Global Positioning

State of Indiana's Export Activity, 2013

AUGUST 2013

KELLEY SCHOOL OF BUSINESS
INDIANA UNIVERSITY
Indiana Business Research Center

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Executive Summary

In 2012, the United States exported nearly $1.5 trillion in goods and services. Of these exports, Indiana's share was $34.4 billion, $2.1 billion higher than 2011. Indiana recovered quickly from the adverse effects of the Great Recession, but the economic turmoil of the eurozone countries and slow recovery worldwide reduced the acceleration in exports in 2012.

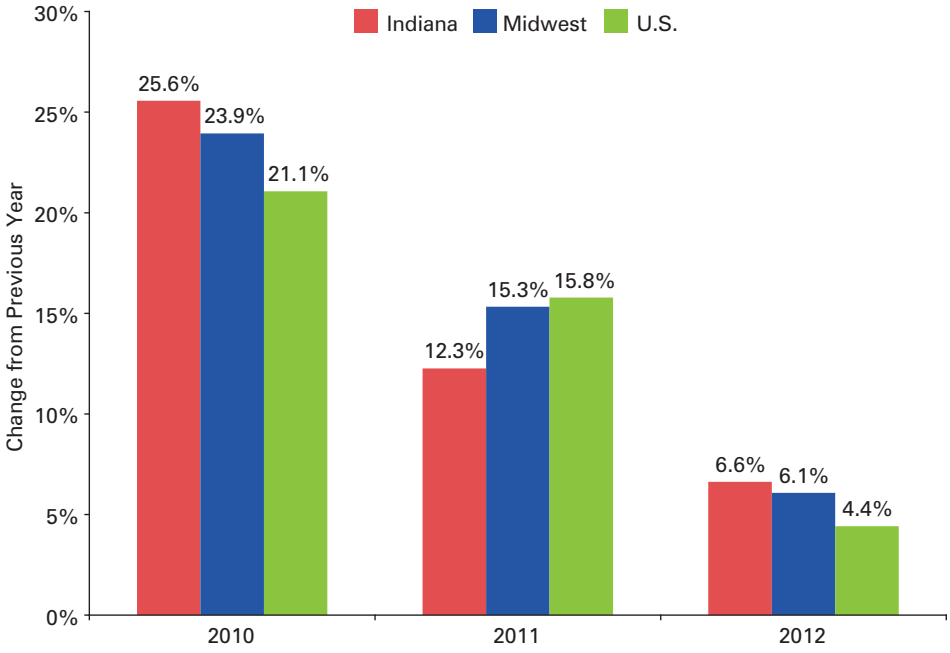
> *Over the last 10 years, Indiana's exports to China have increased almost seven-fold.*

As shown in **Figure 1,** Indiana's exports grew at a higher rate than both the United States and the Midwestern states in 2012.[1] Indiana's export increased 6.6 percent, while nationally exports grew by 4.4 percent from 2011 to 2012. Midwestern exports increased 6.1 percent.

Over the last 10 years, Indiana's exports to China have increased almost seven-fold. In 2012, Indiana ranked 22nd among the states in terms of the value of exported manufactured goods to China, but if agricultural products are included, the state's ranking jumps to 14th.

Relatively speaking, exports are more important to Indiana than other states. While Indiana's economic output (GDP) ranks 16th in the country, its dependency on exports ranks 11th.

Figure 1: Annual Increase in Exports for Indiana, the Midwest and the United States, 2010 to 2012



Source: WISER Trade

Table 1: Indiana's Top Five Export Industries, 2012

Industry	2012 Exports (in millions)	Average Annual Growth Rate, 2002-2012
Vehicles and Parts (Excluding Railway)	$7,156	5.4%
Pharmaceutical Products	$6,040	24.0%
Industrial Machinery (Including Computers)	$5,536	5.4%
Optical and Medical Instruments	$2,484	10.1%
Electric Machinery	$2,109	4.4%

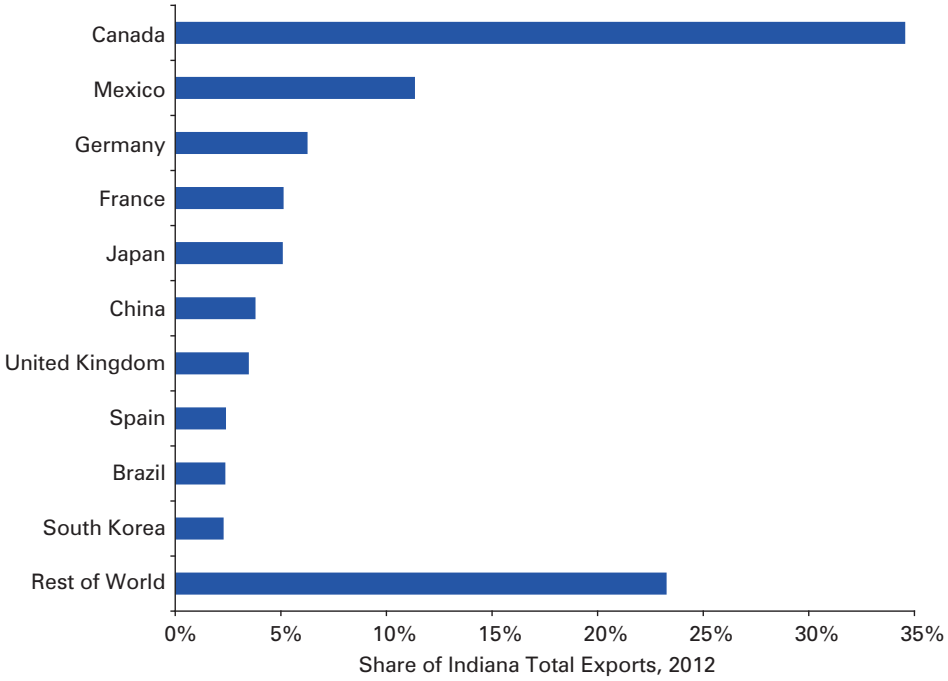
Source: WISER Trade

Transportation equipment and the life science industries—pharmaceuticals and medical instruments—are the leading export industries (see **Table 1**). Most of Indiana's export industries have had strong average annual growth over the last decade, especially

[1] The Midwest, for the purposes of this report, is defined broadly: Indiana, Illinois, Iowa, Kentucky, Michigan, Minnesota, Missouri, Ohio, Tennessee and Wisconsin.

"Relatively speaking, exports are more important to Indiana than other states. While Indiana's economic output (GDP) ranks 16th in the country, its dependency on exports ranks 11th."

Figure 2: Indiana's Leading Export Destinations—Percent of Indiana's Shipments, 2012



Source: WISER Trade

aircraft, spacecraft and related parts; pharmaceuticals; iron, steel and related products; optical and medical instruments; and agricultural products.

The sluggish growth in the eurozone over the next couple of years will likely dampen the rate of export growth in the near future. Fortunately, Canada and Mexico are Indiana's primary markets. While many may look to the emerging economies for growth, there may be less potential for strong expanded export opportunities in the near future. For example, economic growth in the BRICS countries (Brazil, Russia, India, China and South Africa) is easing off of the accelerator—with China moderating and the International Monetary Fund reducing its forecast for Brazil.

