



## Quarterly Commodity Price Update: Fourth Quarter 2011

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### Executive Summary

This report presents data on selected agricultural commodities for the fourth quarter of 2011 (October through December). 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:<sup>1</sup>

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.

This report provides new sections on a series of priority crops including: sorghum, millet, cowpeas, chickpeas, beans, groundnuts, cassava, sweet potato, yams, goats, chickens, and cattle. In most cases, data for these items came from local markets as accepted global commodity contracts do not exist for these commodities. Subsequently, they may not represent global trends. However, they may more accurately represent the prices faced by smallholder producers and consumers, at least in that region.

Highlights of the report include:

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<sup>1</sup> No futures data exist for several commodities (millet, groundnuts, cowpeas, beans, cassava, sweet potatoes, chickens and goats). Sorghum, yams, and fertilizer only include average monthly prices. The US dollar value chart in *Appendix 2* shows only daily values.

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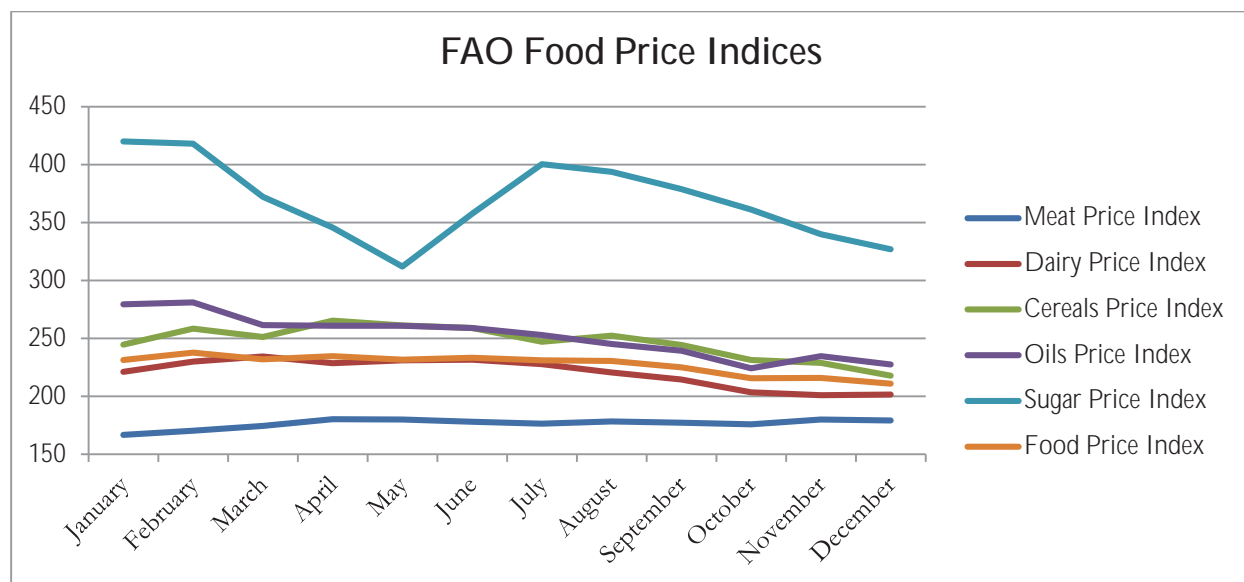
NOTE: The findings and conclusions contained within this material are those of the authors and do not necessarily reflect positions or policies of the Bill & Melinda Gates Foundation.

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- The FAO Food Price Index fell 6% from the third to the fourth quarter on bumper cereal crops and a strengthening US dollar. Nonetheless, the annual food price index still shows 2011 as having the highest prices since the index's inception in 1990.
- Wheat markets reported significant increases in harvests globally, leading to the second-highest global stocks on record and falling prices.
- Maize prices mostly fell during the quarter as bumper crops in China, Argentina, and Sub-Saharan Africa increased global supply.
- Rice prices fell throughout the quarter as a number of countries reported bumper crops, leading to the fifth consecutive annual increase in global stocks.
- Soybean prices continued to fall in response to declining demand as consumers substituted away to cheaper options.
- Sorghum and millet both experienced slight price declines throughout the quarter.
- Cocoa prices continued to fall with consistently high West African production.
- After initial supply fears associated with bad weather in Central America led to coffee price increases, prices fell on reports of favorable production in Africa.
- Legume prices were mixed, as cowpeas and groundnut prices rose throughout the quarter, beans experienced little change throughout the quarter, and chickpeas rose initially before falling.
- Sweet potato and cassava prices began declining this quarter, while yam prices continued to grow steadily.
- Dairy prices have fallen as global supply has increased steadily during the quarter.
- Livestock prices were mixed, with cattle falling, while both goats and chickens increased through the final two months of the quarter.
- Crude oil prices underwent significant volatility as they followed the EU debt drama. Demand has slowed down, while supply has increased slightly.
- Fertilizer prices experienced a slowdown, with steep price falls in phosphate-based fertilizers, as farmers wait to replenish their inventories.

## FAO Food Price Index

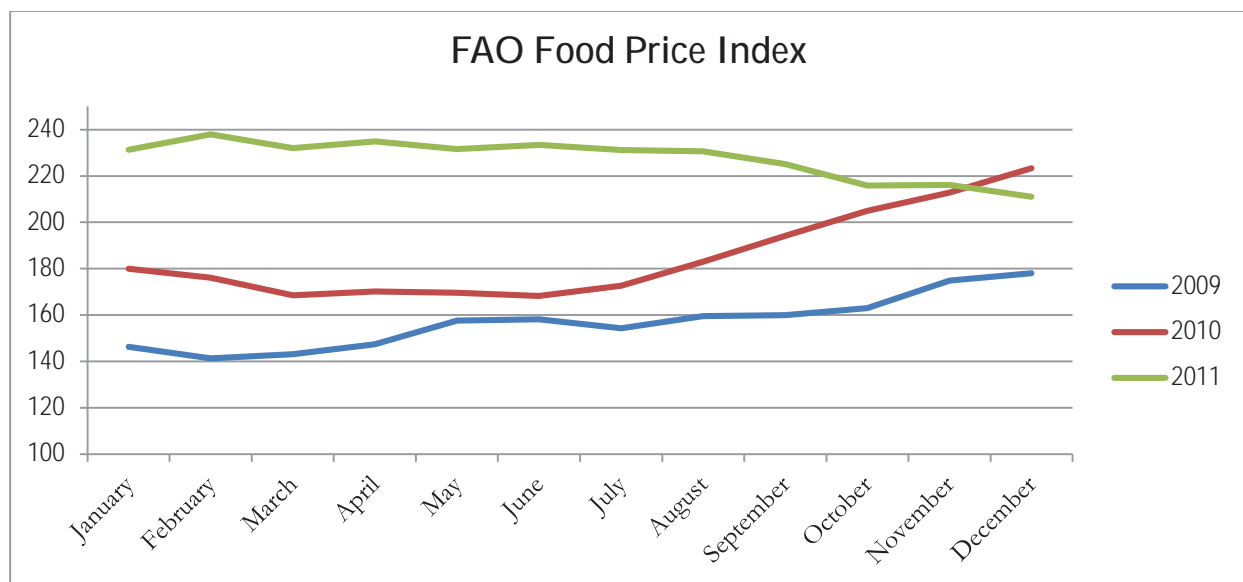
The FAO Food Price Index is a composite measure of changes in average food prices over time.<sup>2</sup> It consists of an average of the five commodity group indices (meat, dairy, cereals, oils, and sugar) weighted by global export shares. The composite food price index continued falling with a 6% decrease from the previous quarter. This drop stems largely from drops in cereals, sugar, and oils indices as these commodities experienced bumper crops. Additionally, the strengthening US dollar pushed commodity prices down. While the food price index ended below December 2010's mark, the annual index shows food prices at their highest since FAO started measuring international food prices in 1990.<sup>3</sup>



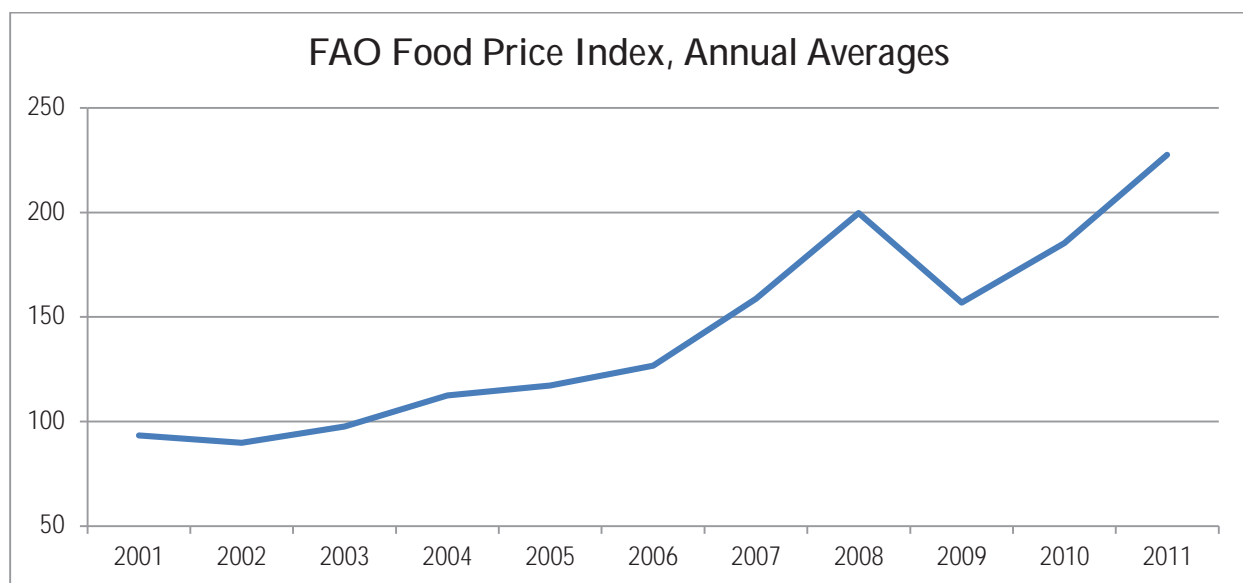
Source: FAO

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

<sup>3</sup> FAO. (2012, January 12). "The FAO Food Price ended the year with a sharp decline". Retrieved from <http://www.fao.org/worldfoodsituation/wfs-home/foodpricesindex/en/>



Source: FAO

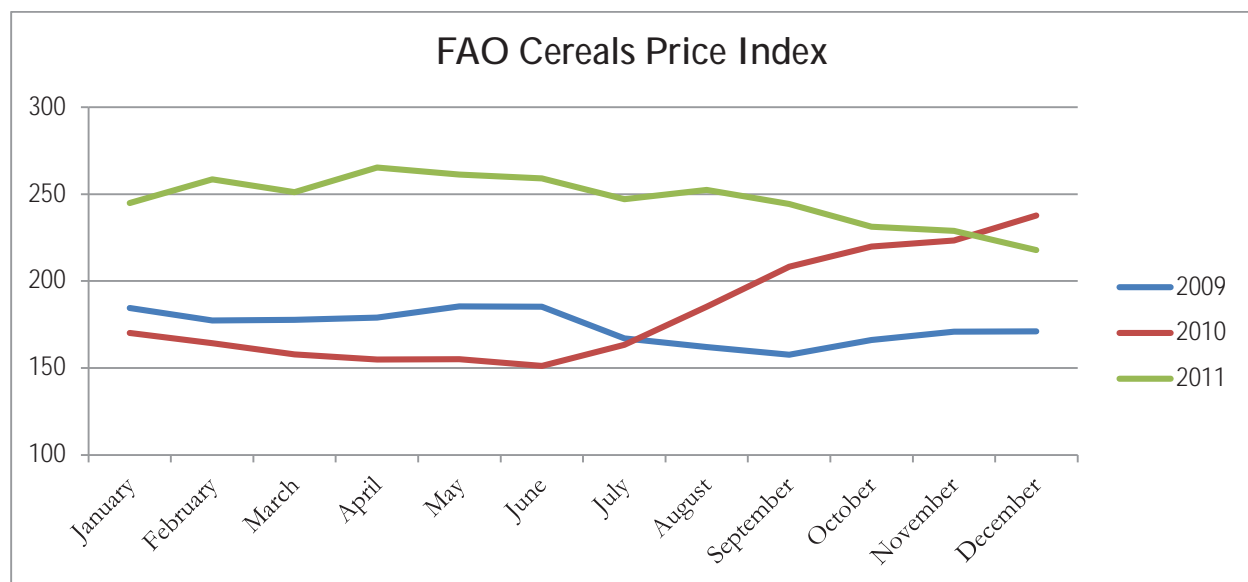


Source: FAO

## Cereals, Oilcrops, & Meat

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.<sup>4</sup> Both indices were still above third quarter 2010 levels, with the cereals price index 18% higher and the oils price index about 20% higher.

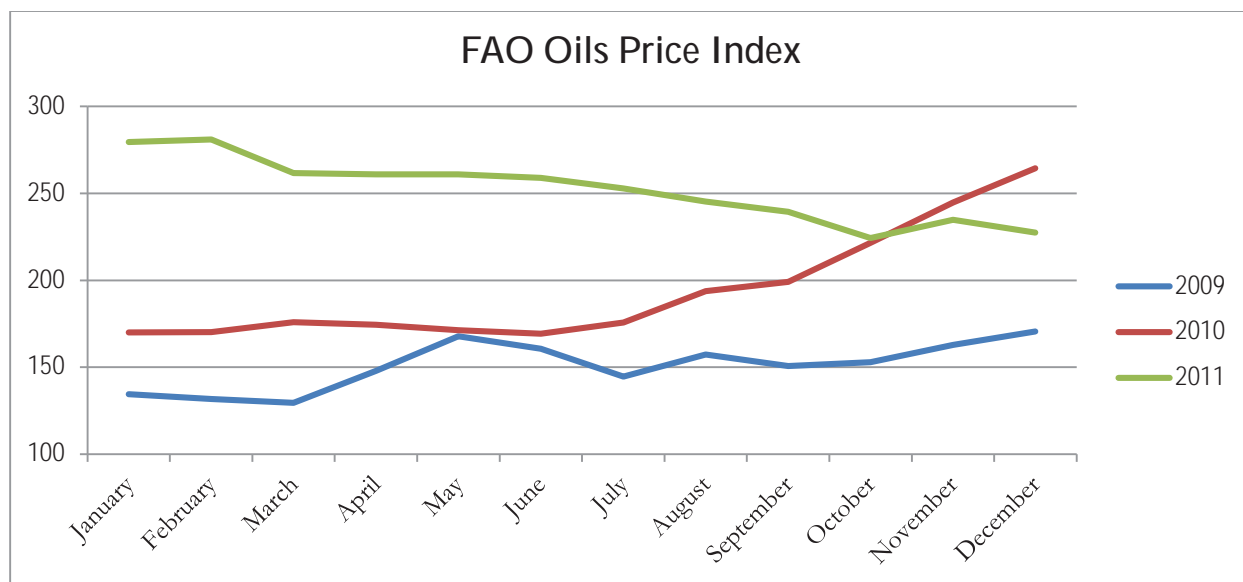
While both the cereals and oils price indices decreased significantly from the third quarter to the fourth (9% and 7% respectively), the meat price index increased slightly by 1%. The cereals index decreased significantly because of record crop production, especially in wheat and rice. The oils index experienced volatility as the market expected diminished supply; however, larger than expected vegetable oil supplies and decreased demand led to a decrease in prices. The meat index showed little movement as prices of pig meat decreased and poultry increased.<sup>5</sup>



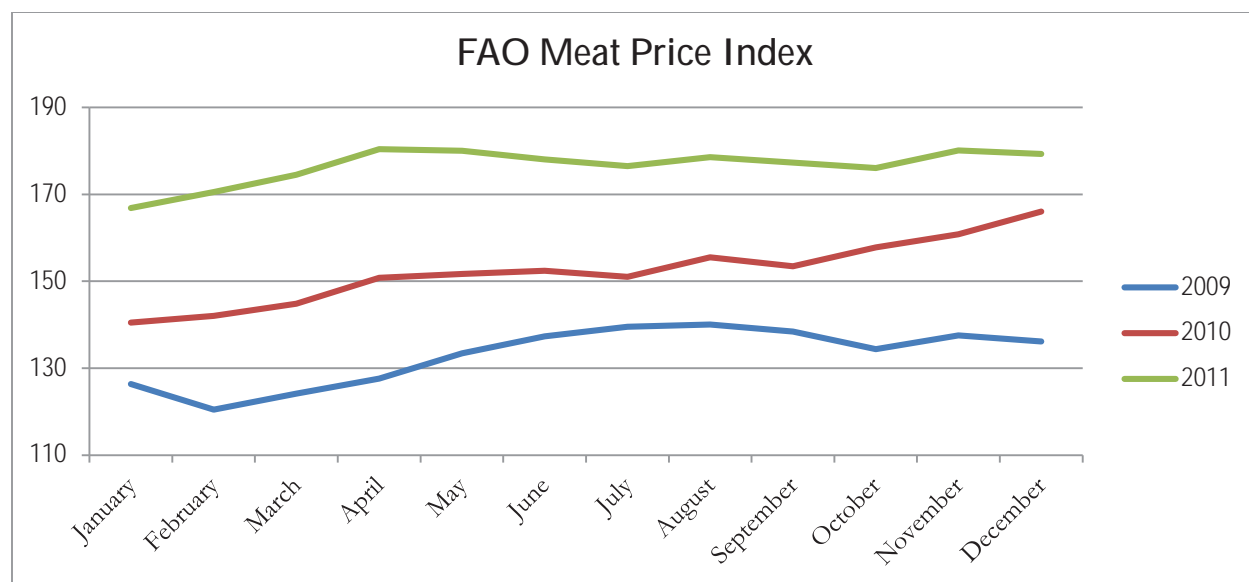
Source: FAO

<sup>4</sup> FAO. (2011 October). *Crop Prospects and Food Situation* (No. 3). Retrieved from <http://www.fao.org/docrep/014/al980e/al980e00.pdf>

<sup>5</sup> FAO. (2012, January 12). "The FAO Food Price ended the year with a sharp decline". Retrieved from <http://www.fao.org/worldfoodsituation/wfs-home/foodpricesindex/en/>



Source: FAO

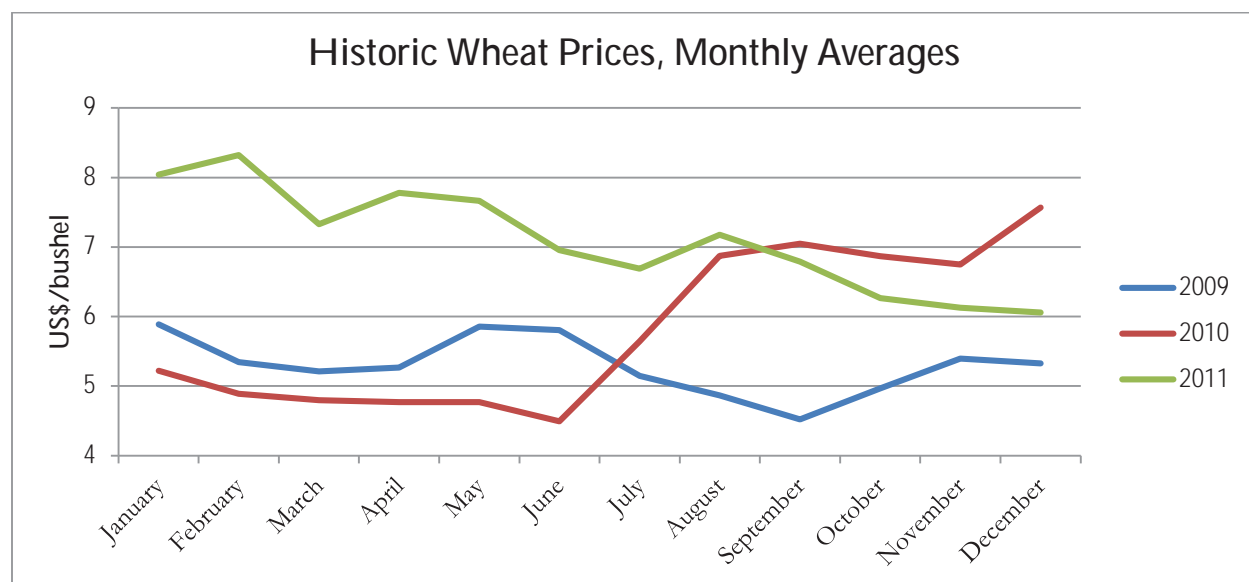


Source: FAO

## Wheat

Wheat prices decreased slightly throughout the quarter, with December's average falling to \$6.06 per bushel. This price represents an almost 20% decrease from December 2010. The fourth quarter's average price decreased over 10% from third quarter 2011.

Record crops and subsequent rising stocks exerted downward pressure on wheat prices this quarter. Kazakhstan recorded a historic output, and the global wheat average yield reached a record-high.<sup>6</sup> Similarly, southern hemisphere wheat crops in Australia and Argentina showed record production.<sup>7</sup> With reduced prices, wheat is emerging as a competitive option for animal feed, which has increased world wheat consumption.<sup>8</sup> Notwithstanding increased consumption, global stocks in 2012 are expected to reach the second-highest level on record.<sup>9</sup> The wheat futures market suggests prices will increase moderately over the next year.



