

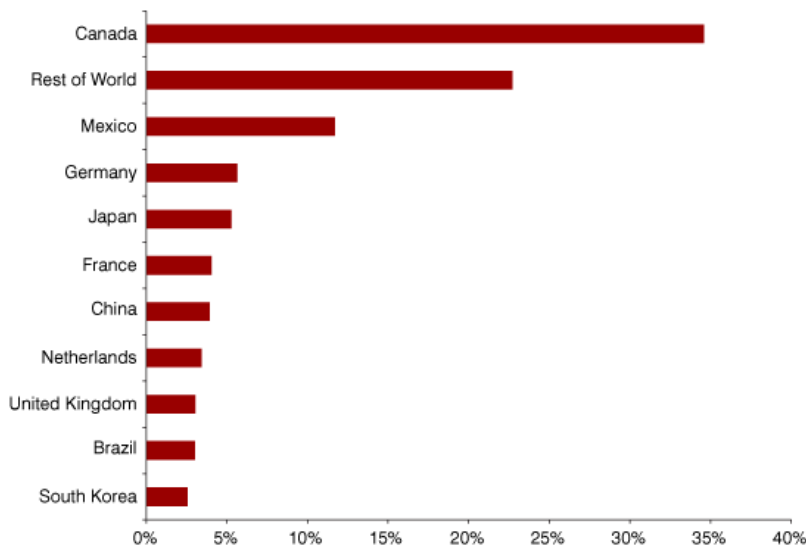
Fast Facts about Indiana's Top 10 Export Markets

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Exports play an important role in the Hoosier economy. While Indiana's GDP ranks 16th in the country, its dependency on exports ranks 12th. This article highlights the state's top 10 export markets (see **Figure 1**). These 10 nations accounted for approximately 77 percent of Indiana's exports in 2013.

Figure 1: Indiana's Leading Export Destinations, 2013

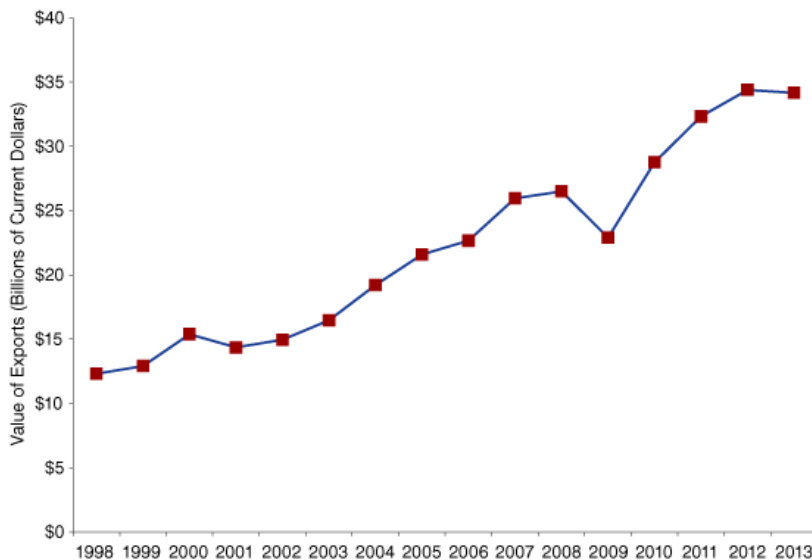


Source: WISER Trade

Indiana's Export Environment

Indiana's export value has nearly tripled since 1998, from \$12.3 billion to \$34.2 billion in 2013 (see **Figure 2**).

Figure 2: Indiana Exports, 1998 to 2013



Indiana exports recovered quickly from the adverse effects of the Great Recession, but the economic turmoil of the eurozone countries and slow recovery worldwide was finally felt by Indiana export industries in 2013. While exports from both the United States and the Midwestern states grew by 2.2 and 1.2 percent, respectively, Indiana’s exports decreased by 0.7 percent from 2012 to 2013.

Top 10 Export Destinations

Table 1 summarizes Indiana’s exports to the top 10 country destinations in 2013, presenting the current dollar value of exports and the growth in exports over one, five and 10 years.

