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How tight is the farmland supply in Iowa?

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The past year did not offer much good news to producers, landowners, and agricultural professionals in general. Despite fleeting price rallies in the spring, the average corn and soybean prices received by Iowa farmers have been stagnant at \$3.55 per bushel and \$10.00 per bushel over the past few months. The U.S. Department of Agriculture also reported U.S. net farm income will drop 11.5 percent to \$71.5 million in 2016, which represents the third straight annual pay cut for farmers and the lowest level since 2009. Meanwhile, U.S. agriculture continues to face a high U.S. dollar on the export market as well as potentially rising interest rates in the future.

These factors tend to put downward pressure on farmland markets. Recently, reports from [USDA](#), [Federal Reserve Bank of Chicago](#), and the [REALTORS Land Institute](#) show a decline in Iowa's farmland values over the past year, ranging from a 2 percent to 8 percent decline from September 2015 to September 2016. Farmland typically

represents the single largest item in a farmer's investment portfolio, and it warrants a closer look at the farmland market amid the multiyear downdrafts in commodity prices. This article examines one critical aspect of the farmland market—farmland supply with a focus on Iowa. A better understanding of farmland supply will help landowners, farm managers, appraisers, and others concerned about the farm downturn gauge the current situation and future directions in the Iowa farmland market.

This article uses several data sources: the summary statistics on farmland sales especially public auction sales in Iowa from 2005 to 2015 collected by Mr. Jim Knuth, Senior Vice President at Farm Credit Services of America (FCSA); the monthly public land auction results published by Peoples Company since September 2015; and the annual sale activity index from the ISU Land Value Survey released every December. The author thanks all parties and companies who shared the data, especially Mr. Jim Knuth and FCSA. There are two

things worth noting regarding our datasets: first, farmland sales are a reflection of farm supply which could be influenced by market fundamentals, e.g., a contractionary commodity or farmland market could lead to less farmland sales. Secondly, the datasets were collected by FCSA and Peoples Company, but they cover all farmland auctions across the state collected from over 140 auction companies.

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Handbook updates
 For those of you subscribing to the handbook, the following updates are included.

Farmland Value Survey (Realtors Land Institute) – C2-75 (2 pages)
 Please add these files to your handbook and remove the out-of-date material.

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Using the sale activity index data from the ISU Land Value survey, Figure 1 shows how farmland sale activities evolved from 1986 to 2015. Agricultural professionals were asked whether they saw more, less, or the same number of sales in the last 12 months in their primary county compared to the same period a year ago. For example, in the November 2015 survey, 60 percent of the respondents reported less sales in 2015 relative to 2014, just 10 percent reported more sales and 30 percent reported the same level. Based on this data, we constructed a sale activity index as follows:

$$\text{Sale Activity Index} = (\% \text{ Reporting More Sales} - \% \text{ Reporting Less Sales}) * 100 + 100$$

Graphically, a sale activity index below 100 – the dashed line shown in Figure 1 – indicates there are less sale activities and an index greater than 100 suggests more sales compared to a year ago. In addition, the higher the index, the more agricultural professionals saw an increase in sale activities. The solid line in Figure 1 shows that over the past three years, the farmland market has seen a continuous retraction in terms of sales activities. Figure 1 also overlays the sale activity index with the annual percentage change in Iowa land values. This reveals that farmland sale activities tend to fluctuate with the changes in land values: the stronger the land value growth, the more farmland sales. This pattern confirms our earlier conjecture that deteriorating market fundamentals tend to lead to less farmland sales.

Over the past 15 years, there were only 3 years that Iowa farmland market saw a decline: 2009, 2014, and 2015, and these declines were all associated with very low levels of sale activities – below 60. Even in the expansionary periods, the sale activity index tends to increase with an increase in land values, as shown in the early 2000s. In the 2015 ISU Land Value Survey, 77 percent of the respondents predicted Iowa land values will decline in 2016, compared to November 2015. With the Iowa farmland market continuing to move sideways, we expect to see a continuation of less farmland sales.