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

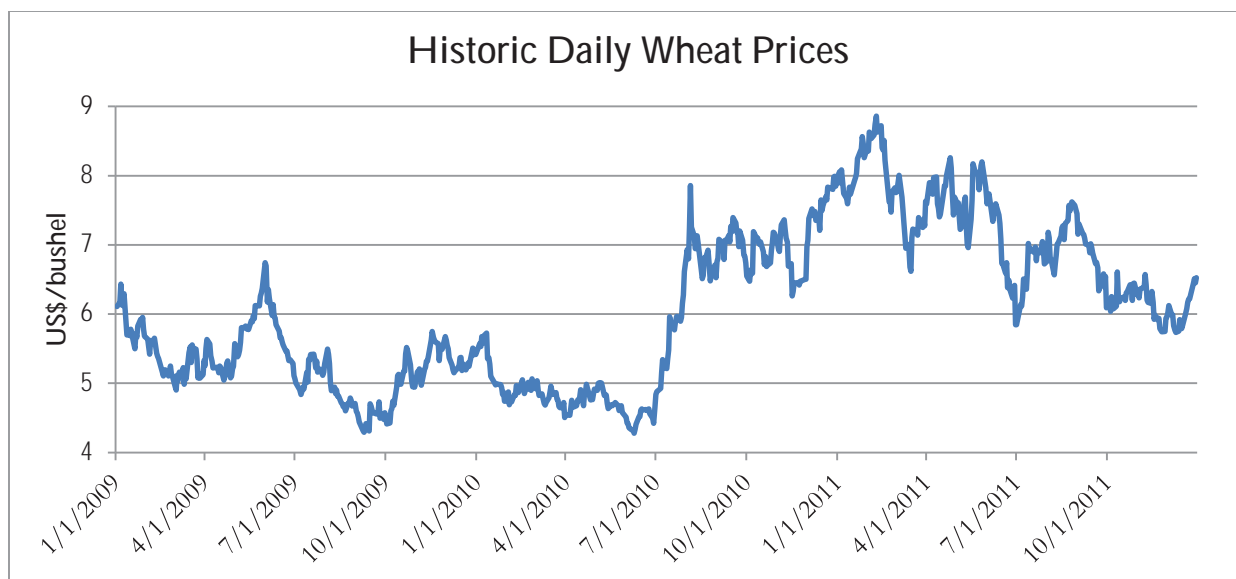
Note: 1 wheat bushel = 60 lbs; 1 metric tonne = 36.74 bushels

<sup>6</sup> Vocke, G. & Liefert, O. (2011, November 14). *Wheat Outlook* (WHS-11k). Retrieved from <http://usda01.library.cornell.edu/usda/ers/WHS//2010s/2011/WHS-11-14-2011.pdf>

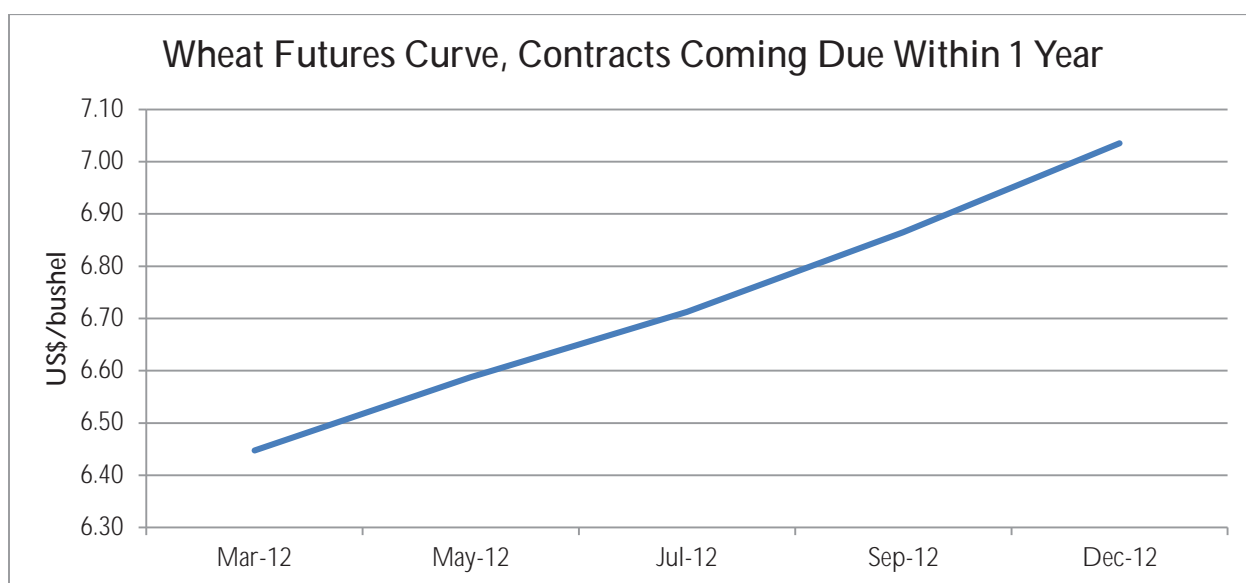
<sup>7</sup> Vocke, G. & Liefert, O. (2011, December 13). *Wheat Outlook* (WHS-11l). Retrieved from <http://usda01.library.cornell.edu/usda/ers/WHS//2010s/2011/WHS-11-14-2011.pdf>

<sup>8</sup> FAO. (2011 December). *Crop Prospects and Food Situation* (No. 4). Retrieved from <http://www.fao.org/docrep/014/al983e/al983e00.pdf>

<sup>9</sup> Vocke, G. & Liefert, O. (2012, January 17). *Wheat Outlook* (WHS 12a). Retrieved from <http://usda01.library.cornell.edu/usda/ers/WHS//2010s/2012/WHS-01-17-2012.pdf>



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

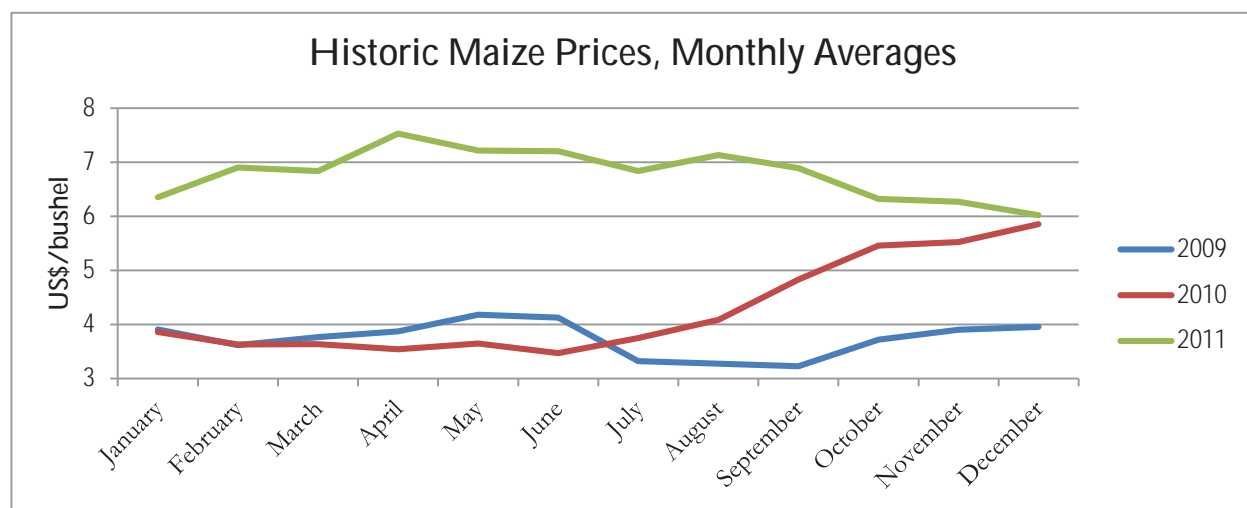


Source: Bloomberg, Chicago Board of Trade (CBOT), wheat futures contracts W H2, W K2, W N2, W U2, & W Z2, January 31, 2012

## Maize

Maize prices exhibited some volatility this quarter. Prices recovered somewhat from September's precipitous decline before falling below \$6.00 per bushel for almost a month. Maize ended the quarter on a two week rise. While the fourth quarter average price was the lowest of the year, it remains 10% higher than 2010 fourth quarter average.

Daily maize prices rose at the beginning of the quarter as buyers responded to September's price decline.<sup>10,11</sup> However, the market began to fall under seasonal pressure from the US harvest.<sup>12</sup> This downward pressure continued on reports of bumper crops in China, Argentina, and Sub-Saharan Africa.<sup>13</sup> Concerns of a global economic downturn and falling demand also led to falling prices.<sup>14</sup> However, demand increased at the end of the year as US ethanol taxes expired December 31, prompting an increase in ethanol production and leading to an increase in prices.<sup>15</sup> Global stocks remain close to the same tight level as the previous year. The futures market expects maize prices to plateau in July before falling through the end of 2012.



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

<sup>10</sup> Wilson, J. & McFerron, W. (2011, October 5). "Corn, wheat, soybeans called to open higher as price drops may spur demand". *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-10-05/corn-wheat-soybeans-called-to-open-higher-as-price-drops-may-spur-demand.html>

<sup>11</sup> Dreibus, T. & Javier, L. (2011, October 12). "Corn extends biggest gain since June 2010 as price drop may spur buying". *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-10-11/grain-prices-advance-most-in-year-amid-signs-u-s-exports-are-rebounding.html>

<sup>12</sup> FAO. (2011, November 8). *Global Food Price Monitor*. Retrieved from [http://www.fao.org/giews/english/gfpm/GFPM\\_11\\_2011.pdf](http://www.fao.org/giews/english/gfpm/GFPM_11_2011.pdf)

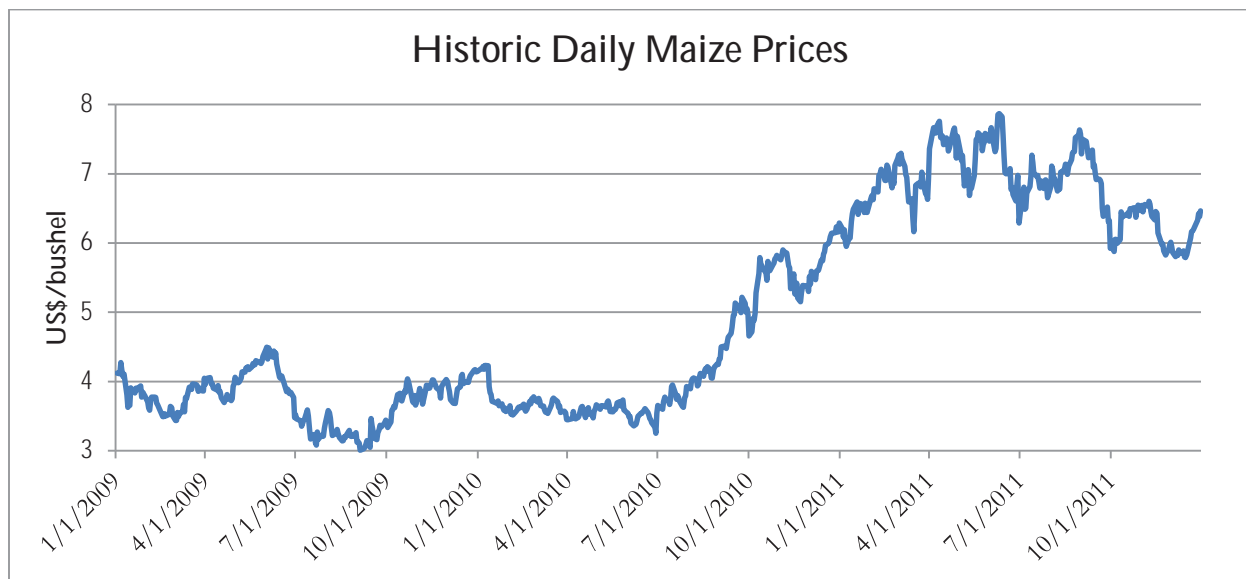
<sup>13</sup> Capehart, T. & Allen, E. (2011, November 14). *Feed Outlook*. Retrieved from <http://usda01.library.cornell.edu/usda/ers/FDS//2010s/2011/FDS-11-14-2011.pdf>

<sup>14</sup> FAO. (2011, November 8). *Global Food Price Monitor*. Retrieved from [http://www.fao.org/giews/english/gfpm/GFPM\\_11\\_2011.pdf](http://www.fao.org/giews/english/gfpm/GFPM_11_2011.pdf)

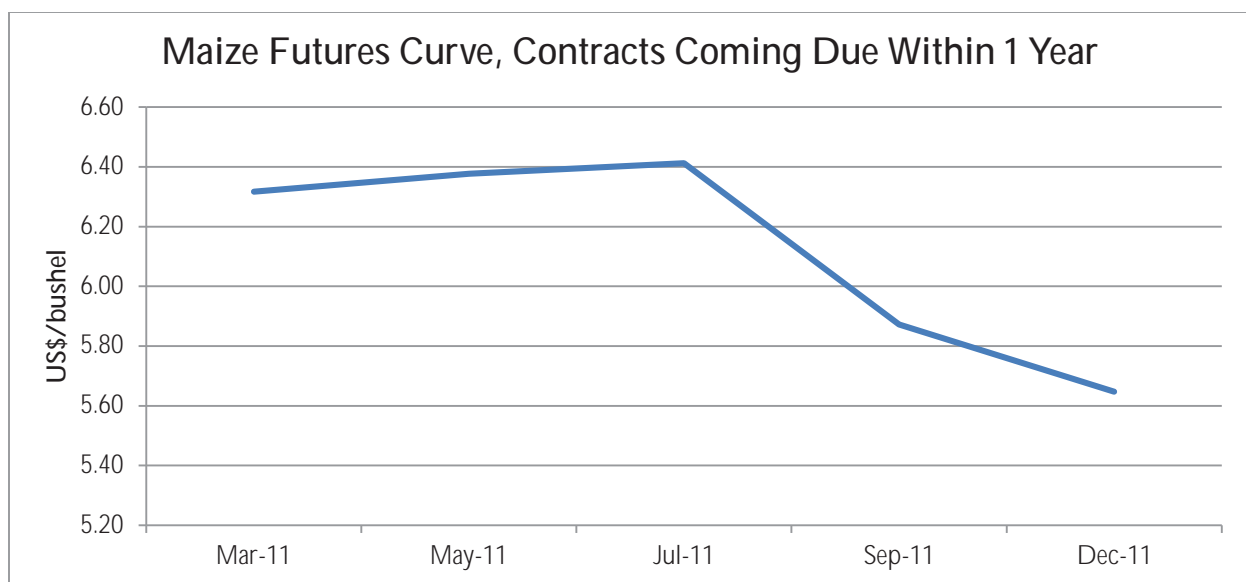
<sup>15</sup> Capehart, T. & Allen, E. (2012, January 17). *Feed Outlook*. Retrieved from <http://usda01.library.cornell.edu/usda/current/FDS/FDS-01-17-2012.pdf>

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



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

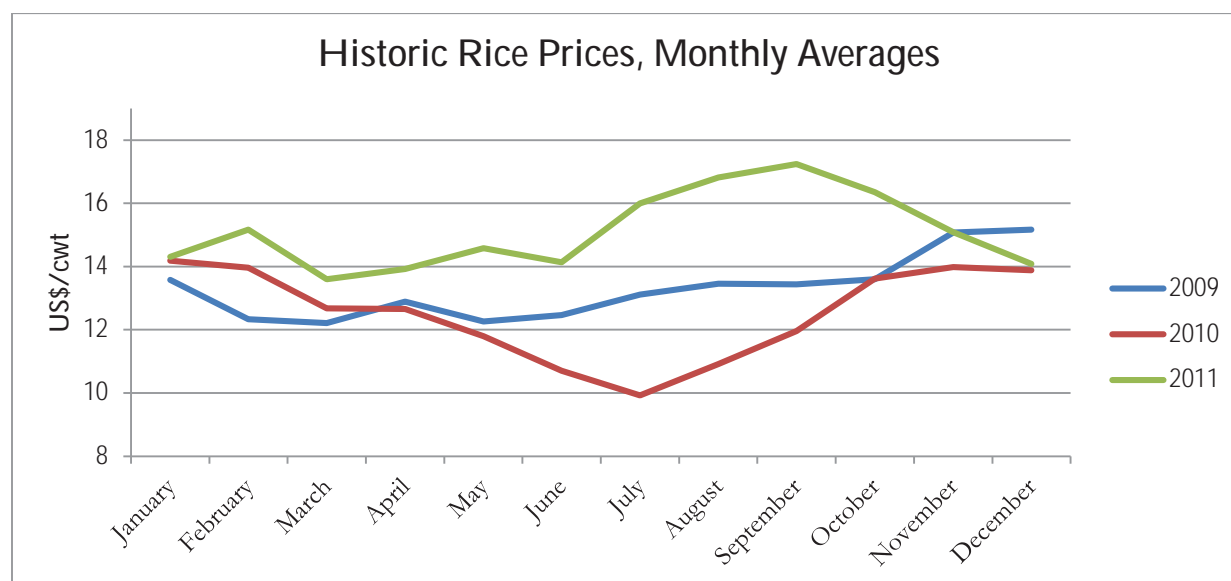


Source: Bloomberg, Chicago Board of Trade (CBOT), corn futures contracts C H2, C K2, C N2, C U2, & C Z2  
January 31, 2012

## Rice

Rice prices increased over the first few weeks of the quarter before a steady and significant decrease over the balance of the quarter. The average rice price fell over \$3.00/cwt from September to December to a level comparable to December 2010.

Significant, widespread flooding across Southeast Asia in combination with the advent of Thailand's state-purchasing program accounted for decreased supply leading to price increases in October.<sup>16,17</sup> However, global production did not fall off as much as predicted, as India further eased export restraints and there were bumper crops in Australia, Bangladesh, China, Egypt, India, and Pakistan.<sup>18,19</sup> In combination with falling global demand, global stocks in 2012 will increase for the fifth consecutive year.<sup>20,21</sup> The futures market predicts rice prices will climb about \$1/cwt over the next year.



