

Food and Agricultural  
Policy Research Institute



**Agricultural Markets  
and Policy**  
University of Missouri

# **U.S. Baseline Briefing Book**

## **Projections for Agricultural and Biofuel Markets**

*March 2013*

FAPRI-MU Report #01-13

Prepared by the Integrated Policy Group, Division of Applied Social Sciences

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The Agricultural and Food Policy Center at Texas A&M University has prepared a companion set of estimates of the farm-level impacts of these projections ([www.afpc.tamu.edu](http://www.afpc.tamu.edu)).

The authors would like to thank participants in a workshop reviewing a preliminary version of these estimates in Washington in December 2012. Any remaining errors are those of the authors.

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# Summary

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The drought of 2012 has resulted in higher prices for many crops, higher feed costs for livestock producers and larger indemnities under the federal crop insurance program. If crop yields return to long-term trends in 2013, the result could be sharply lower grain and oilseed prices.

These baseline projections for agricultural and biofuel markets were prepared in January 2013 based on information available at that time. Macroeconomic assumptions are based on forecasts by IHS Global Insight and suggest modest growth in the U.S. and global economies in 2013 and slightly faster growth in later years. The baseline assumes a continuation of current policies, even when changes are possible or even likely. Policy assumptions generally match those used by the Congressional Budget Office (CBO) in preparing its baseline projections.

The figures reported here represent the average of 500 alternative outcomes based on different assumptions about the weather, oil prices and other factors. In some of the 500 outcomes, prices, quantities and values are much higher or much lower than the reported averages.

Some key results:

- In 2013, corn acreage is projected to remain near the 2012 level. Soybean and wheat acreage expand slightly, while cotton acreage contracts.
- Average weather conditions in 2013 would result in a 2013 corn crop that far exceeds the previous record. This would allow corn use and stocks to rebound and the corn price to fall by about \$2 per bushel relative to the record average price for the crop harvested in 2012.
- A rebound in global grain and oilseed supplies also contributes to sharply lower prices for soybeans and wheat for crops harvested in 2013. Cotton prices remain stagnant, in part because of large global cotton stocks.
- In 2014 and beyond, average grain and oilseed prices remain well below the record levels of 2012/13, but well above the prices that prevailed prior to 2007. Corn prices, for example, average a little under \$5 per bushel.
- The projected strong recovery in ethanol production in 2013/14 is contingent on enforcement of biofuel use mandates. The value of the certificates used to demonstrate mandate compliance must rise substantially to cover the discount needed to sell fuels containing more than 10 percent ethanol.
- Multiple years of drought have limited forage supplies, raised feed prices and reduced cattle numbers. Live cattle prices rise to \$129 per hundredweight in 2013 and remain near that level for several years.
- Hog, chicken and milk prices also increase in 2013. If feed prices decline as projected, this would imply increased profitability for livestock and poultry producers.
- Under a continuation of 2008 farm bill provisions, Commodity Credit Corporation (CCC) outlays would average about \$9 billion per year over the next decade, of which about \$6 billion would be for major commodity programs.
- With record indemnity payments for 2012 crop losses, crop insurance net outlays exceed \$13 billion in fiscal year (FY) 2013. Over the FY 2014-22 period, net outlays average a little under \$9 billion per year.
- Farm income remains high for the third straight year in 2013. Net farm income, a measure that includes changes in the values of inventories, reaches a record \$131 billion in 2013, while net cash income reached its record level in 2012. Both net income measures retreat slightly in 2014 in response to lower crop prices and receipts.
- Annual average food price inflation reaches 2.9 percent in 2013, slightly greater than the 2012 pace. Increases in food prices slow in later years to a rate comparable to the general rate of inflation, about 2 percent per year.

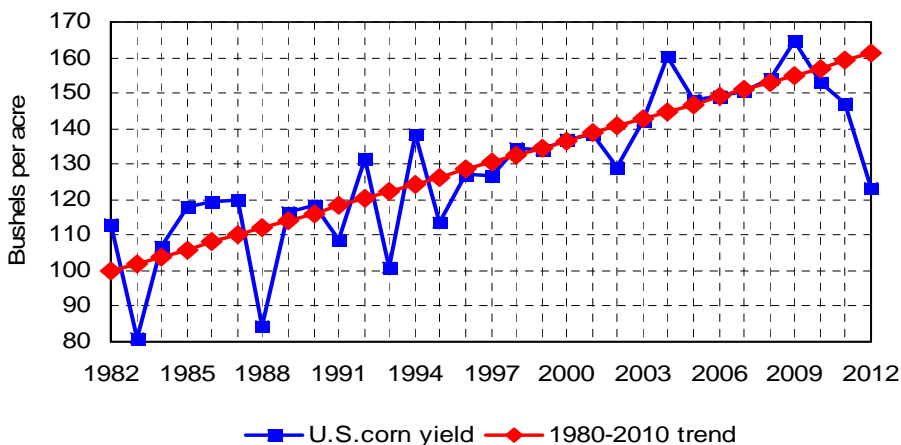
## Key results

Marketing year	2012/13	2013/14	2014/15-2022/23 average
<b>Crop prices</b>			
Corn farm price, dollars per bushel	7.08	5.18	4.81
Soybean farm price, dollars per bushel	14.20	11.49	11.48
Wheat farm price, dollars per bushel	7.98	7.12	6.21
Upland cotton price, cents per pound	69.8	70.1	69.7
<b>Crop area planted, million acres</b>			
Corn	97.2	96.9	91.2
Soybeans	77.2	78.5	77.3
Wheat	55.7	57.5	54.1
Upland cotton	12.1	9.5	9.8
<b>Biofuel production, billion gallons</b>			
Com-based ethanol	12.4	14.4	15.3
All ethanol	12.6	14.6	16.9
Biodiesel	1.2	1.3	1.6
<hr/>			
Calendar year except as noted	2012	2013	2014-2022 average
<b>Livestock sector prices</b>			
Fed steers, 5-area direct, dollars per cwt	122.86	129.32	127.31
Barrows and gilts, 51-52% lean, dollars per cwt	60.88	63.40	58.98
12-city wholesale broilers, cents per pound	86.98	91.31	90.55
All milk, dollars per cwt	18.63	19.82	19.49
<b>Government outlays, billion dollars, fiscal year</b>			
Commodity Credit Corporation	7.9	8.8	9.2
Major commodity programs	4.5	5.2	6.0
All other CCC net outlays	3.4	3.6	3.2
Crop insurance	4.9	13.5	8.6
<b>Farm income measures, billion dollars</b>			
Net farm income	113.0	130.8	108.6
Net cash income	135.7	127.0	121.1
<b>Annual consumer food price inflation</b>			
	2.6%	2.9%	1.9%

# Recent developments and key assumptions

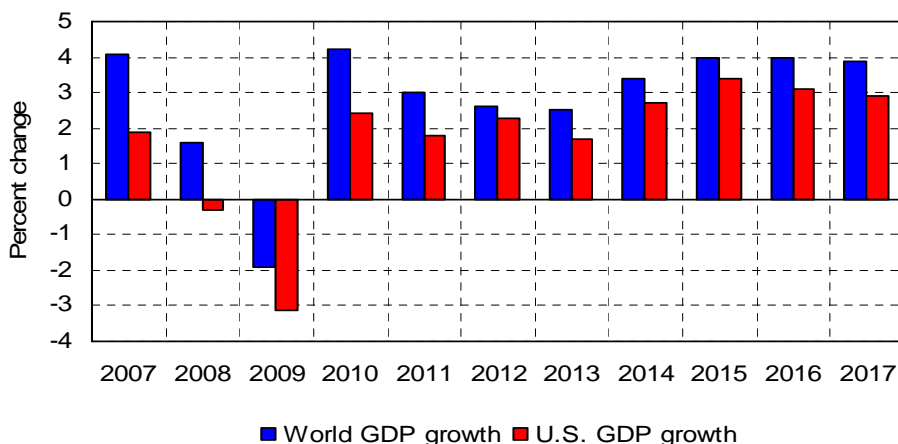
## 2012 drought reduced crop supplies, raised prices

- The 2012 drought sharply reduced supplies of corn and other crops.
- Corn yields fell 23% below the long-term trend, the sharpest reduction since 1988.
- These reduced supplies are the main reason that prices for corn and several other crops are at record highs during the 2012/13 marketing year.



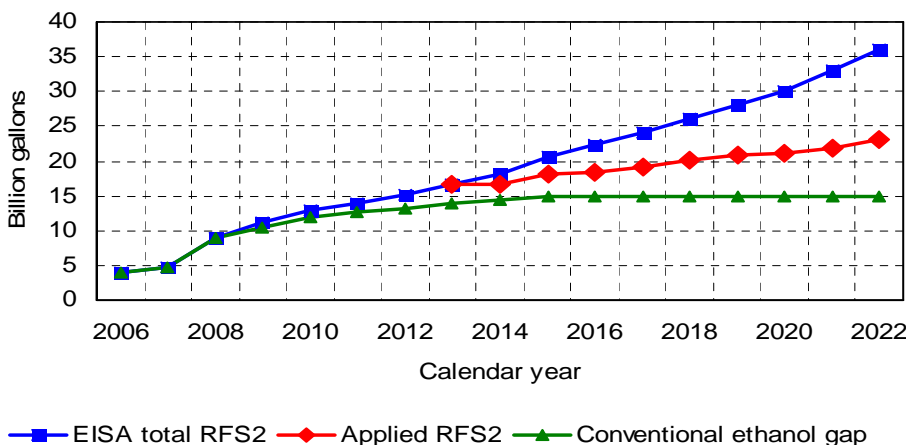
- IHS Global Insight forecasts U.S. and world economic growth to slow slightly in 2013, but pick up in 2014.
- Growth is expected to be stronger in China and many other middle income countries that are major U.S. export markets.
- U.S. unemployment declines slowly, while inflation averages about 2%.
- Interest rates remain low in 2013 but increase in later years.

## Economic growth slows in 2013, picks up in 2014



## Renewable Fuel Standard mandates biofuel use

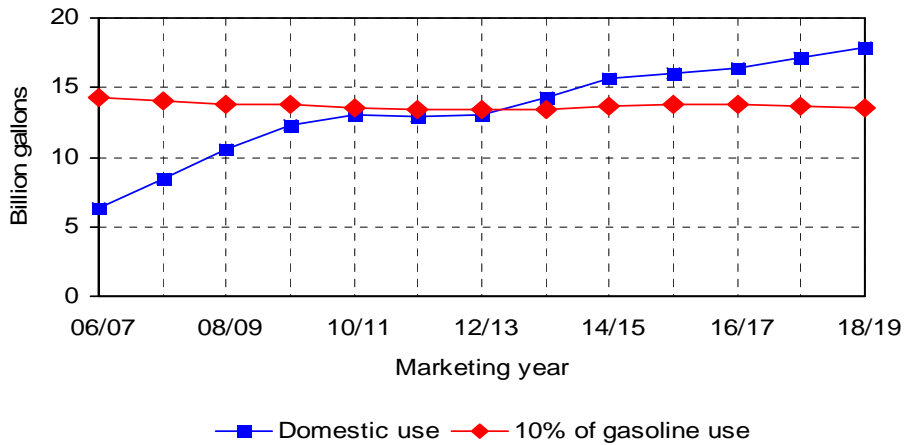
- The Energy Independence and Security Act (EISA) targeted 36 billion gallons of biofuel use by 2022.
- The baseline assumes current policies continue, with the cellulosic mandate waived.
- The EPA administrator is assumed to use existing authority to adjust downward the cellulosic, advanced and total mandates, but leave the gap that can be filled with corn-based ethanol at EISA-implied levels.



# Crop outlook highlights

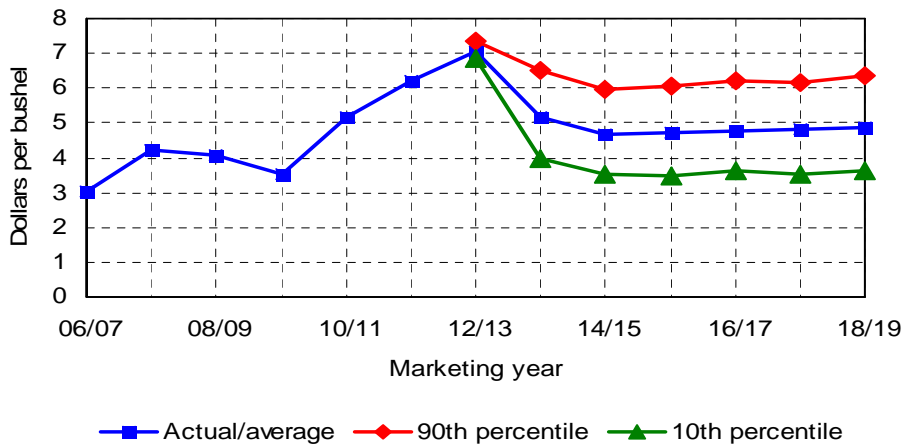
## Ethanol use rebounds, exceeds 10% blend wall

- Ethanol production has declined in 2012/13 because of the drought, but domestic use is little changed, as exports have declined and imports increased.
- Ethanol production rebounds in 2013/14, and use exceeds the 10% “blend wall” (the amount of ethanol that can be used in 10% blends with gasoline).
- Renewable Identification Numbers (RINs, certificates that demonstrate mandate compliance) rise in value to encourage use of higher-level blends.



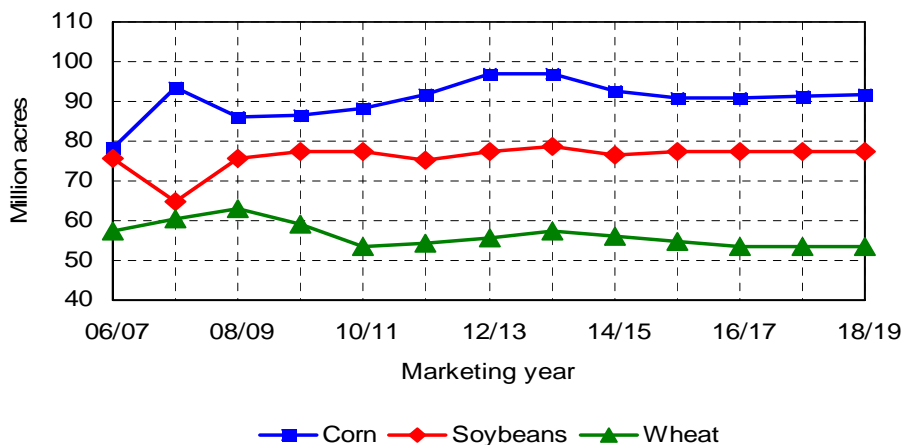
## Corn price could fall, but volatility continues

- Prices for corn and other crops could fall sharply if growing conditions in 2013 are more favorable than in 2012.
- Projected demand is strong enough to keep average projected crop prices above pre-2007 levels.
- Price volatility will continue. Stochastic analysis suggests corn prices could be under \$3.50 per bushel or over \$6.00 per bushel in any given year.



## Soybean, wheat area increase in 2013, corn steady

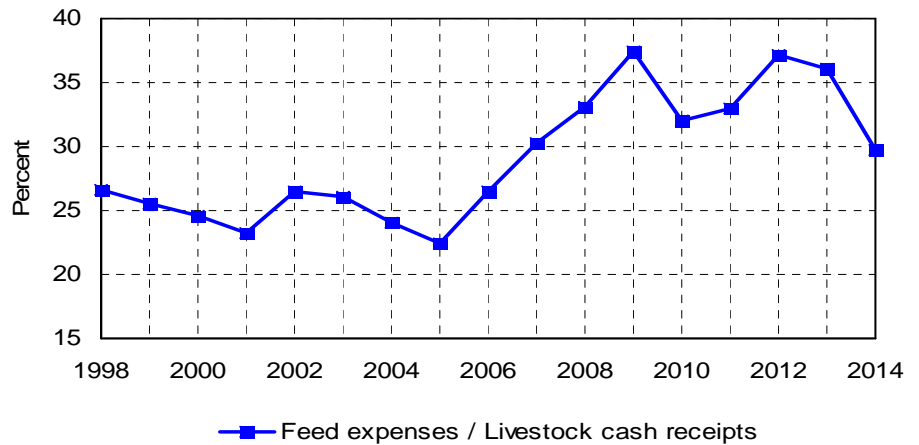
- High prices contribute to an increase in soybean and wheat acreage in 2013.
- Corn acreage holds nearly steady at the second highest level since the 1930s.
- Cotton acreage is reduced in 2013, as is the amount of land idled under the Conservation Reserve Program (CRP).
- Lower prices result in less acreage planted in 2014, as some marginal land reverts to other uses.



# Livestock and dairy outlook highlights

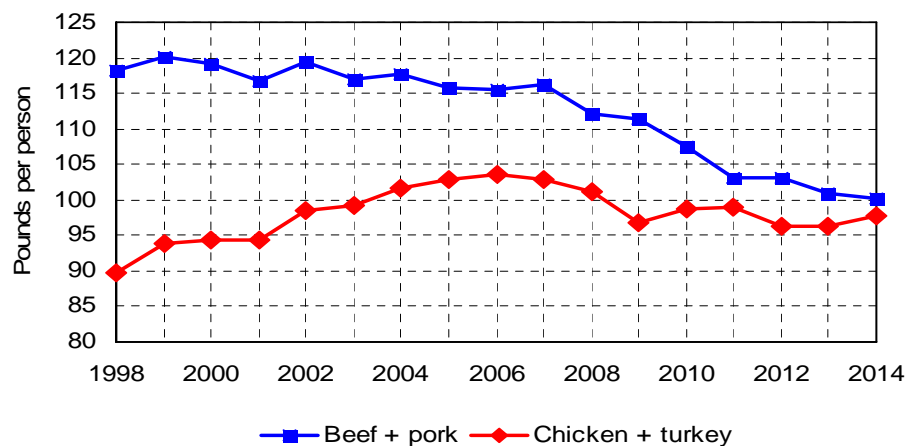
## Livestock producers endure high feed costs

- Feed expenses approached \$64 billion in 2012, more than double the 2006 level.
- Though livestock cash receipts have increased for the past three years, growth in receipts has not kept pace with the rapid growth in input costs.
- Meat and milk producers are in desperate need of the projected larger feed crops in 2013 to lower future feed costs and improve their net returns.



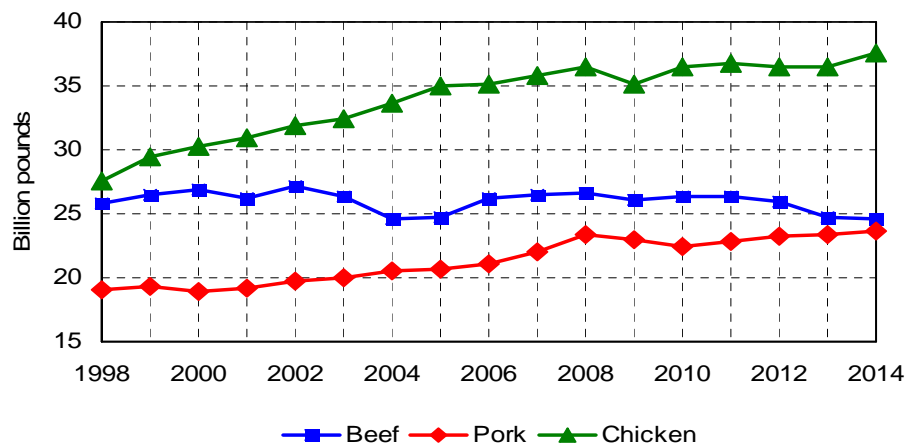
- The supply of beef and pork available for the domestic market has declined 11 percent since 2007.
- Even poultry availability, which regressed only one time between 1976 and 2006, has been flat to declining in recent years.
- If feed prices decline as projected, per person meat availability should bottom out this year and then slowly increase.

## Domestic meat availability continues to fall



## Beef production is losing ground

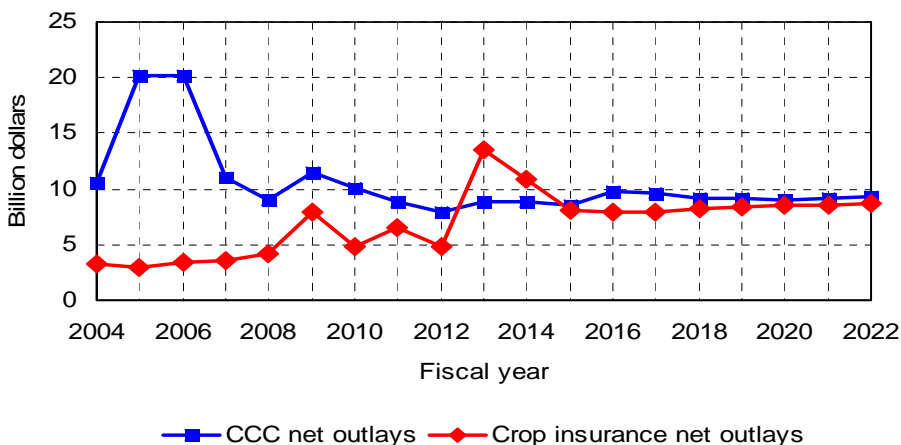
- As recently as 1995, beef led the meat industry in terms of production.
- All meat and dairy industries have endured more expensive feed in recent years, but cow-calf producers have also battled feed availability issues due to drought-stricken pastures.
- Pork production is likely to eclipse beef in the fourth quarter of 2013 for the first time since the fourth quarter of 1962.





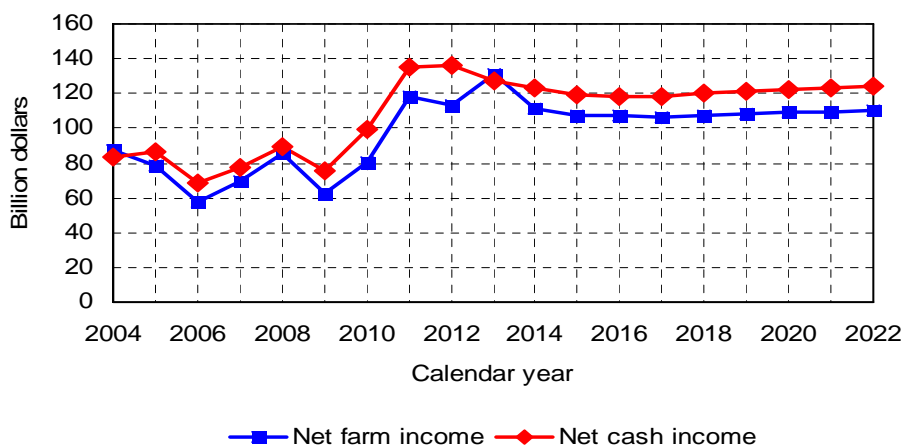
# Farm program costs, farm income and food prices

Crop insurance costs exceed CCC in FY 2013



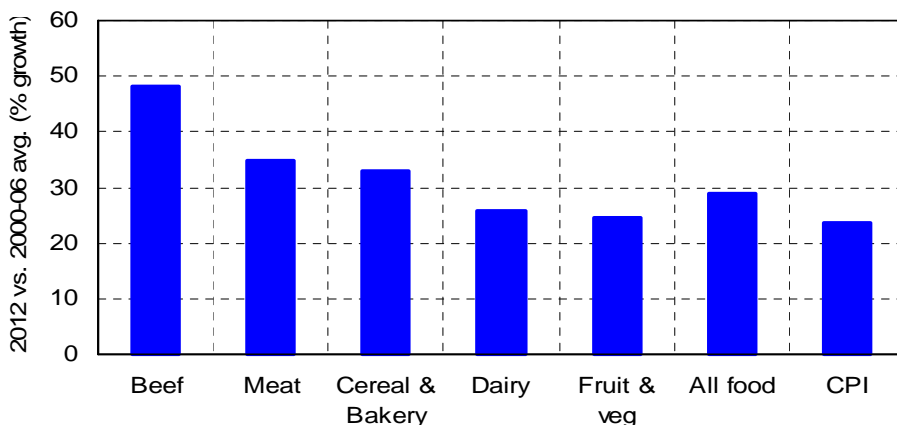
- Because of the 2012 drought, Federal Crop Insurance Corporation (FCIC) net outlays exceed those by the Commodity Credit Corporation (CCC) in FY 2013.
- CCC outlays include spending on major farm programs, the CRP and several other smaller programs.
- Over the FY 2013-22 period, CCC net outlays total \$92 billion while FCIC net outlays total \$91 billion.
- Major commodity programs account for \$60 billion of the CCC total.

Farm income remains high in 2013



- Two measures suggest that 2013 will be the third straight year of high net incomes for the farm sector as a whole.
- Net farm income could set an all-time record in 2013. Even after correcting for inflation, real net farm income could be at its highest level since the early 1970s.
- The recent increase in crop prices has benefited crop producers but reduced the profitability of livestock production. If crop prices fall in 2013 as projected, the situation will be reversed.

Food prices have grown faster than general inflation

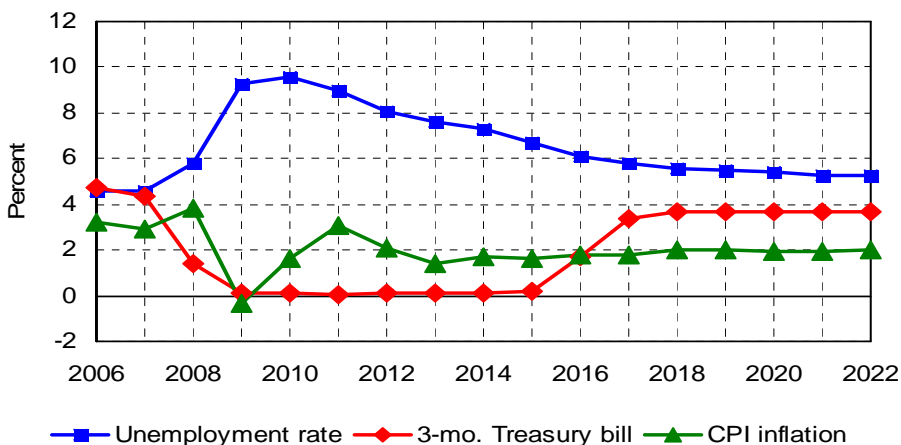


- The consumer price index (CPI) for most food products has grown faster than the overall CPI in recent years.
- Meat prices, particularly for beef, have seen the largest rate of increase.
- Retail food inflation is still less than commodity price increases for many products, as the weak economy has discouraged many retailers from raising prices enough to fully cover costs.