Figure 1. ISU sale activity index and percentage change in Iowa land value, 1986 – 2015

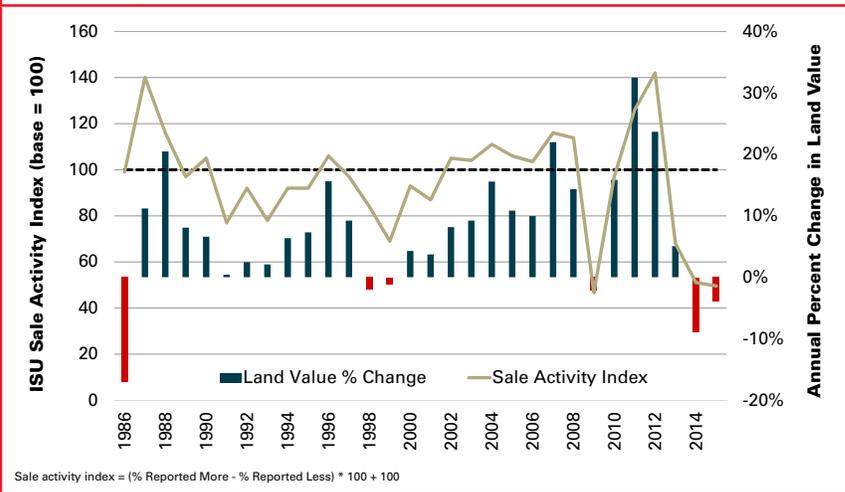
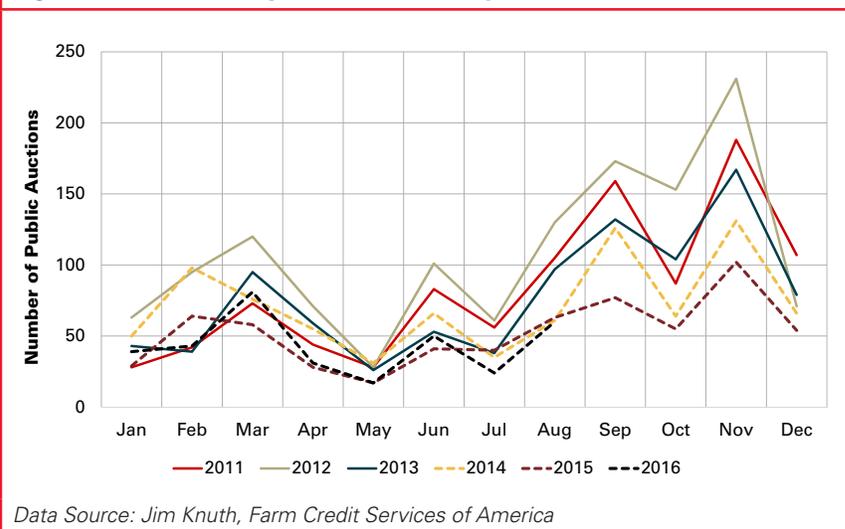


Figure 2. Number of public auctions by month, 2011 – 2016



Data Source: Jim Knuth, Farm Credit Services of America

Figure 2 offers a closer look at the actual farmland transactions in recent years by showing the number of farmland public auctions by month since 2011. This data is compiled and shared by FCSA. This figure shows that the number of public auctions have decreased significantly in recent years from the high levels in 2011-2013. For example, the number of farmland sales in public auctions in November were almost cut in half from more than 200 in 2012 to 100 in 2015. There seems to be a seasonal pattern in farmland auctions: the farmland market is most active from August to November, and then slows down through the spring. This seasonal variability also diminishes when there are less sales overall, as in 2015 and 2016. The first eight months of this year are similar to 2015, and if the pattern holds, we will not likely see a substantial increase in farmland sale activities.