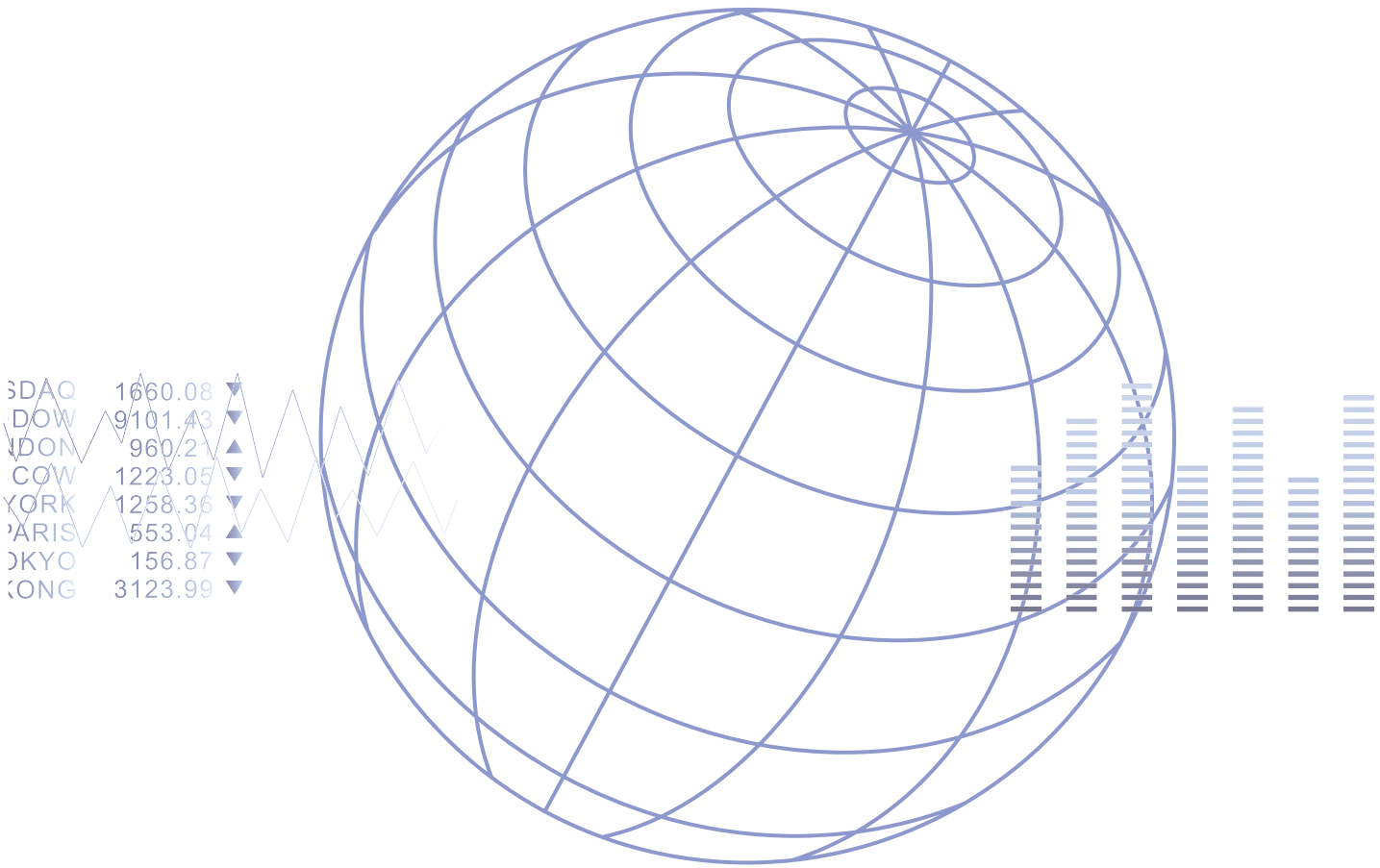
Introduction

Exporting presents a significant opportunity for Indiana businesses to increase sales and profit and to create new jobs. Therefore, Indiana's future economic development and prosperity in some aspects depend on the state's ability to integrate into the global economy.

The Indiana Business Research Center (IBRC) monitors the global business activity occurring within its borders along with export-oriented activity overseas. This report provides detailed information regarding the export activity of goods and agricultural products that are produced in Indiana and sold internationally.

The global economic and trade outlook chapter presents the global economic trends and forecasts that are likely to affect Indiana's exports. Detailed information regarding industry mix and export destination data is presented to shed light on the importance of exports as sources of employment and economic growth in Indiana.

The data used for this report was gathered from public data sources that include the Bureau of Economic Analysis, the Bureau of Labor Statistics and WISER Trade (a commercial database). Using all of these sources, this report presents a complete picture of the state's export activity in the global economy.



Global Economic and Trade Outlook

The Great Recession had a significant impact on economies worldwide, though in some cases the effects were delayed. Data show that U.S. exports did not diminish until 2009, contracting 18 percent, but the rebounds in 2010 (21 percent) and 2011 (15.8 percent) were relatively strong. In 2012, the nation's exports slowed considerably from 2011 as indicated by a 4.4 percent growth. Indiana followed a similar pattern, but had stronger export growth than the U.S. in 2010 and 2012.

The International Monetary Fund (IMF) predicted world output to grow 3.1 percent in 2013 (same as 2012 figures) and 3.8 percent in 2014. The IMF forecasts that the advanced economies—Indiana's primary trading partners—will grow by 1.2 percent in 2013 and 2.1 percent in 2014.[2] **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 despite stronger performances by Germany and France. The top three countries with expected growth in 2013 include China (8.5 percent), Brazil (4.0 percent) and Mexico (3.3 percent), and this growth is expected to sustain itself in 2014.

The current foreign exchange market is mixed for strong export performance. Since 2000, most of the U.S. trading partners had an increase in their cost of foreign exchange in U.S. dollars. Since the end of the recession, foreign exchange trends have been varied (see **Figure 3**).