# Macroeconomic assumptions and farm prices paid

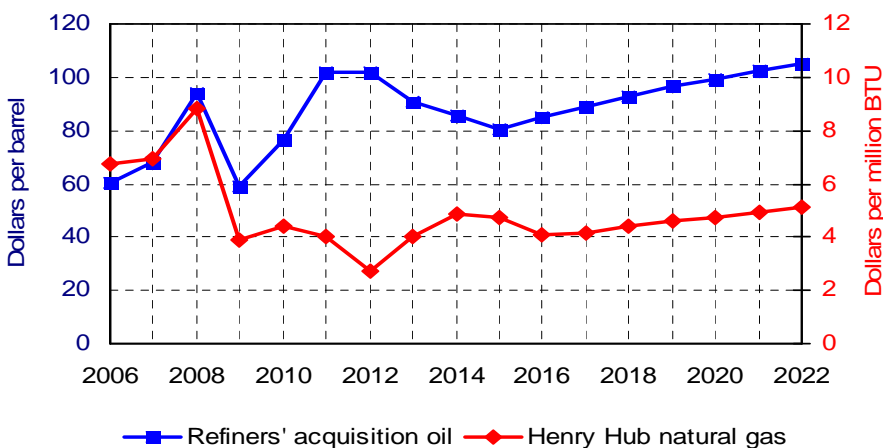
## Slow economic recovery continues

- IHS Global Insight forecast in January that U.S. real GDP growth would slow in 2013 and then pick up again in 2014.
- The unemployment rate continues to decline slowly.
- Short-term interest rates increase only when unemployment drops below 6.5 percent in 2016.
- Inflation is forecast to remain around 2 percent per year.



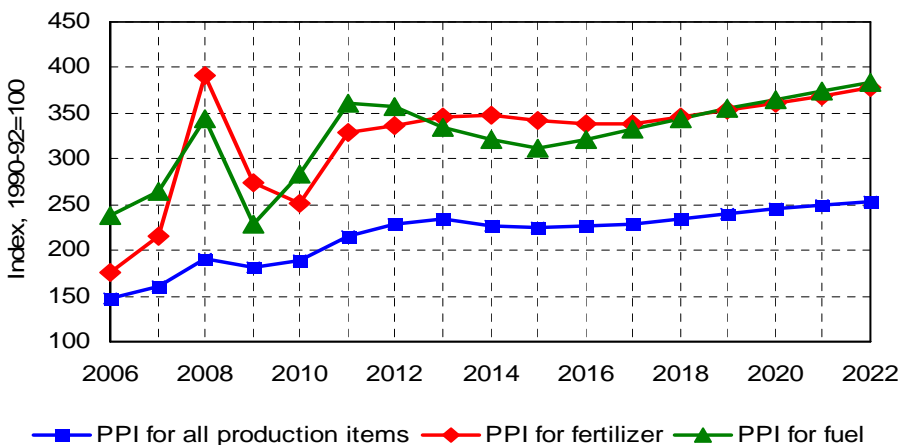
- Oil and natural gas prices both fell in the recession. Since then, oil prices have recovered to new peaks, while natural gas prices have declined.
- IHS Global Insight forecasts lower oil prices for 2013-15 but then modest increases in later years.
- Natural gas prices increase in 2013 and 2014, but remain well below pre-recession levels.
- The 500 alternative outcomes examined consider a range of energy prices.

## Oil and natural gas prices follow separate paths



## Farm input prices rose sharply from 2006-2012

- Between 2006 and 2012, the producer price index (PPI) for all farm production items increased by 55 percent, far more than the overall rate of inflation.
- Lower fuel and feed prices contribute to a dip in the PPI for farm production items in 2014, and the rate of increase in later years is modest.
- Fertilizer prices increased in 2011 and 2012 but remain below the 2008 peak.



## Macroeconomic assumptions

Calendar year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Real GDP growth	(Percentage change from previous year)										
United States	2.3	1.7	2.7	3.4	3.1	2.9	2.7	2.6	2.4	2.3	2.3
China	7.7	8.0	8.3	8.6	8.1	7.7	7.3	7.1	6.9	6.8	6.5
World	2.6	2.5	3.4	4.0	4.0	3.9	3.8	3.8	3.7	3.7	3.6
U.S. population growth	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.9
U.S. CPI, all urban consumers	2.1	1.4	1.7	1.6	1.8	1.8	2.0	2.0	1.9	1.9	2.0
	(Percent)										
U.S. unemployment rate	8.1	7.6	7.3	6.7	6.1	5.8	5.6	5.5	5.4	5.3	5.3
3-month Treasury bill rate	0.1	0.1	0.1	0.2	1.7	3.4	3.7	3.7	3.7	3.7	3.7
Aaa corporate bond rate	3.7	4.0	4.4	4.7	5.5	6.1	6.3	6.3	6.3	6.3	6.3
Petroleum prices	(Dollars per barrel)										
West Texas intermediate	94.17	89.64	86.26	81.60	86.60	90.90	95.40	99.70	102.90	106.30	109.60
Refiners' acquisition cost	101.70	90.87	85.38	80.72	85.29	89.10	92.86	96.63	99.46	102.31	105.13
Natural gas price	(Dollars per million BTU)										
Henry Hub	2.75	4.01	4.89	4.74	4.11	4.18	4.41	4.58	4.74	4.90	5.14
Exchange rates	(Currency per dollar)										
Euro	0.78	0.77	0.82	0.75	0.71	0.69	0.68	0.67	0.67	0.67	0.66
Chinese yuan	6.31	6.29	6.18	5.99	5.88	5.79	5.72	5.64	5.58	5.56	5.57
Japanese yen	79.60	86.19	82.84	79.91	78.33	77.26	76.61	76.30	76.24	76.23	76.18

Source: IHS Global Insight, Jan. 2013

## Indices of prices paid by farmers

Calendar year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Production items, interest, taxes and wages	(1990-92=100)										
Production items	223	228	223	222	225	229	234	240	245	250	255
Feed	229	234	226	224	226	229	234	240	245	249	254
Livestock & poultry	261	271	217	208	209	212	215	218	218	218	217
Seeds	168	174	178	176	169	163	161	164	168	171	175
Fertilizer	358	372	376	371	373	380	390	401	410	419	427
Mixed fertilizer	336	346	348	342	338	339	346	354	362	369	378
Nitrogen fertilizer	307	313	316	310	306	306	311	318	326	331	339
Potash and phosph.	351	363	362	358	355	359	368	378	388	395	405
Agricultural chemicals	381	397	402	392	385	382	387	394	402	409	417
Fuels	153	158	163	164	168	171	176	180	185	188	192
Supplies & repairs	358	335	322	311	322	332	344	356	365	374	384
Autos & trucks	171	176	179	183	186	190	195	199	204	208	213
Farm machinery	118	121	123	125	127	128	130	132	133	134	136
Building material	256	262	267	273	280	287	295	303	310	318	327
Farm services	176	180	184	187	190	194	197	200	203	206	209
Interest*	168	171	175	177	181	185	191	196	202	207	213
Taxes**	145	149	156	161	176	192	199	204	208	211	216
Wage rates	232	242	249	256	263	269	276	283	290	297	306
	199	204	209	215	221	227	234	241	248	255	263

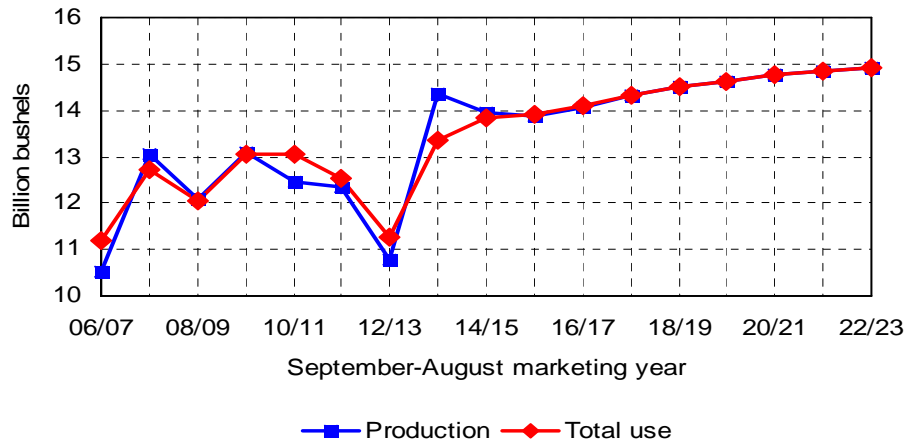
\*Interest per acre on farm real estate debt and interest rate on farm non-real estate debt.

\*\*Farm real estate taxes payable per acre.

# Corn

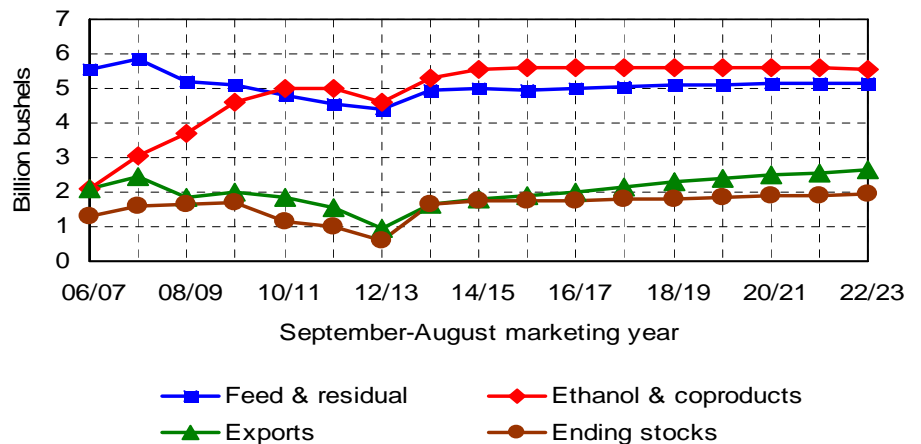
## Corn production could reach record levels in 2013

- The drought reduced 2012 U.S. corn production to the lowest level since 2006 in spite of the largest corn acreage since the 1930s.
- Even average weather conditions in 2013 could result in a record corn crop.
- The larger projected corn crop in 2013 results in sharply lower corn prices and allows use to rebound from the constrained levels of 2012/13.



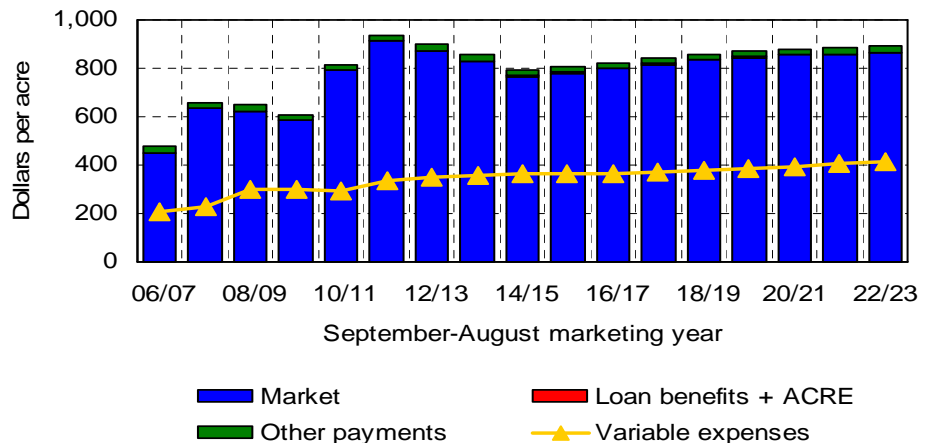
## Corn use rebounds with lower prices

- High prices caused by the drought result in reduced use of corn during the 2012/13 marketing year.
- Much lower prices should allow all major categories of corn use and ending stocks to rebound in 2013/14.
- Particularly uncertain are the projections for significantly higher ethanol use.
- This result assumes biofuel use mandates are enforced, and it requires a large increase in the use of ethanol in higher-level blends with gasoline.



## Corn returns decline from 2011/12 peak

- Higher corn prices almost offset sharply lower yields in 2012/13, leaving average per-acre corn market revenues only slightly lower than the 2011/12 record.
- Lower prices more than offset the projected yield increases, so market revenues decline in 2013/14 and 2014/15.
- Variable expenses (which exclude land costs) continue to increase.
- Projected farm program payments are very small relative to corn market receipts.



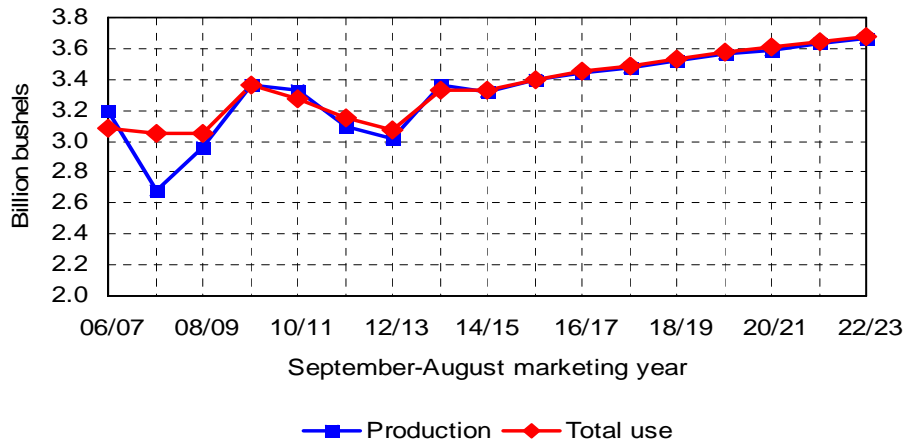
## Corn supply and use

September-August year	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
<b>Area</b>	(Million acres)										
Planted area	97.2	96.9	92.6	91.0	91.1	91.5	91.6	91.3	91.0	90.8	90.2
Harvested area	87.4	88.8	84.8	83.4	83.4	83.9	83.9	83.7	83.4	83.2	82.6
<b>Yield</b>	(Bushels per harvested acre)										
	123.4	161.8	164.3	166.3	168.6	170.8	172.6	174.8	176.9	178.7	180.7
<b>Supply</b>	(Million bushels)										
Beginning stocks	11,869	14,999	15,600	15,682	15,856	16,116	16,319	16,472	16,632	16,765	16,880
Production	989	603	1,638	1,774	1,767	1,765	1,796	1,824	1,846	1,879	1,923
Imports	10,780	14,370	13,937	13,883	14,064	14,326	14,498	14,623	14,761	14,860	14,932
	100	25	25	25	25	25	25	25	25	25	25
<b>Domestic use</b>	10,327	11,713	12,024	12,039	12,089	12,169	12,195	12,227	12,267	12,272	12,264
Feed and residual	4,387	4,968	5,000	4,969	5,013	5,056	5,096	5,114	5,134	5,155	5,167
Ethanol and coproducts	4,576	5,295	5,547	5,586	5,583	5,612	5,591	5,598	5,611	5,586	5,558
HFCs	483	516	528	530	533	535	537	538	539	541	541
Seed	24	23	23	23	23	23	23	23	23	23	23
Food and other	857	910	926	931	937	942	948	954	961	968	975
<b>Exports</b>	939	1,648	1,802	1,876	2,002	2,151	2,300	2,399	2,486	2,569	2,655
<b>Total use</b>	11,266	13,361	13,826	13,915	14,091	14,320	14,495	14,626	14,753	14,842	14,920
<b>Ending stocks</b>	603	1,638	1,774	1,767	1,765	1,796	1,824	1,846	1,879	1,923	1,960
CCC inventory	0	0	0	0	0	0	0	0	0	0	0
Under loan	49	86	126	125	118	121	117	120	121	120	126
Other stocks	555	1,551	1,649	1,642	1,647	1,675	1,707	1,726	1,758	1,802	1,834
<b>Prices, program provisions</b>	(Dollars per bushel)										
Farm price	7.08	5.18	4.69	4.73	4.79	4.83	4.88	4.88	4.87	4.84	4.82
Loan rate	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95
Target price	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63
Direct payment rate	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
<b>Base area</b>	(Million acres)										
	84.7	84.8	84.7	84.7	84.7	84.7	84.7	84.7	84.7	84.7	84.7
<b>Direct payment yield</b>	(Bushels per acre)										
	102.5	102.5	102.5	102.5	102.5	102.5	102.5	102.5	102.5	102.5	102.5
<b>CCP yield</b>	(Percent)										
	114.5	114.5	114.5	114.5	114.5	114.5	114.5	114.5	114.5	114.5	114.5
<b>ACRE participation rate</b>	(Percent)										
	17.6	13.1	20.6	21.0	21.2	20.4	20.5	19.6	20.1	20.3	20.6
<b>Returns and payments</b>	(Dollars)										
Gross market revenue/a.	873.54	829.57	762.39	777.77	798.05	815.75	832.90	844.97	854.30	856.47	862.15
Variable expenses/a.	348.08	358.28	364.18	363.30	363.76	368.35	376.47	386.29	395.73	404.00	412.80
Market net return/a.	525.46	471.29	398.21	414.48	434.29	447.40	456.43	458.68	458.57	452.47	449.35
Marketing loan benefits/a.*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACRE payment/a.*	0.16	0.79	7.97	4.82	2.58	2.98	2.63	3.31	3.43	3.63	4.38
CCP payment/base a.*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Direct payment/base a.*	23.54	23.76	23.39	23.37	23.36	23.40	23.40	23.44	23.42	23.40	23.39

\*Figures reported are averages across ACRE participants and nonparticipants. All table figures are averages across 500 outcomes.

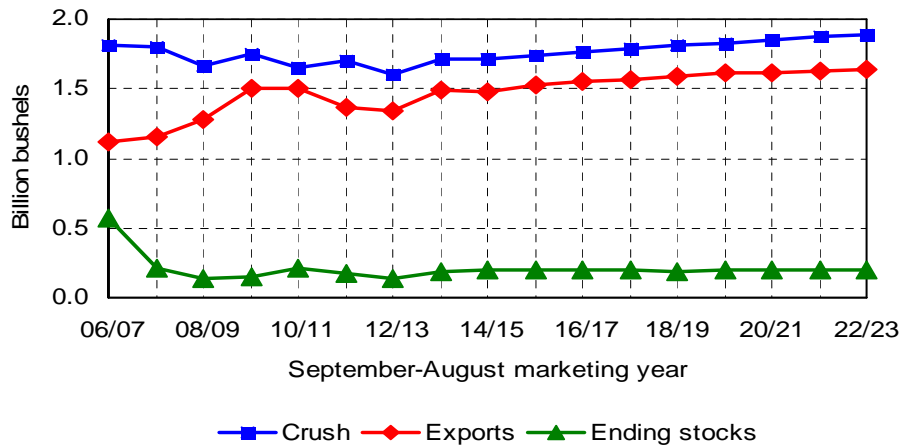
# Soybeans

Soybean production recovers in 2013



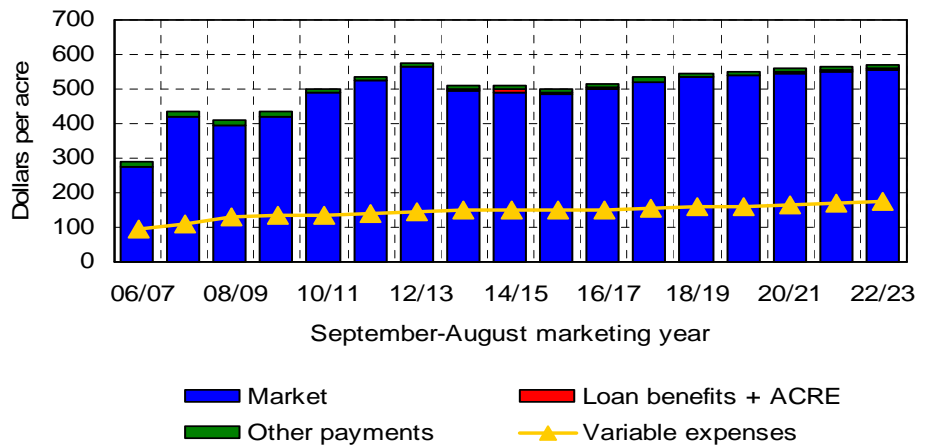
- The drought also reduced U.S. soybean production in 2012, but late season rains moderated the reduction in soybean yields.
- Projected 2013 soybean production slightly exceeds the 2009 record, as acreage increases and the assumption of normal weather leads to higher average yields.
- Projected increases in U.S. and global soybean supplies result in sharply lower prices and higher use in 2013/14.

Soybean exports and crush both grow



- U.S. soybean exports are projected to recover in 2013/14 and then grow at a modest pace.
- Domestic soybean crush also increases slowly over time in response to rising demand for U.S. soybean meal and soybean oil.
- Growth in soybean use is constrained by available supplies because of continued strong competition from corn and other crops.

Soybean returns dip from 2012/13 record



- The increase in soybean prices is more than enough to offset the drop in soybean yields, so per-acre market receipts are at record levels in 2012/13.
- In 2013/14, projected prices fall more than yields increase, causing per-acre revenues to decline.
- Soybean returns must remain strong for soybeans to be competitive with corn.
- As with other crops, soybean prices and returns are likely to be very volatile.

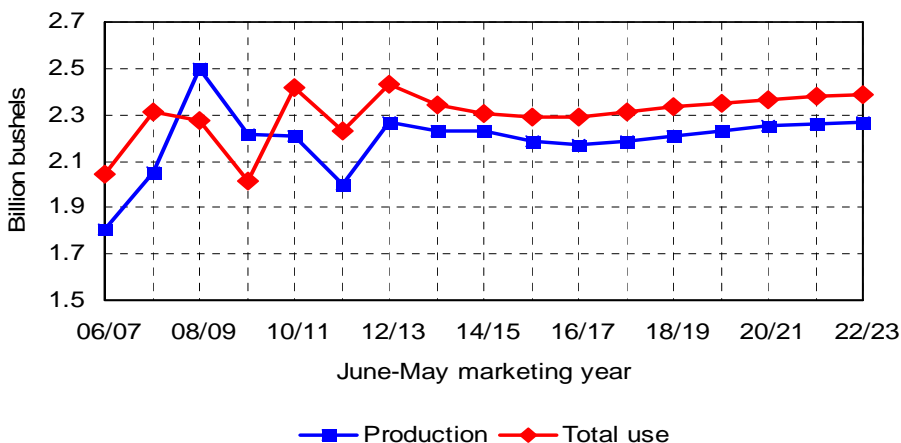
## Soybean supply and use

September-August year	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
<b>Area</b>	(Million acres)										
Planted area	77.2	78.5	76.4	77.2	77.3	77.2	77.5	77.6	77.4	77.4	77.5
Harvested area	76.1	77.4	75.4	76.1	76.2	76.2	76.4	76.6	76.4	76.4	76.5
<b>Yield</b>	(Bushels per harvested acre)										
	39.6	43.5	44.1	44.6	45.1	45.6	46.0	46.5	47.0	47.5	47.9
<b>Supply</b>	(Million bushels)										
Beginning stocks	169	134	191	195	201	199	196	191	193	195	198
Production	3,015	3,367	3,321	3,393	3,437	3,474	3,517	3,564	3,592	3,627	3,662
Imports	20	15	15	15	15	15	15	15	15	15	15
<b>Domestic use</b>	1,726	1,836	1,848	1,879	1,902	1,924	1,945	1,967	1,989	2,013	2,035
Crush	1,608	1,709	1,718	1,744	1,767	1,787	1,808	1,827	1,847	1,870	1,889
Seed and residual	118	128	130	135	135	136	138	140	141	144	146
<b>Exports</b>	1,345	1,489	1,484	1,524	1,552	1,569	1,591	1,609	1,617	1,626	1,640
<b>Total use</b>	3,070	3,326	3,332	3,403	3,454	3,492	3,537	3,576	3,605	3,639	3,674
<b>Ending stocks</b>	134	191	195	201	199	196	191	193	195	198	201
CCC inventory	0	0	0	0	0	0	0	0	0	0	0
Under loan	2	11	13	15	15	14	14	14	14	15	16
Other stocks	132	180	182	185	184	182	177	180	181	183	185
<b>Prices, program provisions</b>	(Dollars per bushel)										
Farm price	14.20	11.49	11.25	10.98	11.22	11.47	11.67	11.65	11.69	11.69	11.68
Illinois processor price	14.92	11.93	11.70	11.44	11.67	11.91	12.11	12.08	12.13	12.13	12.12
Loan rate	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Target price	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Direct payment rate	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
<b>Base area</b>	(Million acres)										
	50.4	50.4	50.4	50.4	50.3	50.3	50.3	50.3	50.3	50.3	50.4
<b>Direct payment yield</b>	(Bushels per acre)										
	30.9	30.9	30.9	30.9	30.9	30.9	30.9	30.9	30.9	30.9	30.9
<b>CCP yield</b>	(Percent)										
	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2
<b>ACRE participation rate</b>	(Percent)										
	15.3	11.7	19.1	19.7	20.0	19.4	19.6	18.8	19.3	19.6	19.8
<b>Returns and payments</b>	(Dollars)										
Gross market revenue/a.	562.67	495.74	492.25	486.12	501.94	519.64	533.26	539.08	546.48	551.61	555.81
Variable expenses/a.	145.29	149.62	151.74	151.06	151.77	154.29	158.05	162.30	166.26	169.75	173.34
Market net return/a.	417.38	346.12	340.51	335.06	350.17	365.36	375.21	376.78	380.22	381.86	382.47
Marketing loan benefits/a.*	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.03
ACRE payment/a.*	0.13	2.65	5.43	4.30	2.81	2.38	2.09	2.23	2.64	2.95	2.88
CCP payment/base a.*	0.00	0.00	0.00	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.03
Direct payment/base a.*	11.20	11.29	11.12	11.10	11.09	11.11	11.10	11.12	11.11	11.10	11.10
<b>Product prices, crush margin</b>	(Dollars)										
48% meal price/ton	443.50	308.98	307.20	306.42	315.68	322.00	329.18	330.84	335.17	337.62	339.06
Oil price/cwt.	51.59	53.63	52.02	50.29	50.54	51.51	51.80	51.43	51.05	50.92	50.62
Biodiesel rack/gallon	4.57	4.78	4.68	4.55	4.58	4.69	4.74	4.73	4.73	4.75	4.77
Crush margin/bu.	1.64	1.66	1.66	1.70	1.72	1.74	1.75	1.77	1.79	1.83	1.84

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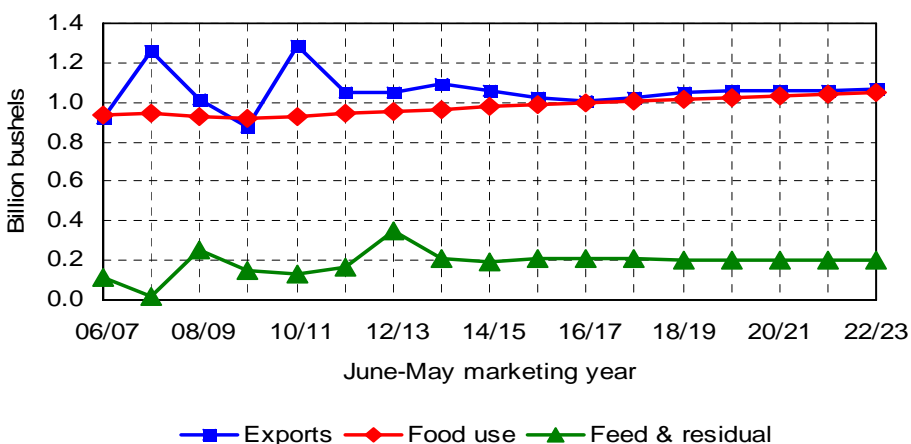
# Wheat

Wheat production remains below 2008 peak



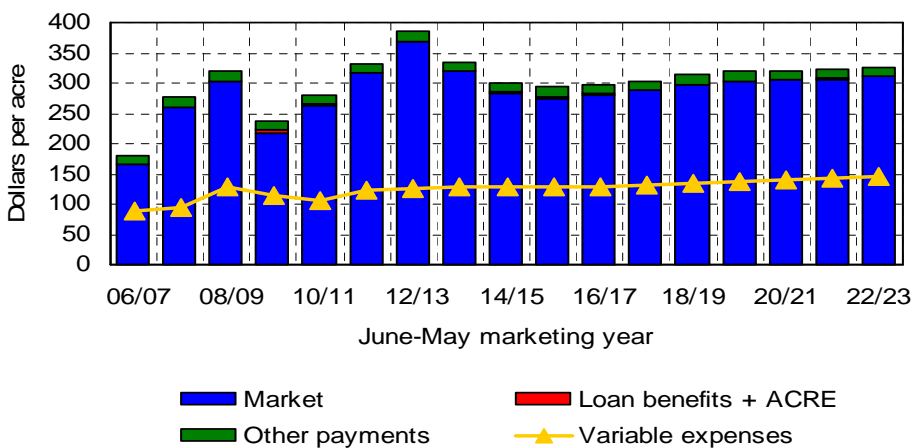
- Unlike corn and soybeans, U.S. wheat yields were near record levels in 2012.
- Continued drought in the Plains raises questions about 2013 wheat yield prospects. The baseline assumes average wheat yields are slightly below trend in 2013, but actual yields could differ.
- Given strong competition from other crops, wheat production declines slightly from 2013-2016.
- Imports explain the continuing difference between production and total use.