Table 1: Indiana’s Top Export Destinations—Value and Average Annual Rate of Change, 2003 to 2013

Export Destination	Value of Exports (Millions of Current Dollars)		Average Annual Rate of Change		
	2012	2013	2012-2013	2008-2013	2003-2013
World Total	34,399	34,162	-0.7%	5.1%	7.3%
Canada	11,900	11,816	-0.7%	2.2%	4.5%
Mexico	3,907	4,001	2.4%	12.8%	6.4%
Germany	2,156	1,928	-10.6%	8.3%	12.5%
Japan	1,752	1,805	3.0%	14.7%	10.5%
France	1,767	1,387	-21.5%	-0.5%	4.1%
China	1,309	1,346	2.8%	7.4%	17.5%
Netherlands	788	1,175	49.0%	17.9%	14.0%
United Kingdom	1,199	1,038	-13.4%	-12.9%	-1.5%
Brazil	818	1,033	26.3%	9.7%	13.2%
South Korea	788	874	11.0%	17.1%	13.2%

Source: WISER Trade

Canada captured 34.6 percent of the state’s exports in 2013 and continues to be the largest market for both the U.S. and for Indiana. Indiana exports to Canada declined slightly (-0.7 percent) from 2012 to 2013 to \$11.8 billion. The top three industries are vehicles and parts; industrial machinery; and iron, steel and related products.

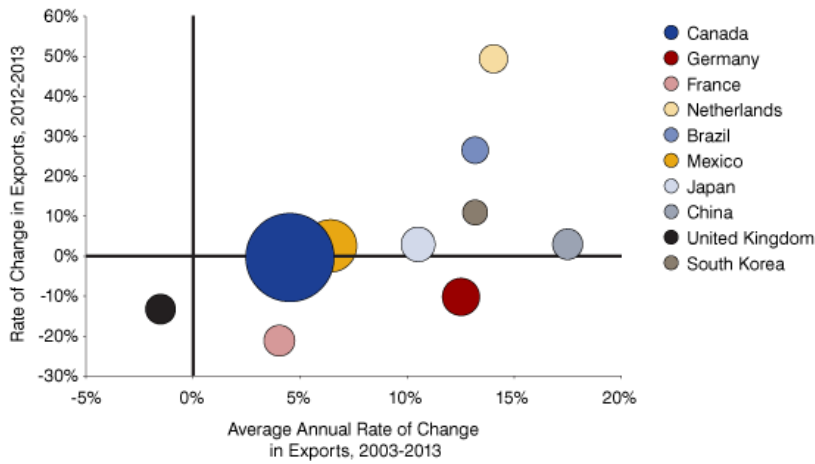
Ranking second, Mexico accounted for 11.7 percent of Indiana’s exports in 2013. Indiana exports to Mexico grew by 2.4 percent from 2012 to 2013 to reach \$4 billion. The top three industries are industrial machinery; vehicles and parts; and electrical machinery.

Germany emerged as the third top destination for Hoosier goods in 2009 and by 2013 accounted for 5.6 percent of all Indiana exports. Indiana exports to Germany declined 10.6 percent from 2012 to 2013 to \$1.9 billion. The top three industries are pharmaceutical products; optical and medical instruments; and miscellaneous chemical products.

Export Trends

Figure 3 graphically depicts how recent export performance compares with export trends from the last decade. The graph also shows how Canada dominates Indiana’s export portfolio. With the exception of the Netherlands and Brazil, export growth (or export shrinkage for several countries) has not kept pace with the average over the last 10 years. Most of the countries for which Indiana exports have been declining—the United Kingdom, France and Germany, for example—have been experiencing overall lackluster economic performance.

