IMPACTS OF THE GREAT RECESSION AND DROUGHT on the Environmental Horticulture Industry

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The environmental horticulture industry is intricately connected to the national, regional, and local economy, as plant and turfgrass sales ebb and flow with economic conditions. Turfgrass, for instance, is intrinsically tied to the overall U.S. economy because a majority of the industry depends on new housing builds for demand. As the economy increases and construction of new housing increases, so does investment in the environmental horticulture industry. This article is divided into three parts.

First, because the environmental horticultural industry is tied to the broader economy, we discuss the general U.S. economy.

Next, we discuss the general agricultural industry to separate how environmental horticulture differs from the general agricultural economy.

Lastly, we consider how the general U.S. and agricultural economies have impacted the recovery of the environmental horticulture industry since the Great Recession.

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General U.S. Economy

Discussion of the impact of recession and drought on the environmental horticulture industry must be preceded by discussion of the Georgia economy as it relates to the Great Recession, which began at the end of 2007 and lasted through mid-year 2009. Termed the "Great Recession" because of its historic length and severity, this economic event is largely identified with the affiliated housing crisis, during which home prices dropped by an average of 30%. After decades of stable or increasing prices in the housing sector, this calamity was facilitated by sub-prime mortgages made by banks that caused the housing bubble to burst. This, in turn, led to asset prices declining, tightening of credit that stalled investment and led to higher unemployment, weaker financial markets, decreasing household net worth, and lower price levels throughout the economy.

The effects of the recession on the Georgia economy can be seen in Figure 1 where housing starts fell from over 95,000 units (in 2005) to just over 15,000 units (in 2009). This represents an 84% reduction in the number of new housing starts during this four-year period. Another economic indicator, unemployment claims, rose sharply during this same time period (Figure 2). Unemployment claims rose from just over 3,000,000 new claims in 2007 to over 6,000,000 in 2009. In Georgia, the unemployment claims grew from 60,000 in 2007 to 175,000 in 2009 (Figure 3), an even greater percentage increase. This severely reduced the savings and purchasing power of households across the nation.

Although the Great Recession officially ended in 2009, recovery from the recession has been slow since the housing bubble burst. Housing starts in Georgia have not returned to pre-recession levels. Currently, there are about 40,000 housing starts per year, near levels observed in 1991 (Figure 1). U.S. unemployment claims have only recently returned to pre-recession levels while the Georgia unemployment rate is on par with pre-recession levels (Figures 2 and 3). The U.S. Federal Reserve Bank has kept interest rates at historically low levels following the housing crisis. This policy was designed and intended to spur investment, resulting in a recovery in employment.

HOUSING STARTS | GEORGIA, 1985-2017

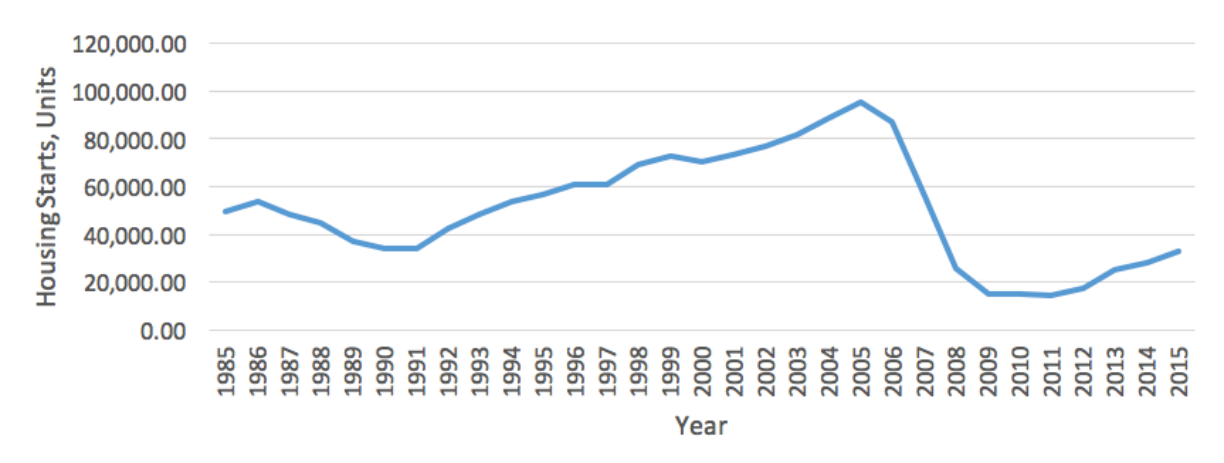

Figure 1. Housing starts in Georgia, 1985-2015. Source: Prepared by the Selig Center for Economic Growth, based on Bureau of the Census, Construction Statistics Division: Housing Units Authorized by Building Permits (C-40).