Wheat feed use bumps up in 2012/13



- High corn prices contributed to a large increase in wheat feeding in the first months of the 2012/13 marketing year.
- With lower projected corn prices in 2013/14, feed use of wheat falls back to more normal levels.
- Food use of wheat increases with population.
- Continued strong competition is likely to limit future U.S. wheat exports except when weather reduces foreign yields.

Wheat net returns decline from 2012 peak



- The combination of near-record yields and record prices results in record wheat market receipts per acre in 2012/13.
- Lower prices and yields result in lower receipts in 2013/14, and projected prices and returns fall further in 2014/15.
- In spite of increased production costs, projected net returns to U.S. wheat producers remain well above pre-2007 levels.



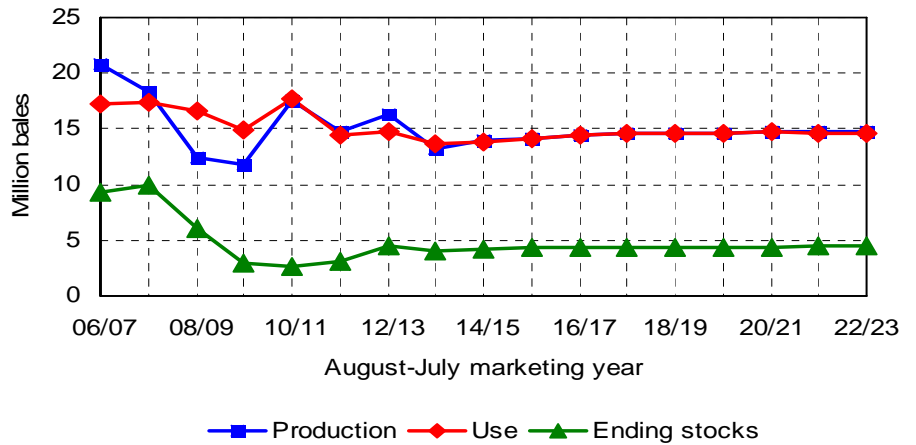
## Wheat supply and use

June-May year	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
<b>Area</b>	(Million acres)										
Planted area	55.7	57.5	56.1	54.6	53.7	53.6	53.7	53.8	53.9	53.6	53.6
Harvested area	49.0	49.7	48.5	47.1	46.3	46.3	46.4	46.5	46.5	46.3	46.3
<b>Yield</b>	(Bushels per harvested acre)										
	46.3	44.9	45.9	46.3	46.8	47.2	47.5	47.9	48.3	48.6	49.0
<b>Supply</b>	(Million bushels)										
Beginning stocks	743	712	727	768	779	774	766	758	756	758	756
Production	2,269	2,233	2,227	2,187	2,169	2,188	2,207	2,230	2,251	2,257	2,271
Imports	131	125	116	113	114	115	117	118	118	118	119
<b>Domestic use</b>	1,379	1,251	1,242	1,269	1,279	1,284	1,285	1,292	1,305	1,317	1,321
Feed and residual	353	214	193	209	210	207	201	199	202	204	199
Seed	77	75	73	72	72	72	73	73	73	73	73
Food and other	950	962	976	988	996	1,004	1,012	1,020	1,030	1,039	1,048
<b>Exports</b>	1,052	1,092	1,061	1,020	1,009	1,026	1,047	1,058	1,062	1,060	1,069
<b>Total use</b>	2,431	2,343	2,303	2,289	2,288	2,310	2,332	2,350	2,367	2,377	2,389
<b>Ending stocks</b>	712	727	768	779	774	766	758	756	758	756	758
CCC inventory	0	0	0	0	0	0	0	0	0	0	0
Under loan	6	12	19	21	21	20	18	18	19	19	18
Other stocks	706	715	748	757	753	746	740	737	739	738	739
<b>Prices, program provisions</b>	(Dollars per bushel)										
Farm price	7.98	7.12	6.19	5.95	6.01	6.11	6.28	6.35	6.34	6.30	6.36
Loan rate	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94
Target price	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17
Direct payment rate	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
<b>Base area</b>	(Million acres)										
	73.8	73.9	73.9	73.8	73.8	73.8	73.8	73.8	73.8	73.8	73.8
<b>Direct payment yield</b>	(Bushels per acre)										
	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4
<b>CCP yield</b>	(Percent)										
	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0
<b>ACRE participation rate</b>	(Percent)										
	14.9	11.1	18.0	18.5	18.7	18.0	18.1	17.3	17.8	18.0	18.2
<b>Returns and payments</b>	(Dollars)										
Gross market revenue/a.	369.59	318.72	283.05	274.73	280.31	287.66	297.15	302.79	304.64	305.65	310.83
Variable expenses/a.	126.28	127.78	129.12	128.61	129.57	131.43	134.35	137.74	140.98	143.81	146.95
Market net return/a.	243.31	190.94	153.94	146.12	150.74	156.23	162.80	165.06	163.66	161.84	163.89
Marketing loan benefits/a.*	0.00	0.00	0.00	0.06	0.04	0.01	0.09	0.01	0.04	0.02	0.00
ACRE payment/a.*	0.00	0.24	2.66	3.34	2.26	1.64	1.28	1.47	1.48	1.51	1.64
CCP payment/base a.*	0.00	0.00	0.03	0.10	0.07	0.03	0.11	0.04	0.09	0.07	0.01
Direct payment/base a.*	14.75	14.87	14.66	14.64	14.64	14.66	14.65	14.68	14.67	14.66	14.65

\*Figures reported are averages across ACRE participants and nonparticipants. All table figures are averages across 500 outcomes.

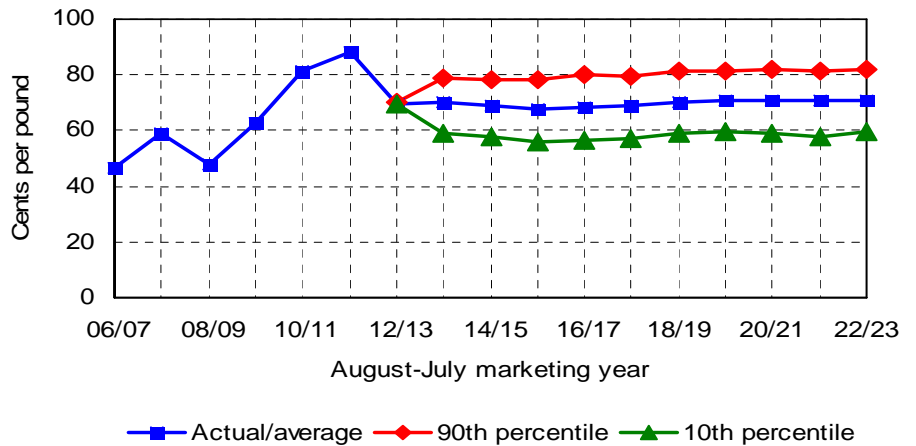
# Upland cotton

Cotton acreage, production fall in 2013



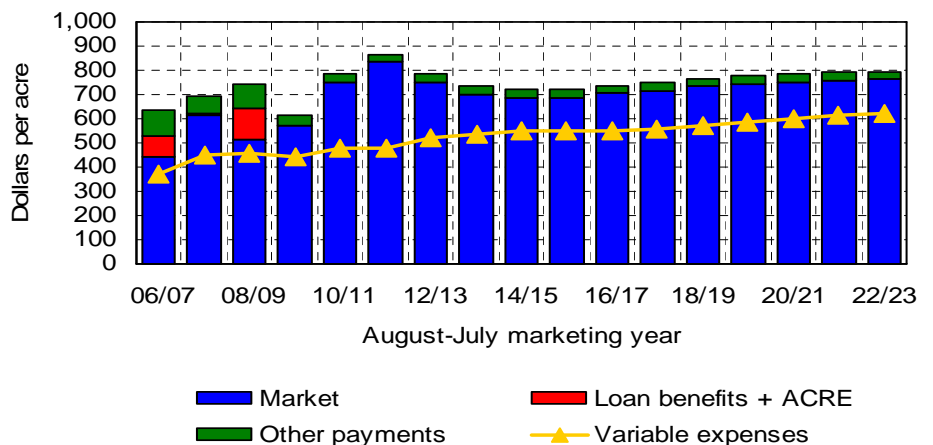
- Upland cotton acreage is likely to fall sharply in 2013, given low cotton returns relative to competing crops.
- Projected cotton use falls in 2013/14 because of reduced supplies and a weak global demand picture.
- U.S. cotton exports would have been even lower the past two years had China not imported cotton to build stocks.

Cotton prices remain near 70 cents per pound



- Average farm-level prices for upland cotton remain near 70 cents per pound over the next ten years.
- Large Chinese stocks could be released at some point, which may limit the potential for higher cotton prices.
- Further declines in cotton prices would make it even more difficult for cotton to compete with other crops.
- In spite of these factors that could limit price movements, cotton prices will remain volatile, as shown in stochastic analysis.

Cotton returns decline from 2011/12 peak



- Cotton revenues per acre harvested fall in 2012/13, as lower prices more than offset the impact of higher yields.
- Assuming a return to trend line yields in 2013, per-acre receipts decline slightly.
- Cotton net returns per acre decline relative to competing crops.
- Under an extension of current programs, cotton prices may sometimes drop enough to trigger marketing loans and countercyclical payments.

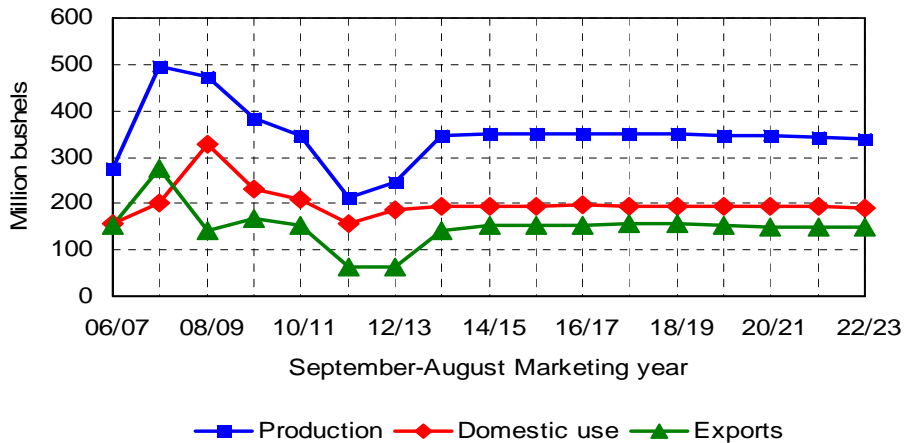
## Upland cotton supply and use

August-July year	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
<b>Area</b>	(Million acres)										
Planted area	12.08	9.45	9.89	9.93	10.03	10.00	9.89	9.84	9.78	9.68	9.58
Harvested area	9.19	7.90	8.29	8.31	8.41	8.39	8.31	8.25	8.21	8.13	8.04
<b>Yield</b>	(Pounds per harvested acre)										
	849	801	810	817	825	833	842	850	859	867	875
<b>Supply</b>	(Million bales)										
Beginning stocks	19.34	17.75	18.11	18.43	18.87	19.00	19.02	19.03	19.10	19.11	19.15
Production	3.08	4.54	4.08	4.24	4.36	4.39	4.40	4.37	4.37	4.39	4.47
Imports	16.25	13.21	14.03	14.18	14.50	14.60	14.61	14.65	14.73	14.71	14.68
	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
<b>Domestic mill use</b>	3.38	3.37	3.37	3.38	3.36	3.33	3.29	3.24	3.19	3.15	3.10
<b>Exports</b>	11.42	10.30	10.50	10.69	11.12	11.26	11.35	11.43	11.53	11.49	11.53
<b>Total use</b>	14.79	13.68	13.87	14.06	14.48	14.59	14.64	14.67	14.72	14.64	14.63
<b>Ending stocks</b>	4.54	4.08	4.24	4.36	4.39	4.40	4.37	4.37	4.39	4.47	4.53
CCC inventory	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other stocks	4.54	4.08	4.24	4.36	4.39	4.40	4.37	4.37	4.39	4.47	4.53
<b>Prices, program provisions</b>	(Cents per pound)										
Farm price	69.8	70.1	68.7	67.5	68.6	69.0	70.3	70.9	70.9	70.9	70.8
Adjusted world price	62.1	64.7	62.5	60.5	62.4	63.0	64.9	65.8	65.5	65.4	65.1
Loan rate	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0
Target price	71.3	71.3	71.3	71.3	71.3	71.3	71.3	71.3	71.3	71.3	71.3
Direct payment rate	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
	(Dollars per ton)										
Cottonseed price	254.39	235.81	214.58	208.90	210.41	214.57	218.28	219.57	219.85	219.55	219.48
<b>Base area</b>	(Million acres)										
	17.97	17.99	17.98	17.97	17.96	17.96	17.96	17.96	17.97	17.97	17.97
<b>Direct payment yield</b>	(Pounds per acre)										
	595	595	595	595	595	595	595	595	595	595	595
<b>CCP yield</b>	(Percent)										
	631	631	631	631	631	631	631	631	631	631	631
<b>ACRE participation rate</b>	(Percent)										
	0.2	0.1	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
<b>Returns and payments</b>	(Dollars)										
Gross market revenue/a.	751.19	698.84	681.72	674.40	690.52	703.83	723.66	737.58	744.21	750.48	756.65
Variable expenses/a.	524.96	536.46	547.01	548.56	552.43	561.00	573.66	587.65	601.03	612.63	626.19
Market net return/a.	226.23	162.38	134.71	125.84	138.09	142.83	150.00	149.93	143.18	137.86	130.46
Marketing loan benefits/a.*	0.00	13.40	16.21	21.74	18.89	17.39	14.30	12.27	13.47	15.06	11.25
ACRE payment/a.*	0.03	0.02	0.03	0.04	0.03	0.03	0.02	0.03	0.03	0.03	0.04
CCP payment/base a.*	0.00	6.76	8.30	11.38	10.85	9.22	7.08	6.47	7.24	7.40	6.18
Direct payment/base a.*	33.73	33.74	33.72	33.72	33.72	33.72	33.72	33.72	33.72	33.72	33.72

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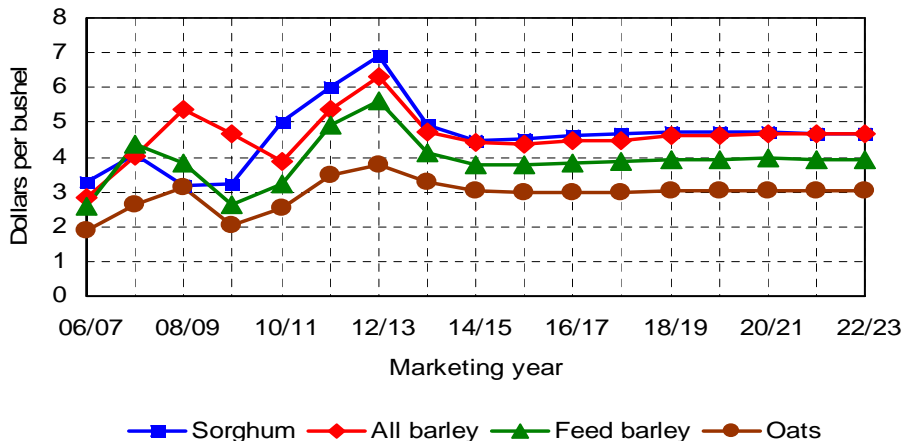
# Sorghum, barley, oats and hay

Sorghum production and exports increase in 2013/14



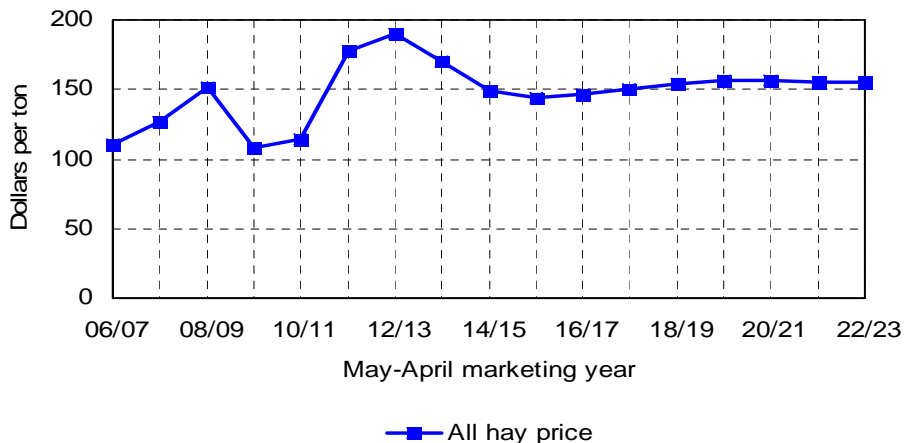
- U.S. average sorghum yields in 2012 fell to the lowest level since 1983.
- With supplies limited, U.S. exports of sorghum are expected to remain very small for the second straight year.
- High sorghum prices and low cotton returns are expected to result in more sorghum acreage in 2013/14.
- If sorghum yields recover in 2013, the increase in production should allow a rebound in U.S. sorghum exports.

Feed grain prices decline sharply from 2012/13 peak



- Season-average prices for sorghum, barley and oats all reach record levels in 2012/13.
- With normal yields in 2013/14, projected prices for all of the major feed grains decline sharply.
- Projected average feed grain prices are fairly steady from 2013/14 to 2022/23, but actual prices for any given year can vary greatly from these averages.

Hay prices decline with increased production in 2013



- Drought reduced 2012 national average hay yields to the lowest levels since 1988.
- Very tight supplies of hay and other forages result in record 2012/13 U.S. average hay prices.
- If more favorable weather results in increased hay and forage production in 2013/14, hay prices are likely to fall.
- Hay markets are particularly fragmented, so national average prices may not reflect local conditions.

## Sorghum, barley and oats supply and use

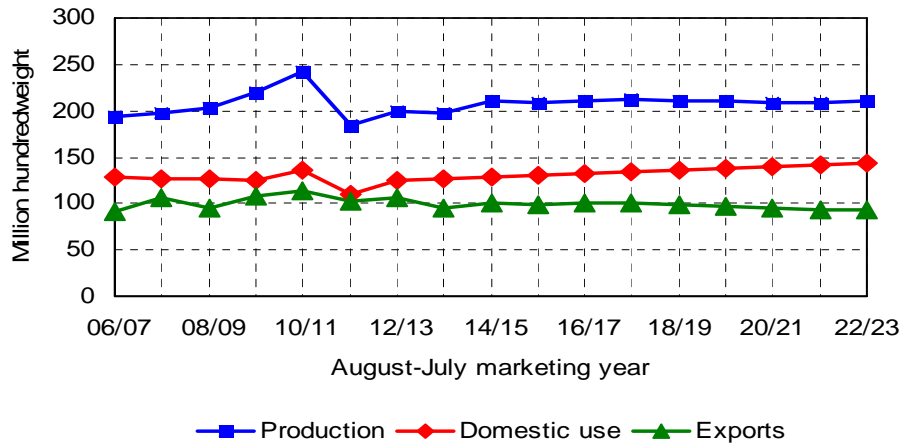
Marketing years	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
<b>Planted area</b>											
	(Million acres)										
Sorghum	6.24	6.74	6.79	6.75	6.74	6.73	6.68	6.62	6.56	6.53	6.47
Barley	3.64	3.47	3.23	3.21	3.17	3.18	3.17	3.16	3.14	3.15	3.13
Oats	2.76	2.78	2.94	2.91	2.86	2.82	2.79	2.75	2.74	2.73	2.72
<b>Harvested area</b>											
Sorghum	4.96	5.44	5.47	5.44	5.42	5.42	5.38	5.32	5.27	5.25	5.20
Barley	3.24	3.05	2.84	2.82	2.78	2.79	2.78	2.77	2.76	2.76	2.74
Oats	1.05	1.08	1.20	1.20	1.18	1.16	1.15	1.13	1.13	1.13	1.12
<b>Yield</b>											
	(Bushels per harvested acre)										
Sorghum	49.8	63.6	63.9	64.0	64.3	64.6	64.6	64.8	65.2	64.8	65.0
Barley	67.9	69.5	70.7	71.3	72.0	72.6	73.2	73.8	74.4	75.0	75.7
Oats	61.3	63.4	63.8	64.3	64.8	65.4	65.8	66.3	66.8	67.3	67.8
<b>Production</b>											
	(Million bushels)										
Sorghum	247	347	351	349	350	351	349	346	345	342	340
Barley	220	212	201	201	201	203	204	205	205	208	208
Oats	64	69	77	78	77	76	76	75	76	76	76
<b>Domestic use</b>											
Sorghum	186	193	192	195	196	194	194	194	194	192	191
Barley	214	213	209	211	210	210	209	209	208	209	208
Oats	164	158	161	163	164	164	164	163	164	164	164
<b>Net trade</b>											
Sorghum net exports	63	140	151	154	154	156	155	153	150	150	149
Barley net imports	10	12	11	11	9	7	5	4	2	2	1
Oats net imports	93	94	89	88	88	88	88	88	88	88	88
<b>Ending stocks</b>											
Sorghum	21	35	42	43	43	44	44	43	44	44	44
Barley	76	87	91	92	91	92	91	91	91	92	93
Oats	49	53	58	60	60	61	62	62	63	63	64
<b>Farm prices</b>											
	(Dollars per bushel)										
Sorghum	6.93	4.92	4.49	4.54	4.61	4.67	4.72	4.73	4.72	4.69	4.69
All barley	6.33	4.72	4.44	4.37	4.47	4.49	4.61	4.62	4.68	4.66	4.68
Feed barley	5.63	4.13	3.79	3.78	3.84	3.87	3.94	3.95	3.97	3.95	3.95
Oats	3.80	3.28	3.03	2.96	2.97	2.99	3.02	3.04	3.05	3.04	3.04

## Hay supply and use

May-April year	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
<b>Harvested area</b>											
	(Million acres)										
	56.3	58.0	58.4	57.9	57.5	57.2	57.1	57.1	57.0	56.8	56.7
<b>Yield</b>											
	(Tons per acre)										
	2.13	2.43	2.44	2.45	2.46	2.47	2.47	2.48	2.49	2.50	2.51
<b>Supply and use</b>											
	(Million tons)										
Production	119.9	141.0	142.6	141.7	141.2	141.1	141.2	141.6	142.1	142.2	142.1
Disappearance	126.5	136.6	139.7	140.8	141.3	141.5	141.6	141.8	141.9	142.0	142.0
Ending stocks	14.8	19.2	22.2	23.1	23.0	22.7	22.3	22.1	22.3	22.5	22.6
<b>All hay farm price</b>											
	(Dollars per ton)										
	190.25	170.34	148.64	144.67	146.64	149.88	154.19	156.42	156.54	155.31	155.00

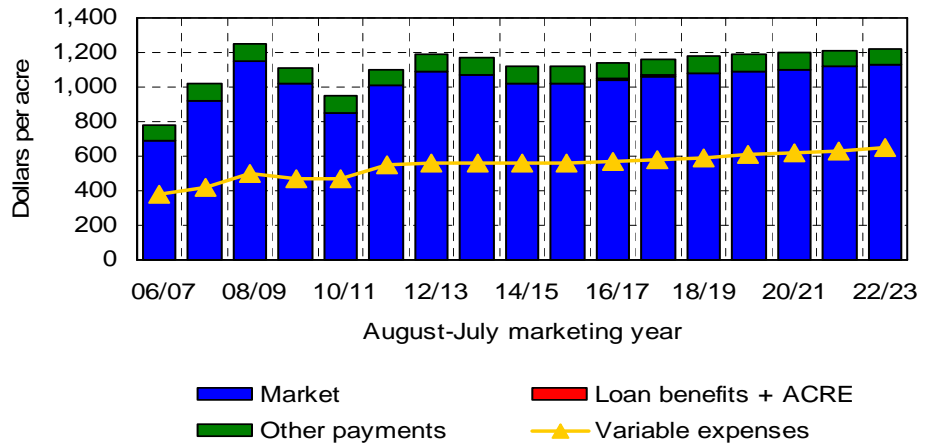
# Rice and sugar

Rice production remains below 2010 peak



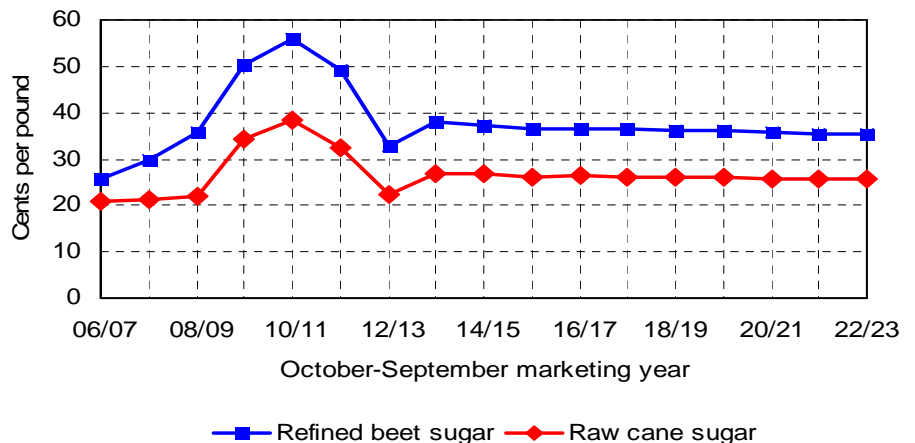
- Record rice yields in 2012 resulted in a modest increase in rice production.
- U.S. rice acreage and production remain well below the 2010 peak over the next ten years.
- Population growth accounts for most of the projected increase in domestic rice consumption.
- U.S. rice exports average around 100 million hundredweight each year.

