



Quarterly Commodity Price Update: Fourth Quarter 2010

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Executive Summary

This report presents data on selected agricultural commodities for the fourth quarter of 2010 (October through December), with summaries of the entire year where available. 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, which does 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 builds on the new methodology established in the most recent commodity price update of September 2010. We report 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. For historical prices, 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. Previous reports sourced historical producer price data from the FAO and industry organizations. *Appendix 2* provides wheat price charts using the former and current data sources for comparative purposes.

Highlights of this report include:

- The FAO Food Price Index continued a rising trend over the quarter, largely reflecting increases in the price of sugar, followed by increases in oils and cereals prices.
- Wheat prices continue a rising trend amid concerns over the Australian crop and dry weather in other main producing countries. Forecasts for 2010/2011 global ending stocks and supply were revised upwards in December.
- Corn prices continued to rise over the fourth quarter of 2010, supported by tightening global stocks. Quarterly average maize prices increased nearly 33% from the third to fourth quarter of 2010, ending at the highest monthly average since July 2008, though still 16% below the June 2008 peak.

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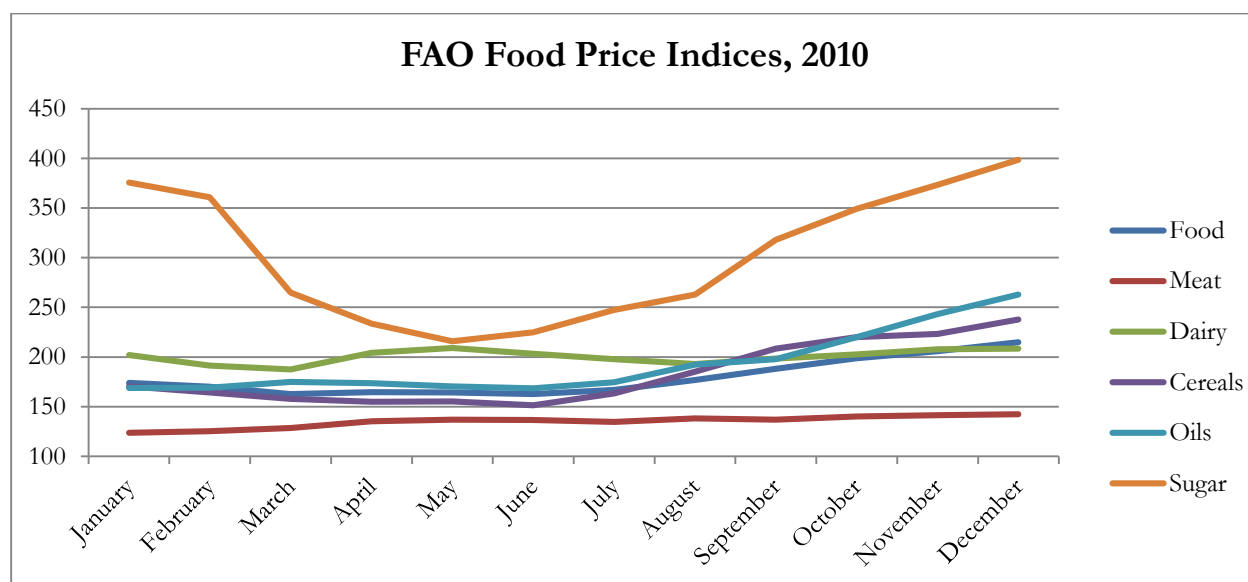
NOTE: The findings and conclusions contained within this material are those of the authors and do not necessarily reflect positions or policies of the Bill & Melinda Gates Foundation.

Quarterly Commodity Price Update: September 2010

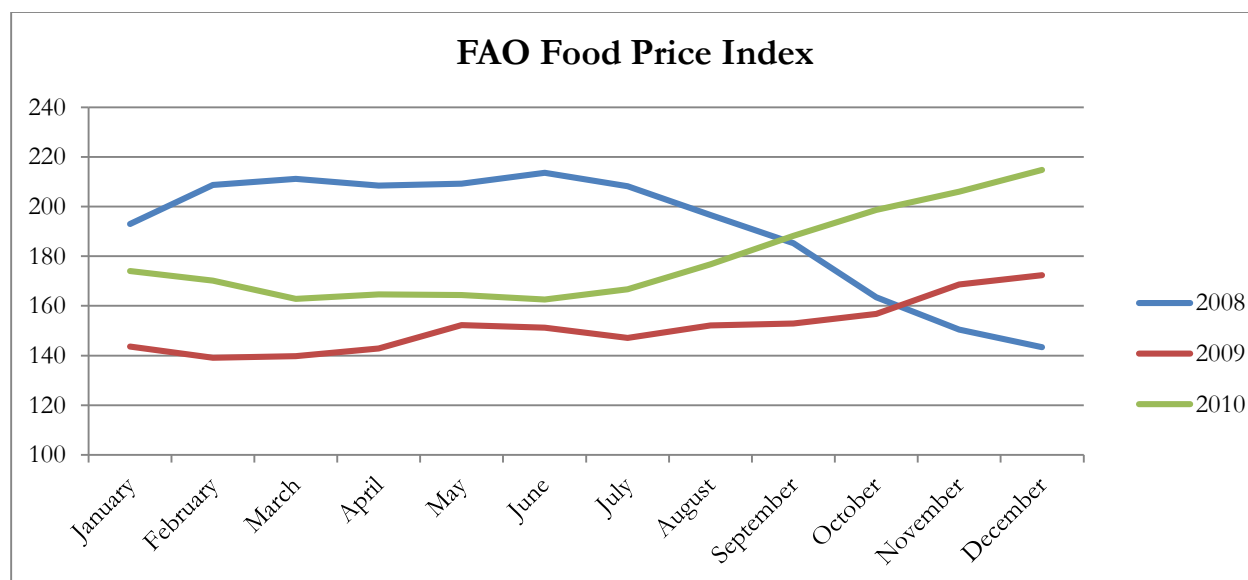
- Ample supplies have spared rice from the price rally in other staple grain markets, though rice prices rose 26.5% from the third to fourth quarter of 2010. The December average price was well below (37%) the April 2008 peak. U.S. ending rice stocks in 2010 were the highest since the 1986/87 season, though world ending stocks were down, due primarily to a smaller crop in Egypt.
- Soybean prices continued to rise over the fourth quarter of 2010 reaching the highest monthly average since July 2008 in December. Prices remain nearly 13% below the July 2008 peak. Lower soybean production and smaller ending stocks in 2010 were due to decreased area harvested in the U.S., lower yields in the U.S. and Argentina, and world demand rising at an estimated 6% per year, largely due to demand for livestock feed.
- Cocoa prices remained relatively stable over the fourth quarter of 2010. In the 2009/2010 season, world grindings increased 4.8% while production increased only 0.2%, accounting for the 4.8% decrease in ending stocks from the previous year. Growth in consumer demand has been supporting cocoa prices, and is projected to continue growing. Concerns over the political situation in Côte d'Ivoire have dominated more recent movement in the market.
- Coffee prices continued a rising trend in the fourth quarter of 2010, culminating in the highest coffee prices of the last three years. Tight supplies, low stocks, and strong world coffee consumption are among the leading factors supporting prices. Adverse weather has also decreased output by delaying harvest and transport in many exporting countries.
- Cotton prices rose significantly over the fourth quarter of 2010, reaching the highest prices since the 1865–77 period of U.S. Reconstruction. Strong demand and limited supplies are currently supporting the market as rising cotton consumption has outpaced a production increase and lowered global ending stocks.
- The FAO dairy price index rose slightly over the fourth quarter of 2010. Milk prices peaked in October and then declined slightly over the course of the quarter. October milk prices remained 16% below the June 2008 peak. Strong import demand from Asian countries and Russia has driven dairy trade to record levels in 2010.
- Crude oil prices continued a rising trend over the course of the fourth quarter, with a December monthly average the highest since September 2008, though still 30% below the most recent peak in July 2008. Increasing demand and decreasing supply from non-OPEC producers contributed to rising oil prices. OECD industry stocks were down in December, though supply from OPEC producers has increased continuously since the past spring, in response to stronger demand.
- Fertilizer prices rose from the third to the fourth quarter of 2010, led by urea prices, which gained nearly 28%. The 2010 yearly average is up from 2009 prices for all fertilizers except potassium chloride, which experienced nearly a 50% price decline. Overall, prices remain well below the 2008 peak prices (by 50% on average) and fertilizer use is projected to increase as farmers respond to higher commodity prices.

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 fats, and sugar) weighted by global export shares. The composite food price index increased 16.5% from the third to fourth quarter of 2010. The index rose to a record 214.7 in December, slightly passing (by 0.1%) the June 2008 peak. Among the component sector indices, the price of sugar increased the most (35% between the third and fourth quarter). Oils and cereals also experienced substantial price increases of 28% and 26%, respectively.

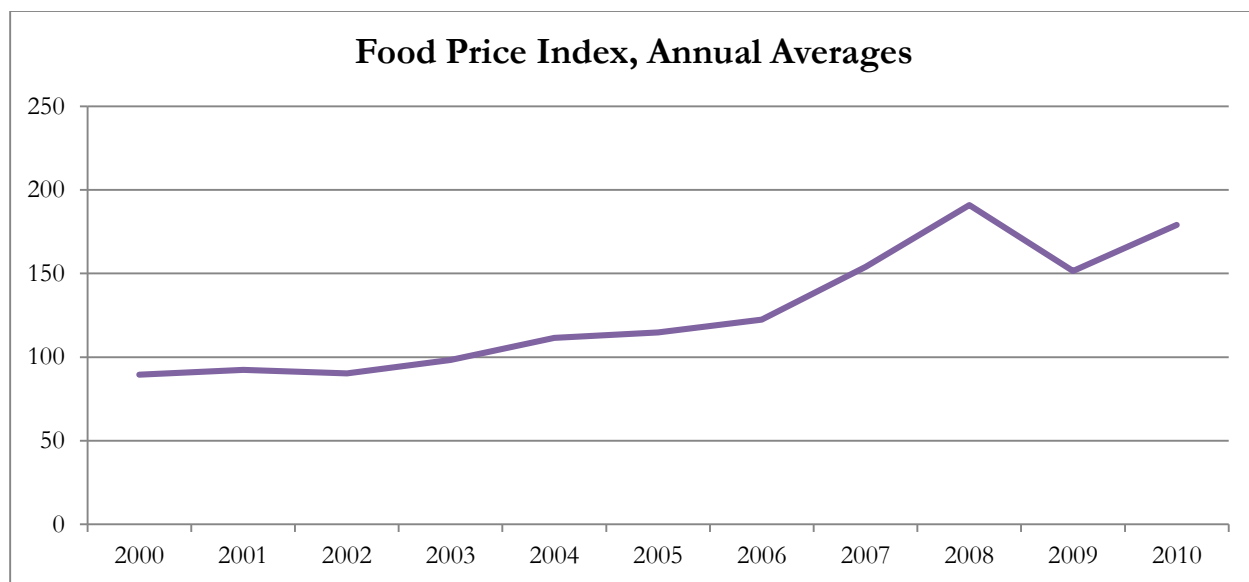


Source: FAO



Source: FAO

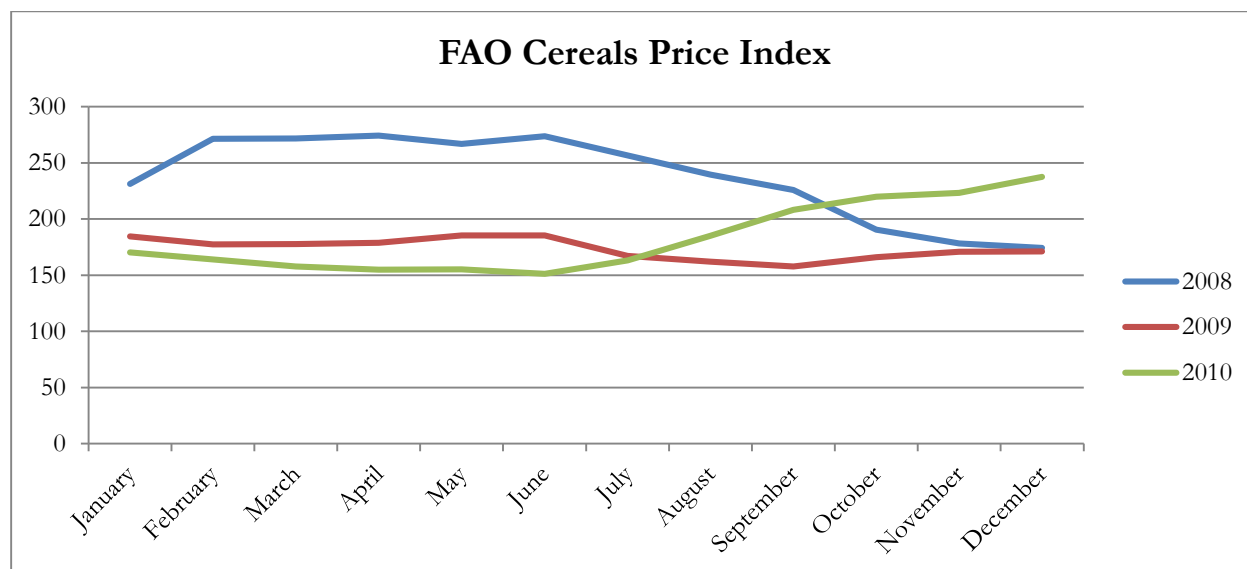
¹ FAO. (2010). *World Food Price Index*. Available from <http://www.fao.org/worldfoodsituation/FoodPricesIndex/en/>



Source: FAO

Cereals & Oilcrops

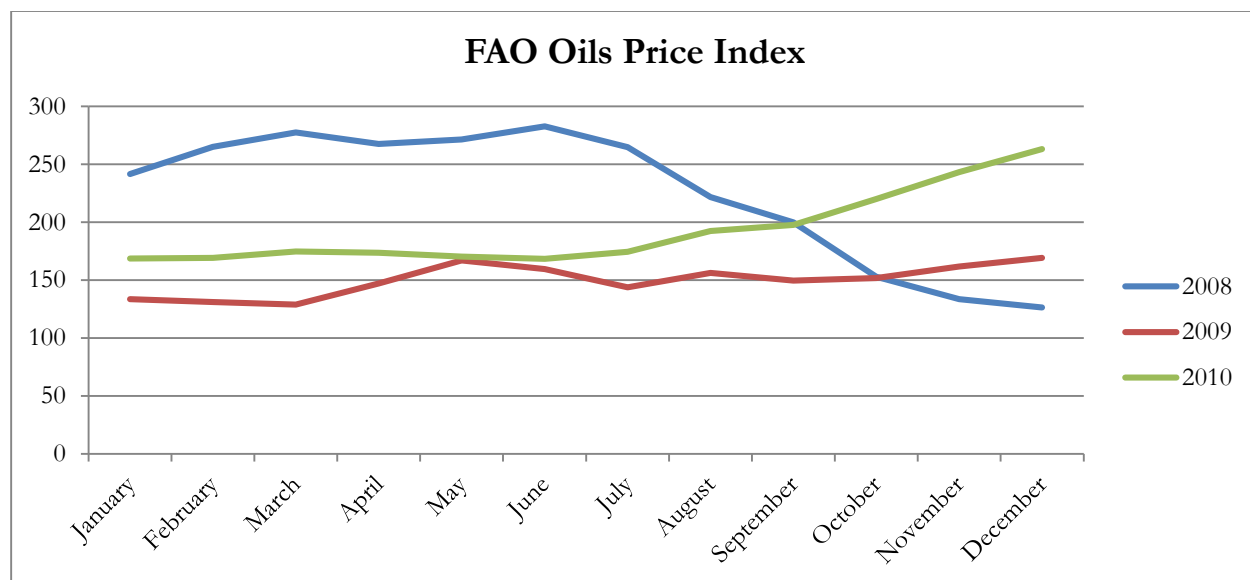
The FAO Cereals Price Index rose over 26% from the third to fourth quarter of 2010. The FAO Oils Price Index rose over 28% from the third to fourth quarter of 2010. The December monthly average remains below June 2008 peak prices by 13% for cereals and 7% for oils. Reduced production and growth in consumption have drawn down global stocks and are supporting prices.^{2,3}