UNEMPLOYMENT CLAIMS | UNITED STATES

Figure 2. Unemployment claims in the United States, 1984-2016. Source: Federal Reserve Bank of St. Louis.

UNEMPLOYMENT CLAIMS | GEORGIA

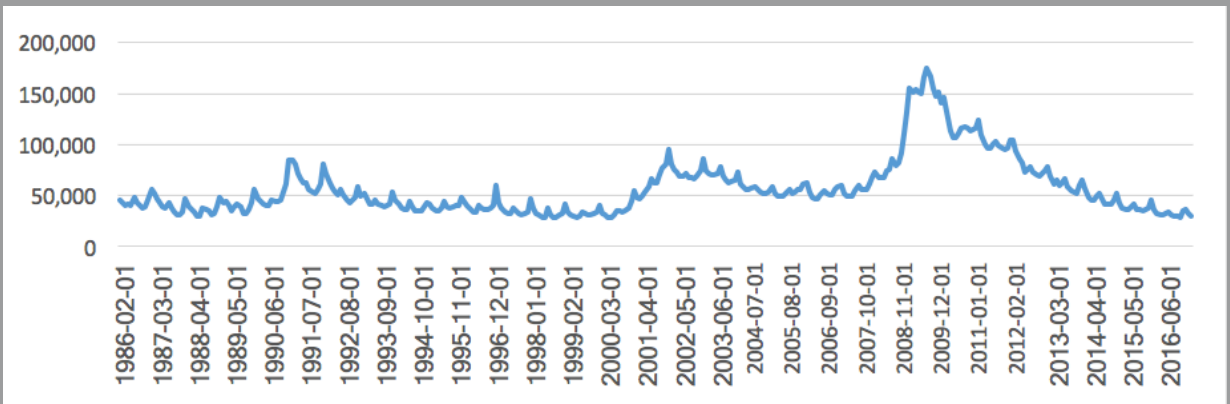

Figure 3. Georgia unemployment claims, 1986-2016. Source: Federal Reserve.

General Agricultural Economy

While the overall U.S. economy continued to struggle in the wake of the Great Recession, the agricultural economy saw record profits in the years following the recession, with profits declining up through 2017. Figure 4 shows the average net farm income for all U.S. farms according to the United States Department of Agriculture (USDA) Agriculture Resource Management Survey (ARMS). Along with the rest of the economy, net farm income began to fall after 2007. However, it quickly recovered and saw record income in 2012, 2013, and 2014. High net farm incomes during these years were driven by high commodity prices during these same time periods. Figure 4 also shows that national high net farm income was driven by corn, cotton, peanut, and tobacco farms.

NET FARM INCOME | UNITED STATES

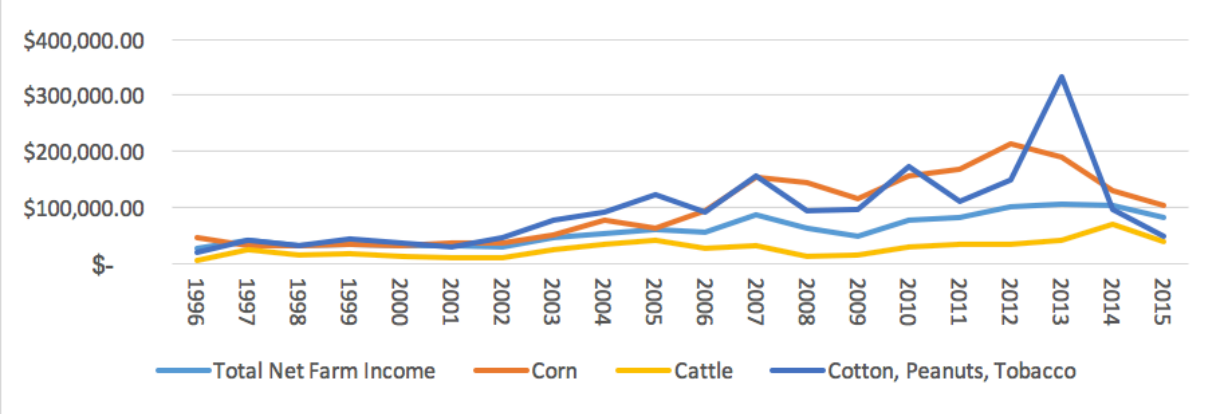

Figure 4. U.S. net farm income by production specialty, 1996-2015. Source: USDA, Economic Research Service, Agricultural Resource Management Survey.

