Staff Paper

2017 ANNUAL
AGRICULTURAL OUTLOOK

Coordinated by
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2017 Annual Agricultural Outlook

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THE GENERAL ECONOMY: 2017
John Whims

U.S. Economy

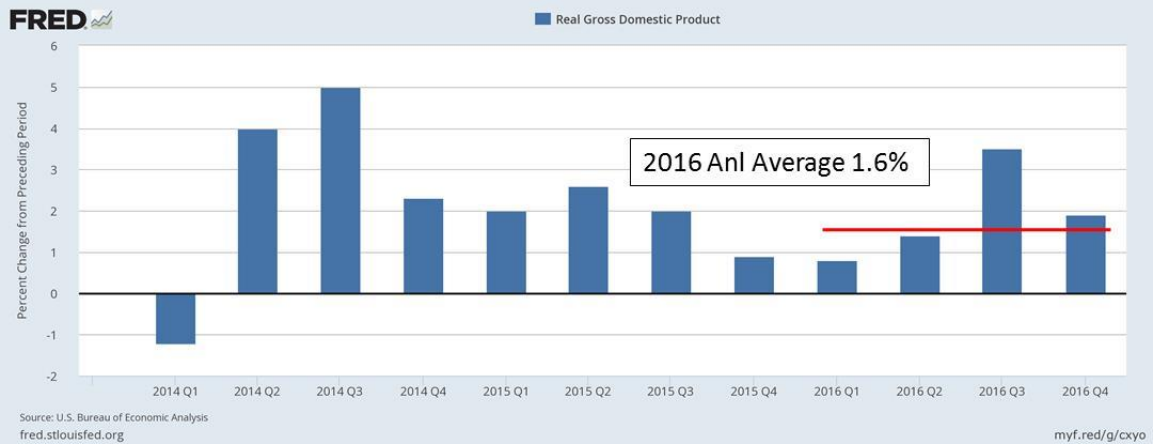
Out with the old, in with the new; despite one's party leanings, the changing of the guard at the White House telegraphs the fact that the next four years *will not be business as usual – or boring!* The high degree of uncertainty was exemplified by the recent spike in the Chicago Board Options Exchange (CBOE) Volatility Index (VIX). The popular measure of Wall Street fear recently jumped to its highest level in more than three months as the stock market retreated amid concern over the new administrations controversial executive order aimed at tightening U.S. immigration rules. There is a strong likelihood that these types of shocks/events will become more commonplace in 2017. The situation whereby the House, Senate, and the Executive Branch are all controlled by the Republicans allows for swifter and more disruptive changes to economic linked policies that had been established under Democratic control during the previous administration. Additionally, throw into the mix that President Trump is not a career politician and has populist policy leanings, and things get really interesting in a hurry. What exactly will happen with the direction of economy in 2017; remains to be seen? What is known, however, is the fact that any significant economic policy changes in the Trump administration will not likely have any material impact on the economy until the second half or later part of the year.

GDP: Our thesis last year stated that the economy would be healthy, but just not as healthy as most other economists were predicting. The general consensus called for real GDP at a level of 3.0% or higher for 2016, while we expected the level to be in the 2.0% to 2.5% range, the actual real GDP number came in at 1.6% (see Figure 1), even below our estimation. Moving forward, we believe that 2017 will be another year of growth, slightly better that 2016, but again very muted growth. In our estimation, real GDP should hover near 2.0% with the potential to be slightly lower. The demographics of lower population growth and an aging population will keep a lid on economic growth in the U.S. for some time. The good news is the U.S. is not nearly as critically disadvantaged demographically as Europe and Japan with their chronologically challenged populations. The consumer will again drive the majority of GDP expansion. The same concerns or headwinds to GDP growth from last year will follow through into 2017:

- The U.S. export market is highly uncertain with the strength of the dollar likely staying solid against most other global currencies given our anticipated scenario of higher interest rates. Thus, causing our exports to remain relatively more expensive compared to other globally traded goods and services.
- Overall, government spending will be constrained given the new administration's likely penchant for a smaller government such that there will be little additive support to real GDP from the government in 2017.

- What might actually help GDP growth in 2017, other than consumer spending; could occur late in the year. New federal policies enacted to cut corporate and personal taxes coupled with new infrastructure spending programs could add to the GDP bottom line, it will take time however, to pass and implement these programs. The earliest impact of significant policy shifts would not likely be felt by the economy until the second half or later in 2017.

Figure 1: Real GDP, Change from Previous Quarter at Annual Rate, Seasonally Adjusted



Inflation: Labor shortages will push wages and core inflation (excluding food and energy) higher from 2.3% in 2016, to 2.5% in 2017, and thus retard overall job growth. Energy prices have stabilized and West Texas Intermediate (WTI) crude prices have begun to find support above the $50 per barrel level. The U.S. Energy Information Administration (EIA) is forecasting an upward bias to current prices coupled with a high degree of uncertainty regarding the potential volatility of price movements in 2017. Given the expected push towards higher energy prices, headline inflation could push above 3.0% by the end of the year, up from 1.9% at the end of 2016. Inflation nearing 3.0% will be the linchpin for the FED to raise rates. The FED will not be able to continue to successfully suppress interest rates to below inflation levels this will led to at least two expected rate hikes in 2017.

Interest Rates: At the beginning of 2016, the market anticipated three FED rate hikes. The premise for this belief was the expectation of higher inflation levels such that the FED would have to "put the brakes" on the economy in order to keep prices under control. What actually happened was an economy that purred nicely along such that everything was healthy but not nearly as strong (in terms of real GDP growth) thus resulting in only one rate hike at the end of the year in December. Going forward the FED has hinted at the necessity of three rate hikes in 2017. The market, however, is more cautious this year and is anticipating only two rate increases. We would also echo

this sentiment of the likelihood of needing only two rate increases in 2017. As previously mentioned, the lukewarm economy should actually give the FED a great deal of wiggle room to for deciding when and by how much they raise rates. The real concern would be the classic case of an overheating economy where there is "too much money chasing too few goods", such that prices begin to rise rapidly in what is known in economics as demand-pull inflation and this just isn't in the cards for 2017.

Unemployment: Job growth will persist quietly in 2017 (much like the expected tepid growth in GDP), such that the unemployment rate will gradually fall to an average annual rate of 4.5% from the expected final level of 4.7% unemployment in 2006. Jobs will continue to be created in the service and professional industries compared to the government and manufacturing industries. The immediate hiring freeze by President Trump on all nonessential governmental jobs in his first week of office certainly sends the message that job openings (growth) in the federal government will not be as plentiful as the private sector. The economy should add approximately 2.0 million jobs in 2017, this equates to an average of 167,000 new job additions per month.

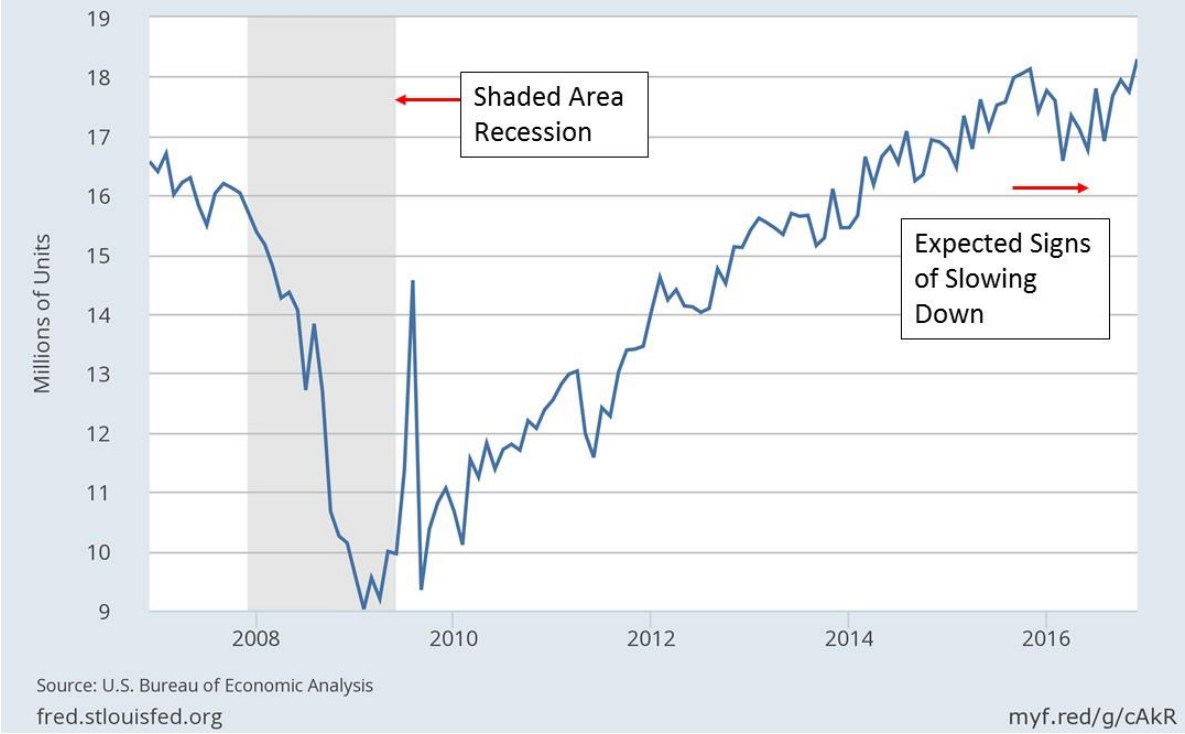
Michigan Economy

We are now beginning the eighth year of economic recovery in the State of Michigan. Since the recession low point in the summer quarter of 2009, to the summer quarter of 2016, net job growth has occurred at an average annual rate of 71,600 jobs. The final number of net jobs created in 2016, should closely approximate the longer-run average with an estimated 69,000 net new jobs (a continued strong year of job growth for Michigan). Heading into 2017, the strong job growth will likely take a bit of a breather, but not too much of a breather. The pullback in jobs is indicative of a tightening labor market, which is being experienced throughout much of the nation. Expected modest national economic growth in GDP will signal similar modest GDP growth in the state, which should translate into new job gains of 41,600 in 2017.

