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Tennessee Grain Overview

Background

Based on 2011 U.S. crop production, Tennessee ranks 17th in corn grain production (96.3 million bushels), 17th in soybean production (40.0 million bushels), and 24th in winter wheat production (21.4 million bushels). Harvested acreage for these crops for this timeframe were 1.2 million acres for soybeans, 0.7 million acres for corn, and 0.3 million acres for wheat. Cash receipts for 2011 totaled \$461.3 million for soybeans, \$456.1 million for corn, and \$139.6 million for wheat. Using United States Department of Agriculture's (USDA) National Agricultural Statistical Service

(NASS) regions designations for the state (Figure 1), the top three counties for corn production in 2011 were Obion, Gibson, and Weakley counties located in the Delta and West Tennessee regions in the north-west corner of the state. For soybeans, the top three counties, again located in the northwestern corner of the state, were Obion, Dyer, and Gibson counties. For wheat, Gibson, Robertson, and Haywood counties were the top three (Gibson and Haywood counties located in the West Tennessee regions; Robertson located in the Western Rim region) (Tennessee Department of Agriculture, 2012).

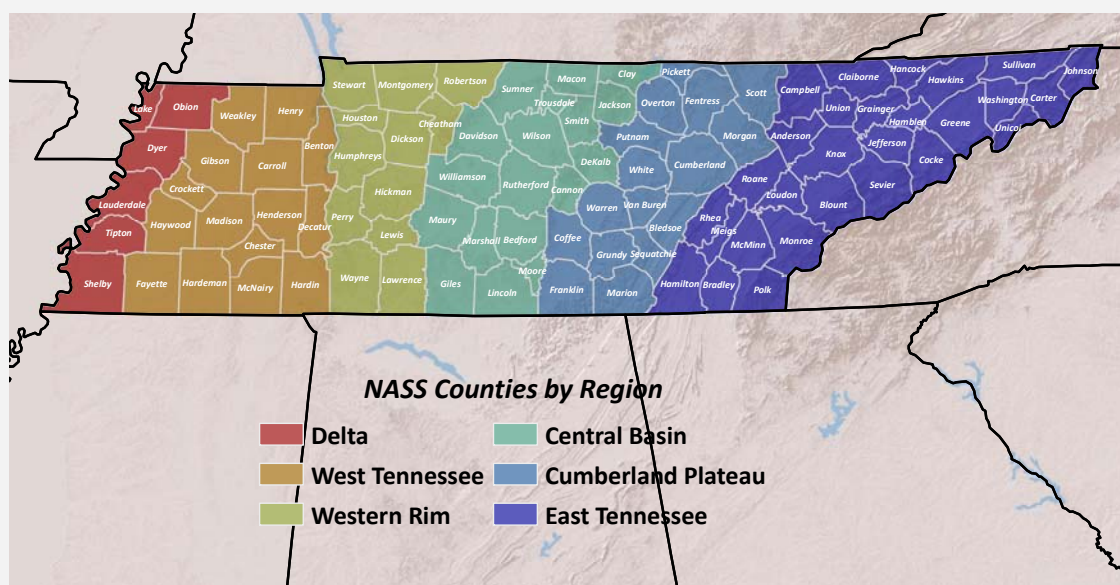


Figure 1. Highlighted National Agricultural Statistical Service Regions with Specified Counties for Tennessee

Historical Grain Production

Corn

Figures 2 and 3 detail harvested acres and production in bushels for corn by NASS regions between 1955 and 2012. For harvested acres, the West Tennessee and Delta regions had the largest harvested acres