NET FARM INCOME | GEORGIA

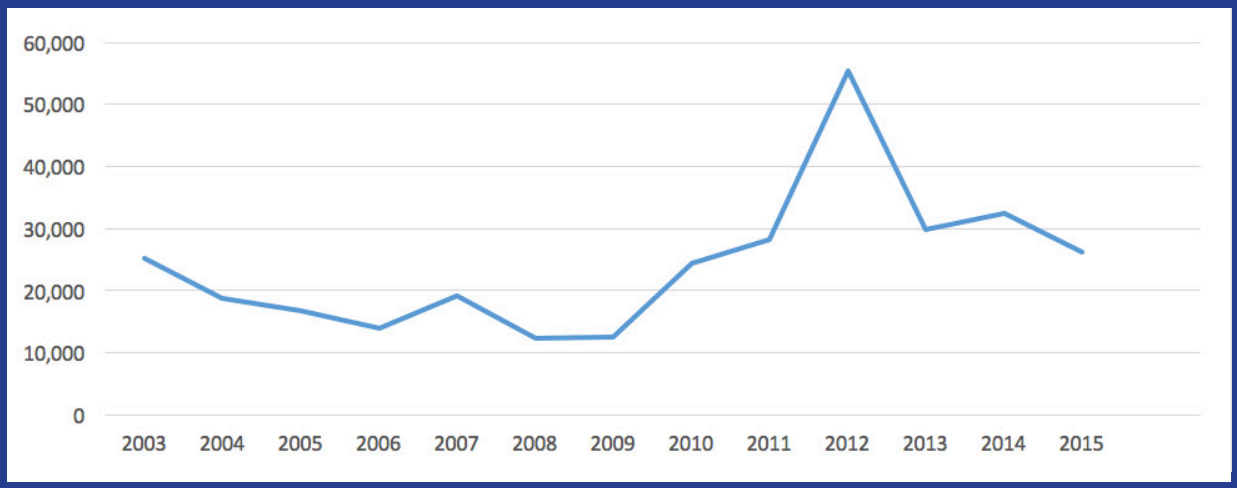

Figure 5. Georgia Net Farm Income, 2003-2015. Source: USDA, Economic Research Service, Agricultural Resource Management Survey.

The same factors that have driven the overall U.S. farm economy have driven Georgia's net farm income. Three of Georgia's primary crops, corn, cotton, and peanuts, were very profitable during the 2008 to 2012 time period, resulting in a tripling of net farm income during the period (Figure 5). Incomes have fallen from the 2012 high but remain well above the 2008 and 2009 figures. In terms of farm income, farmers saw little impact from the U.S. recession immediately following the downfall.

These numbers are important to the environmental horticulture industry because the high net farm incomes that occurred immediately following the Great Recession increased land and input prices. The increasing prices for land and inputs made it costlier for environmental horticulture operations to produce output and slowed recovery and growth.

Environmental Horticultural Industry

The environmental horticulture market is most often considered a maturing market in which there is increasing competition, intensifying rivalry amongst firms, and capturing of market share from other firms (Hall, 2007; Campbell and Hall, 2010). Leading up to the Great Recession, the industry was booming due to economic growth. Increased housing starts (Figure 3) and rising household incomes were especially important to the growth of the environmental horticulture industry. However, just before the recession began in 2007, Georgia experienced a major drought that limited the watering of lawns and landscapes and increased costs at the business level.