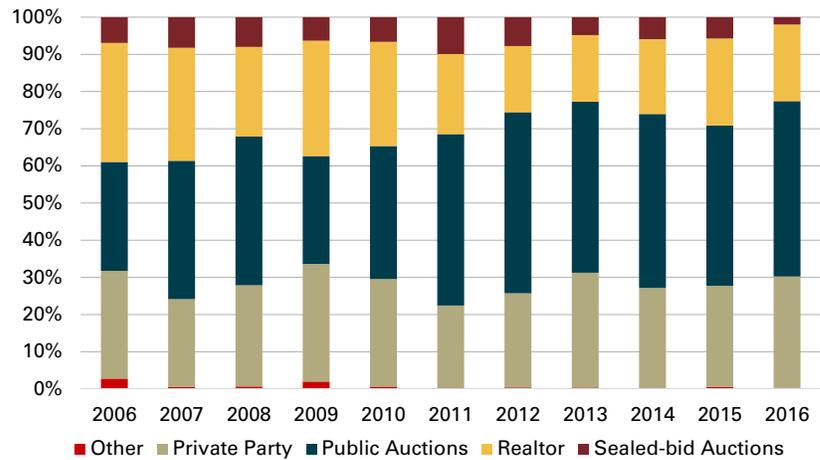
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Public auctions only represent one type of all farmland sales. As a result, it is useful to examine the distribution of all sale types and the full farmland sale activities. Using data from FCSA, Figure 3 shows the distribution of farmland sales by all sales types in the past decade. Public auctions have been the chief mode when farmland is sold. Since 2011, public auctions accounted for 40-50 percent of all farmland sales in Iowa, followed by private party sales and sales facilitated by a realtor. It is interesting that the portion of public auctions increased from around 30 percent of all sales in 2006-2010 to more than 40 percent in 2011-2016. By dividing the number of public auctions by its percentage in all farmland sales from 2006 to 2015, we calculate the number of total farmland sales in Iowa, shown in Figure 4. Note that in 2015, there were about 1,500 farmland parcels sold in Iowa, including about 600 sold in public auctions. It not only represents the third consecutive year that Iowa farmland sales have decreased, but also marks the lowest year in terms of total numbers of farmland sold in Iowa in a decade.

It is often speculated that percent of auctions with no sales fluctuates with price trends; declining commodity and asset prices cause a rise in public auctions with no sales. Figure 5 shows the aggregate percentage of no sales in Iowa farmland auctions from 2005 to early 2016. This shows that in high corn price years of 2010-2012, the percent of no sales is lower, but the relationship is less evident than expected, which is possibly due to less farmland supply in general. However, there may be an increase in public auctions with no sales in the months ahead.

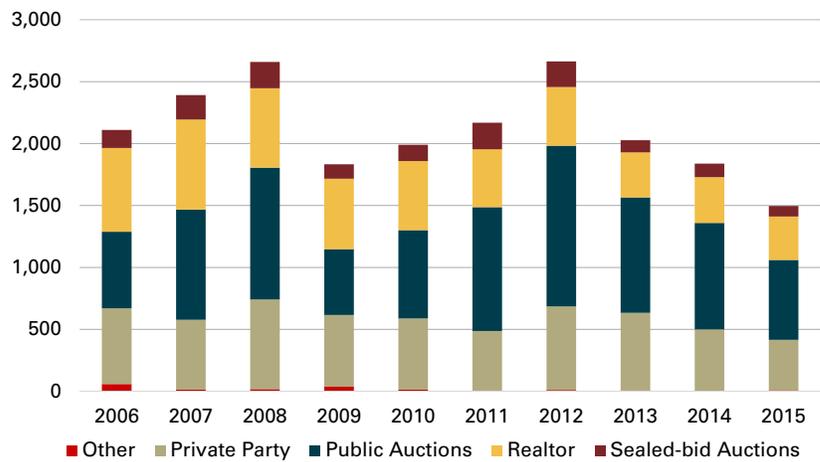
Next we examine the public auction farmland sales by land types using the monthly reports published by Peoples Company. Figures 6a and 6b show the total number and acres of auction

