

# Cereals outlook for 2011/12 —maize in the red zone

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## 1 RECAP FROM THE EARLIER UPDATES

*International maize and wheat prices have risen sharply since mid 2010, driven largely by harvest failures in the Northern Hemisphere in 2010, poorer than hoped for Southern Hemisphere harvests into 2011, and strong demand, particularly for maize to make fuel. Rice prices, though high compared to historical norms, have been more stable than wheat and coarse grains prices over this time.*

## 2 WHAT HAS HAPPENED TO PRICES SINCE EARLY MAY?

### Cereals markets

#### Spot prices [see Figures A and B]

**Maize** prices which turned down slightly in early May rose through mid May into early June.

- By the week ending June 10, US Yellow Maize was trading at US\$315/tonne, 114% higher than the previous low in week ending July 2nd, 2010 — and above high point of the last price spike in June 2008;

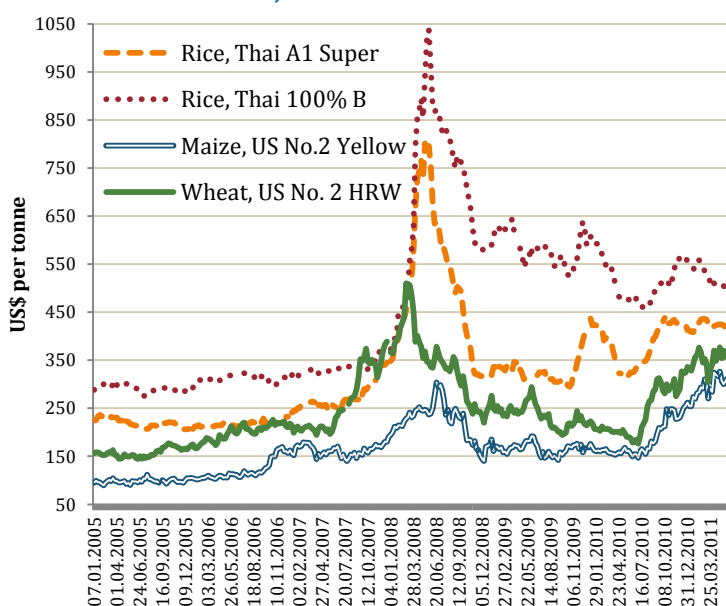
**Wheat** prices have fluctuated: by the second week of June they were some US\$20/tonne less than in early May.

- By the week ending June 10, US Hard Red Winter Wheat was trading at US\$354/tonne, 101% above the low in week ending July 2<sup>nd</sup>, 2010; and

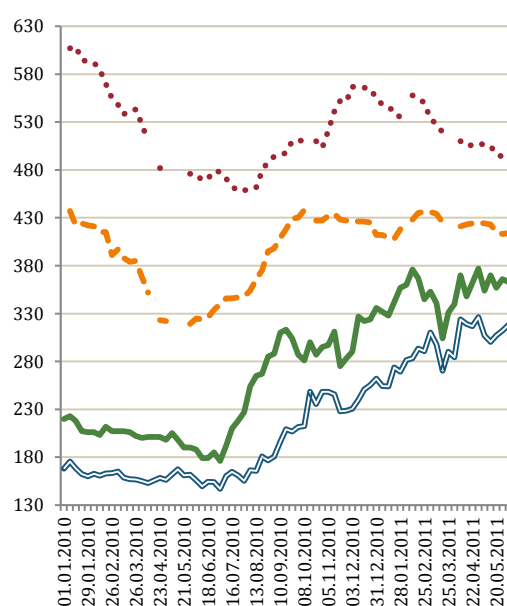
**Rice** prices have seen little movement in the last month.

- By the week ending June 10, low grade Thai Rice was trading at US\$414/tonne, up 30% from the low in week ending May 28<sup>th</sup>, 2010, while medium grade was trading at US\$505/tonne, up only 10% since week ending 23<sup>rd</sup> of July, 2010.

**Figure A: International cereals prices from Jan 2005 to second week of June, 2011**



**Figure B: Focus on 2010/11**



**Source:** Constructed with data from FAO ESC. **Note:** Weekly prices run from Jan 2005 (or Jan 2010) to week ending June 10<sup>th</sup>, 2011.