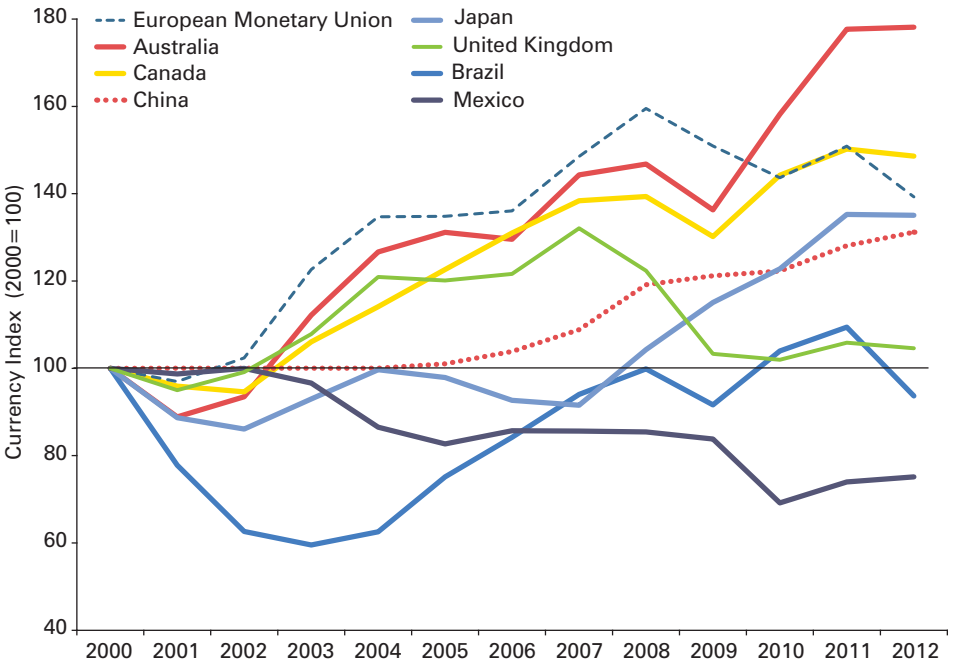
[2] More IMF projections can be found at www.imf.org/external/pubs/ft/weo/2013/update/02/.

Table 2: Percent Change in Real GDP from Previous Year, 2011 to 2014

Nation	Actual		Forecast	
	2011	2012	2013	2014
China	9.3	7.5	8.5	8.9
Mexico	3.9	3.8	3.3	3.6
Australia	2.3	3.7	3.0	3.2
Korea	3.6	2.2	3.1	4.4
United States	1.8	2.2	2.0	2.8
Canada	2.6	2.0	1.8	2.4
Japan	-0.7	1.6	0.7	0.8
Brazil	2.7	1.5	4.0	4.1
Germany	3.1	0.9	0.6	1.9
France	1.7	0.2	0.3	1.3
United Kingdom	0.9	-0.1	0.9	1.6
Eurozone	1.5	-0.4	-0.1	1.3
Netherlands	1.1	-0.9	0.2	1.5

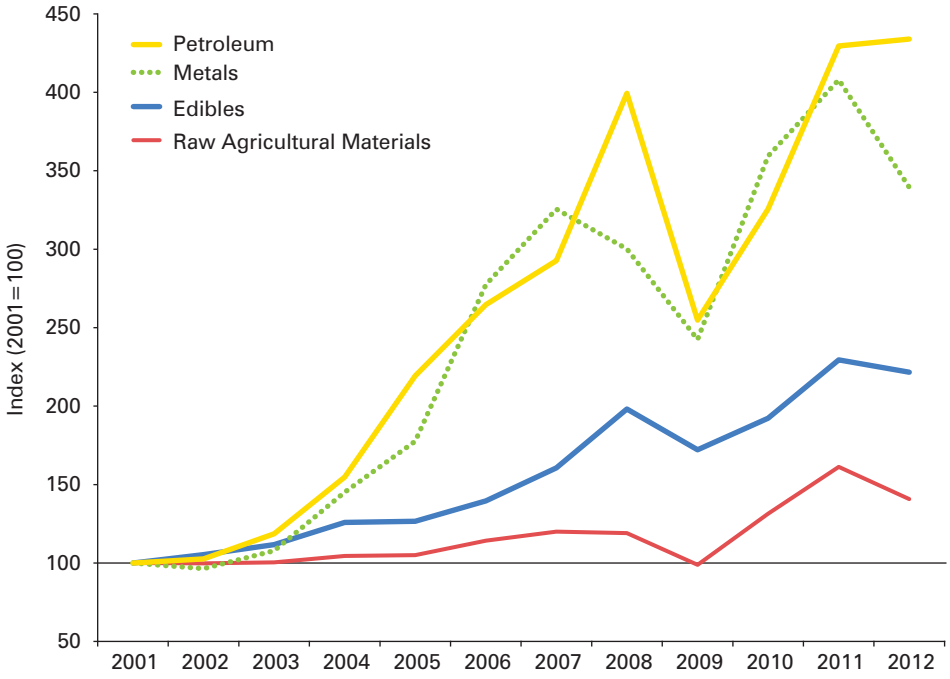
Note: This table is sorted by the 2012 growth rate.
Source: Organization for Economic Cooperation and Development

Figure 3: Foreign Exchange Trends for Indiana's Top Trading Partners, 2000 to 2012