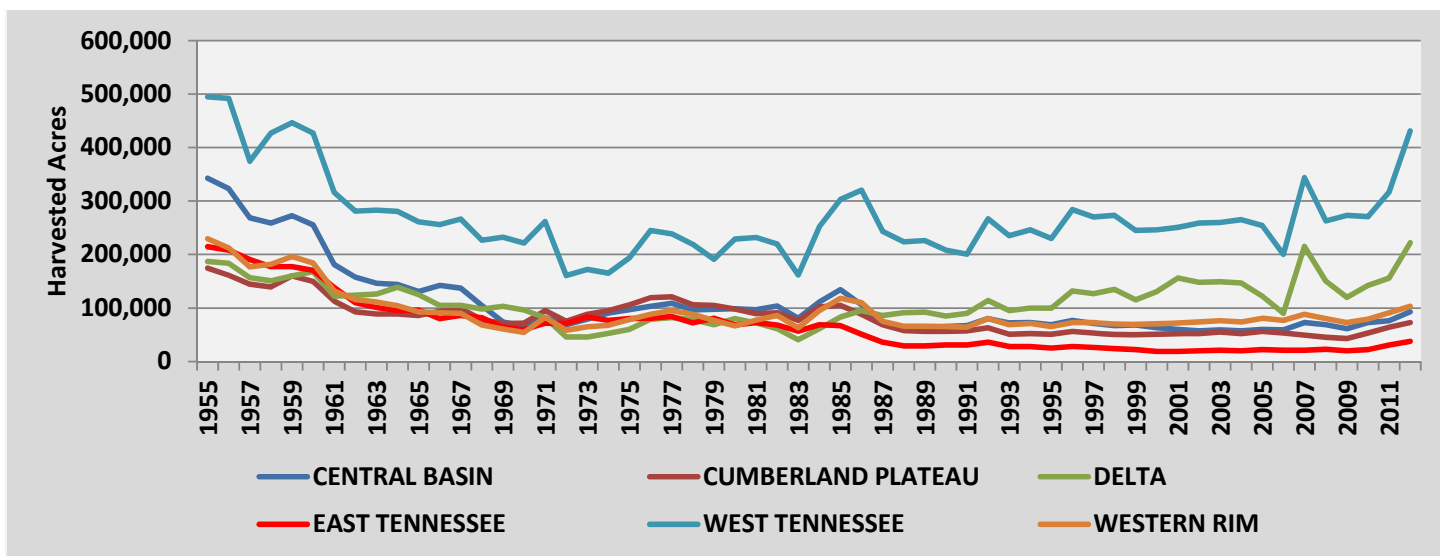


Figure 2. Harvested Corn Acres by NASS Region for Tennessee, 1955-2012

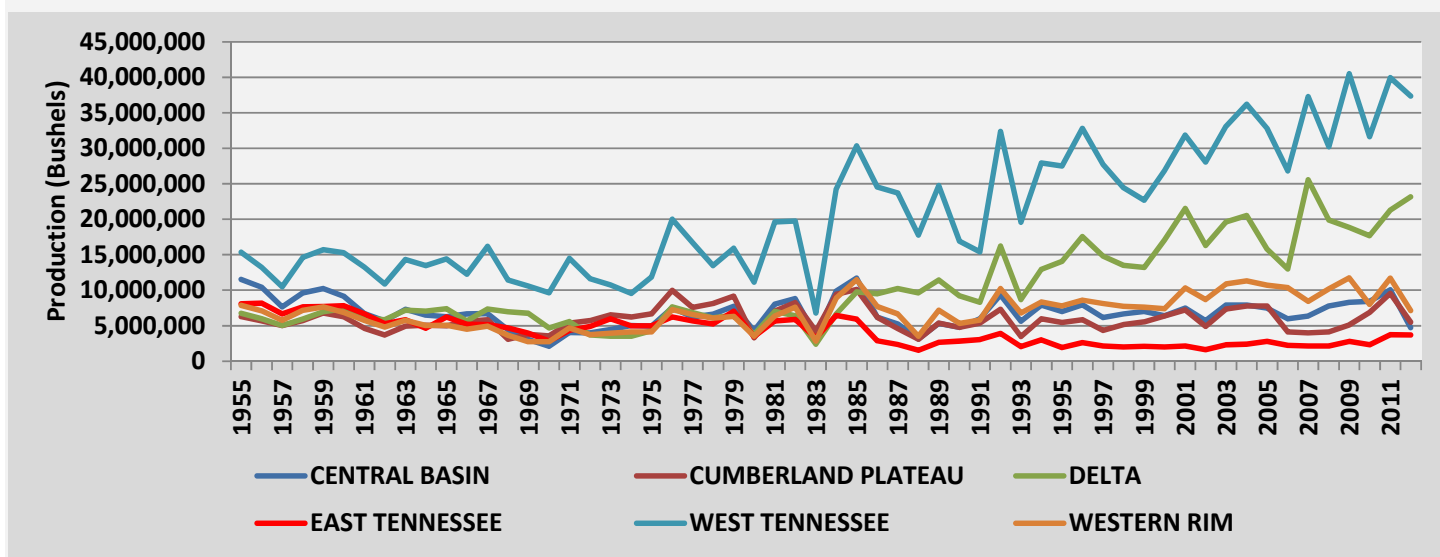


Figure 3. Corn Production by NASS Region for Tennessee, 1955-2012

for the time period evaluated. The East Tennessee region had the lowest acres harvested. Likewise, for corn production, the West Tennessee and Delta regions had the largest production and East Tennessee region had the lowest. For corn acres harvested between 1955 to 2012, the largest harvested acres for all the regions except the Delta region in the state was in 1955. For the Delta region, the largest harvested acres occurred in 2012. Likewise, for corn production during this timeframe, the largest production occurred in 1985 for both the Central Basin and Cumberland Plateau regions, 2007 for the Delta region, 1956 for the East Tennessee region, and 2009 for both the West Tennessee and Western Rim regions. Tabular data detailing harvested corn acres and production between 2000 and 2012 are presented in Tables 1 and 2 (USDA/NASS, 2013).

Soybeans

Figures 4 and 5 detail harvested acres and production in bushels for soybeans by NASS regions between 1947 and 2012. For harvested acres, the West Tennessee and Delta regions had the largest harvested acres for the time period evaluated. The East Tennessee region had the lowest acres harvested. Likewise, for soybean production, the West Tennessee and Delta regions had the largest production and the East

Table 1. Corn Harvested Acres by NASS Region for Tennessee, 2000-2012

Year	Cumberland			East	West	Western Rim
	Central Basin	Plateau	Delta	Tennessee	Tennessee	
Harvested Acres						
2000	63,000	51,000	131,000	19,000	246,000	70,000
2001	60,000	52,000	156,000	19,000	251,000	72,000
2002	57,000	52,000	148,000	20,000	259,000	74,000
2003	59,000	55,000	149,000	21,000	260,000	76,000
2004	57,000	52,000	147,000	20,000	265,000	74,000
2005	60,000	56,000	122,000	22,000	254,000	81,000
2006	59,000	53,000	90,000	21,000	200,000	77,000
2007	73,000	49,000	215,000	21,000	344,000	88,000
2008	69,000	45,000	150,000	23,000	263,000	80,000
2009	61,000	43,000	120,000	20,000	273,000	73,000
2010	73,000	53,000	142,000	22,000	271,000	79,000
2011	76,000	64,000	156,000	31,000	317,000	91,000
2012	93,000	73,000	222,000	38,000	431,000	103,000
Average	66,154	53,692	149,846	22,846	279,538	79,846

Table 2. Corn Production by NASS Region for Tennessee, 2000-2012

Year	Cumberland			East	West	Western Rim
	Central Basin	Plateau	Delta	Tennessee	Tennessee	
Bushels						
2000	6,400,000	6,350,000	17,100,000	2,020,000	26,850,000	7,400,000
2001	7,500,000	7,210,000	21,530,000	2,145,000	31,830,000	10,305,000
2002	5,695,000	4,880,000	16,320,000	1,620,000	28,060,000	8,695,000
2003	7,910,000	7,370,000	19,620,000	2,330,000	33,100,000	10,890,000
2004	7,920,000	7,780,000	20,510,000	2,410,000	36,180,000	11,300,000
2005	7,500,000	7,800,000	15,810,000	2,770,000	32,780,000	10,690,000
2006	5,975,000	4,100,000	13,000,000	2,245,000	26,800,000	10,380,000
2007	6,370,000	3,980,000	25,570,000	2,125,000	37,265,000	8,430,000
2008	7,785,000	4,140,000	19,880,000	2,135,000	30,200,000	10,200,000
2009	8,300,000	5,100,000	18,860,000	2,800,000	40,500,000	11,760,000
2010	8,420,000	6,875,000	17,665,000	2,300,000	31,635,000	7,985,000
2011	10,055,000	9,540,000	21,295,000	3,746,000	39,944,000	11,705,000
2012	4,733,000	5,495,000	23,170,000	3,680,000	37,382,000	7,140,000
Average	7,274,077	6,201,538	19,256,154	2,486,615	33,271,231	9,760,000