Figure 3: Export Trends for Indiana’s Top 10 Destinations, 2003 to 2013

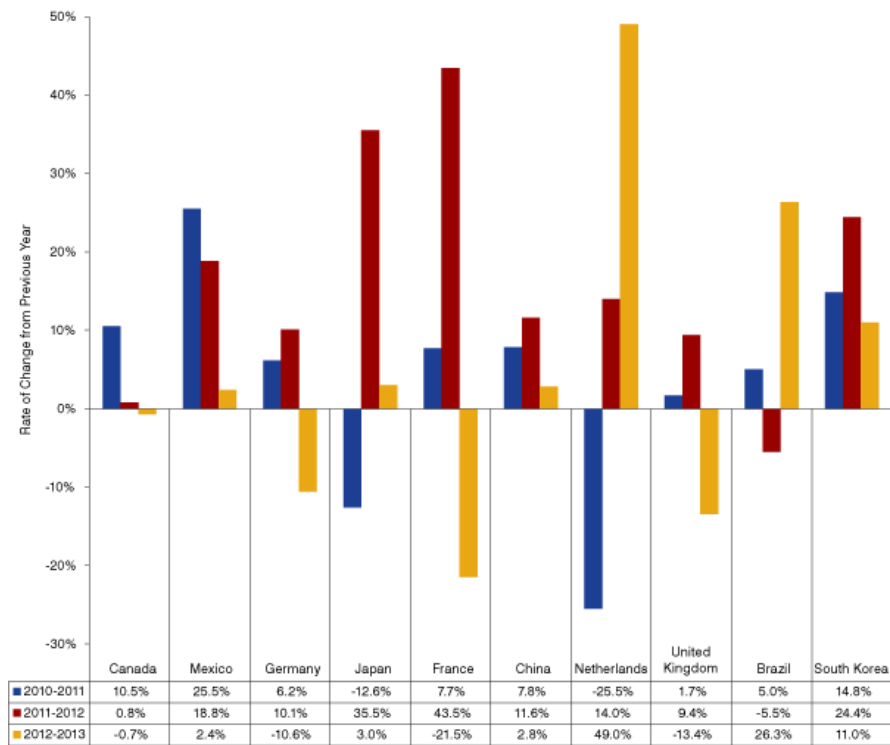


Note: Bubble size indicates export value in 2013.

Source: WISER Trade

It is worth keeping in mind that countries can experience dramatic swings in Indiana exports from year to year, and the top 10 are no exception. **Figure 4** compares the annual change in exports to these export partners for three successive years. From 2010 to 2011, Indiana exports to Japan and the Netherlands shrunk. In the case of Japan, exports surged the next year. In the case of the Netherlands, exports popped in 2013. Only China, South Korea and Mexico have been consistently growing from year to year and even then, not always robustly.

Figure 4: Annual Change in Exports for Indiana's Top 10 Export Destinations, 2010 to 2013



Source: WISER Trade

Looking ahead to the coming year, **Table 2** presents the Organization for Economic Cooperation and Development's (OECD) economic growth forecasts for Indiana's leading export destinations. It projects lethargic growth by the eurozone countries as a whole, though Germany and France will likely outperform their neighbors. The top three countries with expected growth in 2015 include China (7.3 percent), South Korea (4.2 percent) and Mexico (4.1 percent).

Table 2: Percent Change in Real GDP from Previous Year, 2012 to 2015

Nation	Actual	Forecast
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	2012	2013	2014	2015
China	7.7	7.7	7.4	7.3
South Korea	2.3	3.0	4.0	4.2
Brazil	1.0	2.3	1.8	2.2
Canada	1.7	2.0	2.5	2.7
United States	2.8	1.9	2.6	3.5
United Kingdom	0.3	1.7	3.2	2.7
Japan	1.4	1.5	1.2	1.2
Mexico	3.7	1.3	3.4	4.1
Germany	0.9	0.5	1.9	2.1
France	0.0	0.3	0.9	1.5
Netherlands	-1.3	-0.8	1.0	1.3

Note: This table is sorted by the actual 2013 growth rate.

