



UNIVERSITY OF  
WASHINGTON

**Evans School Policy Analysis and Research (EPAR)**

*Professor Leigh Anderson, PI and Lead Faculty*

*Associate Professor Mary Kay Gugerty, Lead Faculty*

**Quarterly Commodity Price Update:  
First Quarter 2011**

EPAR Brief No. 145

Justin Paulsen & Professor C. Leigh Anderson

*Prepared for the Agricultural Development Team  
of the Bill & Melinda Gates Foundation*

May 9, 2011

---

**Executive Summary**

This report presents data on selected agricultural commodities for the first quarter of 2011 (January through March). 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 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. 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. Prior to the fourth quarter of 2010, reports sourced historical producer price data from the FAO and industry organizations.<sup>1</sup>

Highlights of this report include:

- The FAO Food Price Index reached a record high in February before falling in March, the increase due largely to dairy and cereals, and the contraction largely due to sugars and oils.
- Wheat prices rose through most of the quarter due to high demand and tightening stocks, but fell briefly as a result of concerns from lower global demand stemming from political unrest throughout North Africa and the Middle East and the Japanese earthquake.
- Quarterly average maize prices increased nearly 20% from the fourth quarter of 2010, despite the decreases in prices experienced during March.
- Sluggish demand and increased production have limited the growth in rice prices to only a 3.8% increase from the fourth quarter of 2010.

---

<sup>1</sup> *Appendix 2* provides wheat price charts using the former and current data sources for comparative purposes.

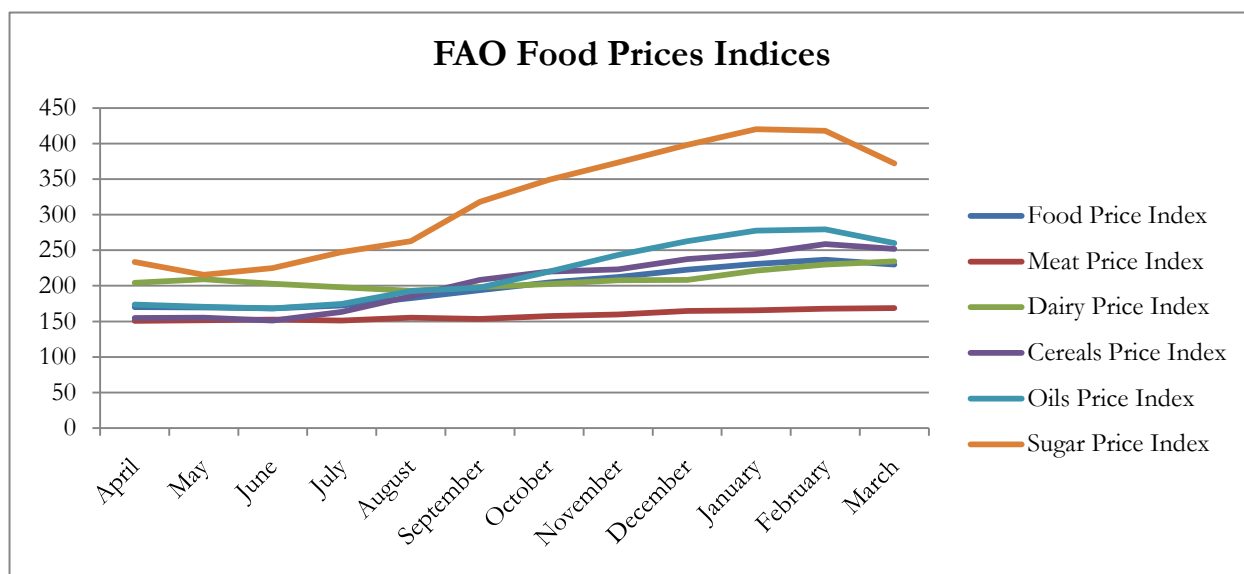
NOTE: The findings and conclusions contained within this material are those of the authors and do not necessarily reflect positions or policies of the Bill & Melinda Gates Foundation.

## Quarterly Commodity Price Update: First Quarter 2011

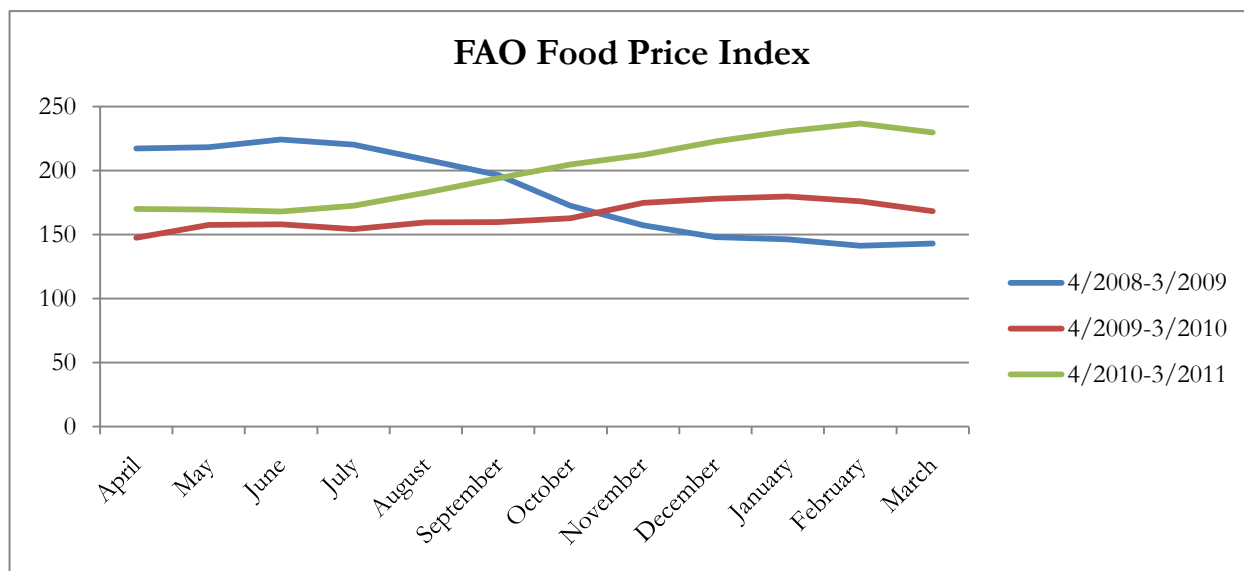
- Soybean price gains have slowed due in large part to record yields in Brazil and Paraguay leading to a four-year high in ending stocks.
- Cocoa prices reached record highs in February due to the export ban associated with conflict in Côte d'Ivoire. However, forecasted increases in global stocks suggest that once power is consolidated in Côte d'Ivoire prices will fall.
- Coffee prices have increased almost 25% since their previous record highs in the fourth quarter of 2010. High global consumption and adverse weather conditions have supported the continued increase.
- Cotton prices continue to rise, exceeding the highest recorded prices. 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 11% since fourth quarter of 2010. Strong import demand from India and China, increased demand in the U.S., and falling supplies from New Zealand led to the highest monthly average since the July 2008 peak.
- Crude oil prices continued rising over the first quarter, reaching a monthly average of \$114.67 per barrel in March. The rise is largely driven by supply risks associated with conflict and political unrest in North African and Middle East countries.
- Most fertilizer prices experienced mild increases ranging from about 2.7% to 13%, while urea experienced a 1% drop. Rising commodity prices largely explain this increase as producers take advantage of higher prices with increased fertilizer use.

## FAO Food Price Index

The FAO Food Price Index is a composite measure of changes in average food prices over time.<sup>2</sup> 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 9% from the fourth quarter of 2010 to the first quarter of 2011. The index rose to a record 236.8 in February, exceeding the June 2008 peak by over 5%, before falling in March largely due to contractions in sugars and oils.<sup>3</sup> Among the component sector indices, the price of oils increased the most (12.5% between the fourth quarter of 2010 and first quarter of 2011).



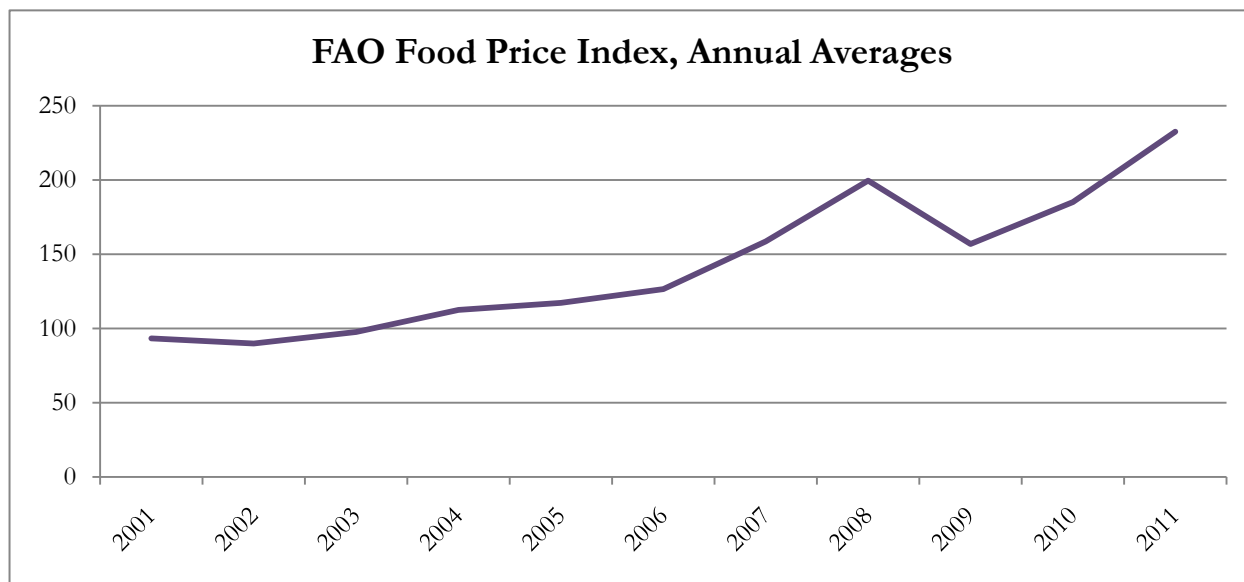
Source: FAO



<sup>2</sup> FAO. (2010). *World Food Price Index*. Available from <http://www.fao.org/worldfoodsituation/FoodPricesIndex/en/>

<sup>3</sup> FAO. (7 April 2011). *Global Food Price Monitor*. Retrieved from [http://www.fao.org/giews/english/gfpm/GFPM\\_04\\_2011.pdf](http://www.fao.org/giews/english/gfpm/GFPM_04_2011.pdf)

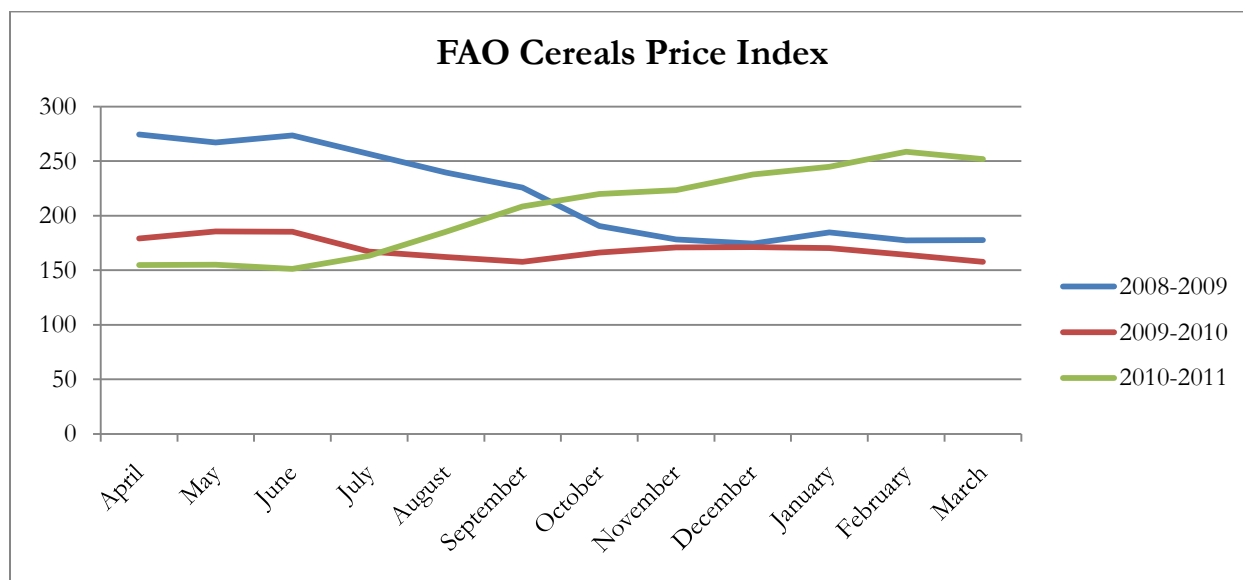
Source: FAO



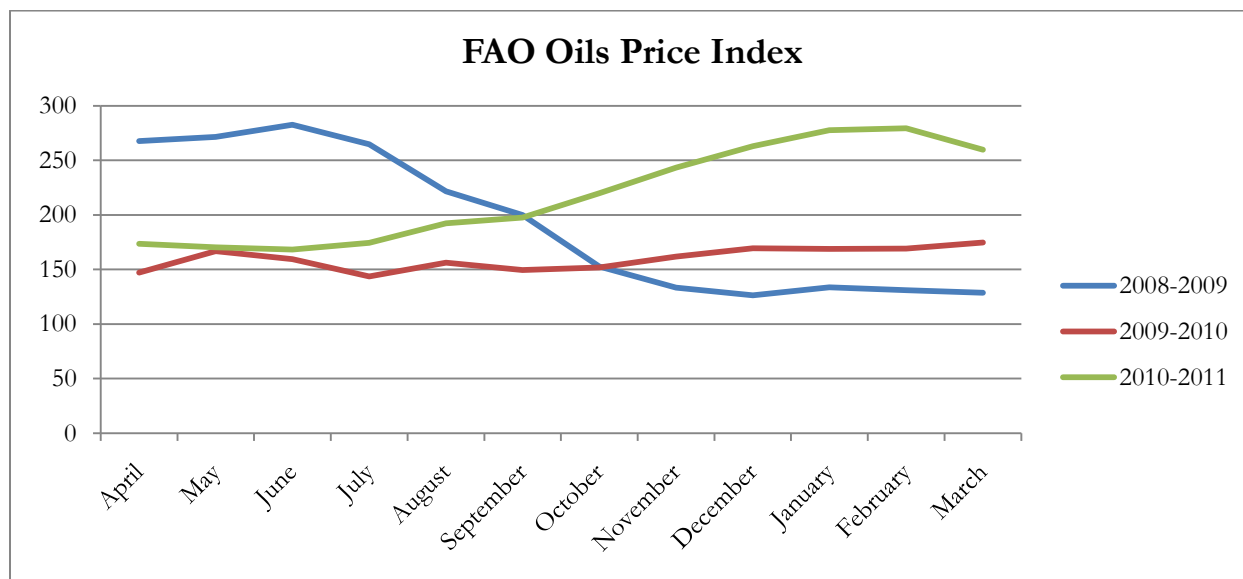
Source: FAO; 2011 through March

## Cereals & Oilcrops

The FAO Cereals Price Index rose almost 11% from the fourth quarter of 2010 to the first quarter of 2011. The FAO Oils Price Index rose over 12% from the fourth quarter of 2010 to the first quarter of 2011. The high February average remains below June 2008 peak prices by 5% for cereals and 1% for oils, and decreased in March.