Source: FAO

² International Grains Council. (2010, November 25). *Grain Market Report* (GMR No. 406). Retrieved from <http://www.igc.int/en/downloads/gmrsummary/gmrsumme.pdf>

³ FAO Trade and Markets Division. (2011, January). *Oilseeds, Oils & Meals: Monthly Price and Policy Update* (No. 21). Retrieved from http://www.fao.org/fileadmin/templates/est/COMM_MARKETS_MONITORING/Oilcrops/Images/January_2011/MPPU_Jan__11.pdf



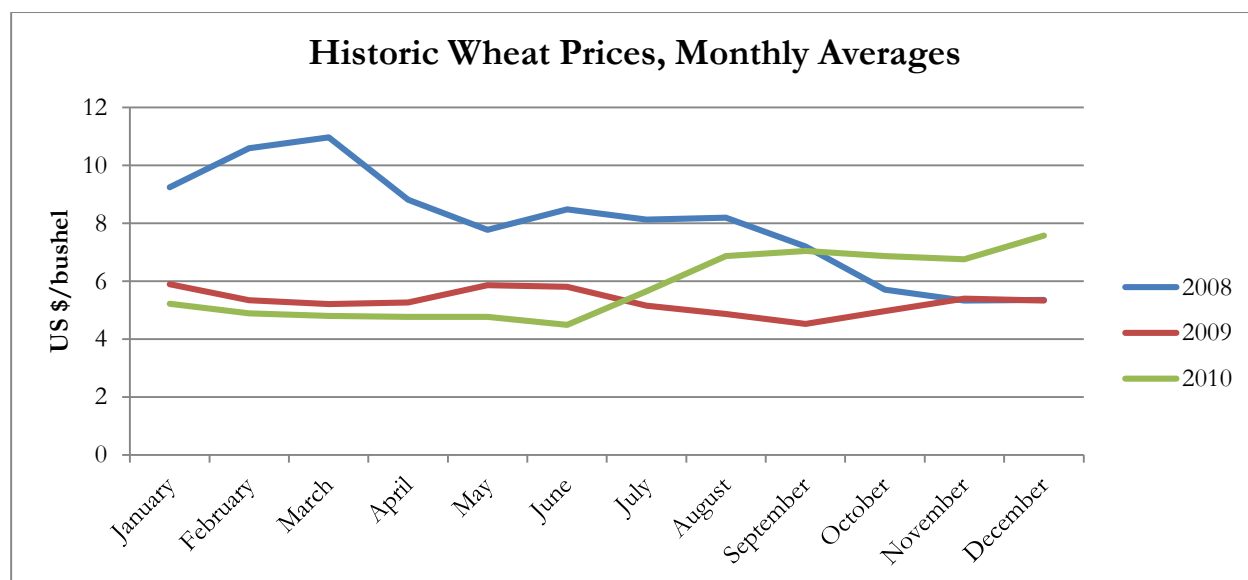
Source: FAO

Wheat

Wheat prices continued to rise over the fourth quarter of 2010. Quarterly average wheat prices increased 8.3% from the third to fourth quarter of 2010, ending at a monthly average of \$7.57 per bushel (\$278.14 per metric tonne) in December. This is the highest monthly average since August 2008, and 42% higher than the previous year, though still 31% below the March 2008 peak.

Downward revision of U.S. ending stocks, concerns over the quality of the Australian crop, and dry weather in some other main producing countries are currently supporting the market.^{4,5} However, according to the FAO, wheat prices in importing countries stabilized in November, possibly due in part to record output in many food-importing countries, particularly in Sub-Saharan Africa.^{6,7}

An increase in global wheat stocks stems from an upward revision of beginning stocks and greater production in Pakistan, Canada, and Brazil.⁸ More recent estimates revise global supplies upwards only slightly, due to lower production in Australia and Kazakhstan. Consumption estimates were revised downward, mostly reflecting reduced wheat livestock feeding in Europe, the US and Kazakhstan but also incorporating lowered food use estimates for Europe and Pakistan.⁹



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

⁴ Stroth, S. & Holloway, A. (2011, January 12). "Commodities touch two-year high on economic growth outlook, smaller crops."

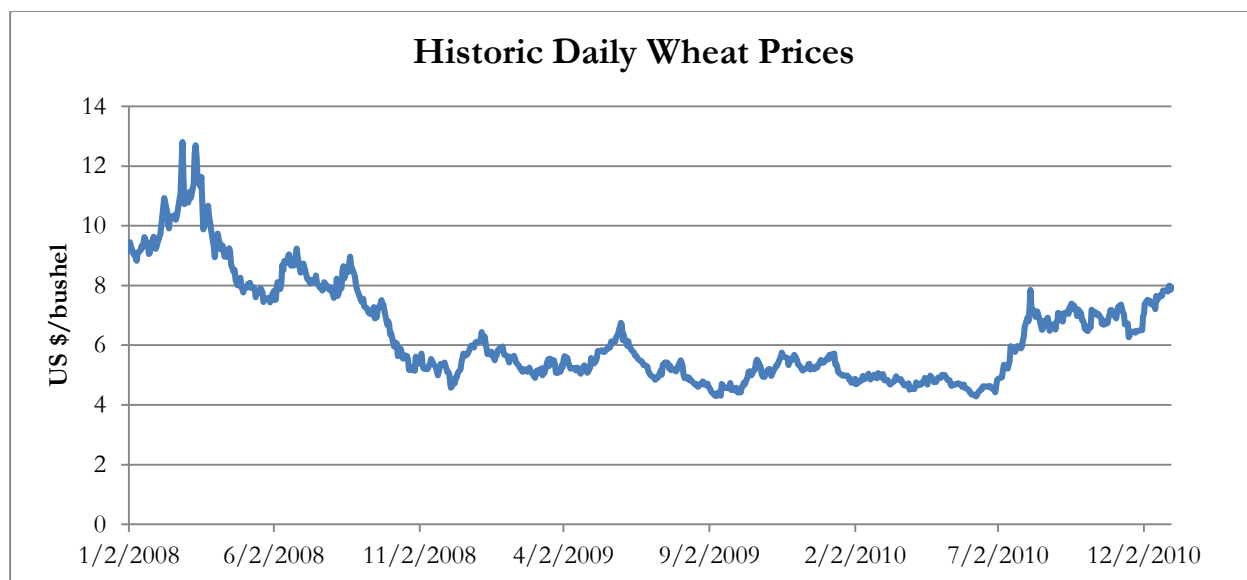
⁵ FAO. (2010, December). *Crop Prospects and Food Situation* (No. 4).

⁶ FAO. (2010, December). *Crop Prospects and Food Situation* (No. 4).

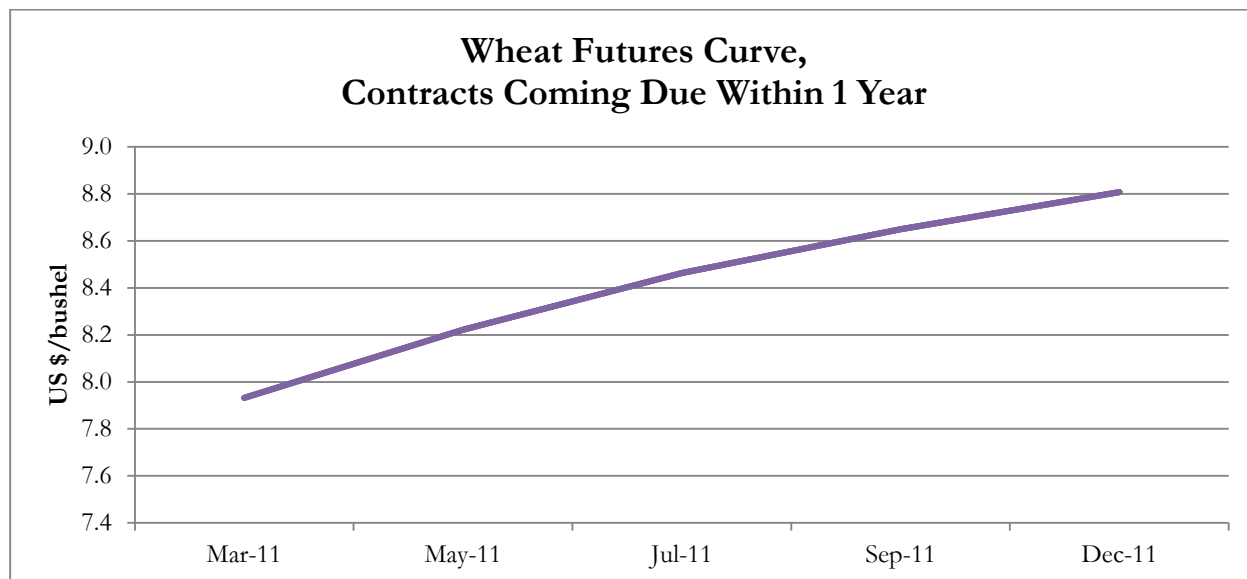
⁷ Bjerga, A. (2011, January 6). "A global scare in food prices."

⁸ Vocke, G. & Liefer, O. (2010, December 14). *Wheat Outlook* (WHS-10I). Retrieved from <http://usda.mannlib.cornell.edu/usda/current/WHS/WHS-12-14-2010.pdf>

⁹ USDA. (2011, January 12). *World Agricultural Supply and Demand Estimates* (WASDE – 490). Retrieved from <http://www.usda.gov/oce/commodity/wasde/latest.pdf>



Source: Bloomberg, Chicago Board of Trade (CBOT), generic wheat futures contract W 1

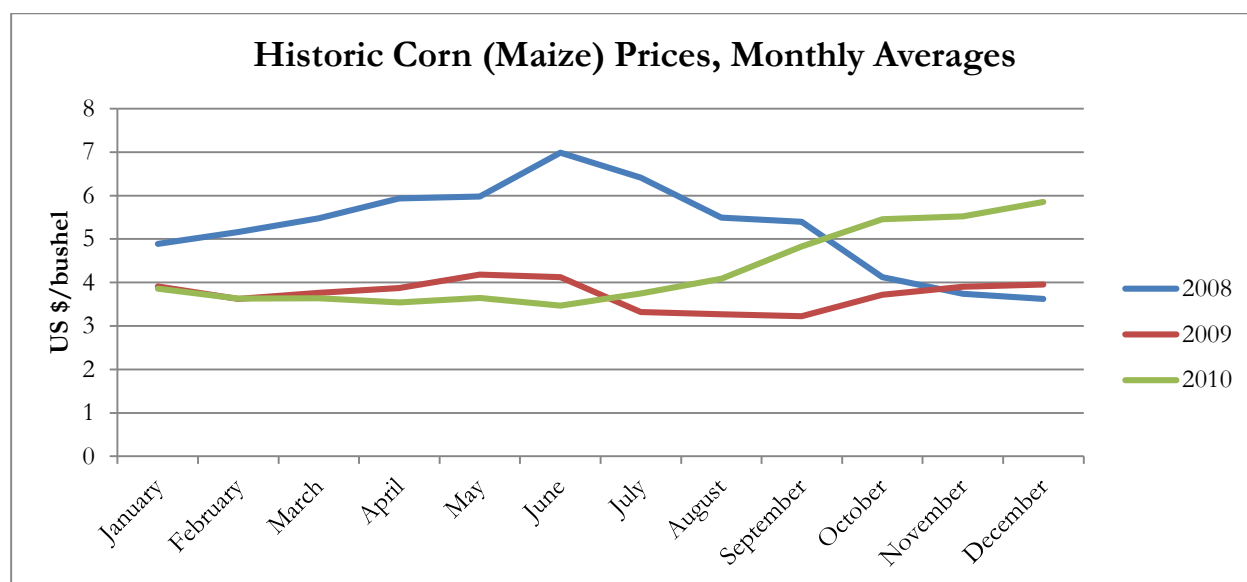


Source: Bloomberg, Chicago Board of Trade (CBOT), wheat futures contracts W H1, W K1, W N1, W U1, & W Z1, January 18, 2011

Maize

Maize¹⁰ prices continued to rise over the fourth quarter of 2010. Quarterly average maize prices increased nearly 33% from the third to fourth quarter of 2010, ending at a monthly average of \$5.86 per bushel (\$230.71 per metric tonne) in December. This is the highest monthly average since July 2008, and 48% higher than the previous year, though still 16% below the June 2008 peak.

The tightening of global stocks is currently supporting maize prices.¹¹ Maize production has decreased globally, led by the largest country reduction in the U.S. (the world's largest maize producer).¹² U.S. maize stocks have fallen to their lowest level since 1996, with the second lowest stock-to-use ratio in history.¹³ Global ending stocks are also lower due to persistent dry weather in Argentina and excessive rain in Indonesia and Colombia, reducing yield prospects.¹⁴ In addition to tightening global stocks, China, traditionally a modest exporter of maize, has been importing it for the past six months.¹⁵



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

¹⁰ 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.