The recession and drought delivered a double whammy to the industry, causing farm gate values and production acreage, as collected by the Center for Agribusiness and Economic Development, to fall. As shown in Figure 6, the Georgia economy was growing until 2007, but fell below 2007 levels until 2013. This trend is shown by the line representing the Georgia State Product, which is the value of all output the Georgia economy produces. The Georgia agriculture farm gate value was impacted marginally by the recession and drought, as growth has been above 2007 levels with the exception of 2009. However, the environmental horticulture industry is still feeling the pain of the recession and drought in the post-recession period, bottoming out at 66% of 2007 levels in 2013 ($853 million in 2007 vs. $565 million in 2013, both adjusted to 2015 dollars). Even with the growth in the industry since 2013, it is still only at 91% ($779 million) of the 2007 farm gate value.

With respect to subsectors of the environmental horticulture industry, the greenhouse, field nursery, container nursery, and turfgrass areas were all impacted to various degrees. Turfgrass was hit hardest in both production acreage and farm gate value. Greenhouse square footage declined from 2008 to 2010, had a slight rebound in 2011, then trended downward through 2014 (Figure 7). In 2015, production acreage rebounded to above 2007 levels with 22.6 million square feet of area under a greenhouse. Container and field nursery production acres decreased from 2007 through 2011-2012 and have trended marginally upward since 2012. In 2015, both container and field nursery production were approximately 78% and 75% of 2007 production acres (6,912 acres of field nursery and 3,699 acres of container nursery), respectively. The turfgrass industry lost 57% of its acreage from 2007 to 2012 (from 50,535 acres to 21,678 acres), but recovered to 51% of its 2007 acreage (25,657 acres) in 2015.

The recession and drought also took a toll on the farm gate values for each subsector of the environmental horticulture industry. As can be seen in Figure 8, the greenhouse sector seemed to be impacted the least by the recession and drought, while the turfgrass sector was impacted the most. For instance, the greenhouse sector saw an 18% drop in farm gate value from 2007 ($306 million) to 2013 ($250 million). On the other hand, the field and container nursery sector saw drops of 39% ($115 million in 2007 vs. $70 million in 2012) and 40% ($245 million in 2007 vs. $146 million in 2012), respectively. Turfgrass saw a large farm gate value decrease of 58% from 2007 ($186 million) to 2011 ($78 million). The greenhouse sector has fully recovered to pre-drought and recession levels, while field nursery, container nursery, and turfgrass have only partially recovered from their 2011 and 2012 lows, remaining between 59% and 78% of their 2007 values.

ECONOMIC VALUE | COMPARED TO 2007

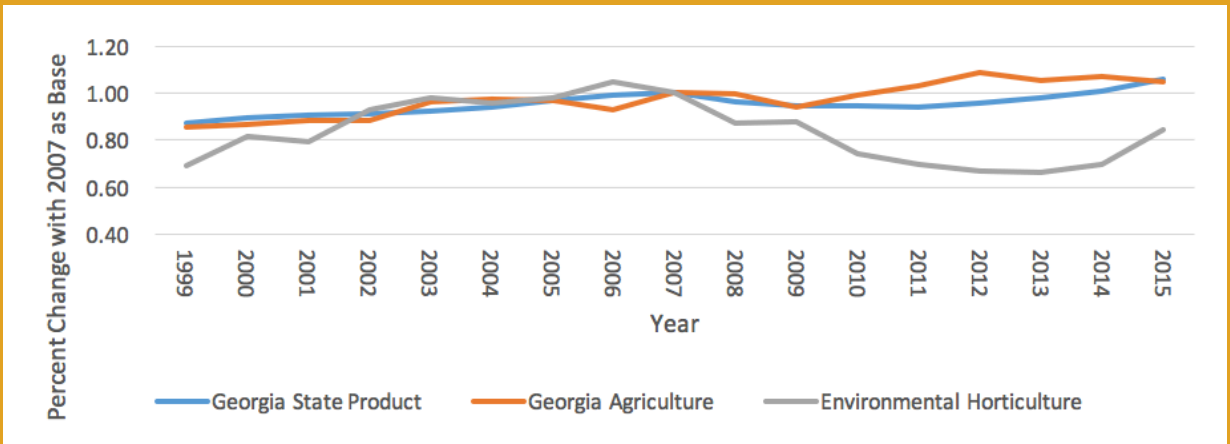

Figure 6. Growth/loss of value for the state of Georgia, Georgia agriculture, and the environmental horticulture industry compared to 2007. With 2007 as the base year, the value for average prices in 2007 are set to 1.00. Every movement above or below 1.00 indicates a percentage change. For example, a value of 0.85 during 2010 means average prices were 15% lower in 2010 than the average prices in 2007.

