Executive Summary

This report presents data on selected agricultural commodities for the third quarter of 2011 (July through September). 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; and USD which only includes the daily price trend):

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 have adjusted graphs to give a tighter range for greater precision.

Highlights of this report include:

- Commodity prices across the board fell significantly during September on concerns of a weakening economy and a strengthening dollar.
- The FAO Food Price Index fell slightly as most component price indices fell, led by cereals, oils, and sugar.
- Wheat prices rose through the first two months of the quarter on weather concerns, but fell dramatically in September as the CIS countries bounced back from last year’s drought, leading to the second highest global stocks in the past decade.
- Maize prices approached highs reached in April before falling steeply in reaction to falling crude prices and a strengthening dollar. Despite strong production in China and Ukraine, global stocks are expected to be their smallest since 2006/2007.
- Rice prices steadily increased over the quarter largely in anticipation of Thailand’s new export policy to be implemented in October. Bumper crops in Southeast Asia and good crops in Brazil, U.S., and China are expected to push global stocks to their highest since 2002/2003.

NOTE: The findings and conclusions contained within this material are those of the authors and do not necessarily reflect positions or policies of the Bill & Melinda Gates Foundation.
Soybean prices decreased slightly despite fewer plantings in the U.S. This is largely the result of economic concerns and weakening demand.

Cocoa prices continued to fall with West Africa’s ongoing high levels, which has led to a global surplus of over 400,000 tons.

Coffee prices rose significantly through August due to fears of an early frost spoiling Brazil’s harvest. However, these frosts did not materialize, and Latin America reaped a very good crop leading to a possible 2.5 million bag surplus.

Cashew prices continued to rise due to limited supplies of kernels and a slowdown in demand.

Despite weather concerns in the U.S., cotton prices fell due to a strengthening dollar and reduced global demand, as both China and India sit on significant stocks.

The FAO dairy price index decreased about 4%, though the Bloomberg data indicated an 18% increase over the same period. Prices rose above $20 per cwt due to rising feed prices, before falling after the U.S. credit downgrade.

Crude oil prices were stable throughout July before tracking global macroeconomic trends, which led to volatility. Output returned to pre-Libya conflict levels, and Libya production began to increase towards the end of the quarter.

Fertilizer prices remained strong through the third quarter based on strong demand and supply disruptions for critical inputs.
FAO Food Price Index

The FAO Food Price Index is a composite measure of changes in average food prices over time.\(^1\) It consists of an average of the five commodity group indices (meat, dairy, cereals, oils, and sugar) weighted by global export shares. The composite food price index decreased modestly, around 2%, reflecting decreases ranging from 2% in the meat index to 4% in dairy and 5% in the cereals and oils indices. The exception early in the quarter was the sugar index, which increased 16% from last quarter’s average, but fell dramatically during the last two months, contributing significantly to an overall drop in the aggregate index.\(^2\) However, the food price index remains 16% higher than September 2010.

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Quarterly Commodity Price Update: Third Quarter 2011

FAO Food Price Index

Source: FAO

FAO Food Price Index, Annual Averages

Source: FAO; 2011 through September
Cereals & Oilcrops

Both the FAO cereals price index and oils price index decreased 5% from the second quarter of 2011 to the third. These declines reflect an increase in world cereal production over last year and an increased risk of global recession. Both indexes are still above third quarter 2010 levels, with the cereals price index 18% higher and the oils price index about 20% higher.

Source: FAO

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Wheat

Wheat prices increased throughout the first two months of the quarter before steadily falling throughout September. On the whole, the quarterly average decreased almost 8% from the second quarter, while September’s average price, $6.79, represented a 4% decrease from prices a year ago.

The wheat market was influenced by supply concerns at the beginning of the quarter and an abundant harvest towards the end. Delayed spring planting in the U.S. and harvests in Europe increased concerns about supply. In addition, strong maize prices supported wheat prices. A number of factors contributed to the September fall in wheat prices. Concerns about the global economy and a stronger US dollar exerted downward pressure. Market fundamentals also played a role in the price fall; record production in Kazakhstan and significant increases throughout Europe and Canada coupled with decreased use has raised global stocks to the second highest level in the past decade. In September the Indian Government lifted its four year export ban adding to global supplies.