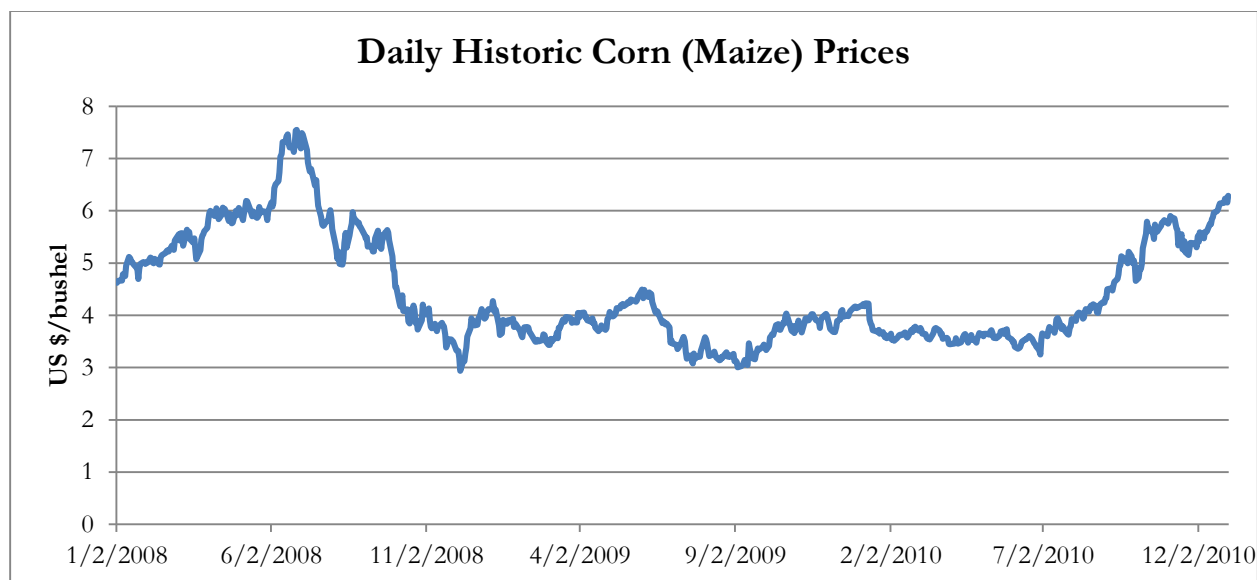
¹¹ Wilson, J. (2011, January 13). "Corn, soybeans rise to highest prices since 2008 on smaller U.S. supplies." *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-01-13/corn-soybeans-rise-to-highest-prices-since-2008-on-smaller-u-s-supplies.html>

¹² Lutman, H. & Allen, E. (2011, January 14). *Feed Outlook* (FDS-11a). Retrieved from <http://usda.mannlib.cornell.edu/usda/current/FDS/FDS-01-14-2011.pdf>

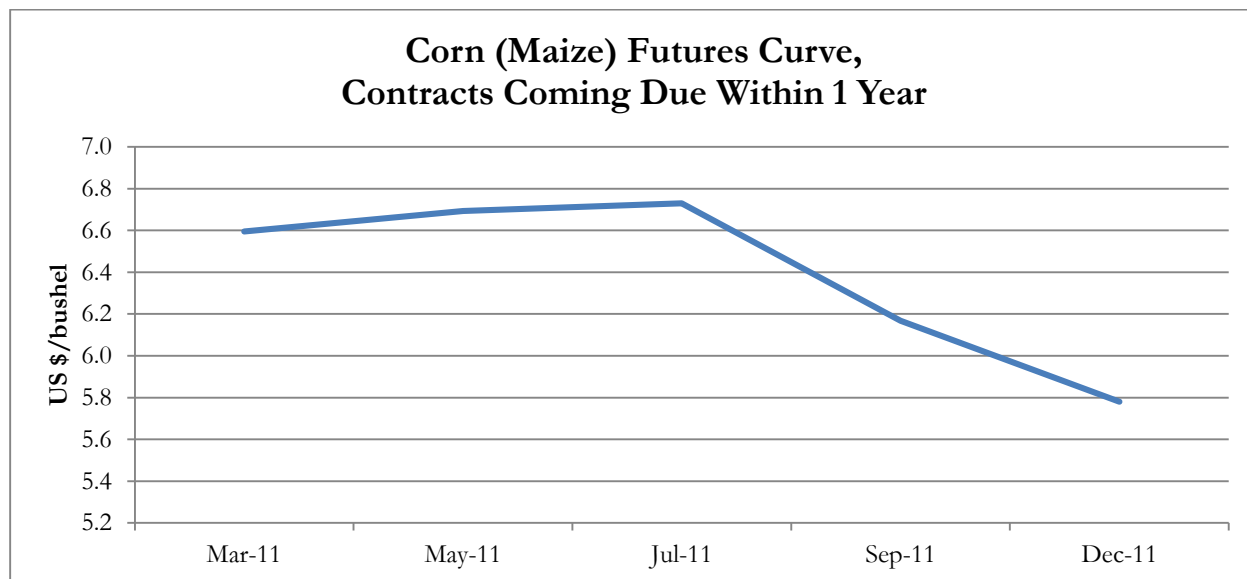
¹³ Wilson, J. (2011, January 13). "Corn, soybeans rise to highest prices since 2008 on smaller U.S. supplies." *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-01-13/corn-soybeans-rise-to-highest-prices-since-2008-on-smaller-u-s-supplies.html>

¹⁴ Lutman, H. & Allen, E. (2011, January 14). *Feed Outlook* (FDS-11a).

¹⁵ Mufson, S. (2011, January 15). "Global effort to calm food prices." *The Washington Post*.



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

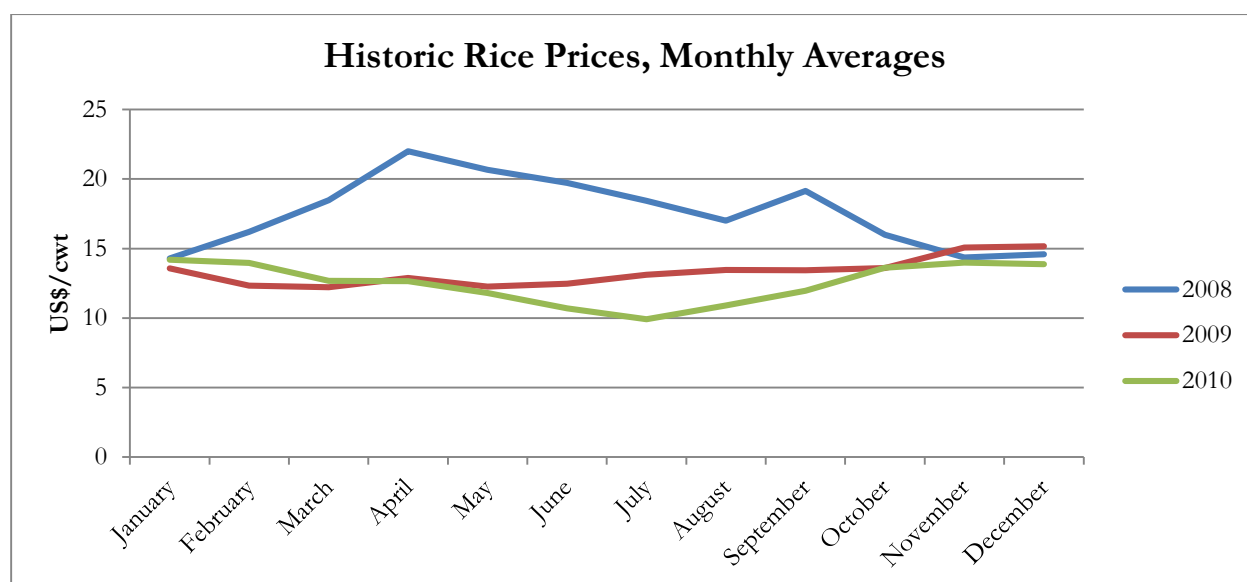


Source: Bloomberg, Chicago Board of Trade (CBOT), corn futures contracts C H1, C K1, C N1, C U1, & C Z1, January 18, 2011

Rice

Rice prices rose over the fourth quarter of 2010. Quarterly average rice prices increased 26.5% from the third to fourth quarter of 2010, ending at a monthly average of \$13.88 per cwt in December. This is 9% lower than the previous year and significantly (37%) below the April 2008 peak. Ample supplies have spared rice from the price rally prices characterizing the market for other staple grains.¹⁶ The monthly average price in December was down slightly (0.7%) from the previous month, partly reflecting decreased trading prices in the U.S., Thailand and Vietnam. A weak Thai baht and the release of government-held intervention stocks were behind the decreased Thai price. In the U.S., large domestic supplies partially reduced the price effects of historically low milling rates.¹⁷

U.S. ending stocks of rice in 2010 were the highest since the 1986/87 season, though world rice ending stocks for 2010 were down from the previous year, due primarily to a smaller crop in Egypt.^{18,19} A 19% reduction in Egyptian area harvested reflects a reduction in government support for producer prices, discouraging farmers from planting rice. Government-imposed water restrictions also decreased the availability of irrigation water, further reducing yield potential.²⁰ In January, production estimates for the 2010/2011 season were raised for the U.S., Brazil, Nicaragua, Sri Lanka and Vietnam.²¹ Specifically, a bumper crop is expected in Vietnam.²² Decreased production estimates for Bolivia, Colombia and Egypt are projected to slightly offset the increases, with global ending stocks for 2011 projected down slightly from 2010 ending stocks.²³



¹⁶ Thukral, N. (2011, January 7). "Analysis: Ample supply spares rice from food price squeeze." *Reuters*. Available from <http://www.reuters.com/article/idUSTRE70707V20110108>

¹⁷ USDA. (2011, January 13). *Rice Outlook* (RCS-11a). Retrieved from <http://usda.mannlib.cornell.edu/usda/current/RCS/RCS-01-13-2011.pdf>

¹⁸ USDA. (2011, January 12). *World Agricultural Supply and Demand Estimates* (WASDE – 490).

¹⁹ USDA. (2011, January 13). *Rice Outlook* (RCS-11a).

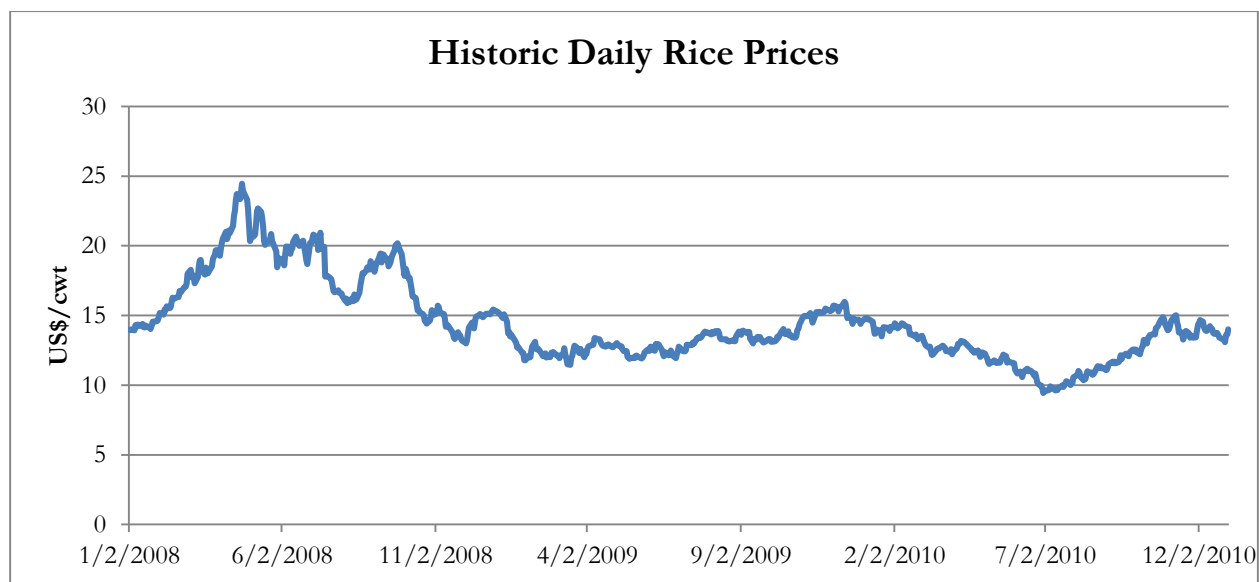
²⁰ USDA. (2011, January 12). *World Agricultural Supply and Demand Estimates* (WASDE – 490).

²¹ USDA. (2011, January 13). *Rice Outlook* (RCS-11a).

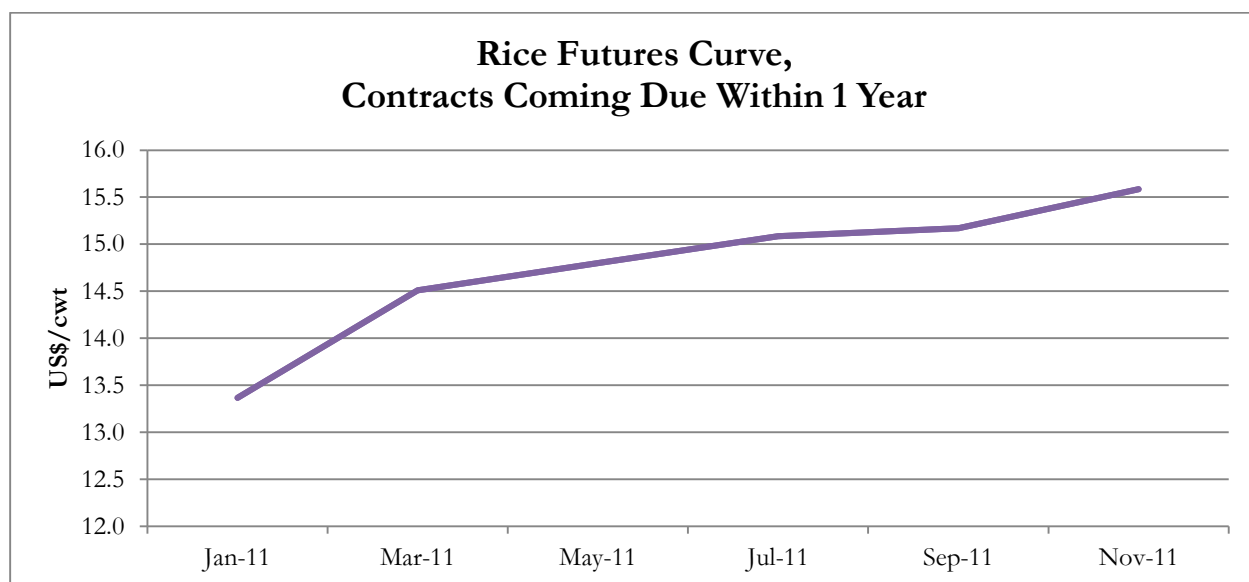
²² Thukral, N. (2011, January 7). "Analysis: Ample supply spares rice from food price squeeze." *Reuters*.

²³ USDA. (2011, January 13). *Rice Outlook* (RCS-11a).