Source: FAO

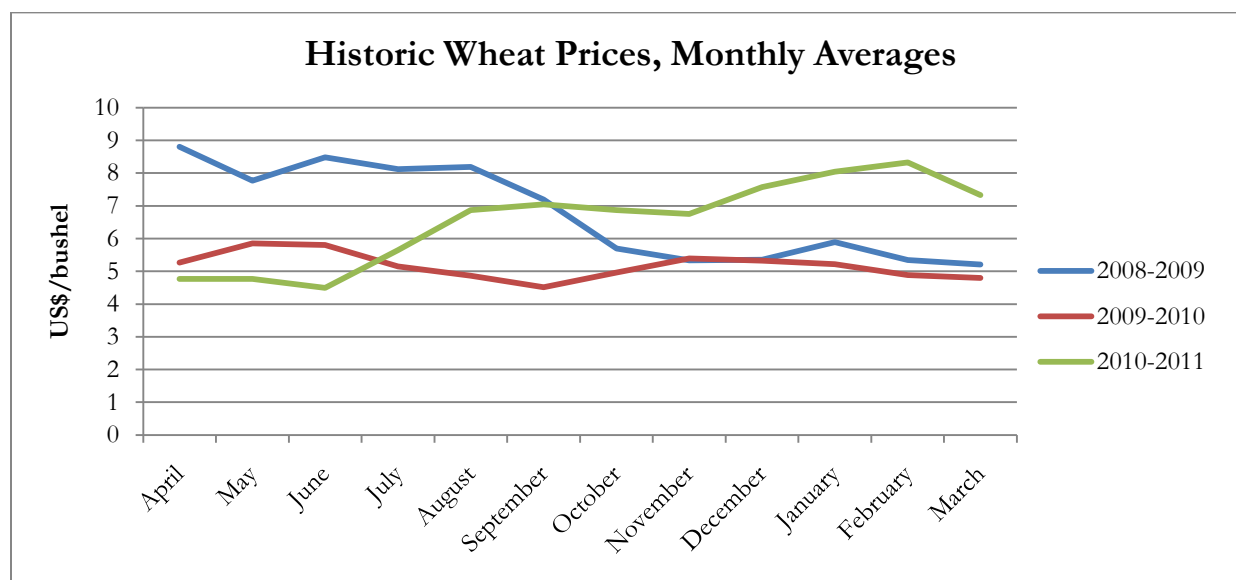


Source: FAO

## Wheat

Wheat prices continued to rise through February and then dropped in March. Quarterly average wheat prices increased 11.8% from the fourth quarter of 2010 to the first quarter of 2011, ending at a monthly average of \$7.33 per bushel (\$269.19 per metric tonne) in March. This average returns to levels seen in November and December 2010, and almost 16% lower than highs reached in April 2008.

The wheat market exhibited volatility in the first quarter of 2011. Downward price pressure came from expected production increases from improved weather in the U.S. and China, and concerns over lower global demand from reports of possible purchase delays by some countries affected by political unrest in the Middle East and Northern Africa, and the effects of Japan's earthquake and nuclear meltdown.<sup>4,5,6</sup> However, prices rose through much of February and rebounded through the quarter's end from strong demand and rallies in the maize market, increasing demand for wheat as a substitute.<sup>7,8</sup> Global wheat supplies remain stable at 137 million bushels down from the previous year, yet significantly higher than record lows in 2007-2008.<sup>9,10</sup>



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

<sup>4</sup> FAO. (2011, March 3). *Global Food Price Monitor*. Retrieved from [http://www.fao.org/giews/english/gfpm/GFPM\\_03\\_2011.pdf](http://www.fao.org/giews/english/gfpm/GFPM_03_2011.pdf)

<sup>5</sup> FAO. (2011, March). *Crop Prospects and Food Situation* (No. 1). Retrieved from...

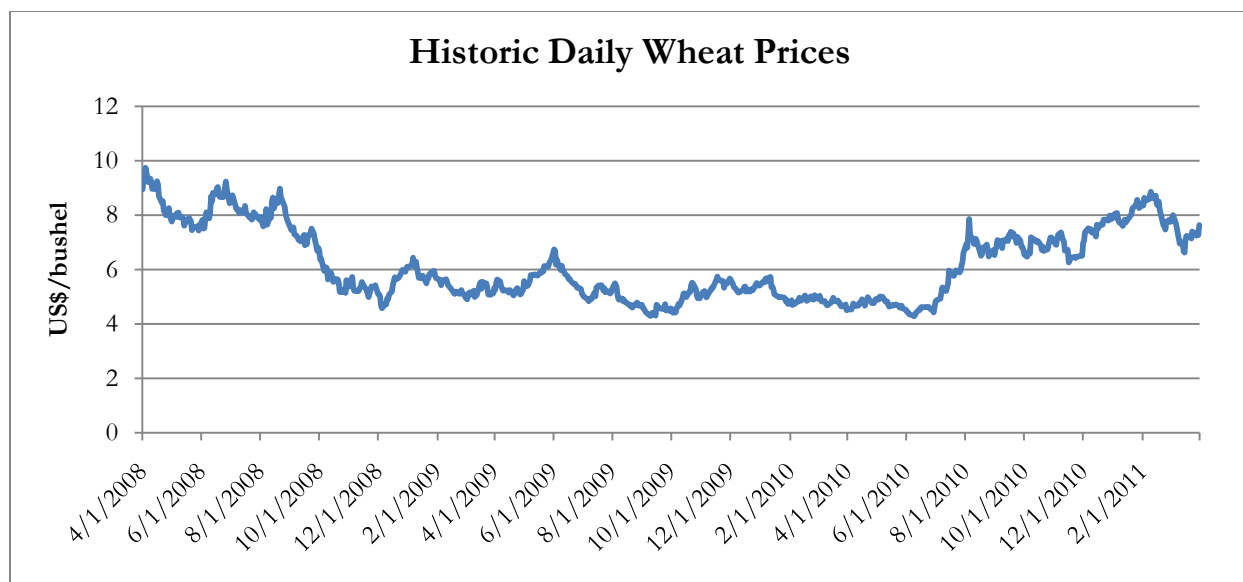
<sup>6</sup> Javier, Luzi Ann. (2011, March 18). "Corn, wheat climb paring weekly decline as U.S. exports soar on demand." *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-03-18/corn-wheat-climb-paring-weekly-decline-as-u-s-exports-soar-on-demand.html>

<sup>7</sup> FAO. (2011, February 3). *Global Food Price Monitor*. Retrieved from [http://www.fao.org/giews/english/gfpm/GFPM\\_02\\_2011.pdf](http://www.fao.org/giews/english/gfpm/GFPM_02_2011.pdf)

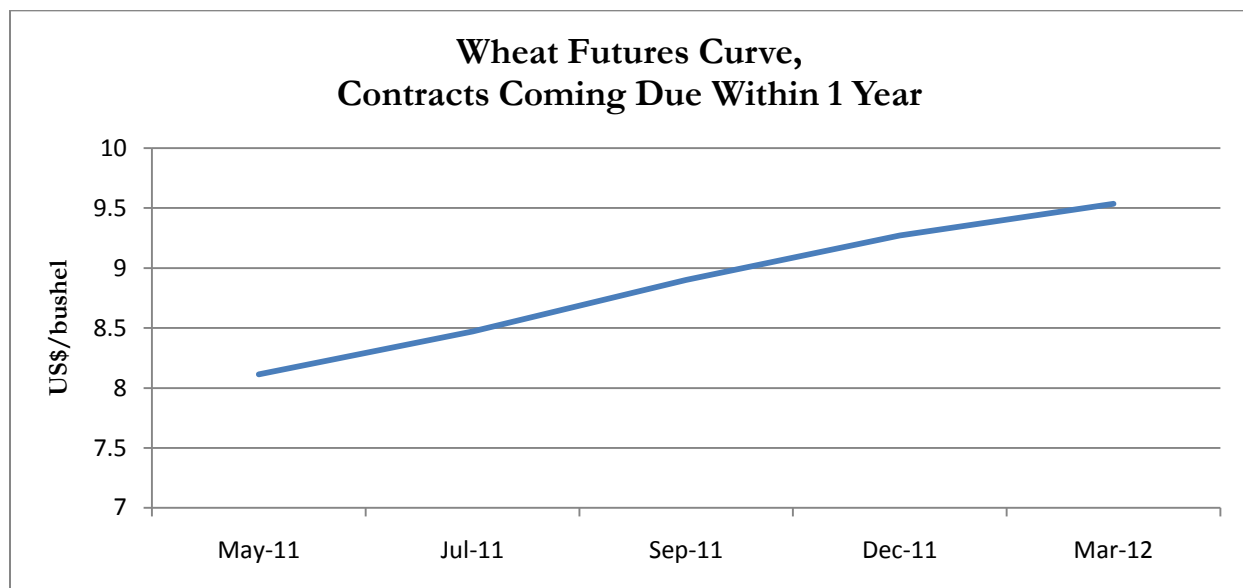
<sup>8</sup> FAO. (2011, April 7). *Global Food Price Monitor*. Available from [http://www.fao.org/giews/english/gfpm/GFPM\\_04\\_2011.pdf](http://www.fao.org/giews/english/gfpm/GFPM_04_2011.pdf)

<sup>9</sup> USDA. (2011, April 8). *World Agricultural Supply and Demand Estimates* (WASDE - 493). Retrieved from...

<sup>10</sup> Vocke, G. and Liefert, O. (2011, April 12). *Wheat Outlook* (WHS-11D). Retrieved from <http://usda.mannlib.cornell.edu/usda/current/WHS/WHS-04-12-2011.pdf>



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

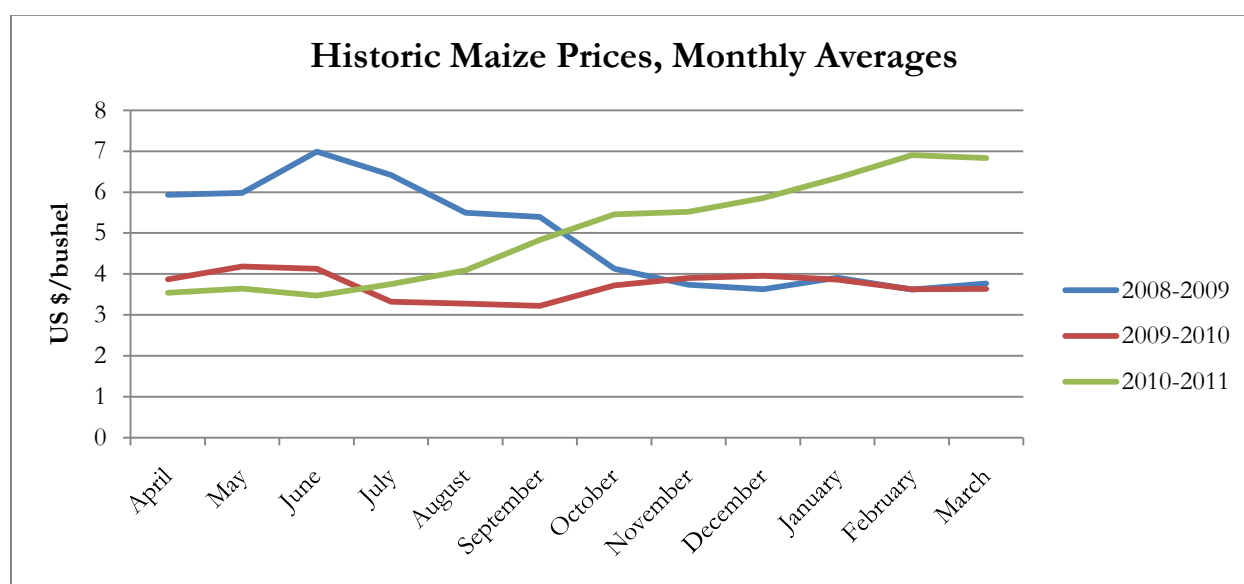


Source: Bloomberg, Chicago Board of Trade (CBOT), wheat futures contracts W K1, W N1, W U1, W Z1, & W H2  
April 27, 2011

## Maize

Maize<sup>11</sup> prices continued to rise through February 2011, then decreased slightly in March. Quarterly average maize prices increased nearly 20% from the fourth quarter of 2010 to the first quarter of 2011, ending at a monthly average of \$6.84 per bushel (\$269.16 per metric tonne) in March. This monthly average is 88% higher than March of the previous year and only 2% below the June 2008 peak.

Maize prices declined during the first half of March due to uncertain demand associated with widespread political unrest and Japan's earthquake.<sup>12</sup> Prices later rebounded, continuing the January and February trend, from increased global corn consumption in China, Brazil, Thailand, and several African countries, rising oil prices, and diminishing stocks.<sup>13,14</sup> In March, corn stocks fell to their lowest level in four years based on record corn usage, especially for ethanol production and feed, for the December 2010 to February 2011 period.<sup>15,16</sup>



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

<sup>11</sup> 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.