Rice returns dip slightly in 2013/14 and 2014/15



- Rice market receipts per acre increased in 2012 with increases in both prices and yields.
- Average prices and yields both decline slightly in 2013/14, and average prices dip below \$14 per hundredweight in 2014/15, reducing market receipts.
- Under the assumed extension of current policies, direct payments are a larger share of rice producer income than for other major crops.

Sugar prices decline sharply in 2012/13



- Record sugar beet yields and the highest sugarcane yields in decades result in a large increase in U.S. sugar production in 2012/13.
- Even with reduced imports and an increase in domestic use, carryover stocks of sugar increase in 2012/13, and market prices for domestic sugar fall sharply.
- Reduced production allows some price recovery in 2013/14, but prices remain well below the 2010/11 peak.

## Rice supply and use

August-July year	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
<b>Area</b>	(Million acres)										
Planted area	2.70	2.76	2.90	2.86	2.85	2.84	2.80	2.77	2.75	2.72	2.71
Harvested area	2.68	2.72	2.86	2.82	2.81	2.80	2.76	2.73	2.71	2.68	2.67
<b>Yield</b>	(Pounds per harvested acre)										
	7,449	7,292	7,335	7,411	7,488	7,556	7,618	7,671	7,730	7,796	7,859
<b>Supply and use</b>	(Million hundredweight)										
Production	199.5	198.3	209.9	209.2	210.6	211.5	210.4	209.8	209.6	209.3	210.0
Imports	20.7	21.1	21.5	22.2	22.7	23.3	24.0	24.7	25.3	25.8	26.2
Domestic use	125.5	126.8	129.3	131.2	132.7	134.3	135.9	137.6	139.3	141.1	142.8
Exports	105.4	95.8	101.0	99.6	100.2	100.4	98.4	96.7	95.4	93.8	93.1
Ending stocks	30.3	27.1	28.2	28.9	29.3	29.4	29.6	29.7	29.9	30.2	30.5
<b>Prices, returns and payments</b>	(Dollars)										
Farm price/cwt	14.67	14.70	13.96	13.83	13.96	14.10	14.19	14.27	14.29	14.31	14.34
Gross market revenue/a.	1092.57	1071.40	1022.97	1024.07	1044.65	1064.79	1080.23	1093.87	1104.13	1115.08	1126.58
Variable expenses/a.	562.00	561.16	562.22	557.80	565.84	576.83	591.16	606.61	620.35	632.51	645.73
Market net return/a.	530.57	510.24	460.75	466.27	478.81	487.95	489.08	487.26	483.79	482.56	480.85
Marketing loan benefits/a.*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACRE payment/a.*	0.00	0.10	0.42	0.42	0.36	0.34	0.27	0.30	0.31	0.36	0.33
CCP payment/base a.*	0.00	0.00	0.02	0.07	0.03	0.06	0.05	0.03	0.07	0.12	0.04
Direct payment/base a.*	96.04	96.09	95.94	95.93	95.92	95.93	95.93	95.95	95.94	95.93	95.93

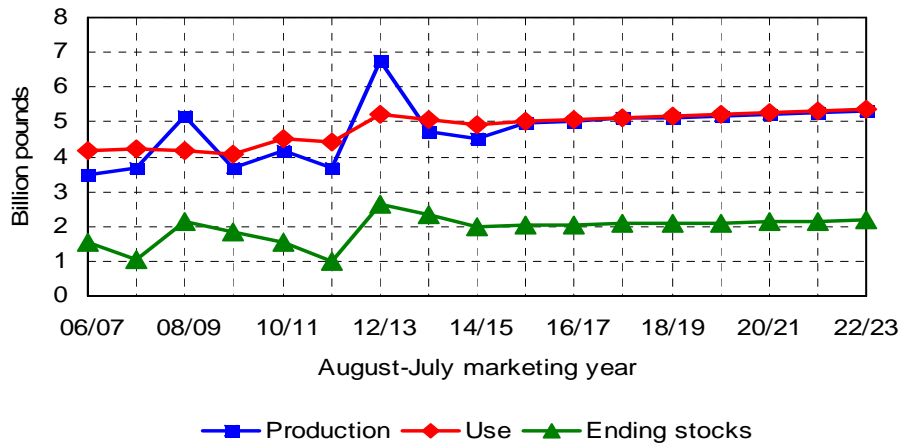
\*Figures reported are averages across ACRE participants and nonparticipants. All table figures are averages across 500 outcomes.

## Sugar supply and use

October-September year	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
<b>Area</b>	(Million acres)										
Sugar cane harvested	0.852	0.830	0.837	0.839	0.837	0.836	0.832	0.827	0.821	0.816	0.809
Sugar beet planted	1.230	1.137	1.212	1.217	1.213	1.212	1.208	1.203	1.198	1.194	1.190
Sugar beet harvested	1.204	1.118	1.191	1.196	1.192	1.192	1.188	1.182	1.177	1.174	1.170
<b>Yield</b>	(Tons per harvested acre)										
Cane sugar	4.54	4.27	4.29	4.31	4.34	4.36	4.38	4.40	4.42	4.44	4.45
Beet sugar	4.32	4.20	4.28	4.36	4.43	4.51	4.58	4.66	4.73	4.80	4.87
<b>Supply and use</b>	(Thousand tons)										
Production	9,070	8,244	8,693	8,839	8,920	9,011	9,091	9,153	9,207	9,255	9,302
Cane sugar	3,870	3,545	3,592	3,622	3,633	3,642	3,645	3,644	3,632	3,621	3,603
Beet sugar	5,200	4,700	5,102	5,217	5,287	5,369	5,446	5,509	5,575	5,634	5,699
Imports	2,914	2,955	2,922	2,947	2,992	3,035	3,079	3,122	3,168	3,218	3,277
Domestic use	11,564	11,306	11,369	11,559	11,712	11,840	11,961	12,071	12,168	12,267	12,380
Exports	194	192	192	192	192	192	192	192	192	192	192
Ending stocks	2,211	1,913	1,967	2,003	2,010	2,024	2,040	2,052	2,066	2,081	2,088
<b>Prices</b>	(Cents per pound)										
N.Y. spot raw sugar	22.46	26.98	26.75	26.20	26.29	26.25	26.14	26.03	25.81	25.63	25.62
Refined beet sugar	32.72	37.93	37.30	36.48	36.54	36.43	36.21	36.00	35.63	35.32	35.25

# Peanuts and sunflower seed

Huge 2012 peanut crop far exceeds use

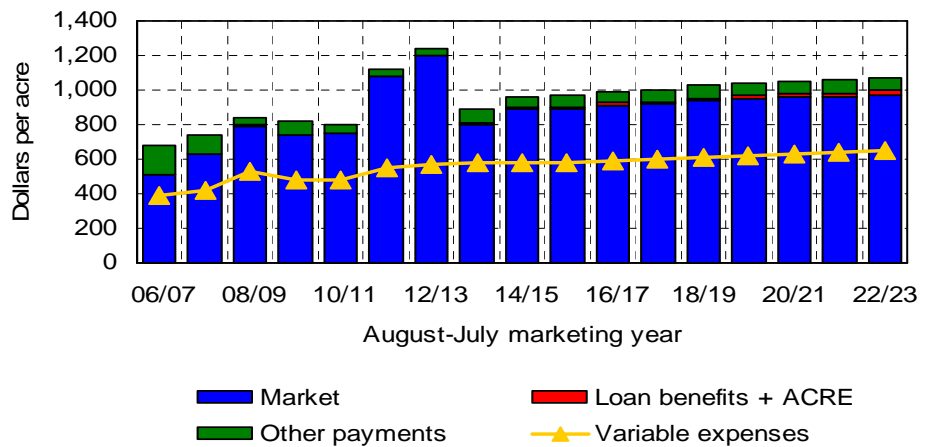


- A sharp increase in acreage and record yields resulted in a huge increase in peanut production in 2012.

- Even with a significant increase in use, peanut stocks at the end of the 2012/13 marketing year are expected to be at record levels.

- These large stocks are likely to dampen future peanut prices and result in reduced acreage in 2013.

Peanut revenues peak in 2012, fall sharply in 2013

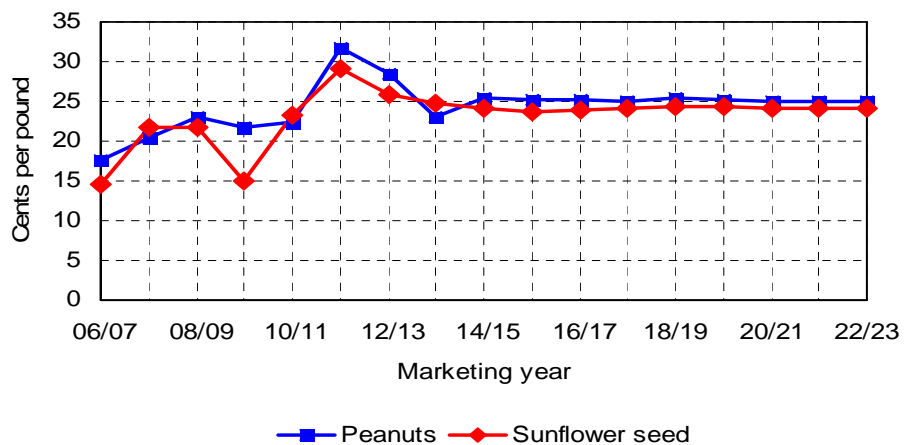


- High contract prices and record yields result in record per-acre market revenues for the 2012 peanut crop.

- With lower projected prices in 2013/14 and a return to more normal yields, per-acre revenues decline sharply.

- In many of the 500 alternative market outcomes examined, peanut prices are low enough to generate countercyclical payments under current program provisions.

Peanut, sunflower seed prices fall in 2013/14



- Projected peanut prices fall in 2013/14 in response to large carryover stocks.

- Sunflower seed prices also decline further in 2013/14. The decline is smaller than for other oilseeds, as vegetable oil prices remain strong and oil accounts for most of the value of sunflower seed.

- Peanut prices recover somewhat in 2014/15 as stocks decline but remain well below recent peak levels.



## Peanut supply and use

August-July year	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
<b>Area</b>	(Million acres)										
Planted area	1.64	1.40	1.32	1.43	1.42	1.43	1.41	1.41	1.41	1.40	1.39
Harvested area	1.61	1.35	1.27	1.38	1.37	1.38	1.36	1.36	1.36	1.35	1.34
<b>Yield</b>	(Pounds per harvested acre)										
	4,192	3,498	3,543	3,589	3,642	3,692	3,742	3,795	3,846	3,893	3,945
<b>Supply and use</b>	(Million pounds)										
Production	6,741	4,741	4,520	4,975	5,000	5,095	5,099	5,153	5,220	5,270	5,303
Imports	70	70	70	70	70	70	70	70	70	70	70
Domestic use	4,383	4,360	4,282	4,366	4,411	4,470	4,507	4,547	4,600	4,650	4,693
Exports	816	706	659	650	648	663	660	659	663	665	662
Ending stocks	2,615	2,360	2,010	2,038	2,050	2,080	2,083	2,099	2,127	2,152	2,171
<b>Prices, returns and payments</b>	(Dollars)										
Farm price/lb.	0.285	0.231	0.253	0.251	0.252	0.251	0.254	0.253	0.251	0.250	0.249
Gross market revenue/a.	1195.05	798.56	887.96	892.45	910.31	916.95	937.92	950.63	955.04	961.47	972.62
Variable expenses/a.	570.94	578.60	583.07	581.34	587.18	595.66	607.16	619.45	630.65	639.77	650.12
Market net return/a.	624.11	219.95	304.89	311.10	323.13	321.30	330.76	331.18	324.39	321.70	322.50
Marketing loan benefits/a.*	0.00	13.27	9.11	10.91	14.84	12.90	16.41	17.26	24.11	23.00	23.32
ACRE payment/a.*	0.00	0.01	0.04	0.05	0.06	0.07	0.07	0.07	0.09	0.11	0.10
CCP payment/base a.*	0.00	35.27	18.42	24.40	23.47	24.30	25.88	26.24	26.95	32.62	30.65
Direct payment/base a.*	45.87	45.87	45.85	45.84	45.84	45.84	45.84	45.84	45.84	45.84	45.84

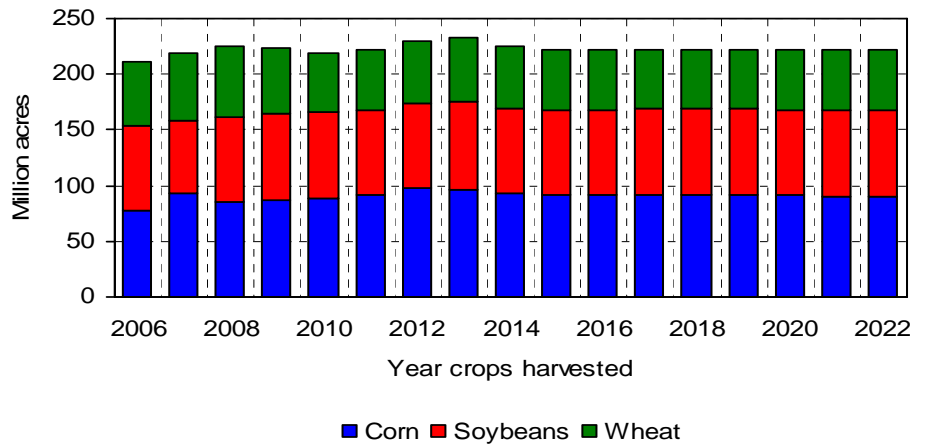
## Sunflower seed supply and use

September-August year	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
<b>Area</b>	(Million acres)										
Planted area	1.92	1.90	2.11	2.15	2.15	2.16	2.16	2.14	2.14	2.14	2.13
Harvested area	1.84	1.81	2.02	2.06	2.06	2.07	2.06	2.05	2.04	2.05	2.04
<b>Yield</b>	(Pounds per harvested acre)										
	1,513	1,540	1,550	1,562	1,573	1,586	1,593	1,603	1,614	1,622	1,628
<b>Supply and use</b>	(Million pounds)										
Production	2,786	2,801	3,131	3,227	3,250	3,283	3,296	3,291	3,308	3,329	3,330
Imports	110	110	110	110	110	110	110	110	110	110	110
Domestic use	2,441	2,542	2,727	2,821	2,861	2,889	2,902	2,900	2,905	2,910	2,905
Exports	346	393	467	499	497	503	501	496	506	523	530
Ending stocks	301	277	325	342	345	346	348	353	361	367	373
<b>Prices, returns and payments</b>	(Dollars)										
Farm price/lb.	0.259	0.248	0.242	0.237	0.239	0.242	0.244	0.243	0.242	0.242	0.241
Gross market revenue/a.	392.25	379.87	374.10	368.54	373.82	382.60	386.08	388.51	389.57	391.36	391.89
Variable expenses/a.	121.49	125.11	126.89	126.32	126.91	129.02	132.17	135.72	139.03	141.95	144.95
Market net return/a.	270.75	254.76	247.21	242.21	246.91	253.59	253.92	252.79	250.54	249.41	246.94
Marketing loan benefits/a.*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACRE payment/a.*	0.00	0.30	1.87	2.31	1.93	1.88	2.00	2.11	2.60	2.68	2.90
CCP payment/base a.*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Direct payment/base a.*	7.01	7.10	6.94	6.93	6.92	6.93	6.92	6.94	6.92	6.92	6.91

\*Figures reported are averages across ACRE participants and nonparticipants. All table figures are averages across 500 outcomes.

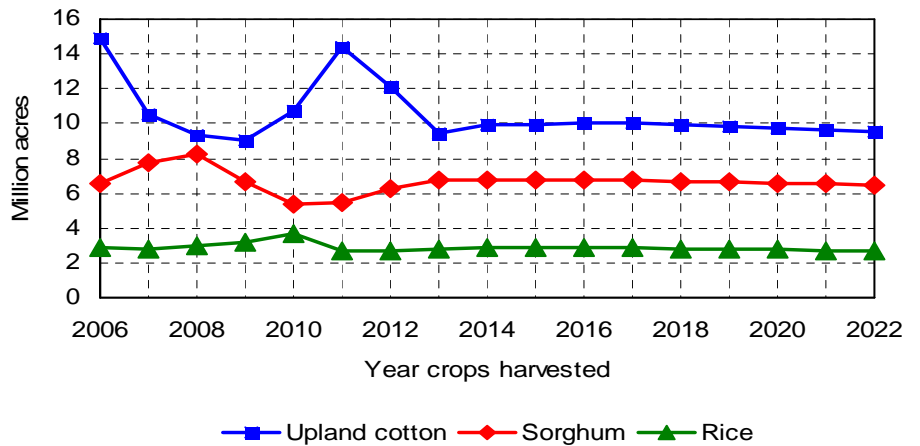
# Land use

Land in 3 major crops peaks in 2013



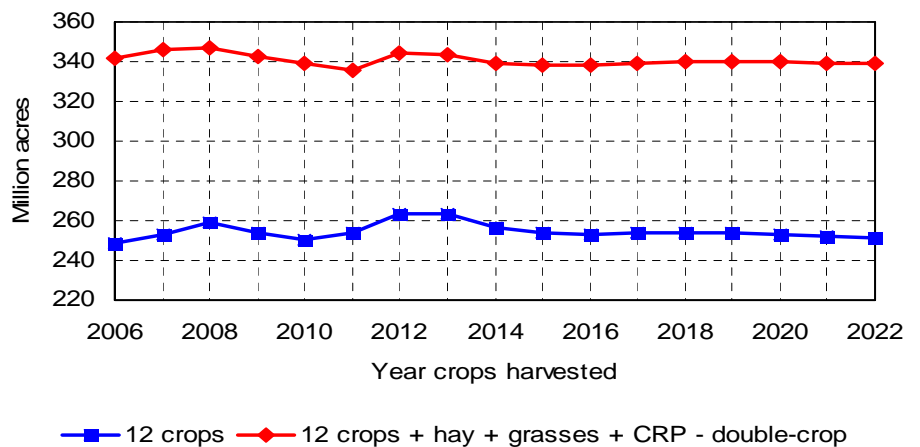
- Corn area planted reached 97 million acres in 2012, the most since the 1930s, in response to strong prices and nearly ideal planting conditions.
- Projected corn acreage is almost unchanged in 2013, as more normal planting conditions and rotational concerns offset the effect of high prices.
- Soybean and wheat areas increase slightly in 2013.
- Lower prices contribute to a reduction in acreage for all three major crops in 2014.

Cotton acreage planted continues decline in 2013



- Upland cotton planted acreage declined in 2012 from the 2011 peak. Because of weak returns relative to other crops, cotton acreage declines again in 2013.
- Projected sorghum acreage increases in 2013, given high prices and returns.
- Rice acreage only increases slightly in 2013 and 2014 and remains well below the 2010 peak.

12-crop planted area remains high in 2013, then dips



- Flooding and other weather-related issues limited crop acreage in 2011.
- Under favorable planting conditions in 2012, 12-crop planted area increased almost 10 million acres.
- High prices and returns keep total planted area high in 2013, but the total declines with lower prices in later years.
- CRP area is reduced for the 2013 crop year. Enrollment rebuilds in later years, but stays below the 32 million acre cap.

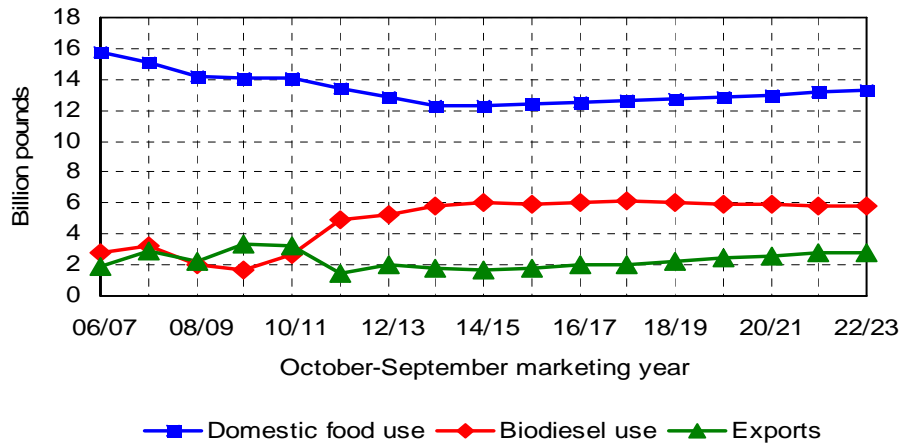
## Land use for major crops and the conservation reserve

Marketing year	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
<b>Planted area</b>	(Million acres)										
Corn	97.16	96.89	92.56	91.03	91.06	91.51	91.64	91.29	91.01	90.75	90.21
Soybeans	77.20	78.48	76.42	77.18	77.31	77.25	77.47	77.62	77.41	77.43	77.55
Wheat	55.74	57.53	56.14	54.61	53.66	53.62	53.68	53.83	53.88	53.64	53.58
Upland cotton	12.08	9.45	9.89	9.93	10.03	10.00	9.89	9.84	9.78	9.68	9.58
Sorghum	6.24	6.74	6.79	6.75	6.74	6.73	6.68	6.62	6.56	6.53	6.47
Barley	3.64	3.47	3.23	3.21	3.17	3.18	3.17	3.16	3.14	3.15	3.13
Oats	2.76	2.78	2.94	2.91	2.86	2.82	2.79	2.75	2.74	2.73	2.72
Rice	2.70	2.76	2.90	2.86	2.85	2.84	2.80	2.77	2.75	2.72	2.71
Sunflowers	1.92	1.90	2.11	2.15	2.15	2.16	2.16	2.14	2.14	2.14	2.13
Peanuts	1.64	1.40	1.32	1.43	1.42	1.43	1.41	1.41	1.41	1.40	1.39
Sugar beets	1.23	1.14	1.21	1.22	1.21	1.21	1.21	1.20	1.20	1.19	1.19
Sugar cane (harvested)	0.90	0.87	0.88	0.88	0.88	0.88	0.88	0.87	0.86	0.86	0.85
<b>12 crop planted area</b>	<b>263.19</b>	<b>263.41</b>	<b>256.38</b>	<b>254.17</b>	<b>253.36</b>	<b>253.61</b>	<b>253.77</b>	<b>253.49</b>	<b>252.89</b>	<b>252.23</b>	<b>251.51</b>
<b>Hay (harvested)</b>	56.26	57.97	58.41	57.90	57.46	57.24	57.11	57.05	56.99	56.84	56.65
<b>Warm season grasses (harvested)</b>	0.20	0.55	1.08	1.56	2.10	2.74	3.37	3.96	4.58	5.21	5.91
<b>12 crops + hay + grasses</b>	<b>319.65</b>	<b>321.93</b>	<b>315.88</b>	<b>313.62</b>	<b>312.91</b>	<b>313.59</b>	<b>314.25</b>	<b>314.51</b>	<b>314.47</b>	<b>314.28</b>	<b>314.07</b>
<b>Conservation reserve (CRP)</b>	29.53	27.00	28.94	29.92	30.80	30.71	30.62	30.55	30.47	30.37	30.27
<b>12 crops + hay + grasses + CRP</b>	<b>349.18</b>	<b>348.93</b>	<b>344.83</b>	<b>343.54</b>	<b>343.71</b>	<b>344.30</b>	<b>344.88</b>	<b>345.05</b>	<b>344.93</b>	<b>344.64</b>	<b>344.34</b>
<b>Double-crop soybeans</b>	5.21	5.81	5.32	5.26	5.21	5.23	5.27	5.29	5.28	5.25	5.24
<b>12 crops + hay + grasses + CRP - double-crop soybeans</b>	<b>343.97</b>	<b>343.12</b>	<b>339.50</b>	<b>338.28</b>	<b>338.50</b>	<b>339.07</b>	<b>339.60</b>	<b>339.76</b>	<b>339.66</b>	<b>339.39</b>	<b>339.10</b>

# Soybean products

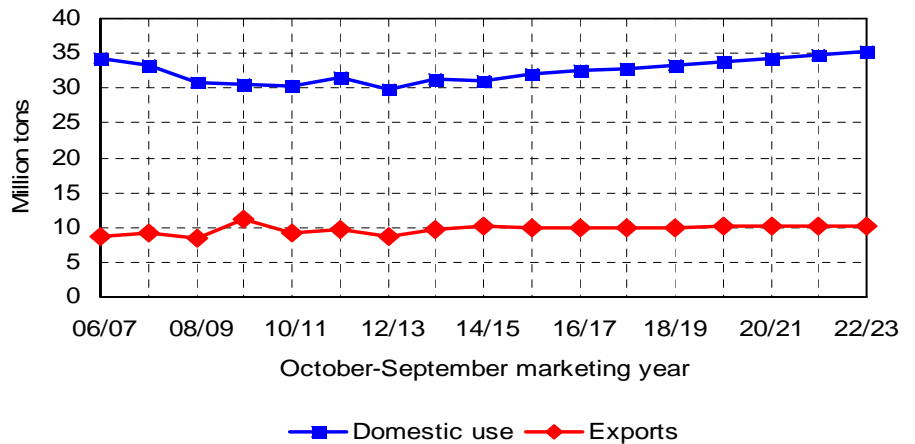
## Biodiesel use of soybean oil increases

- Biodiesel use of soybean oil has increased as firms seek to meet their obligations under the Renewable Fuel Standard (RFS2).
- Future growth in soybean oil biodiesel use partly depends on growth in biodiesel production from other feedstocks.
- Food use of soybean oil increases with population after 2013/14, as recent shifts from soy oil to other vegetable oils abate.
- Soybean oil exports are constrained by available supplies and strong competition.