#### Futures prices [see Figures C and D]

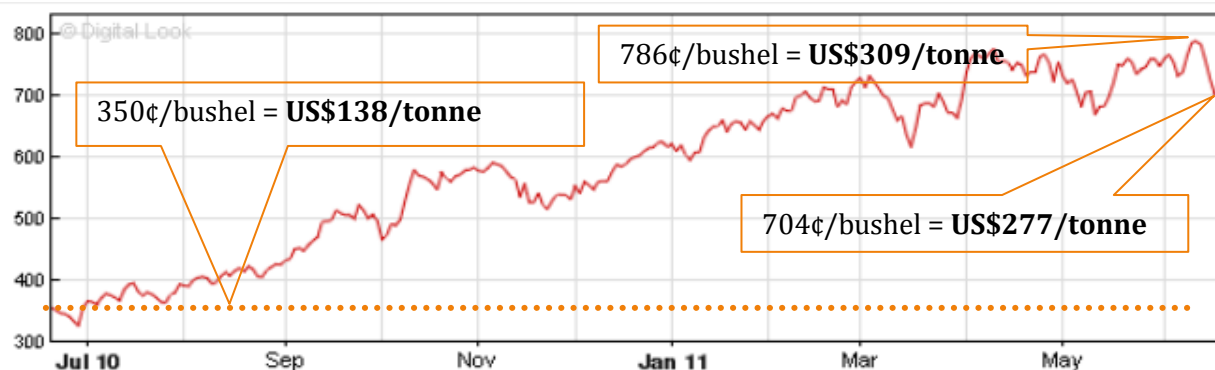
Maize futures, which appeared to be trending down from April into mid May, rose again, reaching beyond the high seen in early April, before falling sharply in the third week of June.

- Maize futures were up about 101% from mid 2010 to June 17, 2011.

Wheat futures have been edging down since late May and continue to remain well below the highs reached in early February 2011.

- Wheat futures prices which almost doubled from mid 2010 to February 2011 fell about 9% from late May to June 9<sup>th</sup>, 2011.

Figure C: CBOT Corn Futures: US cents/bushel - 12 months to June 17, 2011



Source: BBC Market data. Dotted lines and US\$/tonne added

Figure D: CBOT Wheat Futures: US cents/bushel - 12 months to June 17, 2011

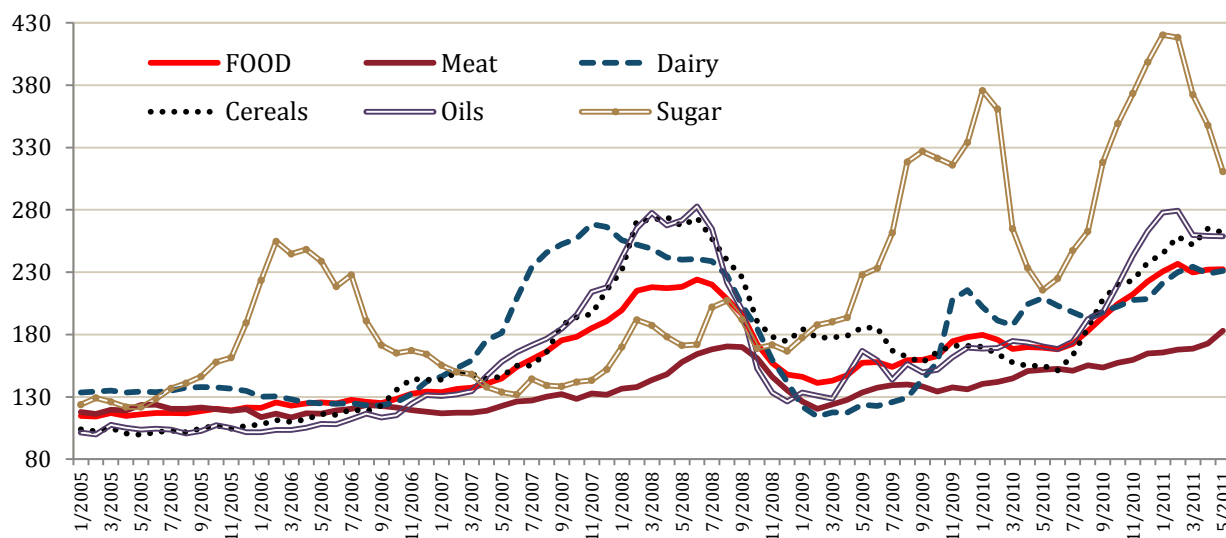


Source: BBC Market data. Dotted lines and US\$/tonne added

## FAO food prices indices

FAO's overall food commodity index, see Figure E, was barely changed in May.