Figure 3. Percent of Iowa farmland sales by sale type, 2006 – 2016



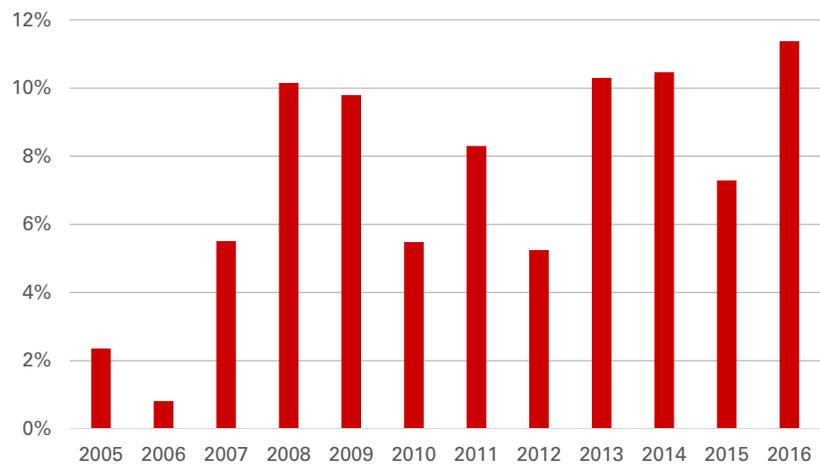
Data Source: Jim Knuth, Farm Credit Services of America

Figure 4. Number of total Iowa farmland sales by sale type, 2006 – 2015



Data Source: Jim Knuth, Farm Credit Services of America

Figure 5. Percent of public auctions with no sales for Iowa farmland, 2005 – 2016



Data Source: Jim Knuth, Farm Credit Services of America

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sales by land types from September 2015 to August 2016. All farmland was split into four land categories: tillable, a combination of tillable land with CRP or pasture land, tillable and timber, and pasture or timber or CRP with no tillable acres. Figure 6a shows that in most months, tillable acres account for the majority of land sold in public auctions, followed by tillable/CRP/pasture and tillable/timber. The fluctuations in the number of public auction sales resembles the trends in the number of auctions of tillable acres. Figure 6b shows that the sales activity picked up in terms of total acreage available for sales in public auctions in August 2016, which might be consistent with the seasonal trends shown in Figure 2. A closer look at Figure 6b shows that farmland offered at auctions in August 2016 had greater acreage sizes than previous months, there was a 20 percent increase in the average acres per sale when compared to the previous three months. Data from available from early September 2016 shows a total of 3,449 acres were offered at auctions, that included 3,009 tillable acres.

Despite the prevalence of corn and soybeans across Iowa, not all districts are equal when it comes to commodity and farmland markets. The northern districts have a higher concentration of livestock and dairy production, while the southern districts have more pasture, CRP, and timber. Figure 7 examines the distribution and heterogeneity in farmland auction sales across all nine crop reporting districts in Iowa from 2006 to 2015. It seems that the relative percentage of crop reporting districts as of the entire state stayed fairly constant over the last decade. Northwest, West Central, Central, and Southeast have consistently accounted for more sales than other districts. 2015 reported a higher percent of public auction sales from the Northeast dairy district, and a slowdown in sale activity in North Central Iowa.