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



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



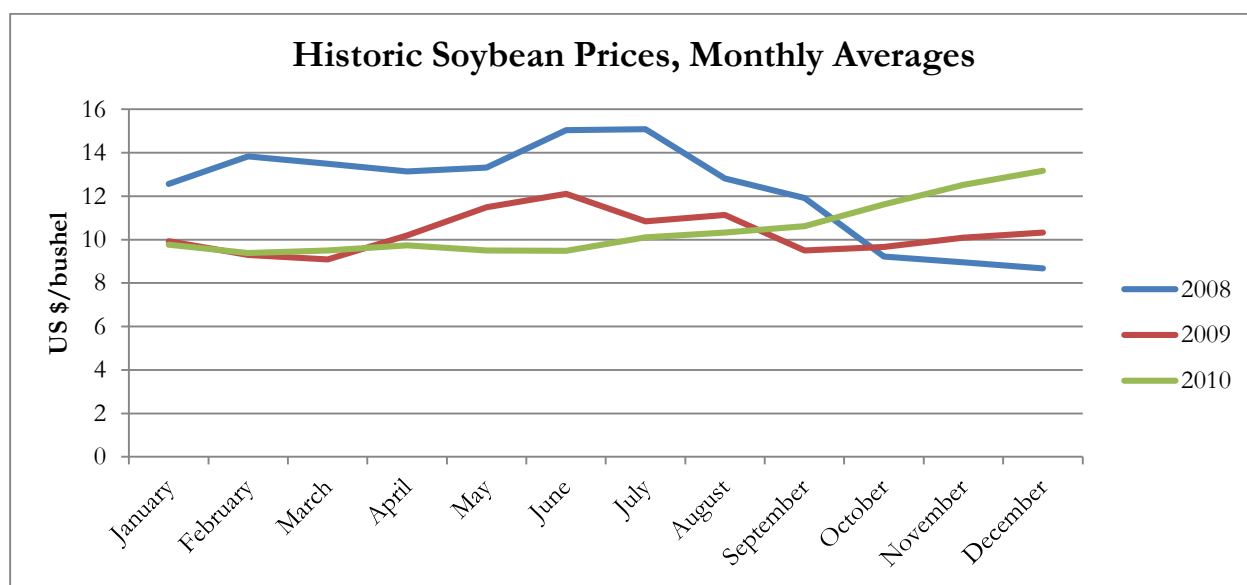
Source: Bloomberg, Chicago Board of Trade (CBOT), rice futures contracts RRF1, RRH1, RRK1, RRN1, RRU1 & RRX1
January 18, 2011

Soybeans

Soybean prices continued to rise over the fourth quarter of 2010. Quarterly average soybean prices increased 20% from the third to fourth quarter of 2010. The December monthly average of \$13.17 per bushel (\$483.87 per metric tonne) is 27.5% higher than the previous year. It is the highest monthly average since the July 2008 peak, though still nearly 13% below that peak.

Decreased area harvested in the U.S. and lower yields in the U.S. and Argentina contributed to lower soybean production and smaller ending stocks in 2010.²⁴ Prices increased in reaction to the news of a significant downward revision of 2010 U.S. soybean production and ending stocks in December. In January, the USDA also lowered production estimates for the 2010/2011 season, due to late planting in the U.S. and dry weather that delayed planting and lowered yield prospects in Argentina, the world's third largest producer behind the U.S. and Brazil.²⁵

Additionally, estimated world demand for soybeans is rising at 6% per year, largely due to demand for livestock feed.²⁶ Increased consumption, particularly in China also contributed to the demand increase. In 1995, China produced as much soy as it consumed; however since then production has stayed largely the same while consumption has increased by a factor of five.²⁷



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

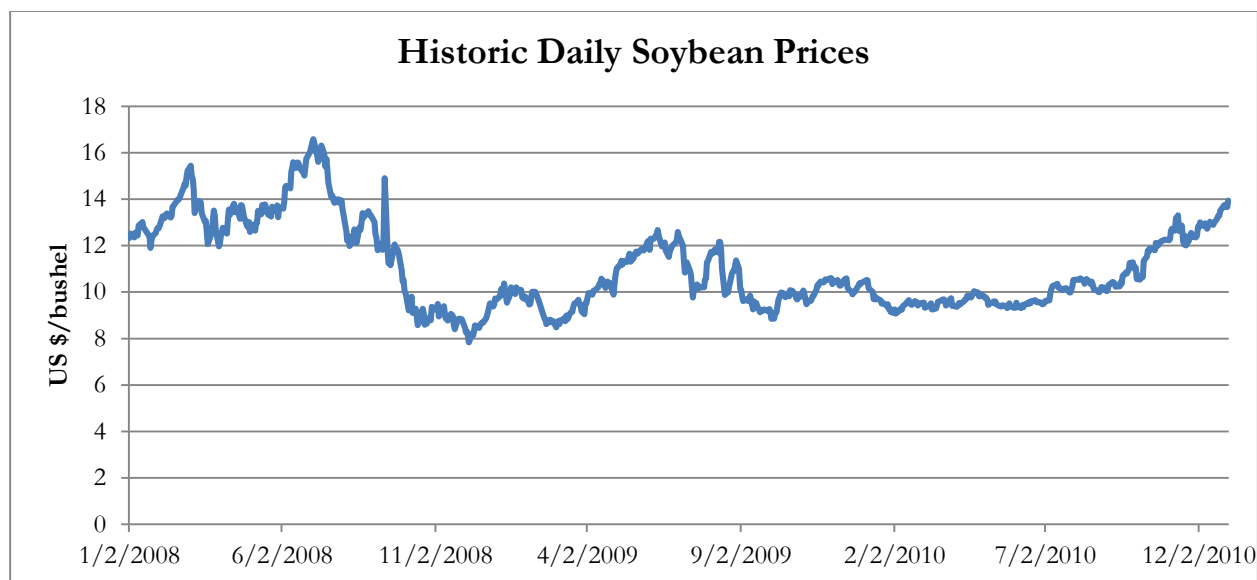
Note: 1 soybean bushel = 60 lbs; 1 metric tonne = 36.74 bushels

²⁴ USDA. (2011, January 12). *World Agricultural Supply and Demand Estimates* (WASDE – 490).

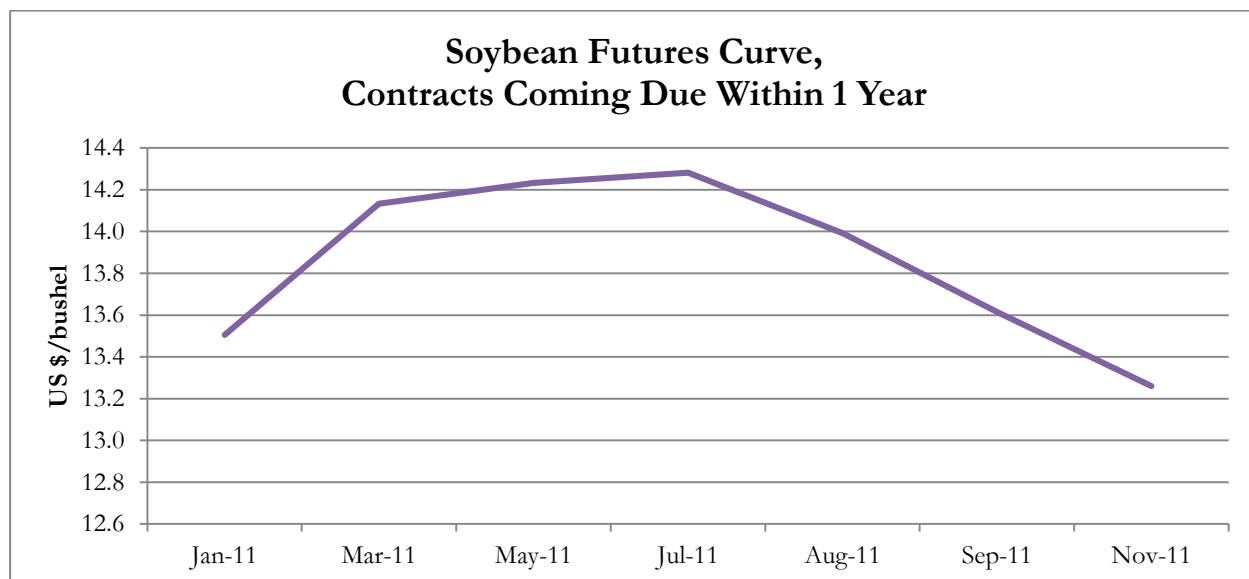
²⁵ USDA. (2011, January 13). *Oilcrops Outlook* (OCS-11a). Retrieved from <http://usda.mannlib.cornell.edu/usda/current/OCS/OCS-01-13-2011.pdf>

²⁶ Mufson, S. (2011, January 15). "Global effort to calm food prices." *The Washington Post*.

²⁷ Mufson, S. (2011, January 15). "Global effort to calm food prices." *The Washington Post*.



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



Source: Bloomberg, Chicago Board of Trade (CBOT), soybean futures contracts S F1, S H1, S K1, S N1, S Q1, S U1 & S X1, January 18, 2011

Other Softs²⁸

Cocoa

Cocoa prices remained relatively stable over the fourth quarter of 2010, with a quarterly average down only 0.29% from the previous quarter. The monthly average price was \$2965.05 per metric tonne in December, 11% lower than the previous year. The 2010 yearly average, however, was nearly 5.5% higher than the previous year and 15% above the 2008 yearly average. Prices briefly reached a four-month high on December 7, but then decreased, despite political unrest in Côte d'Ivoire, the world's largest grower.²⁹ Prices fell as arrivals were unhindered by the political situation, though this trend may not continue if mediation efforts fail and the international community responds with trade sanctions.^{30,31} Some Ivorian farmers were reported to be smuggling their harvest into Ghana where producer prices are higher and to avoid the risk of delay or theft in Abidjan (Côte d'Ivoire's main port) due to the political situation.³²

According to the International Cocoa Organization, world production was up only 0.2% in the 2009/2010 season from the previous year. An increase in world grindings of 4.8% accounted for the 4.8% decrease in ending stocks from the previous year.³³ Growth in consumer demand has been supporting cocoa prices, and is projected to continue growing. Production is also expected to increase in 2011, particularly in Cameroon, Indonesia, Nigeria and Côte d'Ivoire, offsetting projected declines in Ghana and Brazil.³⁴

Unique among the soft commodities, there are two benchmark cocoa contracts: one on the NYBOT ICE exchange and one on the London Liffe exchange. In this report, historical prices reported are based on NYBOT ICE prices in US dollars. Current futures contracts are reported on both exchanges. Cocoa prices are subject to changes in the relative valuation of the US dollar and British pound since it is linked to both currencies,

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.

²⁹ Commodity Online. (2011, January 10). "Global cocoa prices steady despite Ivory Coast crisis." *Commodity Online*. Available from <http://www.commodityonline.com/news/Global-cocoa-prices-steady-despite-Ivory-Coast-crisis-35468-3-1.html>

³⁰ Reuters Africa. (2011, January 12). "Ivorian cocoa prices fall, farmers smuggle to Ghana." *Reuters Africa*. Available from <http://af.reuters.com/article/investingNews/idAFJJOE70B0E020110112?pageNumber=1&virtualBrandChannel=0&sp=true>

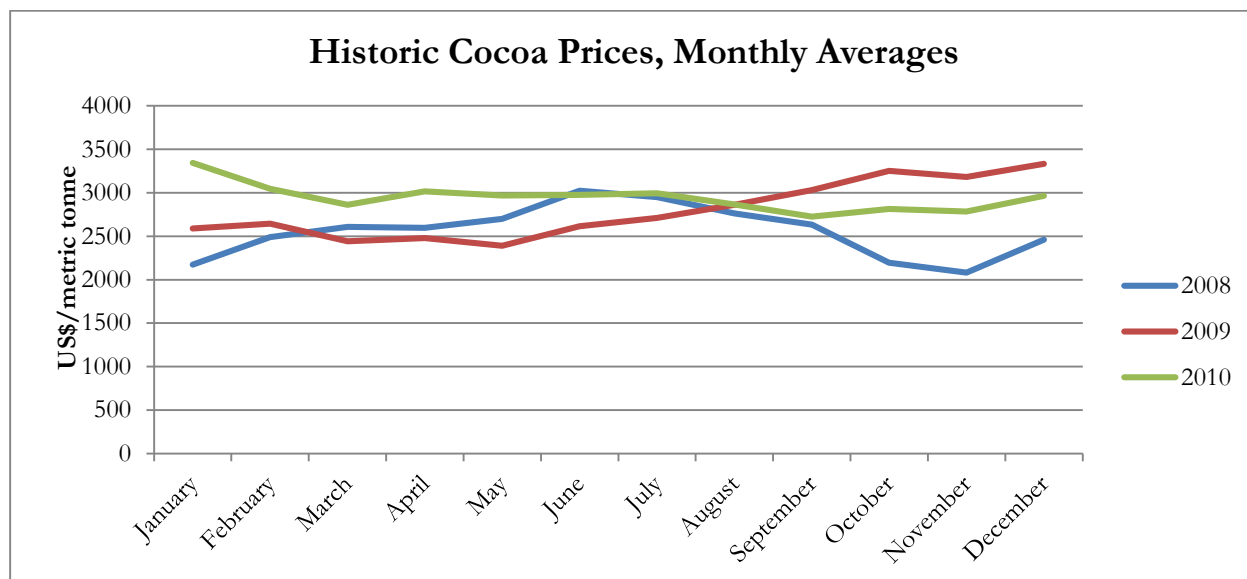
³¹ Carpenter, C. & Roy, D. (2011, January 18). "Cocoa rises on Ivory Coast sanctions; Sugar, coffee advance." *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-01-18/cocoa-gains-after-eu-imposes-ivory-coast-sanctions-sugar-erases-advances.html>

³² Reuters Africa. (2011, January 12). "Ivorian cocoa prices fall, farmers smuggle to Ghana." *Reuters Africa*. Available from <http://af.reuters.com/article/investingNews/idAFJJOE70B0E020110112?pageNumber=1&virtualBrandChannel=0&sp=true>

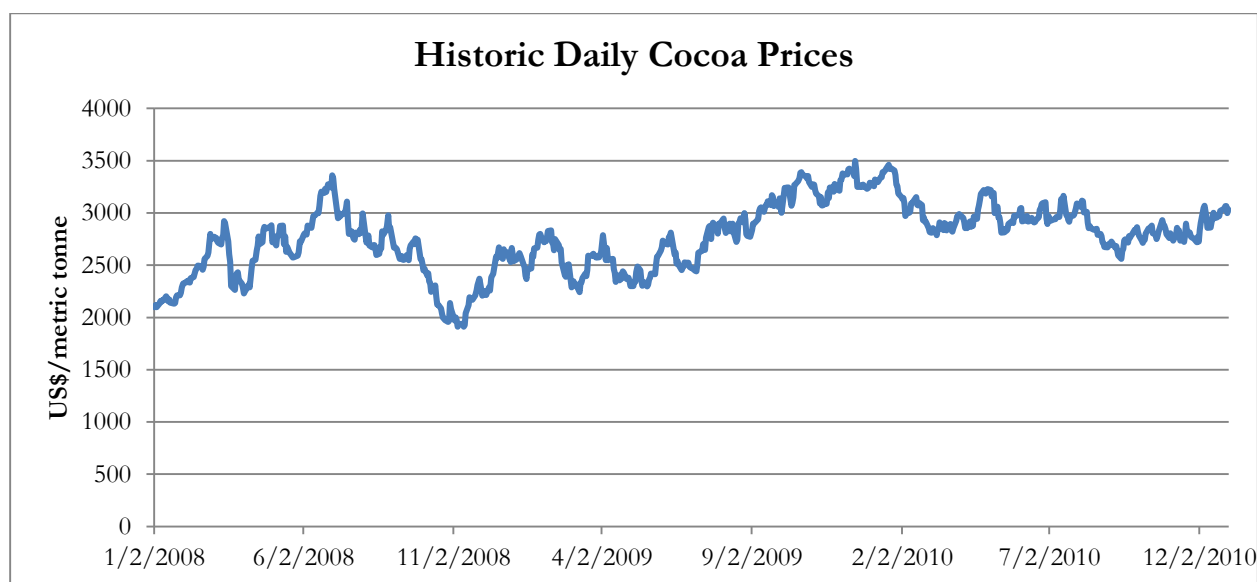
³³ ICCO. (2010). *Latest Quarterly Bulletin of Cocoa Statistics* [Press Release]. Available from <http://www.icco.org/about/press2.aspx?Id=0cn13971>