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

<sup>16</sup> Chanjaroen, C. & Suwannakij, S. (2011, October 19). "Rice may rally as Thai floods, state buying hand export advantage to India". *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-10-19/rice-may-rally-as-thai-floods-state-buying-hand-export-advantage-to-india.html>

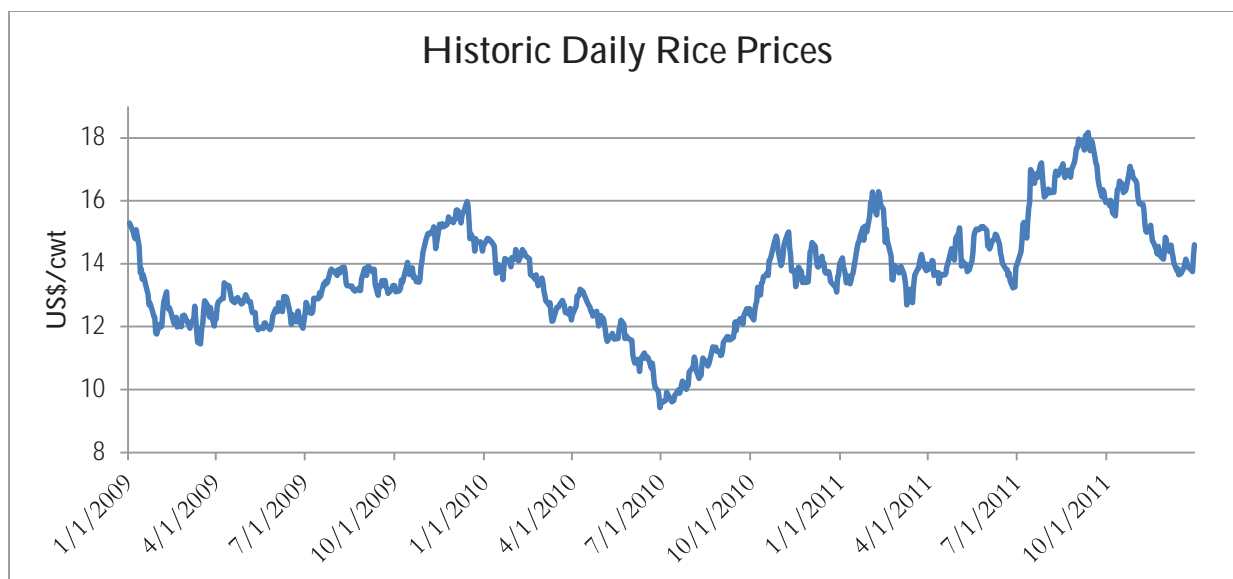
<sup>17</sup> Baldwin, K. & Childs, N. (2011, November 10). *Rice Outlook*. Retrieved from <http://usda01.library.cornell.edu/usda/ers/RCS//2010s/2011/RCS-11-10-2011.pdf>

<sup>18</sup> FAO. (2011, November 8). *Global Food Price Monitor*. Retrieved from [http://www.fao.org/giews/english/gfpm/GFPM\\_11\\_2011.pdf](http://www.fao.org/giews/english/gfpm/GFPM_11_2011.pdf)

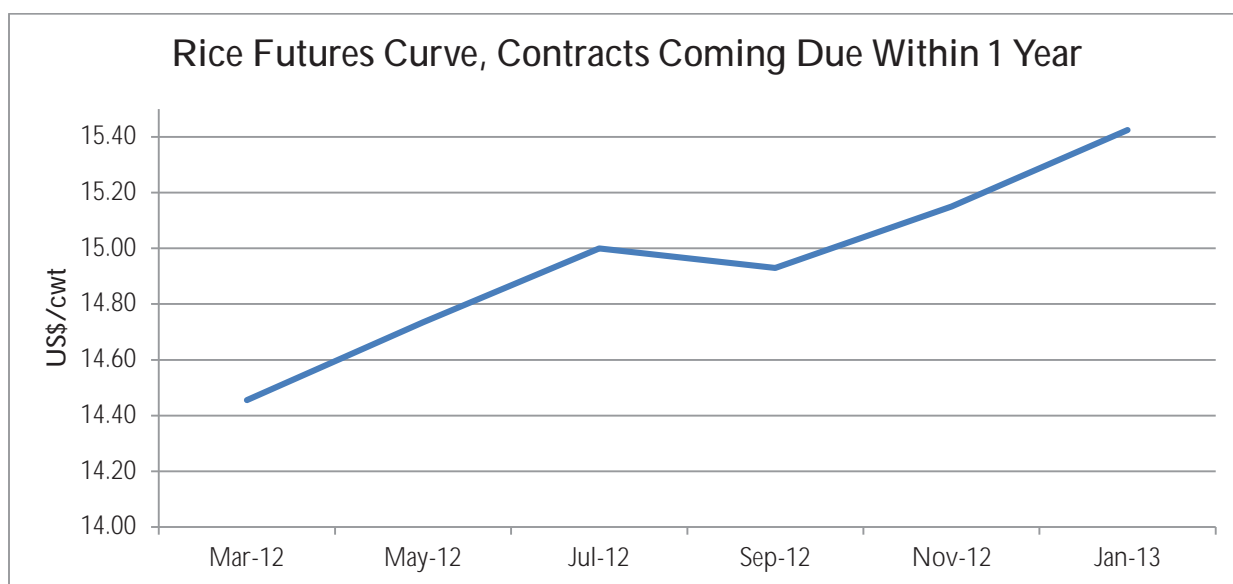
<sup>19</sup> Baldwin, K. & Childs, N. (2012, January 13). *Rice Outlook*. Retrieved from <http://usda01.library.cornell.edu/usda/ers/RCS//2010s/2012/RCS-01-13-2012.pdf>

<sup>20</sup> FAO. (2011, December 9). *Global Food Price Monitor*. Retrieved from [http://www.fao.org/giews/english/gfpm/GFPM\\_12\\_2011.pdf](http://www.fao.org/giews/english/gfpm/GFPM_12_2011.pdf)

<sup>21</sup> Baldwin, K. & Childs, N. (2012, January 13). *Rice Outlook*. Retrieved from <http://usda01.library.cornell.edu/usda/ers/RCS//2010s/2012/RCS-01-13-2012.pdf>



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

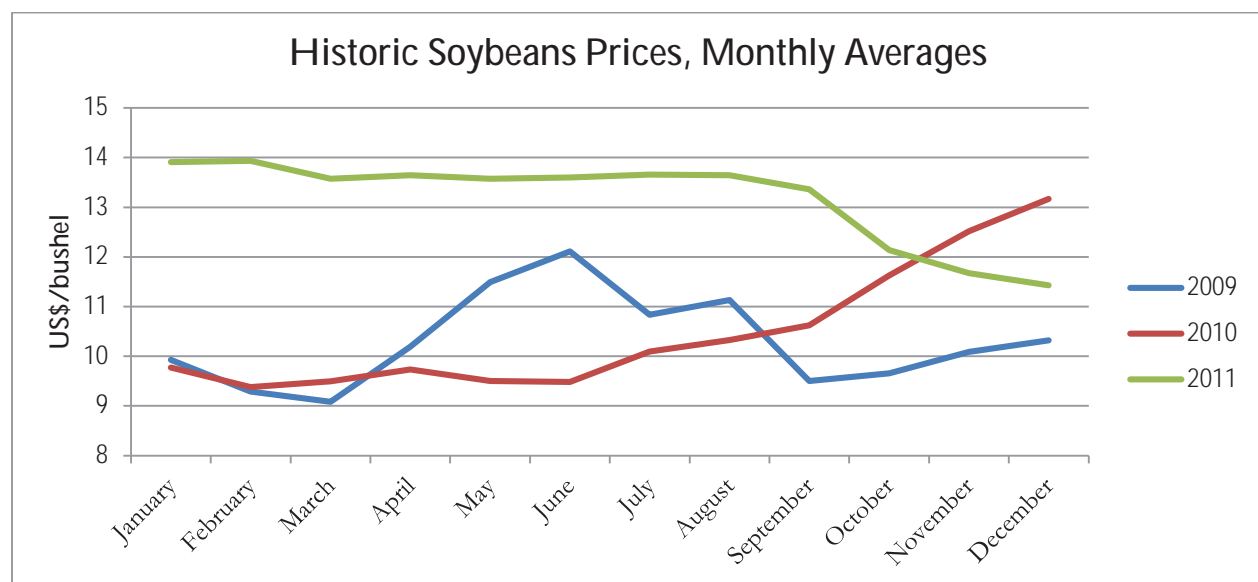


Source: Bloomberg, Chicago Board of Trade (CBOT), rice futures contracts RRH2, RRK2, RRN2, RRU2, RRX2, & RRF3, January 31, 2012

## Soybeans

Soybean prices increased during short intervals at the beginning and end of the quarter, but fell for most of October and November. Prices declined to lower levels than those seen a year ago. The fourth quarter average price was 13% lower than the third quarter's, and almost 6% lower than the fourth quarter price in 2010.

Soybean prices initially increased as buyers, especially China, responded to September's low prices.<sup>22</sup> However, global demand has fallen off significantly, leading to lower prices as consumers shift to cheaper substitutes, i.e. wheat for livestock feed and vegetable oil for cooking oil.<sup>23,24</sup> Prices rallied over the last two weeks of the quarter on bad weather that could jeopardize the South American crop. Despite a nearly 2% decline in global production, global stocks continue to grow.<sup>25</sup> Soybean futures suggest continued volatility as prices rise over the next few months, then fall.



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

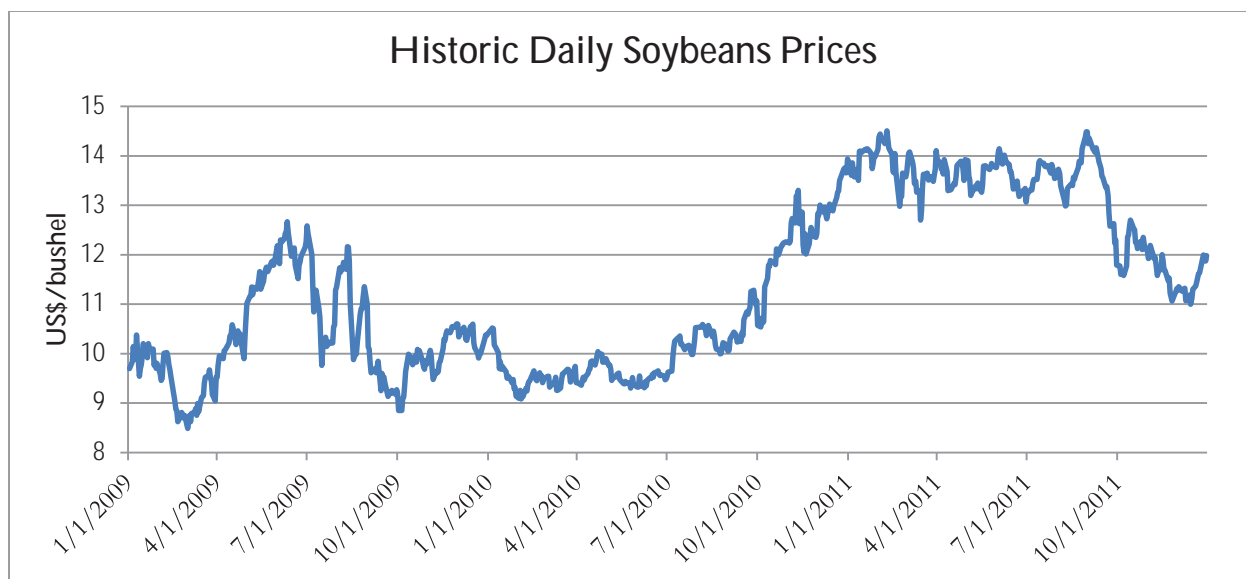
Note: 1 soybean bushel = 60 lbs; 1 metric tonne = 36.74 bushels

<sup>22</sup> Wilson, J. (2011, October 14). "Corn, soybeans, wheat gain as China's demand for imports climbs". *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-10-14/corn-soybeans-wheat-gain-as-china-s-demand-for-imports-climbs.html>

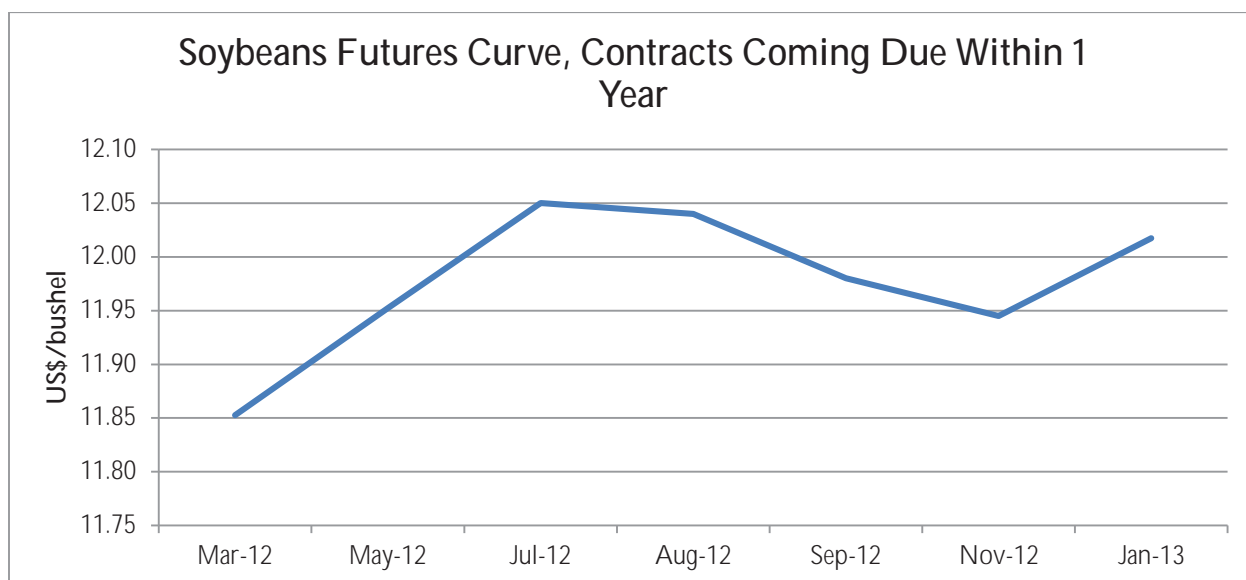
<sup>23</sup> Ash, M. (2011, December 12). *Oil Crops Outlook*. Retrieved from <http://usda01.library.cornell.edu/usda/ers/OCS//2010s/2011/OCS-12-12-2011.pdf>

<sup>24</sup> FAO. (2012, January 12). "The FAO food price ended the year with a sharp decline". Available from <http://www.fao.org/worldfoodsituation/wfs-home/foodpricesindex/en/>

<sup>25</sup> Ash, M. (2012, January 13). *Oil Crops Outlook*. Retrieved from <http://usda01.library.cornell.edu/usda/current/OCS/OCS-01-13-2012.pdf>



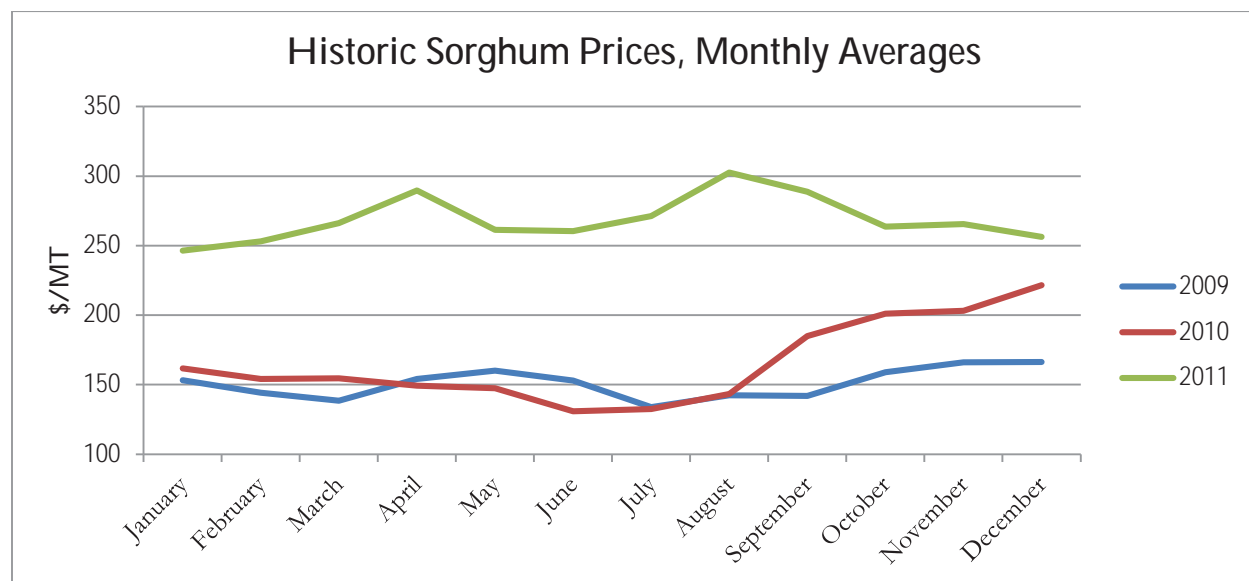
Source: Bloomberg, Chicago Board of Trade (CBOT), generic soybean futures contract S 1



Source: Bloomberg, Chicago Board of Trade (CBOT), soybean futures contracts S H2, S K2, S N2, S Q2, S U2, S X2, & S F3, January 31, 2012

## Sorghum

With the exception of a minor price increase in November, the sorghum market continued to decline from August's record high. The quarterly average, \$261.84/mt, decreased 9% from the previous quarter. However, this price still remains a full 26% higher than the fourth quarter of 2011.

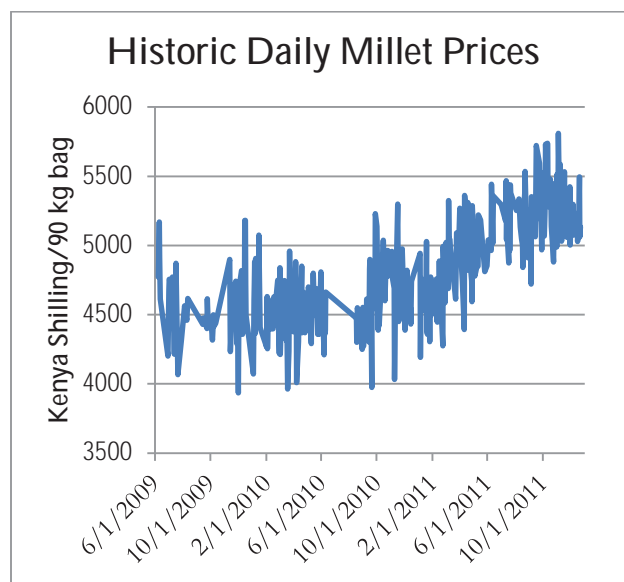
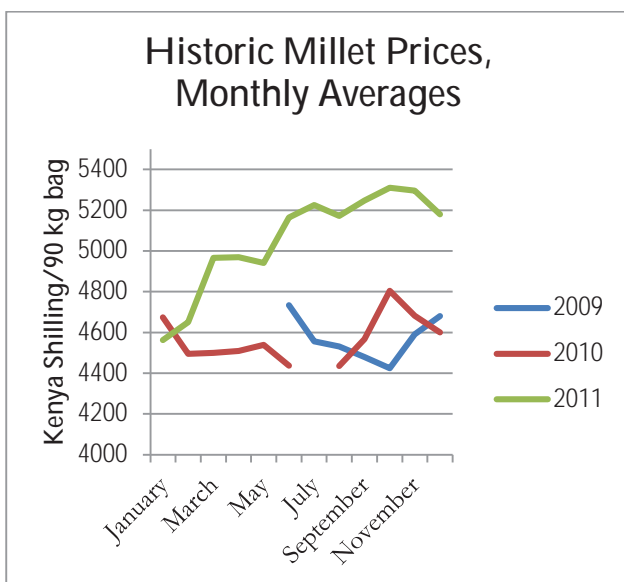


Source: World Bank, Pink Sheet

## Millet

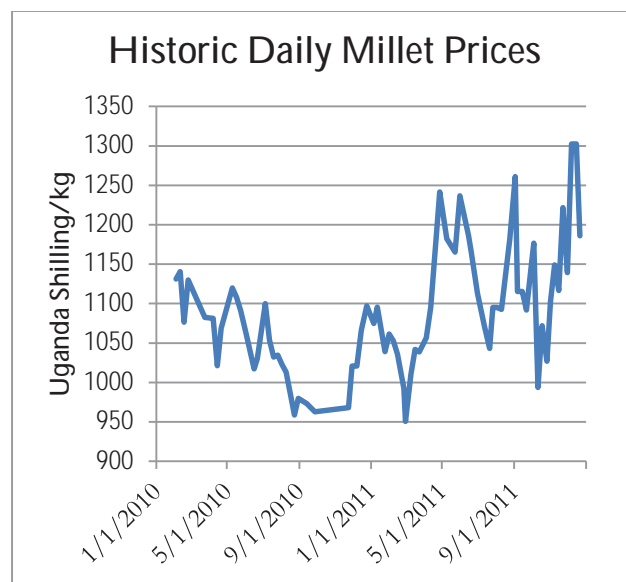
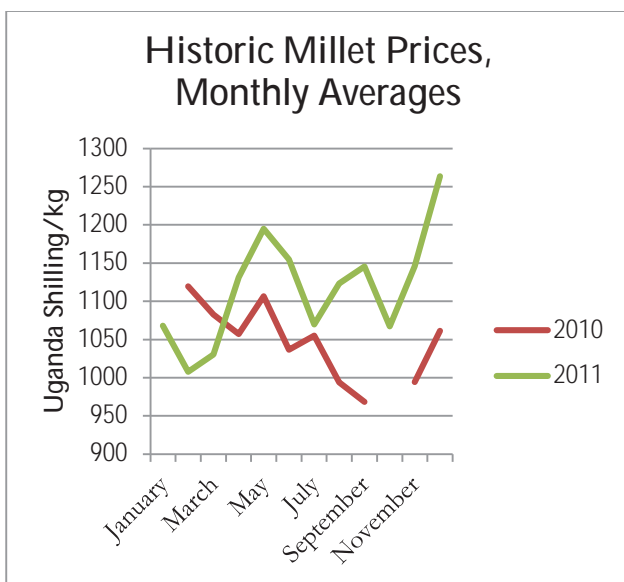
We consulted two sources for the millet market: one from Kenya and one from Uganda. In Kenya, the Ministry of Agriculture provides daily wholesale commodity prices from a number of markets; in Uganda, a public-private partnership does the same on a weekly basis.<sup>26</sup>

Kenyan prices reached a new high in October before decreasing for the rest of the quarter, posting only a .9% increase over the third quarter average. Ugandan prices increased steadily after the low in October; on the whole, the fourth quarter average increased over 4% from the third quarter. While the two sources show differing trends over the past quarter, they both indicate significant price increases over the fourth quarter 2010 average (12% and 12.8% increase respectively).



Source: Kenya Ministry of Agriculture; data are available from June 2010. No observations were made July 2010.

<sup>26</sup> For a more detailed discussion of the sources, see *Appendix 3*.



Source: InfoTrade Uganda; data are available from November 2010. No observations were made October 2010.

## Other Soft Commodities<sup>27</sup>

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### Cocoa

Cocoa prices continued to fall, beyond levels seen in the past three years. The fourth quarter average was almost 20% lower than the third quarter's, and December's average price of \$2090.38/mt was over \$300 less than the lowest average price in the last three years.

Daily cocoa prices responded favorably to increased EU optimism for a debt solution at the beginning of the quarter, but then fell throughout the rest of the quarter in response to ample supplies and a strengthening US dollar.<sup>28,29</sup> In West Africa, production at this point in the season was significantly higher than a year ago.<sup>30</sup> While prices increased towards the end of the quarter on news of increasing consumption, overstocked warehouses suggest that supply continues to outpace demand.<sup>31,32</sup> The cocoa futures markets expect prices to rise but still remain well below the \$2500/mt level.