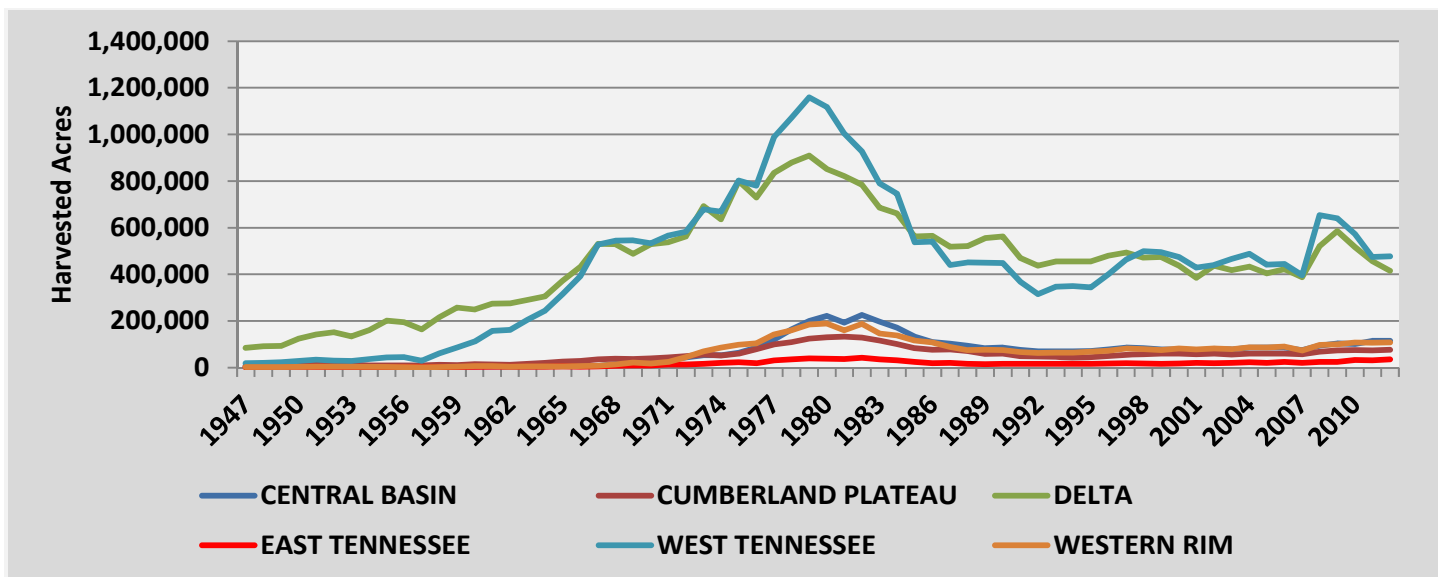


Figure 4. Harvested Soybean Acres by NASS Region for Tennessee, 1947-2012

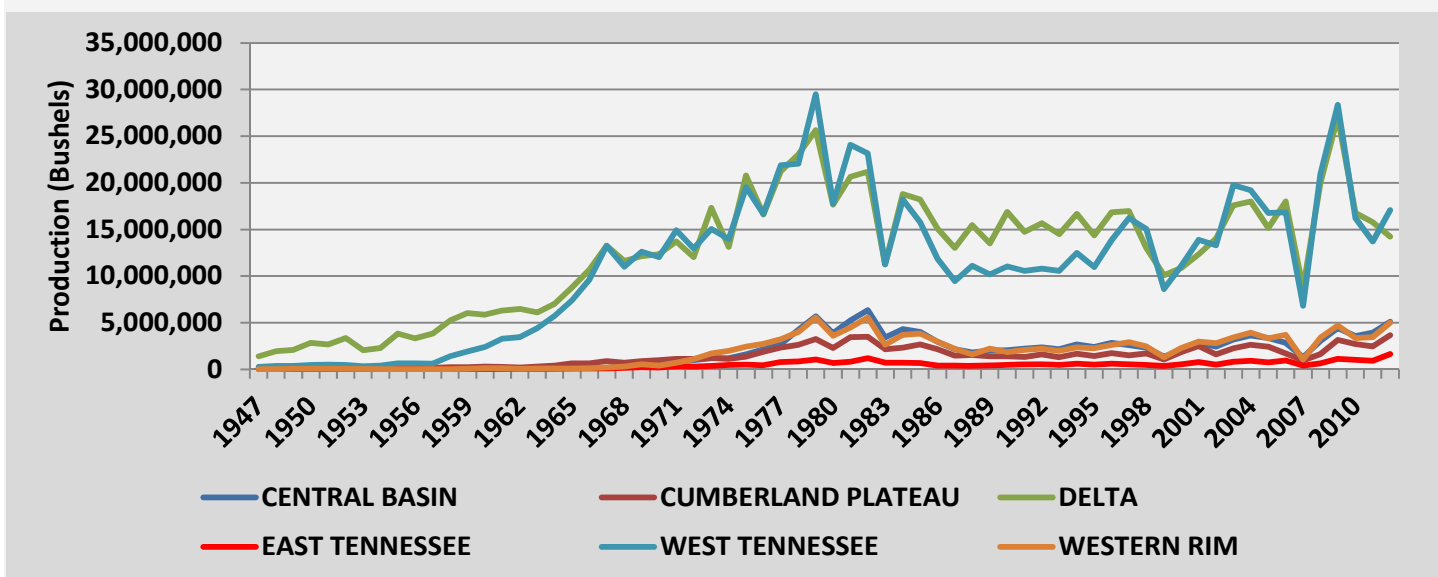


Figure 5. Soybean Production by NASS Region for Tennessee, 1947-2012

Tennessee region had the lowest. For soybean acres harvested between 1947 to 2012, the largest harvested acres for all the regions occurred between 1979 and 1982 (Central Basin and East Tennessee regions (1982), Cumberland Plateau (1981), Delta and West Tennessee regions (1979), and Western Rim region (1980)). Likewise, for soybean production during this timeframe, the largest production occurred in 1982 for the Central Basin, 2012 for both the Cumberland Plateau and East Tennessee regions, 2009 for the Delta Region, and 1979 for both the West Tennessee and Western Rim regions. Tabular data detailing harvested soybean acres and production between 2000 and 2012 are presented in Tables 3 and 4 (USDA/NASS, 2013).

Wheat

Figures 6 and 7 detail harvested acres and production in bushels for wheat by NASS regions between 1948 and 2012. For harvested acres, the West Tennessee and Delta regions had the largest harvested acres for the time period evaluated. The East Tennessee region had the lowest acres harvested. Likewise, for wheat production, the West Tennessee and Delta regions had the largest production and the East Tennessee

Table 3. Soybean Harvested Acres by NASS Region for Tennessee, 2000-2012

Year	Cumberland			East	West	Western Rim
	Central Basin	Plateau	Delta	Tennessee	Tennessee	
Harvested Acres						
2000	78,000	60,000	437,000	18,000	475,000	82,000
2001	69,000	58,000	385,000	21,000	429,000	78,000
2002	81,000	61,000	437,000	19,000	440,000	82,000
2003	78,000	56,000	419,000	21,000	466,000	80,000
2004	86,000	61,000	434,000	23,000	488,000	88,000
2005	86,000	60,000	405,000	21,000	442,000	86,000
2006	87,000	61,000	422,000	25,000	444,000	91,000
2007	75,000	57,000	388,000	20,000	396,000	74,000
2008	94,000	68,000	521,000	25,000	654,000	98,000
2009	104,000	74,000	586,000	25,000	641,000	100,000
2010	101,000	76,000	517,000	33,000	574,000	109,000
2011	115,000	74,000	457,000	32,000	475,000	107,000
2012	115,000	77,000	416,000	36,000	478,000	108,000
Average	89,923	64,846	448,000	24,538	492,462	91,000

Table 4. Soybean Production by NASS Region for Tennessee, 2000-2012

Year	Cumberland			East	West	Western Rim
	Central Basin	Plateau	Delta	Tennessee	Tennessee	
Bushels						
2000	2,040,000	1,840,000	10,890,000	550,000	11,130,000	2,300,000
2001	2,800,000	2,500,000	12,365,000	800,000	13,895,000	3,000,000
2002	2,450,000	1,610,000	14,030,000	530,000	13,300,000	2,800,000
2003	3,185,000	2,250,000	17,595,000	835,000	19,750,000	3,425,000
2004	3,635,000	2,640,000	18,000,000	920,000	19,225,000	3,960,000
2005	3,360,000	2,450,000	15,145,000	750,000	16,765,000	3,330,000
2006	2,850,000	1,700,000	18,000,000	970,000	16,850,000	3,700,000
2007	1,310,000	950,000	8,640,000	400,000	6,820,000	1,070,000
2008	3,040,000	1,640,000	19,950,000	660,000	20,950,000	3,400,000
2009	4,422,000	3,140,000	27,078,000	1,140,000	28,355,000	4,715,000
2010	3,580,000	2,705,000	16,790,000	1,040,000	16,225,000	3,370,000
2011	3,930,000	2,480,000	15,790,000	935,000	13,725,000	3,460,000
2012	5,111,000	3,663,000	14,225,000	1,641,000	17,080,000	5,020,000
Average	3,208,692	2,274,462	16,038,308	859,308	16,466,923	3,350,000