Source: Federal Reserve

Figure 4: World Primary Commodity Prices, 2001 to 2012

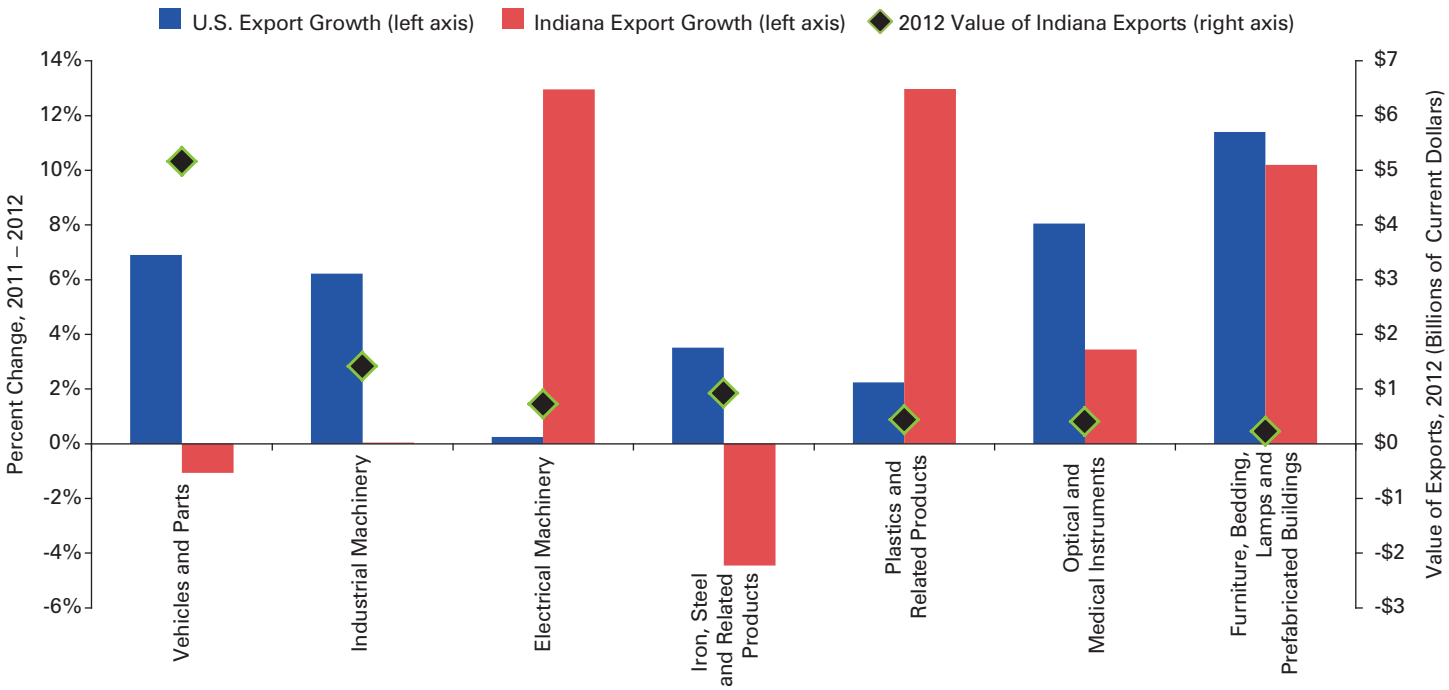


Source: International Monetary Fund

While a weakening dollar tends to encourage export sales, it also can increase raw commodity prices, thus discouraging demand. **Figure 4** presents the trends in commodity prices since 2001. The 2008-2009 dip in commodity prices is reflective of a strengthened U.S. dollar, the financial crisis and the subsequent lower demand for commodities. In 2010 and 2011, the weak global economy helped boost commodity demand and prices. Across all categories in 2012, prices saw either declines or no growth in commodity prices.

Canada continues to be the largest market for the U.S. and for Indiana. U.S. exports to Canada grew by 3.9 percent from 2011 to 2012, while Indiana registered 0.4 percent growth. **Figure 5** shows the change in the seven leading export categories to Canada for both the United States and Indiana between 2011 and 2012. Vehicles and parts remained Indiana's top exported commodity although this category fell from 2011 to 2012. Compared to the growth between 2010 and 2011, Indiana's exports in these top seven industries in 2012 have mostly lagged behind the U.S. The only exceptions were the electrical machinery and plastics industry categories where Indiana

Figure 5: Value and Growth of Exports to Canada by Industry, Comparison of U.S. and Indiana, 2012



Source: WISER Trade

strongly surpassed national growth rates.

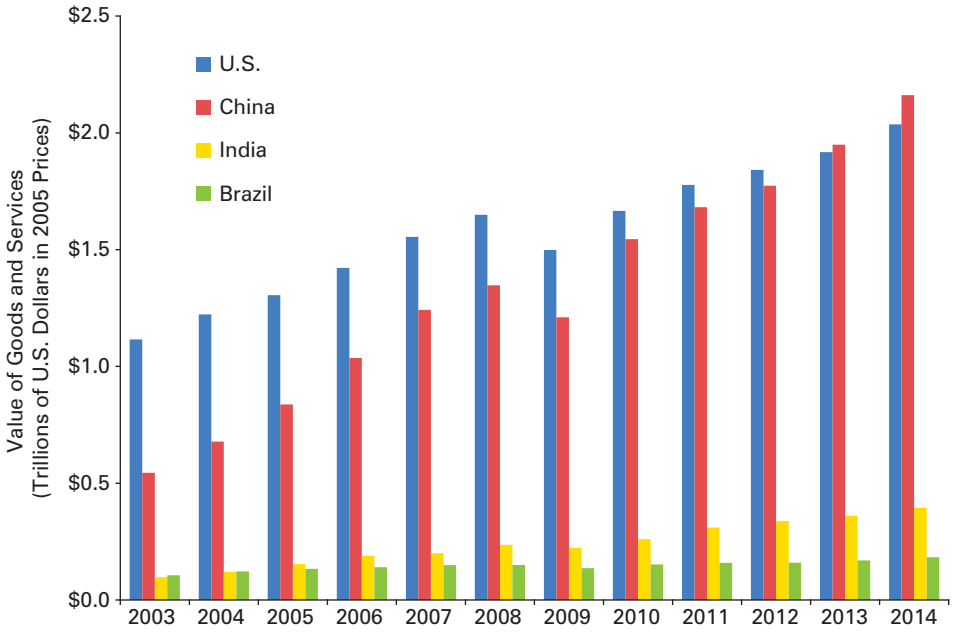
While Canada, Mexico, Japan and Europe are the countries and region that come to mind first when considering export markets, emerging economies are becoming increasingly important. The popular acronym "BRIC" was coined in 2001 to define four large, emerging economies: Brazil, Russia, India and China. It was projected that these four nations would experience rapid economic growth and combined could possibly surpass the richest economies in the world. Recently, South Africa was added to the group, changing BRIC to BRICS. These countries are beginning to collaborate with the announcement of establishing a development bank to help fund five-year infrastructure plans. Together these five countries account for nearly 40 percent of the world's population, and GDP growth has averaged 8 percent in the past decade.[3] As the BRICS countries grow, the middle class is expected to demand (and hence import) more high-value-added products, such as vehicles, office equipment and technology. For these reasons, monitoring trading trends with these countries is warranted. **Table 3** shows the realized and projected export trends of the U.S, Brazil, China and India.[4] **Figure 6** graphically displays the export trends of these countries. China is the dominant BRICS country and has had one of the highest growth rates for both imports and exports. While its trade activity is much smaller, India has experienced high growth rates in both imports and exports—a trend that is expected to continue.

Table 3: Trade Activity of the United States, Brazil, China and India, 2003 to 2014

Nation	Realized Average Annual Growth Rate, 2003-2011		Projected Average Annual Growth Rate, 2012-2014	
	Imports	Exports	Imports	Exports
United States	3.0%	5.8%	5.1%	5.0%
Brazil	12.7%	5.1%	7.3%	6.8%
China	12.2%	14.1%	10.8%	9.9%
India	16.2%	14.5%	8.7%	7.8%

Note: Data for Russia and South Africa were unavailable.
Source: Organization for Economic Cooperation and Development

Figure 6: Export Trends of the United States, Brazil, China and India, 2003 to 2014



Source: Organization for Economic Cooperation and Development

[3] The International Social Security Association article on the BRICS countries can be found at www.issa.int/News-Events/News2/BRICS-countries-leading-the-global-growth-of-social-security.

[4] OECD does not have data on Russia or South Africa.

