; demand in one will raise its value at the expense of the other. The chart below shows the USD index, which measures the value of the USD against a basket of six foreign currencies.

While the past quarter’s USD overall range has been comparatively limited, the steep rises and falls affected commodities. The USD is currently on the low end of its valuation, similar to the weakness seen in the summer of 2008.