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.<sup>33</sup>

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<sup>27</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>28</sup> ICCO (2011 October). *Cocoa Market Review*. Retrieved from <http://www.icco.org/statistics/monthlyreview.aspx>.

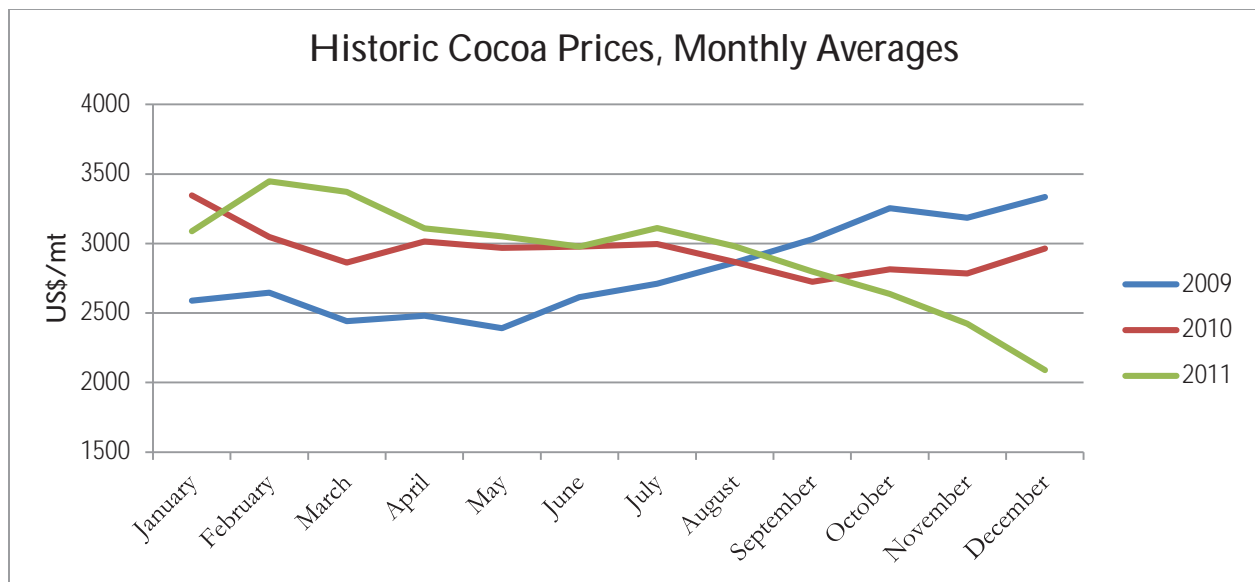
<sup>29</sup> ICCO (2011 November). *Cocoa Market Review*. Retrieved from <http://www.icco.org/statistics/monthlyreview.aspx>.

<sup>30</sup> ICCO (2011 December). *Cocoa Market Review*. Retrieved from <http://www.icco.org/statistics/monthlyreview.aspx>.

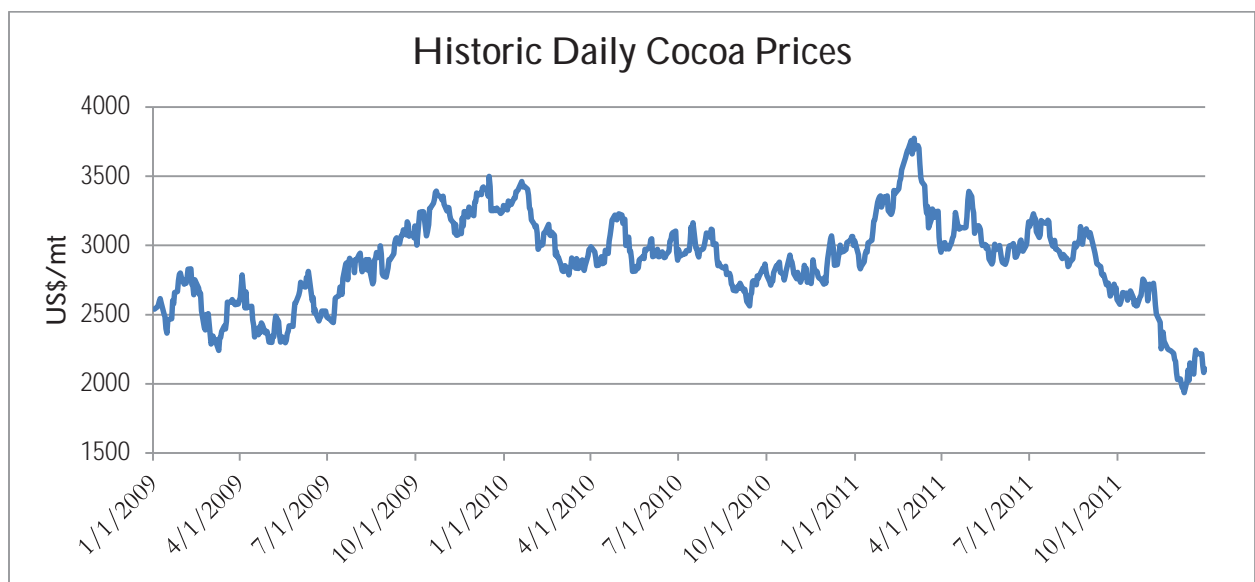
<sup>31</sup> Stubbe, R. (2011, December 12). "Gold, silver, cotton drop on dollar rally: commodities at close". *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-12-12/gold-silver-cotton-drop-on-dollar-rally-commodities-at-close.html>

<sup>32</sup> ICCO (2011 December). *Cocoa Market Review*. Retrieved from <http://www.icco.org/statistics/monthlyreview.aspx>.

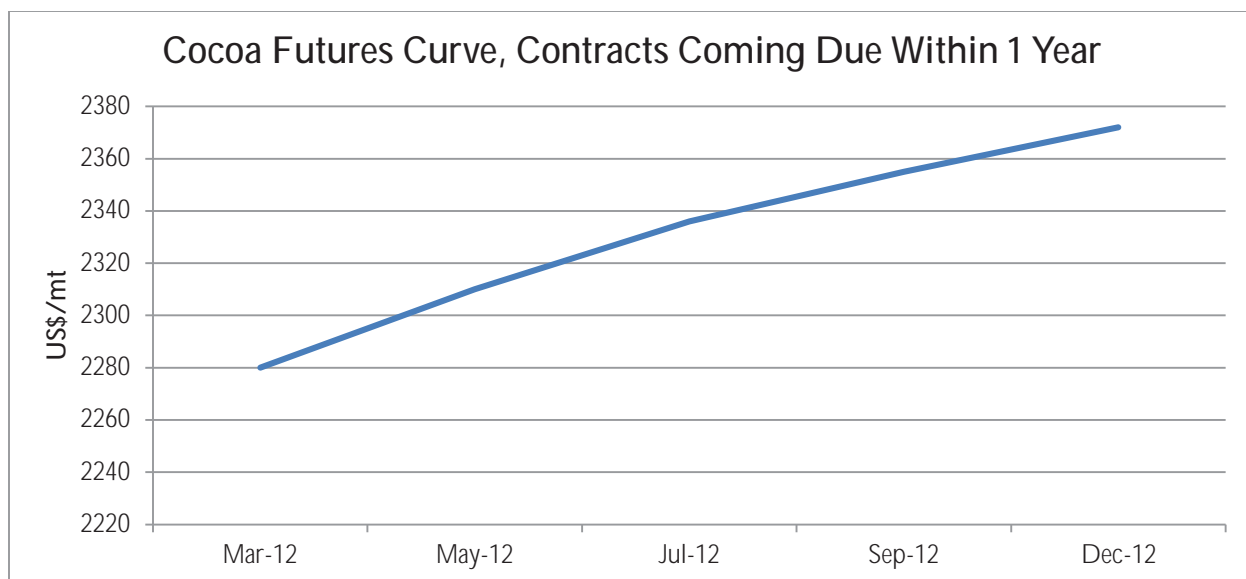
<sup>33</sup> World Cocoa Foundation. (2010, May). *Cocoa Market Update*. Available from <http://www.worldcocoafoundation.org/learn-about-cocoa/documents/CocoaMarketUpdateasof5.18.10.pdf>



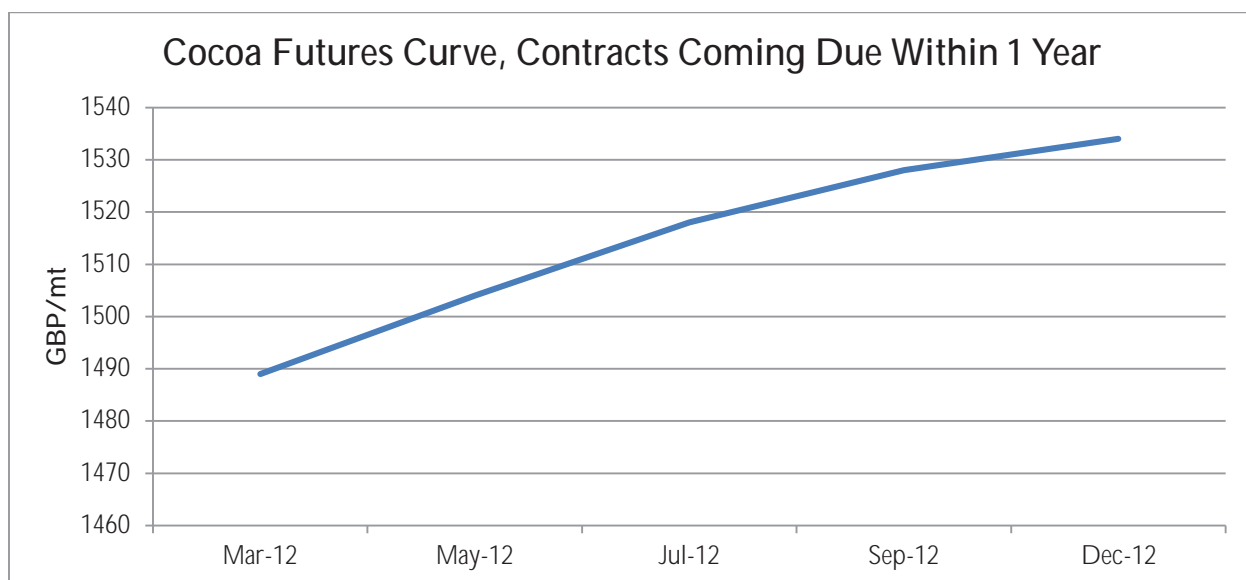
Source: Bloomberg, New York Board of Trade ICE, generic cocoa futures contract CC1



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



Source: Bloomberg, New York Board of Trade ICE, cocoa futures contracts CCH2, CCK2, CCN2, CCU2, & CCZ2, January 31, 2012

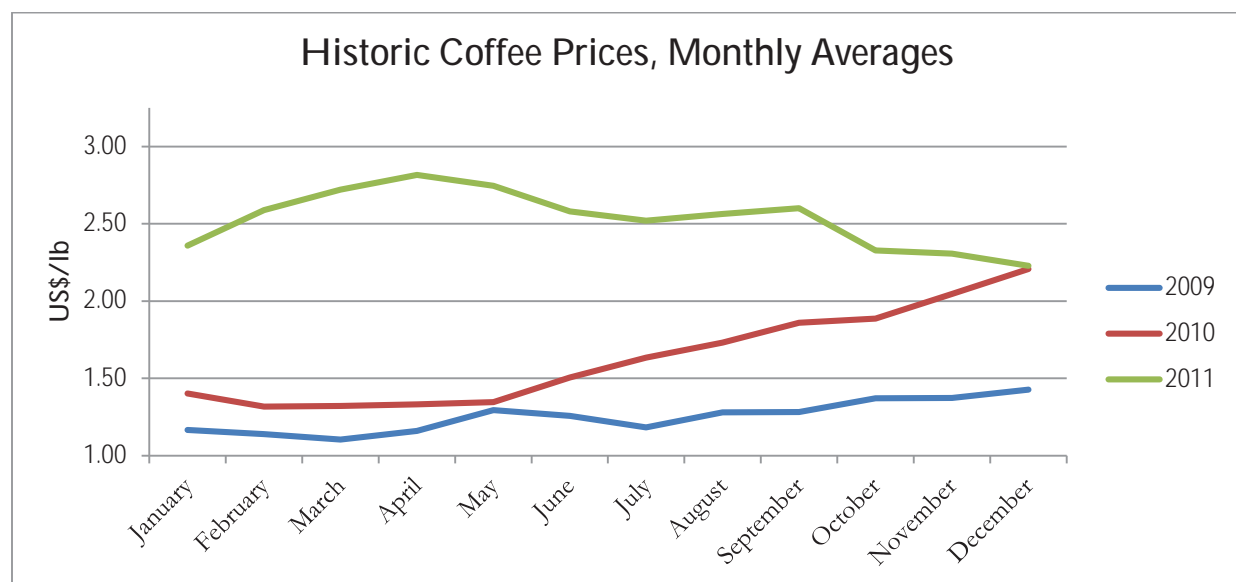


Source: Bloomberg, London Liffe Exchange, cocoa futures contracts QCH2, QCK2, QCN2, QCU2, & QCZ2 January 31, 2012

## Coffee

Coffee prices were somewhat volatile, but generally declined throughout the quarter. This decline represents an almost 11% decrease from the previous quarter's average, with most of that change occurring in October. December's monthly average of \$2.23/lb was only \$.02 more than December 2010.

Adverse weather conditions in Central America and Indonesia drove prices upward at the beginning of the quarter, with production in Colombia falling 13%.<sup>34,35</sup> Prices fell through the end of the quarter based on favorable conditions in Africa, where the International Coffee Organization forecasts production to increase significantly, particularly in Ethiopia, Uganda, and Côte d'Ivoire.<sup>36</sup> Additionally, coffee stockpiles grew through the end of the quarter, growing by almost 20% from November 1 to the close of the quarter in December.<sup>37</sup> Coffee futures show prices gaining over the next year, but still at levels below fourth quarter prices.



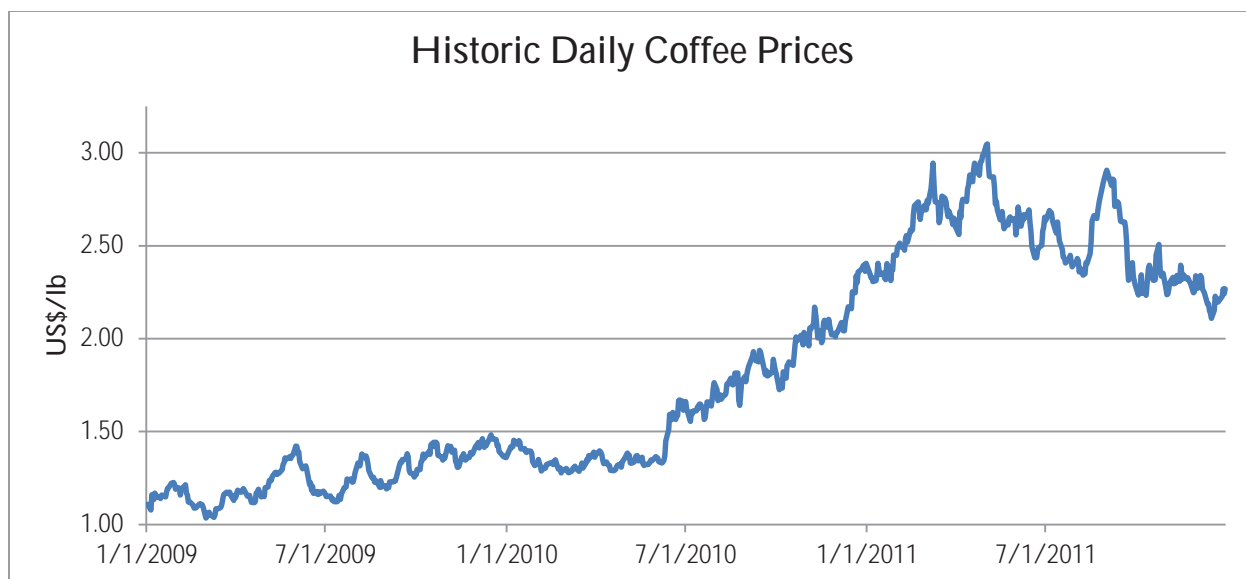
Source: Bloomberg, New York Board of Trade ICE, generic coffee futures contract KC1

<sup>34</sup> ICO. (2011 October). *Monthly Coffee Market Report*. Retrieved from <http://www.ico.org/documents/cmr-1011-e.pdf>

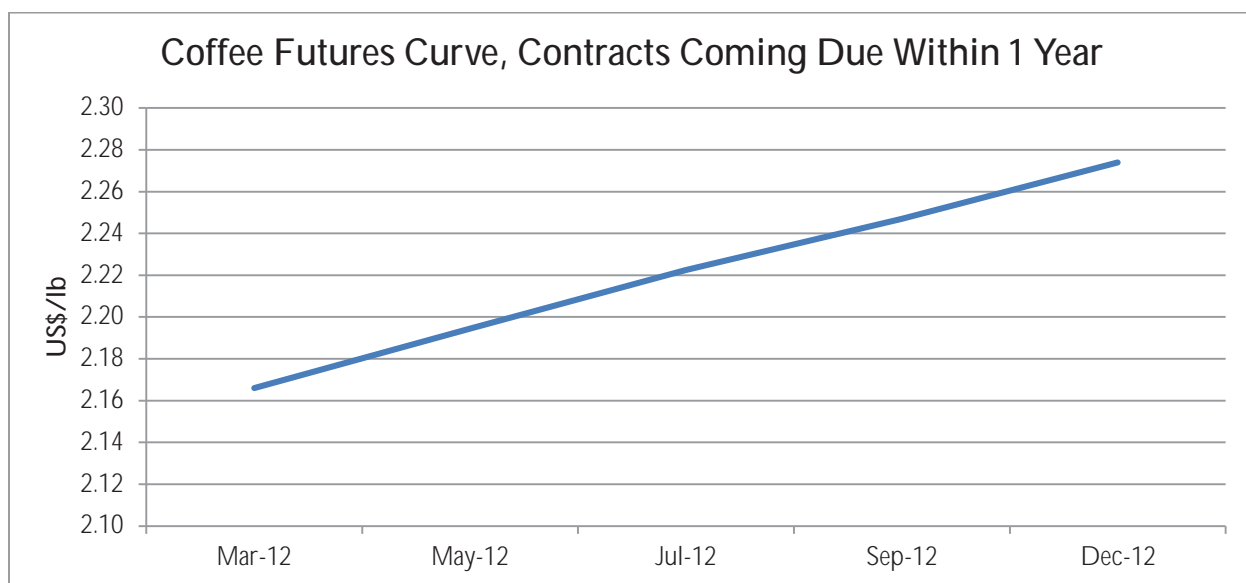
<sup>35</sup> Walsh, H. (2011, October 24). "Colombia coffee crop may miss forecasts after bad weather". Available from <http://www.bloomberg.com/news/2011-10-24/colombia-coffee-crop-may-miss-forecasts-after-bad-weather-1-.html>

<sup>36</sup> ICO. (2011 November). *Monthly Coffee Market Report*. Retrieved from <http://www.ico.org/documents/cmr-1111-e.pdf>

<sup>37</sup> Richter, J. (2011, December 16). "Coffee falls to one-year low as inventories gain; sugar rises; cocoa falls". *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-12-16/coffee-falls-in-new-york-before-usda-s-production-update-sugar-advances.html>



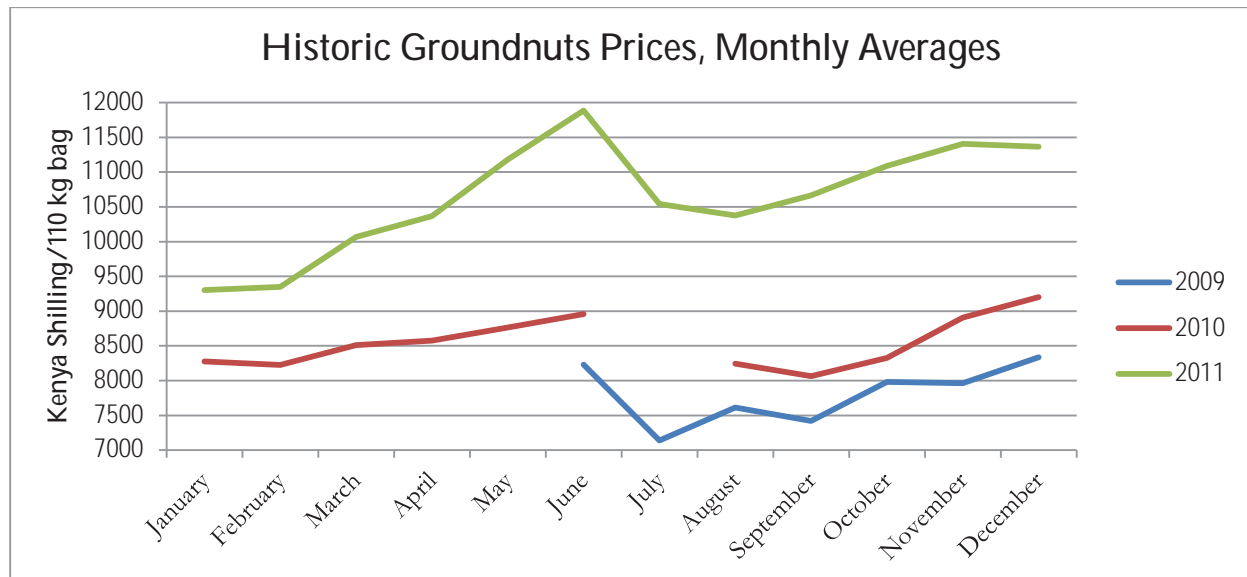
Source: Bloomberg, New York Board of Trade ICE, generic coffee futures contract KC1