Figure E: Monthly FAO Food Price Indices: Jan 2005 to May 2011



Source: FAO

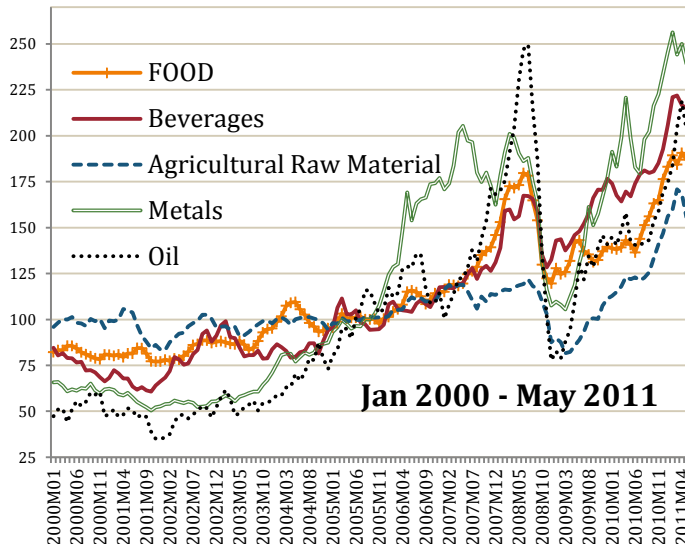
Cereals<sup>1</sup> and oils were slightly down, and sugar fell substantially. On the other hand, meat rose, and dairy was slightly up.

<sup>1</sup> This is an index for May, and maize and wheat price movements reported earlier continue two weeks into June.

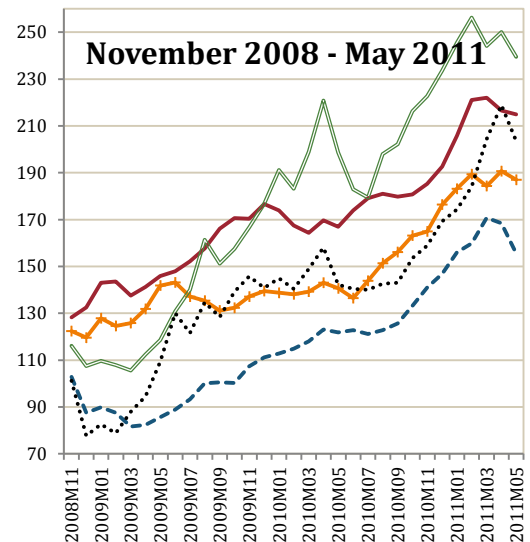
## IMF commodity indices

Indices fell in May, see Figure F. The two year surge in commodity prices shows signs of weakening.

Figure F: Commodity indices to May 2011



Signs of weakening surge?



Source: IMF Data. Note: 2005 = 100

## 3 HARVEST WATCH

### Maize & Wheat: Southern Hemisphere

Main Southern Hemisphere harvests of wheat and maize in the first half of 2011 have proved higher than first feared.

Estimates for the **Argentine** harvests of wheat and maize for 2010/11<sup>2</sup> and the **Australian** wheat harvests<sup>3</sup> have not changed from early May to the second week of June.

### Maize & Wheat: Northern Hemisphere

Although there have been some improvements in outlook recently, worrying news continues to indicate that the Northern Hemisphere harvests of winter wheat, as well as the main 2011 crops may suffer from poor weather<sup>4</sup>.

On the positive side, some winter wheat harvests coming in at the moment in **North America** are looking better than feared<sup>5</sup>.

<sup>2</sup> Bolsa de Cereales: <http://www.bolsadecereales.com/>

<sup>3</sup> <http://www.abare.gov.au/publications/html/data/data.html>

<sup>4</sup> See for instance Bloomberg, June 9, 2011: *Crop Weather Mayhem Delays U.S. Corn, Rice Planting as Prices Extend Gain*. <http://www.bloomberg.com/news/2011-06-09/crop-weather-mayhem-delays-u-s-corn-rice-planting-as-prices-extend-gains.htm> or Agrimoney, June 9, 2011: *US officials ditch hopes for rise in EU wheat crop*. <http://www.agrimoney.com/news/us-officials-ditch-hopes-for-rise-in-eu-wheat-crop-3236.html>

<sup>5</sup> See Agrimoney, June 7, 2011: *Evening markets: wheat slips after US yields beat forecasts*. <http://www.agrimoney.com/marketreport/evening-markets-wheat-slips-after-us-yields-beat-forecasts-1123.html>

Wheat prices also fell slightly after news that **Russia** would remove its export ban<sup>6</sup>. More recent news suggested they may again adopt restrictions<sup>7</sup>, although other sources maintain that wheat output from 2010 may have been underestimated in Russia by as much as 6MT<sup>8</sup>, making opening up exports more attractive.

#### Rice: Asia

Recent reports suggest the rice price is likely to remain stable, although there have been worrying reports of drought threatening crops in **China's** major producing provinces Hunan and Hubei, as well as Jiangsu, Anhui, and Jiangxi<sup>9</sup>:

Key exporters, **Thailand** and **Vietnam** continue to expect good harvests. Some reports are also coming out that a good harvest in **India** means farmers continue to lobby the Indian government to lift its export ban on lower grade rice<sup>10</sup>.