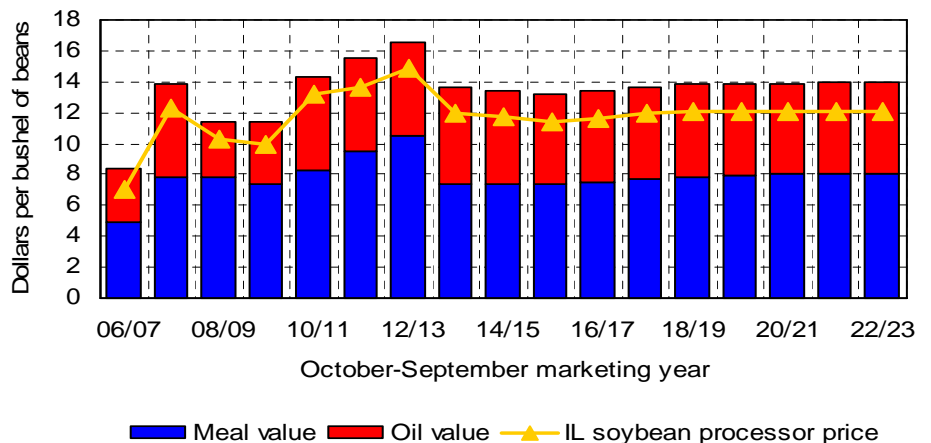
## Soybean meal use recovers from 2012/13 low

- Stagnant livestock and poultry production and competition from distillers grains have limited domestic use of soybean meal in recent years.
- Projected increases in soybean meal use result from resumed growth in poultry production and slower growth in use of distillers grains.
- Soybean meal exports remain stable as growing world demand is met by competitors.



## Oil captures larger share of soybean crush value

- Soybean oil prices remain around 50 cents per pound in response to growing biodiesel demand and other uses.
- Soybean meal prices decline in 2013/14 in response to increased global supplies.
- As a result, oil accounts for an increased share of the value to crushers.



## Soybean oil supply and use

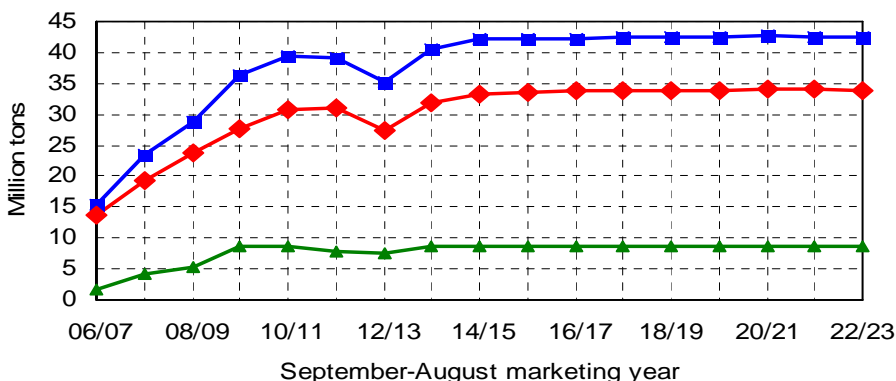
October-September year	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
	(Million pounds)										
<b>Supply</b>	21,627	21,422	21,620	22,005	22,372	22,642	22,848	23,111	23,389	23,696	23,967
Beginning stocks	2,540	1,504	1,593	1,683	1,788	1,818	1,790	1,821	1,873	1,919	1,966
Production	18,737	19,768	19,877	20,172	20,434	20,675	20,909	21,139	21,366	21,627	21,852
Imports	350	150	150	150	150	150	150	150	150	150	150
<b>Domestic use</b>	18,110	18,049	18,288	18,374	18,538	18,791	18,788	18,827	18,906	18,979	19,125
Biodiesel	5,301	5,789	6,044	5,976	5,989	6,141	6,075	5,965	5,905	5,841	5,852
Food and other	12,809	12,259	12,244	12,398	12,550	12,649	12,713	12,861	13,002	13,138	13,273
<b>Exports</b>	2,012	1,781	1,648	1,844	2,016	2,062	2,239	2,411	2,564	2,751	2,833
<b>Total use</b>	20,123	19,829	19,937	20,218	20,554	20,853	21,027	21,238	21,470	21,730	21,958
<b>Ending stocks</b>	1,504	1,593	1,683	1,788	1,818	1,790	1,821	1,873	1,919	1,966	2,009
	(Cents per pound)										
<b>Price</b>											
Decatur	51.59	53.63	52.02	50.29	50.54	51.51	51.80	51.43	51.05	50.92	50.62

## Soybean meal supply and use

October-September year	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
	(Thousand tons)										
<b>Supply</b>	38,825	41,344	41,609	42,221	42,763	43,256	43,739	44,215	44,686	45,225	45,690
Beginning stocks	300	297	336	338	339	336	336	335	336	337	338
Production	38,275	40,847	41,072	41,682	42,224	42,720	43,204	43,681	44,149	44,688	45,152
Imports	250	200	200	200	200	200	200	200	200	200	200
<b>Domestic use</b>	29,817	31,210	31,144	31,962	32,496	32,905	33,364	33,792	34,223	34,670	35,188
<b>Exports</b>	8,712	9,797	10,127	9,919	9,930	10,016	10,041	10,087	10,126	10,217	10,162
<b>Total use</b>	38,528	41,007	41,270	41,881	42,427	42,921	43,405	43,879	44,349	44,887	45,350
<b>Ending stocks</b>	297	336	338	339	336	336	335	336	337	338	339
	(Dollars per ton)										
<b>Price</b>											
Decatur, 48% protein	443.50	308.98	307.20	306.42	315.68	322.00	329.18	330.84	335.17	337.62	339.06

# Corn products

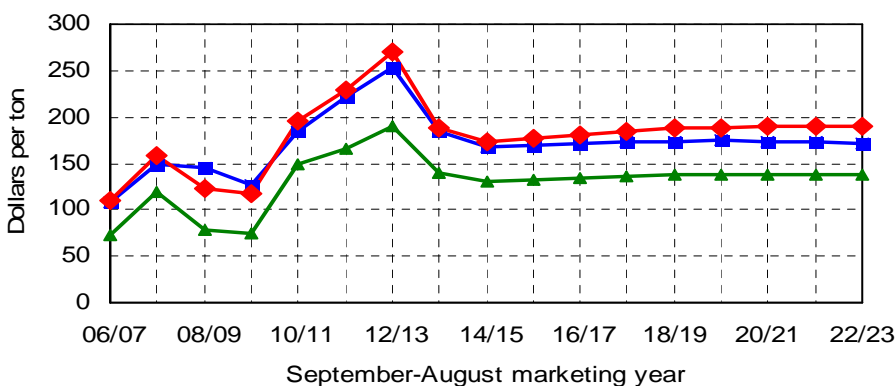
Distillers grains use rebounds, but then growth slows



■ Distillers, brewers grains production    ◆ Domestic use    ▲ Net exports

- Distillers grains production and use expanded rapidly with the dry mill ethanol industry.
- Production dips in 2012/13 because of reduced ethanol production but rebounds in 2013/14.
- Almost no growth occurs after 2014/15, as corn ethanol production is stable.
- Figures in the tables are on a dry-equivalent basis.

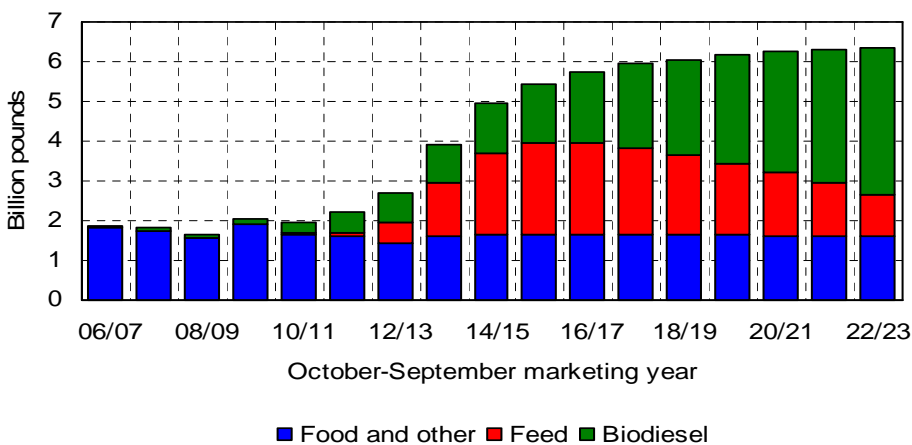
DDGS prices generally follow corn prices



■ Corn    ◆ DDGS    ▲ Corn gluten feed

- Over the long run, prices of distillers dried grains with solubles (DDGS) and corn gluten feed generally move with corn prices.
- As the market matures, DDGS prices slowly increase relative to corn prices over the baseline.
- Distillers grains primarily displace corn in beef cattle rations, but displace both corn and soybean meal in other livestock and poultry rations.

Biodiesel use of corn oil increases



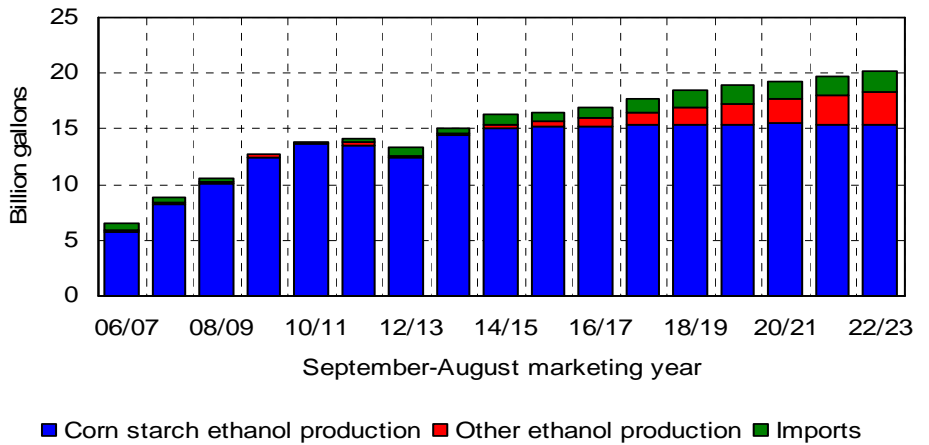
- Wet mill plants produce ethanol, HFCS and other products. Food uses account for most of the corn oil produced at wet mill plants.
- The baseline projects a rapid increase in the share of dry mill ethanol plants that remove oil from distillers grains.
- The oil removed in dry mill plants is used in feed uses and biodiesel production. By the end of the baseline, most corn oil is used to produce biodiesel.

## Corn product supply and use

Marketing year	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
<b>High-fructose corn syrup</b>											
	(Thousand tons, Oct.-Sep. year)										
Production	8,197	8,785	8,996	9,056	9,119	9,176	9,221	9,255	9,299	9,346	9,375
Domestic use	6,745	7,197	7,303	7,310	7,322	7,332	7,330	7,316	7,312	7,310	7,293
Net exports	1,452	1,587	1,693	1,746	1,797	1,845	1,891	1,939	1,987	2,036	2,082
	(Cents per pound, Oct.-Sep. year)										
Price, 42% Midwest	20.93	22.23	20.96	20.67	20.64	20.67	20.70	20.73	20.70	20.61	20.71
HFCS price/ref. sugar price	64%	59%	56%	57%	56%	57%	57%	58%	58%	58%	59%
<b>Distillers, brewers grains</b>											
	(Thousand tons, Sep.-Aug. year)										
Production (dry equiv.)	35,118	40,487	42,100	42,337	42,318	42,550	42,424	42,525	42,694	42,610	42,478
Domestic use	27,502	31,849	33,381	33,648	33,693	33,947	33,855	33,955	34,122	34,034	33,901
Net exports	7,616	8,638	8,719	8,690	8,625	8,603	8,570	8,570	8,571	8,576	8,577
	(Dollars per ton, Sep.-Aug. year)										
Price, IL points	270.64	188.04	174.17	176.50	181.29	184.18	187.74	188.62	189.47	189.37	189.69
DDGS price/corn price	107%	102%	104%	104%	106%	107%	108%	108%	109%	110%	110%
<b>Corn gluten feed</b>											
	(Thousand tons, Sep.-Aug. year)										
Production	8,775	9,367	9,547	9,487	9,438	9,425	9,391	9,368	9,337	9,281	9,235
Domestic use	8,079	8,439	8,584	8,554	8,537	8,549	8,542	8,540	8,528	8,490	8,464
Net exports	696	928	963	934	901	876	849	828	809	791	772
	(Dollars per ton, Sep.-Aug. year)										
Price, 21%, IL points	189.16	140.26	130.71	131.90	134.21	135.66	137.44	137.81	138.15	137.94	137.96
CGF price/corn price	75%	76%	78%	78%	79%	79%	79%	79%	79%	80%	80%
<b>Corn gluten meal</b>											
	(Thousand tons, Sep.-Aug. year)										
Production	2,309	2,465	2,512	2,497	2,484	2,480	2,471	2,465	2,457	2,442	2,430
Domestic use	1,293	1,384	1,421	1,398	1,380	1,372	1,357	1,344	1,330	1,308	1,288
Net exports	1,016	1,081	1,091	1,099	1,103	1,109	1,114	1,121	1,128	1,135	1,142
	(Dollars per ton, Sep.-Aug. year)										
Price, 60%, IL points	579.01	416.24	413.57	412.97	424.33	432.04	440.87	443.06	448.47	451.74	453.78
CGM price/soymeal price	131%	135%	135%	135%	134%	134%	134%	134%	134%	134%	134%
<b>Corn oil</b>											
	(Million pounds, Oct.-Sep. year)										
Production	3,610	4,828	5,860	6,348	6,611	6,810	6,918	7,024	7,118	7,167	7,205
Domestic use	2,682	3,924	4,946	5,455	5,735	5,942	6,052	6,154	6,246	6,297	6,334
Biodiesel	704	979	1,248	1,492	1,770	2,107	2,411	2,713	3,038	3,354	3,690
Feed	557	1,342	2,057	2,317	2,315	2,181	1,994	1,803	1,581	1,329	1,044
Food/other	1,420	1,602	1,641	1,646	1,650	1,654	1,647	1,637	1,627	1,614	1,600
Net exports	847	847	855	862	863	861	861	863	865	866	868
Ending stocks	246	303	361	392	405	413	418	425	431	435	438
	(Cents per pound, Oct.-Sep. year)										
Chicago price	56.44	57.88	56.15	54.40	54.65	55.60	55.91	55.57	55.23	55.13	54.88
Corn oil price/soyoil price	109%	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%

# Ethanol and biofuel policies

Ethanol production recovers in wake of drought

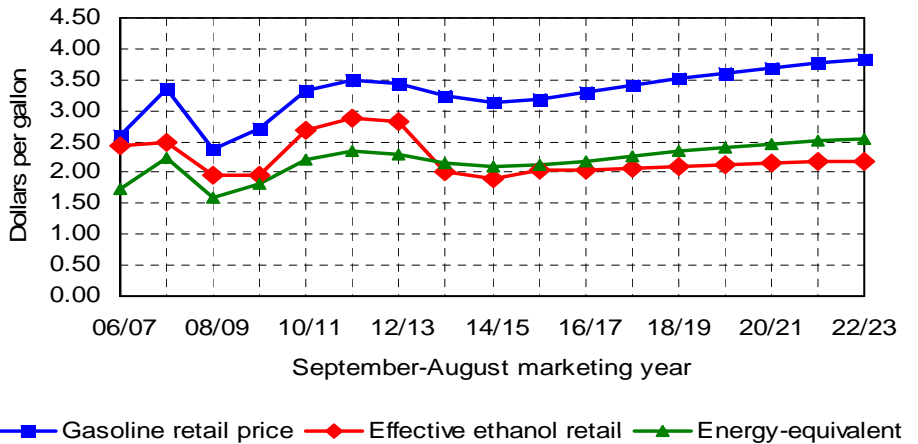


- Ethanol production falls in 2012/13 as the drought raises feedstock costs. Production recovers in 2013/14 because of lower corn prices and the need to meet RFS2 mandates.

- Sugarcane ethanol from Brazil remains one of the primary ways to meet the RFS2 requirements for advanced biofuels, and ethanol imports rise accordingly.

- Cellulosic ethanol production and the constituent feedstocks still are uncertain. Projections remain well below EISA levels.

Prices of ethanol blends must fall to stimulate use

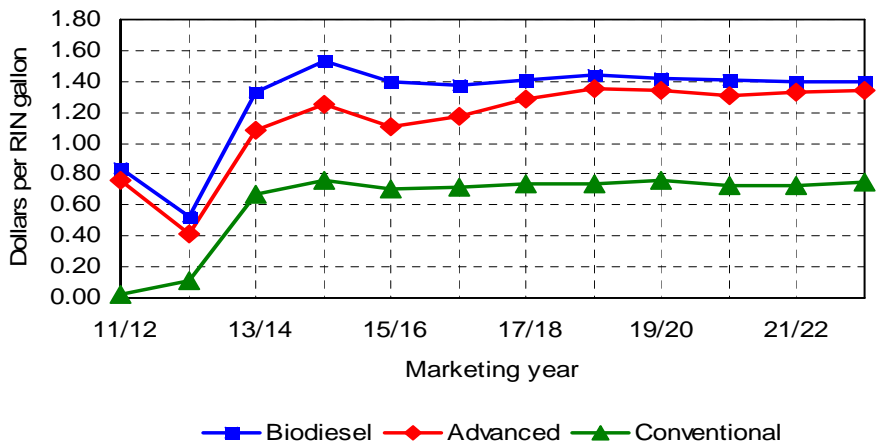


- The E10 market is projected to remain saturated, but the potential market is limited by motor gasoline use.

- The “blend wall” binds when the E10 market is saturated. The implied retail ethanol price falls below the level of gasoline energy equivalence so more E15 and E85 is used.

- Ethanol exports decline sharply in 2012/13 as Brazilian sugar ethanol prices fall relative to the U.S. corn starch ethanol price.

RIN values rise with more binding RFS2 mandates



- Biodiesel and advanced RIN prices dip in 2012/13, in part because of the reinstatement of the biodiesel tax credit.

- Conventional RIN values increase sharply in 2013/14 as the RFS2 mandates become more binding. High RIN values are required to encourage use of ethanol in higher-level blends.

- Biodiesel and advanced RIN prices converge over time as biodiesel competes with sugarcane ethanol from Brazil to fill the advanced gap in the RFS2 mandates.



## Ethanol supply and use

September-August year	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
<b>Petroleum fuel prices</b>											
	(Dollars per barrel)										
Petroleum, W. Texas interm.	91.15	87.39	83.15	84.93	89.46	93.90	98.26	101.83	105.16	108.50	110.33
Petroleum, refiners' acquis.	94.48	87.21	82.27	83.77	87.83	91.61	95.37	98.51	101.36	104.19	105.83
	(Dollars per gallon)										
Unl. gasoline, FOB Omaha	2.85	2.62	2.50	2.54	2.64	2.74	2.83	2.91	2.98	3.05	3.10
Unleaded gasoline, retail	3.43	3.24	3.14	3.18	3.29	3.40	3.51	3.60	3.68	3.76	3.82
	(Million gallons)										
<b>Motor gasoline use*</b>	133,756	134,456	136,076	137,303	137,447	136,864	135,717	134,207	132,521	130,728	128,948
<b>Ethanol supply and use</b>											
Production	12,643	14,641	15,450	15,677	15,959	16,460	16,868	17,299	17,712	18,009	18,397
From corn	12,419	14,406	15,121	15,254	15,275	15,381	15,351	15,397	15,459	15,418	15,369
Other conventional	215	214	230	249	262	271	276	283	291	295	301
Cellulosic	9	21	99	174	423	809	1,242	1,618	1,962	2,295	2,727
Imports	707	356	794	803	986	1,272	1,618	1,650	1,517	1,703	1,716
Domestic disappearance	12,988	14,260	15,646	16,012	16,431	17,113	17,833	18,314	18,597	19,062	19,484
Exports	490	616	554	459	500	593	631	612	610	633	608
Ending stocks	687	808	851	861	876	901	923	944	967	984	1,005
	(Dollars per gallon)										
<b>Ethanol prices</b>											
Conventional rack, Omaha	2.34	2.05	2.03	2.09	2.11	2.14	2.15	2.19	2.20	2.19	2.21
AMS spot plant price, Iowa	2.21	1.94	1.92	1.98	2.00	2.02	2.04	2.07	2.08	2.08	2.09
Cellulosic rack	n.a.	3.19	3.31	3.44	3.54	3.63	3.70	3.69	3.70	3.72	3.74
Other advanced rack	2.63	2.47	2.52	2.50	2.57	2.69	2.76	2.78	2.77	2.79	2.80
Effective retail	2.81	2.00	1.91	2.03	2.05	2.06	2.09	2.13	2.16	2.17	2.18
Ethanol/gasoline retail	82%	62%	61%	64%	62%	61%	60%	59%	59%	58%	57%
<b>RIN values</b>											
Conventional ethanol	0.11	0.67	0.76	0.70	0.71	0.74	0.74	0.76	0.73	0.73	0.75
Advanced ethanol	0.41	1.09	1.25	1.11	1.17	1.29	1.35	1.34	1.31	1.33	1.34
Cellulosic ethanol	0.69	1.47	2.04	2.05	2.14	2.24	2.29	2.25	2.23	2.26	2.29

\*Includes fuel ethanol

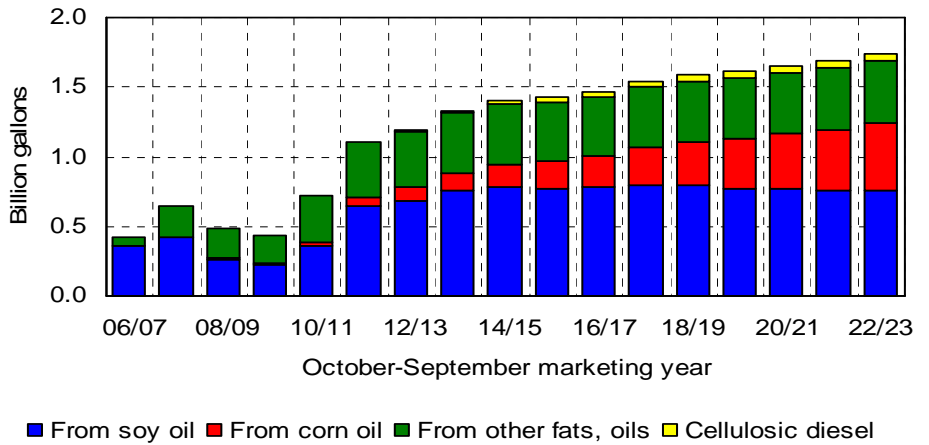
## Biofuel policies

Calendar year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Renewable Fuel Standard</b>											
	(Million gallons)										
<b>(as applied with waivers)</b>	15,200	16,550	16,742	18,135	18,426	19,048	20,010	20,818	21,077	21,755	23,069
Advanced biofuels	2,000	2,750	2,342	3,135	3,426	4,048	5,010	5,818	6,077	6,755	8,069
Cellulosic biofuel	9	35	80	167	305	604	1,010	1,429	1,799	2,144	2,514
Biodiesel	1,000	1,280	1,280	1,280	1,280	1,280	1,280	1,280	1,280	1,280	1,280
	(Dollars per gallon)										
Conventional ethanol credit	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Biodiesel credit	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ethanol specific duty	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cellulosic producers credit	1.01	1.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(Percent)										
Ethanol ad-valorem tariff	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5

# Biodiesel and biofuel plant returns

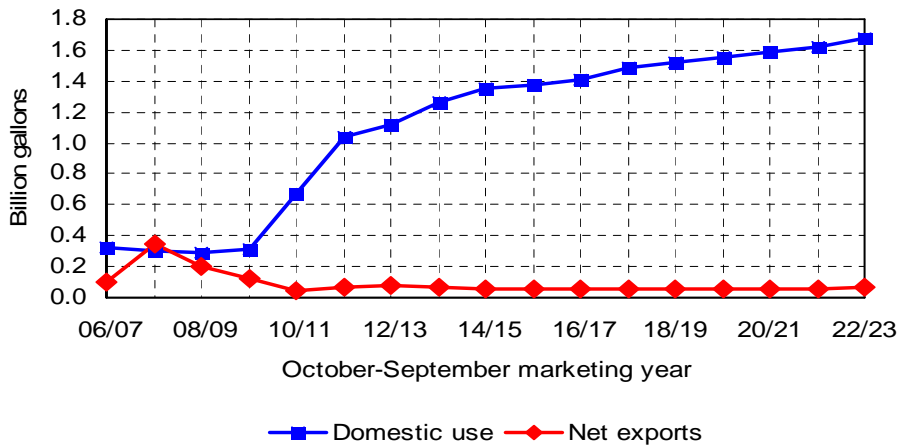
## Biodiesel production expands from soy alternatives

- The projections assume the RFS2 mandates for biodiesel are set at 1.28 billion gallons from 2013 forward.
- A rising RFS2 requirement and tax credit extension through 2013 lead to increased biodiesel production in the near term.
- Biodiesel production from corn oil increases rapidly as more dry mill ethanol plants extract corn oil from DDGS.
- The first quantities of cellulosic diesel appear in these projections, but those quantities remain small.



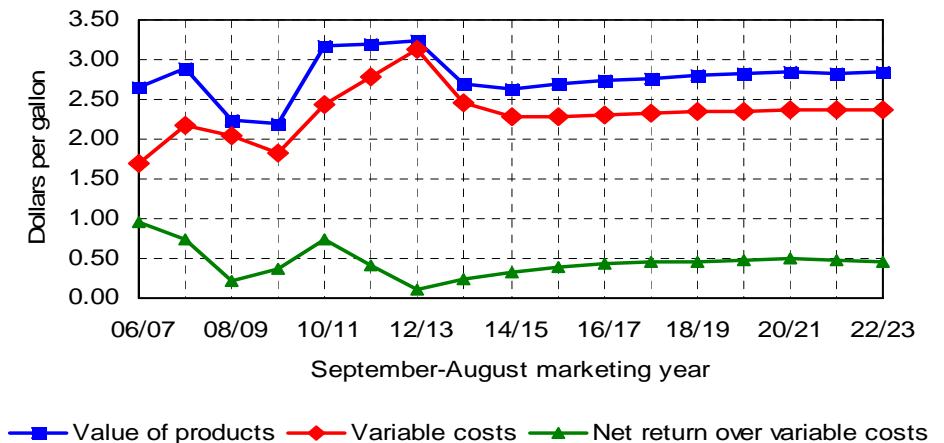
- Domestic biodiesel use may expand beyond the biodiesel mandate to help fill the advanced gap in the RFS2. Biodiesel must compete with sugar-based ethanol from Brazil and other advanced biofuels.
- The stochastic simulation includes some outcomes where extra biodiesel is used to help meet the advanced mandate and some where it is not.
- U.S. biodiesel net trade has been limited for the last two years, and projected exports only slightly exceed imports.