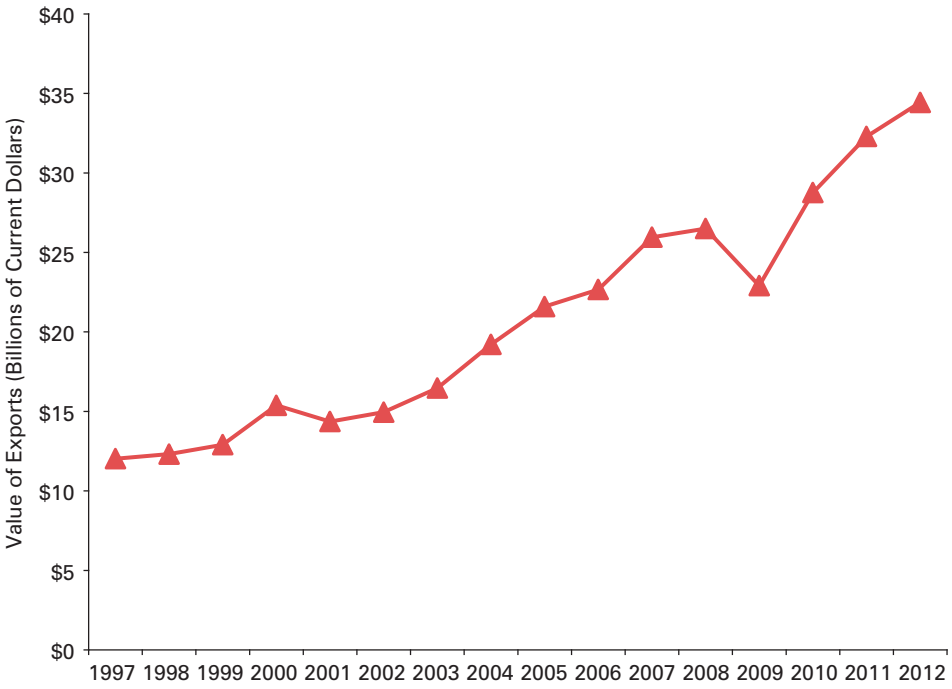
Indiana Export Trends

In 2012, the U.S. exported nearly $1.6 trillion worth of goods and services to foreign countries. Indiana contributed $34.4 billion to that total. In the past decade, Indiana's export growth rate (8.3 percent average annual growth) has slightly exceeded the nation's 8 percent average annual growth. Indiana's exports have steadily grown since 1997, except for dips in 2001 and 2009 (see **Figure 7**). The export value has risen from $12.0 billion in 1997 to $34.4 billion in 2012.

Indiana's exports grew steadily between 2001 and 2006 and accelerated in 2007 to 2008. While the Great Recession affected exports in 2009, the state rebounded strongly between 2010 and 2012 (growing 25.6 percent from 2009 to 2010, 12.3 percent from 2010 to 2011 and 6.6 percent from 2011 to 2012). As shown in **Figure 8**, Indiana recovered from the recession more quickly than the Midwest or United States. Since 1998, Indiana's annual export growth has

> *"Since 1998, Indiana's annual export growth has outperformed the Midwest and nation 10 times—an impressive trend."*

Figure 7: Indiana Exports, 1997 to 2012



Source: WISER Trade

Figure 8: Export Trends for Indiana, the Midwest and the United States, 1998 to 2012

Source: WISER Trade

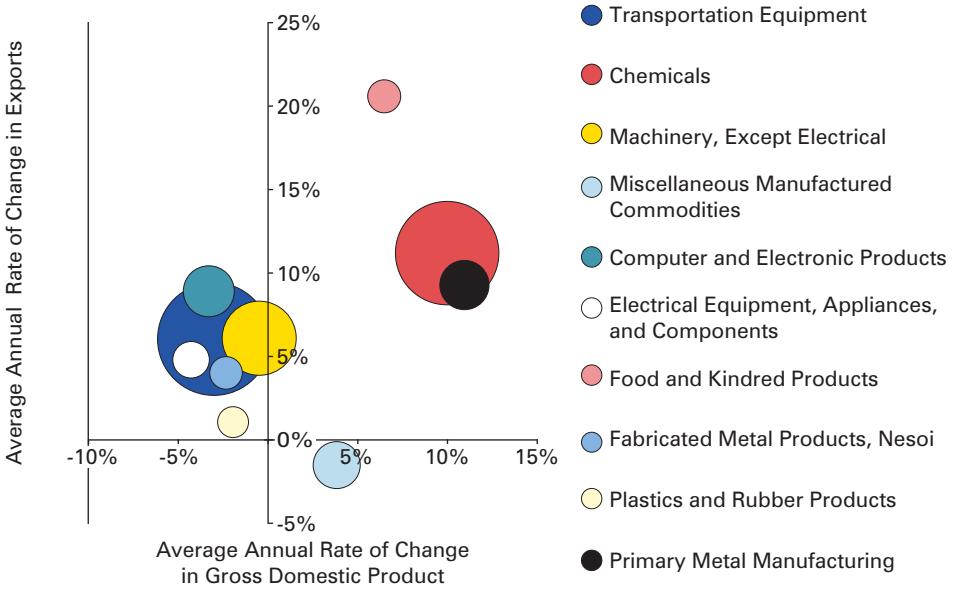
> *Relative to most other states, Indiana's economy depends on exports.*

outperformed the Midwest and nation 10 times—an impressive trend.

Figure 9 shows that nearly all of the top 10 exporting industries had an average annual export growth greater than its average annual GDP growth between 2006 and 2011. The few exceptions included primary metal manufacturing and miscellaneous manufactured commodities. The top two industries in 2011 export volume had opposite effects on the state's average annual GDP growth, with chemicals experiencing a strong 10 percent growth and transportation equipment declining by 3 percent.

Relative to most other states, Indiana's economy depends on exports. **Figure 10** compares Indiana's exports-to-GDP ratio with the rest of the country. GDP—the sum of all value-added components, such as wages and profits—and sales (as in the value of exported goods) are not conceptually the same. This is because the sales figure includes the price of intermediate inputs as well as value added; however, the exports-to-GDP ratio can provide a rough measure of the relative dependence a state has on exports.[5] In terms of export dependency,

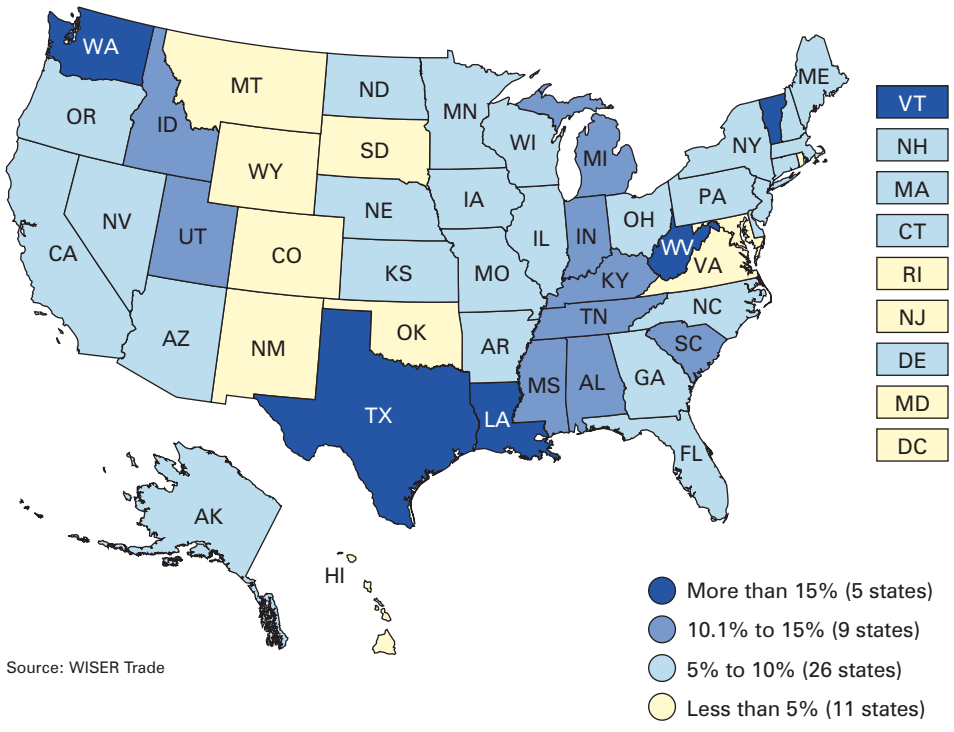
Figure 9: Comparing Indiana's Growth in Exports and GDP by Industry, 2006 to 2011



Note: Nesoi stands for "not elsewhere specified or indicated." Industry classifications based on NAICS industry codes. WISER Trade data based on the Harmonized System for Commodities. Bubble size indicates the 2011 export value. 2011 data were used for both GDP and export value due to 2012 GDP data suppression by detailed industry.