Production in some importers or potential importers is also looking encouraging. In the **Philippines**, where rice importation has attracted criticism over the last few years<sup>11</sup>, recent reports suggest imports will be low in the coming year<sup>12</sup>.

**Indonesia** is reportedly aiming for a 5% increase in rice paddy output for the coming year, which they hope combined with a stock surplus in 2011 should negate any need for imports in 2012<sup>13</sup>.

## FOCUS ON MAIZE: THE ALARMING IMPACT OF BIOFUELS

Stocks, as measured by their ratio to use, are expected to be sufficient to mitigate price shocks for **rice** and **wheat** with stock to use ratios expected for 2011/12 of 21% and 28% respectively, see Figure G. The latest USDA World Agricultural Supply and Demand Estimates (WASDE) released on June 9 indicate current and likely future stocks for the main cereals

For maize however, the stock-to-use ratio projected for 2011/12 is down to just 13%.

<sup>6</sup>Vladimir Putin said in late May that Russia would lift grain export bans from July 1: see <http://www.bbc.co.uk/news/world-europe-13583287>

<sup>7</sup> Agrimoney, June 10, 2011: *Expectations mount of Russian grain export levy*. <http://www.agrimoney.com/news/expectations-mount-of-russian-grain-export-levy--3245.html>

<sup>8</sup> Agrimoney, June 6<sup>th</sup>, 2011: *Russia grain losses exaggerated by up to 6m tonnes*. <http://www.agrimoney.com/news/russia-grain-losses-exaggerated-by-up-to-6m-tonnes--3220.html>

<sup>9</sup>China is largely self-sufficient in rice and maintains large stores though, so this may not impact the world markets unduly. Reports include: UPI, May 21, 2011: *Drought threatens China rice harvest*. [http://www.upi.com/Top\\_News/World-News/2011/05/21/Drought-threatens-China-rice-harvest/UPI-45421305999535/](http://www.upi.com/Top_News/World-News/2011/05/21/Drought-threatens-China-rice-harvest/UPI-45421305999535/) & Commodity Online, June 9, 2011: *China drought affects rice crops in 3.8 million hectare*. <http://www.commodityonline.com/news/China-drought-affects-rice-crops-in-38-million-hectare-39793-3-1.html>

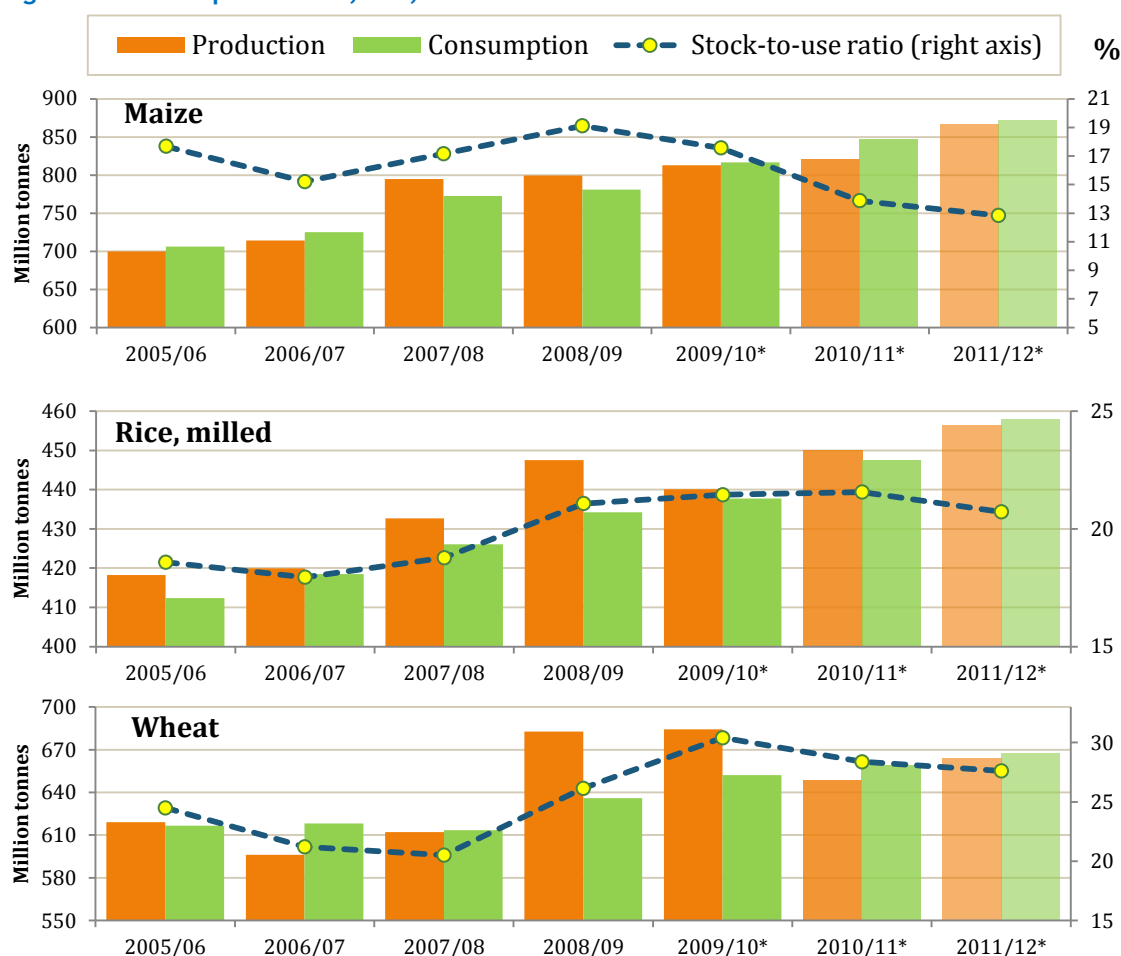
<sup>10</sup> Bernama, June 6, 2010: *Indian Rice Growers Fear Glut, Want Government To Lift Export Ban*. <http://www.bernama.com/bernama/v5/newsbusiness.php?id=591841>