As mentioned in last year's write-up, if jobs expand by the forecasted amounts for 2016 (69,000) and 2017 (41,600), that will take Michigan employment back to the same level as spring 2003. Which is good news considering how hard the state was hit during the Great Recession with such widespread unemployment. The same sectors that generated new job growth in 2016 will provide continued support in 2017, they are the sectors of professional and business services; construction; trade, transportation, and utilities. Manufacturing jobs will likely see headwinds in 2017, with no gains expected. This will also coincide with a projected slowdown in the national sales of autos and light trucks. Stability in the economy, historically low interest rates, and lower gasoline prices have fueled robust sales growth year-over-year since the recession ended in 2009 (see Figure 2). U.S. auto and light truck sales eclipsed 18 million units December of this year, a level that hasn't been seen since July 2005. Given the expectation of higher interest rates in 2017, firmer energy prices, and a maturing market, sales should retreat

modestly from 17.5 million seasonally adjusted annualized level in 2016, down to 17.3 million units in 2017.

Figure 2: Light Weight Vehicle Sales – Autos and Light Trucks, Seasonally Adjusted Annual Rate



POLICY AND TRADE OUTLOOK

David B. Schweikhardt

Total U.S. agricultural exports are projected to be $134 billion in Fiscal Year 2017 (the October 2016 to September 2017 period). This level of exports would be $3.7 billion higher than FY 2016 and an $18 billion decrease from the record high registered in FY 2014. This increase in value is the result of a somewhat higher volume of products exported for some products. This outlook for exports is expected to be driven by continued slow economic growth on a worldwide basis, the continued strength of the U.S. dollar, and favorable stock levels in most producing countries. Only a major disruption caused by weather would be likely to change this outlook.

U.S. Agricultural Trade Outlook

The projected 2017 increase in total U.S. agricultural exports represents a small improvement in the export price and volume for several categories of products. Exports of grains and feeds are projected at $28.6 billion in 2017, matching the category total for 2016. The export value for wheat ($5.4 billion) and corn ($9.6 billion) are expected to increase by $200 to $300 million each from their 2016 level. These values are the result of an expected increase in the volume of exports (4.2 million tons for wheat and 4.4 million tons for corn). Oilseeds and products exports ($31 billion) are expected to increase in value (by $1.6 billion) and volume from their 2016 levels. Livestock product exports are expected to increase by $1.0 billion from their 2016 level of $25.5 billion. In the livestock category, beef exports are expected to increase by $200 million to $5.3 billion, while pork exports are expected to remain constant at $4.7 billion. Poultry product exports are projected to increase by $200 million to $4.7 billion, and dairy product exports are expected to increase by $800 million to $5.3 billion.

During the past several years, horticultural products (fruits, vegetables, and nuts) have seen major growth in exports to become the largest single category of U.S. agricultural exports (replacing the traditional leader of grains and feeds). Though this category growth is expected to continue in 2017, there is expected to be a major change in growth within this category. Horticultural product exports are projected to reach $34 billion in 2017, an increase of $1.1 billion over 2016. Within the horticultural products category, however, fresh fruit and vegetable exports (-$100 million to $6.8 billion) and processed fruit and vegetables (-$100 million to $7.3 billion) are expected to decrease, while tree nut exports (+$1.4 billion to $9.0 billion) are expected to increase in 2017.

The destination of U.S. exports continues its recent pattern. In 2017, Asia will be the leading U.S. agricultural export destination (with China and Japan as the leading buyers of U.S. export products in the region at $21.8 and $11 billion, respectively). China's purchases from U.S. agriculture are projected to be $2.7 billion higher in 2017, giving an indication of the importance of China's economic growth on U.S. producers' exports. Canada's ($21.3 billion, an increase of $1.0 billion over 2016) and Mexico's

($18.3 billion, a $700 million increase over 2016) purchases of U.S. agricultural exports are expected to continue steady growth in 2017.

Total U.S. agricultural imports are projected to decrease to $112.5 billion in 2017, a level $600 million lower than the 2016 level. Horticultural product imports are expected to experience the largest change, with an increase of $300 million above their 2016 level of $53.0 billion. The second largest category of imports is projected to be sugar and tropical products with $22.8 billion in imports in 2017 (including $12.6 billion in imports of cocoa, coffee, and rubber). Mexico ($22 billion), Canada ($21.7 billion), and the European Union ($20.9 billion) are projected to continue as the three largest suppliers of U.S. agricultural imports in 2017. As is the case with U.S. exports, changing consumer preferences are leading to a transformation of the type of food products that are being imported into the U.S. fresh and processed fruit ($16.4 billion), fresh and processed vegetables ($12.3 billion), wine and beer ($10.5 billion), and coffee ($6.2 billion) will constitute the largest categories of U.S. of agricultural and food product imports in 2017.

Farm Bill Prospects

Though some groups have advocated the passage of a new farm bill in 2017, one year ahead of schedule, the likelihood of this occurring is very small. Instead, the performance of the Agricultural Act of 2014 in 2017 and the stage that it will set for the 2018 farm bill debate will dominate the policy discussion in 2017.

First, the performance of the 2014 farm bill in 2017 and 2018 will be a major issue in the coming year. The 2014 bill provided farmers with two alternative risk management programs. The Price Loss Coverage program (PLC) provides a payment when the effective price (national average market price) is below the PLC reference price ($3.70 for corn, $8.40 for soybeans, and $5.50 for wheat). The second choice, the Agricultural Risk Coverage (ARC) program provides payments when the actual revenue (calculated on a county or individual basis) for a crop is less than the ARC revenue guarantee for that crop.

The ARC program revenue guarantee is calculated using a five-year moving Olympic average of the national average price for the prior 5-year period. This formula gave relatively high prices used in calculating the ARC revenue guarantee for the crop years 2014 to 2016. For example, the price used in the ARC program for corn was $5.29 in 2014 and 2015, and $4.79 in 2016. While the final price used for the ARC program in 2017 in not yet known, it is virtually certain that the ARC price for the 2017 crop year will fall near or below $4.00 for corn. This outcome is a result of the moving average price used in the ARC program and the significantly lower national average market prices in 2014 to 2016 than in 2009 to 2013. The ARC price used for corn, soybeans and wheat are all expected to decrease significantly in the 2017 and 2018 crop years.

This decrease in the prices used to calculate ARC payments will significantly reduce the price risk protection provided by the 2014 farm bill. This will have two major consequences. First, lenders and borrowers are likely to consider these changes in making decisions for the 2017 crop year. As a result, both will need to consider the use of other risk management tools in making financial and management decisions. Second, this decrease in the price risk protection provided by the 2014 farm bill, combined with the likelihood that the ongoing era of lower commodity prices will continue in the foreseeable future, will elevate the issue of risk management as the debate on the 2018 farm bill begins. In particular, this debate will focus on the adequacy of the "safety net" provided by the 2014 farm bill and the policy options for improving that protection in the next farm bill.

2017 INPUT COSTS
Bill Knudson and John Whims

Commodity prices for major field crops have continued to decline in 2016. With the exception of diesel fuel, most input prices have also declined, with fertilizer prices showing the biggest decline. Interest rates are likely to remain low, although there may be upward pressure on interest rates in the latter half of 2017. Despite low interest rates, access profitability may also be a challenge for some farmers which may make getting credit more difficult.

Fertilizer

After rising for several years' fertilizer prices have finally started to decline. According to the USDA, the price of anhydrous ammonia in Illinois averaged $481.00 a ton in early January, a decrease of 16.8% from 2016. The price of urea was $337.00 a ton, a decrease of 8.2%. MAP averaged $443.00 a ton, a decline of 12.1%, and potash averaged $312.00 ton, a decrease of 15.2%.

There are two other things to consider when analyzing these figures. The first is, prices are likely to rise as farmers make their purchases as planting season approaches. The second is, these figures are for Illinois. Prices in Michigan may vary somewhat and could be higher due to higher transportation costs.

Seed

Seed prices appear to be stable. In October of 2016, Purdue University estimated the per acre cost of soybean seed to be $72.00, a decline of $2.00 from the 2015 estimate; the per acre cost of corn seed is estimated to be $121.00, also a $2.00 decline from the 2015 estimate, and the per acre cost of wheat seed is estimated to be $44.00, which is unchanged from the previous estimate. The estimates for corn and soybeans may be high; other estimates put the corn figure at about $100.00 an acre for corn and $65.00 an acre for soybeans. There has been downward pressure on corn and soybean prices which usually means that seed prices also decline.

On a per bag basis, there is a wide range of prices based on the traits the seeds possess. Soybean seed prices generally cost between $35.00 and $70.00 a bag. The price of corn seed runs from about $120.00 a bag for conventional seed to full trait seed that can cost more than $350.00 a bag. The price of wheat seed is in the range of $17.00 to $25.00. There appears to be sufficient corn and wheat seed available. There may some shortages of the most popular soybean seed varieties. Non-GMO seed varieties may also be somewhat difficult to obtain.