Source: WISER Trade (exports) and the Bureau of Economic Analysis (gross domestic product)

Figure 10: State Export Dependency—Export Sales to GDP, 2012



Source: WISER Trade

[5] In previous reports, data were available to determine the percentage of manufacturing employment dependent upon exports. The Census Bureau no longer reports these data.

"Only three Midwestern states exceeded the dollar value of Indiana's export sales: Illinois, Michigan and Ohio."

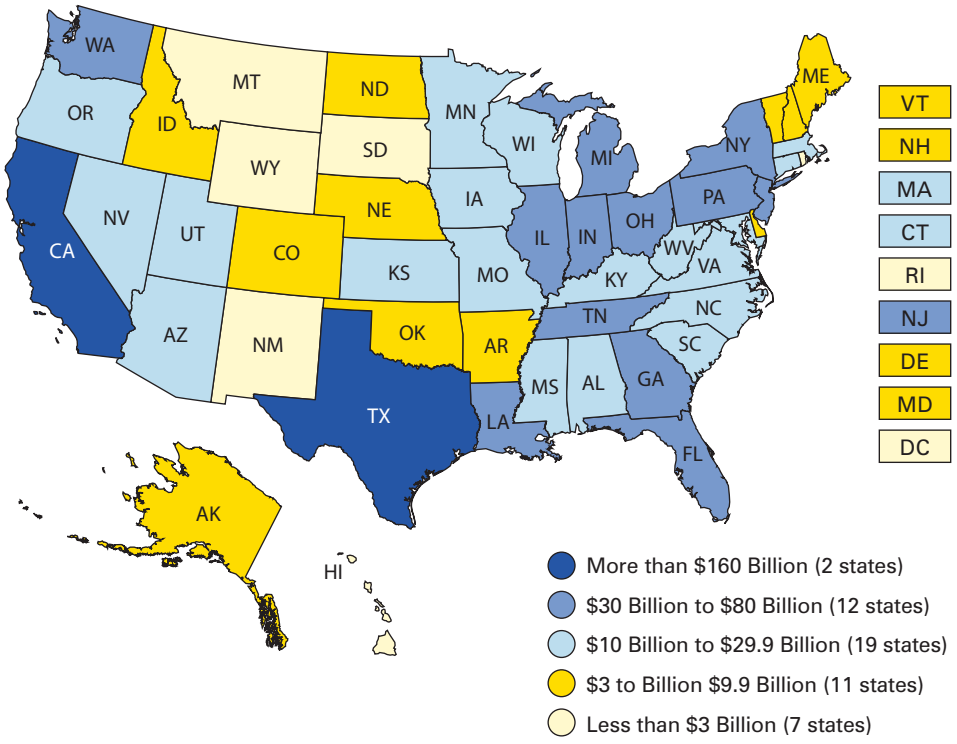
measured by the ratio of exports to GDP, Indiana ranked 11th. Five states had ratios greater than 15 percent, with Louisiana having the highest dependency at 25.9 percent. In the Midwest, Michigan, Kentucky and Indiana had the largest shares of export dependency at 14.2, 12.8 and 11.5 percent, respectively.

Figure 11 reflects the dollar value of export sales by state. Texas and California dominate, with exports valued at $265.4 billion and $161.7 billion, respectively. Indiana held its own at 13th place. Only three Midwestern states exceeded Indiana's exports: Illinois, Michigan and Ohio.

Since the Great Recession, state level export volume has been volatile, ranging from a 32.7 percent average annual growth rate (New Mexico) to an 11.2 percent average annual drop (New Hampshire) in exports.

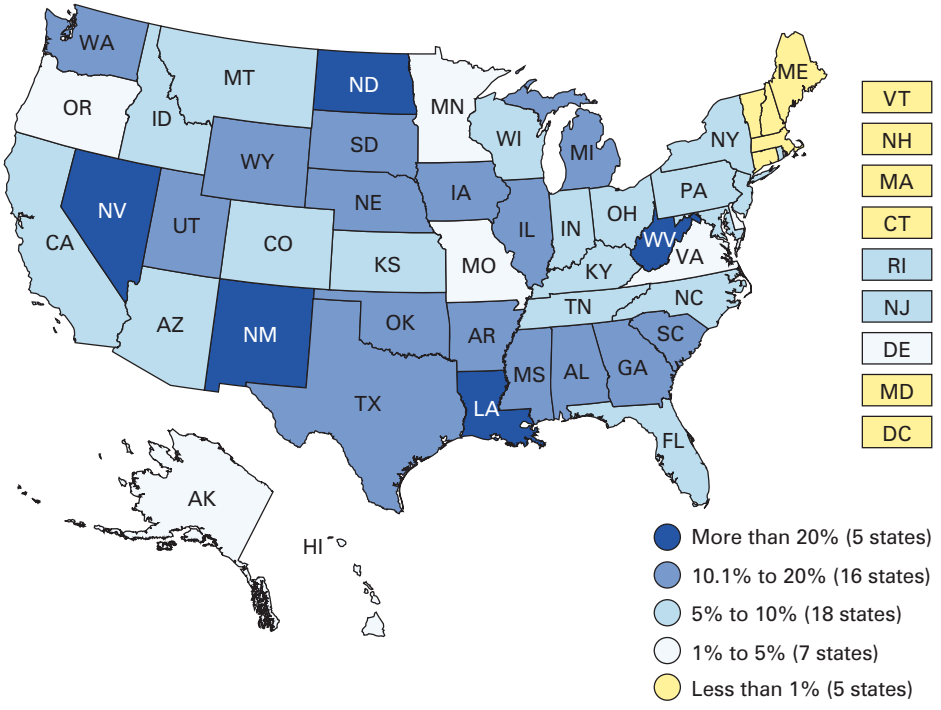
Indiana's average annual growth rate from 2010 to 2012 was 9 percent, slightly less than the U.S. average of 9.5 percent (see **Figure 12**). In the Midwest, Illinois, Iowa and Michigan outperformed the U.S. and Indiana.