<sup>11</sup>For instance: <http://newsinfo.inquirer.net/inquirerheadlines/nation/view/20110518-337105/Rice-overimported-in-last-3-years-of-Gloria-Macapagal-Arroyo> suggested: "The Philippine government overestimated the yearly rice consumption by every Filipino, leading to overimportation in the last three years of the Gloria Macapagal-Arroyo administration"

<sup>12</sup> For instance Philstar, May 23, 2011: *Philippines to greatly cut rice import in 2012*. <http://www.philstar.com/Article.aspx?articleId=689065&publicationSubCategoryId=200>. They plan not to exceed half a million tonnes, compared to an average annual level of imports of 1.67 million tonnes from 2004 to 2008 (FAOSTAT)

<sup>13</sup> See: Daily Times, June 10, 2011: *Indonesian rice output to climb 5% in 2012*. [http://www.dailytimes.com.pk/default.asp?page=2011\06\10\story\\_10-6-2011\\_pg5\\_27](http://www.dailytimes.com.pk/default.asp?page=2011\06\10\story_10-6-2011_pg5_27)

Figure G Cereals production, use, and stock-to-use ratios

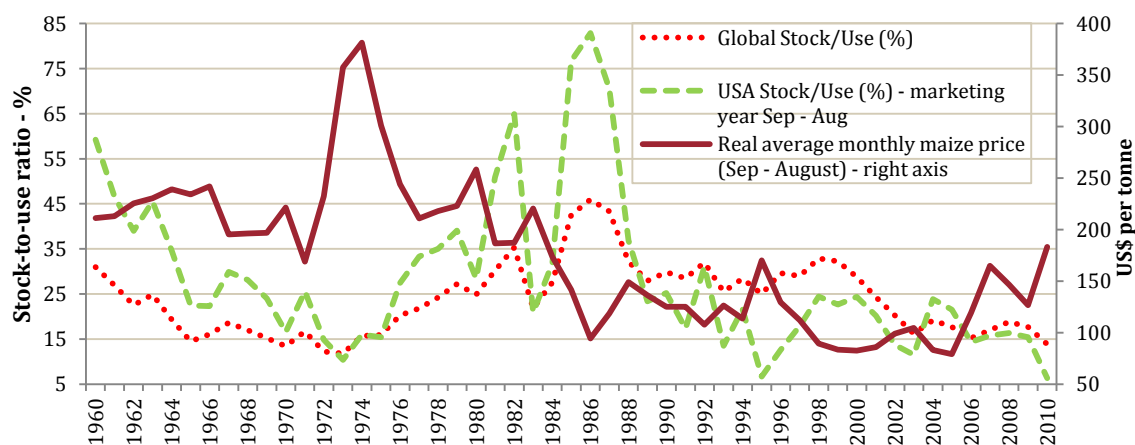


Source: Constructed with data from USDA FAS and USDA WASDE. Notes: \*Latest estimate available (June 2011).

### Maize: very low stocks ring alarm bells

The current and projected levels of stocks-to-use for maize are very low: at their lowest levels since 1974, see Figure H. Low stocks correlate with price spikes: they are a necessary if not always sufficient condition for a spike.

