

Agriculture Digest

Global grains easing—wheat and rice balances poised to loosen coupled with a row crop supply rebound across the Americas...

- **The significant easing of staple grain and oilseed prices seems likely to unfold during the second-half of this year; possibly persisting through the new-crop calendar cycle to the benefit of both foreign and domestic consumers that have been forced to ration demand as a consequence of the historic 2012 US drought.** This should buttress a worldwide rebound in grain stocks during the 13/14 campaign after a period of volatile price spikes during 11/12 and 12/13. For primary row crops including corn and soybeans, which remain the key components for livestock feed and biofuels production, projections call for record output this year from the major export centers. A looming Latin American loading program is expected to be coupled with back-to-trend yields on more favorable weather and record planted acres in the US (see: [Doshi, Aakash. "Agriculture Digest: Field of Dreams..." Citigroup: 5 March 2013](#)). Meanwhile benchmark foodstuff crops including wheat and rice—grown more globally and consumed particularly in Asia and MENA—also appear biased towards looser supply/demand fundamentals this year. Elevated wheat prices fueled by stronger feed demand substitution vis-à-vis coarse grains will perhaps normalize as the shortfalls in Black Sea and European availabilities from 2012 should soon return online. Bumper rice harvests in Southeast Asia should keep CBOT contract prices stable this year.
- **Wheat:** global supply/demand assessments suggest loosening balances in 13/14 with a world new-crop harvest near 695-mn tons or y/y growth of 7%. Producing regions including Europe, Russia and Canada should see higher output with robust Indian output intact and the US down slightly to 2,176-mn bushels on all-wheat planted acres of 56-mn. Flat worldwide seasonal demand at 680-mn tons could imply global stocks-to-use growing 4% in 13/14 to 26%. Meanwhile, US carryout looks unchanged ~30% on lower yields and smaller takedown of sowed acres at 86% versus a trailing three-year average of 87%. Given the outlook for significantly lower corn prices in late 2H'13 and 2014, we suspect coarse grains consumption for feed will alleviate wheat use in that category. But adverse domestic winter wheat conditions and reduced 12/13 carryout could see 13/14 US wheat supplies decline 3.8% y/y to 3,022-mn bushels.
- **Rice:** output from SE Asia producing region continues to appear promising amid generally healthy and robust global inventories. In affinity to wheat—the global rice balance sheet is more bearish versus the US standalone table. Relatively ample rice supplies in recent years have helped consumers adjust to tighter and more volatile corn and wheat markets which have been plagued by drought, trade bans and low stocks.
- **Forecast:** 0-3m point-prices for CBOT wheat are set at USD725/bu and in general parity with corn. 6-12m point-prices for the baker's grain could stabilize near USD750/bu versus 2H'12 average traded levels north of USD858/bu amid the wheat premium to corn normalizing to around USD225/bu. Rough rice levels are forecast to remain range-bound with a 2013 average price of USD15.20/cwt which is a de minimis 0.06% downgrade from our original CBOT rice estimate published in November 2012.

- Commodities
- Agriculture

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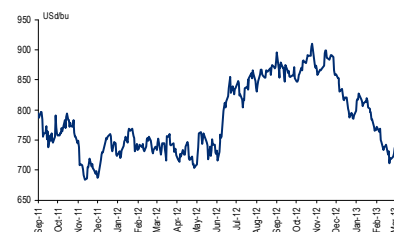
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*With thanks to
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Figure 1. CBOT Wheat Prices