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 Z1, W H2, W K2, W N2, W U2, & W Z2; October 25, 2011
Maize

Maize prices increased through much of the quarter before experiencing a steep decline throughout September. The quarterly average decreased 5% from the average reached in the second quarter, but still remains higher than any quarter in the last three years. In fact, third quarter 2011 is over 65% higher than the quarterly average a year ago. However, the closing price of the quarter dipped under $6.00 for the first time in 2011.

The maize market exhibited more volatility than wheat this quarter. Prices fell at the beginning of the quarter on increased estimates of planted area in the U.S., however the extreme drought across the Southwest U.S. led to lower yields. Projected global economic slowdown weighed on the market in September suggesting weakening demand. Additionally, carryover from the previous harvest in the U.S., a bumper crop in China and Ukraine, and increasingly good prospects in South America pushed prices further down. Feed and ethanol use were down almost 10 million tons from last year on continued high prices. Overall, global stocks are expected to be their smallest since 2006/2007.

Source: Bloomberg, Chicago Board of Trade (CBOT), generic corn futures contract C

Note: 1 corn bushel = 56 lbs; 1 metric tonne = 39.37 bushels

Quarternly Commodity Price Update: Third Quarter 2011

**Historic Daily Maize Prices**

Source: Bloomberg, Chicago Board of Trade (CBOT), generic corn futures contract C 1

![Historic Daily Maize Prices Graph](image)

**Maize Futures Curve, Contracts Coming Due Within 1 Year**

Source: Bloomberg, Chicago Board of Trade (CBOT), corn futures contracts C Z1, C H2, C K2, C N2, C U2, & C Z2

October 25, 2011
Rice

Rice prices increased steadily throughout the quarter resulting in a 17% price increase from the second quarter average to the third. The September average reached $17.24/cwt, over 44% higher than September 2010. However, this price still remains more than 20% below the April 2008 peak.

Rice prices rose this quarter to levels not seen since the summer of 2008, before falling over the last two weeks. Prices have been driven by a new policy in Thailand, the world's largest rice exporter, to limit exports beginning in October. This has increased Thai prices and subsequently affected Vietnam and U.S. market prices. Rice prices began falling towards the end of the quarter on record global production with bumper crops in Thailand, Philippines, and Vietnam, and large crops in Brazil, China, Russia, and the U.S. Additionally, the Indian Government loosened restrictions on non-basmati rice exports. Global stocks are projected at their highest since 2002/2003.

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 RRX1, RRF2, RRH2, RRK2, RRN2, RRU2, & RRX2, October 25, 2011
Soybeans

Soybean prices traded within a tight band early in the quarter before falling steeply throughout September. Overall, soybean prices registered a slight decrease (-0.4%) from the second quarter of 2011 to the third quarter. September’s average price of $13.55 per bushel is 26% higher than September a year ago, but 10% lower than the July 2008 peak.

Soybean prices rose and fell this quarter on supply concerns and pessimistic economic projections. Prices increased in both July and August on lowered U.S. soybean plantings, high temperatures negatively impacting yields, and high corn prices. \(^{24,25}\) Prices fell in July based on an increase in global stocks stemming from larger than initially reported 2010 yields in Argentina and Brazil. \(^{26}\) The downward trend in September resulted from global economic concerns that strengthened the dollar and pushed crude oil prices down. The soybean market is increasingly tied to the oil market through biofuel. Demand is also weakening globally as countries substitute out of soybean meal into wheat and sunflowerseed meal. \(^{27}\)

Historic Soybeans Prices, Monthly Averages

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

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


Source: Bloomberg, Chicago Board of Trade (CBOT), generic soybean futures contract S1

Source: Bloomberg, Chicago Board of Trade (CBOT), soybean futures contracts S X1, S F2, S H2, S K2, S N2, S Q2, S U2, & S X2, October 25, 2011
Other Softs\textsuperscript{28}

Cocoa

Cocoa prices continued their decline this quarter, falling to just above $2600 per metric tonne on the last day of trading, levels not seen since 2009. On the whole, the third quarter registered an almost 3\% decrease in prices compared to the second quarter. The September average of $2798.67 per metric tonne was just 3\% higher than the past three year average.