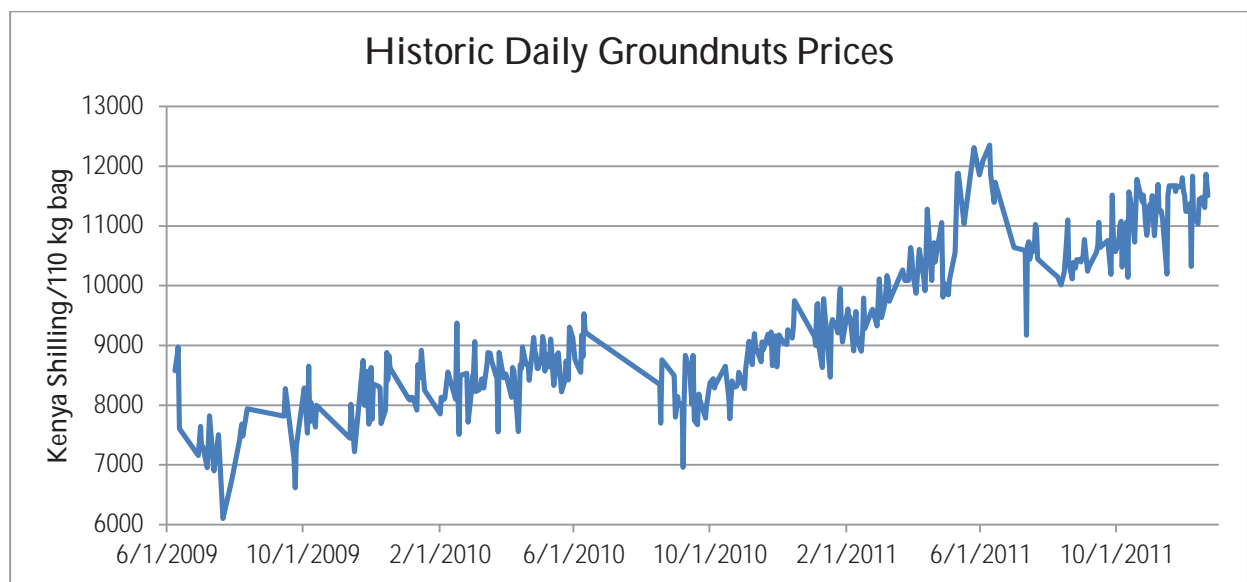
Source: Bloomberg, New York Board of Trade ICE, coffee futures contracts KCH2, KCK2, KCN2, KCU2, & KCZ2, January 31, 2012

## Groundnuts

Groundnut prices are available from the Kenyan Ministry of Agriculture's daily market survey.<sup>38</sup> In the fourth quarter of 2011 groundnut prices rebounded from the third quarter's significant drop, increasing steadily through the first two months of the quarter before declining slightly in December. The fourth quarter average increased 7% over the third quarter average price, and 28% over 2010 fourth quarter prices.



Source: Kenya Ministry of Agriculture; data are available from June 2010. No observations were made July 2010.

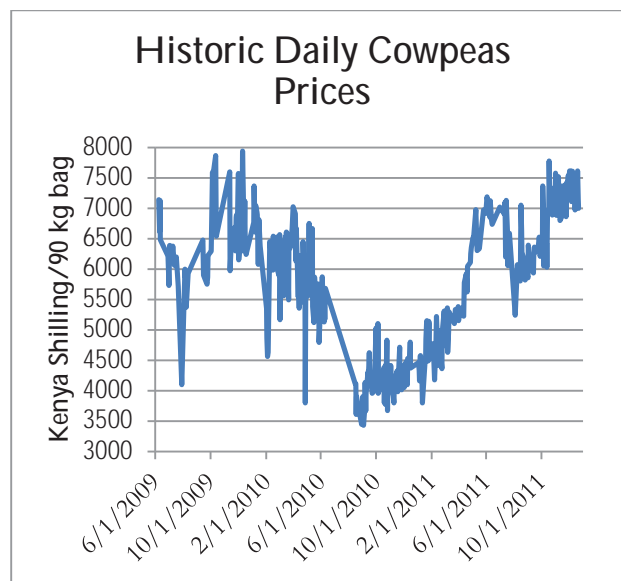
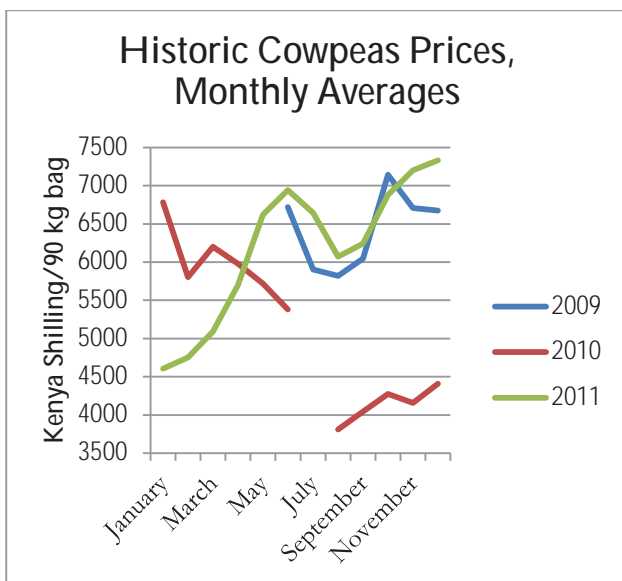


Source: Kenya Ministry of Agriculture

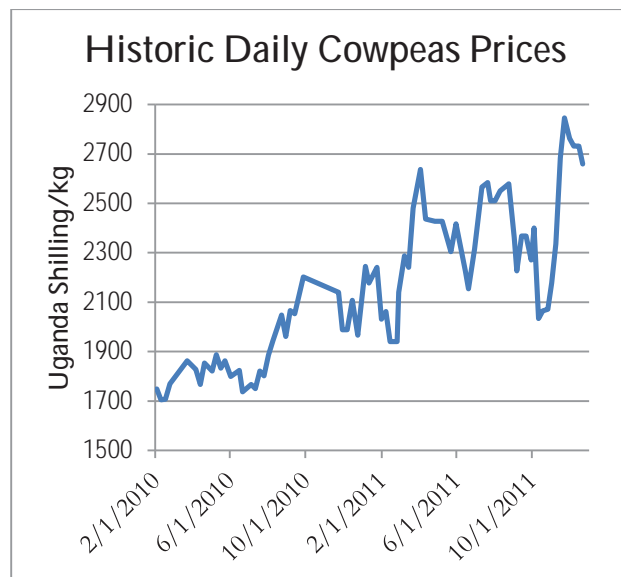
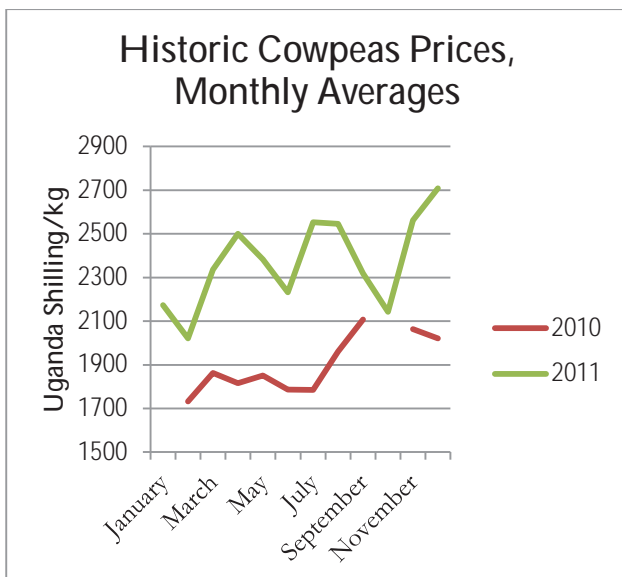
<sup>38</sup> Appendix 3 provides additional detail on this price series.

## Cowpeas

The cowpeas prices were drawn from both the Kenyan Ministry of Agriculture and Ugandan private InfoTrade agency. Both sources showed similar price trends: continual growth throughout the quarter. In Uganda, this growth occurred after bottoming out in October. Therefore, Uganda's fourth quarter average actually represented a .1% decrease from the third quarter, while Kenya's cowpea price increased almost 13%. Both sources increased from the fourth quarter of a year ago, 21% in Uganda and 67% in Kenya.



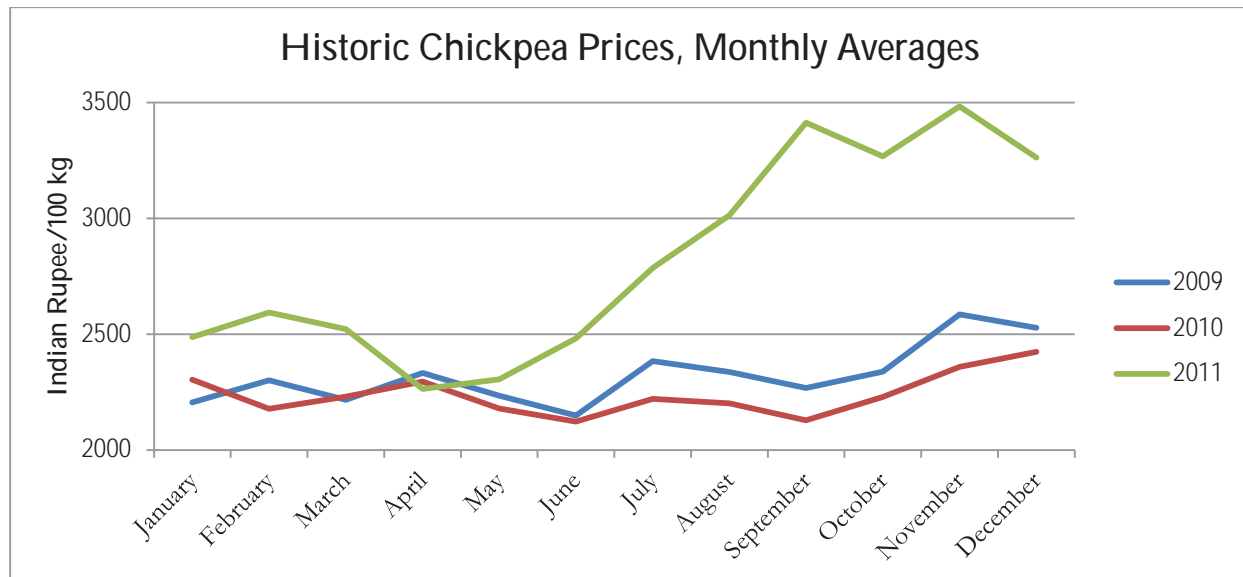
Source: Kenya Ministry of Agriculture; no observations were made July 2010.



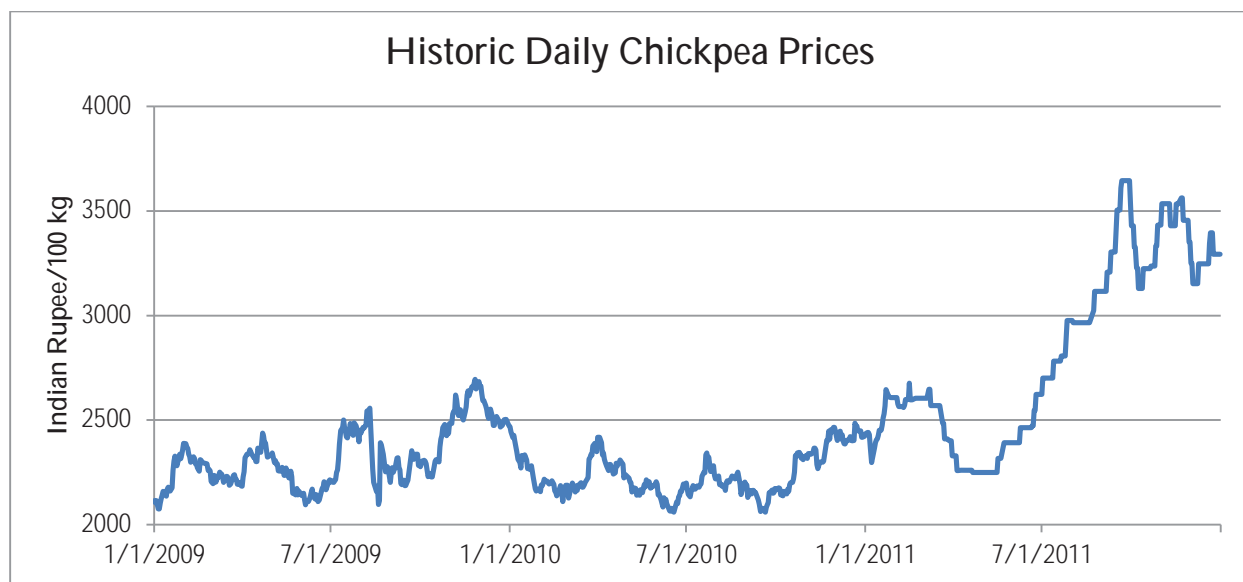
Source: InfoTrade Uganda; no observations were made October 2010.

## Chickpeas

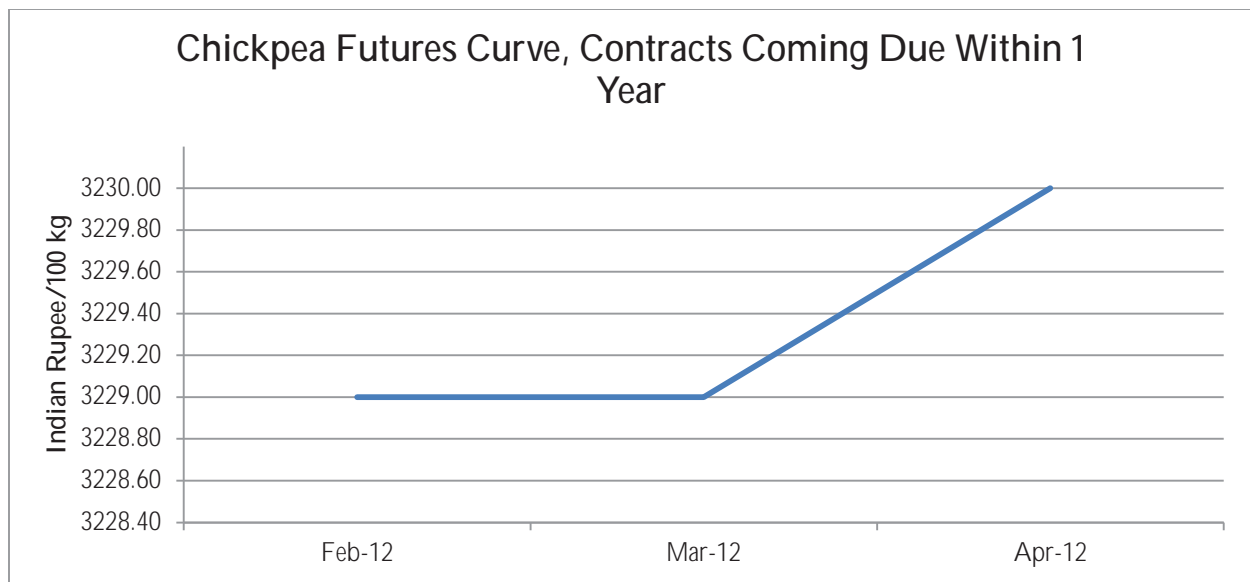
The chickpeas market, based on data from the Multi Commodity Exchange of India, showed some volatility, increasing at the beginning and end of the quarter with a significant decrease at the end of November. Overall, the prices showed an almost 9% increase from the third quarter of 2011, and a 43% increase from the fourth quarter a year ago. Futures prices forecast a slight increase in prices in April.



Source: Bloomberg, Multi Commodity Exchange of India Ltd. (MCX)



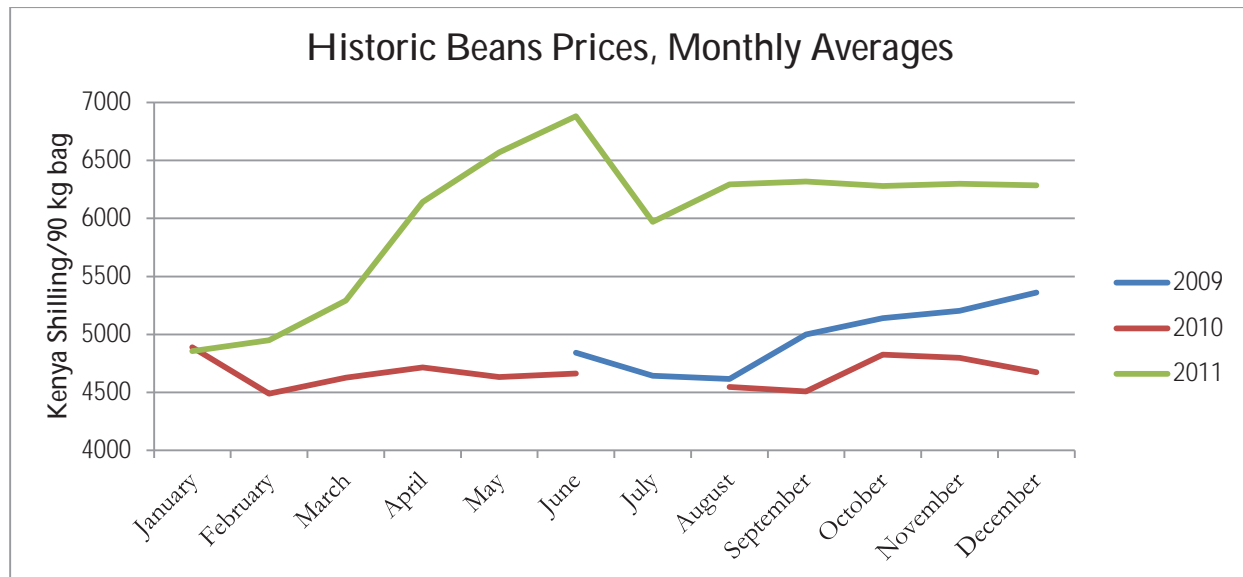
Source: Bloomberg, Multi Commodity Exchange of India Ltd. (MCX)



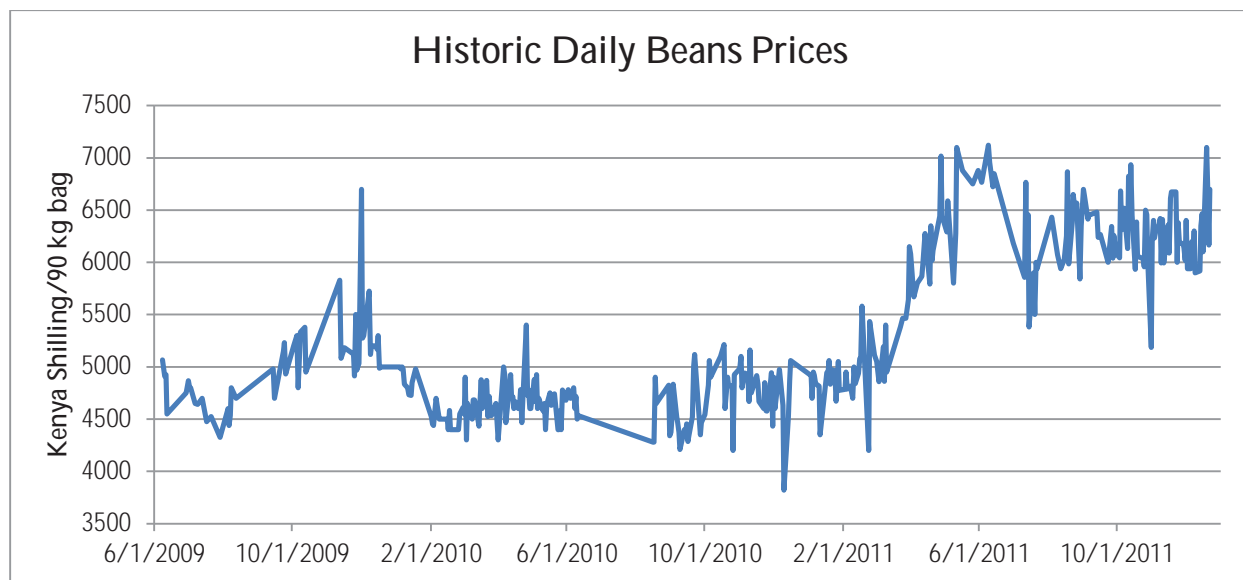
Source: Bloomberg, Multi Commodity Exchange of India Ltd. (MCX), cowpeas spot market

## Beans

Beans prices, based on the Kenyan Ministry of Agriculture daily market survey data, remained fairly constant throughout the quarter with less than a 1% change from month to month. The quarterly average increased only 1.5% from the third quarter, but prices remained almost 32% higher than a year ago.