## Biodiesel use increases beyond biodiesel mandate



## Dry mill net returns decline with drought, then recover

- Dry mill net returns fall substantially in 2012/13 but are projected to return to more normal levels assuming a return to average weather patterns.
- Many dry mill ethanol plants are turning to corn oil extraction as a source of additional revenue.
- Biodiesel net returns are projected to rise as higher demand to satisfy the advanced RFS2 mandate spurs increased production.



## Biodiesel sector

October-September year	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
<b>Biodiesel supply and use</b>											
	(Million gallons)										
Production	1,198	1,332	1,409	1,426	1,465	1,545	1,584	1,611	1,648	1,686	1,736
From soybean oil	688	752	785	776	778	798	789	775	767	759	760
From corn oil	91	127	162	194	230	274	313	352	395	436	479
From other fats and oils	405	434	434	425	423	437	442	441	440	443	445
From cellulosic diesel	13	20	28	31	34	37	40	43	46	49	52
Net exports	78	66	58	57	56	57	59	60	60	61	62
Domestic disappearance	1,120	1,267	1,351	1,370	1,408	1,488	1,525	1,552	1,588	1,625	1,674
<b>Prices</b>											
	(Dollars per gallon)										
Biodiesel with biodiesel RIN	4.57	4.78	4.68	4.55	4.58	4.69	4.74	4.73	4.73	4.75	4.77
Biodiesel with cellulosic RIN	4.84	5.05	5.37	5.42	5.64	5.76	5.76	5.71	5.67	5.70	5.70
#2 Diesel, refiner sales	2.83	2.62	2.50	2.56	2.66	2.75	2.85	2.93	3.00	3.08	3.12
#2 Diesel, retail	3.66	3.47	3.35	3.41	3.52	3.62	3.72	3.80	3.88	3.96	3.99

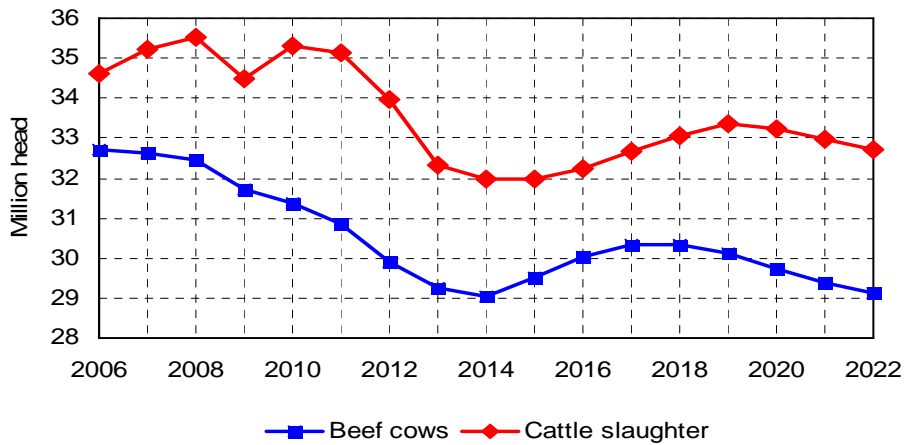
## Biofuel plant returns

Marketing year	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
<b>Biodiesel costs and returns</b>											
	(Dollars per gallon)										
Biodiesel value	4.57	4.78	4.68	4.55	4.58	4.69	4.74	4.73	4.73	4.75	4.77
Glycerin value	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Soyoil cost	-3.97	-4.13	-4.01	-3.87	-3.89	-3.97	-3.99	-3.96	-3.93	-3.92	-3.90
Other operating costs	-0.57	-0.57	-0.58	-0.58	-0.58	-0.59	-0.59	-0.60	-0.60	-0.61	-0.61
Net operating return	0.07	0.11	0.13	0.13	0.14	0.17	0.18	0.20	0.23	0.25	0.29
<b>Corn dry milling</b>											
	(Million bushels)										
Corn wet milled for ethanol	537	573	584	569	555	547	537	529	519	503	491
Corn dry milled for ethanol	4,039	4,722	4,963	5,017	5,029	5,065	5,054	5,070	5,092	5,083	5,067
(Share de-oiling DDGS)	31%	49%	67%	76%	81%	85%	87%	89%	91%	92%	93%
<b>Dry mill costs and returns</b>											
	(Dollars per gallon)										
Ethanol value	2.34	2.05	2.03	2.09	2.11	2.14	2.15	2.19	2.20	2.19	2.21
Distillers grains value	0.84	0.57	0.53	0.53	0.54	0.55	0.56	0.56	0.56	0.56	0.56
Corn oil value*	0.06	0.07	0.07	0.07	0.08	0.09	0.09	0.09	0.08	0.08	0.08
Corn cost	-2.59	-1.89	-1.71	-1.72	-1.74	-1.75	-1.77	-1.77	-1.76	-1.74	-1.73
Fuel and electricity cost	-0.19	-0.23	-0.24	-0.22	-0.21	-0.21	-0.22	-0.23	-0.24	-0.25	-0.29
Other operating costs	-0.34	-0.34	-0.34	-0.34	-0.35	-0.35	-0.35	-0.35	-0.36	-0.36	-0.36
Net operating return	0.11	0.23	0.33	0.40	0.44	0.46	0.46	0.48	0.49	0.47	0.46

\*Weighted by share of dry mills de-oiling DDGs

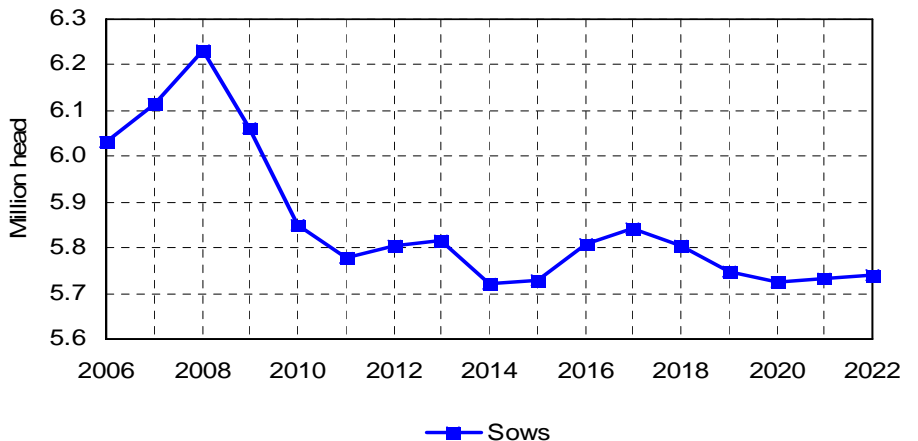
# Cattle and hogs

## Dry weather forces cattle industry contraction



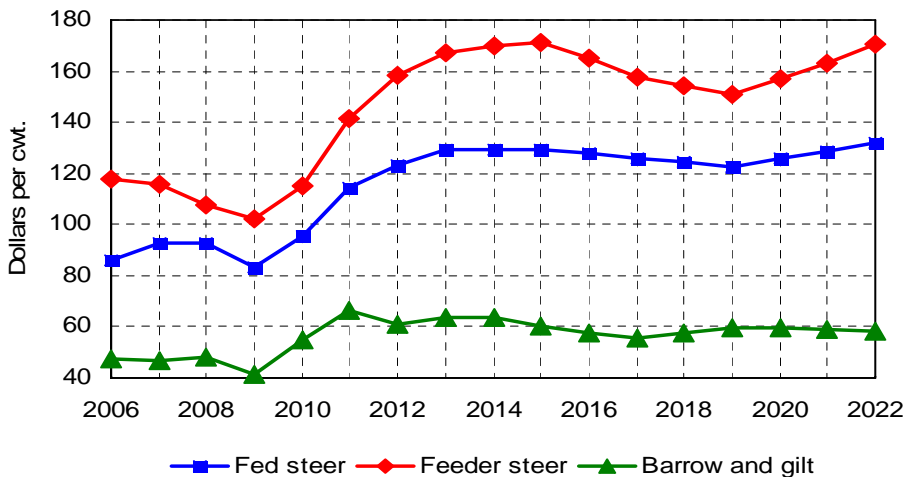
- Even with cow-calf returns at profitable levels in many areas of the country for the past three years, beef cow inventories continue to decline.
- Poor pasture conditions across much of the country have kept many producers from responding to economic signals to increase herd size.
- Cattle slaughter levels held steady for many years despite fewer U.S. beef cows, due in large part to feeder cattle imports. Imports will decline in the next few years with smaller herds in Canada and Mexico.

## Hog producers are in need of a good corn harvest



- Sow inventory remained steady throughout 2012, despite the sharp increase in feed prices.
- Producers appear to be expecting that the 2013 harvest will be sufficient to allow feed prices to decline from record levels and restore industry profitability.
- If feed prices remain much higher than projected, the decision to maintain herd size could lead to significantly lower returns in late 2013 and 2014.

## Cattle and hog prices to remain historically high



- Limited supplies of feeder cattle will keep pressure on feedlots to bid strongly for calves, especially if corn prices subside.
- Though these prices have grown substantially in recent years, profitability pressure still exists due to the soaring input costs.
- There could be additional closures of feedlots and meat processing facilities in the near future as capacity is matched to fewer animal supplies.

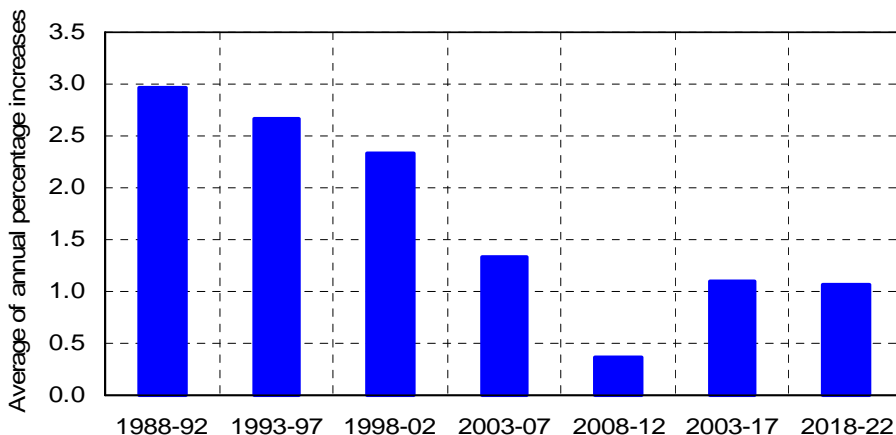
## Cattle and hogs

Calendar year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	(Million head)										
Beef cows (Jan. 1)	29.9	29.3	29.1	29.5	30.0	30.3	30.3	30.1	29.7	29.4	29.1
Dairy cows (Jan. 1)	9.2	9.2	9.2	9.2	9.3	9.3	9.4	9.4	9.4	9.4	9.4
Cattle and calves (Jan. 1)	90.8	89.5	89.2	89.3	89.8	90.5	90.8	90.7	90.1	89.2	88.4
Cattle on feed (Jan. 1)	14.1	13.5	13.1	13.4	13.4	13.3	13.4	13.5	13.5	13.5	13.4
Calf crop	34.5	34.0	34.1	34.5	34.8	34.9	34.8	34.6	34.2	33.9	33.6
Cattle slaughter	34.0	32.3	32.0	32.0	32.2	32.7	33.1	33.4	33.2	33.0	32.7
Cattle imports	2.3	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.2	2.2	2.2
Cattle exports	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
<b>Cattle prices</b>											
Total All Grades,	(Dollars per hundredweight)										
5-Area Direct Steers	122.86	129.32	129.27	129.33	128.01	125.70	124.23	122.66	125.59	128.76	132.29
600 - 650 #, Oklahoma City											
Feeder steers	158.19	166.88	169.95	171.02	164.81	157.98	154.31	150.60	157.20	163.38	170.52
Utility cows, Sioux Falls	76.58	81.83	81.83	82.30	78.59	73.39	70.34	66.49	69.16	71.59	74.06
<b>Cow-calf returns</b>											
	(Dollars per cow)										
Receipts	787.62	830.80	843.73	848.83	818.02	782.69	763.39	742.91	774.06	803.16	836.30
Feed expenses	253.32	231.02	201.15	195.62	198.07	202.86	207.60	211.84	211.19	210.83	209.95
Non-feed expenses	472.12	493.45	497.54	502.96	515.09	527.21	537.67	546.18	558.90	571.82	586.37
Net returns	62.18	106.33	145.04	150.24	104.87	52.62	18.11	-15.10	3.96	20.50	39.98
	(Million head)										
Hogs for breeding (Dec. 1*)	5.80	5.82	5.72	5.73	5.81	5.84	5.80	5.75	5.72	5.73	5.74
Market hogs (Dec. 1*)	60.6	60.5	60.5	60.7	61.7	62.8	63.0	63.1	63.2	63.6	64.1
Sows farrowed	11.64	11.58	11.53	11.66	11.81	11.84	11.78	11.73	11.76	11.81	11.84
Pig crop	117.3	117.8	118.4	120.7	123.2	124.4	124.8	125.3	126.5	128.0	129.3
Barrow and gilt slaughter	109.8	110.3	110.7	112.0	114.2	116.1	116.7	117.1	117.9	119.3	120.6
Hog imports	5.7	5.7	5.8	5.8	5.9	5.9	5.9	6.0	6.0	6.1	6.1
Hog exports	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
<b>Hog prices</b>											
Natl. base 51-52% lean equiv.	(Dollars per hundredweight)										
Barrows & gilts	60.88	63.40	63.52	60.41	57.29	55.61	57.50	59.56	59.71	58.86	58.37
IA-S. Minn. #1-2, 300-400 #											
Sows	48.50	50.53	50.81	48.43	46.40	45.49	47.23	49.09	49.38	49.28	49.02
<b>Farrow-finish returns</b>											
	(Dollars per hundredweight)										
Receipts	63.55	66.15	66.54	63.70	60.91	59.54	61.70	64.03	64.45	63.93	63.71
Feed expenses	46.47	48.79	38.42	36.04	36.40	37.27	37.97	38.43	38.47	38.65	38.49
Non-feed expenses	21.70	21.95	21.99	22.06	22.37	22.72	23.03	23.27	23.47	23.66	23.91
Net returns	-4.62	-4.58	6.13	5.60	2.14	-0.45	0.71	2.32	2.50	1.62	1.31

\* Preceding year

# Meat

Meat production growth to slow vs. past decades

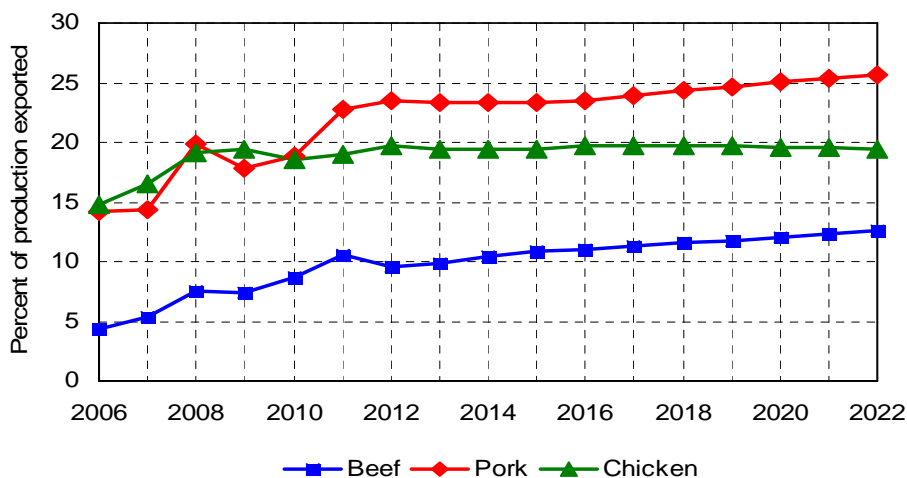


- The total of U.S. beef, pork, chicken and turkey production will decline in 2013 for the second time in five years.

- Stronger meat demand due to an improving economy and lower feed costs will improve the financial health of many livestock producers in 2014.

- However, as feed costs remain well above those prior to 2005, meat production growth will average just over one percent per year in the long term.

International demand for U.S. meat remains strong

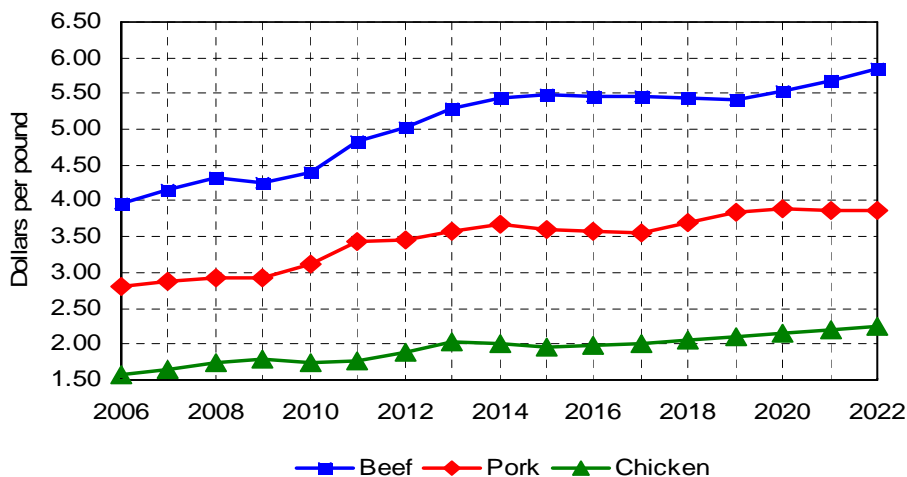


- About 18 percent of U.S. meat production is exported.

- Exports grew strongly from 2004-2011 helped in part by a weakening U.S. dollar. Less currency weakening is expected in the projection than what occurred in the past decade.

- The chicken industry will have a more difficult time increasing or even sustaining world market share, as many nations view chicken production as the quickest way to become more self-sufficient in meat.

Retail meat prices continue to climb



- Retail meat prices are well above 2009 levels.

- Chicken price growth has remained below that for beef and pork. Higher beef prices and a struggling economy could lead to sharply reduced beef purchase for some consumers.

- Further price increases are necessary to recover normal margins throughout the meat industry chain, but these will be difficult for consumers to handle until the economy is on stronger ground.

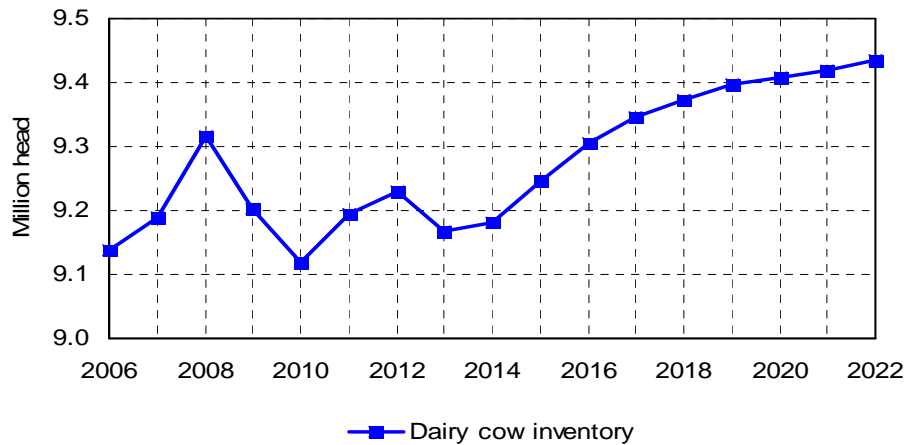
## Meat sector

Calendar year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Beef</b>											
	(Million pounds)										
Production	26,013	24,775	24,617	24,746	25,101	25,547	26,002	26,399	26,407	26,338	26,242
Imports	2,232	2,592	2,798	2,860	2,867	2,870	2,821	2,794	2,807	2,820	2,842
Domestic use	25,786	24,941	24,844	24,926	25,186	25,532	25,795	26,065	26,022	25,900	25,789
Exports	2,484	2,458	2,572	2,677	2,772	2,871	3,017	3,117	3,194	3,263	3,298
Ending stocks	575	543	542	545	555	568	578	590	587	583	579
<b>Pork</b>											
Production	23,265	23,432	23,602	23,980	24,515	25,005	25,220	25,408	25,676	26,060	26,427
Imports	806	815	840	859	869	878	884	900	914	925	938
Domestic use	18,490	18,783	18,944	19,239	19,595	19,878	19,957	20,035	20,139	20,358	20,578
Exports	5,473	5,477	5,512	5,603	5,768	5,991	6,146	6,272	6,446	6,616	6,776
Ending stocks	650	636	622	619	638	653	654	655	660	671	682
<b>Broiler</b>											
Production	36,544	36,502	37,578	38,589	39,411	40,012	40,535	41,092	41,685	42,297	42,951
Domestic use	29,374	29,523	30,388	31,173	31,766	32,240	32,666	33,134	33,650	34,174	34,751
Exports	7,220	7,100	7,279	7,512	7,754	7,895	7,998	8,088	8,167	8,256	8,334
Ending stocks	650	641	666	688	700	702	701	701	703	706	711
<b>Turkey</b>											
Production	5,903	5,902	5,988	6,122	6,227	6,295	6,339	6,379	6,425	6,474	6,529
Domestic use	5,069	5,219	5,257	5,366	5,454	5,512	5,548	5,581	5,619	5,659	5,706
Exports	792	730	747	768	789	801	811	819	826	836	845
Ending stocks	275	248	254	262	268	272	275	277	279	282	285
<b>Wholesale prices</b>											
	(Dollars per hundredweight)										
Boxed beef cutout	190.70	204.79	204.94	204.97	203.47	200.85	199.06	196.92	201.39	206.13	211.40
Pork cutout	84.59	90.49	91.62	88.38	85.99	85.60	89.48	93.45	94.58	94.47	94.59
12 city wholesale broiler	86.98	91.31	89.04	87.26	87.21	88.26	90.06	91.52	92.80	93.82	94.94
Natl. wholesale turkey hens	105.55	104.21	102.83	100.35	100.39	101.09	102.40	103.68	104.85	105.83	106.89
<b>Retail prices</b>											
	(Dollars per pound)										
Beef	5.02	5.30	5.43	5.48	5.47	5.45	5.43	5.42	5.54	5.69	5.85
Pork	3.47	3.59	3.68	3.61	3.57	3.55	3.69	3.85	3.89	3.88	3.87
Broiler	1.89	2.03	2.01	1.97	1.98	2.01	2.06	2.11	2.16	2.20	2.24
Turkey	1.62	1.62	1.61	1.60	1.62	1.64	1.68	1.71	1.74	1.77	1.81
<b>Per capita consumption</b>											
	(Pounds - retail)										
Beef	57.4	55.0	54.3	53.9	54.0	54.2	54.2	54.3	53.7	52.9	52.2
Pork	45.7	45.9	45.9	46.1	46.5	46.8	46.5	46.2	46.0	46.1	46.2
Broiler	80.3	79.9	81.5	82.8	83.5	84.0	84.3	84.7	85.2	85.7	86.3
Turkey	16.1	16.4	16.4	16.6	16.7	16.7	16.7	16.6	16.6	16.5	16.5
Total	199.5	197.3	198.0	199.4	200.7	201.6	201.7	201.8	201.5	201.3	201.2

# Dairy

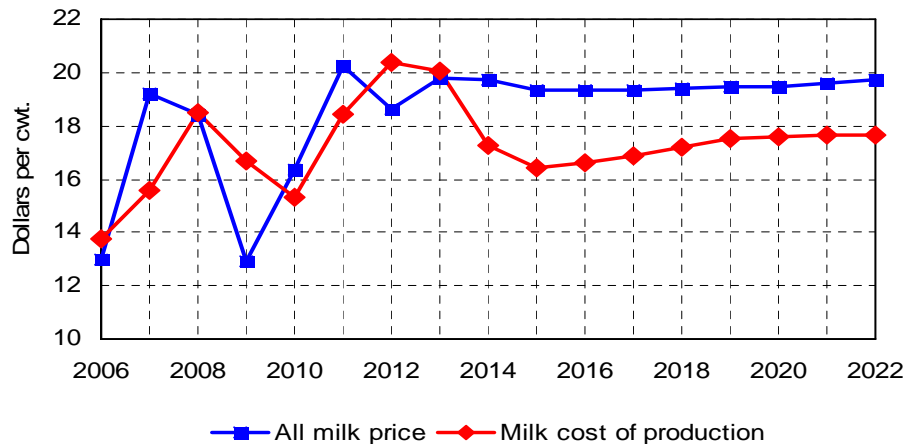
## Dairy herd to resume growth when feed costs ease

- Poor profitability led to reductions in the dairy cow herd for several months in 2012.
- Further reductions are possible for this year, as feed expenses remain high.
- Margins are likely to improve in late 2013 and 2014 if projected crop harvests occur. California, Michigan and Idaho are expected to be major contributors to national herd growth in the medium term.



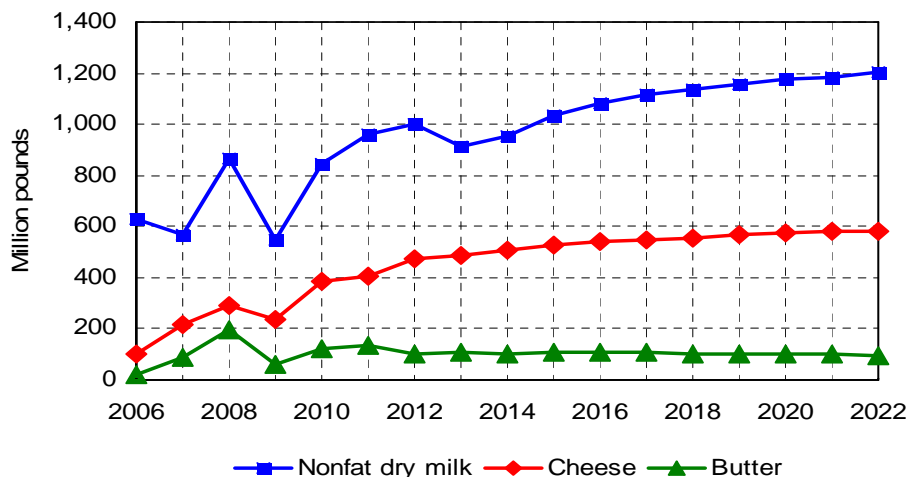
- Milk and dairy product prices rose substantially during the summer of 2012, but annual receipts still fell below the cost of production for many producers.
- The all milk price is projected to average near \$20 per cwt. in the coming decade. Though it is not apparent by looking at the average price projections, volatility is expected to continue.
- If feed costs fall as projected from the drought induced highs of 2012/13, many producers will be able to manage financially with \$20 per cwt. milk.