Source: Bloomberg, Citi Research

See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

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Global Grains Easing

Figure 2. US Wheat Balances

Millions of Acres / Millions of Bushels	09/10	10/11	11/12	12/13 USDA Estimates		Citi Estimates	
				February	March	12/13	13/14
Area Planted	59.2	53.6	54.4	55.7	55.7	55.7	56.0
Area Harvested	49.9	47.6	45.7	49.0	49.0	49.0	48.2
Percent Harvested	84%	89%	84%	88%	88%	88.0%	86.0%
Yield per Harvested Acre	44.5	46.24	43.72	46.2	46.2	46.2	45.2
Beginning Stocks	657	975	862	742	742	742	716
Production	2,218	2,207	1,999	2,269	2,269	2,269	2,176
Imports	119	97	112	130	130	130	130
Total Supply	2,993	3,279	2,974	3,142	3,142	3,142	3,022
Food	919	926	941	950	950	950	960
Seed	69	71	76	75	75	75	70
Feed and Residual	150	132	164	375	375	375	275
Total Domestic Usage	1,138	1,128	1,182	1,400	1,400	1,400	1,305
Exports	879	1,289	1,049	1,050	1,025	1,025	1,025
Total Demand	2,018	2,417	2,231	2,450	2,425	2,425	2,330
Ending Stocks	976	862	743	692	716	716	692
Stocks to Usage	48.36%	35.66%	33.30%	28.24%	29.53%	29.53%	29.68%
% Soft Wheat (Red & White)	48.77%	41.30%	34.45%				

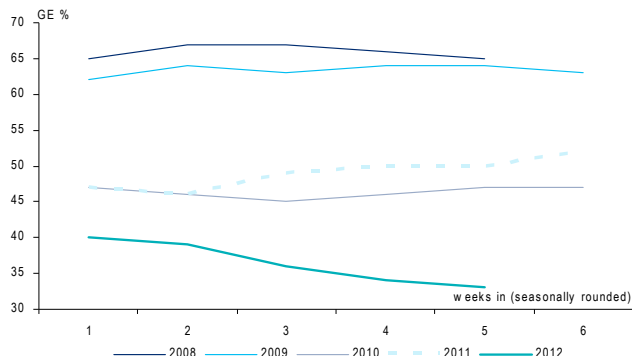
Source: IE, USDA, Citi Research

Wheat Markets

Domestic wheat output for 2013 is projected to decline 4.3% y/y to 2,176-mn bushels for the new-crop despite the fact that planted acres appear set to modestly rise to 56-mn. The drop in US output is a result of a one-point seasonal reduction in forecasted yields to 45.2-bu/acre and lower takedown of sowed acres (~86%) as a consequence of larger-than-normal Hard Red Winter wheat crop abandonment. Assuming decent precipitation in 2Q, at least some of these HRW acres are expected to rotate towards soybeans. The benchmark oilseed is expected to see its US planted acres jump 1.3-mn acres y/y to 78.5-mn.

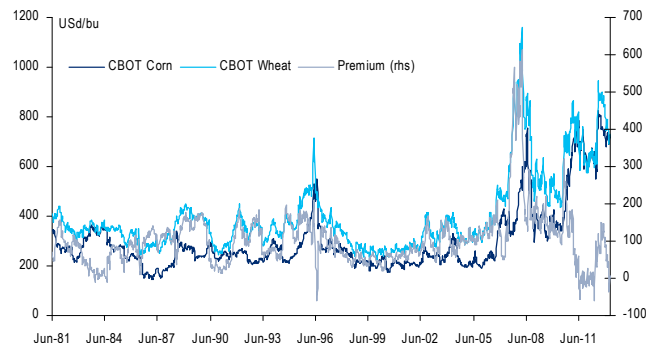
The US winter wheat cycle began facing headwinds during the 4Q'12 planting as a knock-on effect of the stubbornly persistent 2012 summer drought. Adverse growing conditions across the Great Plains have increased Poor/Very Poor (PVP) seasonal winter wheat ratings at the expense of Good/Excellent (GE). In Kansas, 30% of the crop is rated PVP—more than the GE total of 29%. Adequate topsoil and subsoil moisture conditions in the state of 48% and 17%, respectively, compare to 60% and 56% at this time last year. Similar difficulties have been observed in other bellwether producing states including Nebraska and Oklahoma. Total US supply is therefore poised to decline 3.8% in 13/14 to just north of 3-bn bu as old crop carryout remains capped a bit above 700-mn bu in a 'goldilocks' balancing act near 30% stocks-to-use (*note*: a ratio measurably above 30% can be considered a 'looser' market; a ratio much lower than 30% might be labeled a 'tighter' market). To be sure, total 13/14 demand is also expected to decline 3.9% y/y to 2.33-bn bu with the largest change a 100-mn bu curtailment in wheat use for livestock feed to 275-mn bushels. Given the extended period of corn-wheat price parity this year, wheat substituting for corn feeding as backed out from the March 1 NASS stocks report could surprise although the impact may be muted since wheat traded at a premium through most of 4Q'12. Dec 1 inventories of 1.66-bn bu could thus fall to 1.2-bn bu for March 1.