PRODUCTION AREA BY ENVIRONMENTAL HORTICULTURE SUBSECTOR | COMPARED TO 2007

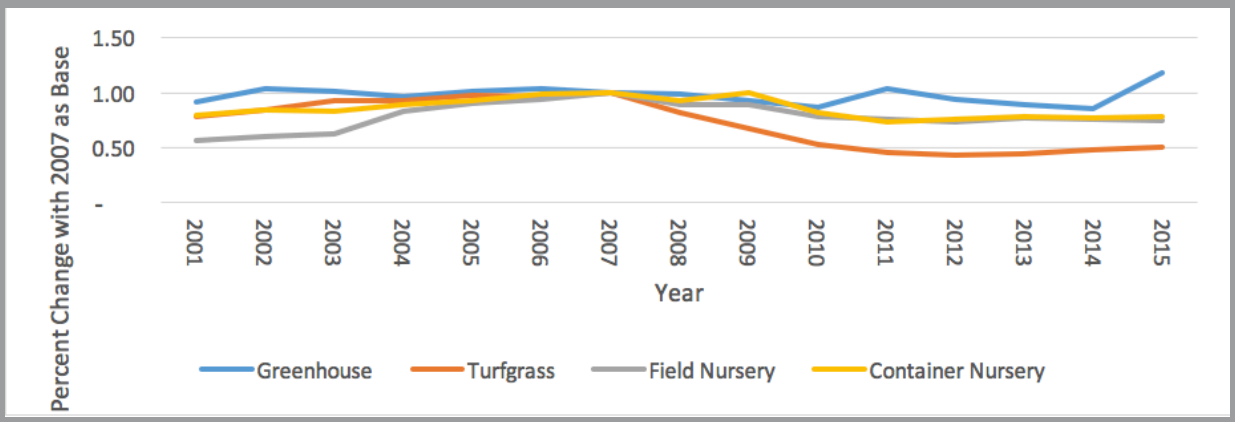

Figure 7. Growth/loss of production area for subsectors of the environmental horticulture industry in Georgia compared to 2007. With 2007 as the base year, that means the value for average prices in 2007 are set to 1.00. Every movement above or below 1.00 indicates a percentage change. For example, production area of turfgrass in 2010 was 53% (0.53) of the turfgrass production area in 2007 or 47% lower than 2007 levels.

FARM GATE VALUE BY ENVIRONMENTAL HORTICULTURE SUBSECTOR | COMPARED TO 2007

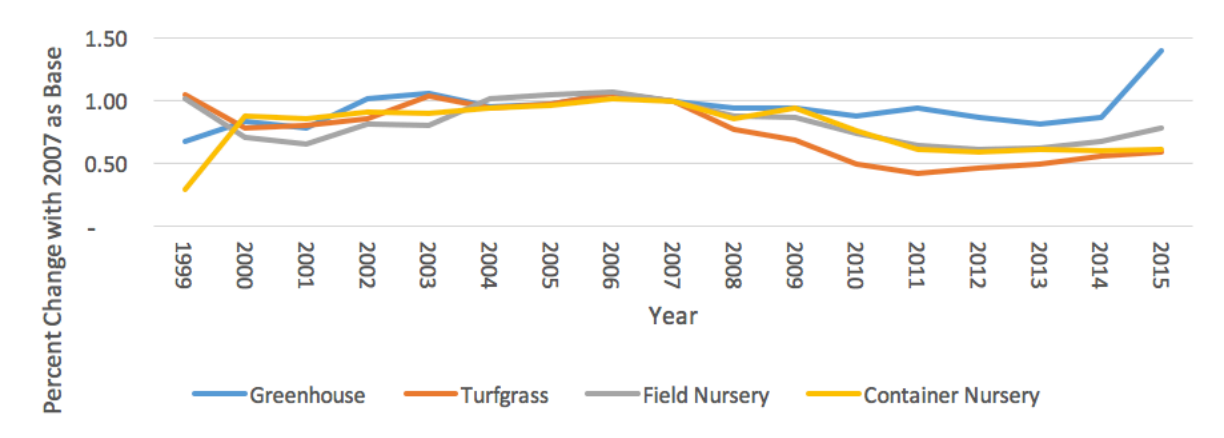

Figure 8. Growth/loss of farm gate value for subsectors of the environmental horticulture industry in Georgia compared to 2007. With 2007 as the base year, that means the value for average prices in 2007 are set to 1.00. Every movement above or below 1.00 indicates a percentage change. For example, a value of 0.49 during 2010 for turfgrass means farm gate values for turfgrass were 51% lower in 2010 than the farm gate values in 2007.