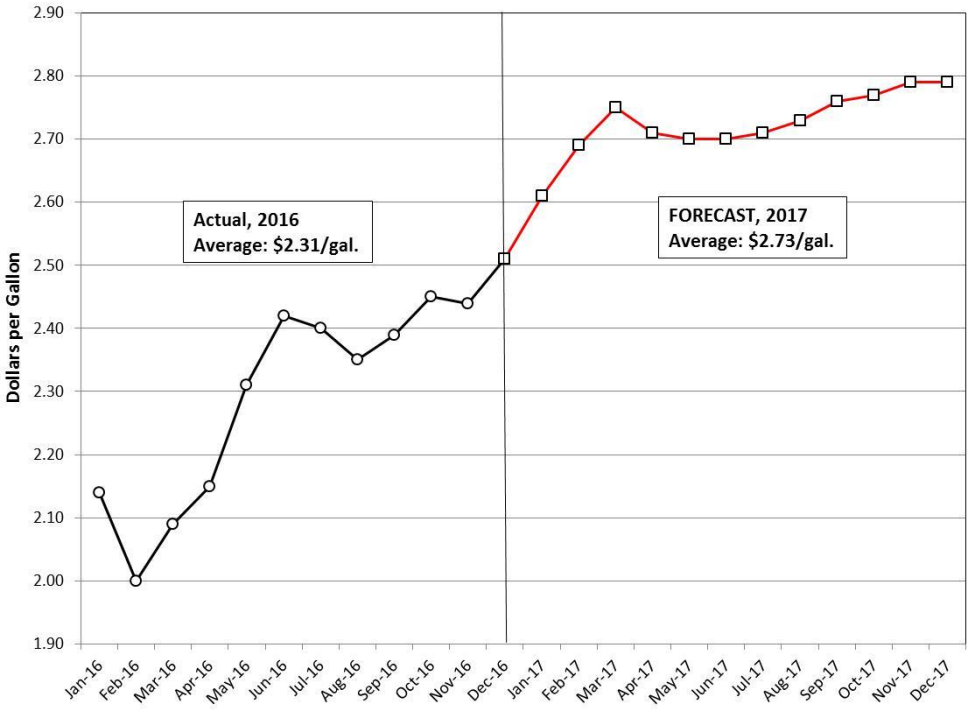
While overall there are sufficient quantities of seed available, there are shortages of some popular varieties of corn and soybean seed. Supplies of dry bean

seed are very tight, and seed may not be available to farmers who do not have a contract.

Fuel

After several years of low fuel prices the fuel market appears to be showing some signs of modest strength. From early 2016 to early 2017, the price of oil has increased from less than $30.00 per barrel to more than $52.00 per barrel. This has translated into higher energy costs across all oil related commodities. According to the U.S. Energy Information Administration (EIA), the retail price of diesel was $2.55 a gallon in the Midwest in January 2017. This is 45 cents a gallon, or 21.4%, higher than the previous year. Nationally, the price of diesel fuel per gallon averaged $2.31 in 2016 (see Figure 3). The EIA forecasts the national price of diesel fuel will average $2.73 per gallon in 2017, an increase of 18% over last year. The EIA warns, however, that there is a significant amount of uncertainty to their forecast this year. This is supported by the unusual uncertainty seen in the crude oil market for West Texas Intermediate (WTI) futures and options contract prices. For example, contracts traded during the five-day period ending January 5 suggest the market expects WTI prices could range from $35.00 per barrel to $93.00 per barrel (at the 95% confidence interval) in December 2017! Ultimately, we could be in for a roller coaster ride for fuel prices in 2017, given the present uneasiness being telegraphed by the oil market.

Figure 3. Diesel Fuel Retail Price Including Taxes U.S. Average (Historical and Forecast)



Source: http://www.eia.gov/outlooks/steo/

Interest Rates

After a protracted period of low interest rates, there appears to be upward pressure for higher rates in 2017. According to the Federal Reserve Bank of Chicago, interest rates in the region which includes the Lower Peninsula, most of Indiana and Illinois, Iowa and the southern and western part of Wisconsin, were 4.87% for operating loans and 4.57% for real estate loans in the third quarter of 2016. Interest rates for farm loans have increased by 0.05% for operating loans, and declined by 0.01% for real estate loans from the third quarter of 2016.

Interest rates are likely to see continued signs of strength in 2017, if -- inflation begins to lift higher. This will be the signal for the Federal Reserve Bank (FED) to increase its lending rate (the Fed Funds rate), which they did by 0.25% in their last meeting of 2016 (December). The International Monetary Fund (IMF) recently increased their global economic growth forecast, and the U.S. labor market is showing signs of tightness which portends higher wages and thus higher inflation. Some economist are forecasting three FED rate hikes in 2017; we are less optimistic about U.S. growth prospects and believe that we will have only one to two rate increases which will still raise the cost of doing business.

2017 MICHIGAN AGRICULTURAL LAND PRICE SITUATION OUTLOOK

Christopher Wolf and Eric Wittenberg

In the Southern Lower Peninsula of Michigan, the average value of tiled field cropland in 2016 was $5,011 per acre while non-tiled field cropland averaged $3,739 per acre (Table 1). In the Upper and Northern Lower Peninsula tiled and non-tiled field crop land averaged $2,139 and $1,742 per acre, respectively.

Table 1. Average Michigan Farmland Values, 2016

	Field Crop Tiled	Field Crop Nontiled	Sugar Beet	Irrigated	Fruit Trees
	$/acre				
Michigan	4,676	3,490	6,547	5,212	7,700
Southern Lower Peninsula	5,011	3,739	6,882	5,709	7,446
Upper & Northern Lower Peninsula	2,139	1,742	3,063	2,290	5,250

Cash rents in the Southern Lower Peninsula averaged $146 per acre for tiled cropland and $98 for non-tiled cropland (Table 2). In the Upper and Northern Lower Peninsula, tiled field cropland rented for an average of $87 per acre and non-tiled cropland rented for an average of $66 per acre. Sugar beet land in Michigan rented for an average of $224 per acre, and irrigated cropland rented for $203 per acre. The Michigan cash rent value for tiled field cropland of $140 per acre for the state was an increase of $5 per acre from the previous year. Sugar beet cash rental per acres decreased by $45 per acre and irrigated cropland increased by $27 per acre from 2015.

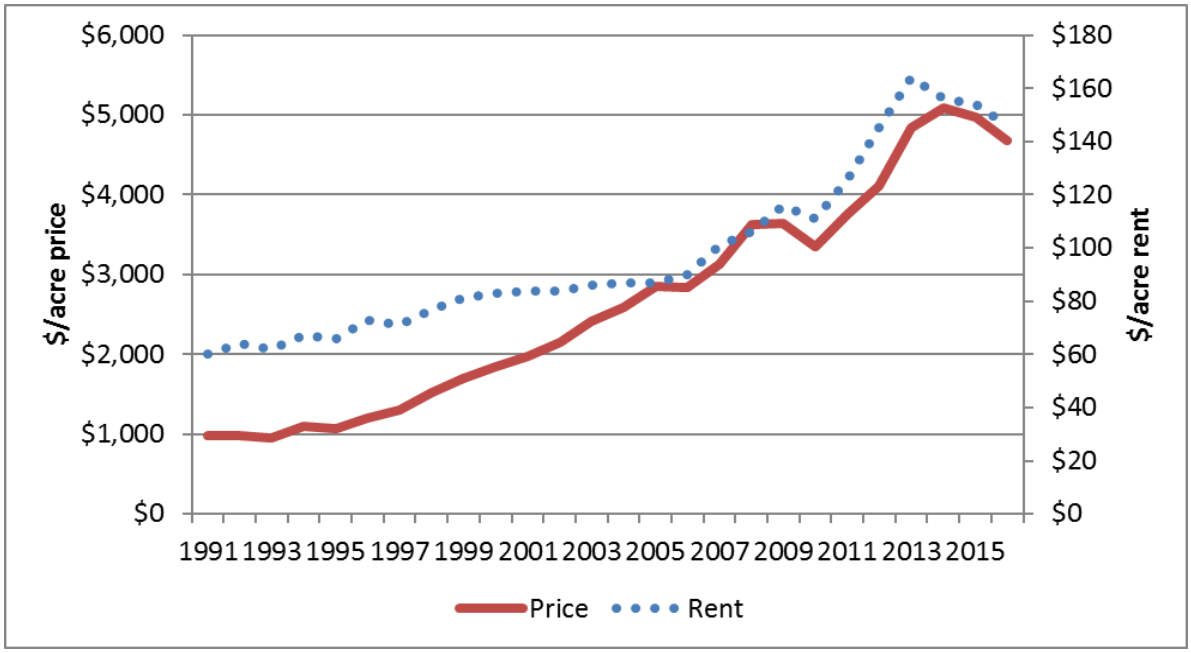
Table 2. Average Cash Rent, Michigan 2016

	Field Crop Tiled	Field Crop Nontiled	Sugar Beet	Irrigated
	($/acre)			
Michigan	140	95	224	203
Southern Lower Peninsula	146	98	233	211
Upper & Northern Lower Peninsula	87	66	144	84

The trend in Michigan agricultural land prices was flat to down slightly in most regions in 2016. This was consistent with surrounding states. Field crop land, whether tiled or not, was down about 3% in value in 2016 over 2015 levels (Figure 1). Over the long-term, MSU has been collecting information on Michigan agricultural land values since 1991, the average price increase has been just shy of 7% and a good hedge against other investments. As expected, rent generally moves with land price, although sometimes sluggishly as rent agreements may be longer-term agreements.

With many major crop prices at or below break-even levels in 2016 and the outlook for 2017 is for more of the same. This will put downward pressure on land prices and rents. These agricultural land price trends are generally consistent with surrounding states although the Corn Belt states to the south of Michigan are more directly impacts by corn and soybean prices. Meanwhile Michigan has more agricultural diversity and recreational impacts on land prices. 2016 survey respondents expected another 3% decline in Michigan agricultural land prices into 2017. Factors to watch in addition to expected crop prices, include interest rates and fertilizer costs.

Figure 1. Michigan Average Farmland Prices and Rental Rates, 1991-2016



2017 ANNUAL CROPS OUTLOOK
Jim Hilker

The 2017 annual Crops Outlook presented here will include the 2016-17 and 2017-18 corn, wheat, and soybean marketing years; the baseline numbers are presented in Tables 1-3. By baseline, I mean, given what I know and expect to date. We all know a lot can and will happen to change these expectations. How the world GDP growth, value of the dollar, oil/gas prices, U.S. and world weather, political crisis, etc., change from expectations will all play a role, as to a large degree they are all unknowns.