## Milk prices expected to catch up with costs in 2013



- The U.S. exports nearly half of its nonfat dry milk production, and about 5 percent of butter and cheese production.
- Butter market weakness will persist, with the 2013 price 2 percent below the 2008-11 average. Cheese and nonfat dry milk prices will be stronger in 2013 than the 2008-11 average by 9 and 20 percent.
- With per capita fluid milk consumption continuing to decline, it is imperative that dairy product demand in domestic and international markets remains strong.

## Dairy product exports are crucial for industry growth



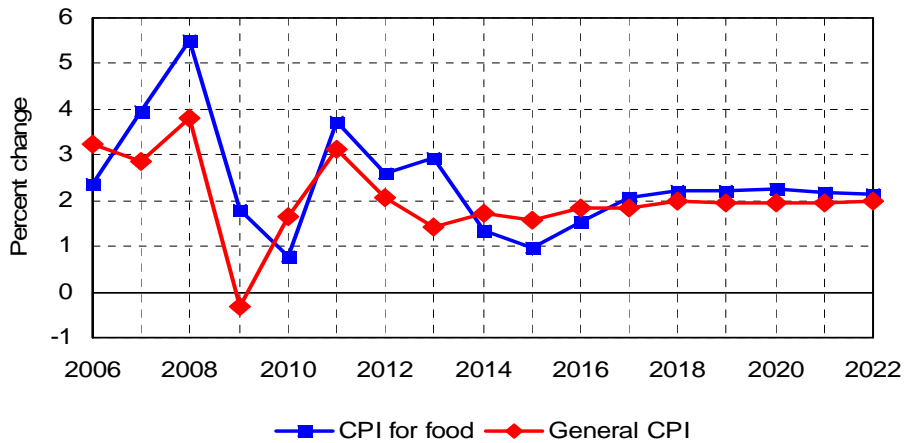


## Dairy sector

Calendar year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Milk supply</b>											
Dairy cows (thou. head)	9,231	9,167	9,180	9,245	9,305	9,347	9,374	9,396	9,409	9,420	9,434
California	1,782	1,767	1,771	1,791	1,811	1,828	1,841	1,854	1,865	1,876	1,888
Wisconsin	1,270	1,268	1,270	1,275	1,278	1,278	1,277	1,275	1,271	1,267	1,263
New York	610	603	601	601	601	599	597	595	592	589	586
Idaho	579	576	579	586	593	600	606	611	617	623	629
Pennsylvania	536	528	525	524	523	521	519	517	515	513	511
Minnesota	465	459	455	452	450	448	445	443	440	438	436
Texas	436	434	435	438	441	442	443	444	445	445	446
Michigan	375	380	387	395	403	409	416	422	428	433	439
New Mexico	330	327	327	329	331	332	333	334	334	334	334
Ohio	270	268	269	271	274	275	276	277	278	278	278
Rest of U.S.	2,578	2,558	2,562	2,583	2,602	2,614	2,620	2,624	2,625	2,623	2,622
Milk yield (lbs. per cow)	21,697	21,885	22,238	22,529	22,773	23,006	23,231	23,453	23,689	23,904	24,126
Milk production (bil. lbs.)	200.3	200.6	204.2	208.3	211.9	215.1	217.8	220.4	222.9	225.2	227.6
<b>Min. FMMO class prices</b> (Dollars per hundredweight)											
Class I mover	17.46	19.13	19.06	18.67	18.76	18.70	18.78	18.90	18.95	19.06	19.23
Class II	16.64	17.99	18.26	18.01	18.06	18.07	18.12	18.18	18.16	18.31	18.39
Class III	17.44	18.21	17.88	17.30	17.28	17.28	17.29	17.33	17.35	17.46	17.59
Class IV	16.01	17.29	17.56	17.31	17.36	17.37	17.42	17.48	17.46	17.61	17.69
<b>All milk price</b>	18.63	19.82	19.75	19.34	19.36	19.35	19.39	19.46	19.46	19.59	19.71
<b>MILC payment rate</b>	0.54	0.06	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
<b>MILC trigger</b>	20.64	19.37	17.72	17.30	17.27	17.30	17.34	17.39	17.42	17.42	17.40
<b>Wholesale prices</b> (Dollars per pound)											
Butter, CME	1.60	1.59	1.64	1.62	1.60	1.62	1.63	1.64	1.64	1.67	1.69
Cheese, Amer., 40#, CME	1.70	1.76	1.74	1.70	1.70	1.70	1.71	1.71	1.71	1.72	1.74
Nonfat dry milk, AA	1.38	1.53	1.54	1.52	1.54	1.53	1.53	1.53	1.53	1.53	1.53
Evaporated milk	1.97	1.79	1.75	1.74	1.74	1.74	1.75	1.76	1.77	1.78	1.79
<b>Dairy product production</b> (Million pounds)											
American cheese	4,351	4,452	4,535	4,633	4,714	4,775	4,816	4,857	4,893	4,920	4,954
Other cheese	6,498	6,754	6,934	7,131	7,310	7,467	7,605	7,743	7,878	8,008	8,142
Butter	1,843	1,754	1,799	1,848	1,891	1,921	1,946	1,970	1,990	2,008	2,027
Nonfat dry milk	2,082	1,974	2,069	2,173	2,251	2,315	2,369	2,428	2,477	2,524	2,575
<b>Dairy product exports</b>											
American cheese	144	153	166	177	186	194	202	210	217	224	231
Other cheese	328	332	343	350	353	354	355	356	356	355	354
Butter	104	110	105	109	110	107	104	104	103	100	97
Nonfat dry milk	1,003	912	956	1,033	1,084	1,114	1,137	1,158	1,175	1,185	1,201
<b>Per capita consumption</b> (Pounds)											
Butter	5.5	5.4	5.4	5.4	5.5	5.6	5.6	5.6	5.6	5.7	5.7
Nonfat dry milk	3.5	3.3	3.4	3.5	3.5	3.6	3.6	3.7	3.8	3.9	3.9
Total cheese	33.7	34.3	34.7	35.2	35.7	36.0	36.2	36.4	36.5	36.6	36.8
American	13.3	13.4	13.5	13.6	13.8	13.8	13.8	13.7	13.7	13.6	13.6
Other	20.3	20.9	21.2	21.6	21.9	22.2	22.4	22.6	22.8	23.0	23.2
Total fluid milk	195.5	193.9	193.2	192.8	192.2	191.6	191.1	190.1	189.4	188.6	187.7
Ice cream	22.9	22.5	22.4	22.4	22.3	22.3	22.2	22.1	22.0	21.9	21.8

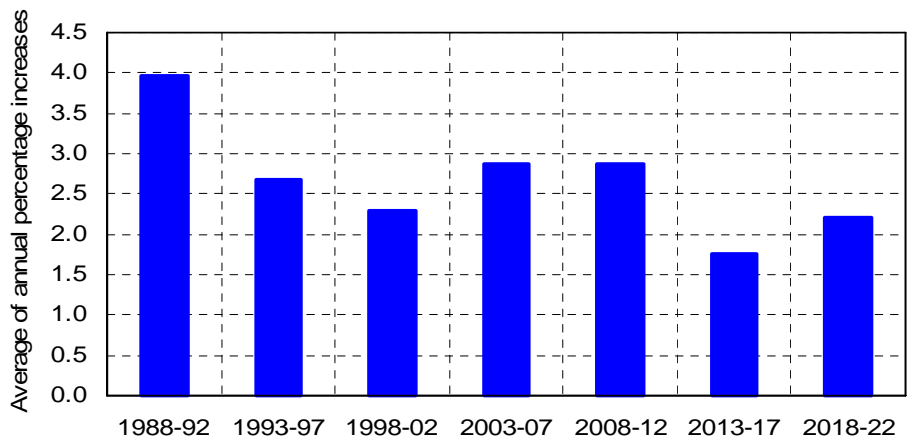
# Food prices and expenditures

Food inflation will outpace overall inflation in 2013



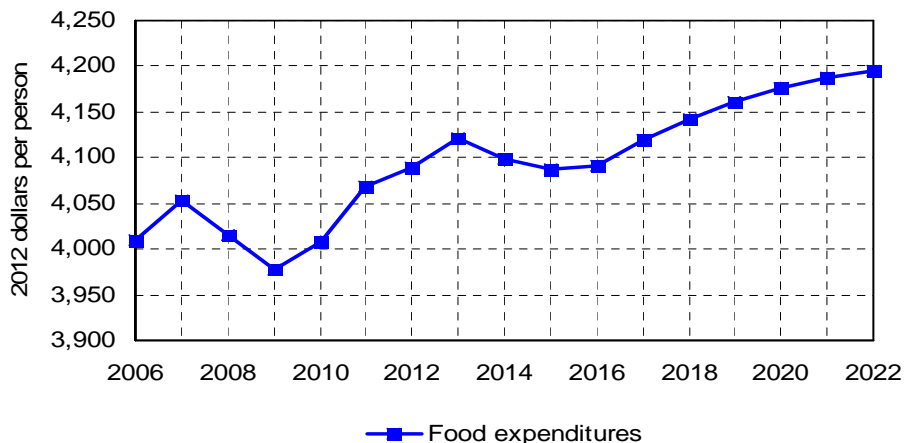
- The CPI for food will increase faster than the overall CPI for the third consecutive year in 2013.
- Food price growth should slow in 2014 if normal crop harvests occur later this year.
- The growth in costs associated with food marketing are also expected to slow, resulting in modest food inflation of near 2 percent for much of the projection.

Food inflation will slow after this year



- Though food prices have increased at higher rates on average in the last few years relative to the prior decade, the average from 2003-2012 remained below 3 percent per year.
- If the economy had been on more solid footing, food prices would have increased more in the past two years.
- A period of lower food inflation is expected after this year, particularly from 2014-2016.

Food expenditures are a small portion of income



- Per capita food expenditures in 2013 are expected to be 12.5 percent above the 2009 level, but only 3.6 percent higher in real terms.
- Higher outlays on food products create a serious burden for some consumers, but on average remain a small percent of disposable income.
- Beef and dairy price increases have received the most attention recently, but many food products will contribute to this year's increase in expenditures.

## Consumer price indices for food

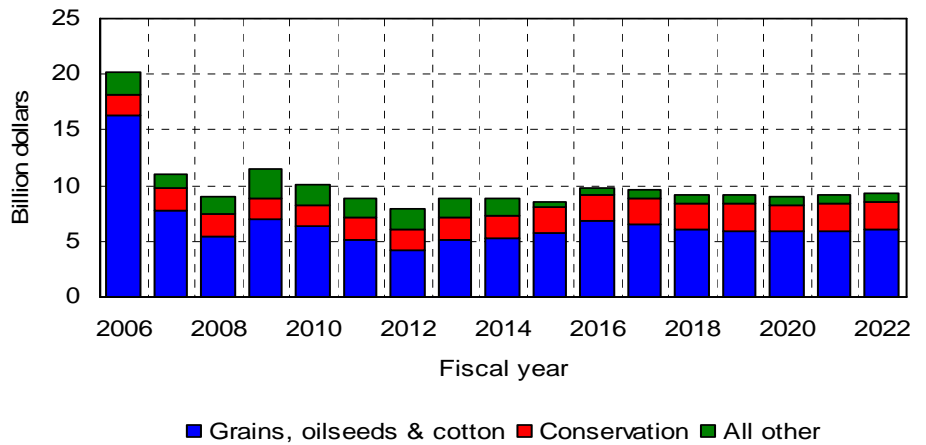
Calendar year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
					(1982-84=100)						
<b>Total food</b>	233.8	240.6	243.9	246.2	250.0	255.1	260.7	266.6	272.5	278.5	284.5
(Inflation rate)	2.6%	2.9%	1.4%	1.0%	1.5%	2.0%	2.2%	2.2%	2.2%	2.2%	2.2%
<b>Food at home</b>	231.8	238.9	241.3	243.0	246.4	251.3	256.8	262.4	268.2	274.0	279.8
Cereal and bakery	267.7	278.2	275.4	275.8	280.2	286.4	292.9	299.5	305.9	312.0	318.1
Meat	231.0	239.5	242.7	243.8	246.1	249.7	254.7	259.9	266.2	272.5	279.1
Dairy	217.3	221.6	223.7	225.1	228.4	232.7	237.2	241.7	246.3	251.0	255.8
Fruit and vegetables	282.8	294.3	300.0	305.4	312.5	321.4	330.4	339.3	348.0	356.5	365.2
Other food at home	204.8	207.7	210.4	211.2	213.1	216.4	220.3	224.3	228.4	232.2	236.0
Sugar and sweets	214.7	211.3	211.1	214.5	216.5	219.8	223.5	227.2	230.8	234.4	237.9
Fats and oils	232.6	235.0	236.9	238.9	241.5	245.6	250.2	254.9	259.3	263.7	268.1
Other prepared items	216.6	222.2	226.8	225.5	226.6	230.1	234.6	239.3	244.0	248.5	252.8
Non-alc. beverages	168.6	169.2	170.0	173.2	175.8	178.6	181.6	184.6	187.6	190.4	193.3
<b>Food away from home</b>	238.0	244.3	248.7	252.0	256.1	261.5	267.4	273.5	279.6	285.8	292.0

## Consumer expenditures for food

Calendar year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
					(Dollars per person)						
<b>Total food per capita</b>	4,089	4,181	4,229	4,283	4,365	4,477	4,590	4,702	4,812	4,919	5,026
Food at home	2,124	2,167	2,182	2,198	2,228	2,271	2,316	2,362	2,407	2,451	2,497
Food away from home	1,965	2,015	2,047	2,086	2,137	2,206	2,274	2,340	2,405	2,467	2,530
Multiply by population for:					(Billion dollars)						
<b>Total U.S. food expenditures</b>	1,285	1,327	1,355	1,386	1,426	1,477	1,528	1,581	1,633	1,685	1,738

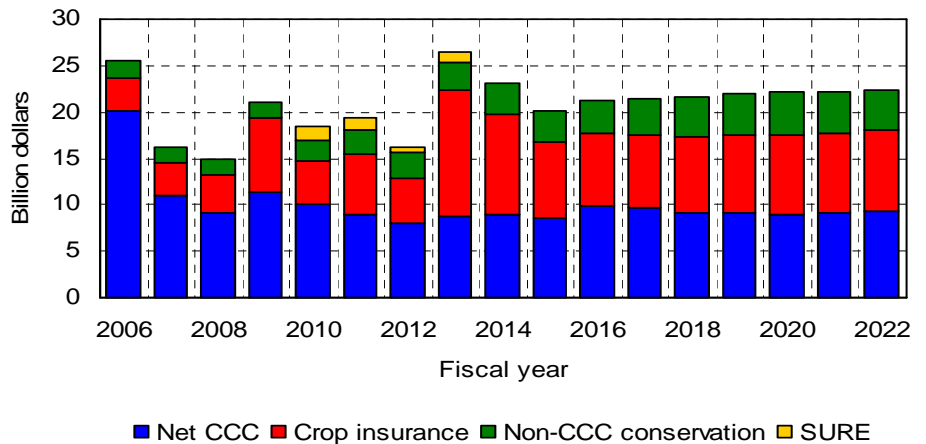
# Government costs

CCC net outlays total \$92 billion over FY 2013-22



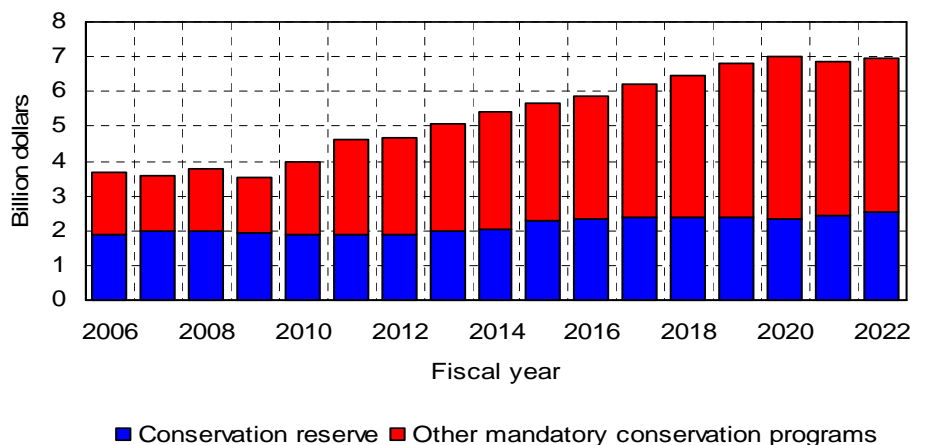
- Net CCC outlays temporarily declined in FY 2012 because no advanced direct payments were made for the 2012 crop.
- Under the assumed extension of current policies, projected spending averages about \$9 billion per year.
- Direct payments account for about \$5 billion per year. CRP outlays account for more than half of remaining net outlays.
- The last tobacco trust fund payments are made in FY 2014.

Crop insurance share of program spending increases



- Mandatory government outlays under the crop insurance program, the supplemental revenue (SURE) program and certain conservation programs are not included in the CCC account.
- Crop insurance net outlays jump in FY 2013 because of indemnities paid on losses associated with the 2012 drought.
- Crop insurance net outlays average about \$9 billion per year over the FY 2013-22 period.

Conservation outlays rise for CRP, CSP, EQIP



- CRP spending reflects changes in CRP area under contract and increased rental rates when new contracts are signed.
- For other mandatory conservation programs, projected expenditures are based on preliminary CBO estimates.
- Provisions of the 2008 farm bill lead to increased spending on the Conservation Stewardship Program, the Environmental Quality Incentive Program and other conservation programs.

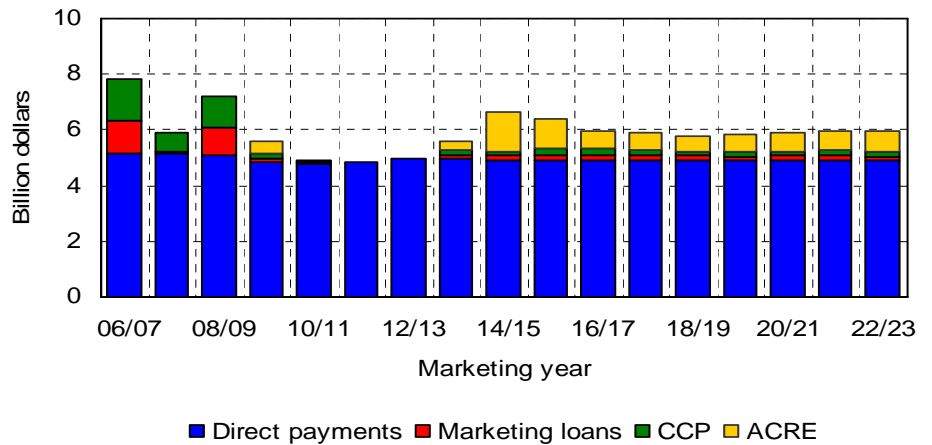
## Net government outlays

Fiscal year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Feed grains</b>	(Million dollars)										
Corn	1,571	1,977	2,024	2,052	2,699	2,397	2,197	2,234	2,205	2,266	2,276
Sorghum	145	195	190	189	202	196	192	192	193	193	194
Barley	65	79	81	82	92	88	84	83	82	82	82
Oats	3	3	3	3	5	5	4	4	4	5	4
<b>Food grains</b>											
Wheat	905	1,192	1,170	1,146	1,280	1,320	1,253	1,219	1,204	1,211	1,209
Rice	396	337	429	421	421	421	420	420	420	420	420
<b>Oilseeds</b>											
Soybeans	431	553	581	772	1,005	910	785	749	728	738	773
Peanuts	71	95	80	134	113	128	123	130	134	144	144
Other oilseeds	16	21	19	19	24	26	25	24	25	25	27
<b>Other commodities</b>											
Upland cotton	523	668	745	902	970	1,004	976	918	864	861	886
Sugar, feedstock flexibility	0	0	9	11	18	14	16	24	19	28	24
Dairy	403	98	8	4	4	5	8	7	5	5	5
<b>CCC conservation</b>											
Conservation reserve	1,913	2,007	2,013	2,278	2,329	2,366	2,365	2,389	2,355	2,432	2,522
Other CCC conservation	12	5	5	5	5	5	1	1	1	1	1
<b>Tobacco trust fund</b>	891	960	960	0	0	0	0	0	0	0	0
<b>Other CCC</b>											
Disaster payments, NAP	355	195	147	144	143	143	143	143	142	142	142
Other net costs	221	446	444	444	520	607	630	633	634	637	638
<b>Net CCC outlays</b>	7,921	8,830	8,907	8,608	9,830	9,635	9,222	9,169	9,014	9,192	9,346
<b>NRCS conservation</b>	2,767	3,047	3,388	3,387	3,552	3,832	4,116	4,407	4,648	4,430	4,436
<b>Supplem. Revenue (SURE)</b>	551	1,095	0	0	0	0	0	0	0	0	0
<b>Other non-CCC Emergency</b>	142	7	0	0	0	0	0	0	0	0	0
<b>Crop insurance</b>	4,887	13,481	10,846	8,110	7,852	7,970	8,185	8,370	8,552	8,583	8,658
<b>Total mandatory outlays</b>	16,267	26,460	23,141	20,105	21,235	21,437	21,523	21,947	22,214	22,205	22,440

Note: "NRCS Conservation" denotes mandatory spending on conservation programs authorized by the 2002 and 2008 farm bills that is not included in reported CCC outlays. Fiscal years begin on Oct.1 of the previous calendar year (FY 2012: Oct. 1, 2011-Sep. 30, 2012).

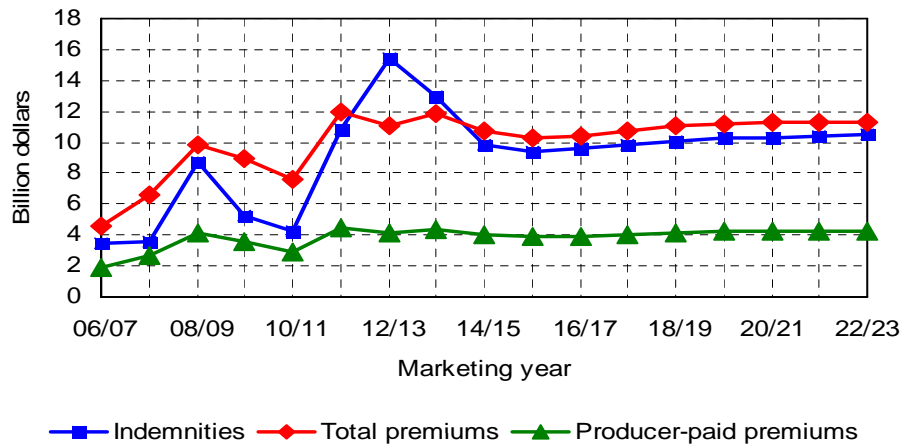
# Payments and crop insurance

Direct payments dominate total traditional payments



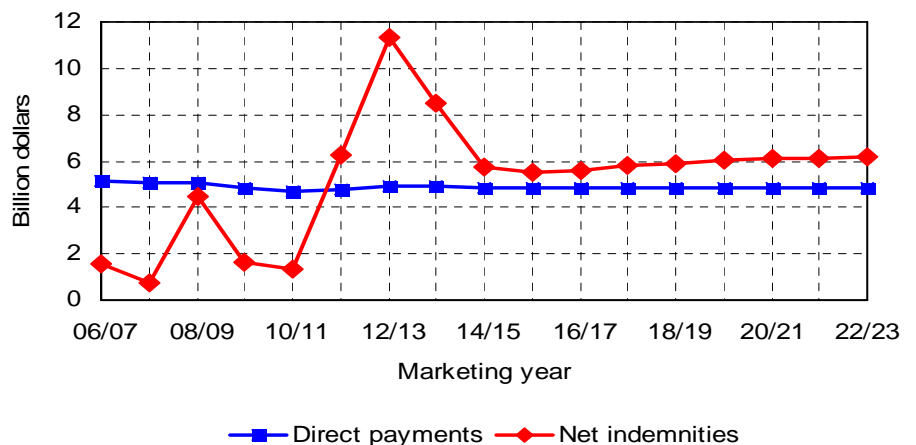
- Under the assumed extension of current policies, direct payments average \$5 billion per year.
- Average projected prices are above levels that would trigger large marketing loan benefits or countercyclical payments.
- Few ACRE payments were made for the 2010, 2011 and 2012 crops. Payments are much more likely in 2014 than other years.
- If the program is extended, actual ACRE outlays will depend on market conditions and producer enrollment.

Crop insurance indemnities set record in 2012/13



- The 2012 drought resulted in total crop insurance indemnities exceeding total premiums for the first time since 2002.
- The loss ratio (indemnities divided by total premiums, including premium subsidies) was about 1.4 in 2012. Losses were especially high for corn.
- Given projected levels and variation in prices and yields, the average annual loss ratio over the next 10 years is 0.94.
- Higher coverage levels and crop prices have increased crop insurance premiums.

Net indemnities exceed direct payments



- The crop insurance program has grown in importance relative to other farm programs.
- Projected net indemnities (indemnities minus producer-paid premiums) exceed the value of direct payments.
- Projected net USDA expenditures on the crop insurance program total \$91 billion over the FY 2013-FY 2022 period.