Figure 3. US WW Crop Progress Data Already Looked Weak in 4Q'12...



Source: USDA, Citi Research

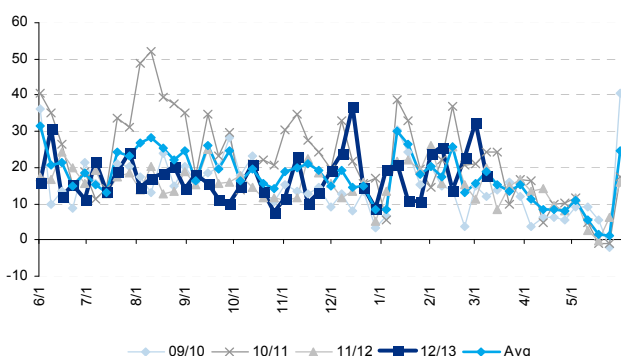
Figure 4. Historical US Wheat Premium to Corn (CBOT)



Source: Bloomberg, Citi Research

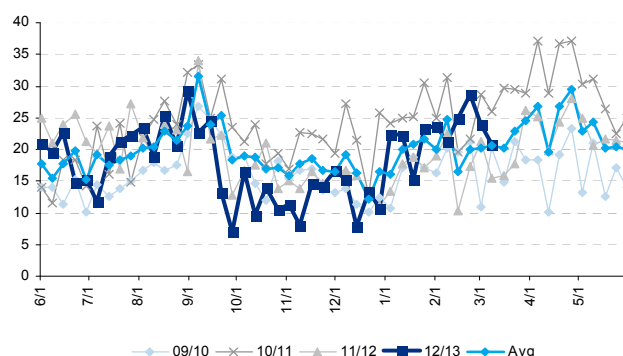
Assuming normal 13/14 weather, we assess that the historical CBOT wheat premium to corn is likely to reestablish itself at ~USD200/bu or higher. Current marketing year US export sales which now total above 720-mn bu and have picked up some traction in recent weeks with purchases spread broadly across traditional importers such as Egypt and buyers in Asia and Southern Europe. This has coupled with a spike in weekly inspections that need to stay elevated above 23-mn bushels in order for old crop wheat exports to scale 1-bn bu for the season. For now we are assuming 13/14 wheat exports to remain unchanged y/y at 1,025-mn bushels although this figure is biased to push lower assuming a global supply rebound and better availabilities from major producing blocs including the Black Sea and Europe. Domestic new-crop carryout is expected to fall below 700-mn bu—and would represent the tightest market since 07/08—albeit this baseline outlook is preliminary and shall adjust as more clarity is achieved on yields and demand trends.

Figure 5. US Wheat Weekly Export Sales (mn bushels)



Source: USDA, Citi Research

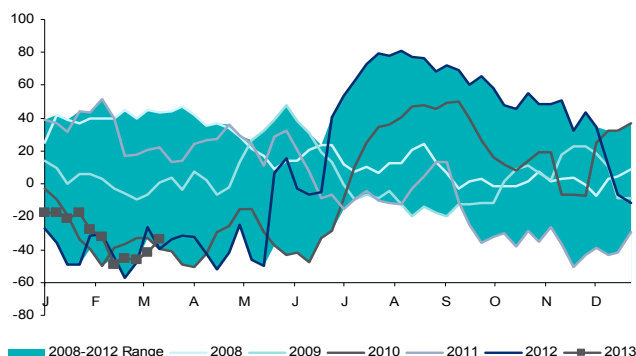
Figure 6. US Wheat Weekly Export Inspections (mn bushels)