What is apparent from the production numbers is that many firms went out of business or experienced significant contraction after the recession and drought. No annual statistics are available to indicate the exact loss; however, anecdotal evidence and limited data from the USDA Census of Agriculture indicate that the number of sod farms in Georgia decreased by 24% from 2002 to 2012 with average sod farm size decreasing by 25%. However, the number of sod farms and average sod farm size are off 32% and 28% from 2007 to 2012, respectively.

In comparison, the number of U.S. turf farms decreased by 8% with a 15% decrease in average farm size from 2007 to 2012. On the greenhouse and nursery side, the number of farms in Georgia decreased by 28% from 2002 to 2012 with a 5% reduction in average farm size. Meanwhile, U.S. production was off only 10% during the same time period with average farm size shrinking by 15%.

Georgia firms have had to adapt to changing economic conditions either through automation or changes in hiring practices. Using data from the USDA Census of Horticultural Specialties for 2009 and 2014 it is apparent that Georgia firms are moving from hiring long-term (150 days of employment or more per year) to shorter-term workers (less than 150 days of employment per year). Overall, employment was up 12% (equivalent to 2 workers per firm) from 2009 to 2014, but long-term employees were down 37% (equivalent to 2.6 workers per firm) with short-term employees hiring up 91% (equivalent to 5.6 workers per firm). These statistics show how firms that survived the recession and drought are changing their business practices to maintain or increase competitiveness.

PRICE BY ENVIRONMENTAL HORTICULTURE SUBSECTOR | COMPARED TO 2007

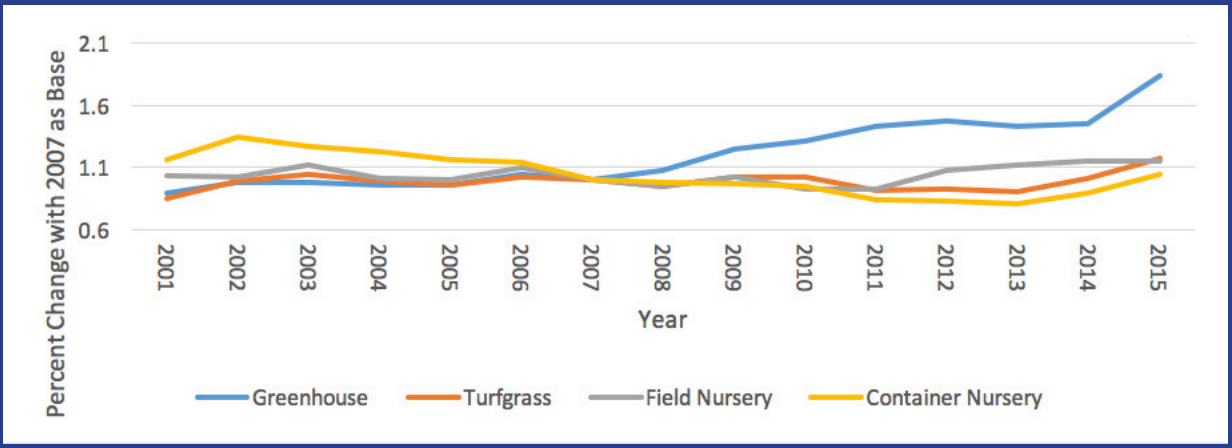

Figure 9. Growth/loss of prices per unit for subsectors of the environmental horticulture industry in Georgia compared to 2007. Every movement above or below 1.00 indicates a percentage change. Every movement above or below 1.00 indicates a percentage change. For example, a value of 1.07 for field nursery in 2012 means average prices were 7 percent higher in 2012 than the average prices in 2007.

