

Checking Up on Farm Real Estate Values

Worrying is one thing economists do especially well. For several years, ag economists watched as farm real estate values climbed rapidly and worried about the potential for bad things to happen in the event of a steep decline. Think of the great recession of 2008, largely caused by an artificial bubble in housing markets. With lower farm income concern has grown about potential negative reactions in farm real estate values. Will there be a hard or soft landing?

One way to get a handle on the situation is to compare market values against the long-term trend. See the chart below that shows USDA survey data of farm real estate market values, released in August of each year.

The top line in the chart shows farm real estate market estimates for Missouri. Real estate includes all types of farmland, buildings and dwellings on farms. The lower line in the chart represents six percent annual appreciation since 1950.

Clearly, there is support for six percent annual growth in ag land over the long run. It makes economic sense. The obvious aberration was the boom of the late 1970s that resulted in double-digit annual growth and ultimately a market value that peaked in 1981 at a whopping 2.5 times over the long-term trend. When the bubble burst, land values painfully tumbled for several years until converging with the long-term trend and settling into a more normal growth rate from 1987 to 2004.

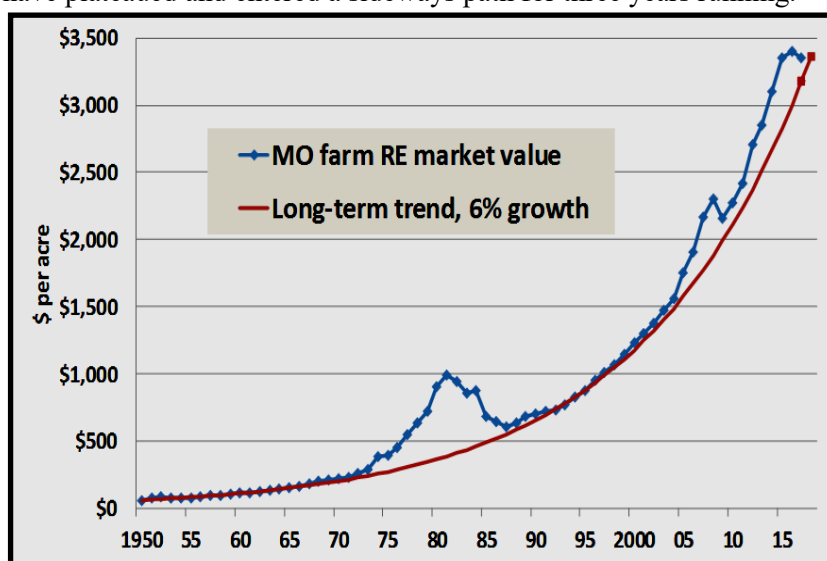
From 2005 to 2015 the land market responded to high farm incomes and low interest rates and ran ahead of the trend. However, the largest deviation from the trend during this period was 1.2 times.

According to the most recent release, real estate values declined by 1.5 percent from the prior year to \$3350 per acre (last point on the top line). The market appears to have plateaued and entered a sideways path for three years running. The current estimate is above the long-term trend for 2017, but slightly below what the trend would “predict” for 2018 (last point on the lower curve).

The news in the latest report is there is no news. A slight decline was not unexpected. The market seems to have slowed enough that the trend has had time to catch up without major disruption in asset values.

We can hope that when August 2018 rolls around the market will again find support from the long term trend and balance sheets will not be detrimentally impacted. A soft landing will be good for just about everybody.

Source: Brent Carpenter, *Agriculture Business Specialist*



Turfgrass Soil Health: What is it and Why is it Important

Plants have been around for 700 million years and fungi around 1,300 million. They have flourished, adapted and survived long before our intervention. It is clear that Food Web (Image on pg. 4) interactions and ecosystem diversity is a measure of soil health that have contributed to this survival mechanism. Management systems that support microbial life such as decomposers (bacteria, fungi and microarthropods) are responsible for nutrient retention in the soil. The interactions of decomposers with predator groups (protozoa, nematodes and certain arthropods) create nutrient cycling and retention in the ecosystem. Advances in technology are improving our understanding of microbial life and various biological functions, which are vital for overall soil health.