Figure 11: Value of Exports by State in Current Dollars, 2012



Source: WISER Trade

Figure 12: Average Annual Rate of Change in Exports, 2010 to 2012

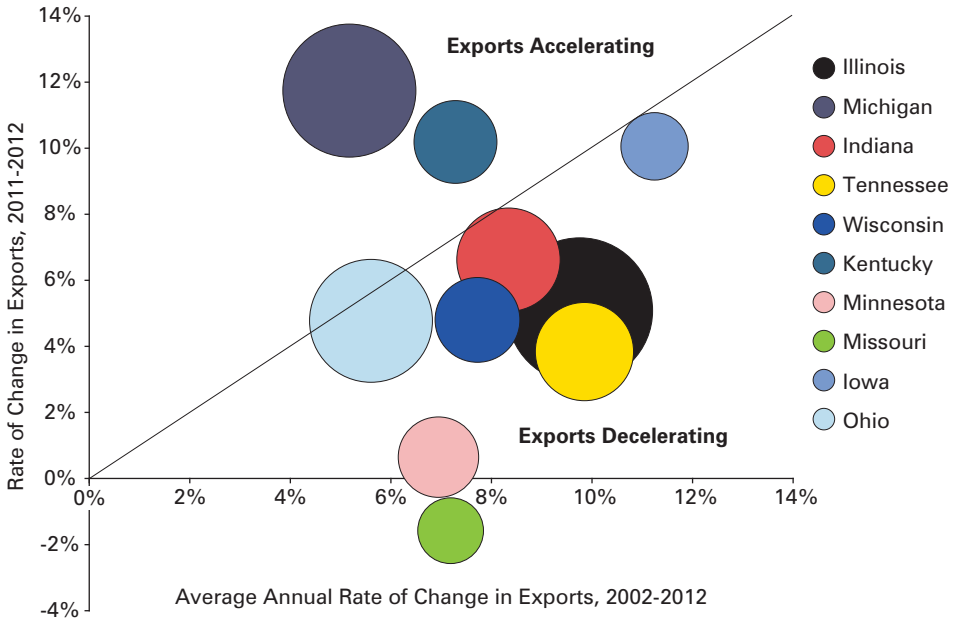


Source: WISER Trade

Figure 13 compares the rate of export increase to the relative dollar value of exports in the Midwestern states. The horizontal axis shows the average annual growth rate for exports from 2002 to 2012. The vertical axis plots the change in exports from 2011 to 2012. The bubble size reflects the relative value of each state's 2012 exports. A bubble above the diagonal line indicates that the most recent year's growth exceeds the 2002 to 2012 trend. For example, Michigan and Kentucky's exports accelerated greatly in 2012. Bubbles below the line indicate that the most recent year's growth is below trend. Eight Midwestern states fell into this category.

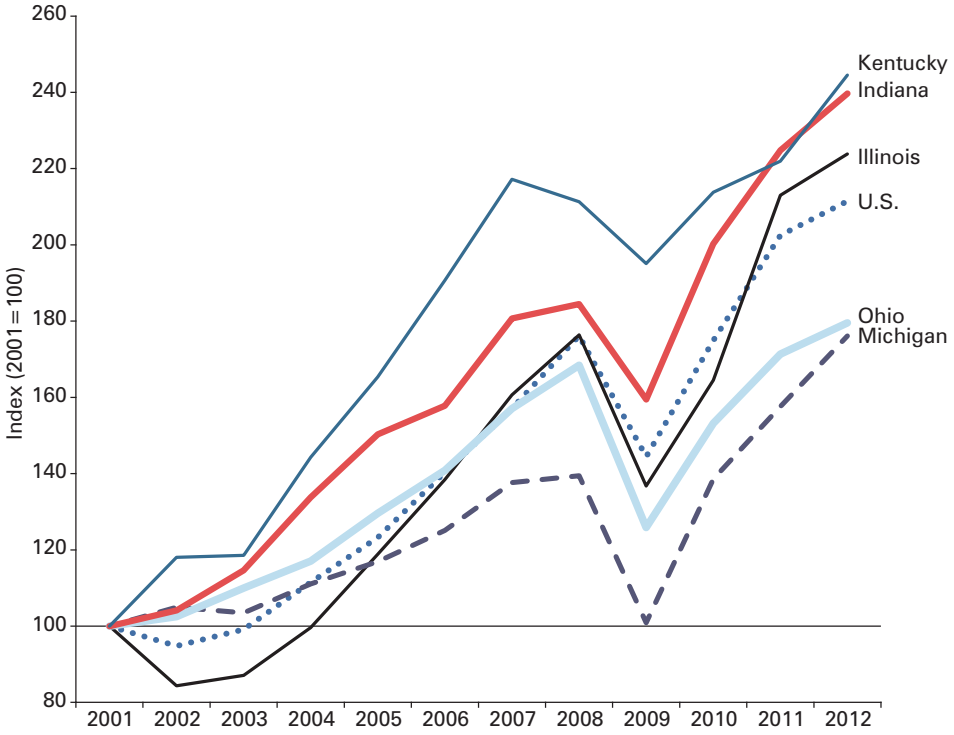
Figure 14 compares Indiana's export growth from 2001 to 2012 to neighboring states and the nation. Indiana and Kentucky have consistently outperformed the national index value as well as most of their neighbors over the years. Other Midwestern states with more dynamic trends and a stronger 2012 index include Missouri and Tennessee, with Missouri surpassing all Midwestern states in exporting strength since 2008.

Figure 13: Export Trends in the Midwest, 2002 to 2012



Note: Bubble size indicates the 2012 export value.
Source: WISER Trade

Figure 14: Export Index for Selected Midwestern States, 2001 to 2012



Source: WISER Trade

Indiana Export Destinations

Mirroring national trends, Canada and Mexico have remained Indiana's top two export markets. In 2012, Canada captured more than a third of the state's exports, whereas Mexico accounted for 11.3 percent of Indiana's exports. In 2009, Germany emerged as the third top importer of Hoosier goods and continues to increase its purchase of Indiana goods year over year. **Table 4** summarizes Indiana's exports to the top 10 country destinations in 2012, presenting the current dollar value of exports and the growth in exports over the short, medium and long run.

The top 10 destinations comprised approximately 77 percent of Indiana's exports in 2012. **Figure 15** illustrates Canada's dominance. Of the top 10 destinations, half had accelerating import trends from Indiana relative to the long-term trend. Most of the