Figure 6a. Number of public auction sales by land type, September 2015 – August 2016

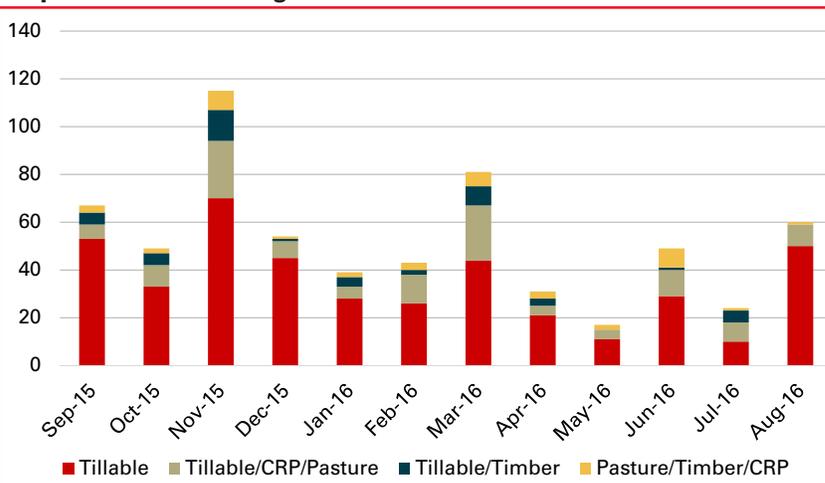
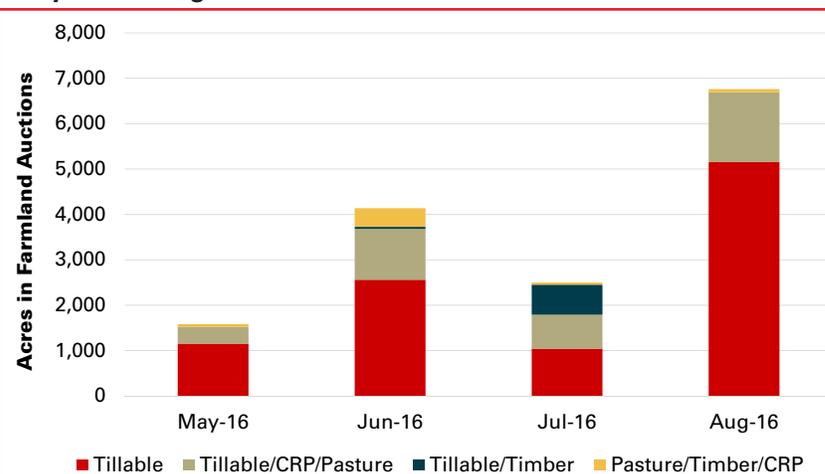
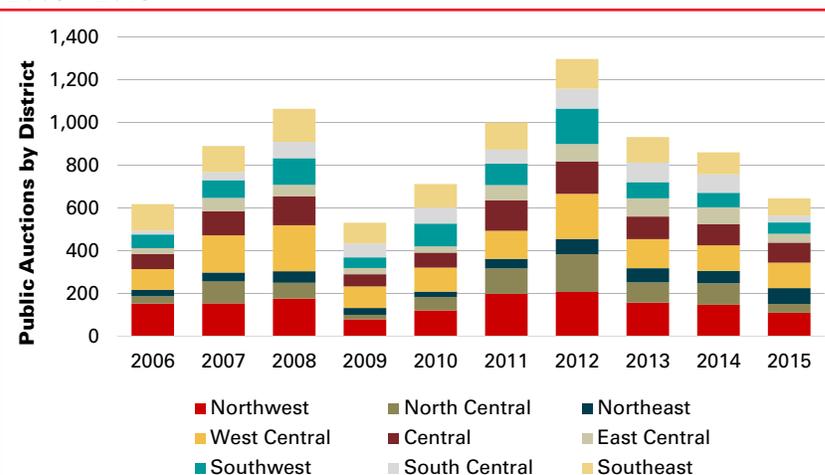


Figure 6b. Acres in public auction sales by land type, May 2016 – August 2016



Data Source: Peoples Company

Figure 7. Percent of public auctions by crop reporting district, 2006 – 2015



Data Source: Jim Knuth, Farm Credit Services of America