Practices associated with production agriculture are similar to the management of sports turf, golf, and home lawns etc., which attempt to mitigate or eradicate problem areas such as insects or diseases. However, those practices can reduce the overall health of the turf ecosystem. As, local, regional, state, and federal regulations are continually evaluating the environmental effects of applying chemical pesticides and fertilizers, best management practices which help sustain good soil health should be considered. Providing a beneficial management decision for plant growth in conjunction with a good environment for microbial activity needs more attention. While there is no one formula and no one solution, our management decisions must continually scrutinize the potential impact on overall soil health. However, soil health is relatively new to agriculture and the turf industry. The challenge is in testing and adjusting different methods onsite to establish site-specific programs.

Management Considerations

Nutrient-based upon soil test – not too much or too little. Turf needs fertility but that only makes up 5% of their diet (digested from both organic and mineral sources) while the other 95% comes from carbon and oxygen in the form of carbon dioxide and hydrogen from water. The organic source is a byproduct of the soil microorganisms which first digest and transform these nutrients into the available form. Plants respond to both excessive and deficient nutrient levels. While they are unable to distinguish the nutrients from biologically released organic source and our chemical soluble source, looking at a balance between the two would reduce the feast to famine scenario of a “spoon feeding”

operation. Higher cation exchange capacity due to formation and presence of stable organic humus may promote greater numbers of soil microorganisms that regulate the availability of nutrient.

pH- acidity can effect turf nutrient uptake and growth as well as potential infestations by weed species. Microbes tend to grow best in upper pH range of 6.5-8.0. Optimal pH will improve the rate of mineralization of nutrient.



Water- too little or too much creates stress.

Moisture is essential for microbe survival. If too high, aeration will be limited and most microbial activity reduced. Various forms of organic matter can hold many times their own weight in water, which can retain more dissolved nutrients that would otherwise be leaching out of the root zone.

Aeration- is essential for all aerobic microorganisms and those involved in nitrogen mineralization. Thatch management – heavy thatch keeps soil too moist, reduces air movement and promotes both insects and disease. Aeration reduces compaction from both foot and vehicle, which allows moisture, fertility, and oxygen through the root zone.

Cut height- management practices that include increased cutting height can reduced herbicide and fungicide applications as the greens are not as stressed compared with cutting at lower heights.

Beneficial insects- healthy turf contains beneficial insects such as ground beetles, predatory and parasitic wasps, non-pest ants. Some prey upon harmful species or aid in recycling nutrients in soil as primary decomposers. Unnecessary pesticides reduce beneficial insects.

Pests- Pest create damage causing many human concerns. They can range from chiggers and ticks to raccoons in garbage cans or deer trails across the course. Treating the pest symptom may resolve the current visible issue but further investigation might lead to discovery of an imbalance in the ecosystem. Pesticide side effects can create an imbalance in the beneficial rhizosphere microbial pool. While plants are not defenseless, healthy plants in conjunction with soil organisms are able to withstand greater pest pressures.

Source: Dr. Todd Lorenz, Agronomy Extension Professional

Livestock Identification

As long as civilizations have maintained herds of livestock, there has been a need of identifying them. The reasons for identification of our cattle have grown over the years from a simple form of proof ownership to include record keeping, marketing, tracking transport animal health to name a few. Each method of identification has advantages and drawbacks and because of that, it is often desirable to have our cattle identified by more than one means.

Herd record keeping: Assigning individuals within the herd some form of marking that is unique to them is the first vital component of a good recordkeeping system; without identification, it is rather difficult to keep detailed records. Records on calving dates, calf sire and dam, vaccination and treatment records, breeding, and performance traits such as weaning weights are all components of a well-rounded record keeping and management system. Unfortunately, recording data is the easy part of the equation. Without evaluating your records periodically and using the knowledge mined from them to make management, breeding and culling decisions the information is trivial.