With the exception of a brief rise in prices during August, cocoa prices decreased significantly from the highs seen this past spring. The price rise in August followed news of an expected supply deficit during the next cocoa season.\textsuperscript{29} However, strong market fundamentals, a weakening global economy, and strengthening U.S. dollar pushed prices lower. The West Africa crop continues to produce at high levels, almost 250,000 tons higher than at the same point last year.\textsuperscript{30} This has led to a record global surplus approaching 400,000 tonnes.\textsuperscript{31} Global economic concerns have strengthened the U.S. dollar and are expected to decrease demand.\textsuperscript{32}

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 from 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{33}

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

\textsuperscript{28} 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.
Quarterly Commodity Price Update: Third Quarter 2011

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

![Historic Daily Cocoa Prices](image1)

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

![Cocoa Futures Curve, Contracts Coming Due Within 1 Year](image2)

*Source:* Bloomberg, New York Board of Trade ICE, cocoa futures contracts CCZ1, CCH2, CCK2, CCN2, CCU2, & CCZ2, October 25, 2011
Cocoa Futures Curve, Contracts Coming Due Within 1 Year

Source: Bloomberg, London Liffe Exchange, cocoa futures contracts QCZ1, QCZ2, QCK2, QCN2, QCU2, & QCZ2
October 25, 2011
Coffee

Coffee prices fell through much of July and September, with a significant mid-quarter rise during August that almost reached May’s single day peak of $3.05 per pound. On the whole, the third quarter average decreased almost 6% to $2.56 per pound. September’s monthly average of $2.60 per pound still remains almost 40% higher than September 2010.

Supply concerns and global economic worries gripped the coffee market. The threat of frost in Brazil’s coffee-growing areas led to a rollercoaster market with price rises at the end of June and beginning of August, and price falls when the frost did not occur. Global production is projected to create a 2.5 million bag surplus as output in Brazil, Colombia, Central America, Vietnam, and Côte d’Ivoire increases and production expands in Guinea, Tanzania, Madagascar, Togo, Laos, and Malaysia. A strengthening dollar factored in price declines in both July and September.

![Historic Coffee Prices, Monthly Averages]

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

Historic Daily Coffee Prices

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

Coffee Futures Curve,
Contracts Coming Due Within 1 Year

Source: Bloomberg, New York Board of Trade ICE, coffee futures contracts KCZ1, KCH2, KCK2, KCN2, KCU2, & KCZ2, October 25, 2011
Cashews

Cashew prices increased through the first month of the quarter before settling over the last two months. The increase was not as steep as the previous quarter, but the overall prices are significantly higher. The third quarter average reflected an almost 18% increase in prices from the second quarter. Additionally, September’s monthly average of 566.55 rupees per kilogram is 37% higher than the September 2010 average.

Cashew prices this quarter reflected tight supplies. Kernel inventories within importing countries were low, while supply was limited. The crop from India and Vietnam has been smaller than expected and crop prospects in the Southern hemisphere remain uncertain. High prices reduced quantity demanded, and sellers were unwilling to offer lower prices as supply concerns lingered.

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

Historic Cashews Prices, Monthly Averages

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

Historic Daily Cashews Prices

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 continued to be volatile during the third quarter. Prices rose and fell at a rapid rate throughout July and August before falling steeply through the last few weeks of September. Overall, prices tumbled over 18% from the second quarter average to the third quarter. However, September’s average of $1.06/lb remains 28% higher than September 2010’s price.

The same dueling concerns of adverse weather and weakening demand characterized this quarter. Falling prices in July and August can be attributed to record yarn stockpiles in India and weakening demand globally, as economic growth is slower than expected. The market rebounded three times on reports of limited supplies due to historic drought conditions in Texas, comparable to the dust bowl of the 1930s. September’s fall came on news of record global production, flat global consumption, and a strengthened US dollar.50

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

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

Historic Daily Cotton Prices

Cotton Futures Curve, Contracts Coming Due Within 1 Year

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

Source: Bloomberg, New York Board of Trade – ICE Futures Softs, cotton futures contracts CTZ1, CTH2, CTK2, CTN2, & CTV2, October 25, 2011
Dairy

The FAO dairy price index decreased 4% from the second to the third quarter of 2011. The Bloomberg data showed an 18% increase in prices over the same period, likely responding to the almost six weeks that dairy traded over $20/cwt. Notwithstanding, dairy prices experienced a precipitous fall through the end of the quarter, ending just above $17/cwt on the final trading day. The third quarter 2011 average, however, still remains 37% higher than the quarterly average a year ago.