Figure H: The inverse relationship between maize prices and stock-to-use ratios



Source: Price data from [http://future.aae.wisc.edu/data/monthly values/by\\_area/2052?area=US&tab=feed&grid=true](http://future.aae.wisc.edu/data/monthly values/by_area/2052?area=US&tab=feed&grid=true) (Original source USDA NASS). Stock-to-use ratio calculated using data from USDA FAS. Note: Prices are deflated using the US GDP deflator from US Bureau of Economic Analysis. Correlation on natural logs of USA maize stock-to-use ratios and maize prices = -0.44

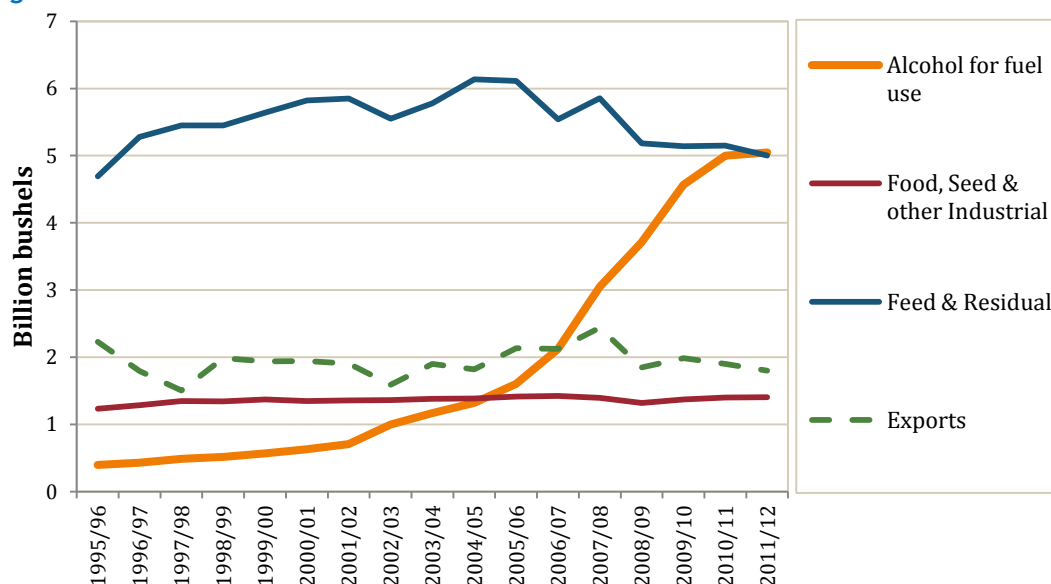
Once stock ratios fall below 15%, most adjustment<sup>14</sup> of changing demand and supply takes place by price changes, with large fluctuations. With such low stocks, it is no wonder that maize futures prices are higher than those for wheat, and that the spot price has climbed above the 2008 level. The only surprise here is that maize prices are not even higher.

### Why are maize stock-to-use ratios so low?

Maize stocks are not low for lack of production. On the contrary, harvests have been rising rapidly. Global maize production projected for 2011/12 is 275M tonnes more than in 2000/01 — about a 46% increase over the period. Compare this to milled rice and wheat production increases over the same period, which were both about 14% larger (57M tonnes more rice and 81M tonnes more wheat).

No, the big difference is the extraordinary expansion in use of US maize for ethanol. Figure I compares trends in US maize used for ethanol, feed, food, and exports. Ethanol use has increased by 4.37 billion bushels from 2000/2001 to 2010/11 — that is 111M tonnes.