Source: Organization for Economic Cooperation and Development

Summary

While Indiana companies export to 115 countries, the top 10 make up 77 percent of all exports. The lethargic economic growth that is expected in the eurozone over the next couple of years is a potential threat to the continued expansion of Indiana exports. On the other hand, the dominance of the Canadian and Mexican markets, together with the potential for expanding exports to some of the emerging economies, may serve as a counterbalance to tepid demand for Indiana exports in Europe.

For more detailed information regarding the export activity of goods and agricultural products produced in Indiana and sold internationally, see the latest “Global Positioning” report at www.ibrc.indiana.edu/studies/globalpositioning2014.pdf.

The Value of Indiana Agriculture Production

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597 million bushels of corn. 49 types of vegetables and melons. 102 million dozens of eggs. 3.7 billion pounds of milk. 12,450 gallons of maple syrup. These are just a handful of the agriculture products Indiana produced in 2012.

In May 2014, the United States Department of Agriculture's (USDA) National Agriculture Statistics Service (NASS) released the results from the 2012 Census of Agriculture. This article, concentrating on agricultural production and its sales value, serves as the third and final installment of a series exploring Indiana's Census of Agriculture results. (The **first article** focused on highlights from the census and the **second article** looked at farm financials.)

The Census of Agriculture was based on the 2012 production year, so it is worth noting the weather conditions and their impact on agriculture production. This is especially true since a drought gripped much of the crop-producing states in 2012 —severely impacting corn production and having a moderate to severe impact on soybeans. However, row crops were not the only sectors impacted by the drought. Subsequently, at the national level in 2012, agricultural sales were at record levels for both crop and livestock sectors. Nationally and statewide, farmers had strong growth in their farm income (as well as expenses) from crops and livestock since 2007.¹

One reason why the Census of Agriculture results are eagerly anticipated is that the broad survey attempts to capture all agricultural sectors. While not all results can be reported due to confidentiality concerns, the results yield very informative data on sectors that often receive little attention or fanfare through other NASS surveys. With this 5-year census, we can discover the diversity of agricultural production in Indiana and its trends over time. In 2012, Indiana was able to report on 52 production sectors, nine more than in 2007.

We find that over time, Indiana has begun to diversify its agricultural production offerings, but quantifying these new sectors in a timely manner can be challenging. We know that Indiana grows more than the standard portfolio of corn, soybeans, cows, hogs, chickens and eggs simply because berries, nuts, bedding plants, horses and more can be purchased from farmers markets, local producers or through other means.

To simplify the interpretation of the state's numerous agricultural sectors, this article will break the results into four major categories: grains, row crops and forage; fruits, vegetables, beans and nuts; livestock; and nursery, floriculture and woody crops. In **Table 1** through **Table 4**, a fairly detailed list of each category's production volume for 2012 and its percent change from 2007 are listed, with sales value and percent change also included when available.

Grains/Other Row Crops and Forage

Corn and soybeans clearly dominate this category in both production volume and market value received in 2012. The third-highest row crop was popcorn—in fact, Indiana is ranked second in popcorn production in the nation. Barley had the most gains in the past five years with its exponential growth in production (9,890.5 percent) and sales (977.1 percent). However, one must keep in mind that the 2007 comparison figures were rather small and 2012 production numbers were only 0.01 percent of corn production volume. Since 2007, at least five of the row crops experienced declines in production volume, which may be attributed to the drought in 2012, crop rotation patterns and/or a change in commodities planted.

Who Completes the Survey?

In late December 2012, 3 million questionnaires were sent out to agricultural producers throughout the nation. Similar to the national Census, multiple efforts were used to solicit responses, including mail, Internet, phone and in-person visits.

The USDA defines a farm as any place that produced and sold, or normally would have sold, \$1,000 or more of agricultural products during the Census year. Thus, farming operations of all sizes and types were sought to participate.