Source: Kenya Ministry of Agriculture; no observations were made July 2010.

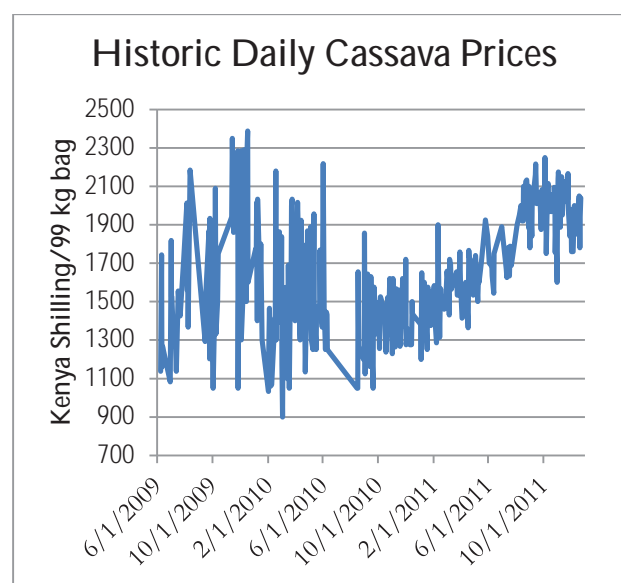
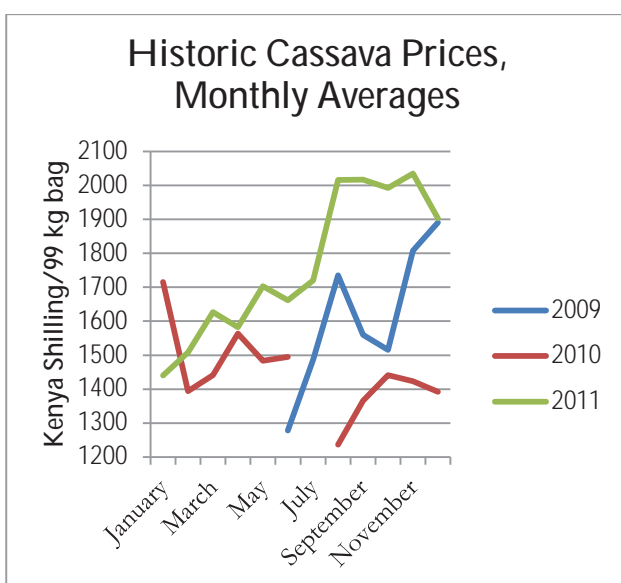


Source: Kenya Ministry of Agriculture

## Tubers

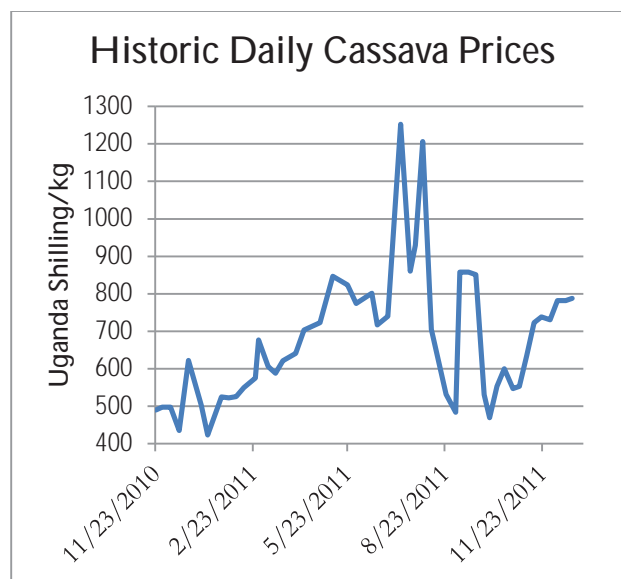
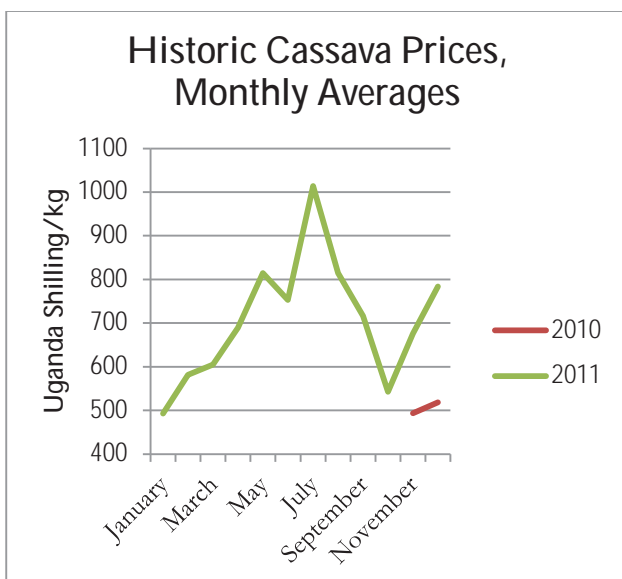
### Cassava

The cassava data reflects three different sources from Kenya, Uganda, and Thailand.<sup>39</sup> Interestingly, each source indicated a different price trend over the past quarter. Kenya showed a slight increase in prices in November before steeply declining in December; average fourth quarter prices represented a 3% increase from the previous quarter, and a 39% increase from last year's fourth quarter average. Uganda's cassava market rebounded significantly after bottoming out in October. The fourth quarter 2011 average fell 21% from the preceding quarter, but still remained 21% higher than a year ago. Prices in Thailand remained fairly stable with only a slight increase in November. Overall prices decreased less than 1% from the third quarter and over 20% from a year ago.

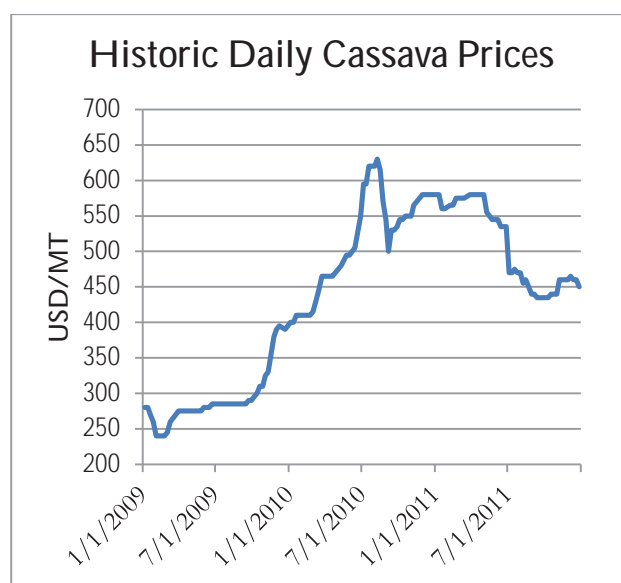
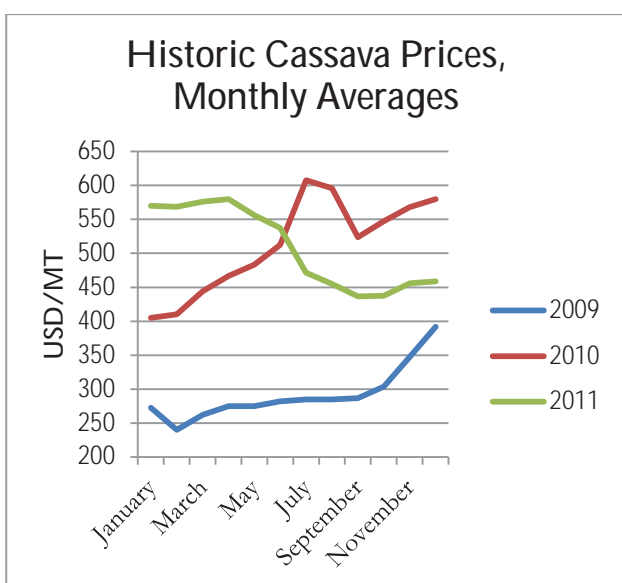


Source: Kenya Ministry of Agriculture; data available beginning June 2009. No observations made July 2010.

<sup>39</sup> For more information on these sources, see *Appendix 3*.



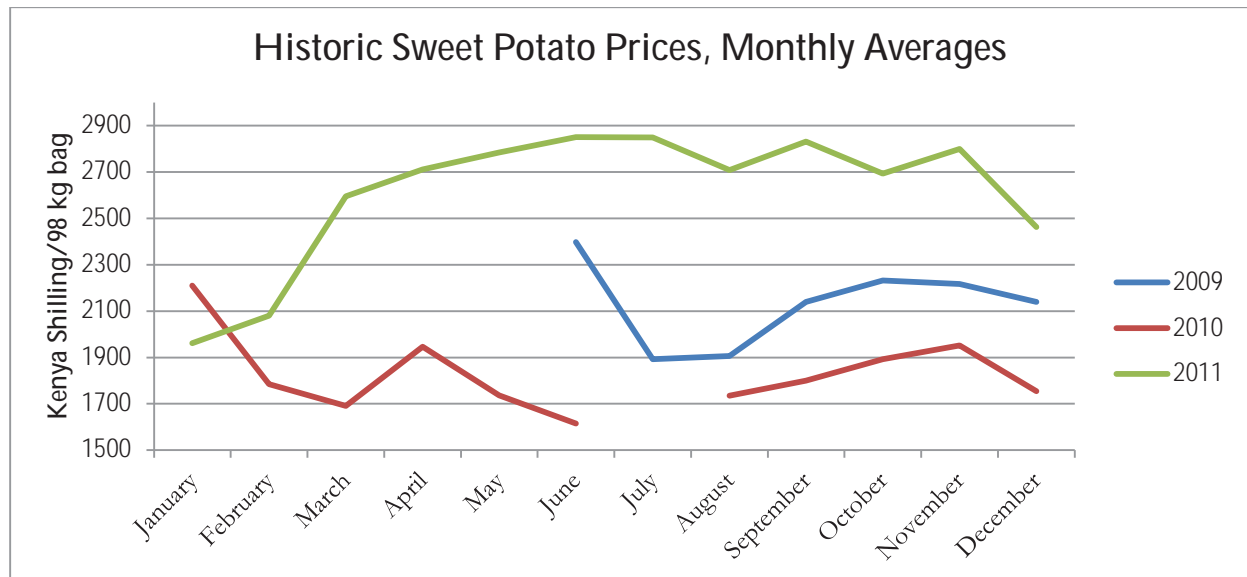
Source: InfoTrade Uganda; Price data available beginning November 2010



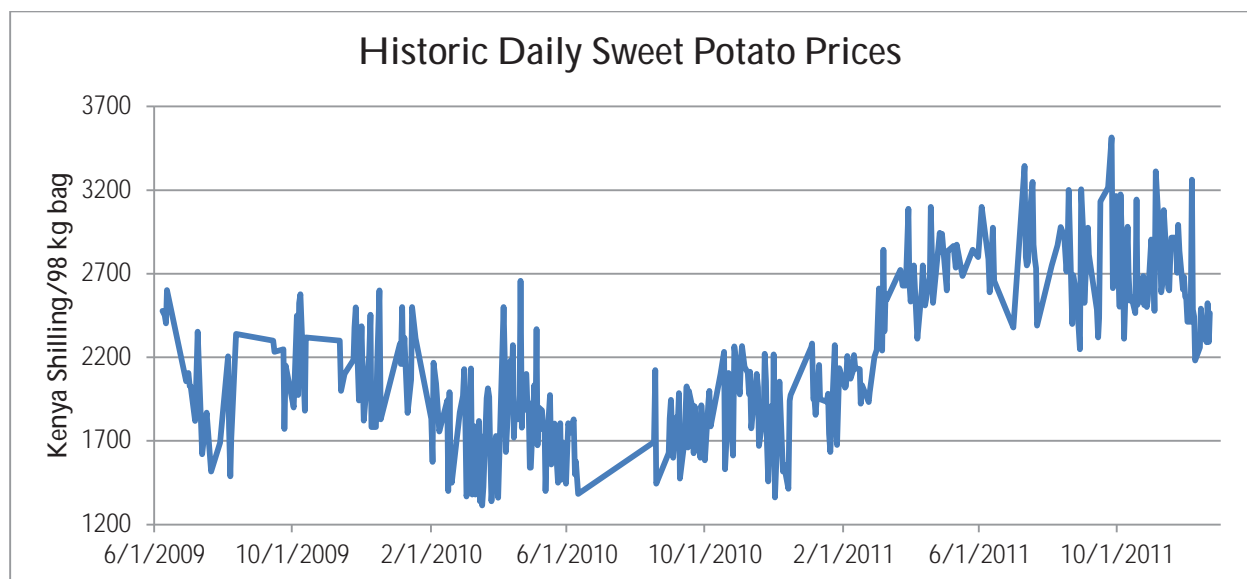
Source: Thai Tapioca Development Institute, tapioca roots domestic price

## Sweet Potatoes

Sweet potato prices, based on data from the Kenyan Ministry of Agriculture, showed volatility throughout the fourth quarter. Prices declined in October, rose in November, then fell more steeply during December. The quarterly average declined 5% from the third quarter to the fourth, but prices remain 42% higher than fourth quarter 2010.



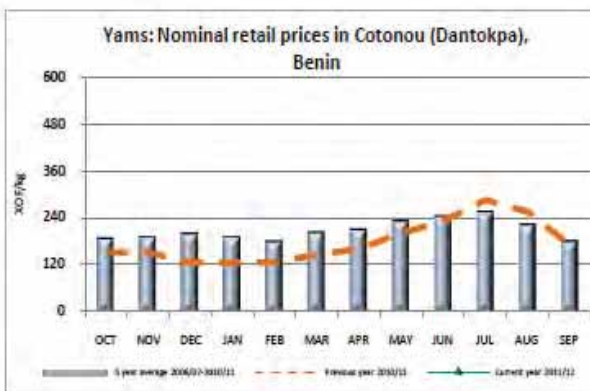
Source: Kenya Ministry of Agriculture; data available starting June 2009. No observations made July 2010.



Source: Kenya Ministry of Agriculture

## Yams

We have not identified a reliable source for yam prices, but USAID's Famine Early Warning Systems Network (FEWS NET) provides some charts showing historical data in four West Africa countries (Nigeria, Benin, Ghana, and Côte d'Ivoire). FEWS NET published this report in January 2012. The silver bars represent the 5 year average price, the orange dashed line represents last year's prices, and the green line represents the current 2011/2012 year beginning with October. These charts indicate yam prices are higher than the 5 year average, and in two of the three cases higher than a year ago.



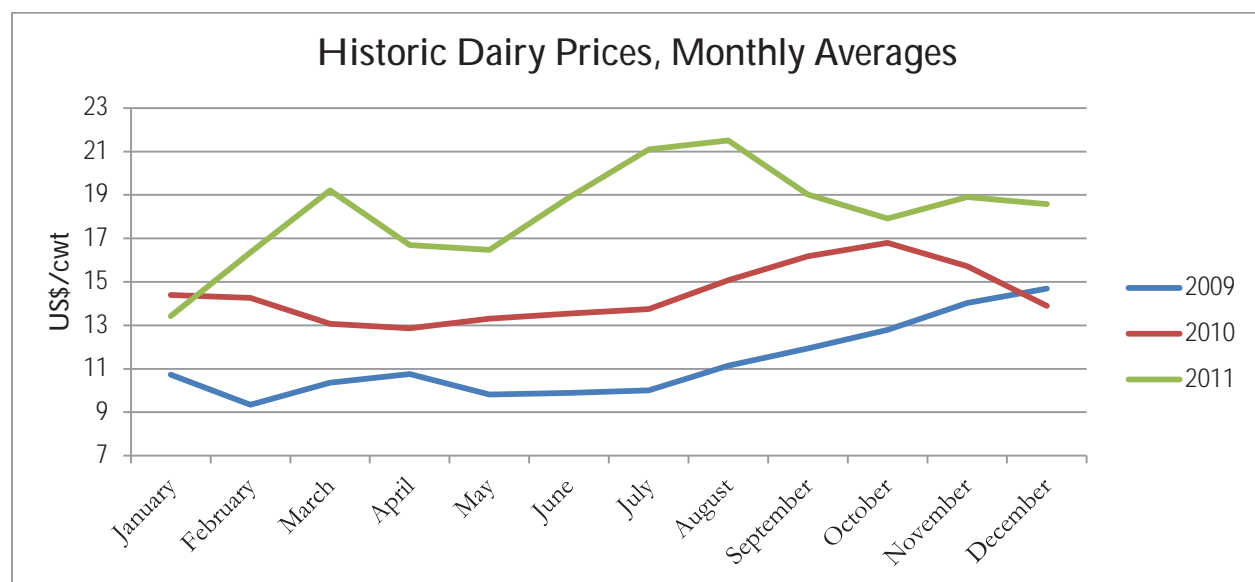
Source: FEWS NET West Africa Price Bulletin, January 2012

## Livestock and Livestock Products

### Dairy

Dairy prices showed some volatility, experiencing increases in October, then decreases in November and December. Average dairy prices fell significantly from the third to the fourth quarter. The Bloomberg data suggest a 10% reduction in prices, while the FAO dairy index registered a 9% fall. The fourth quarter average remained 19% higher than a year ago.

The initial gains in the milk market stemmed from increased demand, particularly in emerging markets like Brazil, Mexico, and China.<sup>40</sup> However, supplies in Oceania and South America recovered during November, and global supply is expected to surge in the coming year.<sup>41,42</sup> Dairy futures prices indicate low prices before increasing during the summer, then falling again over the last quarter of 2012.

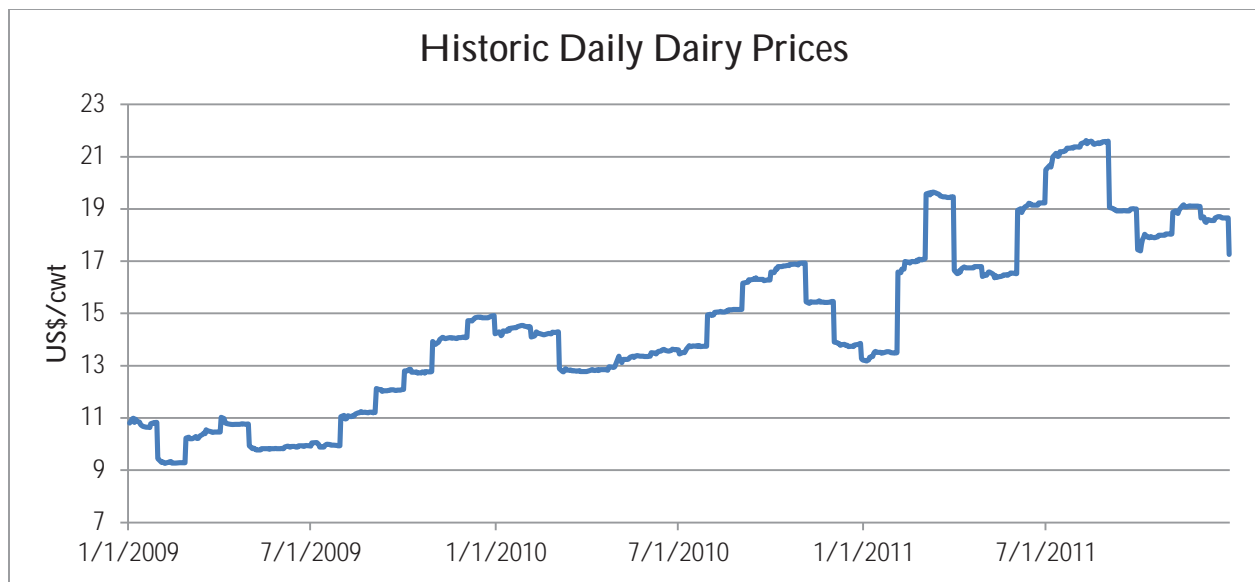


Source: Bloomberg, Chicago Mercantile Exchange (CME), generic milk contract DA1

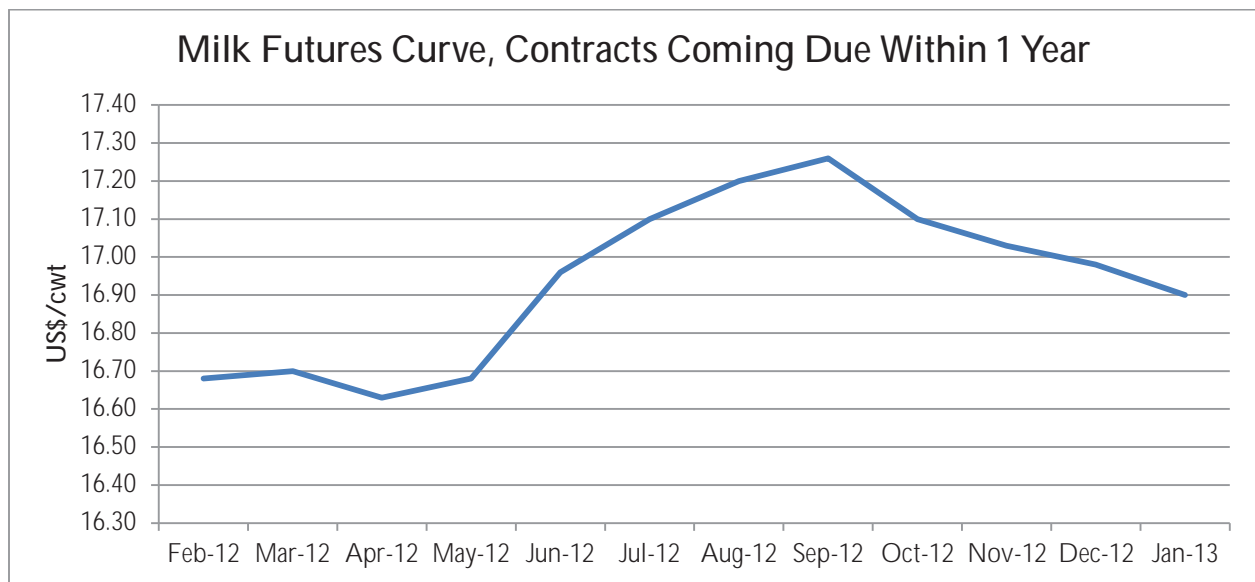
<sup>40</sup> NBR Staff. (2011, December 13). "Fonterra lifts 2012 payout forecast range". *National Business Review*. Available from <http://www.nbr.co.nz/article/fonterra-lifts-2012-payout-forecast-range-ne-106393>