Ownership: Most everyone has had an experience or two where your cattle got out onto a neighbor or theirs got onto you; having some sort of unique way of identifying them can help them get back to the right home. In the event of theft, branding is the only form of ownership identification that is legally binding.

Forms of livestock identification can easily be broken into two distinct categories, permanent and temporary. As the name would indicate, permanent identification stays with the animal until death. Permanent methods of cattle identification would include branding, tattoo, and notching. Metal identification tags such as used for brucellosis vaccination or trichomonis identification could be considered a permanent means of identification. The numbers stamped on the metal tags are unique to the animal and recorded at the federal level. Some form of permanent identification is desirable for ownership purposes.

Brand: In order to be legally binding, a brand must be registered with the Missouri Department of Agriculture, have at least 2 characters and be at least 3 inches in diameter. Brands are allowed in one of three places on either side of the animal, the shoulder, the center of the rib cage, and the hip. In Missouri, it cost \$35 to initially register a brand and a \$20 maintenance fee is required every five years. Before registering a brand, put some thought into the design of the brand, avoid complex designs as they are more likely to result in a blotched, difficult to read brand.

With branding, most envision an era gone by with cowboys dragging cattle to the fire, quickly pulling the branding iron off and slapping it of the side of the calf. Fortunately, most have adapted newer methods, utilizing an electric branding iron and animals are branded while restrained in the squeeze chute. The process is much less stressful on both the cattle and the people doing the work; electric irons take less time to heat and often leave a more legible mark on the calf.

Over the last twenty years, the freeze brand has gained in popularity as a less painful alternative to the fire brand. With freeze branding, copper irons chilled in either liquid nitrogen

or a dry ice and alcohol solution are used. If done properly, the color pigment in the affected hair follicles is destroyed, leading to the hair growing back white. Unfortunately, on lighter colored cattle the white doesn't show up as well. You can hold the irons on longer and create a brand that resembles a hot brand. The process really becomes more of an art than a science and requires some experience to get it right every time. It is even common to freeze brand animal identification numbers onto the hip of the breeding herd because they are easily visible at a distance.

Marketing tool: The brand can become your "trademark" for other endeavors as well. Society today puts a high value on knowing where their food comes from and sourcing locally from known sources. Your brand could be a part of that marketing outlet if you chose to go down the direct marketing road.

Ear tags: inexpensive, easily applied and quite visible under most circumstances. The biggest drawbacks to ear tags is the fact that they are nearly as easy to remove as they are to insert. They can get caught on fences, limbs, and other obstacles in the pasture and ripped out. In the event of theft, a thief can quickly cut the old tags out and all of a sudden, your form of identification is gone. Besides the chance of loss, ear tags will wear out over time and the numbers on them fade away. The newer laser etched tags and those that engrave the identifying characters into the surface tend to remain visible longer.

One of the most important things to remember about ear tags is to devise a system of tagging that makes sense and has value to you. Develop some sort of system that can identify the age of individual animals. Some have a system where they use a different color of tag every year, others use a numbering system where the first number coincides with the year of birth such as 701 for the first calf born in 2017. Regardless of the system, make sure you understand it.

Identification of the animal should happen as early in the calf's life as possible. There are a couple of reasons why we want to have them individually identified at a young age. Mostly, it comes down to making sure you get it right. The likelihood of getting it wrong when the calf is fresh is much lower than trying to pair up cows and calves when they are older. It can be more stressful as the calves get a little bigger and have more energy and strength as well. Branding on the other hand can wait until a more convenient time when you are getting the cattle up and running them through the chute for other reasons.

Identifying your animals is certainly worth the small added cost associated with the process and can pay you back in dividends later on down the road. To register a brand, go to the Missouri Department of Agriculture's website and looking through the brand requirements and regulations. The brand book is all online and can be found and searched through at the same website <http://agriculture.mo.gov/animals/livestockbranding.php>.

Source: *Andy McCorkill, Livestock Specialist*



The Soil Food Web