CORN

While I expect corn price volatility to be higher than pre-2007, with the large U.S. carryover in 2015-16, the rest of the world having large carryovers, and the even larger than expected U.S. carryovers for 2016-17 and 2017-18, I expect volatility to be down relative to 2006-07 through 2013-14, and the market is reflecting this. At this point, the market is projecting a 54% chance that December 2017 corn futures will be below today's $3.94 per bushel, and a 60% chance that December 2017 corn futures will be between $3.26 and $4.56 per bushel at harvest. Or, to put another way, there is a 20% chance December 2017 corn futures will be below $3.26 per bushel, and a 20% chance the December 2017 corn futures could be above $4.56 per bushel come harvest time. You need to adjust these for your local basis.

2016-17

U.S. Corn producers planted 94 million acres of corn for the 2016 crop, up 6 million acres from 2015. Acres harvested for grain came in at 86.7 million acres. The average corn yield for the U.S. of 174.6 bushels per acre smashed the previous record of 171.0 bushels per acre set in 2014, 8-9 bushels per acre above the trend yield. Multiplying the 174.6 bushel per acre yield by the 86.7 million harvested acres put corn production 15,148 million bushels, just shy of a billion bushels bigger than the previous record corn production. When you add beginning stocks, production, and imports, total supply is projected to be 16,940 million bushels, almost a billion and a half bushels more the 2014-15 and 2015-16.

Michigan planted 2.4 million acres of corn in 2015, 50,000 more acres than 2015. Michigan harvested for grain corn acres were 2.04 million, down 30,000 acres from the previous year. Michigan's average 2016 state yield was 157 bushels per acre, 5 bushels lower than the record 2015 yield, and third highest yield on record. Michigan corn for grain production was a record 320.3 million bushels, the fifth largest on record.

U.S. feed use and residual is expected to be 5,600 million bushels, up 7.6% from last year. While some of this will be an increase in the residual with such a large crop, beef production is expected to be up about 7% over the corn marketing year, pork

production is expected to be up about 4%, poultry production is expected to be up over 2%, and milk cow numbers are expected to remain about the same. Food, seed, and all industrial uses are projected at 6,760 million bushels for 2016-17. Seed use is expected to be down a little as less acres of corn will be planted this spring. Corn used for food and industrial uses, other than ethanol, is expected to grow a bit on population growth. Corn projected to be used for ethanol and DDG's is 5,325 million bushels, up nearly 120 million bushels as gas prices are higher and corn prices are a little lower.

At 2,225 million bushels, projected exports in 2016-17 are expected to increase 17%, even though the world has a lot of corn and the dollar is strong. Basically, Brazil had a very poor second corn crop last spring and world demand has been strong, and with a lot of corn, the price is down. Total 2016-17 U.S. use is expected to be 14,585 million bushels, up almost a billion bushels from 2015-16. If we subtract total use from total supply, we end up with over a half billion more bushels in ending stocks than last year, at 2,355 million bushels. Ending stocks as a percent of use would be 16.1%, compared to about 12.7% in 2014-15 and 2015-16, and 7-9% the previous three years, giving us a projected weighted average season price of $3.40 for 2016-17. See Table 1.

2017-18

My baseline projections for the 2017-18 corn marketing year are shown in Table 1 as well. I am projecting planted 2017 corn acres at 91.0 million acres, down 3 million acres from last year. The switch is basically due to the corn/soybean price ratio being at a level that greatly favors soybeans with respect to returns per acre, both looking at forward cash contracts being offered and harvest futures. How do I come up with a shift of 3 million acres from corn to soybeans? That is the switch it will take in my analysis to bring returns to soybean acres versus return to corn acres back into some type of balance. This is what producers, a completive market, do/does over time. I am projecting 83.6 million acres to be harvested for grain.

I am projecting a trend yield of 168.3 bushels per acre to use in my analysis, for a projected 2017 U.S. corn crop of 14,073 million bushels; this would be the third largest corn crop on record. When we add the projected production to the huge beginning stocks of 2,355 million bushels, and the 50 million bushels of projected imports, we would have a projected total supply of 16,478 million bushels. This would be the second largest total supply on record, just 2.7 % smaller than massive 2016-17 supply.

I am projecting total 2017-18 use to be 14,390 million bushels, down 1.3%. I expect feed use and residual to be about the same at 5,600 million bushels as the beef sector growth slows and the pork and broiler sectors continue to grow marginally, with residual shrinking. I expect corn used for ethanol and DDG's to remain about the same, as the situation remains about the same. I expect U.S. corn exports will be up down at 200 million bushels, as the South American crops return to trend yields. World beginning stocks are expected to be large.

As shown in Table 1, this story would give us projected ending stocks of 2,088 million bushels, 14.5% of use, and an annual average weighted price around $3.50. While $3.50 is my median price projection for 2016-17, there are still a lot of risks as we have seen of the past.

TABLE 1

SUPPLY/DEMAND BALANCE SHEET FOR CORN

														Est.	Proj.	Hilker
	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
(million acres)																
Acres Planted	78.9	78.6	80.9	81.8	78.3	93.5	86.0	86.4	88.2	91.9	97.3	95.4	90.6	88.0	94.0	91.0
Acres Harvested	69.3	70.9	73.6	75.1	70.6	86.5	78.6	79.5	81.4	84.0	87.4	87.5	83.1	80.7	86.7	83.6
Yield/Bushels	129.3	142.2	160.4	148	149.1	150.7	153.9	164.7	152.8	147.2	123.1	158.1	171.0	168.4	174.6	168.3
(million bushels)																
Beginning Stocks	1596	1087	958	2114	1967	1304	1624	1673	1708	1128	989	821	1232	1731	1737	2355
Production	8967	10089	11807	11114	10531	13038	12092	13092	12447	12360	10755	13829	14216	13602	15148	14073
Imports	14	14	11	9	12	20	14	8	28	29	160	36	32	67	55	50
Total Supply	10578	11190	12776	13237	12510	14362	13729	14774	14182	13517	11904	14686	15479	15401	16940	16478
Use:																
Feed & Residual	5563	5798	6158	6155	5591	5913	5182	5125	4795	4557	4315	5040	5280	5131	5600	5600
Food, Seed & Ind	2340	2537	2686	2981	3490	4387	5025	5961	6426	6428	6038	6493	6601	6635	6760	6765
Ethanol for fuel	996	1168	1323	1603	2119	3049	3709	4591	5019	5000	4641	5124	5200	5206	5325	5315
Total Domestic	7903	8335	8844	9136	9081	10300	10207	11086	11221	10985	10353	11534	11881	11766	12360	12365
Exports	1588	1897	1818	2134	2125	2437	1849	1980	1834	1543	730	1920	1867	1898	2225	2025
Total Use	9491	10232	10662	11270	11206	12737	12056	13066	13055	12528	11083	13454	13748	13664	14585	14390
Ending Stocks	1087	958	2114	1967	1304	1624	1673	1708	1128	989	821	1232	1731	1737	2355	2088
Ending Stocks, %of Use	11.5	9.4	19.8	17.5	11.6	12.8	13.9	13.1	8.6	7.9	7.4	9.2	12.6	12.7	16.1	14.5
U.S. Loan Rate	$1.98	$1.98	$1.95	$1.95	$1.95	$1.95	$1.95	$1.95	$1.95	$1.95	$1.95	$1.95	$1.95	$1.95	$1.95	$1.95
U.S. Season Ave																
Farm Price, $/Bu.	$2.32	$2.42	$2.06	$2.00	$3.04	$4.20	$4.06	$3.55	$5.18	$6.22	$6.89	$4.46	$3.70	$3.61	$3.40	$3.50
Source: USDA/WASDE and Jim Hilker. (2 - 2 - 17)																

WHEAT

The 2016-17 U.S wheat marketing year is eight months in, and while we will discuss the projections, it appears present projections will hold for the most part. The more interesting part is discussing the 2017-18 prospects. The wheat story is a bit like corn, ample supplies in the U.S. and the world.

2016-17

We planted 50.2 million acres of wheat for the 2016 wheat crop, down 4.8 million acres from 2015. Winter wheat accounted for 36.14 million of those acres, down 3.54 million acres! Spring wheat planted acres was 11.6 million, and durum wheat planted acres was 2.4 million. Harvested acres came in at 43.9 million acres. The all wheat yield was a record of records 52.6 bushels per acre. This put 2016 total wheat production at 2,310 million bushels, up 248 million bushels, 12%, from 2015, on 3.4 million less acres harvested.

Michigan planted 610,000 acres of wheat for 2016, up 100,000 acres from 2015. Michigan harvested 570,000 acres for grain. Michigan's 2016 wheat yield was a record 89 bushels per acre, up 7 bushels per acre from the previous record set last year, which was 5 bushels above the previous record set in 2012.

Beginning stocks were a large 976 million bushels, up 224 million bushels from 2015-16. Total 2016-17 wheat supplies were 3411 million bushels when 125 million bushels of imports and beginning stocks are added to production. This is up 12.3% from 2015-16.

Domestic use of wheat in the U.S. for 2016-17 is projected to be up 73 million bushels from 2015-16 at 1,249 million bushels. Feed use is expected to be 225 million bushels, up 73 million bushels as wheat as a feed became relatively cheaper. Exports are projected to be up 200 million bushels from last year at 975 million bushels. This is due to strong world demand and lower prices. This puts total use at 2,224 million bushels, up 272 million bushels, 13.9%.

Projected 2016-17 U.S. ending stocks are 1,186 million bushels. This is 53.3% of use, up from last year's 50.0% of use, way, way, more than adequate, in fact, very burdensome. The 2016-17 average weighted wheat price is expected to be $3.80 per bushel. Check out Table 2.

2017-18

The Winter Wheat Seedings Report showed 32.83 million acres of winter wheat planted for 2017, down sharply from 36.14 million acres last year. This is the second lowest winter seedings since records began in 1898; the lowest was early in the period.