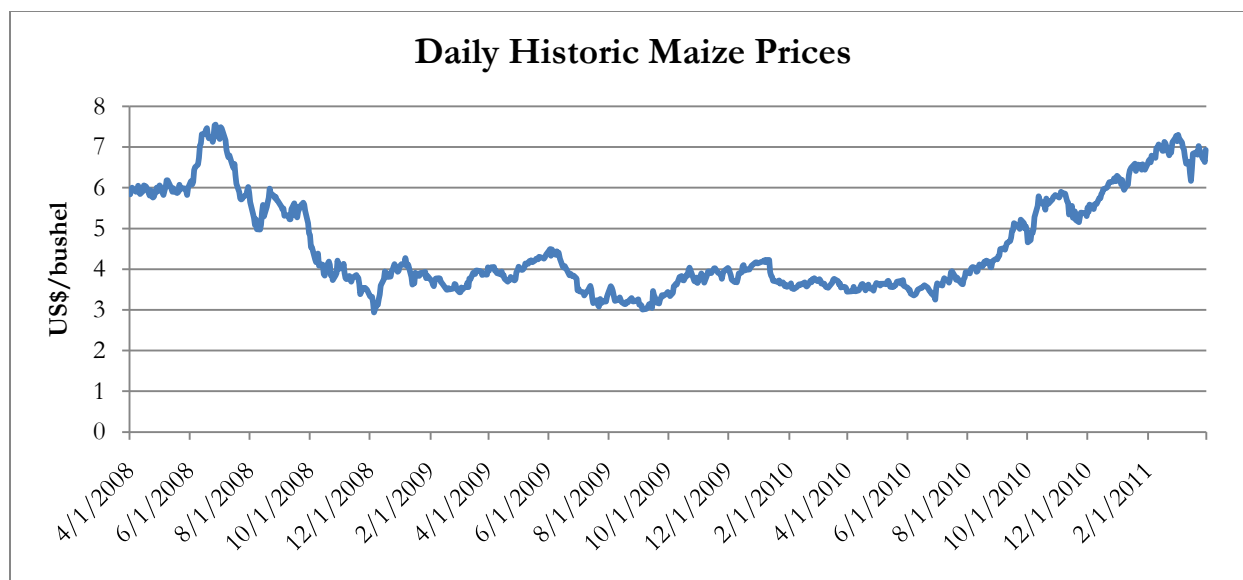
<sup>12</sup> FAO. (2011, March). *Crop Prospects and Food Situation* (No. 1).

<sup>13</sup> USDA. (2011, April 8). *World Agricultural Supply and Demand Estimates* (WASDE - 493).

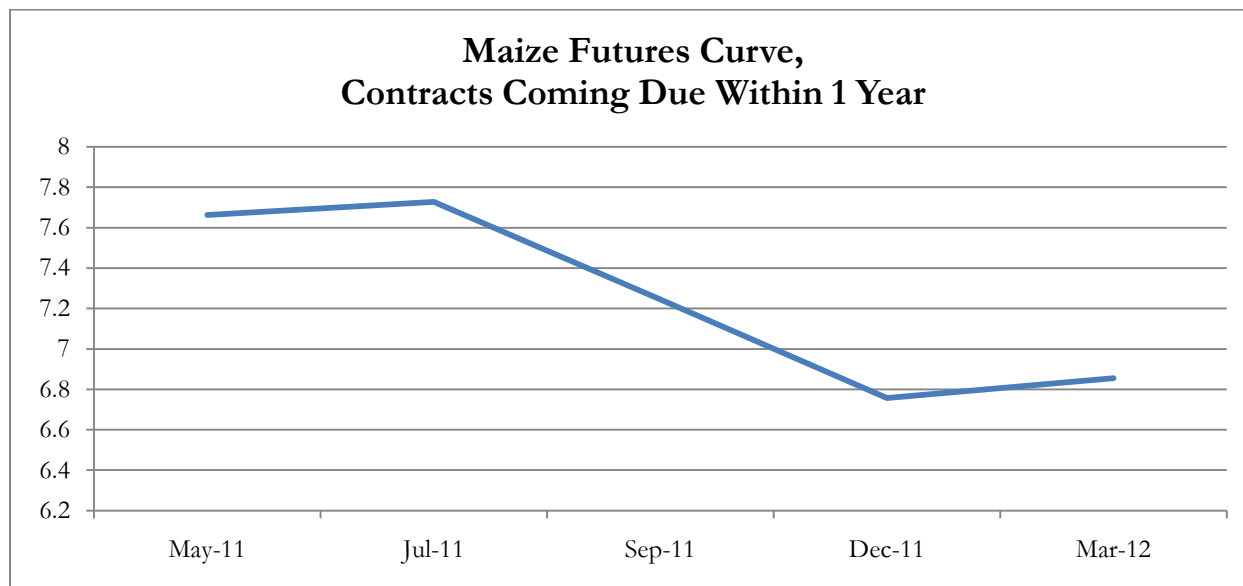
<sup>14</sup> FAO. (2011, April 7). *Global Food Price Monitor*.

<sup>15</sup> McFerron, Whitney. (2011, April 4). "Corn prices jump to 33-month high on shrinking U.S. supply; soybeans drop." *Bloomberg*. Retrieved from <http://www.bloomberg.com/news/2011-04-04/corn-rises-to-highest-since-2008-on-shrinking-u-s-reserves-soybeans-drop.html>

<sup>16</sup> O'Brien, Daniel. (2011, April 7). "Grain stocks report impacts in 2011 market prospects". Retrieved from [http://www.agmanager.info/marketing/outlook/newletters/archives/GRAIN-OUTLOOK\\_04-07-11.pdf](http://www.agmanager.info/marketing/outlook/newletters/archives/GRAIN-OUTLOOK_04-07-11.pdf)



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

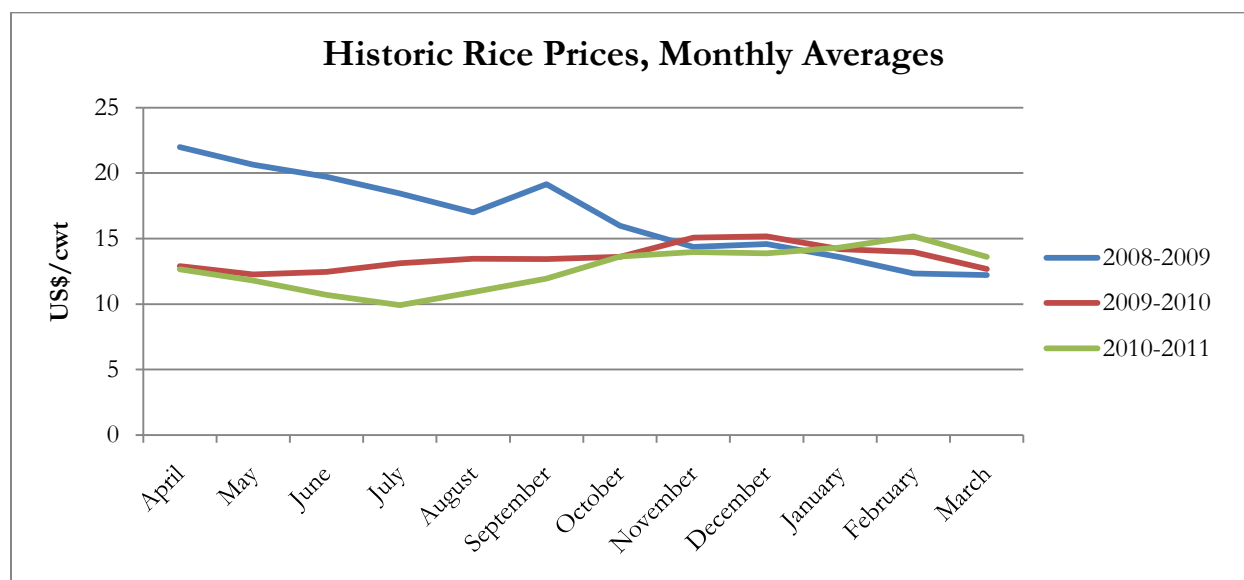


Source: Bloomberg, Chicago Board of Trade (CBOT), corn futures contracts C K1, C N1, C U1, C Z1, & C H2  
April 27, 2011

## Rice

Rice prices rose through February 2011 before falling in March to levels seen in October 2010. Quarterly average rice prices increased 3.8% from the fourth quarter of 2010 to first quarter 2011, ending at a monthly average of \$13.60 per cwt in March. This is 7% higher than the previous year but significantly (38%) below the April 2008 peak. Ample supplies have spared rice from the rally in prices characterizing the market for other staple grains.<sup>17</sup>

Rice prices were the only grain not subject to the volatility of cereal prices this quarter. As one FAO expert said, “rice is the commodity which is separating us from a food crisis.”<sup>18</sup> While rice plantings are expected to drop, global production is still expected to exceed last year’s production by more than 2% due to increased production in Madagascar, Brazil, and Colombia.<sup>19,20</sup> Based on increased production and sluggish demand, global ending stocks are expected to increase to their highest level since 2002 – 2003, despite the earthquake in Japan.<sup>21,22,23</sup>



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

<sup>17</sup> Thukral, N. (2011, January 7). “Analysis: Ample supply spares rice from food price squeeze.” *Reuters*. Available from <http://www.reuters.com/article/idUSTRE70707V20110108>

<sup>18</sup> Ruitenberg, Rudy. (2011, March 3). “World food prices climb to record as UN sounds alarm on further shortages.” *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-03-03/world-food-prices-climb-to-record-as-un-sounds-alarm-on-further-shortages.html>

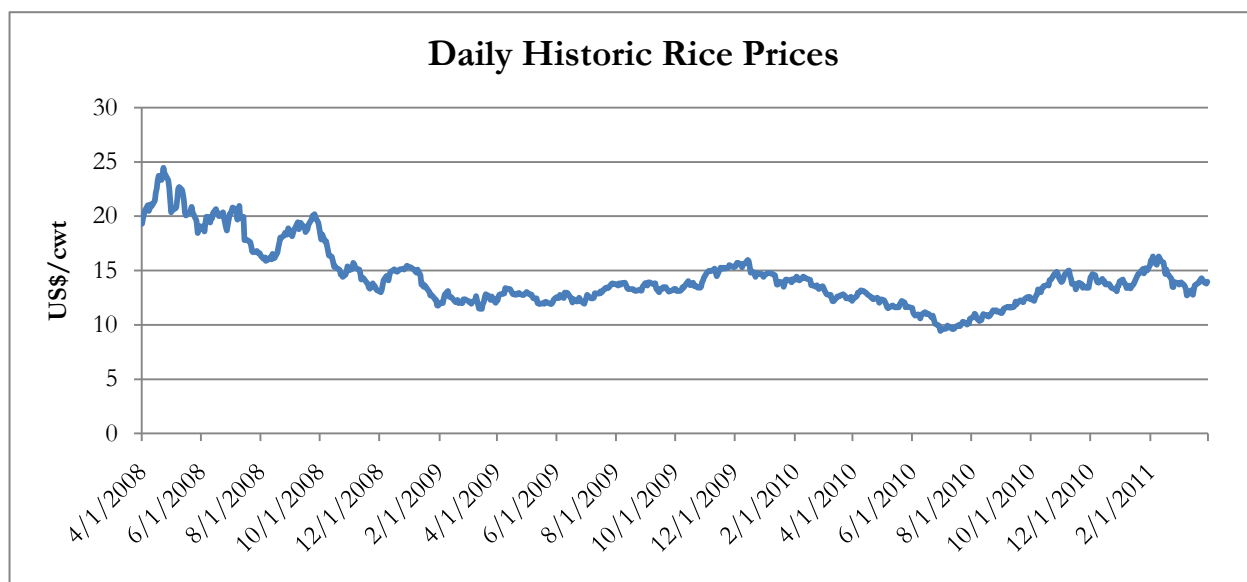
<sup>19</sup> McFerron, Whitney. (2011, January 31). “Rice rebounds from two-year drop as U.S. crop shrinks”. *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-01-30/rice-rebounding-from-two-year-drop-as-u-s-crop-falls-to-lowest-since-1989.html>

<sup>20</sup> Baldwin K., and Childs, N. (2011, April 11). *Rice Outlook* (RCS-11d). Retrieved from...

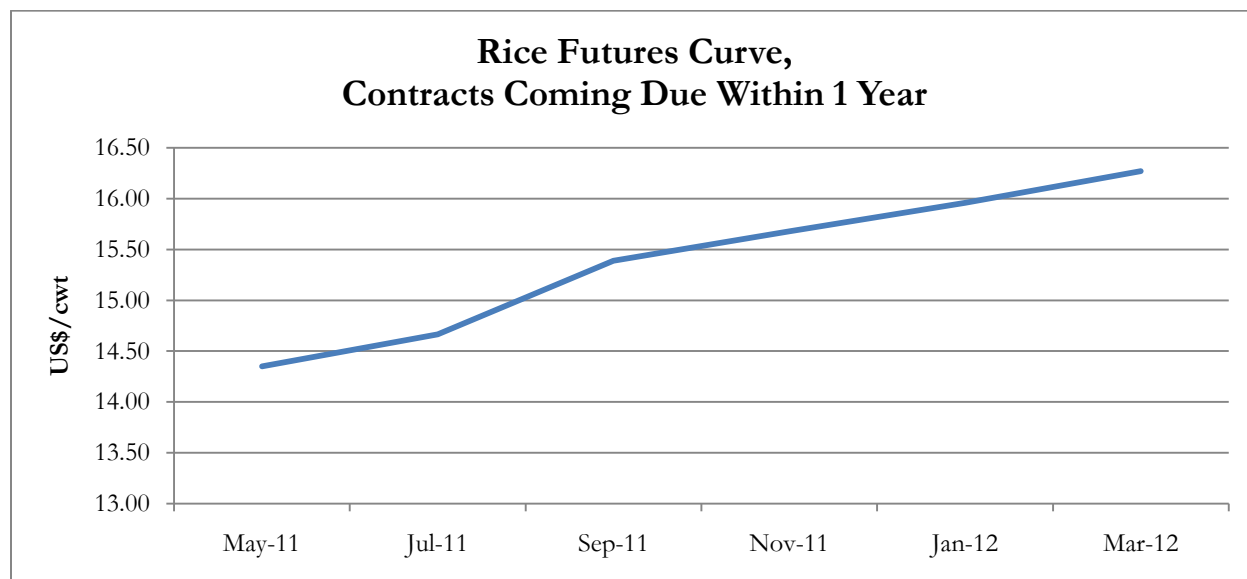
<sup>21</sup> Suwannajki, S. and Javier, L. (2011, March 15). “Rice may extend decline, limiting food costs, UN’s Calpe says”. *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-03-15/rice-may-extend-decline-limiting-food-costs-un-s-calpe-says.html>

<sup>22</sup> USDA. (2011, April 8). *World Agricultural Supply and Demand Estimates* (WASDE – 493).

<sup>23</sup> FAO. (2011, March). *Crop Prospects and Food Situation* (No. 1).