## Selected direct government payments

Marketing year	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
	(Million dollars)										
Direct payments	4,939	4,977	4,915	4,909	4,906	4,911	4,911	4,918	4,914	4,912	4,910
Marketing loans	0	130	158	211	199	177	157	136	157	168	136
Countercyclical payments	0	168	174	242	229	199	169	154	172	182	154
ACRE payments	26	322	1,406	1,050	642	607	524	613	662	711	783
<b>Total</b>	<b>4,966</b>	<b>5,598</b>	<b>6,653</b>	<b>6,413</b>	<b>5,975</b>	<b>5,894</b>	<b>5,761</b>	<b>5,821</b>	<b>5,904</b>	<b>5,973</b>	<b>5,983</b>

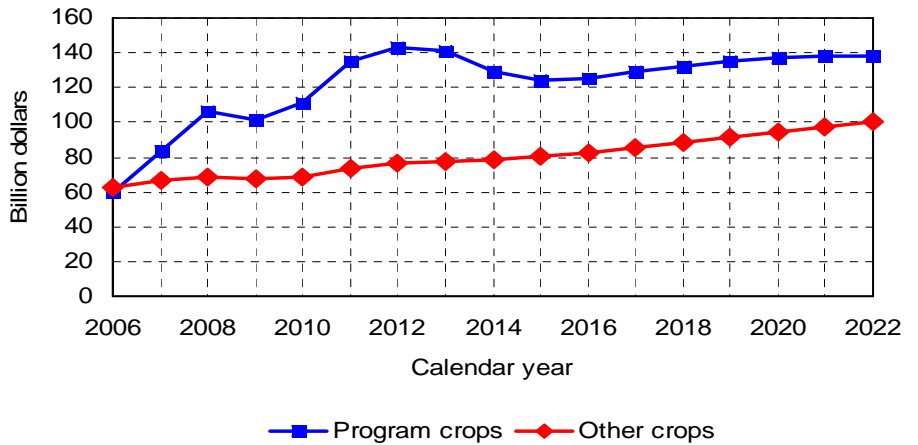
Note: Includes selected payments for feed grains, food grains, oilseeds, and upland cotton.

## Crop insurance

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	(Million dollars, crop year)										
<b>Total premiums</b>	11,071	11,809	10,687	10,306	10,416	10,722	11,017	11,201	11,236	11,294	11,316
Producer-paid premiums	4,121	4,407	4,006	3,862	3,904	4,019	4,130	4,199	4,211	4,232	4,239
Premium subsidies	6,950	7,403	6,681	6,444	6,512	6,703	6,887	7,003	7,025	7,062	7,076
<b>Total indemnities</b>	15,467	12,968	9,799	9,444	9,575	9,847	10,080	10,309	10,340	10,428	10,471
<b>Loss ratio</b>	1.40	1.10	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.93
	(Million dollars, crop year)										
<b>Net indemnities</b>	11,346	8,562	5,794	5,582	5,671	5,828	5,951	6,110	6,129	6,195	6,231
Corn	8,547	3,410	2,453	2,308	2,397	2,467	2,494	2,557	2,511	2,542	2,519
Soybeans	1,120	2,197	1,255	1,266	1,270	1,309	1,355	1,385	1,386	1,413	1,435
Wheat	65	1,490	783	725	708	719	738	770	802	788	804
Upland cotton	836	462	338	331	328	336	333	340	346	346	348
All other	779	1,002	964	952	968	997	1,031	1,057	1,083	1,107	1,125
	(Million dollars, fiscal year)										
<b>Net outlays</b>	4,887	13,481	10,846	8,110	7,852	7,970	8,185	8,370	8,552	8,583	8,658

# Farm receipts and expenses

Program crop receipts decline from 2012 record

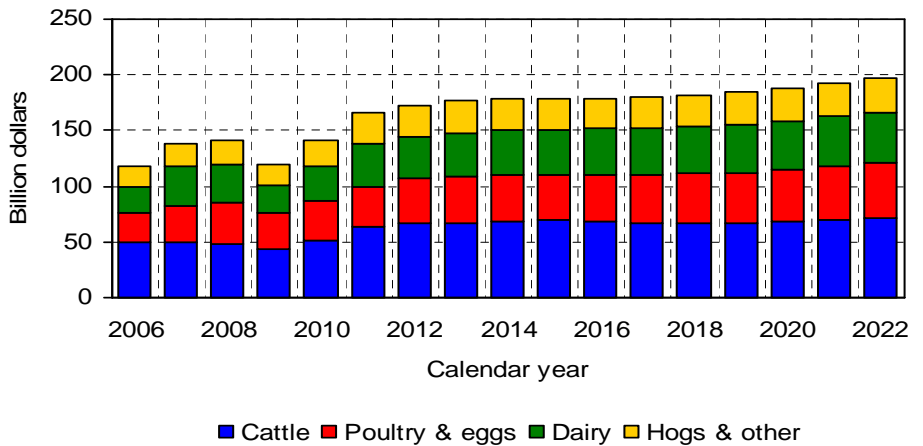


- Cash receipts from sales of program crops (grains, oilseeds, cotton and sugar) have more than doubled since 2006.

- Program crop receipts decline in 2014 and 2015 in response to lower grain and oilseed prices.

- Receipts for other crops (including vegetables, fruits, nursery crops, hay and biomass crops) grow at an average rate of almost 3 percent per year.

Recent rapid growth in livestock receipts slows



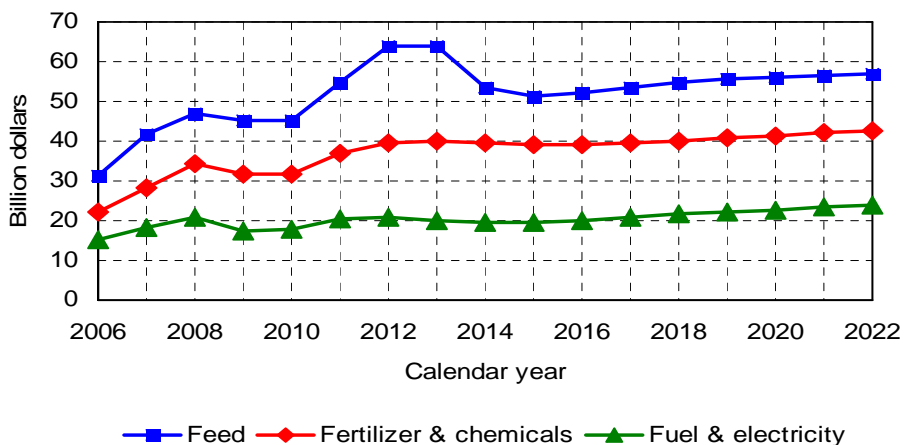
- After declining with the recession, dairy and livestock cash receipts increased by \$51 billion between 2009 and 2012.

- Higher livestock and milk prices result in increased receipts in 2013. The increase in dairy receipts is larger than the increases for cattle, hogs or poultry.

- For cattle, higher prices are partially offset by reduced numbers of animals sold in 2013.

- Livestock and dairy receipts grow at a slower pace than over the last three years.

Feed expenses decline from 2012-13 peak



- Farm production expenses increased by \$48 billion between 2010 and 2012, with feed and fertilizer accounting for almost half of the increase.

- Feed costs could fall significantly in 2014 if more normal weather results in larger crops and lower feed prices later this year.

- The overall rate of growth in farm production expenses in the baseline slows sharply from the recent pace.



## Farm cash receipts

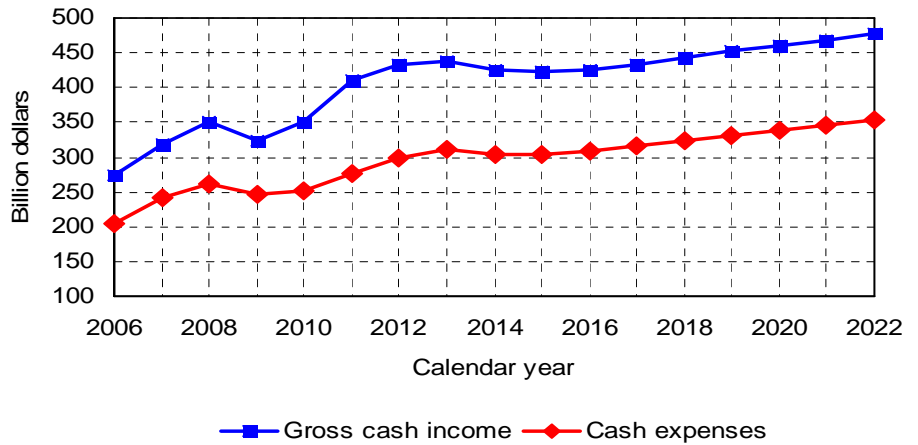
Calendar year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	(Billion dollars)										
Feed grains	76.14	78.81	72.87	68.46	69.62	71.67	73.78	75.40	76.39	77.01	77.30
Food grains	19.02	19.04	16.87	15.73	15.56	15.85	16.30	16.63	16.78	16.81	16.97
Oilseeds	45.43	42.52	39.10	38.50	39.12	40.42	41.66	42.50	42.98	43.38	43.78
Cotton	7.91	6.08	5.65	5.68	5.78	5.93	6.04	6.13	6.17	6.17	6.16
Sugar	2.68	2.40	2.53	2.57	2.58	2.60	2.62	2.63	2.62	2.62	2.62
Other crops	68.51	69.31	71.00	73.00	75.47	78.08	80.75	83.34	86.01	88.75	91.68
Cattle	67.02	67.52	68.81	69.22	68.30	67.28	66.97	66.30	68.23	69.91	71.81
Hogs	21.54	22.15	22.30	21.58	20.98	20.79	21.61	22.46	22.72	22.73	22.85
Dairy products	36.99	39.46	40.00	39.96	40.72	41.30	41.90	42.55	43.07	43.79	44.54
Poultry, eggs	40.10	41.13	41.32	41.55	42.43	43.58	44.96	46.22	47.45	48.61	49.84
Other livestock	6.03	6.48	6.57	6.62	6.68	6.75	6.87	6.99	7.13	7.27	7.42
Total cash receipts	391.37	394.89	387.03	382.87	387.22	394.24	403.46	411.12	419.56	427.06	434.97

## Farm production expenses

Calendar year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	(Billion dollars)										
Feed	63.71	63.77	53.31	51.23	52.01	53.36	54.60	55.64	56.21	56.61	56.79
Purchased livestock	22.15	22.58	23.95	24.03	23.16	22.44	22.06	21.56	22.43	23.12	23.96
Seed	19.86	20.89	20.85	20.66	20.55	20.89	21.46	22.06	22.61	23.10	23.54
Fertilizer and chemicals	39.46	39.99	39.73	39.26	39.11	39.38	40.01	40.76	41.50	41.99	42.60
Fuels and electricity	20.79	20.20	19.76	19.46	20.16	20.84	21.57	22.27	22.79	23.29	23.82
Interest	14.63	15.41	16.34	17.32	19.00	20.92	22.29	23.31	24.19	25.00	25.79
Contract and hired labor	27.54	29.46	30.18	31.01	31.96	32.96	33.99	35.05	36.15	37.28	38.44
Capital consumption	33.40	34.95	36.35	37.49	38.39	39.10	39.72	40.33	40.96	41.62	42.35
Rent to non-operators	13.81	15.07	15.76	16.01	16.14	16.30	16.51	16.75	16.99	17.20	17.38
All other	78.34	85.18	85.65	86.55	88.56	91.02	93.70	96.28	98.86	101.42	104.17
Total production expenses	333.68	347.51	341.89	343.03	349.04	357.22	365.91	374.02	382.69	390.62	398.84

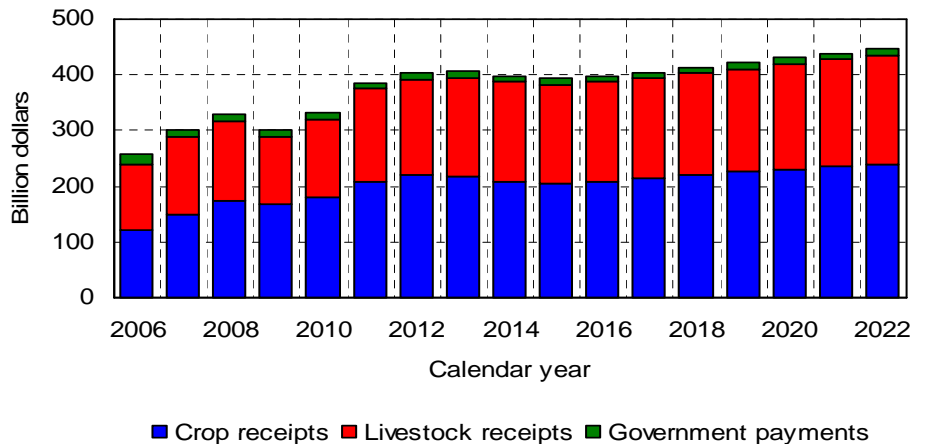
# Farm income

Cash income, expenses have both jumped recently



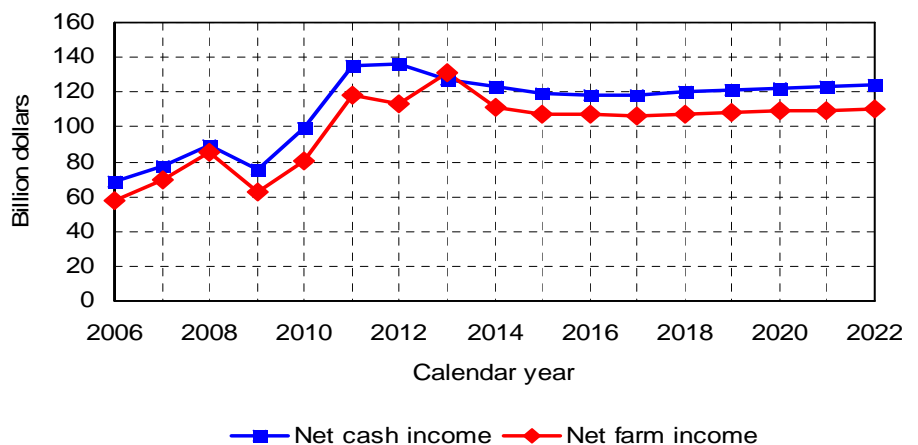
- Gross cash income (sales receipts and government payments) increased by \$82 billion between 2010 and 2012.
- Cash expenses also increased sharply, but by less than gross income. Net cash income reached a record \$136 billion in 2012, according to USDA estimates.
- Net cash income could decline in 2013, as the increase in production costs is likely to outpace the increase in cash receipts.
- In 2014, both gross cash income and cash expenses fall.

Livestock receipts continue to grow in 2013 and 2014



- Both crop and livestock sales receipts increased substantially between 2010 and 2012.
- In 2013 and 2014, crop receipts decline with lower average prices, while livestock receipts increase.
- Between 2014 and 2022, crop and livestock receipts both increase at a modest pace.
- Government payments are a small share of gross farm income.

Two net income measures tell different 2013 stories



- Net cash income peaked in 2012 and is projected to decline slightly in 2013.
- Net farm income dipped in 2012 and could reach record levels in 2013. Even after correcting for inflation, net farm income might be at its highest level since the 1970s.
- The main difference in the two measures is that net farm income includes an adjustment for changes in the value of inventories, which were reduced by the drought in 2012 but could rebuild in 2013.

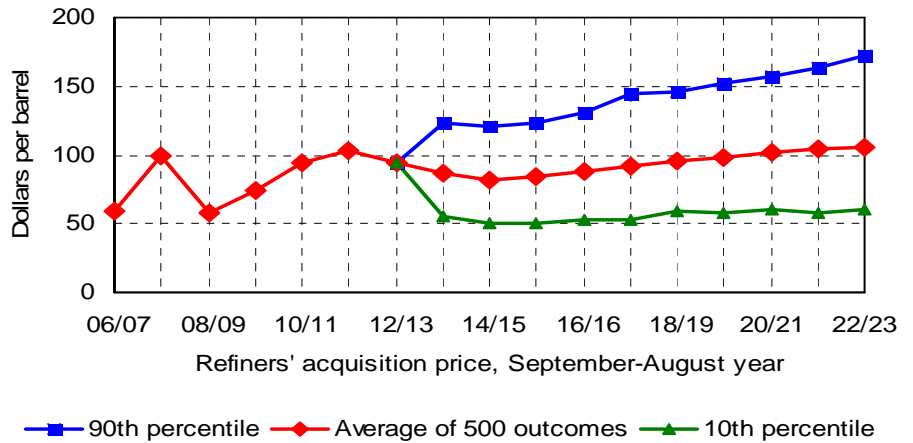
## Farm income statistics

Calendar year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	(Billion dollars)										
1. Farm receipts	422.69	426.45	415.49	410.51	415.15	422.70	432.49	440.72	449.56	457.45	465.76
Crops	219.69	218.17	208.02	203.94	208.11	214.55	221.15	226.61	230.96	234.74	238.51
Livestock	171.68	176.73	179.01	178.94	179.10	179.70	182.31	184.51	188.60	192.32	196.46
Farm-related	31.32	31.56	28.46	27.63	27.93	28.46	29.03	29.60	30.00	30.39	30.79
2. Government payments	10.84	10.98	10.80	11.36	11.24	10.97	11.10	11.17	11.40	11.40	11.49
3. Gross cash income (1 + 2)	433.54	437.43	426.29	421.87	426.39	433.67	443.59	451.89	460.96	468.85	477.26
4. Nonmoney income	24.47	26.44	28.05	29.08	29.59	29.88	30.18	30.72	31.39	32.14	32.96
5. Value of inventory Change	-11.36	14.44	-1.21	-0.13	0.39	0.24	-0.40	-0.60	-0.83	-0.92	-0.98
6. Gross farm income (3 + 4 + 5)	446.65	478.32	453.13	450.81	456.36	463.79	473.37	482.01	491.52	500.06	509.24
7. Cash expenses	297.80	310.38	303.12	302.96	307.98	315.36	323.36	330.75	338.67	345.79	353.14
8. Total expenses	333.68	347.51	341.89	343.03	349.04	357.22	365.91	374.02	382.69	390.62	398.84
9. Net cash income (3 - 7)	135.73	127.05	123.17	118.90	118.41	118.31	120.23	121.14	122.29	123.06	124.12
10. Realized net farm inc (3 + 4 - 8)	124.33	116.37	112.45	107.92	106.93	106.34	107.85	108.59	109.66	110.37	111.38
11. Net farm income (6 - 8)	112.97	130.81	111.24	107.79	107.32	106.58	107.46	107.99	108.83	109.44	110.39
Deflated (2012 \$)	112.97	128.84	107.75	102.84	100.84	98.63	97.83	96.72	95.85	94.77	93.92

# Ranges from the 500 alternative futures

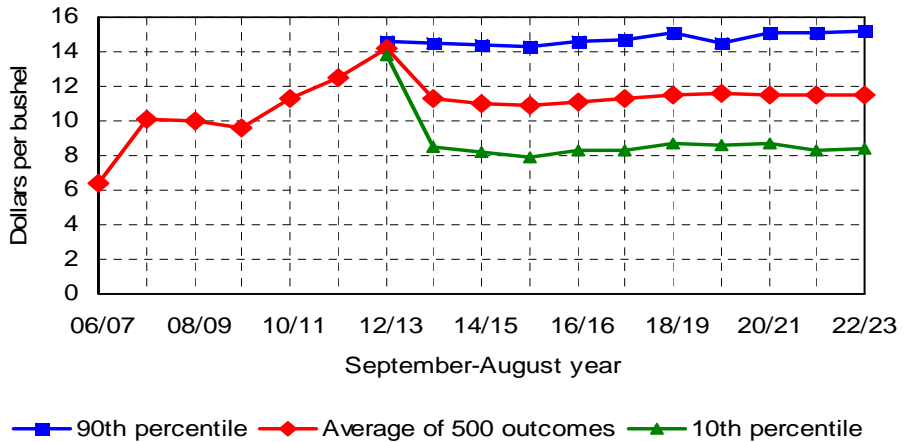
## Oil price uncertainty is large

- IHS Global Insight expects the refiners' acquisition price for petroleum to remain below \$100 per barrel for much of the forecast period.
- To examine alternative futures for biofuel and agricultural markets, we explored a range of possible oil prices centered on the IHS Global Insight forecast.
- This process is repeated for hundreds of other variables to generate the stochastic baseline. The correlation is preserved among the related variables.



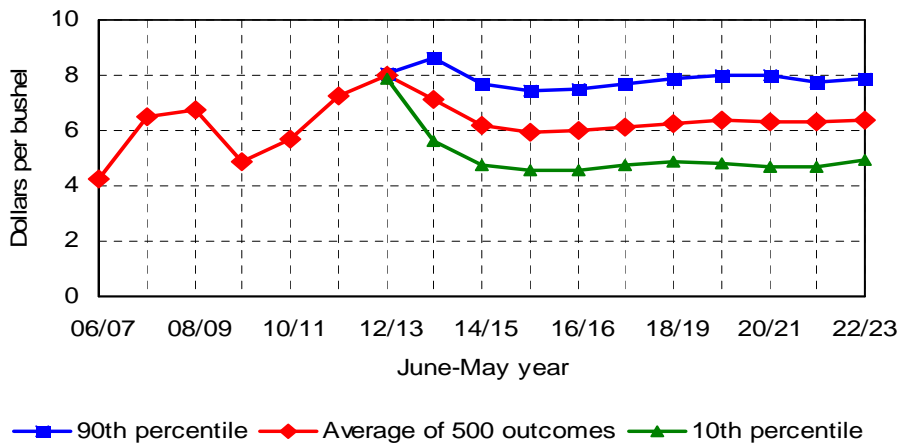
## Soybean prices depend on oil prices, yields, more

- Soybean prices depend on petroleum prices, crop yields, global economic growth, the value of the dollar and many other uncertain factors.
- Average soybean prices are projected to remain well below the 2012/13 record level.
- In most of the outcomes, soybean prices are between \$8 and \$15 per bushel.



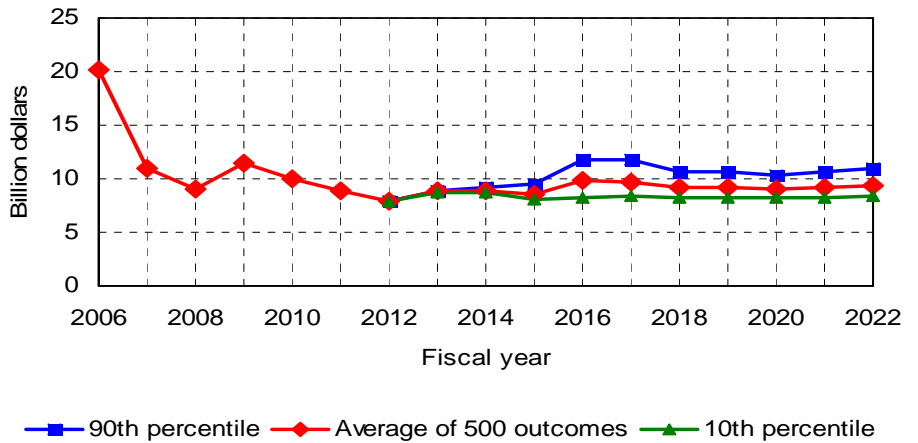
## Wheat, other commodity prices will also be volatile

- Prices for wheat and other agricultural commodities will also be volatile in the years ahead.
- In any given year, wheat prices may be as high as they have been in 2012/13 or as low as they were in 2009/10.
- In about 10 percent of the outcomes, wheat prices are at least \$1.50 per bushel above the average, and in about 10 percent they are at least \$1.50 below the average.



# Ranges from the 500 alternative futures

CCC net outlays are unlikely to reach 2006 levels

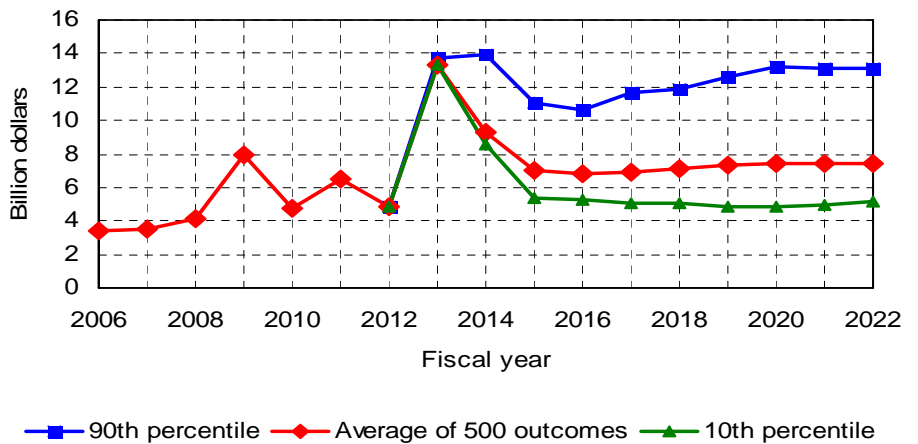


- Under current program provisions, CCC net outlays can exceed the average when market conditions trigger payments under the marketing loan, countercyclical payment or ACRE programs.

- Given projected price distributions and ACRE participation rates, large payments under those programs would happen infrequently, so net CCC outlays would be unlikely to reach the FY 2006 levels.

- If new legislation changes farm programs, it could affect both the average level and the range of CCC net outlays.

Crop insurance net outlays are also uncertain



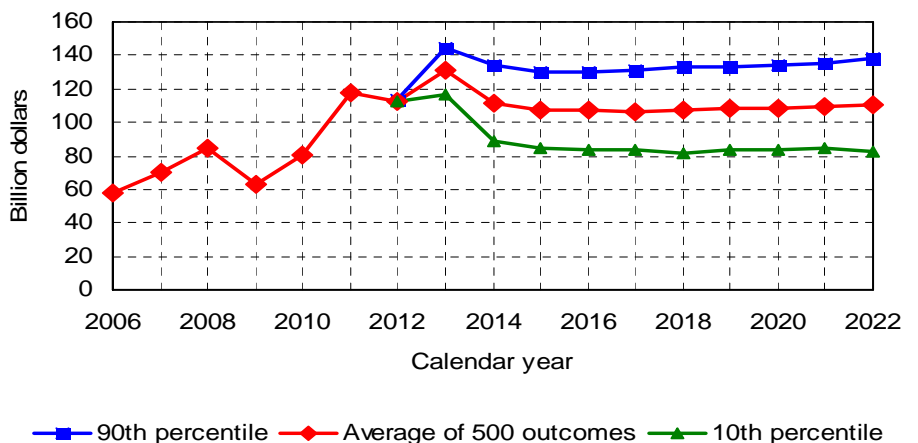
- Volatility in commodity yields and prices creates uncertain outlays for the crop insurance program.

- Higher crop prices, production and coverage levels increase crop insurance premiums and premium subsidies.

- In any given year, outlays will depend on yields, prices and resulting indemnities.

- In extreme weather years, indemnities and outlays can far exceed the average, as in FY 2013.

Net farm income will vary from year to year



- Net farm income depends on production levels and the prices of agricultural outputs and inputs, all of which are uncertain.

- As a result, future levels of net farm income are also quite uncertain.

- The sources of uncertainty considered in this analysis lead to a wide range of possible farm income levels for any given year.

- There are certain to be risks not captured in these 500 alternative futures.