This decrease is mostly due to low expected returns and a few planting issues. I expect spring wheat plantings and durum wheat plantings to be same as last year. I expect total wheat planted acres to be 46.5 million acres for 2017-18 as shown in Table 2. I am projecting a normal percent harvested, which would put harvested acres at 40.1 million acres.

Michigan planted 470,000 acres of winter wheat, down 140,000 acres from last year. Over the years, the "normal" would be 620,000 planted acres. Returns are low, and for many it was a struggle to get it planted in time.

Using a trend yield of 46.3 bushels per acre, expected 2017 U.S. wheat production would be 1,856 million bushels, down 454 million bushels, 19.7%. When added to beginning stocks and expected imports, total 2017-18 supplies are expected to be 3,167 million bushels, down 244 million bushels from 2016-17, down only 7.2% due to the massive beginning stocks.

I expect domestic use to be down a very marginal 32 million bushels in 2017-18 as feed use drops a bit from this year's levels on relatively higher wheat prices. Food use will grow with the population and seed use will likely grow a bit as planted acreage will likely be up for 2018. I expect a normal world crop, and strong competition. Therefore, I have lowered my 2017-18 wheat exports marginally to 950 million bushel from 975 million.

This scenario would leave us with total ending stocks of 939 million bushels, down 247 million bushels. The projected stocks-to-use ratio would be a 43.5%. Wheat will be priced a bit more of a food versus feed crop, as corn is projected to be $3.50. I am projecting the average 2016-17 wheat price at $4.20, up than last year, but still giving poor returns.

At this point, the market is projecting a 52.5% chance that July 2017 Chicago wheat futures will be below today's $4.58 per bushel, and an 60% chance that July 2016 Chicago wheat futures will be between $4.00 and $5.10 per bushel at harvest. Or, to put another way, there is a 20% chance the July 2016 Chicago wheat futures will be below $4.00 per bushel, and a 20% chance the July 2016 wheat futures could be above $5.10 per bushel come harvest time. One would then need to adjust for the basis for their local cash price.

TABLE 2

SUPPLY/DEMAND BALANCE SHEET FOR WHEAT

	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	Est. 2015-2016	Proj. 2016-2017	Hilker 2017-2018
(Million Acres)															
Acres Planted	62.1	59.7	57.2	57.3	60.5	63.2	59.2	53.6	54.4	55.3	56.2	56.8	55.0	50.2	46.5
Acres Harvested	53.1	50.0	50.1	46.8	51.0	55.7	49.9	47.6	45.7	48.8	45.3	46.4	47.3	43.9	40.1
Bu./Harvested Acre	44.2	43.2	42.0	38.6	40.2	44.9	44.5	46.3	43.7	46.2	47.1	43.7	43.6	52.6	46.3
(Million Bushels)															
Beginning Stocks	491	546	540	571	456	306	657	976	862	743	718	590	752	976	1186
Production	2345	2158	2105	1808	2051	2499	2218	2207	1999	2252	2135	2026	2062	2310	1856
Imports	68	71	82	122	113	127	119	97	112	123	173	151	113	125	125
Total Supply	2904	2775	2727	2501	2620	2932	2993	3279	2974	3118	3026	2768	2927	3411	3167
Use:															
Food	907	910	915	938	948	927	919	926	941	951	955	958	957	963	973
Seed	80	78	78	82	88	78	69	71	76	73	77	79	67	61	69
Feed and Residual	212	182	160	117	16	255	150	132	162	364	228	114	152	225	200
Total Domestic	1194	1169	1152	1137	1051	1260	1138	1128	1180	1388	1260	1151	1176	1249	1242
Exports	1159	1066	1003	908	1263	1015	879	1289	1051	1012	1176	864	775	975	965
Total Use	2353	2235	2155	2045	2314	2275	2018	2417	2231	2400	2436	2015	1952	2224	2207
Ending Stocks	546	540	571	456	306	657	976	862	743	718	590	752	976	1186	960
Ending Stocks, %of Use	23.2	24.2	26.5	22.3	13.2	28.9	48.3	35.7	33.3	29.9	24.2	37.3	50.0	53.3	43.5
U.S. Loan Rate	$2.80	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75
U.S. Season Ave															
U.S. $/Bu.	$3.40	$3.40	$3.42	$4.26	$6.48	$6.78	$4.87	$5.70	$7.24	$7.77	$6.87	$5.99	$4.89	$3.80	$4.20
Michigan $/Bu.	$3.35	$3.01	$3.13	$3.41	$5.01	$5.63	$4.25	$5.72	$6.70	$7.75	$6.70	$5.60	$5.00	$3.75	$4.15
Source: USDA/WASDE and Jim Hilker (2 - 3 - 2017)															

SOYBEANS

2016-17

Soybean producers planted a record 83.4 million acres for 2016, up 700,000 acres from 2015. Harvested acres were 82.7 million acres. After a wet early and a bit late planting season, soybeans had a great growing season over most of the U.S. The 2016 U.S. soybean yield came in at record 52.1 bushels per acre, about six bushels over trend and a 4.1 bushels higher than the record 2015 yield. This put soybean production for 2016 at a record 4,307 million bushels, a whopping 380 million bushels, 9.7%, higher than the record 2014 and 2015 production levels were a record. Total supply for 2016-17 is 4,529 million when fairly low beginning stocks of 197 million bushels and imports of 25 million bushels were added to production, 389 million bushels greater than the record 2015-16 total supply.

Michigan planted 2.07 million acres of soybeans in 2016, and harvested 2.06 million acres, both up 40,000 acres relative to 2015. Michigan's 2016 soybean yield was a whopping 50.5 bushels per acre, up 1.5 bushel per acre from last year's record yield and 4.5 bushels above the previous Michigan record of 46 set in 2006. This put 2016 Michigan soybean production at 104 million bushels, up 5 million bushels relative to 2015.

U.S. 2016-17 total use is expected to be 4,108 million bushels, up 165 million bushels from last year. Crush at 1,936 million bushels is expected to be up 44 million bushels. The increase crush is due to both strong domestic demand for meal and oil and more export demand for both due to Brazil's poor second crop soybeans. Exports of whole soybeans are expected to be 2,050 million bushels, up 5.9% from the record exports 2015-16, and the fourth record exports in a row. The sharp increase in exports is again due to the Brazil's poor second crop soybeans as well as strong world demand, particularly China. China continues to account for over 62% of both the world and U.S. exports.

This will put projected 2016-17 soybean ending stocks at what you would think would be a burdensome 420 million bushels, 10.2% of projected use. Large world supplies, if Brazil's crop comes is as expected, will keep a lid soybean prices for the remainder of the marketing year if we have a normal 2017 soybean growing season. The projected U.S. 2016-17 average price is expected to be $9.50 after all is said and done. This is higher than historical fundamentals of this level would suggest.

2017-18

I expect a record 86.8 million acres to be planted to soybeans for 2017-18, 3.4 million acres more than last year. There are several factors suggesting a relative shift from corn and wheat to soybeans. Primarily returns per acre, and to a lesser degree,

less cash outflow. As discussed in corn, the relatively returns to soybeans versus corn being suggested by both harvest futures and harvest cash bids favor soybeans by a significant amount. I project 2017 harvested acres to be a normal percentage of planted acres which would be 86.1 million acres. Using a trend yield of 46.6 bushels per acre, 2017 U.S. soybean production would be 4,011 million bushels, which would be a second largest crop on record after 2016.

I expect crush to be down slightly as shown in Table 3 as we will be up in livestock numbers a bit, but exports of oil and meal will likely be down. I also expect soybean exports to be down as we see a large South American soybean crop this year, and probably next year, somewhat offsetting strong world demand. Total U.S. disappearance is expected to be 4,456 million bushels, second largest on record. However, despite the large disappearance, projected 2017-18 ending stocks are projected to be 436 million bushels, 10.8% of use. I project the average U.S. 2017-18 soybean price will be $8.90, which would give about the same returns per acre to soybeans as $3.50 corn.

At this point, the futures markets are not expecting my projected price. The market is projecting a 52.8% chance that November 2017 soybean futures will be below today's $10.15 per bushel, and an 60% chance that November 2017 soybean futures will be between $8.70 and $11.50 per bushel at harvest. Or, to put another way, there is a 20% chance the November 2017 soybean futures will be below $8.70 per bushel per bushel, and a 20% chance the November 2016 soybean futures could be above $11.50 per bushel come harvest time. Remember, you still need to subtract your basis from those numbers to get your local cash price. These prices are much higher than my fundamentals would suggest.