Source: USDA, Citi Research

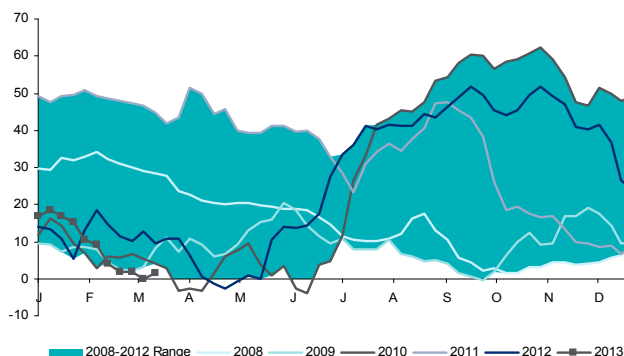
CFTC data suggest a tapering off of the wheat market sell-off since November 2012. Funds have reduced their net short in CBOT wheat (generic US benchmark) markets and hold a small net long in KCBT wheat (HRW benchmark) after nearly nine consecutive weeks of reductions in category positioning. For the balance of 1H'13, coarse grains are likely to set the tone for complex with wheat following the lead of corn. With drought conditions improving on the margins and better precipitation forecast across the Great Plains—new-crop US wheat is poised to muddle through a stable but lower trading range amid an output rebound globally.

Figure 7. Money Manager Net Length (F&O, 000s lots): CBOT Wheat



Source: CFTC, Citi Research

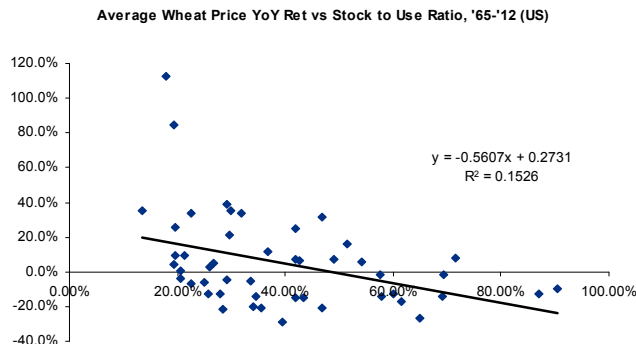
Figure 8. Money Manager Net Length (F&O, 000s lots): KCBT Wheat



Source: CFTC, Citi Research

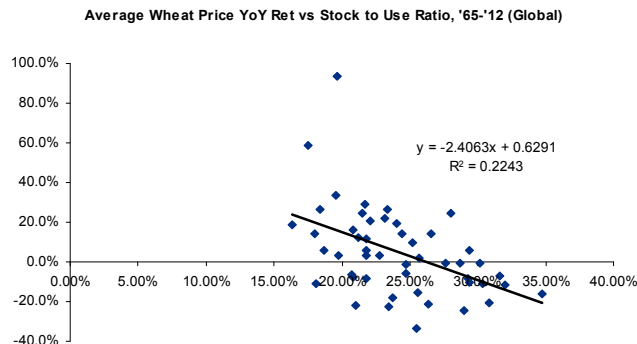
12/13 US wheat prices have averaged nearly US\$800/bu and are expected to have a mean value of US\$785/bu by the end of 2Q in advance of the new-crop. This would imply a 0-3m point-price target of US\$720/bu-US\$725/bu for CBOT wheat. This jibes with looking at the historical relationship between y/y changes in US average wheat prices and final seasonal carryout—a linear correlation which appears to have strengthened in recent years.

Figure 9.



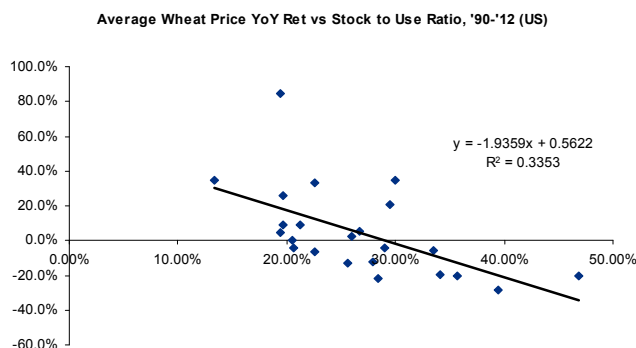
Source: Citi Research

Figure 10.



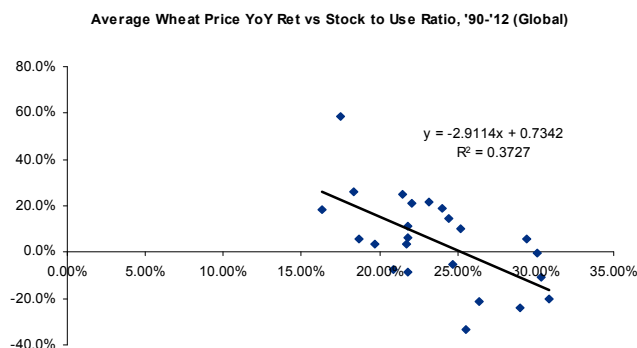
Source: Citi Research

Figure 11.