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

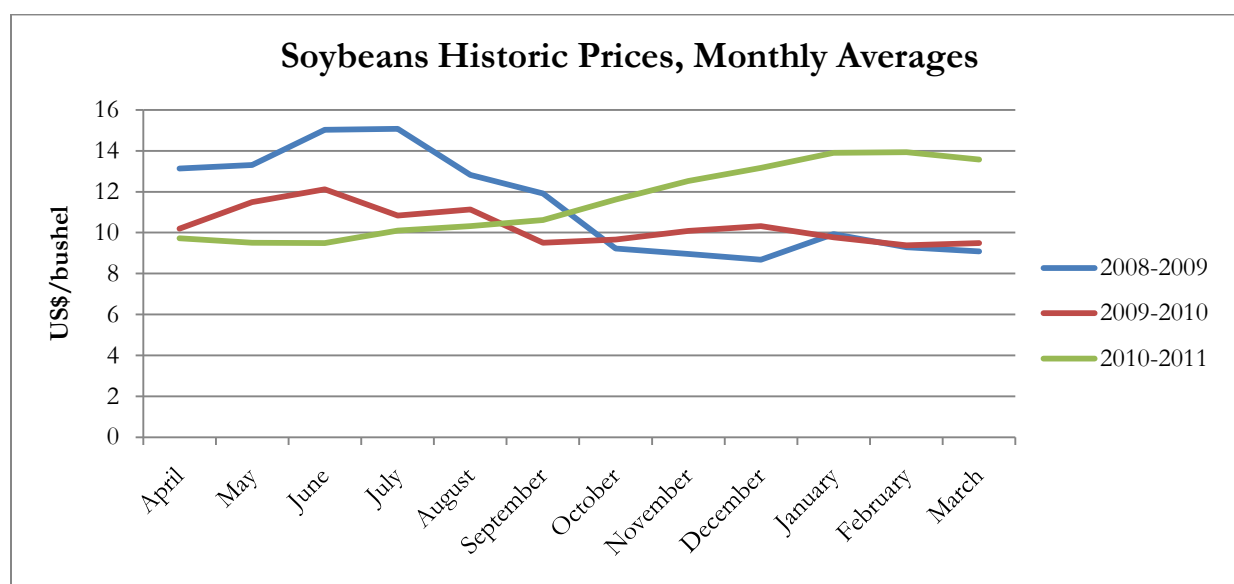


Source: Bloomberg, Chicago Board of Trade (CBOT), rice futures contracts RRK1, RRN1, RRU1, RRX1, RRF2, & RRH2 April 27, 2011

## Soybeans

Soybean prices continued to rise through February 2011 before falling in March. Quarterly average soybean prices increased 11% from the fourth quarter of 2010 to the first quarter of 2011. The March monthly average of \$13.57 per bushel (\$498.56 per metric tonne) is 42.9% higher than the previous year. This average remains one of the highest over the past three years, but still 10% below the peak seen in July 2008.

Soybean's eight-month rally in prices came to an end this quarter. Despite U.S. farmers shifting to maize and wheat and sowing the fewest acres of soybean in the past three years, record high global soybean output is forecast for 2010 to 2011.<sup>24,25,26</sup> China alone will account for all of 2011's increase in global supply and almost 60% of the global total.<sup>27</sup> Record soybean yields in Brazil coupled with increased production in Paraguay also put downward pressure on the soybean market.<sup>28</sup> This increase in yields is likely to push global stocks to a four-year high.<sup>29</sup>



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

<sup>24</sup> Dreibus, Tony. (2011, March 10). "Soybeans extend worst losing streak in 10-months on global supply forecast." *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-03-10/soybeans-extend-worst-losing-streak-in-10-months-on-global-supply-forecast.html>

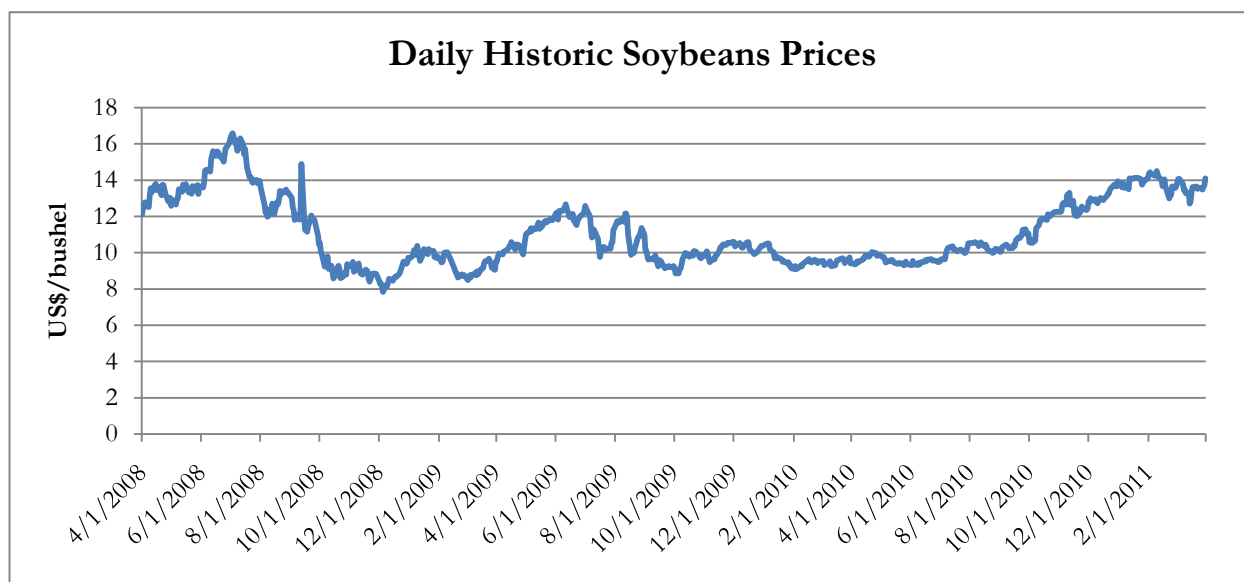
<sup>25</sup> Wilson, Jeff. (2011, April 11). "China meat binge fuels Iowa-sized soy imports on shortage". *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-04-10/china-meat-binge-fuels-iowa-sized-soybean-imports-to-feed-689-million-pigs.html>

<sup>26</sup> Ash, M. (2011, April 11). *Oilcrops Outlook* (OCS-11d). Retrieved from <http://usda.mannlib.cornell.edu/usda/current/OCS/OCS-04-11-2011.pdf>

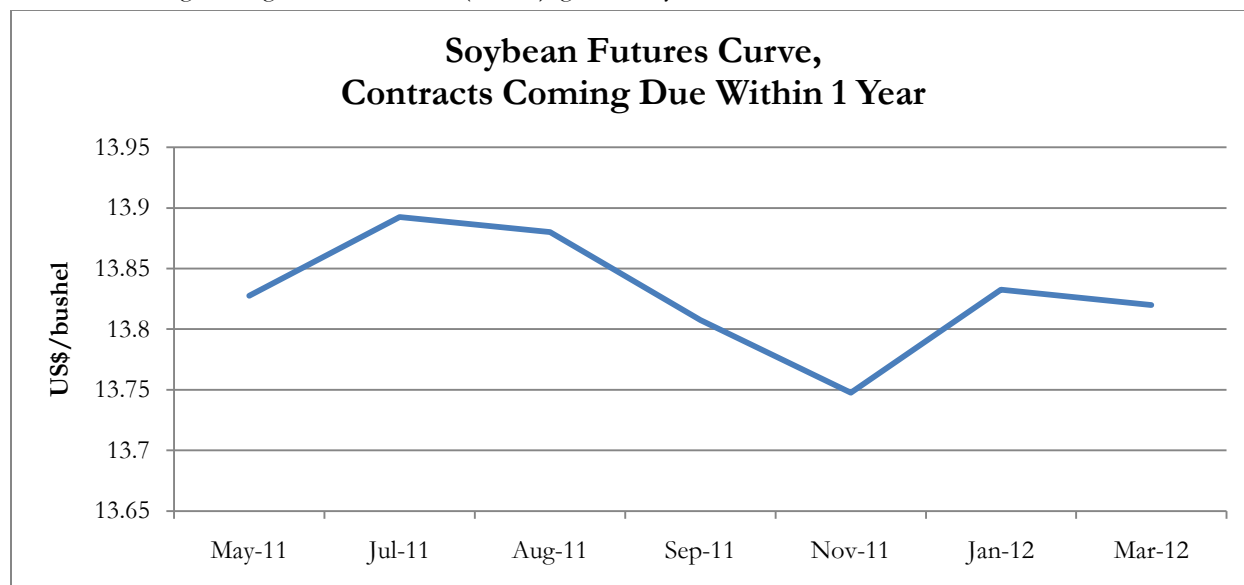
<sup>27</sup> Wilson, Jeff. (2011, April 11). "China meat binge fuels Iowa-sized soy imports on shortage".

<sup>28</sup> USDA. (2011, April 8). *World Agricultural Supply and Demand Estimates* (WASDE – 493).

<sup>29</sup> Ash, M. (2011, April 11). *Oilcrops Outlook* (OCS-11d).



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



Source: Bloomberg, Chicago Board of Trade (CBOT), soybean futures contracts S K1, S N1, S Q1, S U1, S X1, S F2, S H2 April 27, 2011

## Other Softs<sup>30</sup>

---

### Cocoa

Cocoa prices increased through February 2011 before falling slightly in March. The first quarter average increased 15.7% from fourth quarter 2010. The monthly average price was \$3,371.74 per metric tonne in March, 17.8% higher than the previous year. Cocoa rose to its highest level since 1979 based on the export ban associated with conflict in Côte d'Ivoire.<sup>31</sup> However, prices began to decrease in March as the internationally recognized election winner began to take control of the situation.<sup>32</sup> Côte d'Ivoire's crop is projected to be 6.7% higher this season, and the market expects to experience strong downward pressure on prices when the conflict is resolved.<sup>33</sup>

According to the International Cocoa Organization, world production is forecast to increase 8% in the 2010 – 2011 season from the previous year, with only a 2.8% increase in world grindings accounting for a 7.2% increase in global ending stocks.<sup>34</sup> Growth in consumer demand has also been supporting cocoa prices, and is projected to continue. Production is also expected to increase in 2011, particularly in Ghana and Côte d'Ivoire, offsetting projected declines in Indonesia.<sup>35</sup>

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 subject to changes in the relative valuation of the US dollar and British pound since it is linked to both currencies, though in general prices on the two exchanges track one another.<sup>36</sup>

---

<sup>30</sup> 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.

<sup>31</sup> ICCO. (2011 March). “Cocoa Market Review”. *International Cocoa Organization*. Available from <http://www.icco.org/statistics/monthlyreview.aspx>

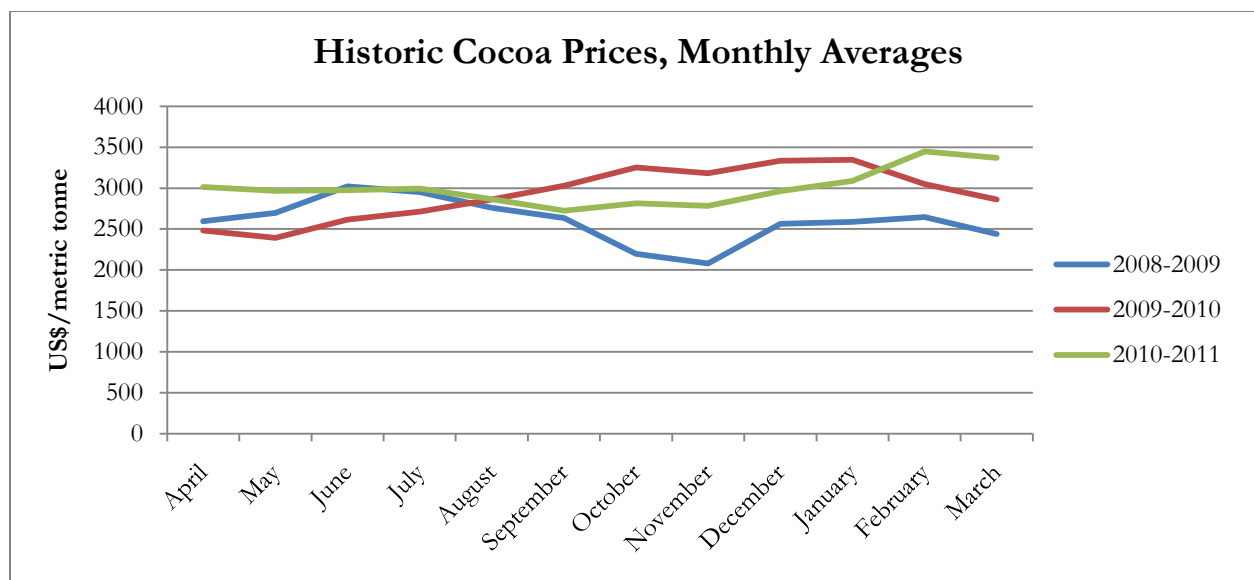
<sup>32</sup> Almeida, Isis. (2011, April 4). “Cocoa seen dropping 12 once fight for Ivory Coast power ends.” *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-04-04/cocoa-seen-dropping-12-once-fight-for-ivory-coast-power-ends.html>

<sup>33</sup> Almeida, Isis. (2011, March 28). “Cocoa may gain as Ivory Coast unrest heightens shortage risk; coffee falls.” *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-03-28/cocoa-may-climb-in-london-as-unrest-heightens-risk-of-shortage.html>