Figure I: US maize use from 1995/06 to 2011/12



Source: USDA. Note: marketing years run August to September

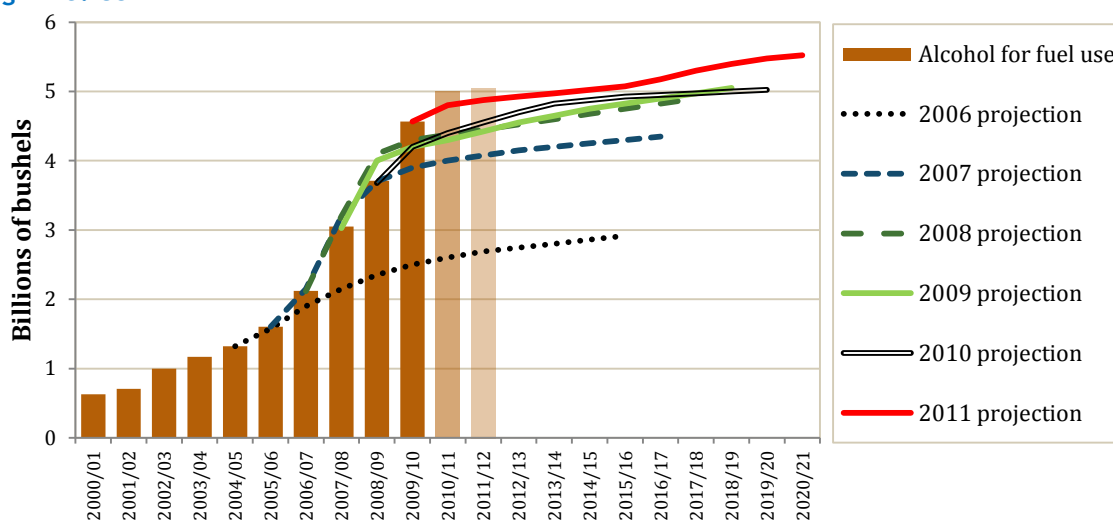
<sup>14</sup> Not all the adjustment falls on maize prices: in livestock feed markets wheat can be substituted for maize, limiting the increase in maize price.

Reports from the USA and China confirm such substitution is happening:

- Reuters, June 10, 2011: *Red hot U.S. corn market sparks more wheat feeding.* <http://www.reuters.com/article/2011/06/10/usa-wheat-feed-idUSN1020168620110610> & Bloomberg, June 14, 2011: *Livestock Eat More Wheat as Cheapest Corn Alternative Since 1996.* <http://www.bloomberg.com/news/2011-06-14/livestock-eat-more-wheat-as-cheapest-corn-alternative-since-1996.html>
- Bloomberg, June 10, 2011: *China Feed Mills Use Wheat as Corn Prices Rise, Researcher Says.* <http://www.bloomberg.com/news/2011-06-10/china-feed-mills-use-wheat-as-corn-prices-rise-researcher-says.html>

Forecasts have consistently under-estimated since 2006 just how much maize is being diverted to the distilleries: See Figure J.

**Figure J: US maize used for ethanol**

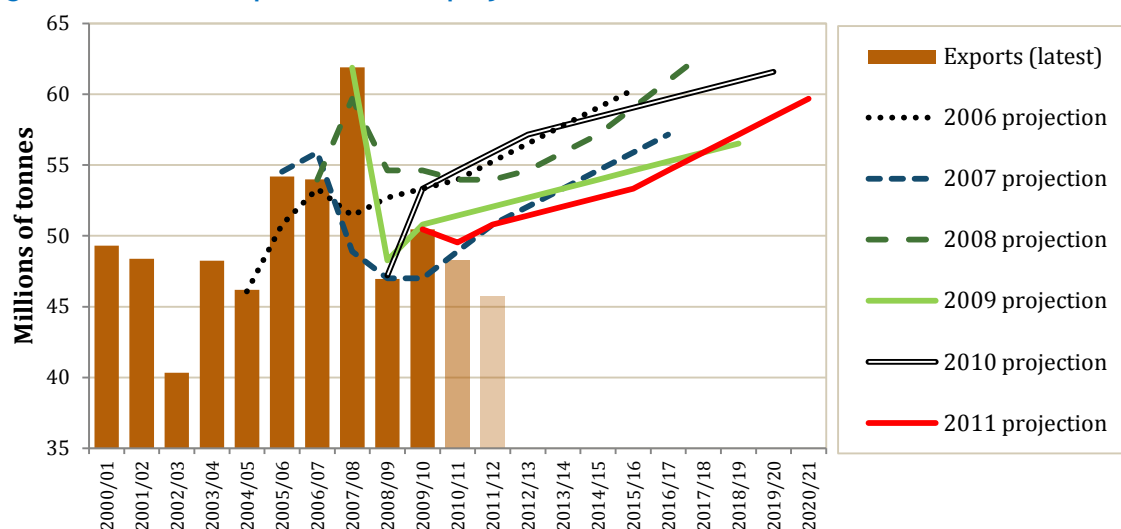


Source: Constructed with data from USDA ERS.

As maize is used for ethanol, there is less left for US exports: the most important source for the world market<sup>15</sup>. Estimates of exports have consistently over-estimated since 2006 how much the US could export: See Figure K.

The difference between the latest USDA estimate for exports in 2011/12 and the February 2011 projection is 200 million bushels — about 5 million tonnes. This is a 10% reduction in average US export levels.

**Figure K: US Maize exports: actual & projected**



Source: Constructed with data from USDA ERS

<sup>15</sup> The United States is the world's top maize exporter: accounting for an average of 54% of global maize exports from 2000 to 2008—on average 50M tonnes a year. This was followed at a distance by Argentina, with 12M tonnes on average over the same period, or about 13% of the global average (FAOSTAT).