Source: Citi Research

Figure 12.



Source: Citi Research

The calendar 2013 forecast is estimated at US\$740/bu—fitting prices to global and US carryout and acknowledging the current curve. Meanwhile the 2014F price of US\$775/bu published in November 2012 remains unchanged in this report.

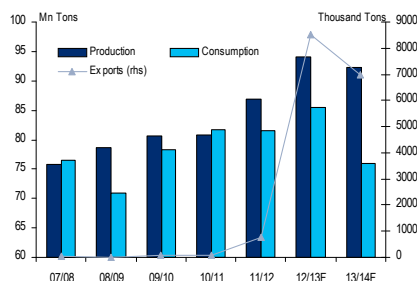
Figure 13. World Wheat Balances

Millions of Hectares Millions of tons	07/08	08/09	09/10	10/11	11/12	12/13	12/13 USDA Estimates November	December	Citi Estimates 13/14
Yield	2.82	3.05	3.05	3	3.1	3.0	3.0	3.0	3.1
Beginning Stocks	134	128	168	201	198	196	198	196	178
Production	612	684	687	652	697	655	651	655	695
Imports	114	138	134	132	148	141	138	141	150
Total Supply	860	950	989	985	1043	993	987	993	1023
Feed	102	121	120	116	147	134	132	134	125
Total Domestic Usage	614	637	651	655	698	674	675	674	680
Exports	117	145	137	133	157	133	133	133	135
Total Demand	732	782	788	788	856	807	808	807	815
Ending Stocks	128	168	201	198	196	178	174	178	208
Stocks to Usage	18%	22%	26%	25%	23%	22%	22%	22%	26%

Source: FAO, USDA, Citi Research

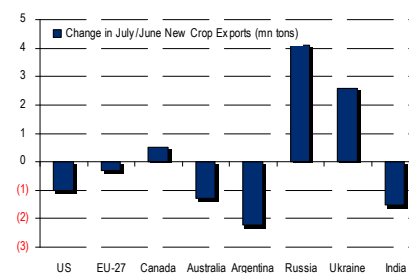
US balances look similar old-crop to new-crop, but outsize production gains are expected from the rest-of-world (RoW) including Europe, Black Sea and India. Global output is poised to rise 7% this year to about 695-mn tons. The 2013 wheat harvest in India, the world's second most prolific wheat producer, is expected to come in at 93-mn tons, exceeding local consumption of about 87-mn tons for the third consecutive year. India has reportedly allowed 4.5-mn tons of 12/13 exports and could double this amount for old crop. Meanwhile, the EU harvest could be 138-mn tons in 2013, up 4% from 133-mn tons in 2012. FSU output might gain the most. Russia could increase its 2013 grain harvest by 30% to 55-mn tons after a disastrous 2012 whereby its export availabilities were cut in half y/y to 10-mn tons. Worldwide seasonal total use at 815-mn tons on stable demand growth to 680-mn tons could imply global stocks-to-use growing 4-points in 13/14 to 26% amid greater export competition amongst US origin crops and foreign producing blocs.