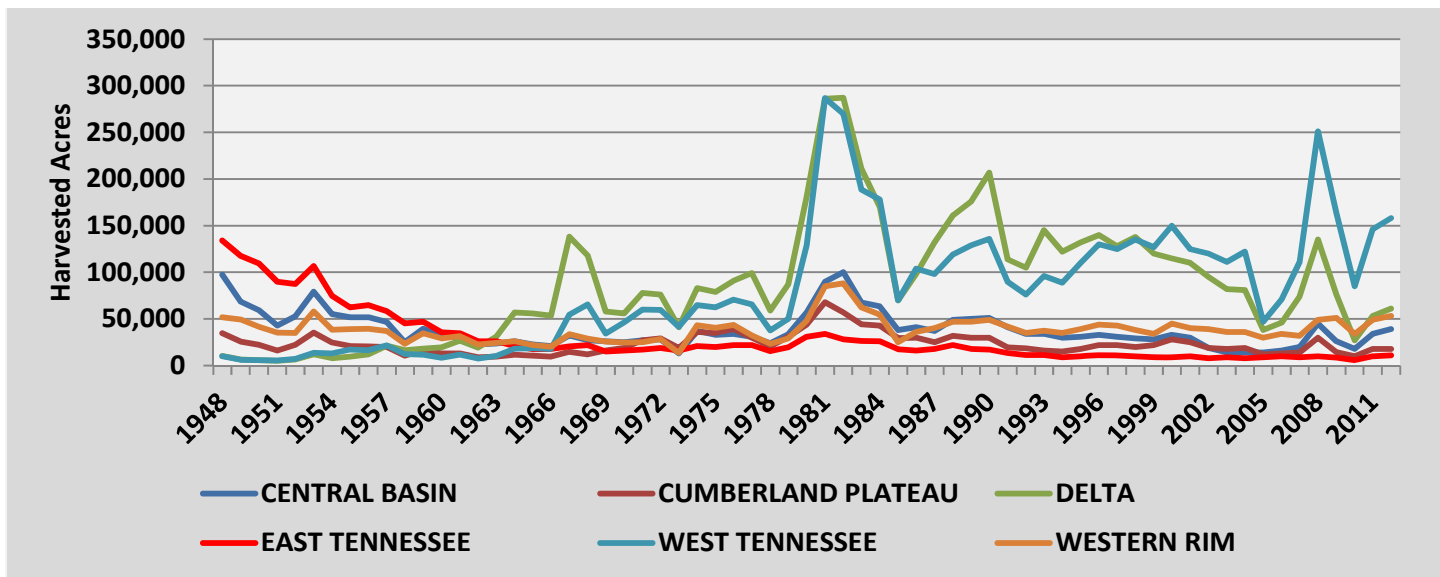


Figure 6. Harvested Wheat Acres by NASS Region for Tennessee, 1948-2012

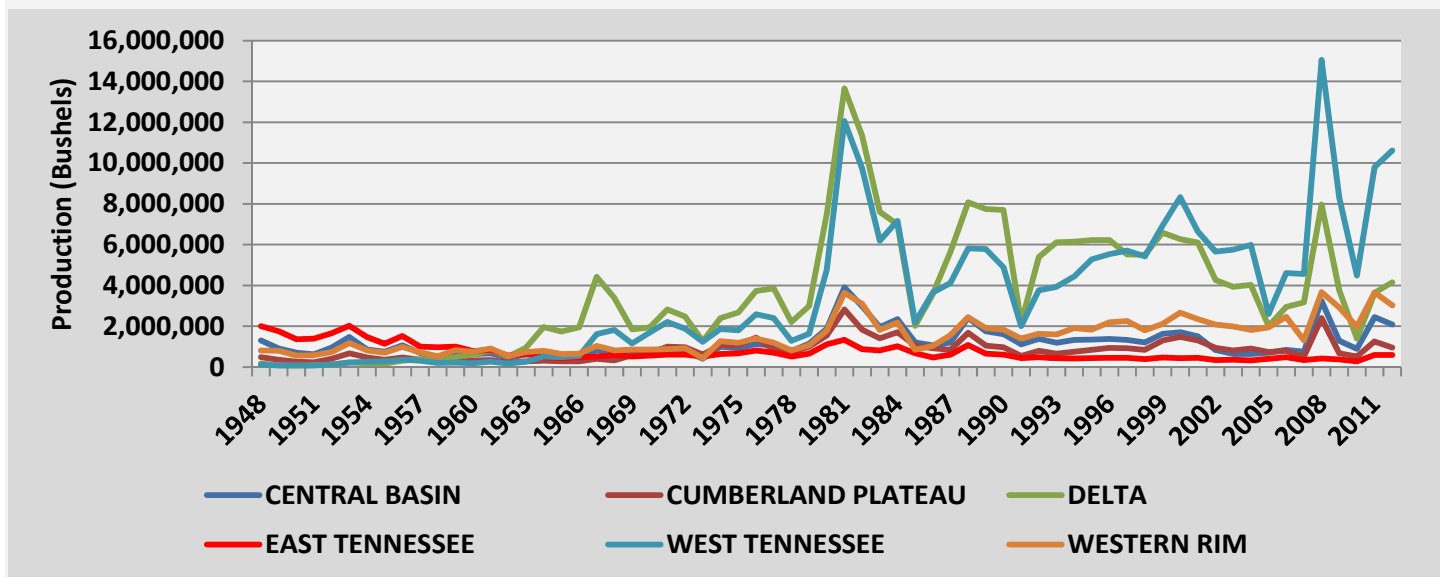


Figure 7. Wheat Production by NASS Region for Tennessee, 1948-2012

region had the lowest. For wheat acres harvested between 1948 to 2012, the largest harvested acres for all the regions occurred between 1981 and 1982 except for the East Tennessee region, which had the largest harvested acreage in 1948. Likewise, for wheat production during this timeframe, the largest production occurred in 1981 for the Central Basin, Cumberland Plateau, and Delta regions. For West Tennessee and the Western Rim regions, the largest wheat production occurred in the year 2008. For the East Tennessee region, the largest wheat production occurred in 1953. Tabular data detailing harvested wheat acres and production between 2000 and 2012 are presented in Tables 5 and 6 (USDA/NASS, 2013).

East Tennessee Region

Based on tabular data presented in Tables 1 and 2, corn harvested acres and production are detailed graphically in Figures 8 and 9. Between 2000 through 2012, corn harvested acres for the East Tennessee Region increased an average of 6.7 percent with 2011 through 2012 having the highest harvested acres at 31,000 and 38,000 acres, respectively. Corn production during this timeframe increased an average of 7.0

Table 5. Wheat Harvested Acres by NASS Region for Tennessee, 2000-2012

Year	Cumberland			East	West	Western Rim
	Central Basin	Plateau	Delta	Tennessee	Tennessee	
Harvested Acres						
2000	33,000	28,000	115,000	9,000	150,000	45,000
2001	30,000	25,000	110,000	10,000	125,000	40,000
2002	19,000	19,000	95,000	8,000	120,000	39,000
2003	14,000	18,000	82,000	9,000	111,000	36,000
2004	14,000	19,000	81,000	8,000	122,000	36,000
2005	14,000	12,000	38,000	9,000	47,000	30,000
2006	16,000	13,000	46,000	10,000	71,000	34,000
2007	20,000	14,000	74,000	9,000	111,000	32,000
2008	45,000	30,000	135,000	10,000	251,000	49,000
2009	26,000	14,500	76,000	8,500	164,000	51,000
2010	18,000	10,000	27,000	6,000	85,000	34,000
2011	34,000	18,000	53,000	10,000	146,000	49,000
2012	39,000	18,000	61,000	11,000	158,000	53,000
Average	24,769	18,346	76,385	9,038	127,769	40,615

Table 6. Wheat Production by NASS Region for Tennessee, 2000-2012

Year	Cumberland			East	West	Western Rim
	Central Basin	Plateau	Delta	Tennessee	Tennessee	
Bushels						
2000	1,715,000	1,480,000	6,280,000	435,000	8,320,000	2,670,000
2001	1,500,000	1,300,000	6,100,000	460,000	6,650,000	2,350,000
2002	825,000	935,000	4,260,000	340,000	5,660,000	2,080,000
2003	645,000	820,000	3,935,000	360,000	5,750,000	1,990,000
2004	645,000	905,000	4,030,000	325,000	5,990,000	1,825,000
2005	700,000	735,000	2,000,000	415,000	2,600,000	1,950,000
2006	850,000	800,000	2,950,000	490,000	4,615,000	2,455,000
2007	760,000	500,000	3,165,000	345,000	4,570,000	1,320,000
2008	3,240,000	2,400,000	7,965,000	420,000	15,060,000	3,675,000
2009	1,290,000	682,000	3,760,000	378,000	8,315,000	2,915,000
2010	896,000	510,000	1,395,000	284,000	4,485,000	1,970,000
2011	2,440,000	1,255,000	3,640,000	590,000	9,805,000	3,660,000
2012	2,080,000	950,000	4,160,000	590,000	10,620,000	3,020,000
Average	1,352,769	1,020,923	4,126,154	417,846	7,110,769	2,452,308