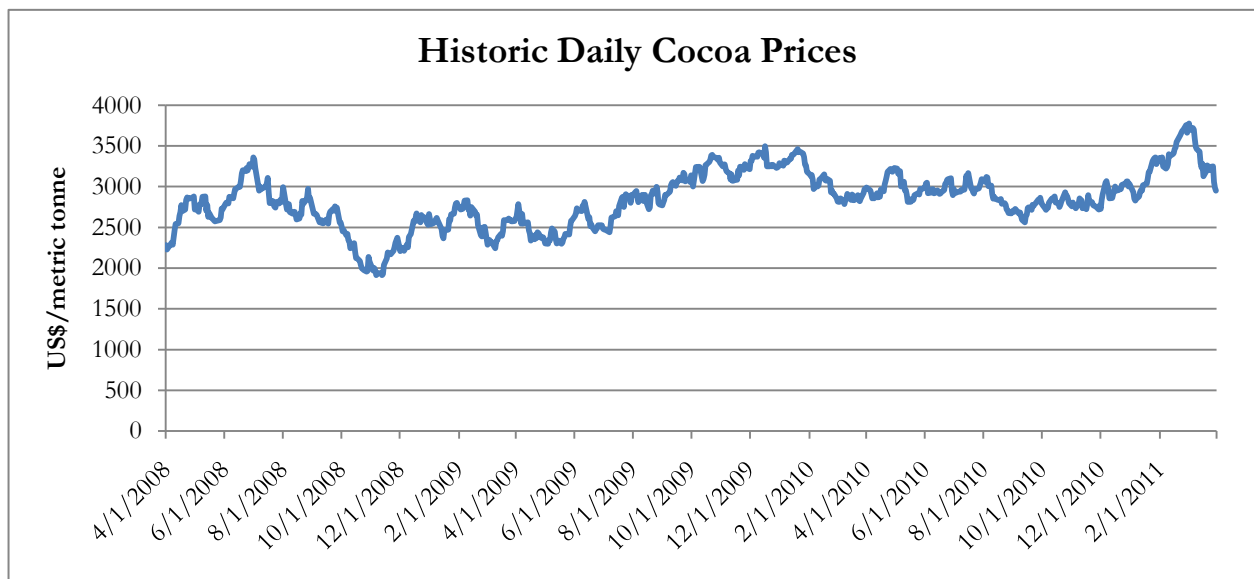
<sup>34</sup> ICCO. (2011). *Latest Quarterly Bulletin of Cocoa Statistics* [Press Release]. Available from <http://www.icco.org/about/press2.aspx?Id=0cn13971>

<sup>35</sup> ICCO. (2011 March). “Cocoa Market Review”. *International Cocoa Organization*. Available from <http://www.icco.org/statistics/monthlyreview.aspx>

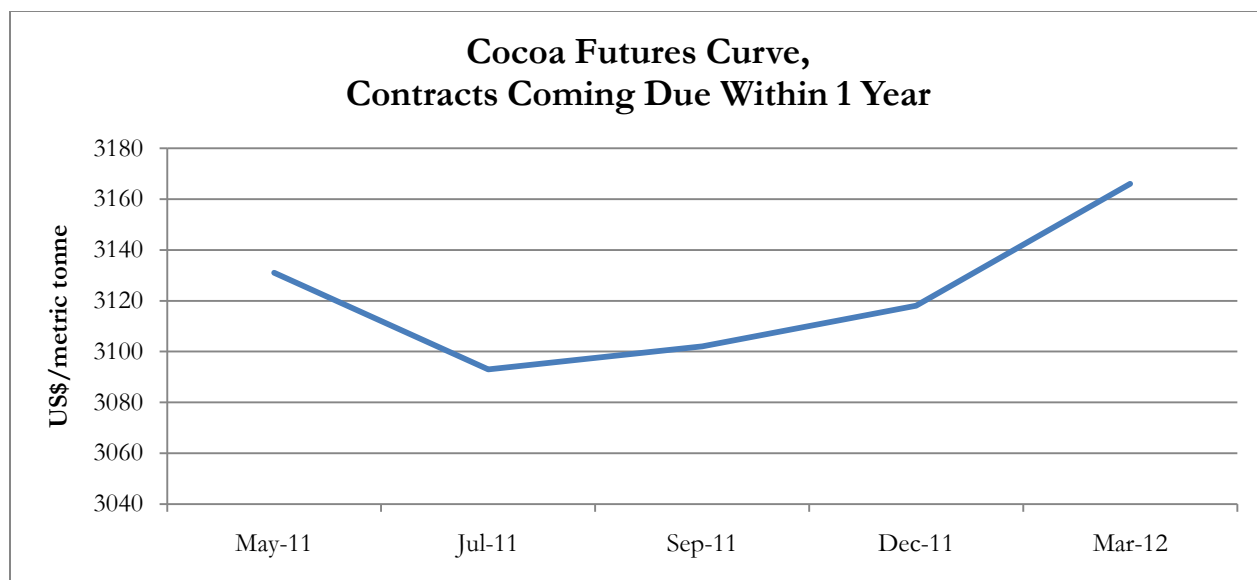
<sup>36</sup> World Cocoa Foundation. (2010, May). *Cocoa Market Update*. Retrieved from <http://www.worldcocoafoundation.org/learn-about-cocoa/documents/CocoaMarketUpdateasof5.18.10.pdf>



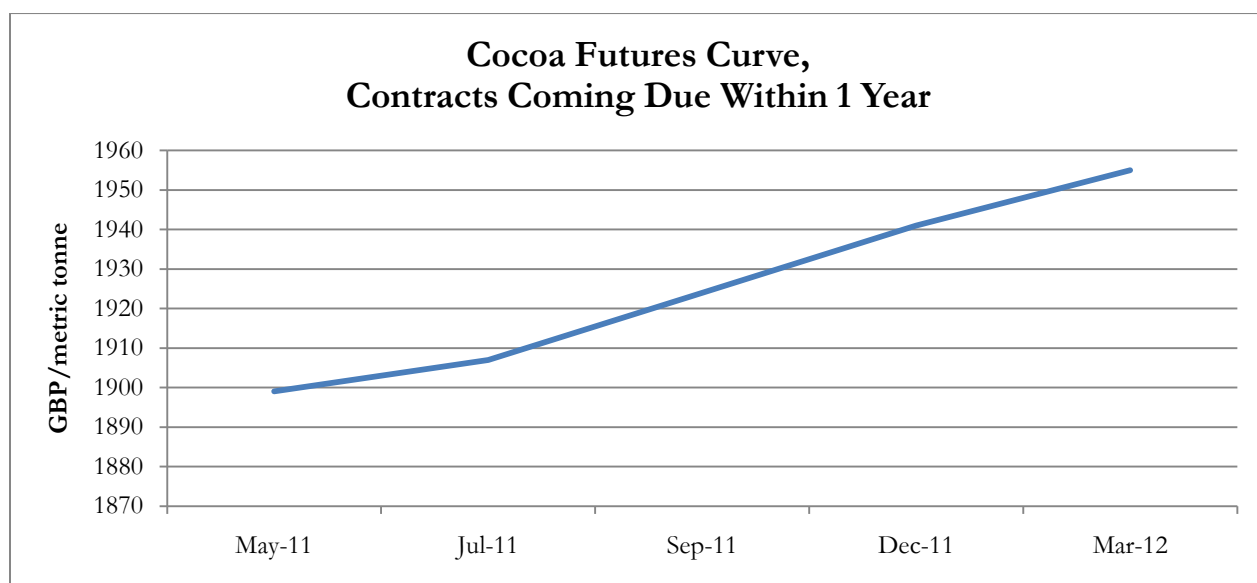
Source: Bloomberg, New York Board of Trade ICE, generic cocoa futures contract CC1



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



*Source:* Bloomberg, New York Board of Trade ICE, cocoa futures contracts CCK1, CCN1, CCU1, CCZ1, & CCH2  
April 27, 2011

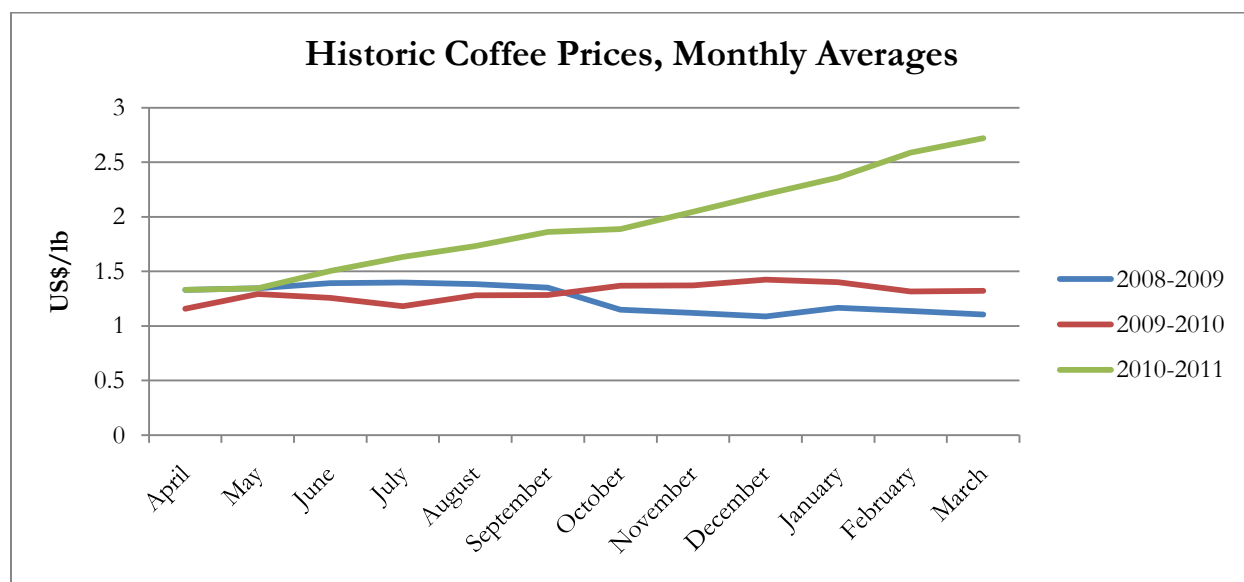


*Source:* Bloomberg, London Liffe Exchange, cocoa futures contracts QCK1, QCN1, QCU1, QCZ1, & QCH2  
April 27, 2011

## Coffee

Coffee prices continued a steep rising trend in the first quarter of 2011, with a quarterly average up 24.9% from the previous quarter. The monthly average price was \$272.07 in December, nearly 106% higher than the monthly average one year ago. The first quarter of 2011 recorded the highest quarterly average in the past three years.

La Niña weather patterns have negatively impacted production in the Asia and Oceania regions, particularly Indonesia, and are expected to similarly impact East Africa.<sup>37</sup> Additionally, production in Brazil is projected to fall 13% this season.<sup>38</sup> Global consumption continues to grow, up 2.4% from last year, particularly in developing markets. Global stocks continue to fall, and prospects for rebuilding are low.<sup>39</sup>

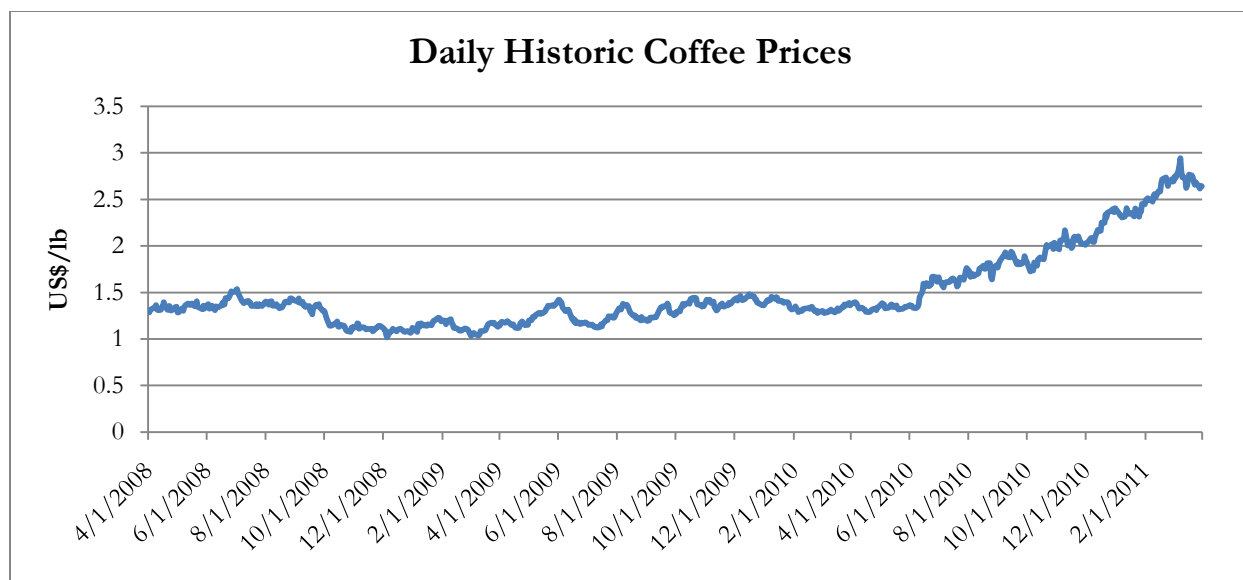


Source: Bloomberg, New York Board of Trade ICE, generic coffee futures contract KC1

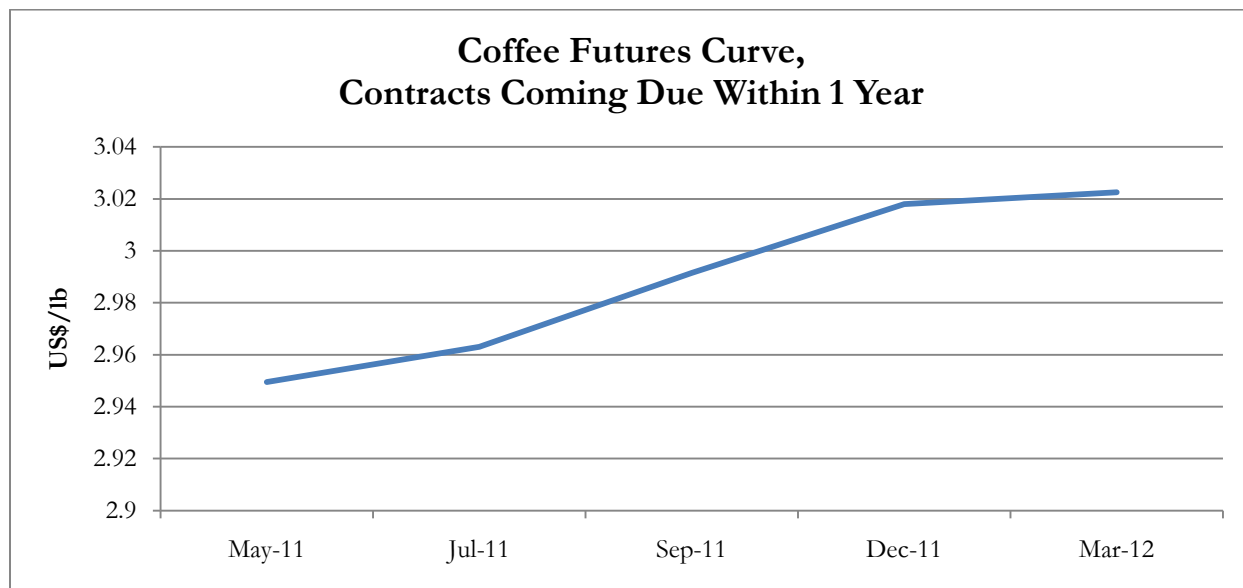
<sup>37</sup> International Coffee Organization. (2011, March). *Coffee Market Report*. Retrieved from <http://dev.ico.org/documents/cmr-0311-e.pdf>

<sup>38</sup> Almeida, Isis. (2011, April 7). "Coffee rises as export shipments may start to slow; sugar climbs." *Bloomberg*. <http://www.bloomberg.com/news/2011-04-07/coffee-rises-as-export-shipments-may-start-to-slow-sugar-climbs.html>

<sup>39</sup> International Coffee Organization. (2011, March). *Coffee Market Report*.