Figure 14. Indian Wheat Balances



Source: USDA, Citi Research

Figure 15. Y-o-Y Change in Wheat Exports*



Source: IE, Citi Research, *13/14 cycle

Rice Markets

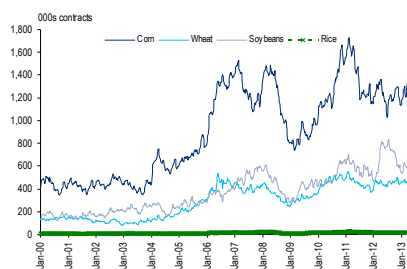
Figure 16. World Rice Balances

Millions of Hectares Millions of tons	07/08	08/09	09/10	10/11	11/12	12/13	12/13 USDA Estimates November	December	Citi Estimates 13/14
Yield	2.79	2.84	2.83	2.85	2.9	3.0	2.9	3.0	3.1
Beginning Stocks	75.46	80.9	92.4	95.2	98.7	105.5	105.8	105.5	103.3
Production	432.59	448.7	441.1	449.1	466.2	468.1	464.3	468.1	472
Imports	29.99	27.3	28.2	32.9	36.0	34.5	34.3	34.5	36.5
Total Supply	538.04	556.9	561.7	577.1	600.9	608.0	604.4	608.0	611.8
Total Domestic Usage	425.68	435.5	435.4	445.6	459.4	470.2	467.9	470.2	464.8
Exports	31.48	29.0	31.1	34.9	39.1	37.8	36.5	37.8	34.4
Total Demand	457.16	464.5	466.5	480.5	498.5	508.0	504.4	508.0	499.2
Ending Stocks	80.88	92.4	95.2	98.7	105.5	103.3	102.3	103.3	112.6
Stocks to Usage	18%	20%	20%	21%	21%	20%	20%	20%	23%

Source: IGC, USDA, Citi Research

The global supply/demand picture looks rather rosy for rice this year amid robust inventories in Vietnam and Thailand. World output, led by Asia, is expected to climb 1% y/y to a record 472-mn tons. This boosts total supply to about 612-mn tons or 35-mn tons above the trailing five-year average. While the US balance sheet appears less bearish, akin to wheat, the rice rebound is RoW driven. Total use is expected to remain relatively stable at about 500-mn tons with export markets and domestic consumption shrinking in 13/14 versus 12/13. On the whole, ending stocks might rise to a record 112-mn tons lifting the world carryout ratio 3-points to 23%.

Figure 17. CBOT Futures – Aggregate Open Interest for Corn, Wheat, Soybeans, Rice

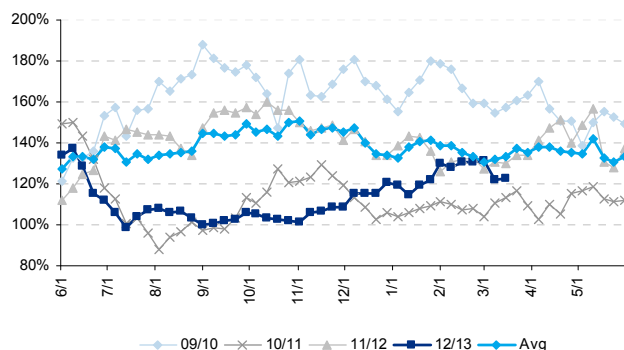


Source: CME, Citi Research

Rice prices are poised to ease and stabilize in conjunction with the staple row crops and small grains. Worth noting, rough rice contracts are very thinly traded on CME and they are not part of any benchmark commodity indices; furthermore, the US position in global market supply for rice is much smaller than it is for corn, soybeans and wheat. Over the past few marketing cycles, rice has traded about 1x to 1.4x its equivalent CBOT wheat counterpart (in ton terms). Given the relative stability of rice flat price over the past few months and the general softening of wheat prices since their summer 2012 peaks, the ratio has rebounded back to average 1.2x levels. We suspect rice will not deviate from this normalized pattern in the near term. Additionally, the historical linear relationship between global rice carryout and average seasonal price change is weak; unlike that for wheat or other major grains.

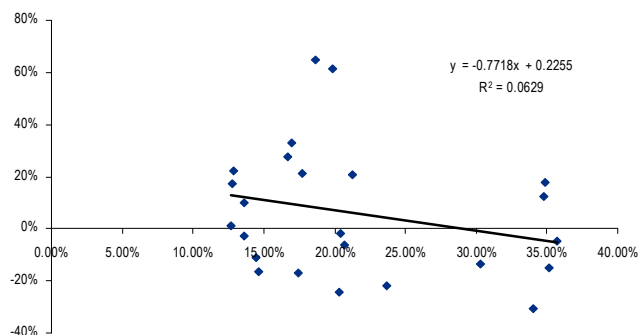
On the whole, rice contracts are likely to stay capped given looser fundamentals and price direction will likely follow the lead of the other benchmark grains. But if adverse US growing conditions derail the resurgence for global row crop output, that could tighten the rice balance sheet as inventories draw down and consumption could be boosted. Relatively ample rice supplies in recent years have helped grain consumers adjust to tighter and more volatile corn and wheat markets plagued by drought, trade bans and reduced stocks. Rough rice prices are forecast to remain range-bound with a 2013 average price of USD15.20/cwt which is a modest 0.1% downgrade from our original CBOT rice estimate published in November 2012. Traded levels in 2014 are forecast at \$15.00/cwt or \$0.25 below the current curve.