Table 1: Indiana's Grains/Row Crops and Forage Production, 2007 to 2012

	Quantity, 2012 (1,000 units)	Change, 2007-2012	Value, 2012 (\$1,000s)	Change, 2007-2012
Grains/Row Crops				
Corn (bu.)	597,271	-37.8%	\$4,071,150	30.7%
Soybeans (bu.)	218,928	3.7%	\$2,956,767	66.8%
Popcorn (lbs.)	151,729	-31.3%	-	-
Other Grains (bu.)	20,668	-1.3%	\$46,013	48.3%
Wheat (bu.)	19,857	0.8%	\$140,114	40.6%
Mint for Oil (lbs.)	572	33.6%	-	-
Sorghum (bu.)	439	-45.9%	\$3,294	-0.2%
Oats (bu.)	271	-32.9%	-	-
Barley (bu.)	49	9,890.5%	\$517	977.1%
Sunflower Seeds (lbs.)	35	N/A	-	-
Rye (bu.)	27	11.9%	-	-
Emmer and Spelt (bu.)	24	344.3%	-	-
Tobacco (lbs.)	(D)	N/A	\$7,653	16.0%
Forage Crops				
Corn for Silage (tons)	1,775	N/A	-	-
Forage, All Hay and All Haylage, Grass Silage and Greenchop (dry tons)	1,198	-8.3%	\$76,467	18.8%
Sorghum for Silage (tons)	11	84.9%	-	-

Note: (D) represents suppressed data, (bu.) represents bushels, N/A indicates that a calculation cannot be made due to missing 2007 data, and "-" represents the inability to report due to lack of data.

Source: IBRC, using 2012 Census of Agriculture data

Fruits, Vegetables, Beans and Nuts

Indiana continues to grow its vegetable offerings, as witnessed by a 6.3 percent increase in production and a 31.2 percent increase in sales value since 2007. In total, 49 different varieties of vegetables and melons were planted within Indiana during 2012. Nearly 80 percent of the acreage was concentrated to five crops: tomatoes (27.6 percent), sweet corn (16 percent), watermelons (14.6 percent), snap beans (10.3 percent) and potatoes (9.4 percent). The overall increase in acreage devoted to vegetables and melons was mostly attributed to an increase in potato, sweet corn and tomato acreage.

The non-citrus fruit category was heavily dominated by apples. Approximately 95 percent of the non-citrus acreage was in apples (60 percent), grapes (20.5 percent) or peaches (14.2 percent). The overall decline in acreage was largely due to fewer acres being planted in apples, followed distantly by peaches. There was a healthy growth in acreage planted in grapes. In the berries category, blueberries and strawberries comprised 63 percent and 24 percent of the berry acreage, respectively, in Indiana during 2012. Since 2007, acreage devoted to strawberries has declined 31.3 percent—serving as the sole source of the overall drop in berry acreage.

One might not necessarily think that Indiana produces dry edible beans, but the state produced 71,000 pounds of such beans in 2012. Unfortunately, the data do not allow comparison to 2007 to see if this figure is increasing or decreasing over time.

Thanks to the state's prolific population of trees, Indiana has the ability to grow nut-bearing trees. Approximately 370 acres were devoted to this production. Three types of nuts dominate the nuts category—led by the "other nuts" category (39 percent), followed by walnuts and pecans each capturing 29 percent of the category total. The drop in total nut acreage is primarily due to a nearly 50 percent decline in "other nuts" acreage.

Table 2: Indiana's Fruits, Vegetables, Beans and Nuts Production, 2007 to 2012

	Quantity, 2012	Change, 2007-2012	Value, 2012 (\$1,000s)	Change, 2007-2012
Vegetables Harvested for Sale (acres)	37,747	6.3%	\$104,411	32.6%
Non-Citrus Fruit (acres)	3,017	-9.8%	-	-
Berries (acres)	1,171	-6.2%	\$3,898	N/A
Dry Edible Beans, Excluding Limas (100 lbs.)	710	N/A	-	-

Nuts (acres)	369	-25.9%	-	-
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Note: "-" represents the inability to report due to lack of data, and N/A indicates a calculation cannot be made due to missing 2007 data.
Source: IBRC, using 2012 Census of Agriculture data

Livestock

The data for livestock contains a few more measures—primarily to differentiate between the inventory and the actual amount of livestock sold within a given timeframe. The reported sales value is then given for the sold livestock.