IMPACT OF RECESSION AND DROUGHT ON THE ENVIRONMENTAL HORTICULTURE INDUSTRY

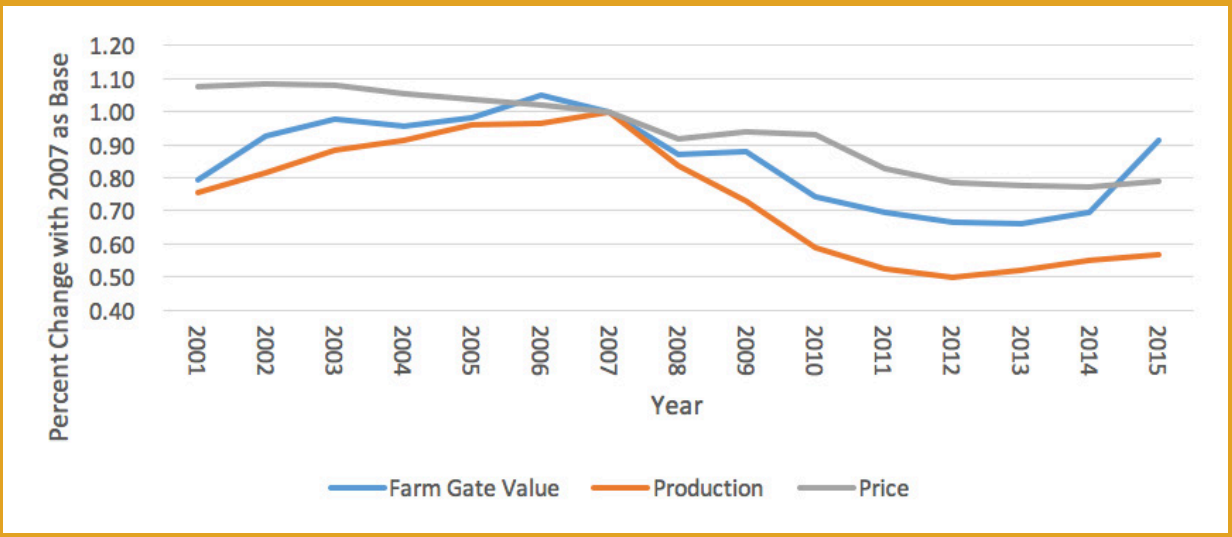

Figure 10. Growth/loss of various measures of the environmental horticulture industry in Georgia compared to 2007. With 2007 as the base year, that means the value for average prices in 2007 are set to 1.00. Every movement above or below 1.00 indicates a percentage change. For example, a value of 0.74 for farm gate value during 2010 means farm gate values were 26% lower in 2010 than the farm gate values in 2007.

Firms that survived this period are seeing increasing demand for their products. One measure of this is the price per unit received by each of the subsectors. In contrast to production and farm gate number, prices fell only slightly on average with each sector remaining at 80% or above the 2007 price per unit (Figure 9). Greenhouse prices per square foot contrast with the other subsectors as they have increased continually from 2007 through 2015, with 2015 prices at over 80% of their 2007 levels. This could be caused by strong demand or low supply, but is most likely caused by a combination of strong demand and low supply. Turfgrass, field nursery, and container nursery have also experienced increasing prices with prices reaching 2007 levels in 2014 and 2015.

The environmental horticulture industry as a whole has experienced both good and bad times over the past two decades. Since the recession and drought of the mid-2000s, production area has decreased considerably, while prices in the industry have remained relatively constant (Figure 10). Given that prices have remained relatively stagnant since 2007, firms will need to focus on increasing demand for environmental horticulture goods to increase their profitability. By increasing demand, production area can once again expand to pre-recession levels which will allow firms that are efficiently utilizing their inputs to increase their profitability. This will also be helped by stagnant incomes in the general agricultural sector that will help cheapen land costs and input costs.

Conclusion

The environmental horticulture industry in Georgia and throughout the U.S. is directly tied to the national, state, and local economies. Home starts are a primary driver and proxy for how the industry is performing. As home starts increase, the industry can expect continued growth as plants and sod are installed into new and existing landscapes.

Further, prices within the industry fell less than production acres and square footage. The loss of production due to the recession and drought of the mid-2000s was caused by less efficient firms either being eliminated from the market or becoming more efficient, most likely through decreasing costs. Given the upturn in the economy after the end of the recession, firms should remain wary of taking risks that expose them to loss of efficiency within their organizations. Firms should continue to strive to increase efficiency through lower costs while evaluating new markets or improving existing markets to increase revenues.

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