³⁴ Global Industry Analysts. (2011, January 13). "Global cocoa market to reach 4.8 million metric tons by 2015, according to a new report by Global Industry Analysts, Inc." [Press Release]. *San Francisco Chronicle*. Available from <http://www.sfgate.com/cgi-bin/article.cgi?f=/g/a/2011/01/13/prweb8061519.DTL>

though in general prices on the two exchanges track one another.³⁵ Current differences largely reflect different short-term market responses to recent events in Côte d'Ivoire and related growing supply concerns.³⁶



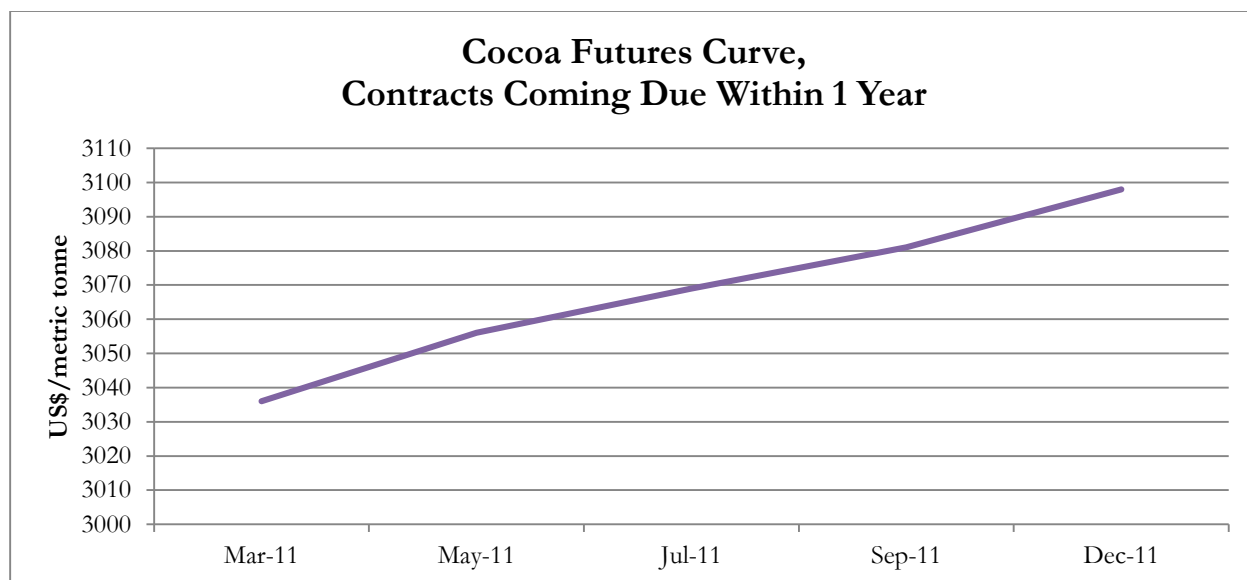
Source: Bloomberg, New York Board of Trade ICE, generic cocoa futures contract CC1



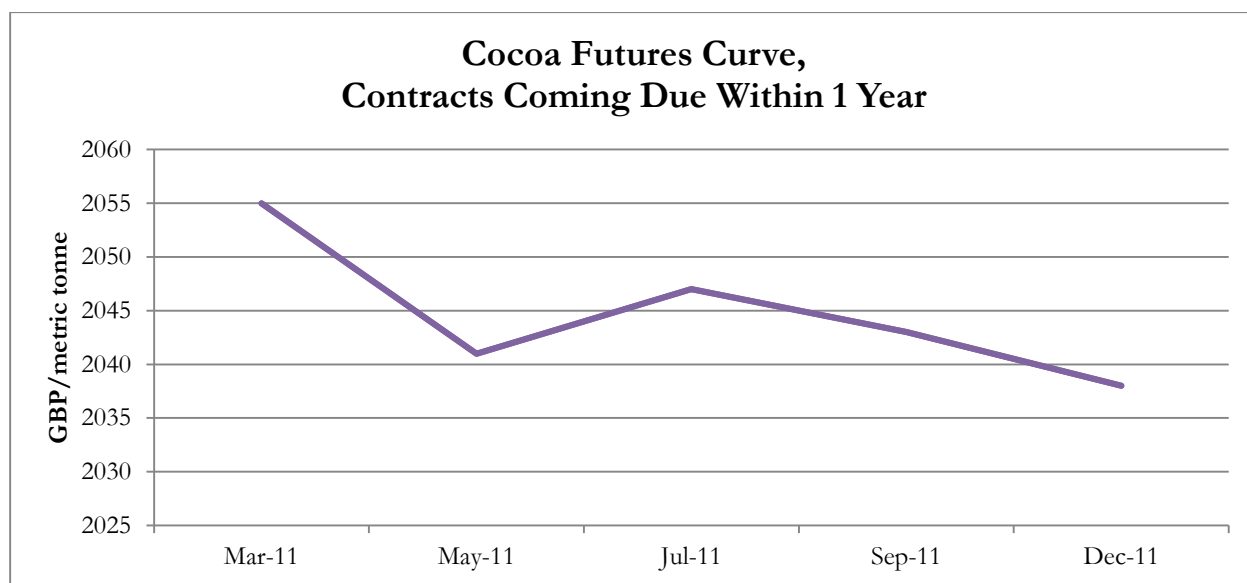
Source: Bloomberg, New York Board of Trade ICE, generic cocoa futures contract CC1

³⁵ World Cocoa Foundation. (2010, May). *Cocoa Market Update*. Retrieved from <http://www.worldcocoafoundation.org/learn-about-cocoa/documents/CocoaMarketUpdateasof5.18.10.pdf>

³⁶ Reuters. (2011, January 19). "SOFTS – Cocoa jumps to 5-month top as Ivorian talks collapse." *Reuters*. Available from <http://www.forexyard.com/en/news/SOFTS-Cocoa-jumps-to-5-month-top-as-Ivorian-talks-collapse-2011-01-19T190218Z>



Source: Bloomberg, New York Board of Trade ICE, cocoa futures contracts CCH1, CCK1, CCN1, CCU1 & CCZ1, January 18, 2011

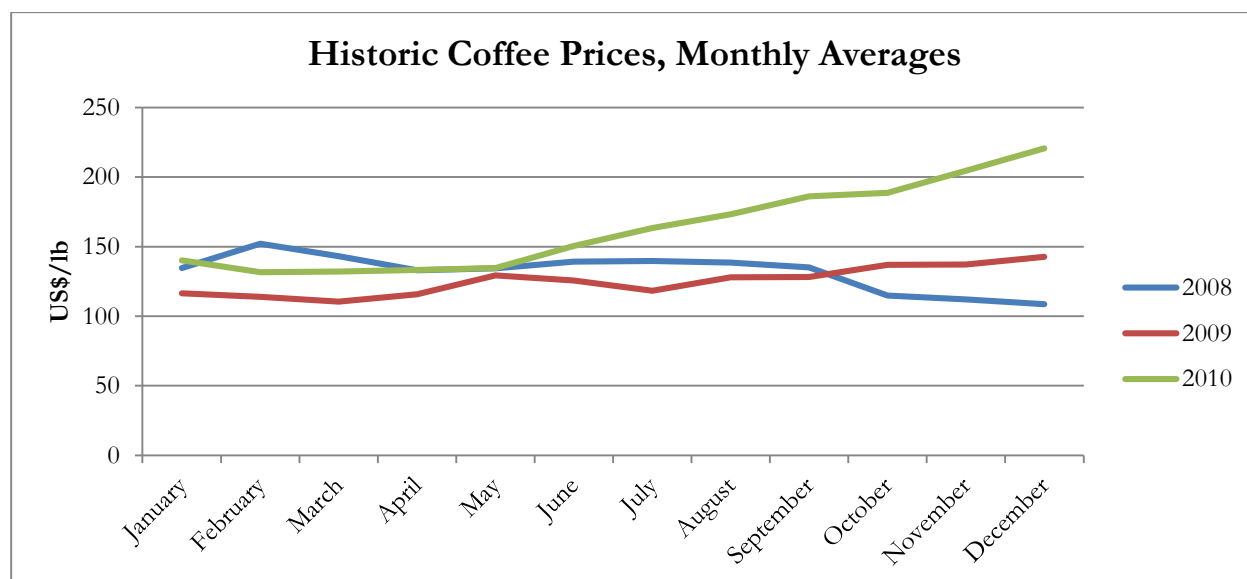


Source: Bloomberg, London Liffe Exchange, cocoa futures contracts LCCH1, LCCK1, LCCN1, LCCU1 & LCCZ1, January 19, 2011

Coffee

Coffee prices continued a rising trend in the fourth quarter of 2010, with a quarterly average up 17.5% from the previous quarter. The monthly average price was \$220.68 in December, nearly 55% higher than the monthly average one year ago and 103% higher than December 2008. The fourth quarter 2010 recorded the highest coffee prices in the last three years.

Leading factors supporting coffee prices include tight supplies, low stocks, and strong world coffee consumption. In addition, adverse weather has delayed harvest and transport in many exporting countries, decreasing output. Production projections for the 2010/2011 season are currently estimated at the highest level ever recorded for a low-production year in the biennial coffee growing cycle. Specifically, high production is expected in Brazil and Africa, particularly in Ethiopia.³⁷ However, there is some uncertainty about the potential yield from Brazil's crop, which is currently still supporting the market.³⁸ Production is expected to decrease in Vietnam, Indonesia and Colombia. Analysts suggest that Colombia may find it difficult to recover its former levels of production since many coffee trees have been affected by coffee leaf rust and the high cost of inputs has severely limited growers' access to treatment.³⁹

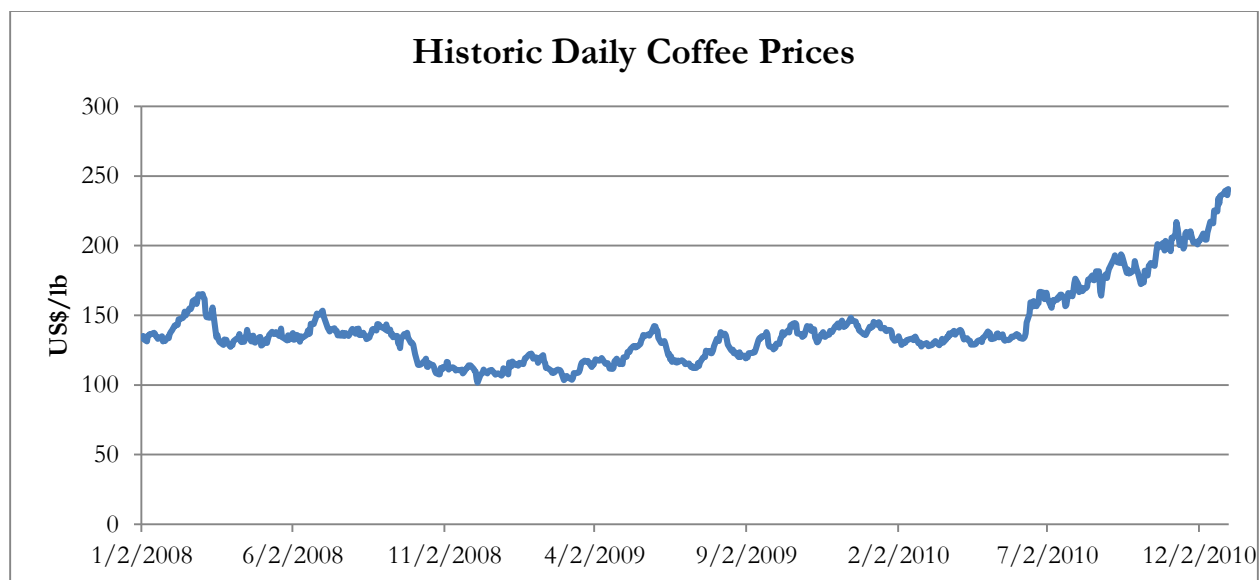


Source: Bloomberg, New York Board of Trade ICE, generic coffee futures contract KC1

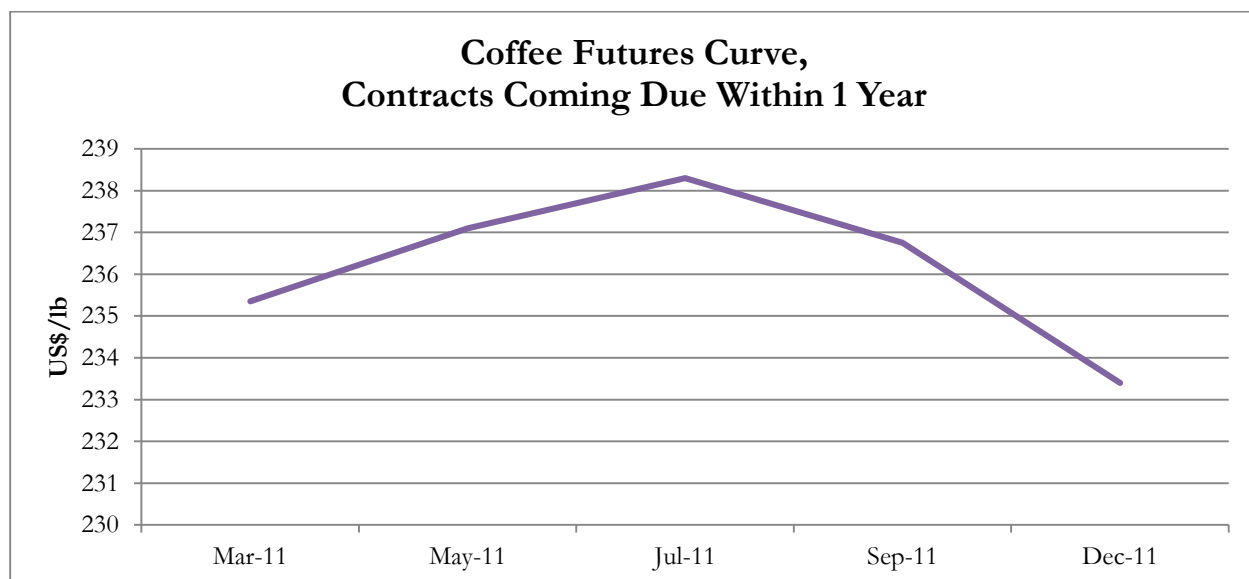
³⁷ International Coffee Organization. (2010, December). *Coffee Market Report*. Retrieved from <http://dev.ico.org/documents/cmr-1210-e.pdf>

³⁸ Commodity Research Bureau. (2011, January 14). "Foods and Softs Outlook – January 14, 2011." *Inside Futures*. Available from <http://www.insidefutures.com/article/208531/Foods%20and%20Softs%20Outlook%20-%20January%202014,%202011.html>

³⁹ International Coffee Organization. (2010, December). *Coffee Market Report*.