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

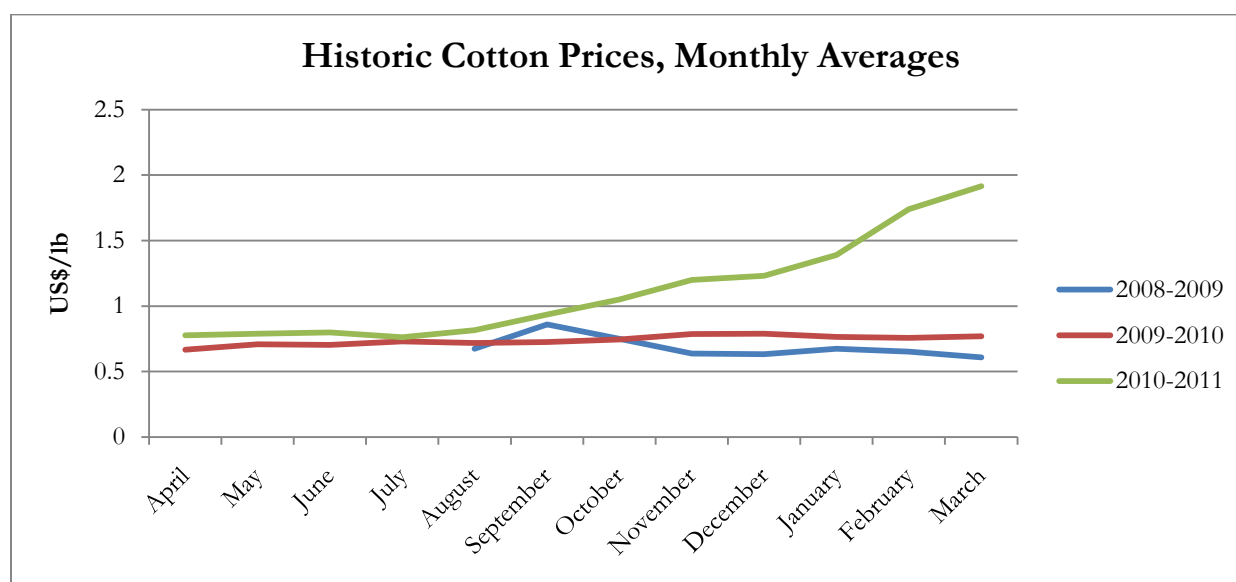


Source: Bloomberg, New York Board of Trade ICE, coffee futures contracts KCK1, KCN1, KCU1, KCZ1, KCH2  
April 27, 2011

## Cotton

Cotton prices continued their steep rise throughout the first quarter of 2011. The quarterly average was up 44.9% from the previous quarter, with a monthly average of \$1.91 per pound in March nearly 149% higher than the March 2010 average. Cotton prices over the past quarter were the highest ever recorded as noted in October 2010.<sup>40</sup>

Rising consumption and tightening stocks support record highs in the cotton market. Global and U.S. cotton producers are increasing cotton plantings in response to the higher prices. Record high production is anticipated in Australia and Brazil, with decreases only expected in China and Pakistan due to unfavorable weather.<sup>41</sup> However, world cotton consumption is expected to outpace production. 2010 – 2011 consumption is projected to be the fourth highest on record, despite record high prices.<sup>42</sup> Additionally, USDA forecasts higher mill use, further depleting stocks.<sup>43</sup> U.S. cotton stocks have reached lows unseen since the 1920s, and the smallest stocks to consumption ratio since 1993 – 1994.<sup>44,45</sup>



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

<sup>40</sup> 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>

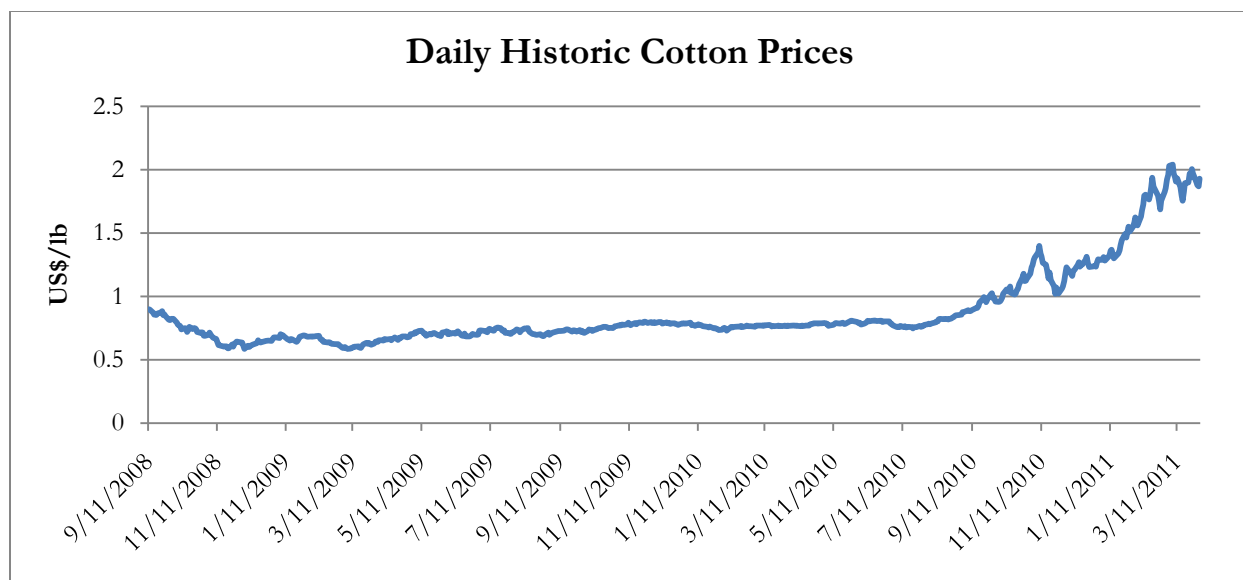
<sup>41</sup> Meyer, L., MacDonald, S. & Kiawu, J. (2011, April 11). *Cotton and Wool Outlook* (CWS-11b). Retrieved from <http://usda.mannlib.cornell.edu/usda/current/CWS/CWS-04-11-2011.pdf>

<sup>42</sup> Meyer, L., MacDonald, S. & Kiawu, J. (2011, April 11). *Cotton and Wool Outlook* (CWS-11b).

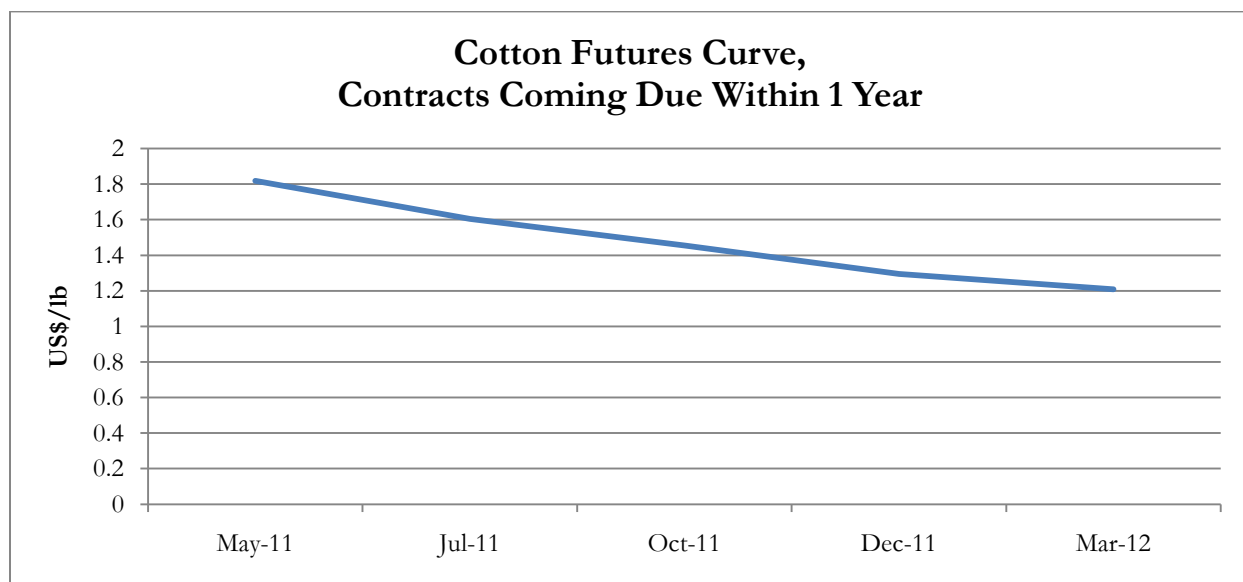
<sup>43</sup> USDA. (2011, April 8). *World Agricultural Supply and Demand Estimates* (WASDE – 493).

<sup>44</sup> Meyer, L., MacDonald, S. & Kiawu, J. (2011, April 11). *Cotton and Wool Outlook* (CWS-11b).

<sup>45</sup> USDA. (2011, April 8). *World Agricultural Supply and Demand Estimates* (WASDE – 493).



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

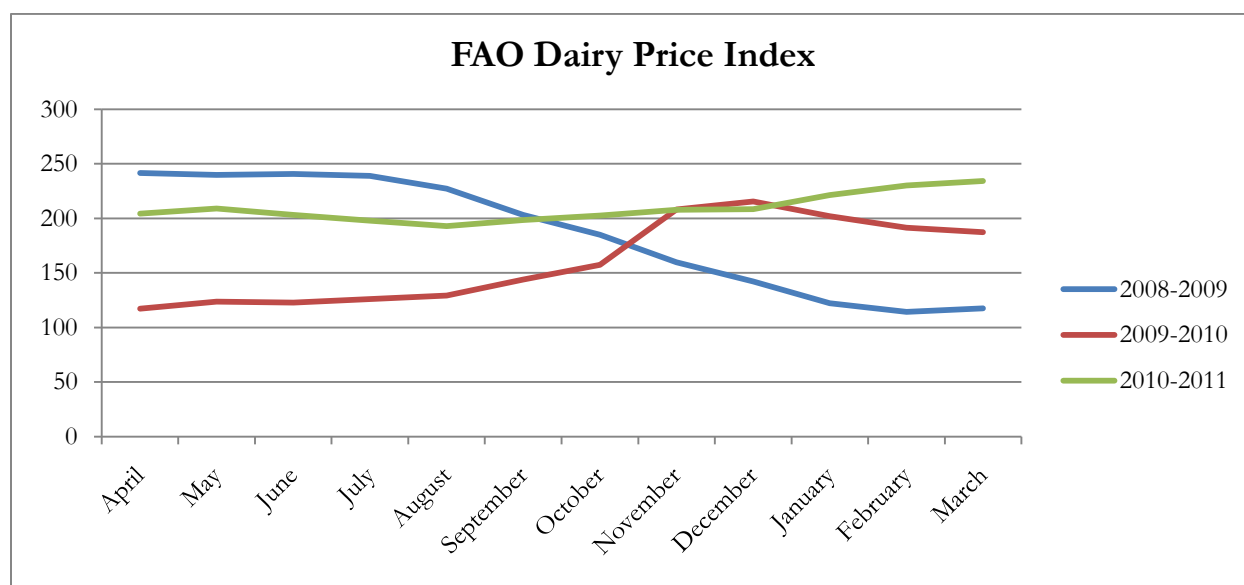


Source: Bloomberg, New York Board of Trade – ICE Futures Softs, cotton futures contracts CTK1, CTN1, CTV1, CTZ1, & CTH2 April 27, 2011

## Dairy

The FAO dairy price index rose over the first quarter of 2011, with a quarterly average almost 11% above the previous quarter. Milk prices increased to the highest monthly average (\$19.21) since June 2008. The quarterly milk price average was 5% above the previous quarter. The monthly average price in March peaked at \$19.21, at only 5% below the historic June 2008 peak.