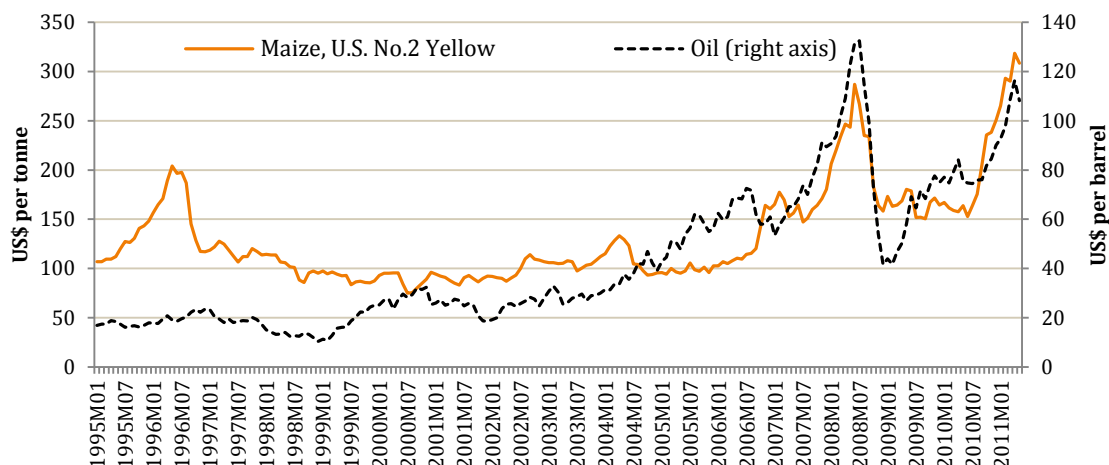


### Why is ethanol use rising so rapidly in the US?

Some of this presumably responds to official policy: mandates to produce renewable fuels, backed by subsidies.

That said, it seems the rise in oil prices — well beyond the levels forecast a few years ago — has driven ethanol production up more quickly than expected. Oil and US maize prices appear to have moved closely together since 2007, see Figure L.

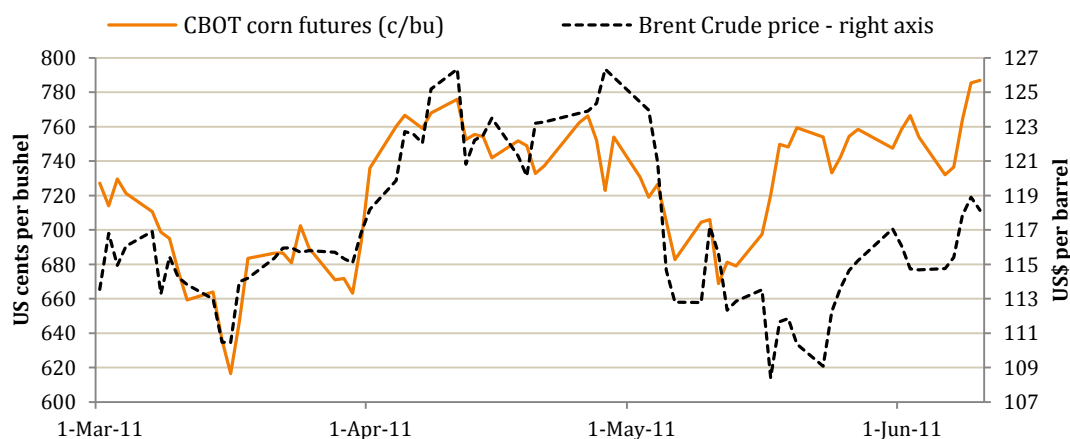
Figure L: Maize and oil prices, 1995 to 2011, monthly



Source: Constructed with data from the IMF. Note: Oil price is an average of U.K. Brent, Dubai, and West Texas Intermediate. Maize price is FOB Gulf of Mexico. Correlation = 0.75

The same close relation holds in the short term as well. Recent daily maize futures prices and oil prices have close correspondence, see Figure M.

Figure M: Daily maize futures and oil prices



Source: CBOT corn futures from Wikinvest, Brent crude price from Digital Look. Note: Correlation = 0.49 (69 observations: does not equal number of days because figures are not available for weekends.). Series runs from 01/03/2011 to 10/06/2011

**In sum**, then, it seems that high oil prices are driving up ethanol production in the US and thereby encouraging very large amounts of maize to be distilled, which in turn means less maize to export, and pushes up world prices. Most worrying, stocks have been cut to the bone. This leaves maize markets on a knife-edge: shocks to demand or supply could trigger very large, and rapid, price changes.