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



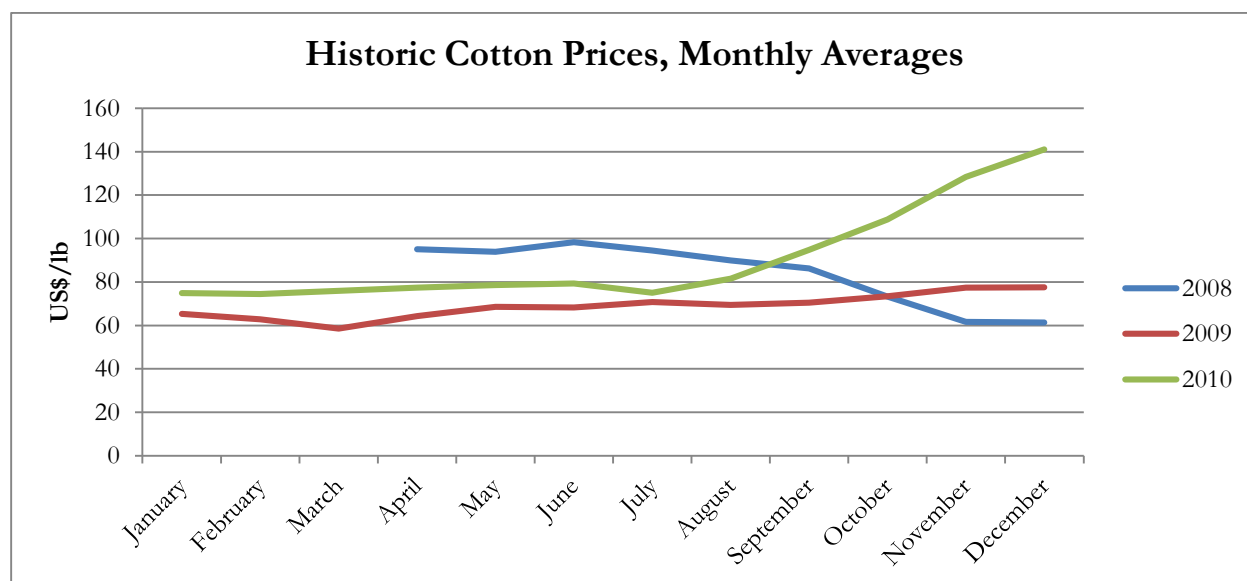
Source: Bloomberg, New York Board of Trade ICE, coffee futures contracts KCH1, KCK1, KCN1, KCU1 & KCZ1, January 18, 2011

Cotton

Cotton prices rose significantly over the fourth quarter of 2010. The quarterly average was up 50% from the previous quarter, with a monthly average of \$141.05 per pound in December nearly 82% higher than the previous year. Cotton prices over the past quarter were the highest in the past three years. In fact, cotton prices reached the highest prices seen since U.S. Reconstruction.⁴⁰

Strong demand and limited supplies are currently supporting record high prices in the cotton market. Rising cotton consumption has outpaced an increase in production, lowering global ending stocks.⁴¹ Furthermore, China, the world's largest producer, has increased imports over 100% in the past year, contributing to the 15-year low in global ending stocks.⁴²

Global cotton production is projected to reach record levels in 2010/2011 as producers respond to high prices, with global demand projected to decline at the same time putting downward pressure on prices.⁴³ In the U.S., cotton growers are expected to plant twice as many acres of cotton this year than in 2008.⁴⁴ In December, significant output increases were also projected in other major producing countries such as Australia, Brazil and India. However, a rally in cotton futures prices followed the January 13 announcement that floods would likely decrease Australian cotton output by 10%, suggesting that December projections may be revised in light of this extreme weather.⁴⁵



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

⁴⁰ Holmes, E. (2010, October 16). "Flashback to 1870 as cotton hits peak." *Wall Street Journal*. Available from <http://online.wsj.com/article/SB10001424052748704300604575554210569885910.html#dummy>

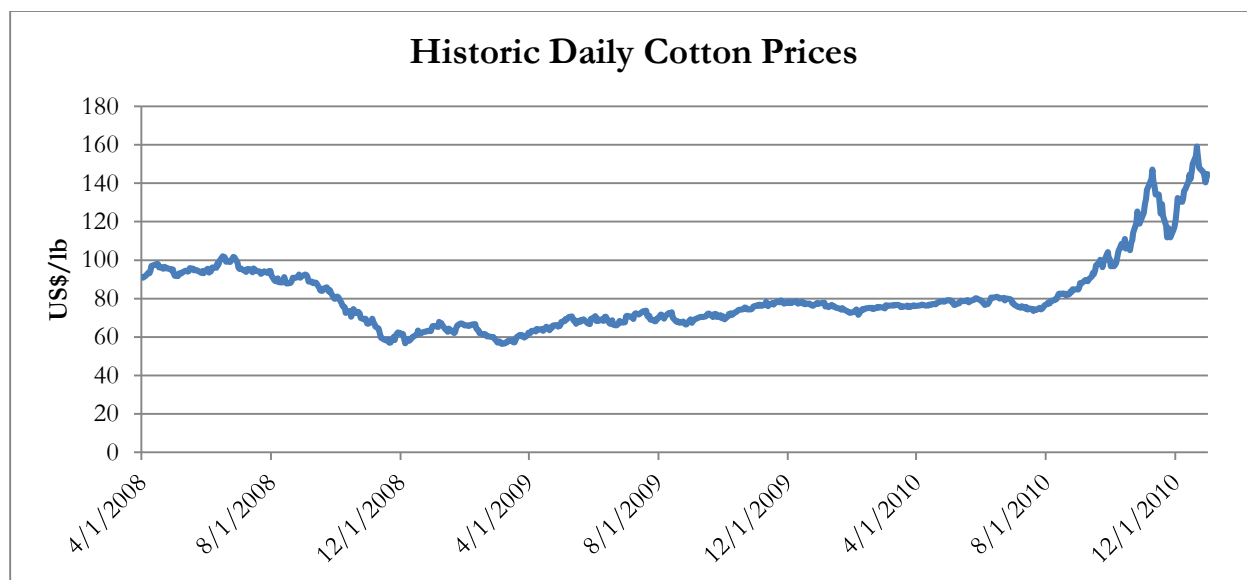
⁴¹ USDA. (2011, January 12). *World Agricultural Supply and Demand Estimates* (WASDE – 490).

⁴² Commodity Research Bureau. (2011, January 14). "Foods and Softs Outlook – January 14, 2011." *Inside Futures*.

⁴³ Meyer, L., MacDonald, S. & Kiawu, J. (2010, December 13). *Cotton and Wool Outlook* (CWS-10i). Retrieved from <http://usda.mannlib.cornell.edu/usda/current/CWS/CWS-12-13-2010.pdf>

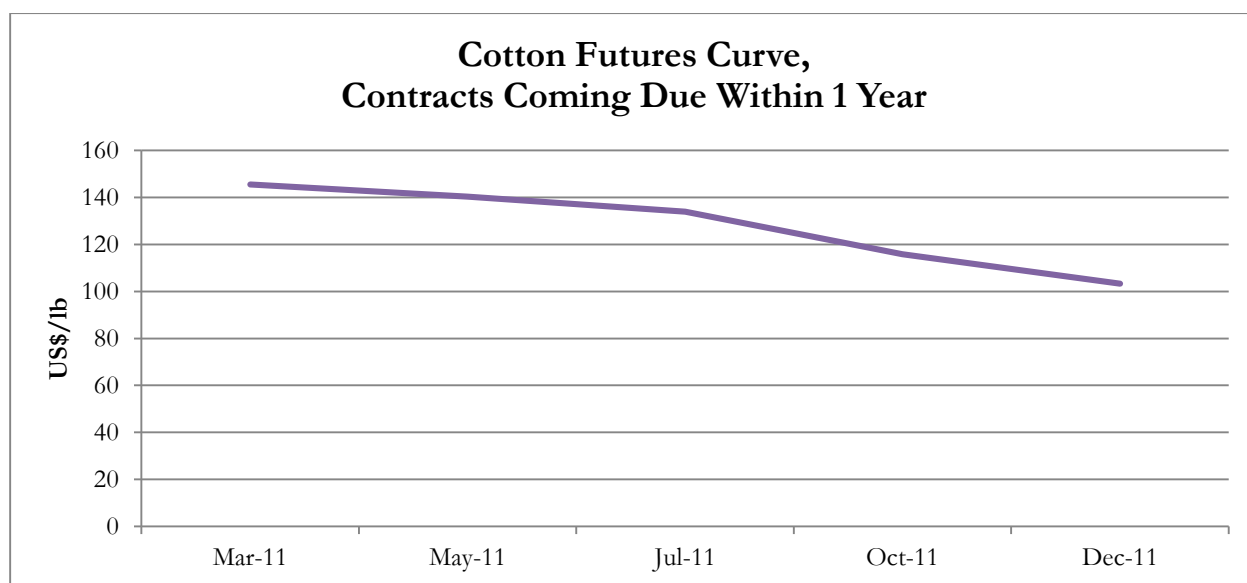
⁴⁴ Nachtigal, J. (2011, January 7). "High prices have US farmers planting more cotton." *BusinessWeek*. Retrieved from <http://www.businessweek.com/ap/financialnews/D9KJCJ7O1.htm>

⁴⁵ Meyer, L., MacDonald, S. & Kiawu, J. (2010, December 13). *Cotton and Wool Outlook* (CWS-10i). Retrieved from <http://usda.mannlib.cornell.edu/usda/current/CWS/CWS-12-13-2010.pdf>



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

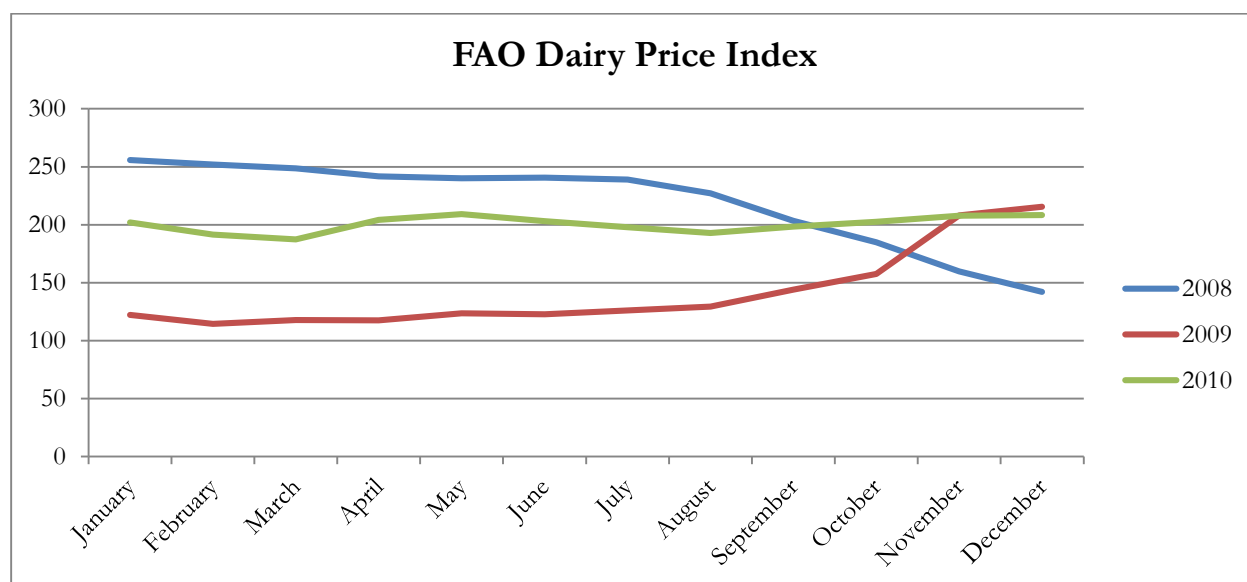


Source: Bloomberg, New York Board of Trade – ICE Futures Softs, cotton futures contracts CTH1, CTK1, CTN1, CTV1 & CTZ1, January 18, 2011

Dairy

The FAO dairy price index rose slightly over the fourth quarter of 2010, with a quarterly average 5% above the previous quarter. Milk prices peaked for the year in October 2010 and then declined slightly over the course of the fourth quarter. The quarterly average was slightly (3%) above the previous quarter. The monthly average price in October, the highest month of 2010, remained over 16% below the June 2008 peak. International dairy prices have remained firm, particularly butter, which reached an all-time record high in October.⁴⁶

Strong import demand from Asian countries and the Russian Federation has driven dairy trade to record levels in 2010.⁴⁷ Production forecasts for 2011 project global increases in milk production. The FAO estimates that production will increase 2.4% in developing countries, but only 1% in developed areas. Asia leads global milk production and has the highest rate of annual growth. In particular, China and India are projected to lead the region in terms of total output in 2011, though the FAO notes that its estimates are quite conservative due to current high feed costs, low farmgate prices, and, in China, the recurring melamine contamination in milk. In other areas, increased production is expected due to low rates of cattle slaughter in North America, the gradual increase in production quotas under new trade reforms in the European Union, and favorable weather in South America and New Zealand. In Africa, production has increased mainly in Kenya and South Africa, though favorable weather in central and east Africa has also had positive effects on milk production by improving grazing opportunities. Offsetting these production increases, production is projected to decline in the Russian Federation and Pakistan. Flooding in Pakistan has resulted in the loss of livestock and low fodder supply, decreasing its projected dairy production.⁴⁸