TABLE 3

SUPPLY/DEMAND BALANCE SHEET FOR SOYBEANS

	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	Est. 2015-2016	Proj. 2016-2017	Hilker 2017-2018
(Million Acres)																
Acres Planted	74	73.4	75.2	72	75.5	64.7	75.7	77.5	77.4	75.0	77.2	76.8	83.3	82.7	83.4	86.8
Acres Harvested	72.5	72.3	74.0	71.3	74.6	64.1	74.7	76.4	76.6	73.8	76.1	76.3	82.6	81.7	82.7	86.1
Yield/Bushels	38.0	33.9	42.2	43.0	42.9	41.7	39.7	44.0	43.5	41.9	40.0	44.0	47.5	48.0	52.1	46.6
(Million Bushels)																
Beginning Stocks	208	178	112	256	449	574	205	138	151	215	169	141	92	191	197	420
Production	2756	2454	3124	3063	3197	2677	2967	3359	3329	3094	3042	3358	3927	3926	4307	4011
Imports	5	6	6	3	9	10	13	15	14	16	41	72	33	24	25	25
Total Supply	2969	2638	3242	3322	3656	3261	3185	3512	3495	3325	3252	3570	4052	4140	4529	4456
Use:																
Crushings	1615	1530	1696	1739	1808	1803	1662	1752	1648	1703	1689	1734	1873	1886	1930	1920
Exports	1045	885	1097	940	1116	1159	1279	1499	1501	1365	1317	1638	1842	1936	2050	1980
Seed	89	92	88	93	80	93	90	90	87	90	89	97	96	97	95	95
Residual	41	19	105	101	77	0	16	20	43	-2	16	10	50	24	33	25
Total Use	2791	2526	2986	2873	3081	3056	3047	3361	3280	3155	3111	3478	3862	3943	4108	4020
Ending Stocks	178	112	256	449	574	205	138	151	215	169	141	92	191	197	420	436
Ending Stocks, %of Use	6.4	4.4	8.6	15.6	18.6	6.7	4.5	4.5	6.5	5.4	4.5	2.6	4.9	5.0	10.2	10.8
U.S. Loan Rate	$5.00	$5.00	$5.00	$5.00	$5.00	$5.00	$5.00	$5.00	$5.00	$5.00	$5.00	$5.00	$5.00	$5.00	$5.00	$5.00
U.S. Season Ave Farm Price, $/Bu.	$5.53	$7.34	$5.74	$5.66	$6.43	$10.10	$9.97	$9.59	$11.30	$12.50	$14.40	$13.00	$10.10	$8.95	$9.50	$8.90

Source: USDA/WASDE and Jim Hilker. (2 - 2 - 17)

2017 ANNUAL LIVESTOCK OUTLOOK
Jim Hilker

CATTLE

The numbers show that traditional feedlots made economic profits of -$123.00 per head in 2016; yes, negative, and did not have one profitable month, although April and May losses of only $4.00 and $11.00 were close. The 2016 losses followed the -$307.00 per head in 2015, which was the biggest annual loss in our data set which go back into the 1970s. With breakeven prices for colored cattle early in 2017 being in the $108-112 per cwt. Range, it appears they will see some economically profitable months in 2017.

However, feedlots in Michigan feed largely Holstein steers, which don't always follow the same drummer as colored cattle. While we don't have data on Michigan Holstein steer prices, there is some evidence that feedlots feeding Holsteins did better over the past two years than colored cattle, relatively cheaper feeders, and strong basis' really helped out. Unfortunately there is some evidence that the basis fell apart in January, so if you didn't have a delivery contract, Holstein prices dropped sharply even without futures dropping. It is unclear when this will improve.

After cow-calf returns on average were positive for a sixth year in a row in 2015, annual returns in 2016 averaged -$30.00. In 2014, cow-calf returns over cash cost, including pasture rent, at $530.00 per cow, was the highest in our records going back into the 1970's. And while dropping off to $301 per cow in 2015, which was still the second highest. At this point we are looking for returns to be about -$29 per head for 2017.

January 1, 2017 Cattle Inventory Report, for the third year in a row, after seven years of decline, showed an increase. The U.S. had 93.6 million head of cattle and calves as of January 1, 2% above 2016, but remember, 2013 was the smallest inventory since 1951. USDA estimated the total U.S. cowherd, including dairy, at 40.6 million head, up 3.0% from a year ago. Beef cows were reported at 31.2 million head, 3.0% larger than a year ago.

Beef cow replacements on January 1, 2017 were 6.42 million head, up a 1.0% over last year. The number of beef cow replacement heifers expected to calve in 2017 at 4.0 million head was up 2.0%. USDA reported the 2016 calf crop at 35.1 million head, 3.0% larger than 2015. This should lead to a larger calf crop again in 2017.

As of January 1, 2017, the calculated available supply of feeder cattle outside feedlots was 26.552 million head, 2.2% more than January 1, 2016. Cattle on feed in all feedlots January 1 were 13.1 million head, down 1.0% relative to last January 1.

All cattle and calves in Michigan on January 1, 2017, were at 1,180,000 head, up 40,000 head, 4.0%. All cows that had calved were at 545,000 head, up 5.0%. Beef cows were up 11.0%, at 120,000 head. Dairy cows numbers were 425,000, up 3.0%. Beef cow replacements were down 2,000 head, 7.4%, at 25,000, while dairy cow replacements were down 2,000 head, 1.2%, at 170,000 head. Michigan's 2016 calf crop was 410,000, up 5.0%. The survey does not distinguish between beef and dairy calves. Michigan had 145,000 cattle on feed January 1, down 14.7%, after being up 6.3% the previous year.

The following estimates for cattle and hogs are made in conjunction with the Livestock Marketing Information Center, which I belong to. It is a group supported by Universities to provide efficiencies; ie, less duplication of work by folks such as myself. U.S. commercial beef production is expected to be up 3.8% for 2017, as slaughter is expected to be up 3.4% with dressed weights being up 0.3%. Steer prices are expected to average in the $110-114 per cwt. range for 2017, down 7.3%, after averaging $120.85 for 2016. The 7-800# feeder steers are expected to average $127-133 per cwt. in 2017, down from $145.16 for 2016, with 5-600# feeder calves averaging $137-145 per cwt in 2017, versus $166.29 in 2016.

In the first quarter of 2017, commercial beef production is expected to be up 4.6%. Steer prices are expected to average $115-117 per cwt., with feeder steers averaging $127-129 per cwt., and feeder calves averaging $139-142 per cwt. In the second quarter, production is expected to be up 5.1%, with steer prices averaging $112-115 per cwt., feeder steers averaging $129-133 per cwt., and feeder calves averaging $142-148 per cwt.

In the third quarter, beef production is expected to be up 3.1%, with steer prices averaging $106-110, feeder steers averaging $128-134, and feeder calves averaging $133-142. In the fourth quarter, beef production is expected to be up 2.4%, with steer prices averaging $107-112, feeder prices averaging $125-132, and feeder calves averaging $132-141, all per cwt.

HOGS

Farrow-to-finish hog operations had up than down profitability in 2016, profitable 7 of the 12 months, and negative 5 of the seven months. For the most part, returns were decent most of the first half of the year and pretty negative the last half of 2016. Returns may be mixed in 2017.

All hogs and pigs on December 1, 2016 were up 4% from December 1, 2015. The breeding herd was up 1.0% from the same period a year earlier. And market hogs on hand December 1 were up 4.0% from 2015. The September-November pig crop was up 5% as fall farrowings were up 4%, and the pigs saved per litter were up 1%. This will be the bulk of the spring marketings. December- February farrowing intentions were up 1%, so if pigs saved per litter is up 1-2%, this indicates summer marketings will likely be

up 2-3%. March-May farrowing intentions were up 1%, so with the normal 1-2% increase in pigs saved per litter, fall marketings will be up 2-3%.

The Michigan breeding herd stayed even at 110,000 head on December 1, 2016, the same as December 1, 2015, 2014, 2013, 2012, 2011, and 2010. We had 1,000,000 market hogs on hand, down 1% from last year. Sows farrowing in Michigan were down 4% this past fall, at 49,000. Pigs saved per litter were 10.60 versus 10.7 last fall. This put our total fall pig crop 95% of the previous year at 519,000 head. Michigan's December-February farrowing intentions are up 4% and the March-May farrowing intentions are up 8%, our summer and fall production. Getting ready for the new slaughter plant's planned opening this summer?

Pork production is expected to be up 2.8% in 2017 versus 2016 as slaughter is expected to be up 2.6% with weights being up 0.1%. Carcass prices, National Weighted Average Base (multiply by .76 to have approximate live price projections) are expected to average in the $60-64 per cwt. range for all of 2017, down 3.9% relative to 2016.

In the first quarter of 2017, pork production is expected to be up 3.7%, with carcass prices averaging $55-58 per cwt., down 9.1%. In the second quarter, production is expected to be up 3.6%, with carcass prices averaging $65-69 per cwt., down 8.7%. In the third quarter, production is expected to be up 1.1%, with carcass prices averaging $65-70 per cwt., down 1.2%. In the fourth quarter, production is expected to be up 2.9%, with carcass prices averaging $53-59 per cwt., up 4.7%. The increase in the fall quarter price projections even with more production is a combination of demand and more slaughter capacity coming on line.

2017 DAIRY SITUATION AND OUTLOOK
Christopher Wolf

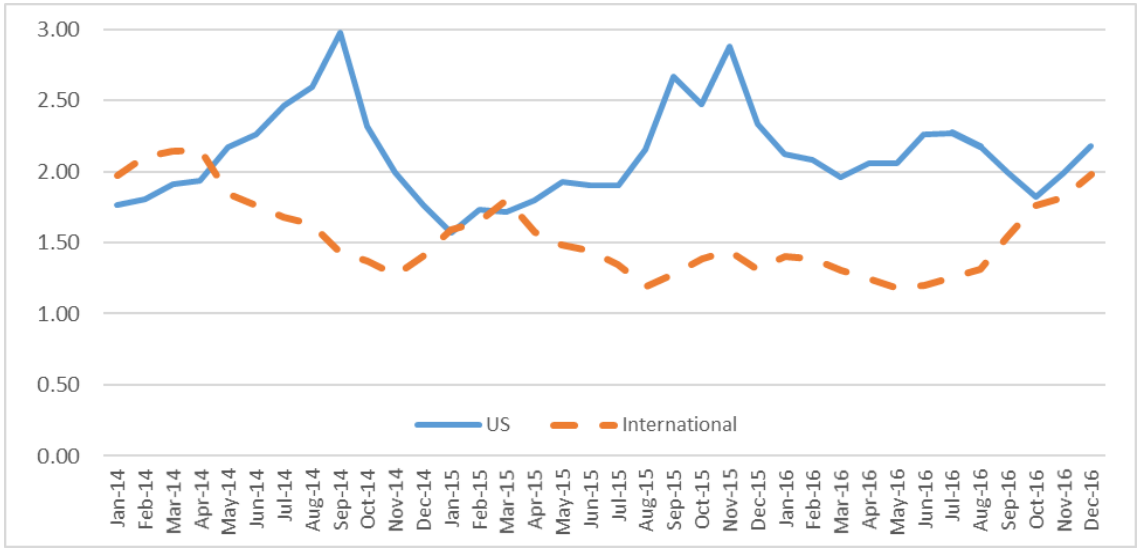
The Michigan dairy price outlook for 2017 has two parts. First, the national, and thus international, milk price which is a consequence of world milk supply and demand as well as exchange rates. Second, the Michigan mailbox price in relation to the national price which is primarily a function of the supply situation in the state.