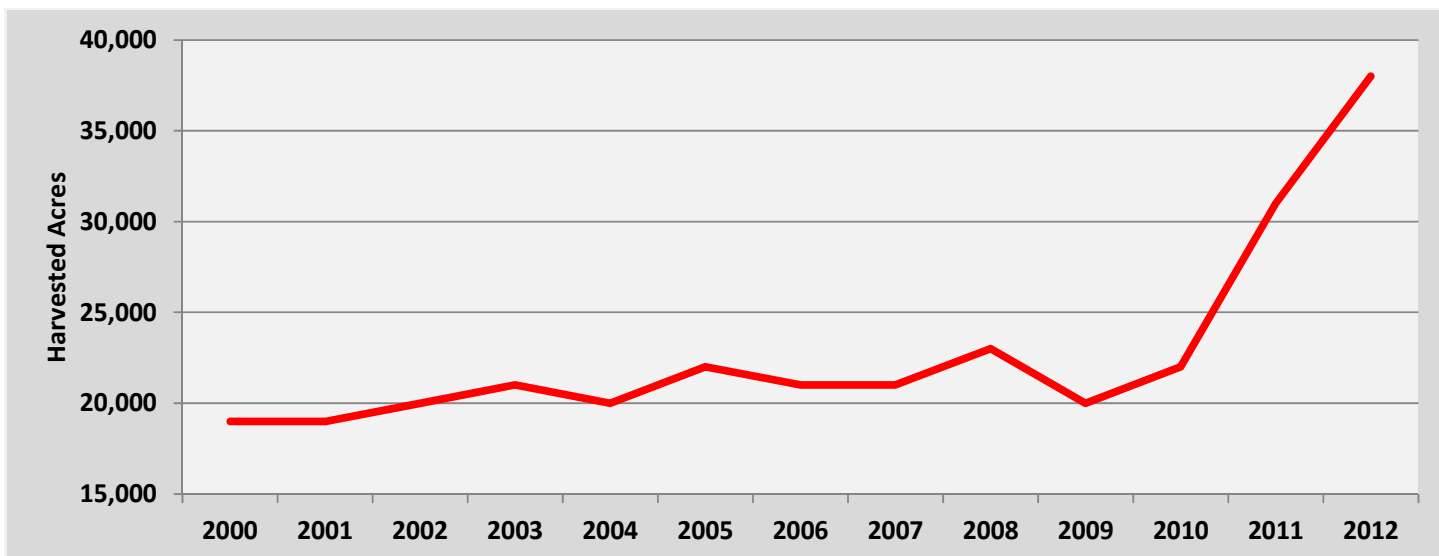


Figure 8. Harvested Corn Acres for East Tennessee Region, 2000-2012

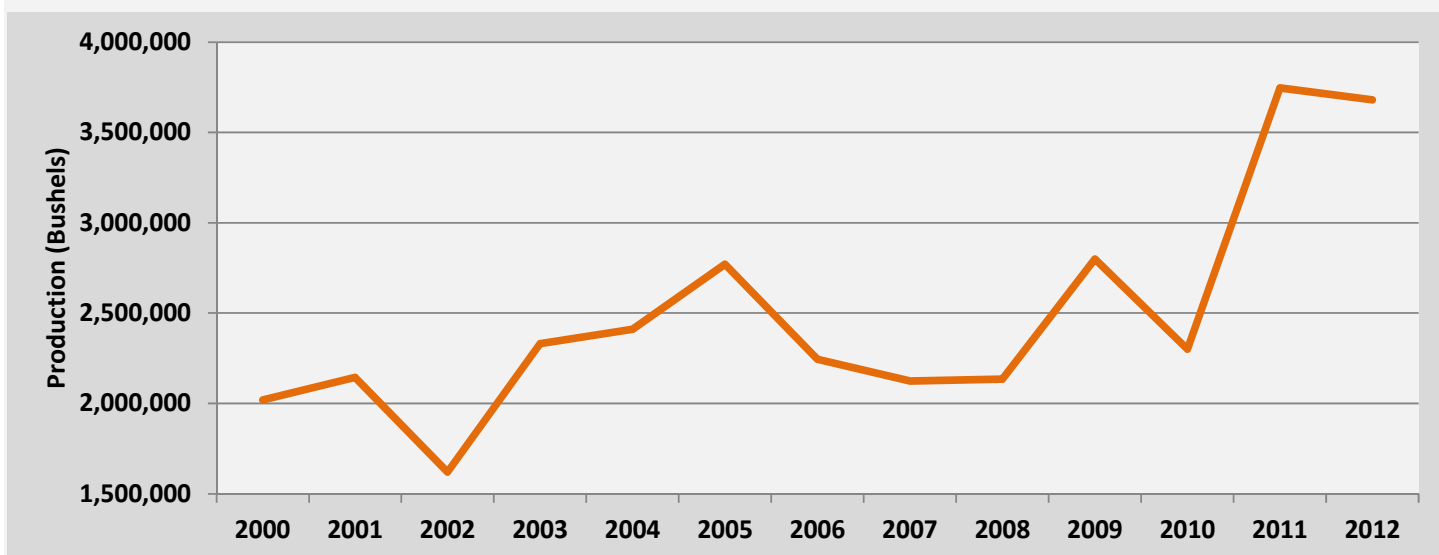


Figure 9. Corn Production for East Tennessee Region, 2000-2012

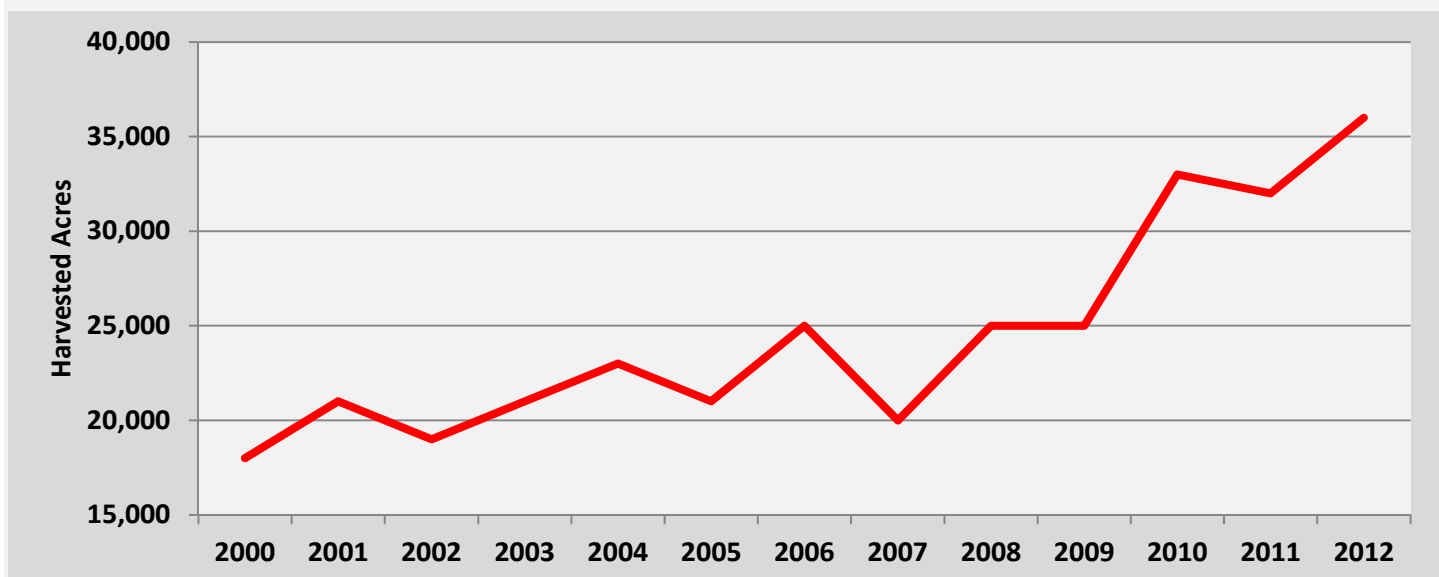


Figure 10. Harvested Soybean Acres for East Tennessee Region, 2000-2012

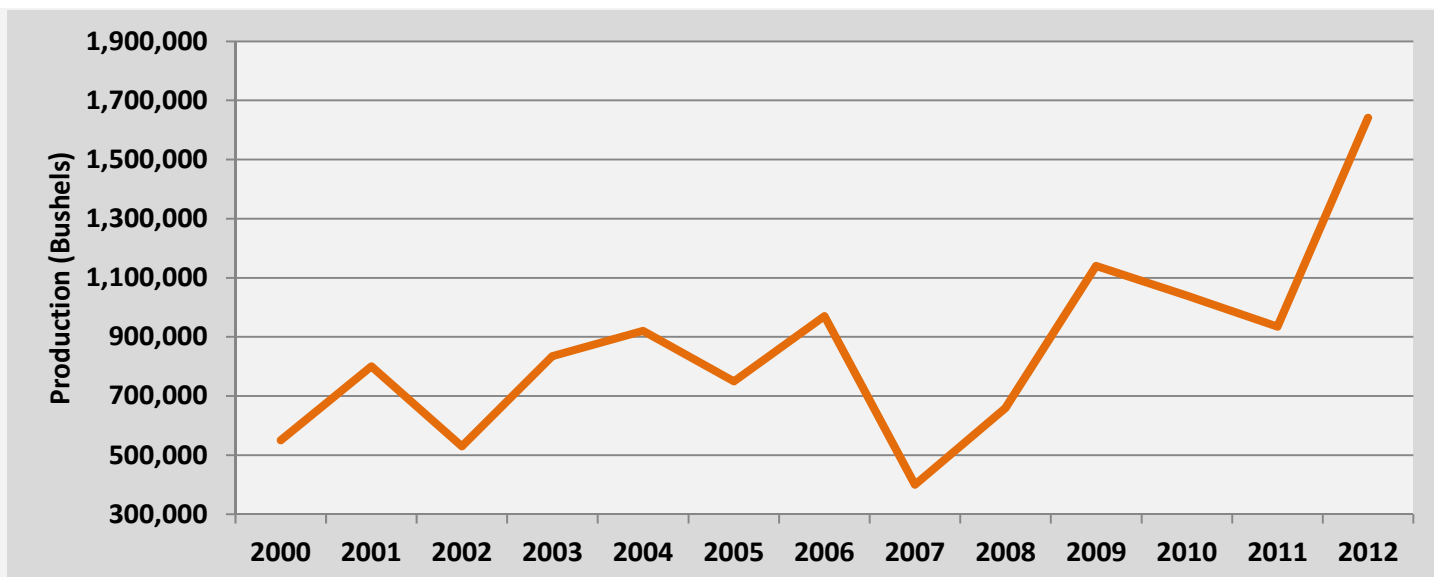


Figure 11. Soybean Production for East Tennessee Region, 2000-2012

percent. The greatest increase in corn production occurred between 2010 and 2011 where production increased 62.8 percent from 2.3 million bushels to 3.7 million. Soybean harvested acres and production for the East Tennessee Region are graphically represented in Figures 10 and 11 (Tables 3 and 4 tabular data). Between 2000 through 2012, soybean harvested acres increased an average of 7.0 percent with 2010 through 2012 having the highest harvested acres ranging from 32,000 to 36,000 acres. Soybean production during this timeframe increased an average of 18.8 percent with the greatest increase occurring at the beginning of 2009 through 2012. The greatest increase in soybean production occurred between 2008 and 2009, a 72.7 percent jump.

Historical Grain Prices