In 2012, poultry production dominated in the state, thanks to the large quantities of eggs produced. Poultry production is very vertically integrated, thus sales values are usually suppressed. Similarly, the state is the number one duck producer in the country; however, its data is always suppressed due to a limited number of producers. Another major livestock production category is hogs and pigs, which has experienced a 2.1 percent inventory growth and a 10.8 percent increase in sales since 2007.

Due to the 1,700 dairy operations with sales, 3.7 billion pounds of milk were produced in 2012, an increase of 10.9 percent in the past five years. As expected, the state has seen a decline in cattle and calves production, due to a loss of 1,000 cattle operations since 2007, continuing a downward trend seen since the early 2000s.

The livestock category with the strongest production growth in the past five years has been honey production with 41.2 percent growth. The largest decline was experienced among aquaculture operations (61.1 percent); however, since its data source is the 2013 Census of Aquaculture with a comparison year of 2005, it is unknown if the loss in operations occurred in the late 2000s or in more recent years.

Table 3: Indiana's Livestock Production, 2007 to 2012

Livestock	Inventory, 2012	Change, 2007-2012	Quantity Sold, 2012	Change, 2007-2012	Value, 2012 (\$1,000s)	Change, 2007-2012
Poultry, All (Including Eggs)	147,081,116	5.6%	-	-	\$1,164,199	31.2%
Broilers (1,000 head)	6,239	12.7%	41,579	12.2%	-	-
Layers (1,000 head)	25,587	5.6%	10,097	-13.9%	-	-
Turkeys (1,000 head)	5,085	-14.8%	13,643	1.1%	-	-
Pullets for Laying Flock (1,000 head)	7,567	9.2%	16,769	34.1%	-	-
Eggs (dozens)	102,603,617	6.2%	-	-	-	-
Hogs and Pigs (head)	3,747,352	2.1%	10,551,241	10.8%	\$1,273,099	30.7%
Milk from Cows (1,000 lbs.)	3,739,000	10.9%	3,713,000	11%	\$659,314	N/A
Cattle and Calves (head)	821,265	-6.2%	665,418	4.3%	\$522,694	14.5%
Honey (lbs.)	593,489	41.2%	-	-	\$1,256	N/A
Wool Production (lbs.)	255,048	7.8%	-	-	\$129	N/A
Horses and Ponies	88,331	N/A	11,110	N/A	\$23,651	N/A
Sheep and Lambs Inventory	52,169	6.4%	33,975	1.9%	\$6,128	N/A
Goats	38,632	-18.0%	18,665	N/A	\$2,710	N/A
Miscellaneous Livestock	24,409	N/A	34,493	N/A	\$5,552	N/A
Mules, Burros and Donkeys	5,101	16.2%	711	49.4%	\$248	N/A
Aquaculture (farms)*	7	-61.1%	-	-	\$2,183	N/A

* Aquaculture data was taken from the 2013 Census of Aquaculture, which uses 2005 as its comparison year.

Note: "-" represents the inability to report due to lack of data, and N/A indicates a calculation cannot be made due to missing 2007 data.
Source: IBRC, using 2012 Census of Agriculture data

Nursery, Floriculture and Woody Crops

The state's nursery, floriculture and woody crops are often overlooked. It's difficult to ascertain the number of unique operations since many often grow multiple lines of nursery products. Therefore, the Census of Agriculture measures the production size by square footage devoted to each crop.

The most prominent nursery crop was sod, with 2,600 acres devoted to its production, a 51.6 percent decline since 2007. Bedding and garden plants, including hanging baskets, were the second most prolific crop and also had the largest sales value. Rounding

out the top three were greenhouse vegetables and fresh herbs, which experienced a 93.3 percent growth since 2007. The crop that has had the most explosive growth in the past five years was vegetable seeds (246.4 percent), which may be due to the resurgence in gardens and local food production.