<sup>41</sup> FAO. (2012, December 8). "The November FAO Food Price Index nearly unchanged from October". Available from <http://www.fao.org/worldfoodsituation/wfs-home/foodpricesindex/en/>

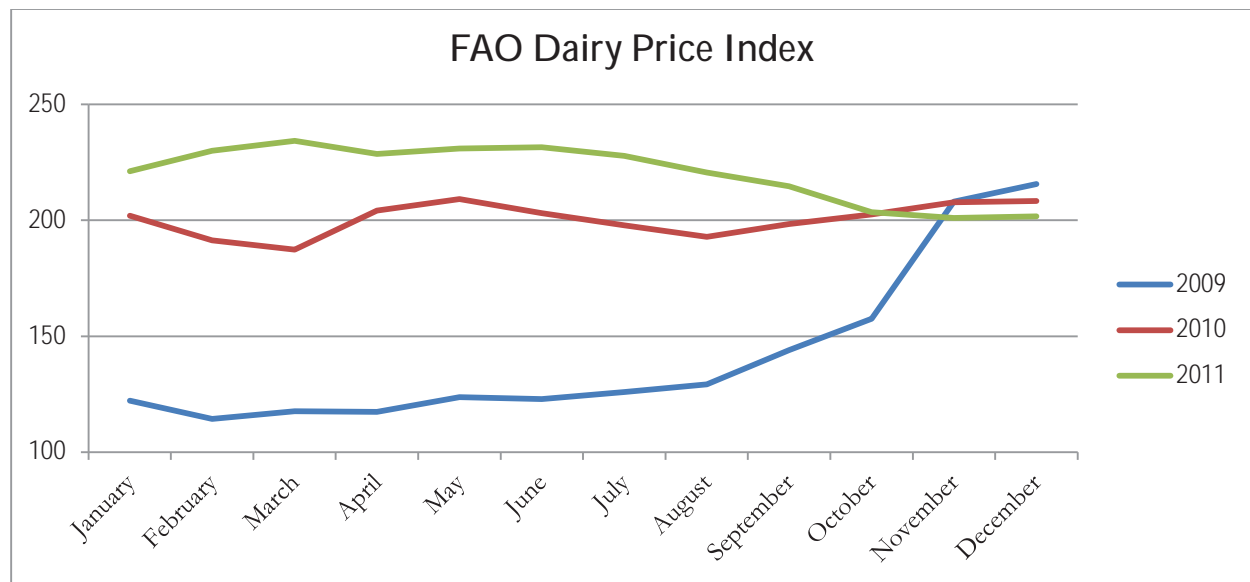
<sup>42</sup> Cooper, O. (2012, January 4). "Dairy markets finely poised as markets ease". *Farmers Weekly*. Available from <http://www.fwi.co.uk/Articles/04/01/2012/130815/Dairy-markets-finely-poised-as-markets-ease.htm>



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



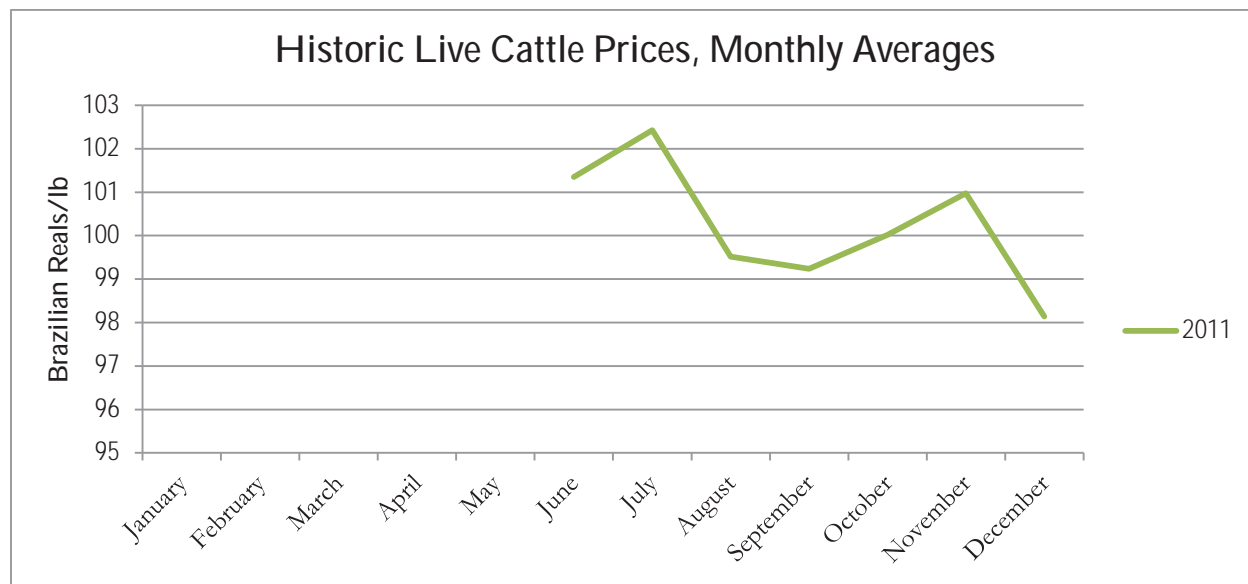
Source: Bloomberg, Chicago Mercantile Exchange (CME), milk contracts DAG2, DAH2, DAJ2, DAK2, DAM2, DAN2, DAQ2, DAU2, DAV2, DAX2, DAZ2, & DAF3, January 31, 2012



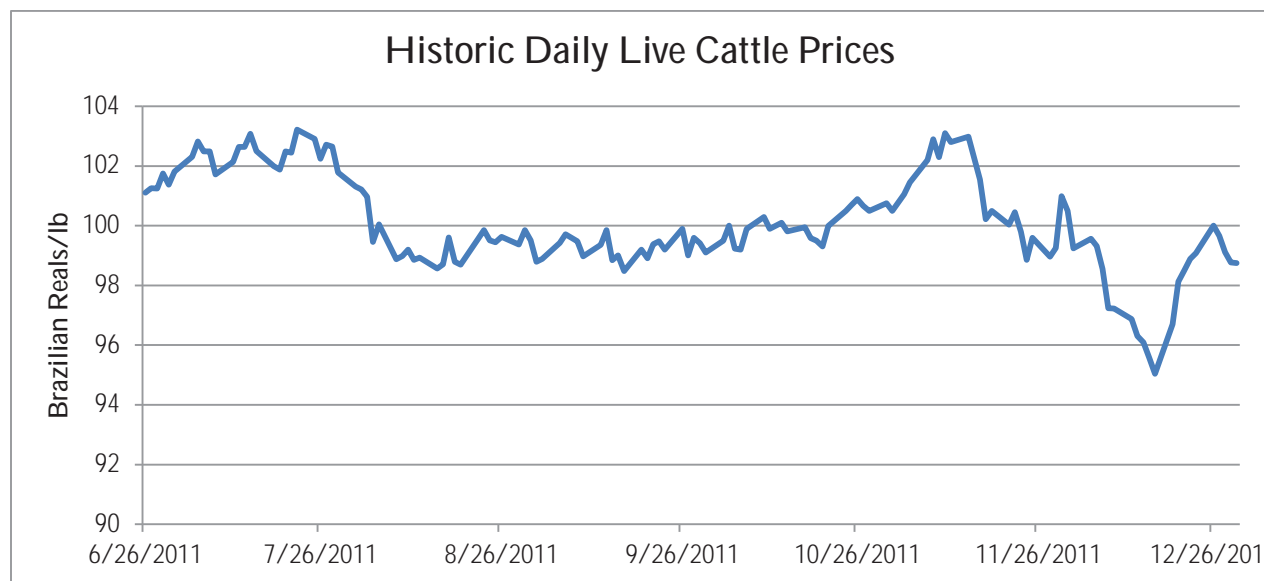
Source: FAO

## Cattle

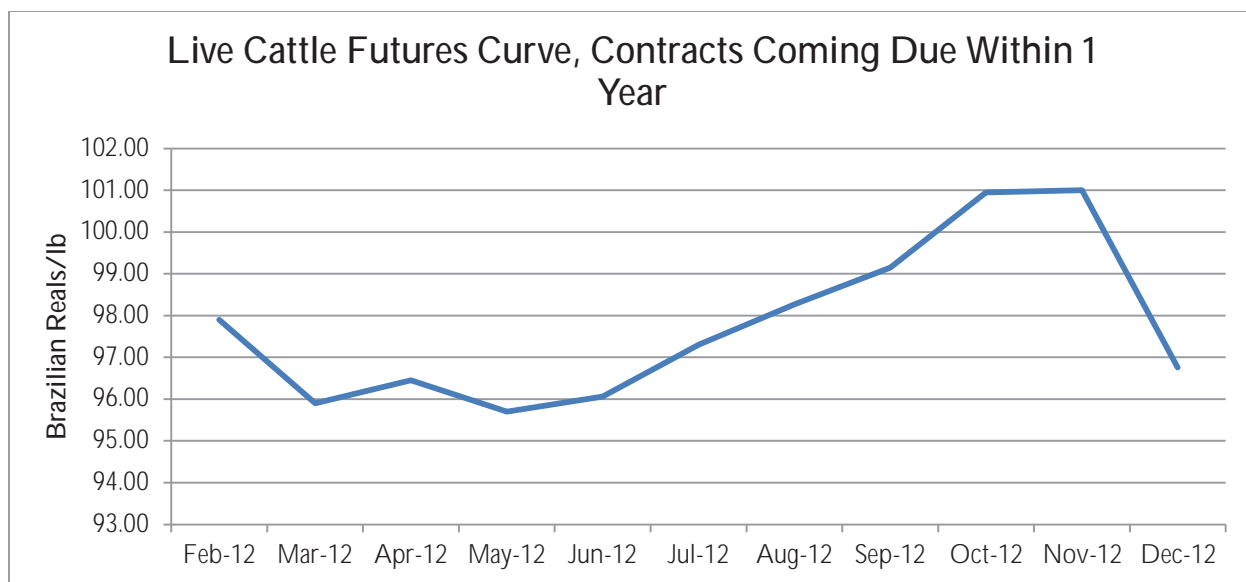
Live cattle prices rose less than 1% during the first two months before falling almost 3% during the first couple weeks of December. In all, this represented only a .7% decrease from the third quarter average. The international cattle market data are new, resulting in no data to compare for an annual perspective. Future prices suggest cattle prices will remain low until rising throughout the second part of the year.



Source: Bloomberg, Brazil International Cattle Market; Price data available beginning June 2011



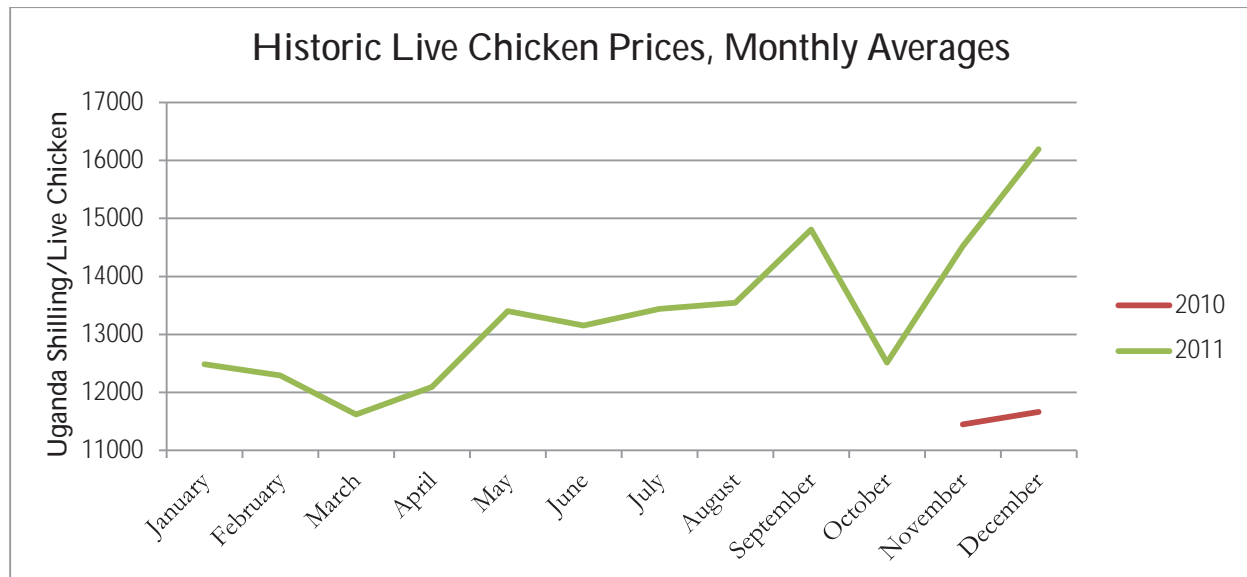
Source: Bloomberg, Brazil International Cattle Market; Price data available beginning June 2011



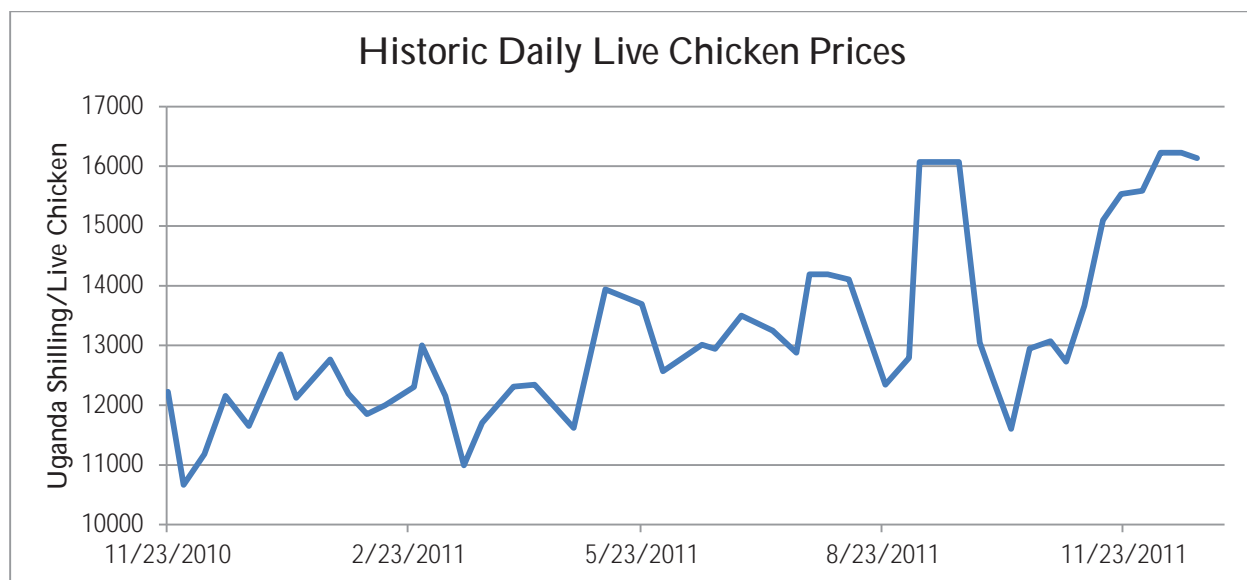
Source: Bloomberg, Brazil International Cattle Market, cattle contracts LSG2, LSH2, LSJ2, LSK2, LSM2, LSN2, LSQ2, LSU2, LSV2, LSX2, & LSZ2, January 31, 2012

## Chickens

Uganda's live chicken market, the only data identified for live chicken prices, experienced a precipitous fall at the beginning of the quarter before rallying to the highest price in the past 14 months. The fourth quarter average price increased over 3% from the third quarter and almost 25% from the 2010 fourth quarter average.



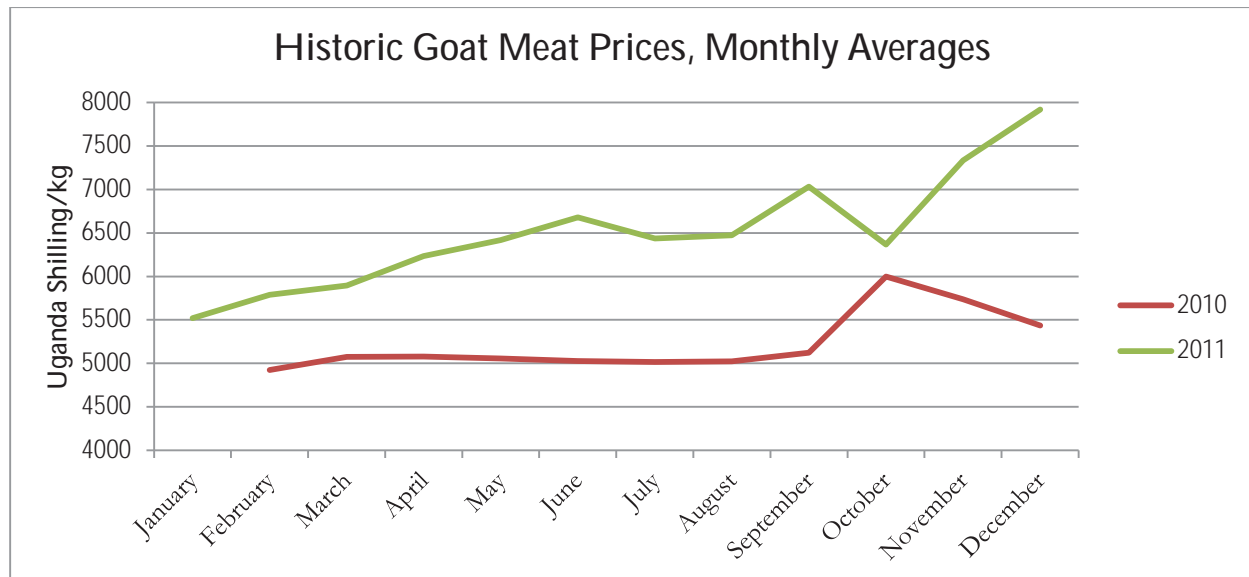
Source: InfoTrade Uganda; data available from November 2010.



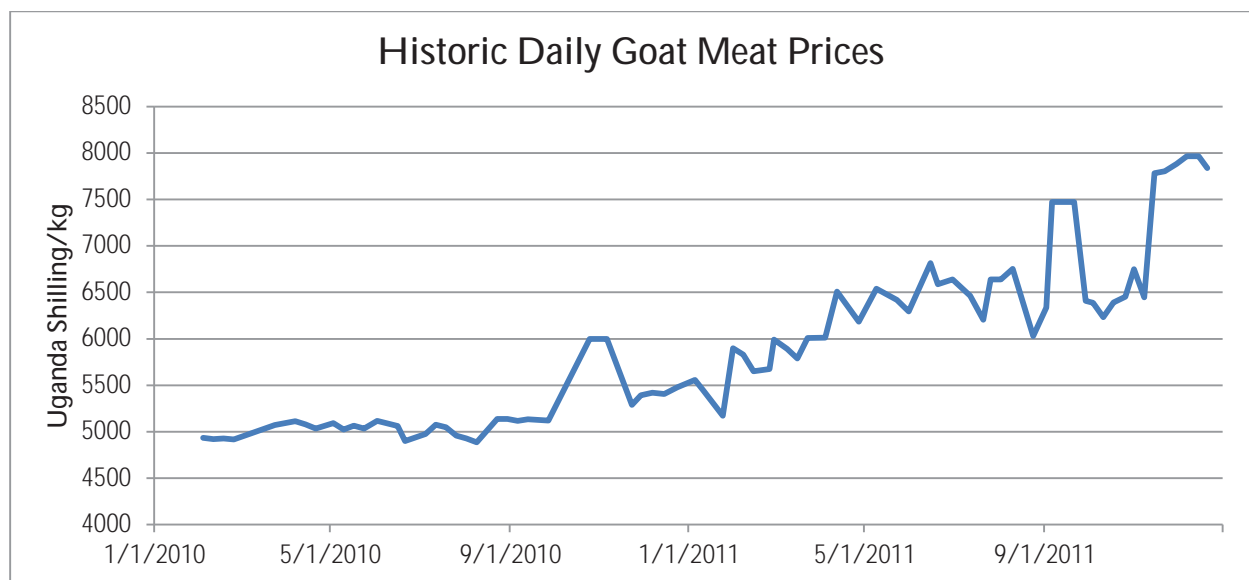
Source: InfoTrade Uganda; data available from November 2010.