As indicated in Figures 12 through 14, the highest price per bushel for corn and soybeans occurred in 2012; for wheat, in 2011. The lowest price per bushel for corn and soybeans occurred in 1959; for wheat, 1968. For corn, the largest price increase occurred between 1972 and 1973, an increase of 63.9 percent per bushel; for soybeans, between 2006 and 2007, an increase of 63.5 percent per bushel; and for wheat, between 1972 and 1973, an increase of 96.5 percent per bushel. The largest decrease in corn prices occurred between 1985 and 1986, when prices decreased 28.3 percent per bushel; for soybeans, between 1974 and 1975 when prices decreased 34.7 percent per bushel; and for wheat, between 1976 and 1977 when prices decreased 26.2 percent per bushel. Between 2000 and 2012, average per year increase in corn prices was 12.5 percent, 10.8 percent for soybeans, and 9.7 percent for wheat (USDA/NASS, 2013).

Tennessee Elevators and Grain Buyers

Tennessee off-farm grain storage capacity decreased from a high of 77.5 million bushels in 1988 to 61.0 million bushels in 2012 (Figure 15). From 2005, off-farm grain storage capacity has increased roughly 3.6 percent on average per year--averaging 53.6 million bushels during that timeframe. The number of off-farm facilities storing grain decreased from 281 in 1988 to 150 in 2012, an average decrease of 2.5 percent per year. On-farm grain storage capacity has decreased from a high of 95.0 million bushels in 1988 to 75.0 million bushels in 2012 (Figure 16). Between 1998 and 2008, on farm grain storage capacity remained rela