Beyond nursery and floriculture crops, the state also has woody products and by-products. The state has seen a 52.2 percent increase in maple syrup production, equating to almost 12,500 gallons and \$454,000 in sales. Real Christmas tree production has declined 21.1 percent in the past five years, with a loss of 30 Christmas tree operations. Likewise, it appears that the demand for short rotation woody crops (such as poplars and willow trees) has waned over the years since production and quantity sold has declined sharply.

Table 4: Indiana's Nursery, Floriculture and Woody Crops Production, 2007 to 2012

	2012 Inventory	Change, 2007-2012	Quantity Sold, 2012	Change, 2007-2012	Value, 2012 (\$1,000s)
Maple Syrup (gallons)	12,449	52.2%	-	-	\$454
Christmas Trees Harvested (acres, trees)	2,505	-21.1%	\$89,252	-55.1%	-
Short Rotation Woody Crops (acres)	434	-86.0%	\$104	-73.6%	-
Nursery/Floriculture					
Sod Harvested (sq. ft)	112,907,520	-51.6%	-	-	\$7,760
Bedding and Garden Plants; Hanging Baskets (sq. ft)	22,539,612	-9.6%	-	-	\$64,041
Greenhouse Vegetables and Fresh Herbs (sq. ft)	10,011,765	93.3%	-	-	\$5,405
Nursery Stock Crops (sq. ft)	9,901,040	-33.4%	-	-	\$28,443
Flower Seeds (sq. ft)	9,321,840	N/A	-	-	\$1,933
Greenhouse Fruits and Berries (sq. ft)	770,388	N/A	-	-	(D)
Vegetable Seeds (sq. ft)	617,888	246.4%	-	-	\$35
Aquatic Plants (sq. ft)	369,263	12.7%	-	-	\$435
Cuttings, Seedlings, Liners and Plugs (sq. ft)*	102,799	-68.3%	-	-	\$2,255
Vegetable Transplants (sq. ft)	75,724	65.8%	-	-	\$779
Bulbs, Corms, Rhizomes and Tubers (sq. ft)	(D)	N/A	-	-	(D)
Tobacco Transplants (sq. ft)	(D)	N/A	-	-	(D)

*Cuttings, etc. acreage was suppressed; however, square footage under cover was reported. Thus, reported volume is less than actual.

Note: (D) represents suppressed data, "-" represents the inability to report due to lack of data, and N/A indicates a calculation cannot be made due to missing 2007 data. For all categories, the 2007-2012 change in value data were unavailable due to suppression.

Source: IBRC, using 2012 Census of Agriculture data

Summary

The state produces a wide range of agricultural products, going well beyond the traditional commodities of corn, soybeans, cattle and poultry. As the demand for locally grown foods and products continues to flourish, Indiana may continue to witness an increasingly diverse array of agricultural products. It will likely always have its traditional commodities, but farmers and other agricultural operators are savvy enough to adapt their business practices to capture new markets.

If you would like to learn more about the nation's agriculture industry, visit www.agcensus.usda.gov and explore the numerous tables and maps available at various geographic levels.

Notes

1. For more information on this topic, be sure to visit the second installment of this series: "Farm Financials," *InContext*, September-October 2014, www.incontext.indiana.edu/2014/sept-oct/article2.asp.

Importance of the Statewide Industry Mix

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Wage growth in Indiana is a principle concern for policymakers. While many can debate the impact of cost-of-living differences across states limiting the impact of comparative state analysis, most would agree that more work can be done to increase the rate of wage growth. The housing crisis that started in late 2007 and the subsequent recession certainly contributed to slow wage growth.

In understanding wage growth, two elements should be examined. The first is the wage growth of existing jobs. Another, perhaps more subtle, is the changing industry mix that results from job churn. This article focuses on the latter element.