Internationally, the slowing of milk production in the other major dairy exporting nations—New Zealand (-3% in 2016 from 2015), Australia (-8.5%), and the European Union (+0.7% in 2016 percent but down from a 2.5% growth in 2015)—led to a recover in milk prices. Australia has been experiencing drought which has depressed milk production. New Zealand and the European Union dairy farmers have experienced very low milk prices which have discouraged milk production.

Where U.S. farm milk prices had been above world levels for most of the past three years, by the end of 2016 price convergence had generally been achieved Figure 1. Butter has been the star performer of the past couple of years consistently being near or above $2 per pound. Popular press on butter has been quite positive recently and major restaurant chains have made the move to butter. The result is that per capita butter consumption has risen more than 25% in the past decade to a 40-year high as Americans now consume 5.6 pounds of butter each annually.

The result has been a US butter price that is consistently above the international price. The second half of 2016 witnessed a strong recovery in international butter prices which bodes well for demand in 2017.

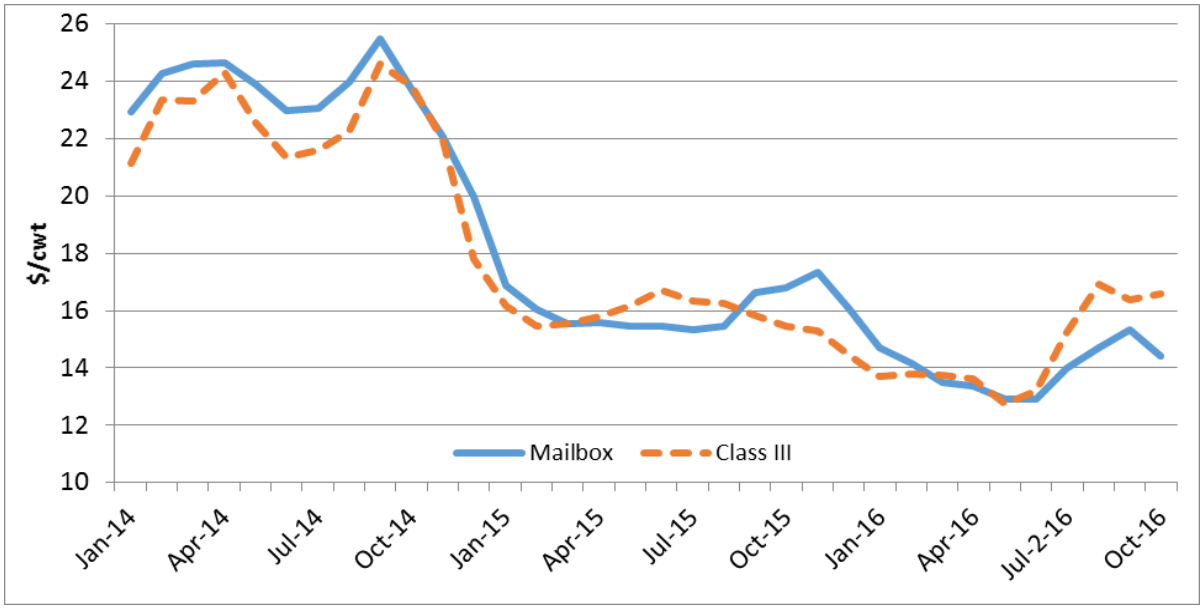
Figure 1. US and International Butter Prices, 2014-2016



U.S. milk production for 2016 totaled 212.5 billion pounds, up 1.9% from 2015. The U.S. dairy herd finished 2017 with 9.333 million milk cows producing an average of 22,770 pounds per cow. Recent trends continued regionally with the Upper Midwest and Northeast states realizing growing milk supplies. Michigan finished 2016 with 425,000 milk cows producing and fourth quarter milk production was up 4.5% over a year earlier. This continued growth put further pressure on processing capacity and again resulted in excess hauling and marketing costs and a relatively depressed Michigan mailbox milk price.

Figure 2 displays the Class III milk price—which is the price for milk used for cheese—and the Michigan mailbox milk price monthly from 2014 through October 2016. The long-run average of this difference is about $1 per cwt., meaning that the Michigan mailbox price has historically averaged a dollar above the class III price. Through the first 10 months of 2016, this difference averaged -$0.60 per cwt., being more than $1.50 per cwt. below the long-run average. This situation is likely to continue to plague Michigan farm milk prices in 2017. These low farm milk prices—notice the precipitous drop from the robust prices in 2014—are causing significant financial strain across the state.

Figure 2. Class III and Michigan Mailbox Milk Price, 2014-2016



With other major dairy producing having stagnant to down milk production and China seeming to reenter the world market as a strong importer, the dairy price situation for 2017 from national perspective is positive. Domestic dairy consumption remains strong and the prospect of growth in export markets beckons. As of this writing, the futures market is projecting a class III price that averages $17.40/cwt nearly reaching $18/cwt in September 2017. Meanwhile, class IV price is projected to average

$16.74/cwt. With relatively low and stable feed prices also expected, the income over feed cost margin is expected to average $10.61/cwt for 2017 which is well above the long-run average does not send a signal to cut back milk production. Of course, this healthy national margin does not translate well for Michigan dairy farms at the current time.

While the 2014 Farm Bill programs, most notably the Dairy Margin Protection Program (MPP-Dairy), run through calendar year 2018, discussions about the next farm bill have begun. With 2018 being a mid-term election year, the conventional wisdom is that it might be advantageous to get the bill done early. The limitations of MPP-Dairy, real and perceived, will drive the debate in the dairy industry.

For many producers, MPP-Dairy has not lived up to expectations. The financial stress in many dairy producing regions in 2016 did not materialize into payments from the program unless producers had purchased high levels of coverage. MPP-Dairy is viewed by dairy industry leaders as the cornerstone of dairy policy for the foreseeable future. Under discussion are likely to be ways to "fix" MPP-Dairy including changing the margin formula, premiums, coverage level, or payment frequency.

FARM TAXES
Larry Borton and John Jones

While many items were made permanent in legislation passed in late 2015, few items changed in 2016 except for normal adjustments for inflation. Let's look at several topics to remind us of IRS rules including a couple of new ones.

Records: Good records will assist in preparing tax forms. Under audit the IRS does not have to prove a taxpayer is incorrect; the taxpayer must prove to the IRS that their tax return is correct (called substantiation) with receipts and other support items. These records also serve as data for preparing financial statements and monitoring the progress of the business. Examples of records needed include purchases and sales invoices, real estate closing statements, canceled checks, and bank statements. Income and expense records should be kept at least three years from when the tax return was due or filed, or within two years of the date when the tax was paid, whichever is later. Employee records should be kept at least four years after the later of the tax being due or paid. Records relating to the basis (cost or tax value) of assets may need to be kept until the period of limitations after you dispose of it (sold, junked, inherited, or traded). For land this could be longer than your lifetime.

Form W-4 for 2017: Make new forms available to employees and encourage them to check their income tax withholding.

Form 1099-MISC: File this form if you pay at least $600 in rents, services, and other miscellaneous payments in your farming business to an individual who is not your employee. This includes all veterinarians even if they are a corporation. It also includes landowners. Give them a W-9 to fill out so you have the correct information. LLCs are seldom taxed as corporations so an LLC landowner taxed as a sole proprietorship or partnership should receive a 1099-MISC. Failure to file correct information returns may be subject to a penalty of $520. Since each landlord gets one and the IRS gets the copy, failure may result in a penalty of $1,040 for each landlord. Also, the Schedule F has lines F and G that ask if you should file 1099s, then if you did or will file them. You answer by checking the appropriate boxes yes or no. Note that a 1099 is not required for payments for merchandise, freight or storage.

Depreciation: The election to direct expense up to $500,000 with a phase-out beginning at $2,010,000 of qualified property purchased was in effect for 2016. Bonus depreciation of 50% for original use, depreciable property is in effect for 2016-2017 for almost all farm property including machinery sheds and hay barns. Single purpose livestock (animal) structures or greenhouses would be eligible for direct expensing and/or bonus depreciation. Direct expensing requires an election to use it, while bonus requires an election to not use it. Most fruit farmers cannot use this bonus depreciation. However, fruit and vine growers may use a new option that allows them

to deduct 50% of the preparatory costs of planting or grafting specified plants (including ones that bear fruits or nuts).

Tangible Property: When these regulations arrived, we used to call them the Repair and Capitalization Rules to help distinguish between what are repairs or what must be on the depreciation schedule. Most rules did not affect farmers much. However, one item (de minimus safe harbor) allows most farmers to elect to expense all individual items of property equal to or under a certain amount. This is property that normally would have to be depreciated. The amount is up to $2,500 (a few farmers with an Applicable Financial Statement can elect up to $5,000). For example, if a dairy farmer elected $2,000 and purchased a springing heifer for $1,800, then the heifer must be expensed under this provision and cannot be depreciated. Note that direct expensing could accomplish the same thing, but in this example an elected amount for the year must be less than $1,800 in order to not use the de minimus safe harbor. If ten animals were purchased and identified as individually purchased for $1,800 each, then all ten must be expensed under this provision if the elected amount was $1,800 or more.

Losses: If a farm taxpayer had a loss last year and does not owe any self-employment tax, the optional farm method of computing self-employment taxes allows a farmer to get four quarters of coverage toward retirement, survivor's benefits or, maybe more important, disability. It may cost almost $800, but if eligible for the earned income credit, one can get most or sometimes more back than the cost.

Farm business losses may be carried back five or two years which may allow getting back some income taxes paid in previous years. Otherwise, business losses may be carried forward to future years.