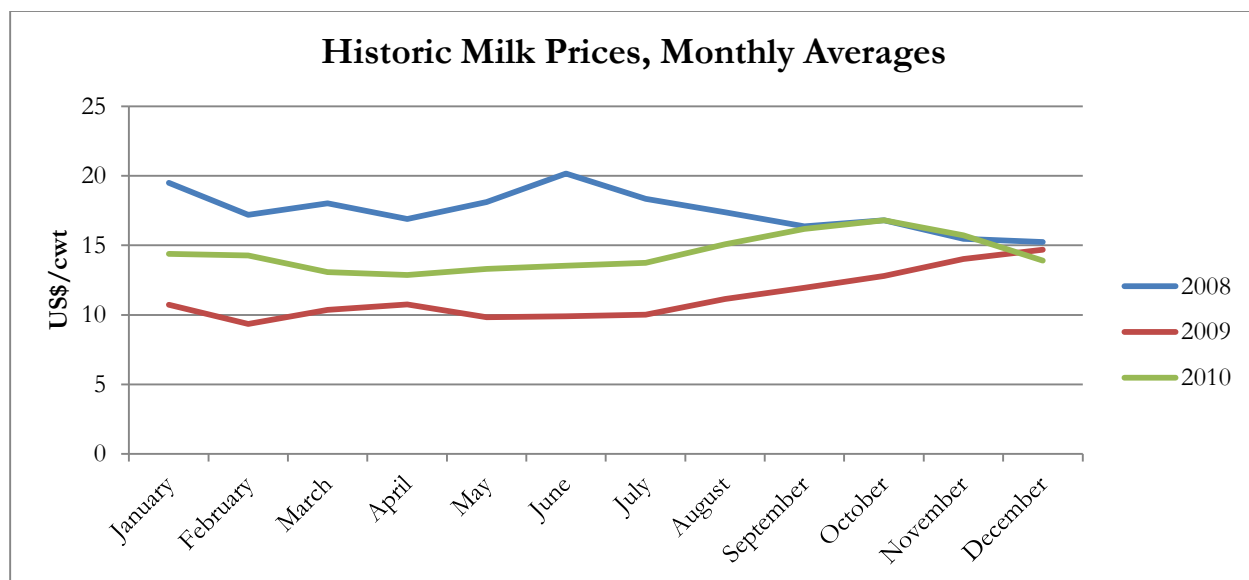


Source: FAO

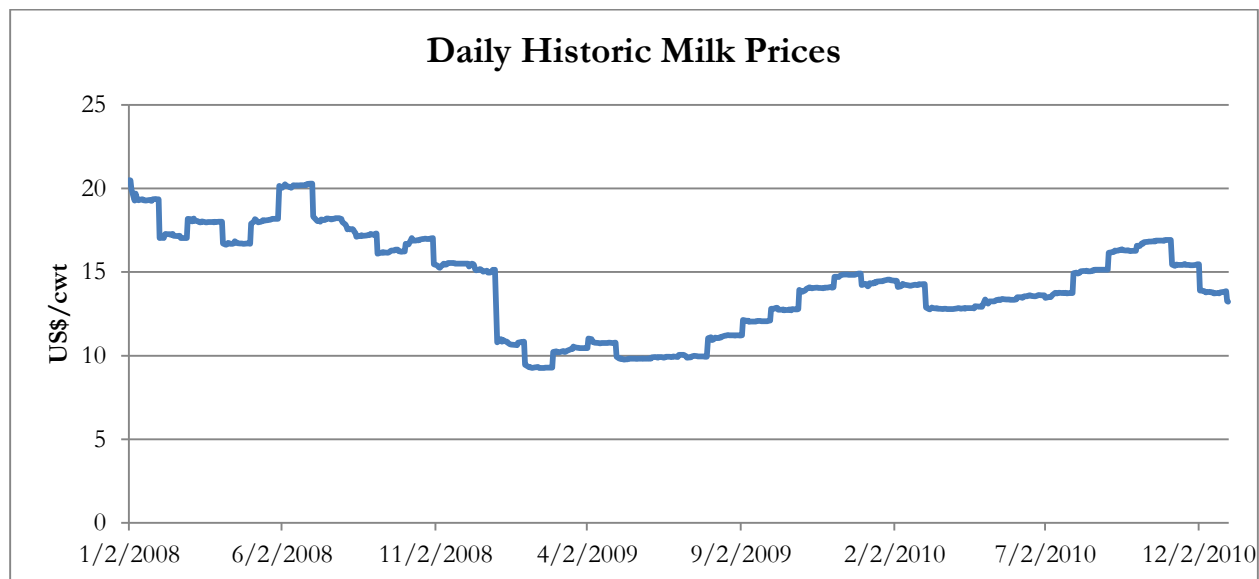
⁴⁶ FAO. (2010, November). *Food Outlook: Global Market Analysis*. Retrieved from <http://www.fao.org/docrep/013/al969e/al969e00.pdf>

⁴⁷ FAO. (2010, November). *Food Outlook: Global Market Analysis*. Retrieved from <http://www.fao.org/docrep/013/al969e/al969e00.pdf>

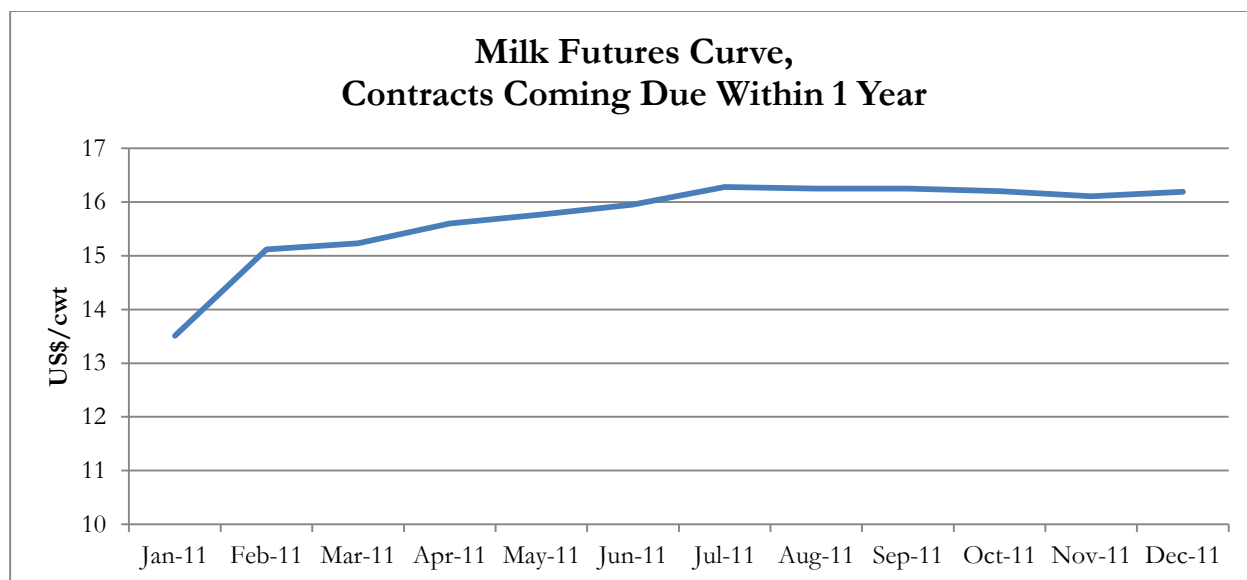
⁴⁸ FAO. (2010, November). *Food Outlook: Global Market Analysis*. Retrieved from <http://www.fao.org/docrep/013/al969e/al969e00.pdf>



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



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



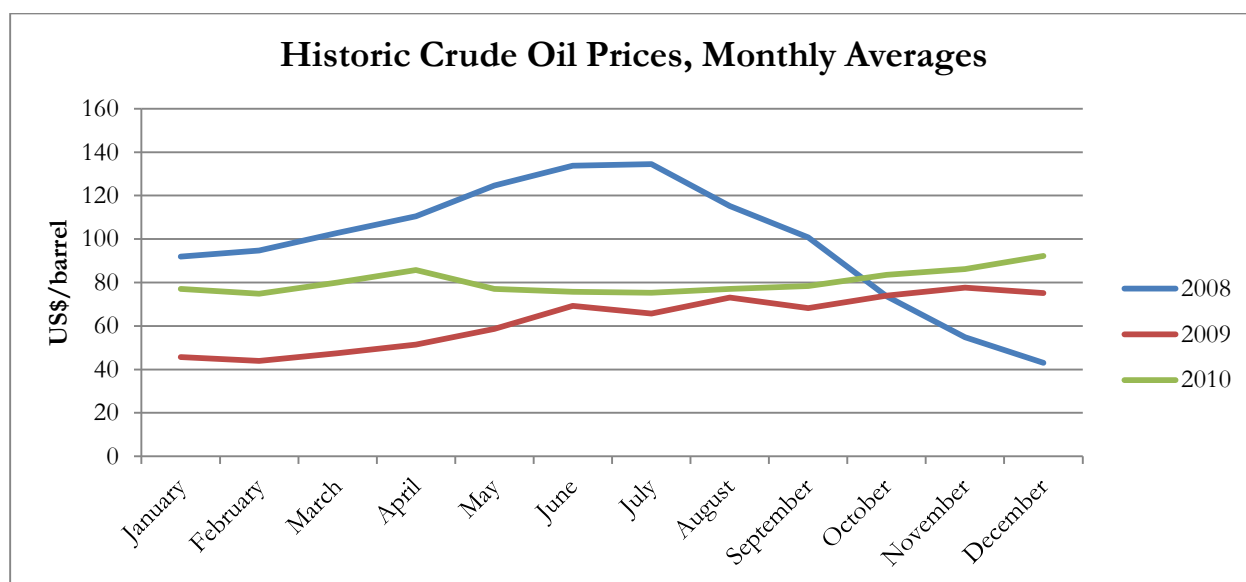
Source: Bloomberg, Chicago Mercantile Exchange (CME), milk contracts DAF1, DAG1, DAH1, DAJ1, DAK1, DAM1, DAN1, DAQ1, DAU1, DAV1, DAX1 & DAZ1, January 18, 2011

Energy

Crude oil

Crude oil prices continued a rising trend over the fourth quarter, with a monthly average of \$96.14 per barrel in December. This is the highest monthly average since September 2008, and the quarterly average is nearly 13.5% above the previous quarter. The December average is still 30% below the most recent peak in July 2008.

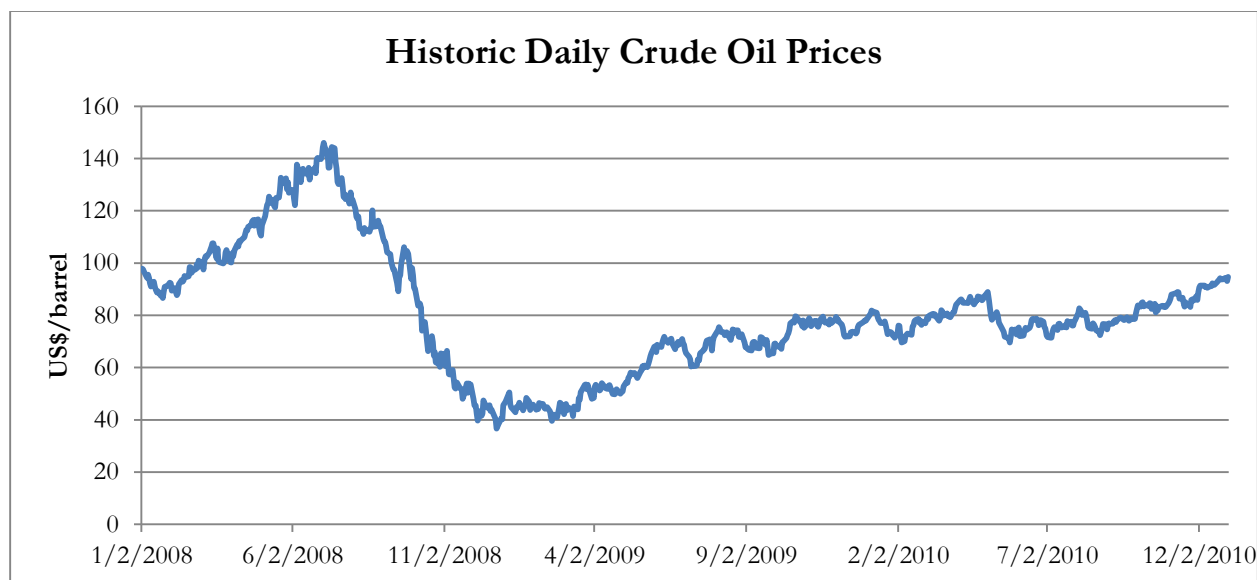
Increasing demand and decreasing supply from non-OPEC producers contributed to rising oil prices. OECD industry stocks were down in December, though supply from OPEC producers has increased continuously since the past spring in response to stronger demand.⁴⁹ The U.S. Energy Information Administration expects world oil markets to continue tightening in the short-term and that the market will rely on both inventories and increased production to meet the growth in demand. Several factors could influence oil prices in the coming months. If OPEC producers do not increase production as global consumption recovers, prices could rise significantly. On the other hand, growth in consumption depends upon global and national economic recovery, which remains highly uncertain.⁵⁰



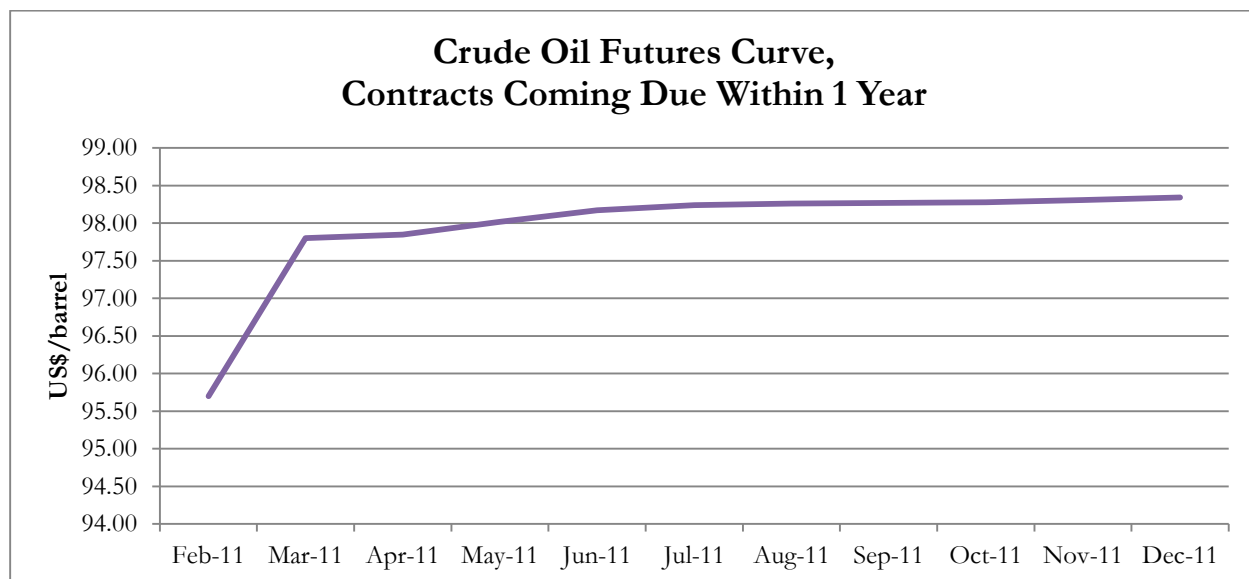
Source: Bloomberg, New York Mercantile Exchange (NYMEX), Brent Crude Oil generic futures contract CO1