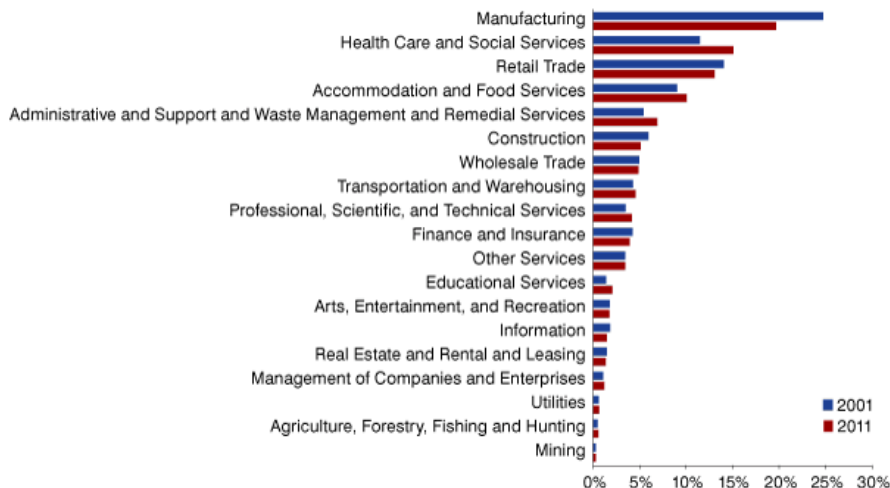
Occupations enter and exit the market. During the housing crisis, many construction jobs were lost. While the state has in the intervening years added a large number of positions back, they were not construction jobs. The industry mix for Indiana employment has changed. It is important to understand this change and its impact on statewide wages.

Quarterly Census of Employment and Wages (QCEW) data were taken from the Hoosiers by the Numbers website (www.hoosierdata.in.gov). These annualized data from 2001 to 2011 detail employment and total wages by large industry sectors (two-digit NAICS). Average wages were calculated by industry and as a total. [View details in the companion spreadsheet.](#)

Using the QCEW data, calculated private sector worker salaries averaged \$31,759 in 2001 and \$40,272 in 2011. The increase in wages of \$8,514 represents a growth of 26.8 percent over the period. While this is positive news, it should be noted that on an annualized basis, wage growth has had a difficult time maintaining pace with inflation (30.5 percent over the same period). While the gains are important, the influence of inflation indicates that work remains. Even if these numbers could be muted by cost-of-living adjustments, all would prefer faster real wage growth. It is, therefore, important that the role of industry mix be understood for its importance in tackling the issue.

The employment industry mix was derived for both 2001 and 2011 by calculating the percentage of employment totals by industry. Comparing the employment industry mix over this period highlights some interesting changes and shifts in employment patterns (see **Figure 1**).

Figure 1: Indiana Private Sector Employment Industry Mix



Source: Quarterly Census of Employment and Wages

From casual observation, the changing industry mix seems rather mild, with the exception of the decrease in manufacturing and increase in health care. However, even seemingly mild changes in the state's industry mix can have significant impacts on worker salaries.

In an effort to determine the importance of industry mix, a calculation was done to assess the potential impact on wages. First, the 2001 industry mix percentages were applied to the total private sector employment in 2011. Differences were then calculated representing the difference in employment from the current and the hypothetical created using the 2001 industry mix percentages.

Second, sector wages were individually calculated using 2011 wages and the 2011 hypothetical employment. Using 2011 total employment and industry wages with 2001 industry mix patterns, annual salaries in this hypothetical scenario should have been \$41,384 (see **Table 1**).

Table 1: Industry Mix Analysis

Year	Salaries
2001 Annual Wage	\$31,759
2011 Annual Wage	\$40,272
2011 Annual Wage If There Were No Change in Industry Mix from 2001	\$41,384

Source: Quarterly Census of Employment and Wages

This would have represented a 30.3 percent increase over the period vs. 30.5 percent for inflation. Rather than falling behind inflation, Indiana would have nearly maintained pace with it if the industry mix had remained unchanged.

Essentially, the changing industry mix from 2001 to 2011 cost the average Hoosier worker about \$1,112 in additional wage growth. On a statewide basis, this represents a \$2.62 billion loss in additional wage growth.

This analysis utilizes a great number of unrealistic assumptions and the results should be treated with caution. The back of envelope calculation and analysis are only designed to convey the importance of industry mix in determining the wages of Hoosiers.