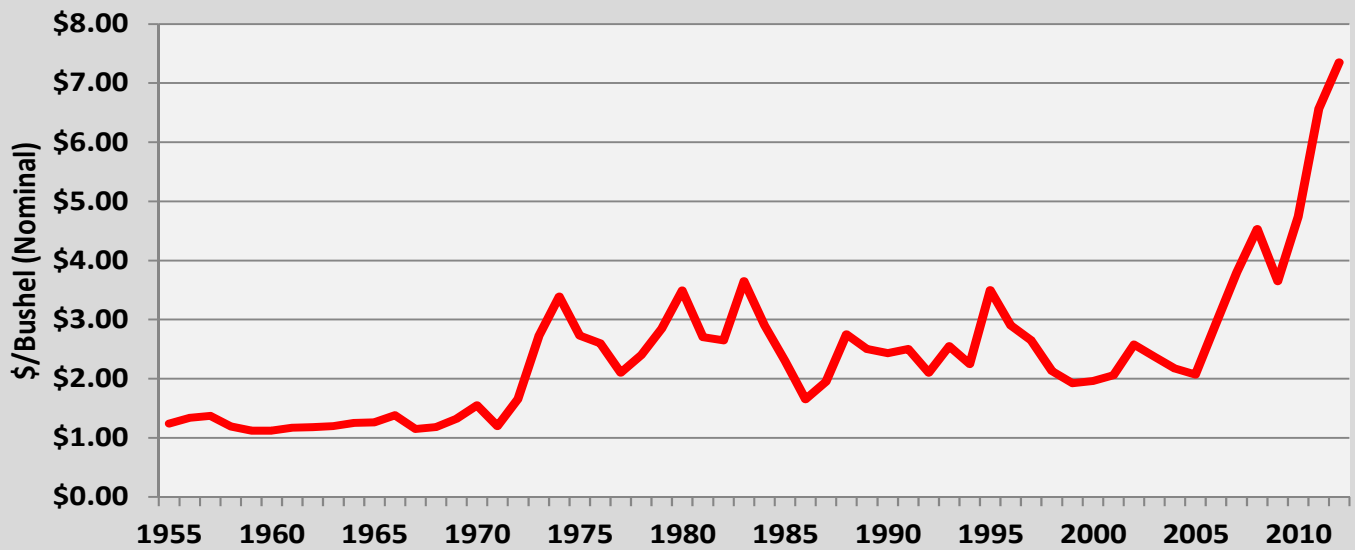


Figure 12. Nominal Corn Prices for Tennessee, 1955-2012

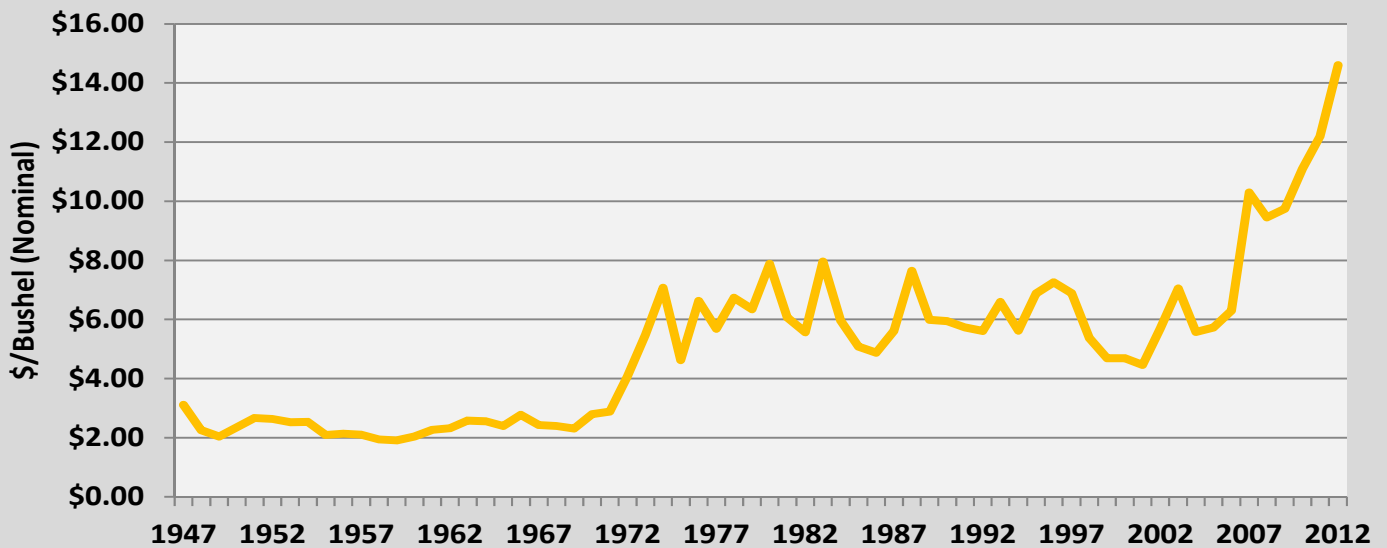


Figure 13. Nominal Soybean Prices for Tennessee, 1947-2012

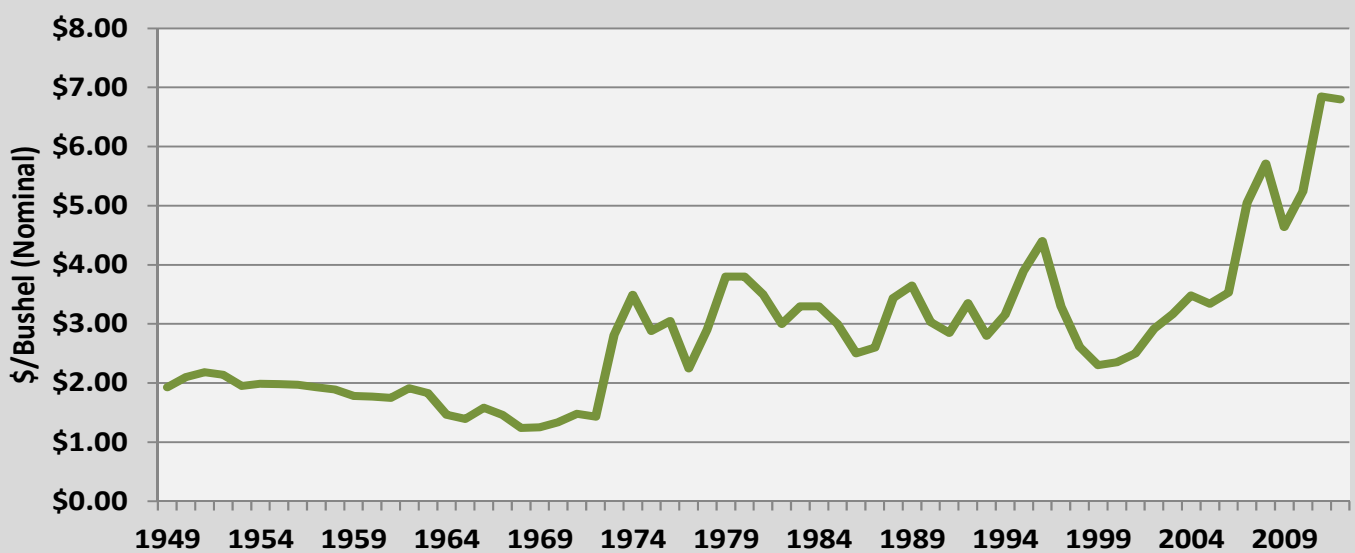


Figure 14. Nominal Wheat Prices for Tennessee, 1949-2012

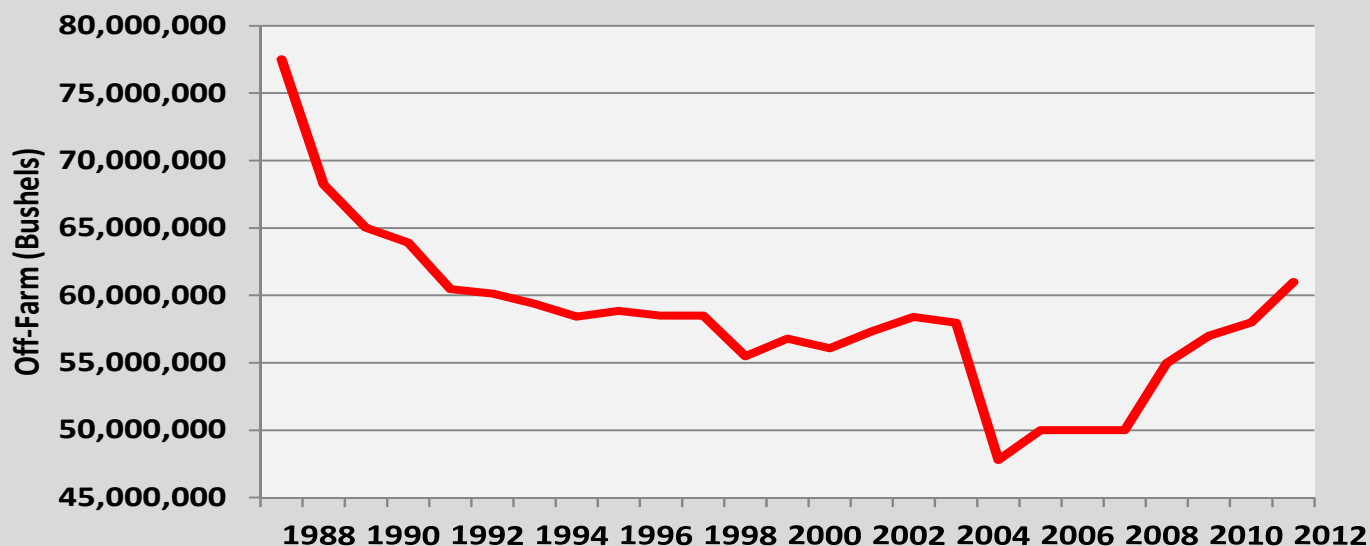


Figure 15. Off-Farm Grain Storage Capacity for Tennessee, 1988-2012

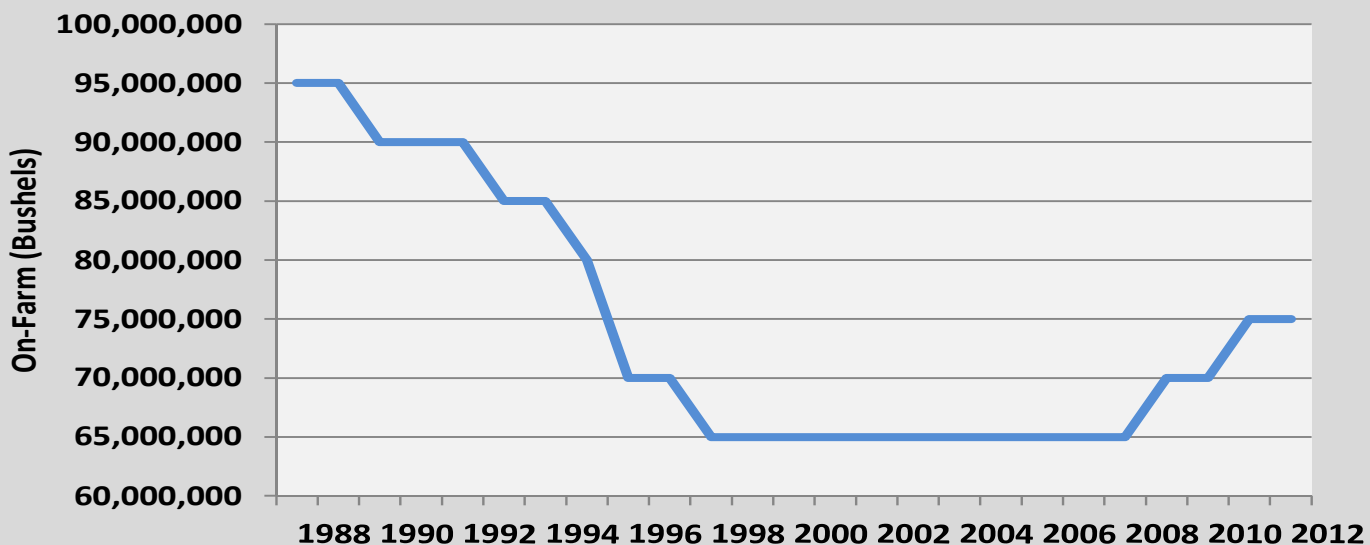


Figure 16. On-Farm Grain Storage Capacity for Tennessee, 1988-2012

tively flat at 65.0 million bushels. From 2008 to 2012, on-farm grain storage capacity has increased an average of 3.7 percent per year -- averaging 71.0 million bushels during that timeframe (USDA/NASS, 2013).

The location of Federal warehouses operating under USDA guidelines to store grain plus state warehouses buying from or storing grain for producers is dis-

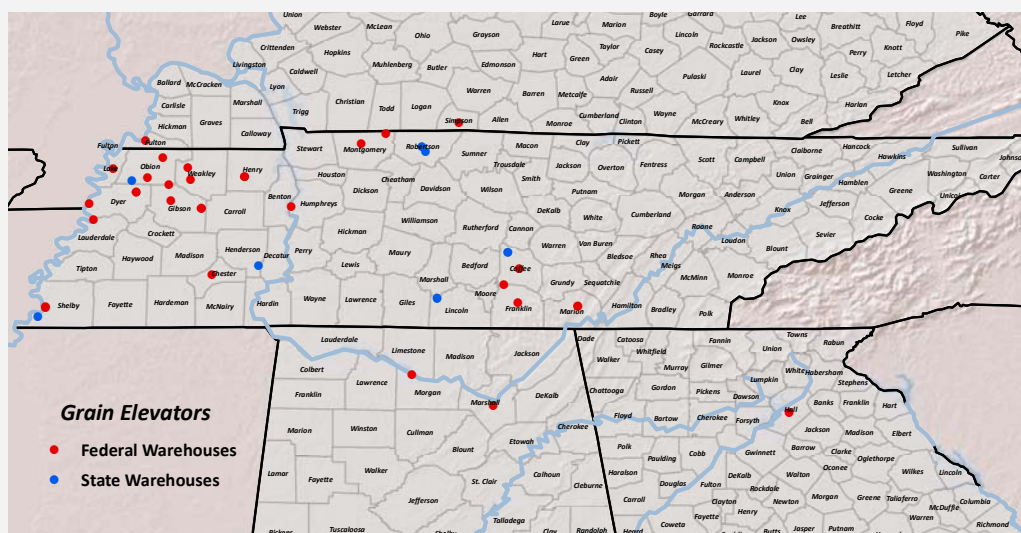