Donations: Properly donating raised farm products to a qualifying charitable organization may not get a charitable deduction, but may be more financially efficient than selling the product and then donating the cash. The tax basis of most raised products is zero, so donating them does not allow a tax deduction, but by donating the product there is less income on which to pay income and self-employment taxes. This is especially useful if a taxpayer takes the standard deduction. A new law allows donation of "apparently wholesome food" to be equal to 25% of the fair market value. The farmer must be in the business of farming and the charity must use the food for the care of the ill, the needy or infants.

Gifts: Current rules allow a unified estate and gift tax exclusion of $5.45 million for 2016 and $5.49 million for 2017. Double these amounts are allowed for a married couple if proper forms are filed. Independent of this exclusion is the $14,000 that each donor may give to anyone or as many people as desired. This does not use up the gift tax exclusion amount and is not taxable to either the donor or donee. The done, or the person receiving the gift, also receives the basis or tax value from the donor. On the

other hand, inherited property gets a step up (or step down) for its basis to fair market value on the date of death or the alternate valuation date.

2017: We expect some changes in tax laws, but do not know when. Many items show up in the news, but deliberation may take some time. We keep operating under current law until new tax laws get passed and signed. Then, as always, we will try to figure out what the new rules mean and how to adapt to them.

FARM INCOME OUTLOOK

David B. Schweikhardt

Following an all-time record level in 2013, net farm income showed the third straight annual decrease in 2016. As a result, net farm income for 2016 is forecast to be 17% below 2015, thereby returning to its lowest level since 2009. This decrease resulted from a small increase in revenues for crop production (but decreases in several major crop categories) and significant decreases in all livestock production categories. Total farm production expenses experienced a decrease during 2016, but far less than the decrease in revenue. This outlook sets the stage for a highly uncertain outlook for 2017.

During the past decade, variations in income across the farm sector have been especially pronounced, with the crop income outlook varying widely from the livestock income outlook. In 2017, the outlook for continued low crop prices is likely to be the dominant factor in determining the income outlook for both the crop and livestock sectors.

2016 Farm Income Summary

Net farm income in the United States is estimated to have been $67 billion in 2016, compared to $81 billion in 2015 and a record $124 billion in 2013. This decrease resulted from a major decrease in total farm revenue (-$26 billion), an increase in government payments (+$2.0 billion) and a decrease in expenses (-$9 billion). As a result of these changes, the 2016 level of net farm income remained below the 10-year moving average for the second straight year.

The value of crop production in 2016 ($185 billion) increased by $3 billion from 2015, but remained well below the record level of $204 billion in 2013. This outcome was due to decreases in revenues for most crop categories – feed grains (-$2 billion), food grains (-$2 billion), fruits and nuts (-$2 billion), and vegetables and melons (-$1.4 billion) all experienced decreases in revenue. Revenue for oilseeds (+$5 billion) experienced an increase in revenue due largely to increased acreage and favorable yields (only cotton, tobacco and “other crops” also experienced increases in revenue in 2016). The value of livestock production decreased by $26 billion to a total of $168 billion in 2016 on the basis of decreases in dairy (-$2 billion), meat animal (-$13 billion), and poultry and egg revenue (-$9 billion).

Changes in production expenses continued to reflect economic conditions across production sectors in agriculture, unlike the widely varying conditions witnessed in recent years. In recent years, the farm income outlook across agricultural sectors (crop versus livestock sectors) held widely divergent outlooks that resulted as high crop prices were reflected in increased feed expenses for livestock producers. In 2016, this situation continued its recent reversal as lower crop prices were reflected in constant purchased feed costs for livestock producers (at $58 billion in both 2015 and 2016). At the same

time, livestock and poultry purchases declined by $7.0 billion for livestock producers. Such a change, however, also reflected lower prices for feeder animal producers.

The decrease in revenue for crop production was partially offset by decreases or a constant level of production costs for several expense categories. Seed ($21 billion) and electricity ($5.9 billion) expenses remained unchanged in 2016, while fertilizer (-$2.2. billion), pesticides (-$770 million), fuels (-$5.1 billion), and marketing, storage and transportation (-$200 million) decreased in 2016. Labor (+$1.6 billion), interest (+$3.2 billion), and repair and maintenance (+$300 million) expenses increased in 2016. Rental payments to non-operator landlords decreased by $100 million in 2016 to $18.3 billion. This represented a decrease of $1.7 billion from the record high level of rental payments in 2013.

2017 Farm Income Outlook

Looking toward 2017, the outlook for commodity prices, combined with some relief in the outlook for some production expenses, will continue to dominate the farm income picture. If yields are normal in 2017, given the level of existing carryover stocks, then commodity prices are likely to continue to limit revenues from crop production (see the price outlook article in this issue for more detail). At the same time, a relatively stable outlook for some input costs could provide limited optimism for the farm income outlook.

First, energy costs are expected to be somewhat higher than existing levels. Producers purchased $11 billion in fuels during 2016, a decrease of $2.0 billion from 2015. The U.S. Department of Energy (DOE) is projecting that crude oil prices will average $52 per barrel in 2017, compared to $43 in 2016. This oil price would translate into a projected retail diesel fuel price of $2.73 for 2017, compared to $2.31 for 2016. This level of oil prices in 2017 is expected to result from the effect of the recent OPEC agreement to limit oil production, higher growth in world oil demand, and the level of oil and fuel inventories throughout the world. These conditions are expected to continue throughout 2017. As usual, events in the Middle East and other oil producing regions could create periods of instability in oil prices.

Natural gas and electricity prices are expected to increase somewhat in 2017. The DOE is projecting an average price for natural gas in 2017 of $11.25 per thousand cubic feet, compared to $10.29 in 2016. This price outlook is largely the result of an expected increase in the number of heating degree days in 2017, a return of slow demand growth worldwide, and a small increase in U.S. natural gas production. Thus, the natural gas cost component in fertilizer production is likely to remain steady in 2017, though other processing costs could change (see the input cost outlook article in this issue for more detail). The DOE forecasts a price of electricity of 12.84 cents per KWH in 2017, compared to 12.51 per KWH in 2016. This trend is closely related to the outlook for natural gas prices.

Thus, it should be noted that decreased fuel expenditures helped offset the decrease in farm revenues and provide a small cushion against the revenue decreases that occurred in 2016. Given the existing outlook for energy prices, energy prices are less likely to provide such a cushion in 2017. Similarly, producers paid $4 billion less for fertilizer and lime inputs in 2016, largely a result of favorable natural gas prices and a shift to less fertilizer-intensive crops. Thus, this source of relief from the loss of revenue is likely to be smaller in 2017 than in 2016.

Second, land rental expenses continued a three-year decrease in 2016 and are likely to be a major factor in the 2017 farm income outlook. Farmers paid $15.1 billion in land rent to non-operator landlords in 2016, a decrease of $400 million from 2015 and a $5 billion decrease from their highest level on record in 2013. As noted in last year's farm income outlook, though significantly lower returns on crop production usually result in lower cash rents, landlord expectations (and tenants' cash rent bids) can be slow to adjust to changing economic conditions.

The decrease in 2016 rental payments marks the continuation of the process of adjusting landlords' expectations about realistic land rents. It is essential that landlords adjust expectations regarding realistic rental payments: The economics of the U.S. farm sector simply cannot support the existing level of cash rent payments, and, barring some unexpected major market event, rental payments will continue to decline for the immediate future. As a result, cooperation between landlords and tenants is required if all parties are to reach a reasonable and workable rental agreement.

Third, the trend of steady expenses is likely to persist for other inputs. For example, 2016 continued the recent trend of lower seed expenses. In addition, the favorable crop conditions in 2016 are likely to limit seed price increases in 2016 (see the input cost outlook article in this issue for more detail). Labor costs are likely to see an increase again in 2017 from their $28 billion level in 2016 ($2 billion higher than in 2015).

Finally, the outlook for interest rates on production and asset loans is somewhat uncertain for 2017, but is unlikely to support an increase in net farm income. In December of 2016, the Federal Reserve raised the Federal Funds rate (bank lending rate) by ¼ point to ¾%. As in 2015, comments by the Federal Reserve Open Market Committee (FOMC) suggested that three addition ¼ point increases would occur by the end of 2017. In making this decision, the FOMC members emphasized that labor market conditions had improved and that inflation remained well within its stated target range of 2%, but had moved upward in recent months.

In considering the impact of this move, producers should anticipate two factors. First, the FOMC's ¼ point increase in December 2016, has already be priced into the cost of lenders' interest rates for short term loans. Thus, production loans for 2017 are very likely to be higher than in 2016.

Second, the FOMC statement emphasized that any future decisions about interest rate increases would depend upon the status of economic conditions, including international conditions, later in 2017. This is nearly identical to the FOMC's statement in December 2015 about their intention to raise rates throughout 2016. As 2016 unfolded, however, unforeseen events affected the FOMC's decisions. Both international events (e.g., the Brexit vote) and domestic events (continued slow economic growth, increasing strength of the U.S. dollar on currency markets) led the FOMC to forego additional rate increases. Thus, analysts believe that the likelihood of additional rate increases will be determined by economic and political events in 2017. For example, as of January 2017, the Federal Funds Rate futures market anticipates that the FOMC will undertake only two additional ¼ point increases in 2017 rather than the FOMC's planned three increases.

Indeed, longer term (10-year) interest rates on U.S. Treasury bonds have decreased in January 2017 after increasing in December 2016, suggesting that investors might be losing confidence in the likelihood of additional rate increases. In addition, though the U.S. has signaled an intention to increase interest rates, no other major countries have followed suit, meaning that the widening gap between U.S. and foreign interest rates are likely to make U.S. bonds attractive to international investors, thereby possibly keeping a lid on the Federal Reserve's ability to increase interest rates. As noted last year in this article, though the outlook for interest rates is likely to be uncertain to stable for the coming year, the weakened farm income outlook is likely to lead lenders to continue using increased scrutiny of borrowers' creditworthiness, with a particular emphasis on the farm's liquidity status.