The global dairy market rallied throughout the first quarter of 2011 based on increased demand and concerns over supplier countries. Demand from Asian countries remains high, particularly in China and India, and forecasts suggest an increase U.S. demand as well.<sup>46,47</sup> U.S. production has mitigated feed cost increases through increased output per cow, however global production has been dampened by dry weather and the February earthquake in New Zealand.<sup>48,49</sup> Towards the end of the quarter, demand began to drop as high feed costs were passed along to consumers.<sup>50</sup>



Source: FAO

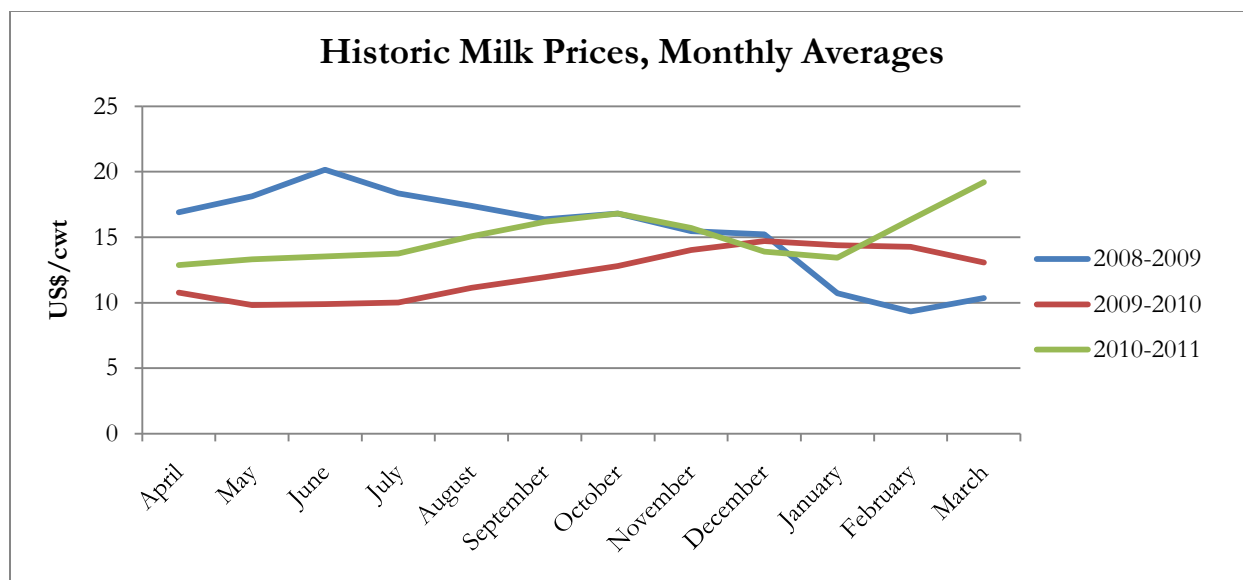
<sup>46</sup> Wilson, Jeff. (2011, March 18). "U.S. milk output rises spurred by higher prices." *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-03-18/u-s-milk-output-rises-2-spurred-by-higher-prices-usda-says.html>

<sup>47</sup> Johnson, R. (2011, April 14). *Livestock, Dairy, and Poultry Outlook* (LDP-M-202). Retrieved from <http://www.ers.usda.gov/publications/ldp/2011/04Apr/ldpm202.pdf>

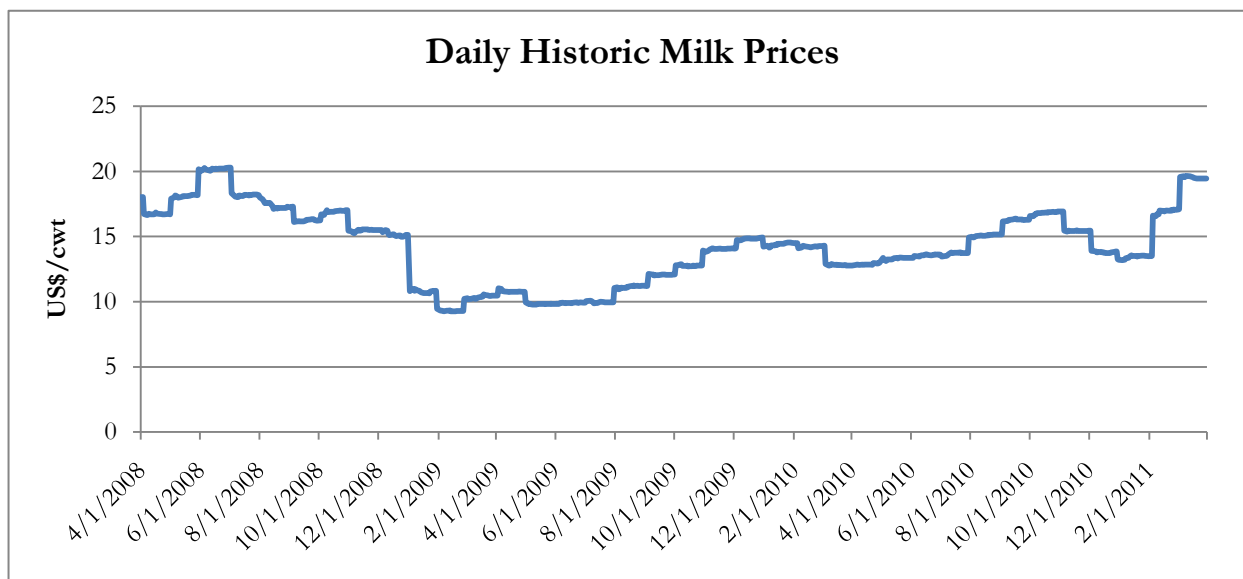
<sup>48</sup> Dunn, Jim. (2011, April 21). "Dairy outlook: Commodity prices high and unstable." *Dairy Herd Network*. Available from <http://www.dairyherd.com/dairy-news/latest/Dairy-Outlook-Commodity-prices-high-and-unstable-120370029.html>

<sup>49</sup> Sedgman, Phoebe. (2011, April 7). "Dairy prices to trade near record on emerging-market demand, Fonterra says." *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-04-08/fonterra-s-ferrier-says-global-dairy-prices-to-remain-near-record-highs.html>

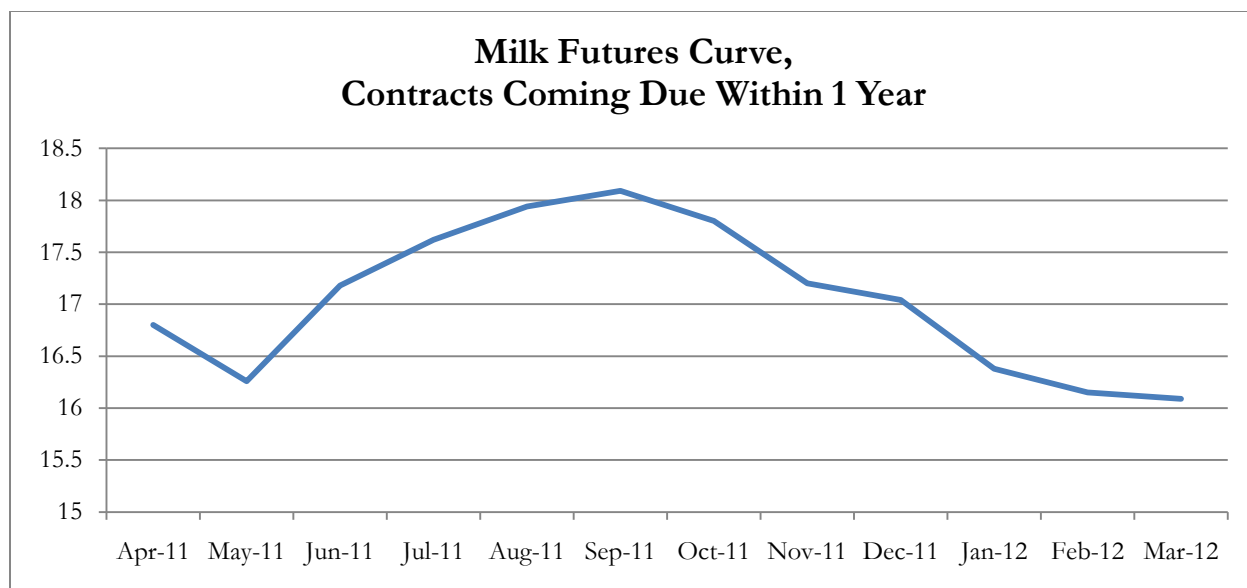
<sup>50</sup> McFerron, W., Campbell, E., and Wilson, J. (2011, March 14). "Milk seen plunging 14% as costliest cheese in quarter century curbs demand." *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-03-13/milk-seen-plunging-14-as-costliest-cheese-in-quarter-century-curbs-demand.html>



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



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



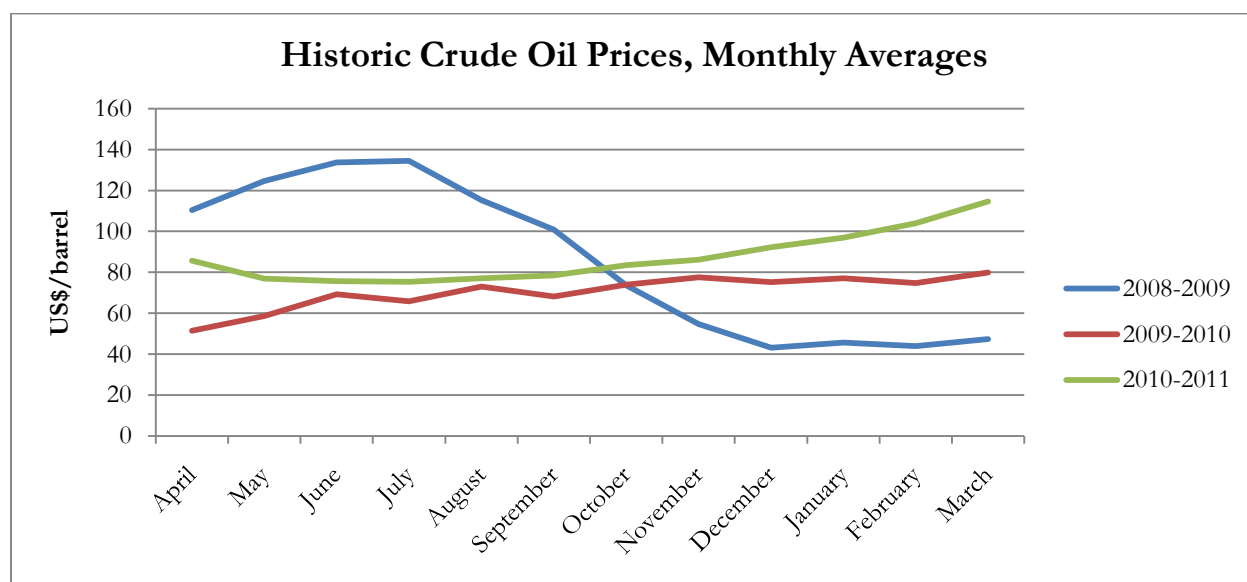
*Source:* Bloomberg, Chicago Mercantile Exchange (CME), milk contracts DAJ1, DAK1, DAM1, DAN1, DAQ1, DAU1, DAV1, DAX1, DAZ1, DAF2, DAG2, & DAH2 April 27, 2011

## Energy

### Crude oil

Crude oil prices continued rising over the first quarter, reaching a monthly average of \$114.67 per barrel in March. This is the highest monthly average since August 2008, ~~though it~~ The March average is still 15% below the most recent peak in July 2008. The quarterly average is nearly 20.5% above the previous quarter and 43.5% higher than March a year ago.

Both increasing demand and decreasing supply contributed to rising oil prices. Global oil output fell in March on a nearly 70% decrease in Libyan crude output. Additional supply risk from other Middle East and North African countries countered increased production from non-OPEC producers and rising inventories in the U.S.<sup>51,52</sup> Increased oil demand for Japanese reconstruction and robust global economic growth are drawing down global stocks.<sup>53,54</sup> Calls are multiplying for OPEC countries to boost production in order to reduce prices.



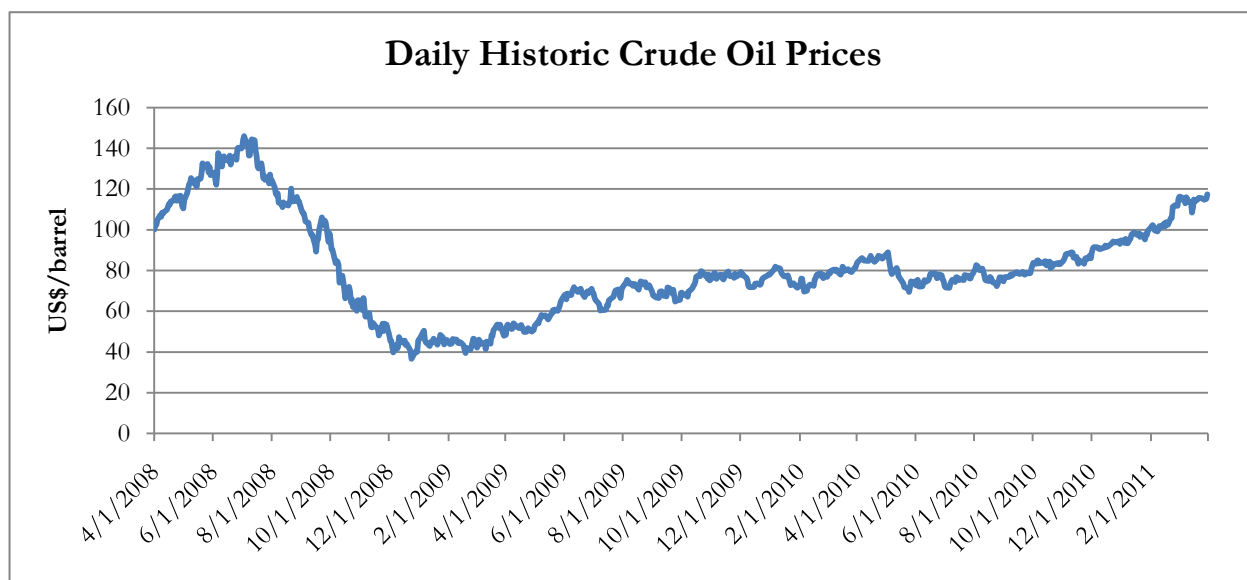
Source: Bloomberg, New York Mercantile Exchange (NYMEX), Brent Crude Oil generic futures contract CO1

<sup>51</sup> International Energy Agency. (2011, April 12). *Oil Market Report: Highlights*. Retrieved from <http://omrpublic.iea.org/currentissues/high.pdf>

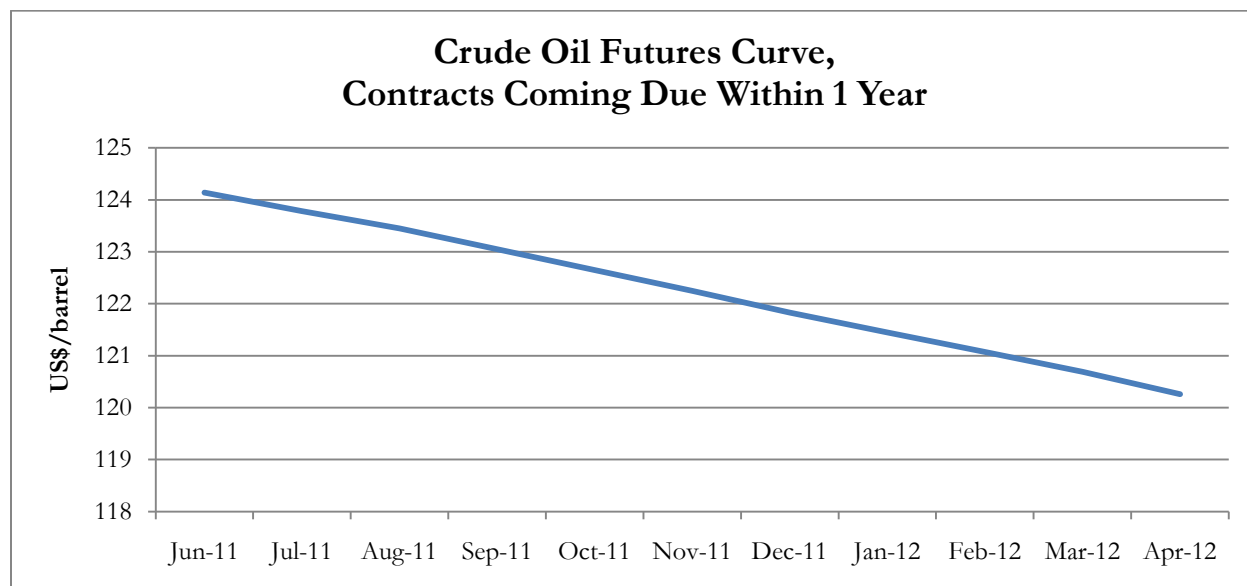
<sup>52</sup> Pin, Yee Kai. (2011, March 30). "Oil heads for third quarterly gain as Libya disruptions counter U.S. glut." *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-03-31/oil-heads-for-third-quarterly-gain-as-libya-disruptions-counter-u-s-glut.html>

<sup>53</sup> Energy Information Administration. (2011, April). *Short-term Energy Outlook*. Retrieved from [http://www.eia.gov/emeu/steo/pub/steo\\_full.pdf](http://www.eia.gov/emeu/steo/pub/steo_full.pdf)

<sup>54</sup> International Energy Agency. (2011, April 12). *Oil Market Report: Highlights*.