Figure 17. Location of Grain Elevators in Tennessee and Surrounding States, 2013

played in Figure 17. Bunge North America, Inc., Cargill, Andersons, Cargill, and Koko-mo Grain Company are a few of the federal warehouses operating in the state. Most of the grain elevators are located in West and Middle Tennessee. The location of grain buyers from producers are displayed in Figure 18 and are distinguished based on value of grain purchased (between \$100 to \$500 thousand and over \$500 thousand).

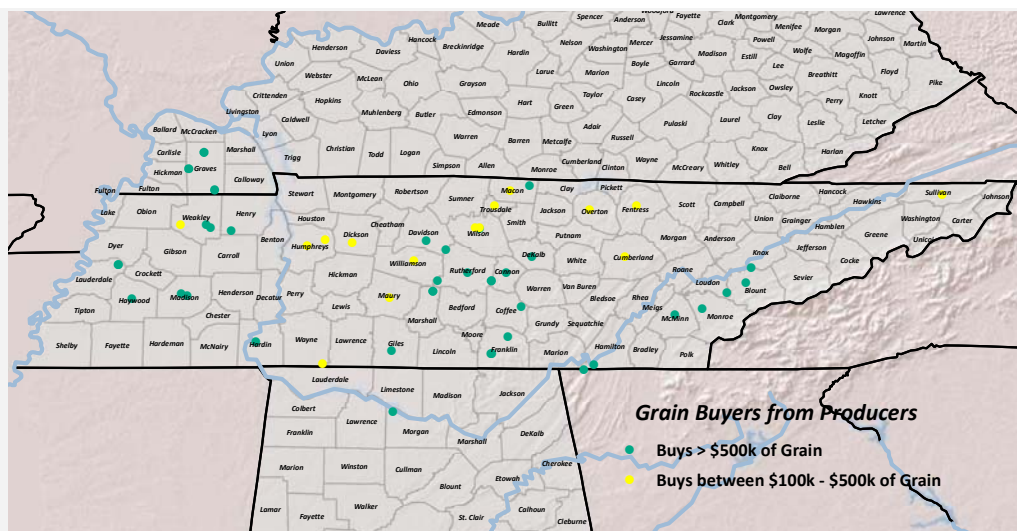


Figure 18. Location of Grain Buyers from Producers in Tennessee and Surrounding States, 2013

Buyers include mills, coops, poultry processors (Tyson, Koch), and granaries. Most of the buyers are located in West and Middle Tennessee with some located in the southeastern portion of East Tennessee (Smith and Bowling, 2013).

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