## Goats

Following the pattern of all Ugandan commodities, goat meat prices fell significantly at the beginning of the quarter before rallying through the end of the quarter.<sup>43</sup> The quarterly average increased over 8% from the third to the fourth quarter and 26% from the fourth quarter 2010.



Source: InfoTrade Uganda; data available from February 2010.



Source: InfoTrade Uganda; data available from February 2010.

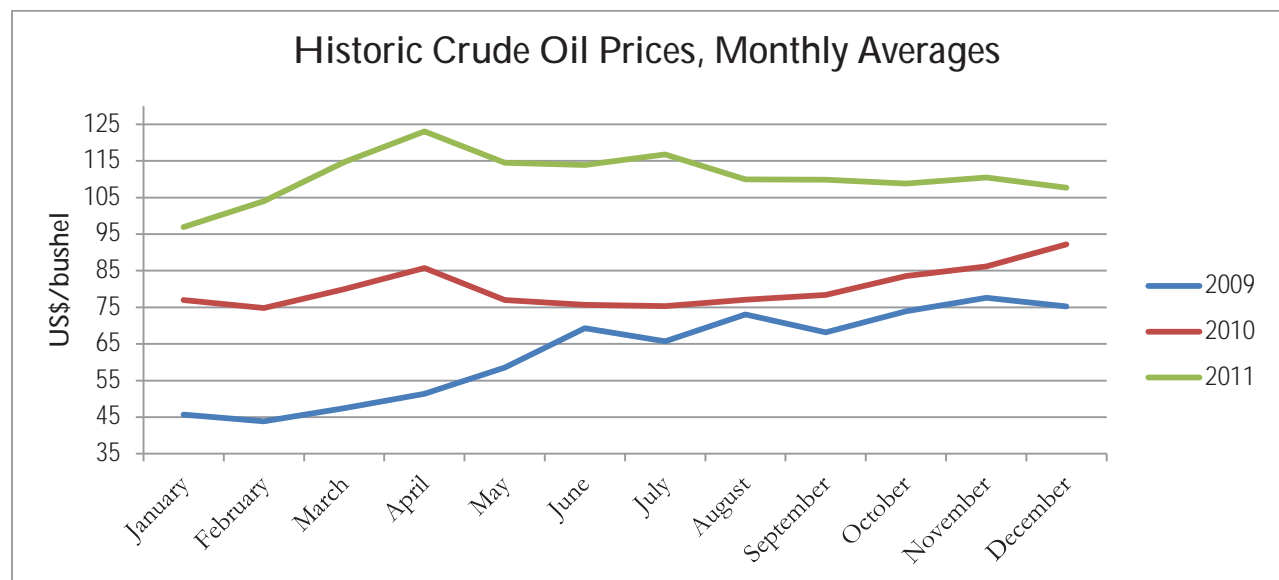
<sup>43</sup> InfoTrade was the only source we found for goat prices.

## Energy

### Crude oil

Crude oil prices were volatile throughout the quarter. After a significant increase at the beginning of the quarter, prices bounced back and forth within a range of \$105 and \$115 per barrel. Overall, the fourth quarter average decreased almost 3% from the previous quarter, but was still 25% higher than the fourth quarter 2010.

The crude oil market closely followed the EU debt crisis. Rises and falls in the market over the past six months are in some part always tied to the changes in the EU debt situation, as positive or negative news serve as an indicators for future economic health and demand.<sup>44,45,46</sup> Global supplies have increased over the past three months due to increased non-OPEC output.<sup>47</sup> Demand has fallen, with particular concern over shrinking Chinese manufacturing.<sup>48</sup>



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

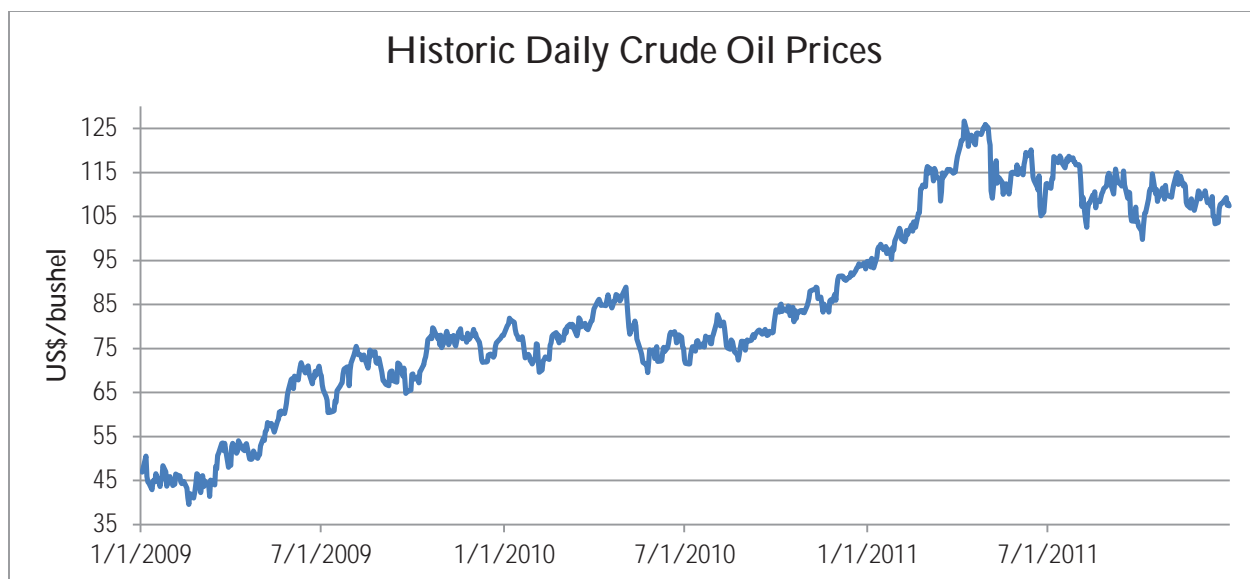
<sup>44</sup> International Energy Agency. (2011, November 10). *Oil Market Report: Highlights*. Retrieved from <http://omrpublic.iea.org/omrarchive/10nov11high.pdf>

<sup>45</sup> Arab Times. (2012, January 9). "Oil demand projected to grow 1.1% Y/Y in Q1". Available from <http://www.arabtimesonline.com/NewsDetails/tabid/96/smld/414/ArticleID/177804/reftab/73/Default.aspx>

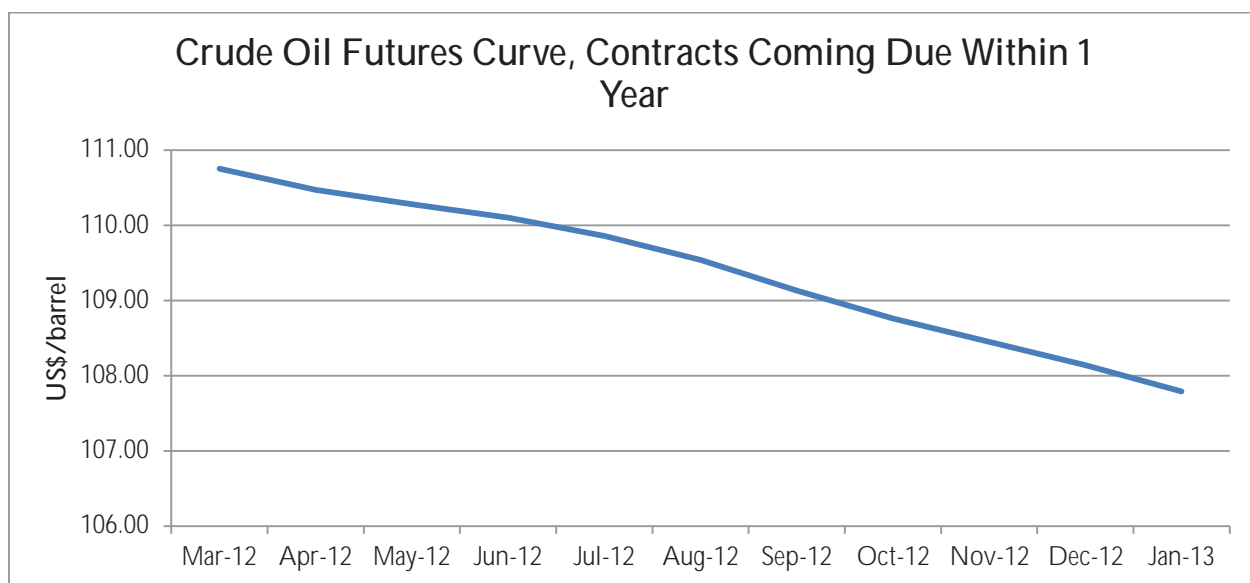
<sup>46</sup> Shenk, M. & Zhou, M. (2011, December 16). "Crude oil heads for biggest weekly drop since September on Europe outlook". *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-12-16/oil-heads-for-second-weekly-drop-on-concern-european-growth-is-slowing.html>

<sup>47</sup> International Energy Agency. (2011, December 13). *Oil Market Report: Highlights*. Retrieved from <http://omrpublic.iea.org/omrarchive/13dec11high.pdf>

<sup>48</sup> Zhou, M. (2011, December 30). "Crude oil pares third annual increase as Chinese manufacturing contracts". *Bloomberg*. Available from International Energy Agency. (2011, November 10). *Oil Market Report: Highlights*. Retrieved from <http://omrpublic.iea.org/omrarchive/10nov11high.pdf>



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

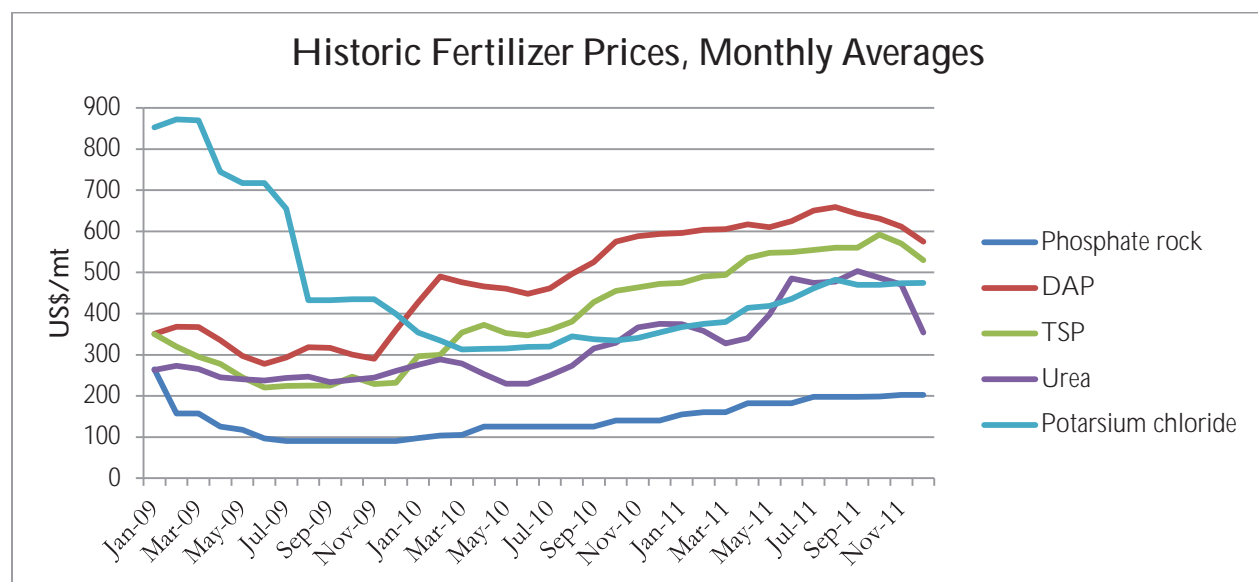


Source: Bloomberg, New York Mercantile Exchange (NYMEX), Brent Crude Oil futures contracts COH2, COJ2, COK2, COM2, CON2, COQ2, COU2, COV2, COX2, COZ2, & COF3 January 31, 2012

## Fertilizer

Fertilizer prices were mixed this quarter, with some significant decreases in the price of urea and DAP and stagnation or minimal growth in phosphate rock, TSP, and potarsium chloride. From October to December, DAP fell almost \$70/mt and urea fell \$150/mt, or 11% and 30% respectively. Phosphate rock and TSP increased marginally, 2% and 1% respectively, while potarsium chloride registered 0% growth. However, with the exception of DAP, the fourth quarter 2011 averages were significantly higher than a year ago, ranging from 22-44% higher.

The slowdown in the fertilizer markets resulted from economic uncertainty. Declining commodity prices and fears of a global recession have led to farmers waiting to replenish their inventory.<sup>49,50</sup> Inventories have increased, well exceeding current demand.<sup>51</sup>



Source: World Bank, Pink Sheet.

<sup>49</sup> Khrennikov, I. (2011, December 30). "Phosagro cuts phosphate-fertilizer output goal on price drop". *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-12-30/phosagro-cuts-phosphate-fertilizer-output-goal-on-price-drop-1-.html>

<sup>50</sup> Agrimoney. (2012, January 4). "Phosphate price outlook weakest in nutrient sector". Available from <http://www.agrimoney.com/news/phosphate-price-outlook-weakest-in-nutrient-sector--4009.html>

<sup>51</sup> Casey, S. (2011, December 29). "Mosaic declines after plan to reduce phosphate production". *Bloomberg*. Available from <http://www.bloomberg.com/news/2011-12-29/mosaic-drops-after-plan-to-cut-output-by-250-000-metric-tons.html>

## Conclusion

Falling prices characterized the majority of commodities covered in this report. Major cereals and cocoa experienced significant bumper crops, increasing supply while demand simultaneously weakened. Fertilizers followed these trends as farmers wait to see how the markets shape in the coming year. Livestock was mixed, with chicken and goat prices increasing, while cattle and dairy fell. Tubers gained for some portion of the quarter before falling over the last part, with the exception of yams which gained throughout. Futures prices suggest most commodities' price, with the exception of maize, will increase over the coming year; however, in most cases prices are significantly lower than future prices a quarter ago.

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

## Appendix 1: Factors that Contribute to Agricultural Commodity Price Volatility

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

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

Recently, the FAO and others have noted that macroeconomic factors including fluctuating exchange rates, volatile oil prices, and rising liquidity from low interest rates have played an increasing role in the fluctuations observed in agricultural commodities markets. They note that although supply and demand will continue to be the primary factors that shape commodities markets in 2010, the global food system has arguably become more susceptible to volatility driven by external, non-food economy events.<sup>52</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>53,54,55</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

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<sup>52</sup> FAO. (2009). *Food Outlook*. Retrieved from <http://www.fao.org/docrep/012/ak341e/ak341e00.htm>.

<sup>53</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>54</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>

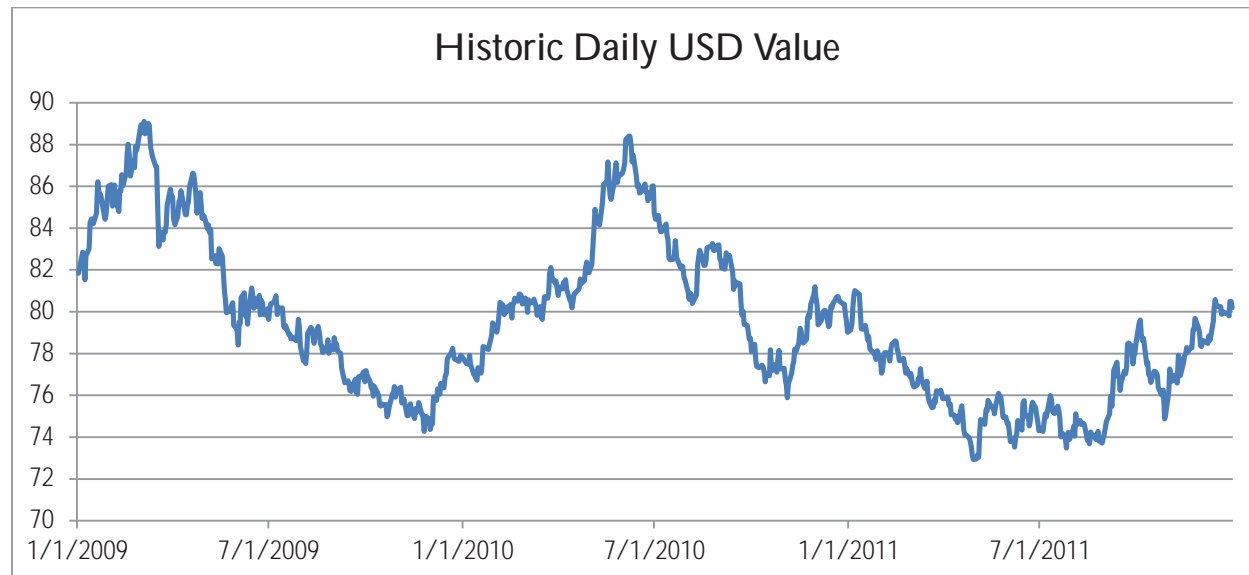
<sup>55</sup> FAO (2009). *The State of Agricultural Commodity Markets, High food prices and the food crisis – experiences and lessons learned*. Retrieved from <ftp://ftp.fao.org/docrep/fao/012/i0854e/i0854e.pdf>

- 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, essentially bidding up (down) the price.<sup>56</sup> Another avenue affecting this relationship includes a weaker (stronger) USD becoming more (less) attractive to borrow, fueling higher (lower) demand and speculation.<sup>57</sup> The chart below shows the USD index, which measures the value of the USD against a basket of six foreign currencies.

The fourth quarter saw the value of the dollar fall through the first few weeks of the quarter before rising through the end of the quarter, with brief, minor declines in November and December. The year ended at a level not seen since the beginning of first quarter 2011.



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<sup>56</sup> Blomberg, S.B. and Harris, E.S. (1995). The commodity—consumer price connection: fact or fable? *Federal Reserve Bank of New York Economic Policy Review*, October, 21-38.

<sup>57</sup> Krichene, N. (2008). *Recent Inflationary Trends in World Commodities Markets* [International Monetary Fund Working Paper]. Retrieved from <http://www.imf.org/external/pubs/ft/wp/2008/wp08130.pdf>

### Appendix 3: Priority Crop Sources

*Kenya Ministry of Agriculture* – Beginning May 25 2009, Kenya’s Ministry of Agriculture began regularly reporting early morning wholesale commodity prices. The ministry contacts a number of markets, ranging from 5-15 each day, to ascertain current commodity prices. Markets used in these reports include the following: Nairobi, Mombasa, Kisumu, Eldoret, Nakuru, Malindi, Kisii, Kitui, Namga, Nyahururu, Mwingi, Taveta, Busia, Embu, Machakos, Thika, Kakamega, Bungoma, Loitoktok, Chwele, Imenti, Gikumi, Karatina, Siaya, and Mathira. This source provides data for the following crops: millet, beans, cowpeas, groundnuts, cassava, and sweet potatoes.

For the graphs above, prices across the country were averaged to create a country composite. Consecutive reports rarely use the same markets (excepting Nairobi and Mombasa), which accounts for the extreme volatility in daily graphs using this source. However, monthly trends reflect markets across the entire country.

*InfoTrade Uganda* – InfoTrade Uganda is a project stemming from a partnership between FIT Uganda LTD (a leading Ugandan business development firm) and the Danish International Development Agency (DANIDA). InfoTrade reports commodity prices from 20 markets throughout Uganda on a weekly or bi-weekly basis. These markets include Arua, Gulu, Hoima, Kasere, Kampala, Kapchorwa, Kiboga, Kabale, Mbarara, Masaka, Mbale, Soroti, Kabarole, Lira, Luwero, Iganga, and Jinja. This source provides data for the following commodities: cowpeas, cassava, goat meat, live chickens, and millet.

*Thai Tapioca Development Institute (TTDI)* – TTDI is an independent non-profit organization supported by the Thai Ministry of Commerce. As the world’s largest exporter of cassava in its various forms, TTDI seemed the source most representative of global cassava prices. The data reported in this report reflect a weekly tapioca roots (cassava) price.

*Réseau des Systèmes d’Information des Marchés en Afrique de l’Ouest (RESIMAO)* – RESIMAO, also known as West-African Market Information Network (WAMIS-NET), provides data and charts on commodity prices from local markets. USAID’s FEWS NET uses their data to construct their monthly West African Price Bulletin. The charts used in the Yams section come from RESIMAO.