⁴⁹ International Energy Agency. (2011, January 18). *Oil Market Report: Highlights*. Retrieved from <http://omrpublic.iea.org/currentissues/high.pdf>

⁵⁰ Energy Information Administration. (2011, January). *Short-term Energy Outlook*. Retrieved from http://www.eia.gov/emeu/steo/pub/steo_full.pdf



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



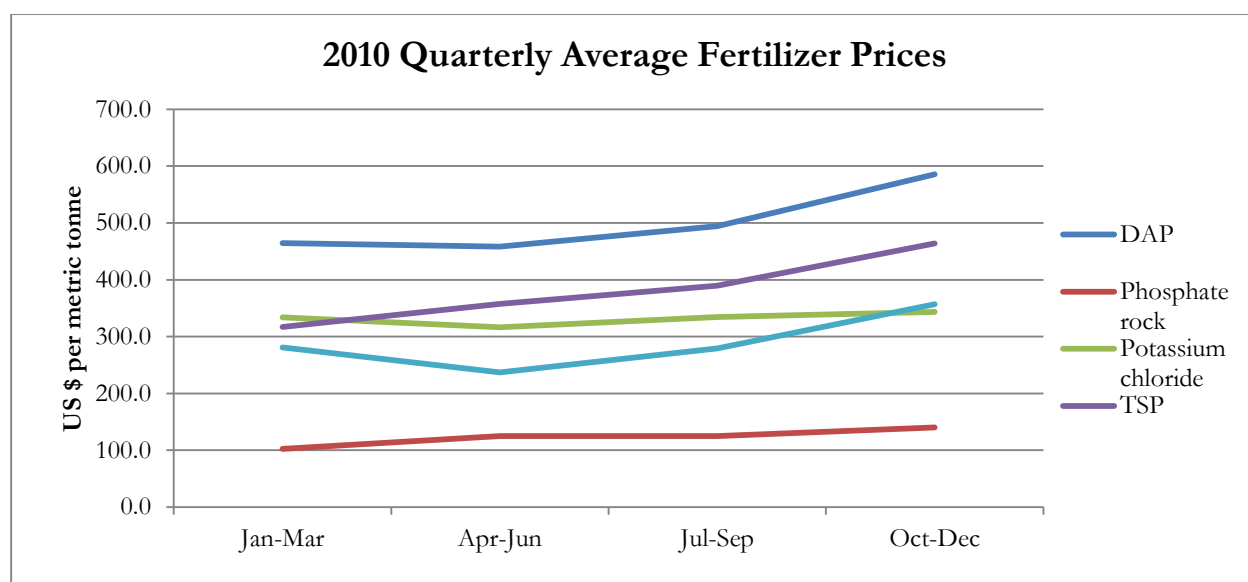
Source: Bloomberg, New York Mercantile Exchange (NYMEX), Brent Crude Oil futures contracts COG1, COH1, COJ1, COK1, COM1, CON1, COQ1, COU1, COV1, COX1 & COZ1, January 18, 2011

Fertilizer

Monthly average fertilizer prices rose from the third to the fourth quarter of 2010. Urea prices led the increase, gaining nearly 28%, followed by a 19% increase in TSP and 18.5% in DAP. Phosphate rock prices increased 12% and potassium chloride experienced only a modest 2% price increase.

The 2010 yearly averages are also up from 2009 prices, with the exception of potassium chloride which experienced nearly a 50% price decline from 2009 to 2010. DAP and TSP average yearly prices for 2010 were up 50% from 2009, while urea and phosphate rock experienced more modest gains of 15% and 1.1%, respectively. Prices remain well below the 2008 peak prices, ranging from 41% (potassium chloride, urea) to 64% (phosphate rock) below the 2008 yearly average.

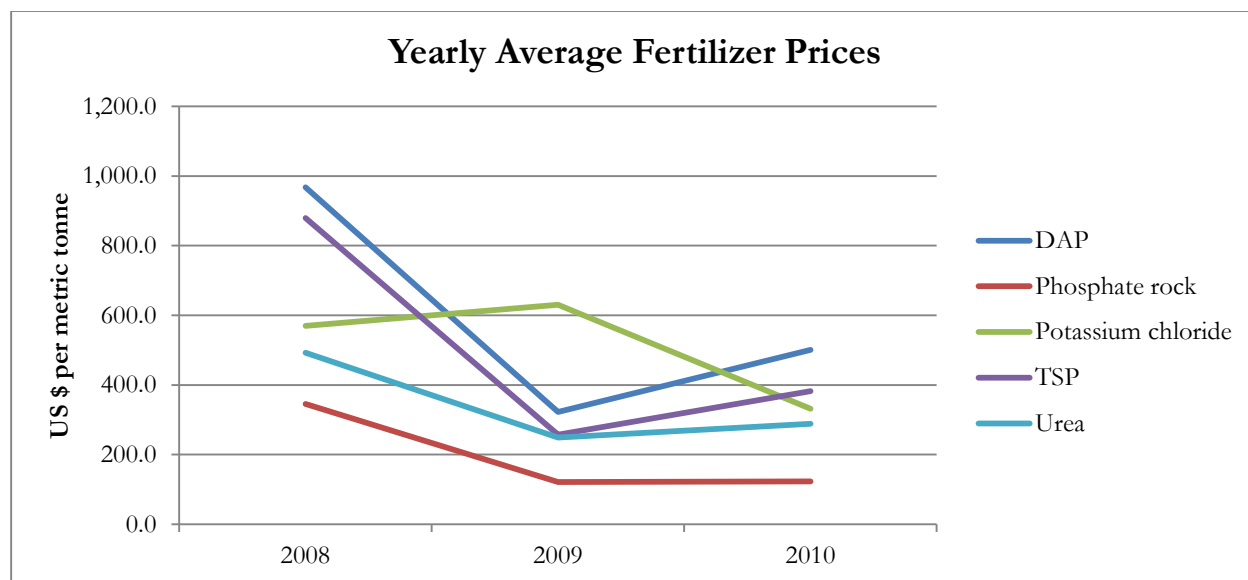
Fertilizer use is projected to increase as farmers respond to higher commodity prices. In addition to increased demand in North America, consumption has also been increasing in developing agricultural markets, including Brazil, India and China.⁵¹ China recently placed an order for 14% more potash than last year, which NASDAQ analysis suggests may represent a new dynamic in the fertilizer market.⁵²



Source: World Bank, Pink Sheet.

⁵¹ Harder, B. (2011, January 17). "Fertilizer prices appear to have peaked: analyst." *Commodity News Service Canada*. Available from <http://www.country-guide.ca/East/issues/ISArticle.asp?aid=1000399722&PC=FBC&issue=01172011>

⁵² NASDAQ. (2011, January 18). "Will China's potash deal stink up the fertilizer market?" *NASDAQ*. Available from <http://community.nasdaq.com/News/2011-01/will-chinas-potash-deal-stink-up-the-fertilizer-market.aspx?storyid=53607>



Source: World Bank, Pink Sheet.

Conclusion

The fourth quarter of 2010 was characterized by higher global commodity prices.⁵³ Food prices are coming out of a two-year period of relatively low price inflation due to the global recession, however increased global trade, some increased consumer demand, and higher energy and food production costs are likely to continue boosting prices as the world emerges from recession.⁵⁴ Grains, oilseeds and coffee led gains in commodity prices.⁵⁵ Stocks generally remain low and severe weather has contributed to several significant supply interruptions.⁵⁶ Specifically, floods in Australia, drought in Russia, and bad weather in South America have contributed to the rise in commodity prices.⁵⁷ Current futures prices suggest that this rising price trend is likely to continue in the short-term.

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

⁵³ FAO. (2010, December). *Crop Prospects and Food Situation* (No. 4). Retrieved from <http://www.fao.org/docrep/013/al972e/al972e00.pdf>

⁵⁴ Bjerga, A. (2011, January 6). "A global scare in food prices." *Bloomberg Businessweek*. Available from http://www.businessweek.com/magazine/content/11_03/b4211006108971.htm

⁵⁵ Stroth, S. & Holloway, A. (2011, January 12). "Commodities touch two-year high on economic growth outlook, smaller crops." *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-01-12/commodities-touch-two-year-high-on-economic-growth-outlook-smaller-crops.html>

⁵⁶ PRNewswire. (2011, January 12). "Commodity markets posted substantial gains in 2010's final month; Physical asset outlook remains robust amongst investors in 2011." *PRNewswire*. Available from <http://www.prnewswire.com/news-releases/commodity-markets-posted-substantial-gains-in-2010s-final-month-physical-asset-outlook-remains-robust-amongst-investors-in-2011-113349164.html>

⁵⁷ Mufson, S. (2011, January 15). "Global effort to calm food prices." *The Washington Post*. Available from <http://www.washingtonpost.com/wp-dyn/content/article/2011/01/14/AR2011011406859.html>

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.⁵⁸

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.^{59,60,61} 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

⁵⁸ FAO. (2009). *Food Outlook*. Retrieved from <http://www.fao.org/docrep/012/ak341e/ak341e00.htm>.

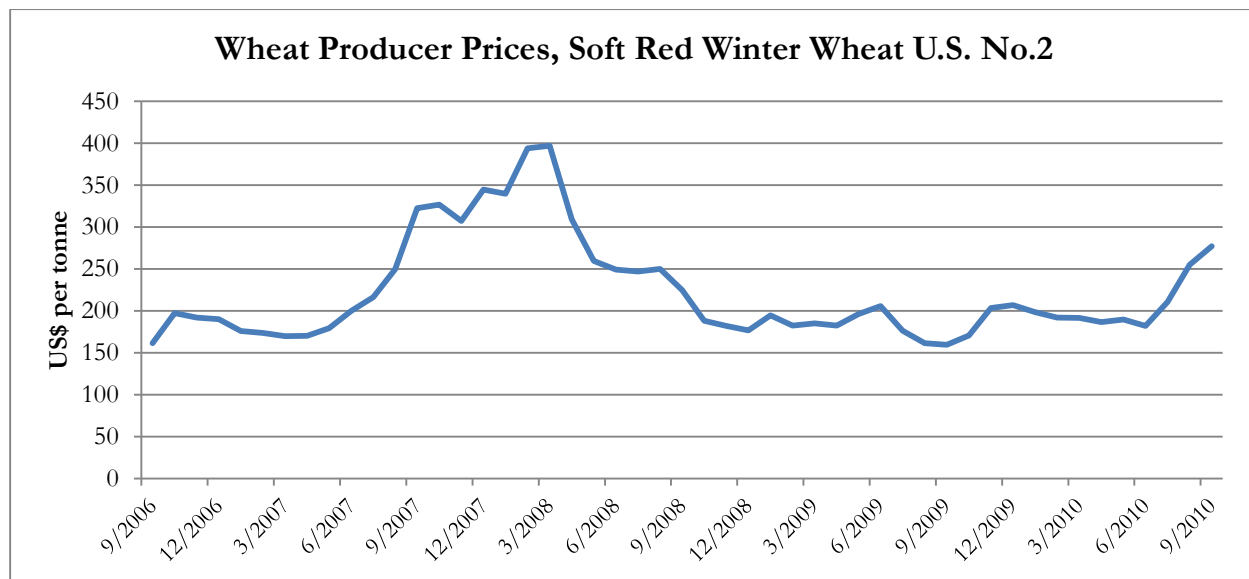
⁵⁹ Sarris, A. (2009, July). *International Farm Policy Challenges to 2050* [Presentation, IFAP Commodity Conference]. Retrieved from <http://www.ifap.org/en/newsroom/documents/InternationalFarmPolicyChanges2050.pdf>

⁶⁰ Schnepf, R. (2008). *High Agricultural Commodity Prices: What Are the Issues?* [Congressional Research Service (CRS) Report for Congress]. Retrieved from <http://fpc.state.gov/documents/organization/104685.pdf>

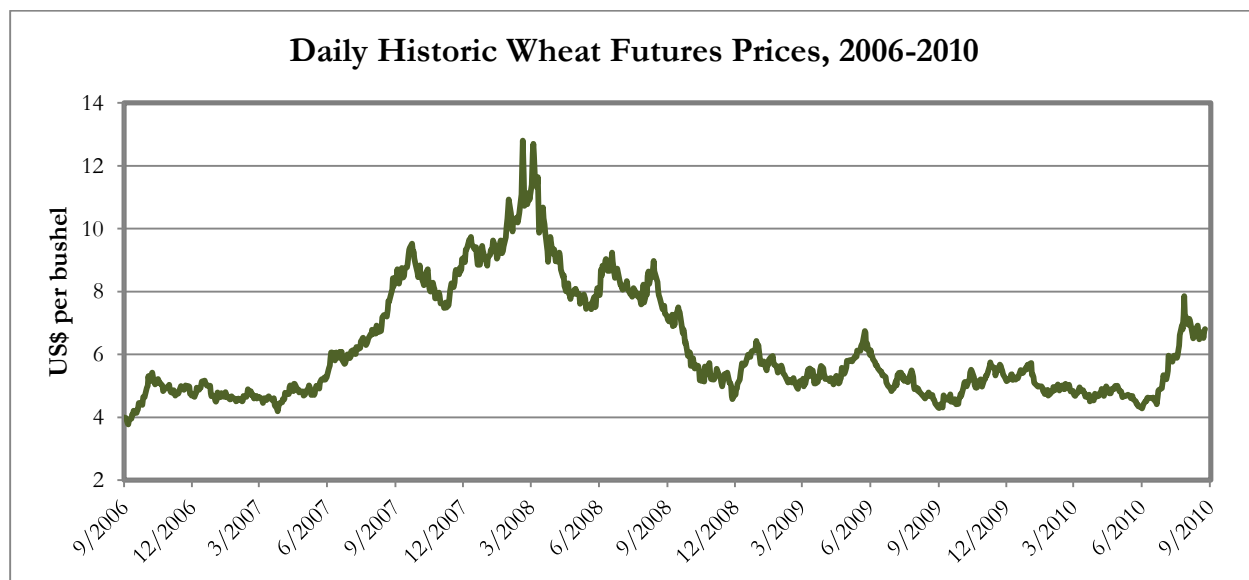
⁶¹ FAO (2009). *The State of Agricultural Commodity Markets, High food prices and the food crisis – experiences and lessons learned*. Retrieved from <ftp://ftp.fao.org/docrep/fao/012/i0854e/i0854e.pdf>

Appendix 2: Methodology Comparison

The graphs below illustrate the difference in price reporting between the new methodology in the current and most recent updates compared to prior commodity price updates. The first graph uses FAO historical producer price data. The second graph reports estimated historic spot prices, as estimated by the historic prices of benchmark global wheat contracts on the Chicago Board of Trade. Although the price units differ between the two data sources, the price trends are similar.



Source: FAO Commodity Outlook, retrieved September 27, 2010



Source: Bloomberg, Chicago Board of Trade (CBOT) generic first wheat futures contract W 1