Higher than normal input prices and global economic conditions accounted for the rise and fall in the market. Livestock feed prices, a significant input in the dairy market, rose significantly in response to the Texas drought, which supported July’s milk price rise. Additionally, Asian demand for dairy remained high through the first half of this year, driving up prices internationally. Prices began falling in reaction to the U.S. credit rating downgrade and subsequent concerns about another global recession. Higher than expected dairy herd expansion and increased milk per cow exerted further downward pressure.

Source: FAO

![FAO Dairy Price Index](chart.png)


Historic Dairy Prices, Monthly Averages

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

Historic Daily Dairy Prices

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 DAV1, DAX1, DAZ1, DAF2, DAG2, DAH2, DAJ2, DAK2, DAM2, DAN2, DAQ2, DAU2, & DAV2 July 25, 2011
Energy

Crude oil

Crude oil prices trended bounced down through the quarter. The third quarter average decreased just over 4% from the 2011 second quarter to $112.20 per barrel. This price remains almost 46% higher than the quarterly average from last year.

Oil prices remained fairly stable through July before a period of considerable volatility but maintaining an overall downward trend. Crude rose slightly in July on signs of increasing consumer confidence and manufacturing growth.55. Thereafter, oil futures tracked macroeconomic events, with prices responding largely to the U.S. debt downgrade, the European debt crisis, and fluctuations in the dollar.56 Additionally, by August oil supplies had returned to levels seen prior to Libya's conflict, and global demand fell both in developing and developed countries.57,58

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

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

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

Source: Bloomberg, New York Mercantile Exchange (NYMEX), Brent Crude Oil futures contracts COZ1, COF2, COG2, COH2, COJ2, COK2, COM2, CON2, COQ2, COU2, & COV2, October 25, 2011
Fertilizer

Fertilizer prices continued their climb through the third quarter of 2011, with only DAP and potassium chloride declining in September. Compared to the second quarter average, all fertilizer price averages increased, ranging from 3% for TSP to 19% for urea. Relative to last year, September prices were up across the board: phosphate rock up 58%, DAP up 22%, TSP up 32%, urea up 60%, and potassium chloride up 39%.

Strong demand and limited inputs continued the rising price trend begun over a year ago. Demand appeared to be strong particularly in Latin America, Europe, India, and the Middle East. Limited nitrogen and phosphate exports from China are limiting urea, DAP, and phosphate rock output globally. Additionally, phosphate mining problems in the U.S. have affected supply. Prices stalled through the end of August and September in reaction to the general selloff in the commodity market.


Historic Fertilizer Prices, Monthly Averages

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Conclusion

The third quarter of 2011 was characterized by early volatility before a vast sell off over the last month of the quarter affecting almost all commodities. September’s price falls are largely due to deteriorating economic conditions and subsequent strengthening of the dollar. More positively, many commodities are realizing excellent harvests, particular cereals, and global stocks look to increase. Current future prices suggest grains will continue to increase before falling next spring, while most other commodities will decrease over the future year. Additionally, all commodity futures are trading at lower levels than a quarter ago.

Please direct all comments or questions to Leigh Anderson at eparx@u.washington.edu

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64 Cashews was the only commodity not affected, likely because our measure is of a domestic Indian market sold in Rupees.
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.65

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.66,67,68 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. Since most commodities are traded in USD terms, a depreciating (appreciating) USD leads to increased (decreased) willingness among foreign consumers to pay more dollars for commodities, essentially bidding up (down) the price.69 Another avenue affecting this relationship includes a weaker (stronger) USD becoming more (less) attractive to borrow dollars fueling higher (lower) demand and speculation.70 The chart below shows the USD index, which measures the value of the USD against a basket of six foreign currencies.

The third quarter experienced volatility within a tight band through the first several weeks of the quarter. However, the dollar advanced steeply through the latter half of the quarter to levels not seen since the beginning of this year.

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