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



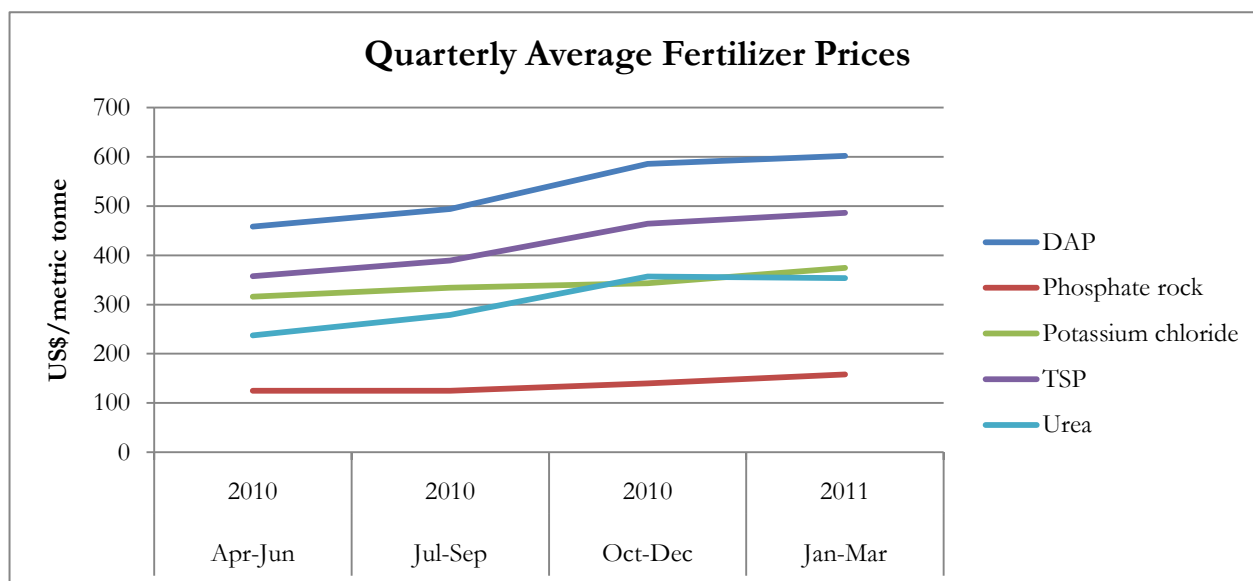
Source: Bloomberg, New York Mercantile Exchange (NYMEX), Brent Crude Oil futures contracts COM1, CON1, COQ1, COU1, COV1, COX1, COZ1, COF2, COG2, COH2, & COJ2 April 27, 2011

## Fertilizer

Monthly average fertilizer prices rose modestly from the fourth quarter of 2010 to the first quarter 2011, with urea falling slightly (1%). Phosphate rock prices led the increase, gaining 13.1%, followed by a 9% increase in potassium chloride. TSP and DAP experienced only small price increases, 4.9% and 2.7% respectively.

The 2011 averages through March are significantly higher than 2010 prices. Phosphate rock experienced the highest increase (28.7%), followed by TSP (27.3%), Urea (22.4%), and DAP (20.2%). Potassium chloride experienced more modest gains of 12.7%. However, these averages remain between 54% and 28% below the peak prices seen in 2008. And though fertilizer costs have risen throughout this year, they have not done so as rapidly as 2010.<sup>55</sup>

The fertilizer market has been particularly supported by the increase in U.S. maize planting, a fertilizer intensive crop.<sup>56</sup> In contrast, a wave of Chinese urea exports in late 2010 raised inventories and put downward pressure on prices.<sup>57</sup>

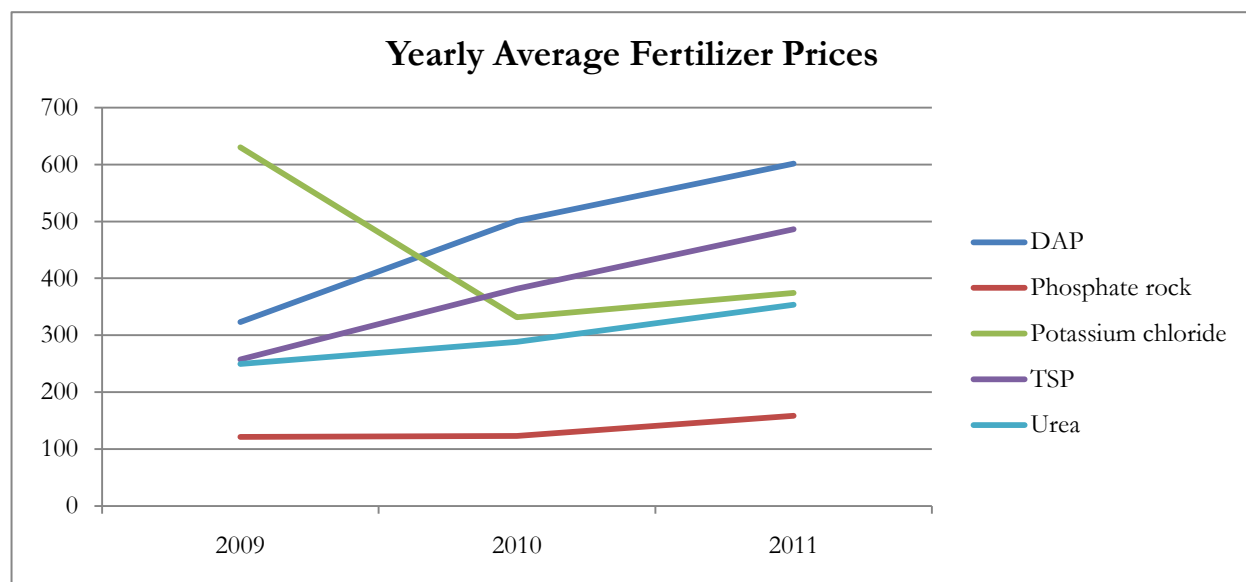


Source: World Bank, Pink Sheet.

<sup>55</sup> Ausick, P. (2011, April 15). "Commodities watch: Fertilizer, food prices could be spiraling; US drought threatens wheat crop; China rejects coal shipments." *Wall Street Journal: Market Watch*. Available from <http://www.marketwatch.com/story/commodities-watch-fertilizer-food-prices-could-be-spiraling-us-drought-threatens-wheat-crop-china-rejects-coal-shipments-syt-mon-mos-gld-slv-2011-04-15>

<sup>56</sup> Toovey, L. (2011, March 16). "Japan quake fails to rattle potash". *Potash Investing News*. Available from <http://potashinvestingnews.com/2637-japan-quake-fails-to-rattle-potash.html>

<sup>57</sup> Klesty, V. (2011, March 31). "Pricey food to fuel fertilizer boom." *Commodities Now*. Available from <http://www.commodities-now.com/news/agriculture-and-softs/5639--pricey-food-to-fuel-fertiliser-boom.html>



Source: World Bank, Pink Sheet; 2011 through March.

## Conclusion

The first quarter of 2011 was characterized by volatility, particularly in cereals, and overall higher global commodity prices.<sup>58</sup> Food prices generally continue the rise seen over the past two quarters, with a minor drop-off resulting from the earthquake and nuclear crisis in Japan. Dairy, cotton, and cereals lead the commodity gains.<sup>59</sup> Stocks generally remain low, while consumption is increasing.<sup>60</sup> Despite some price decreases in March, current futures prices suggest that this rising price trend is likely to continue in the coming months.

*Please direct all comments or questions to Leigh Anderson at [eparx@u.washington.edu](mailto:eparx@u.washington.edu)*

---

<sup>58</sup> FAO. (2011, March). *Crop Prospects and Food Situation* (No. 1). Retrieved from <http://www.fao.org/docrep/013/al977e/al977e00.pdf>

<sup>59</sup> Shumaker, Lisa. (2011, March 31). "Factbox: Most commodities set to post gains in Q1." *Reuters*. Retrieved from <http://in.reuters.com/article/2011/03/31/idINIndia-56008620110331>

<sup>60</sup> FAO. (2011, March). *Crop Prospects and Food Situation* (No. 1). Retrieved from <http://www.fao.org/docrep/013/al977e/al977e00.pdf>

## 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.<sup>61</sup>

### 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.<sup>62,63,64</sup> 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

---

<sup>61</sup> FAO. (2009). *Food Outlook*. Retrieved from <http://www.fao.org/docrep/012/ak341e/ak341e00.htm>.

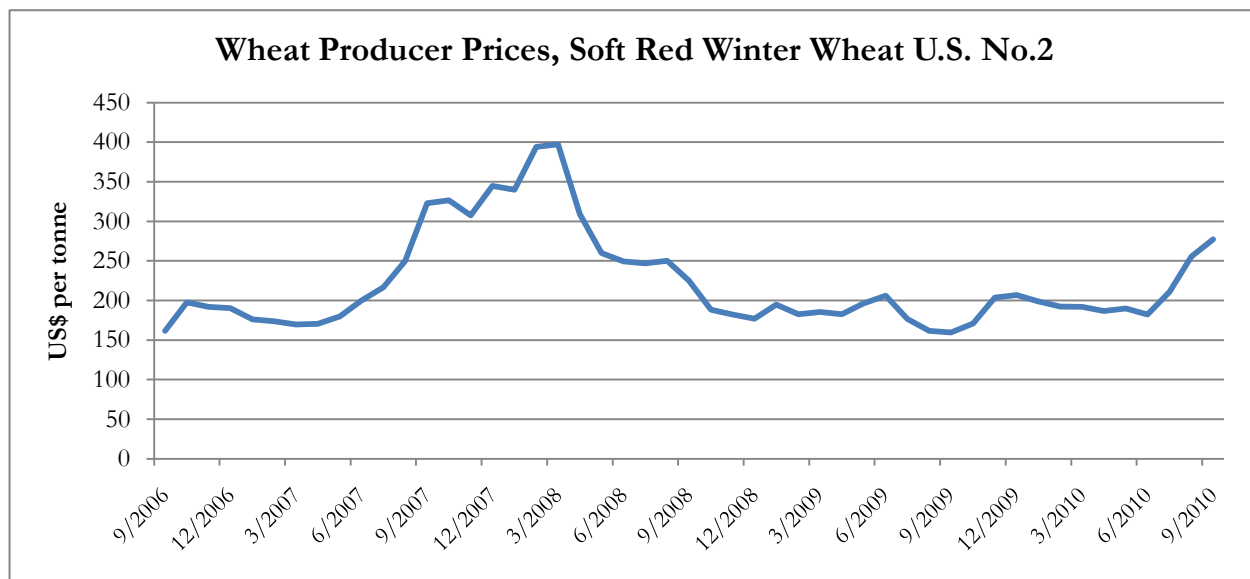
<sup>62</sup> Sarris, A. (2009, July). *International Farm Policy Challenges to 2050* [Presentation, IFAP Commodity Conference]. Retrieved from <http://www.ifap.org/en/newsroom/documents/InternationalFarmPolicyChanges2050.pdf>

<sup>63</sup> 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>

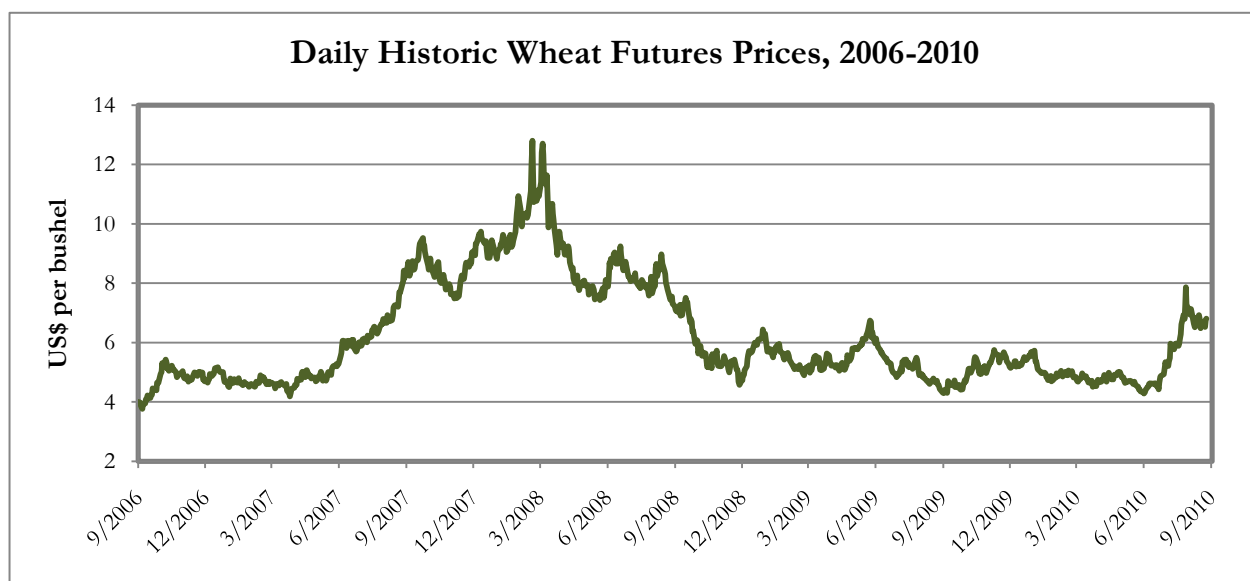
<sup>64</sup> FAO (2009). *The State of Agricultural Commodity Markets, High food prices and the food crisis – experiences and lessons learned*. Retrieved from <ftp://ftp.fao.org/docrep/fao/012/i0854e/i0854e.pdf>

## 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