Figure 18. Rice-to-Wheat Ratio* (CBOT)



Source: Bloomberg, Citi Research, *in ton equivalent terms, rice multiple over wheat

Figure 19. Average Rice Price YoY versus Stocks-to-Use Ratio ('90-'12)



Source: Citi Research

Price Outlook

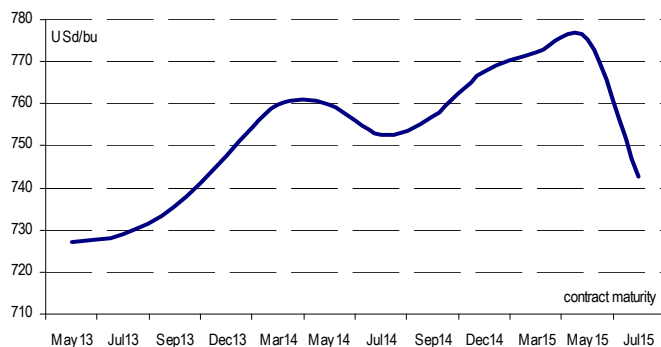
Figure 20. CBOT Grains and Oilseed Price Outlook

Mar-13	2010	2011	0-3m	6-12m	1Q12	2Q12	3Q12	4Q12	2012	1Q13f	2Q13f	3Q13f	4Q13f	2013f	2014f	11 vs. 10	12 vs. 11	13 vs. 12	14 vs. 13
Corn (USD/bu)	428	680	725	625	641	618	783	737	695	710	700	650	515	645	500	252	15	(50)	(145)
Wheat (USD/bu)	582	709	725	750	643	641	870	846	750	740	720	750	750	740	775	127	41	(10)	35
Soybeans (USD/bu)	1049	1317	1425	1275	1272	1426	1675	1485	1465	1450	1350	1300	1175	1320	1150	268	148	(145)	(170)
Rice (USD/cwt)	12.5	15.1	15.2	15.0	14.3	14.8	15.3	15.1	14.9	15.3	15.2	15.2	15.0	15.2	15.0	2.6	-0.2	0.3	(0.2)

Source: Citi Research, *subject to revision

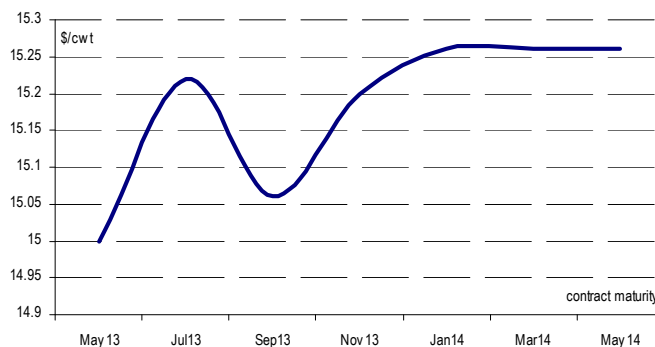
The three major agriculture markets trade ideas we published in January were to position long corn spreads (bullish old-crop versus bearish new-crop), sell back-end beans (and by default, being relatively neutral to slightly bullish soybean structure) and for consumers to hedge (buy) the cal'14 cotton strip. We hold no strong conviction for trades surrounding wheat or rice for the time being. On the margins, we are still bullish December wheat versus December corn on the CBOT screen (this was an idea first discussed in our January grains report—see: Doshi, Aakash. "Dancing on the Ceiling with US Grains." Citigroup: 16 January 2013). Separately, our deferred price forecast for the 2014 rough rice curve is moderately bearish the current strip which might allow US producers a hedging opportunity.

Figure 21. CBOT Wheat Forward Curve (March 2013)



Source: Bloomberg, Citi Research

Figure 22. CBOT Rough Rice Forward Curve (March 2013)



Source: Bloomberg, Citi Research

Appendix A-1

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