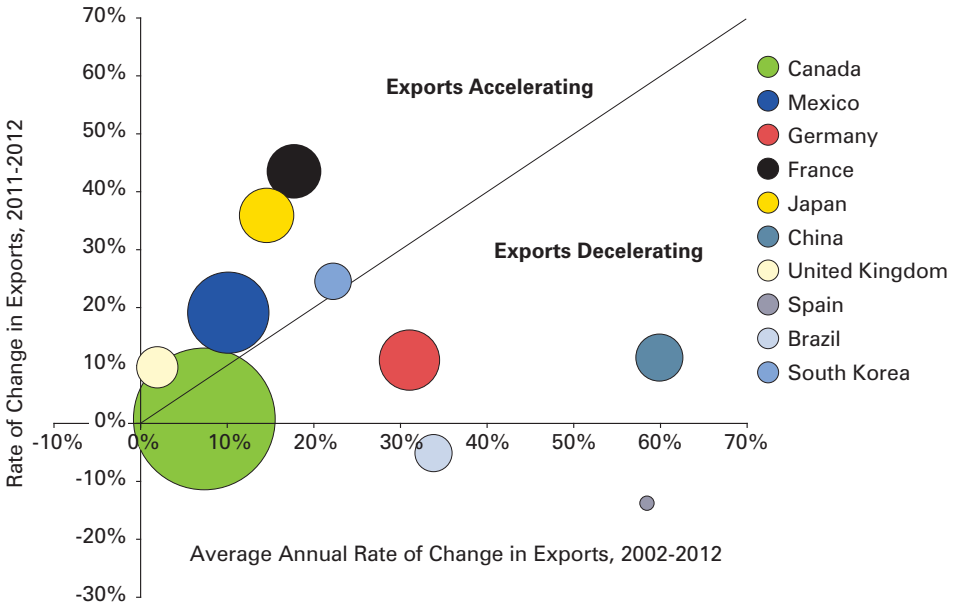
> *"In 2009, Germany emerged as the third top importer of Hoosier goods and continues to increase its purchase of Indiana goods year over year."*

Table 4: Indiana's Top Export Destinations—Value and Average Annual Rate of Change, 2002 to 2012

Export Destination	Value of Exports (Millions of Current Dollars)			Average Annual Rate of Change		
	2010	2011	2012	2011-2012	2007-2012	2002-2012
World Total	$28,744	$32,282	$34,431	6.7%	5.7%	8.3%
Canada	$10,684	$11,807	$11,900	0.8%	1.9%	5.5%
Mexico	$2,613	$3,279	$3,907	19.1%	8.1%	7.0%
Germany	$1,830	$1,943	$2,156	10.9%	13.5%	14.1%
France	$1,408	$1,230	$1,766	43.5%	3.3%	10.2%
Japan	$1,197	$1,289	$1,752	35.9%	17.3%	9.0%
China	$1,089	$1,175	$1,308	11.4%	10.9%	19.4%
United Kingdom	$1,467	$1,092	$1,198	9.7%	-9.2%	1.8%
Spain	$941	$957	$825	-13.8%	19.4%	19.2%
Brazil	$820	$861	$817	-5.1%	9.4%	14.8%
Korea	$551	$632	$788	24.5%	15.3%	11.7%

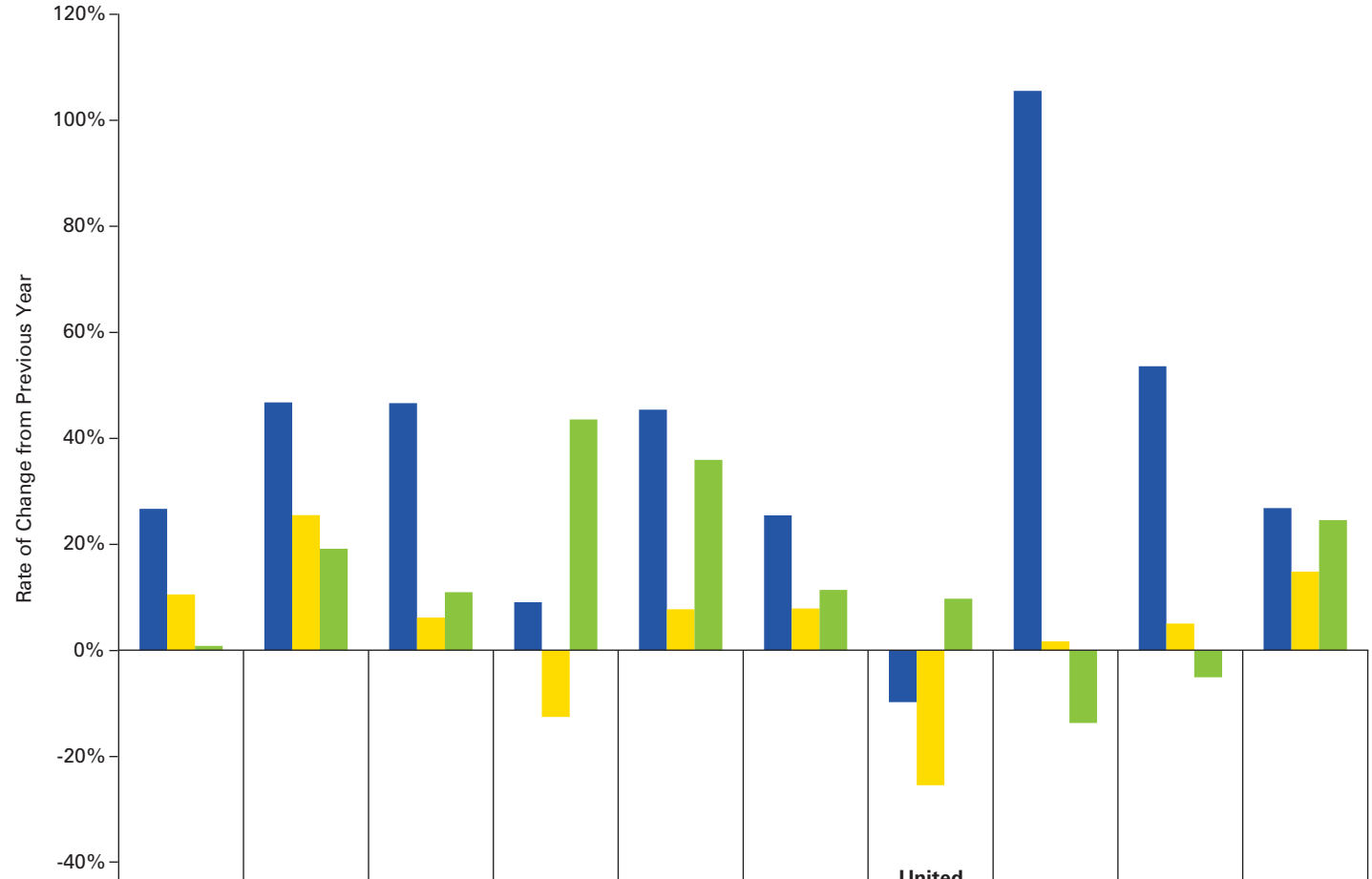
Source: WISER Trade

Figure 15: Export Trends for Indiana's Top 10 Destinations, 2002 to 2012



Note: Bubble size indicates the 2012 export value.
Source: WISER Trade

Figure 16: Annual Change in Exports for Indiana's Top 10 Export Destinations, 2009 to 2012



	Canada	Mexico	Germany	France	Japan	China	United Kingdom	Spain	Brazil	Korea
2009-2010	26.6%	46.8%	46.6%	9.0%	45.4%	25.4%	-9.8%	105.5%	53.6%	26.8%
2010-2011	10.5%	25.5%	6.2%	-12.6%	7.7%	7.8%	-25.5%	1.7%	5.0%	14.8%
2011-2012	0.8%	19.1%	10.9%	43.5%	35.9%	11.4%	9.7%	-13.8%	-5.1%	24.5%

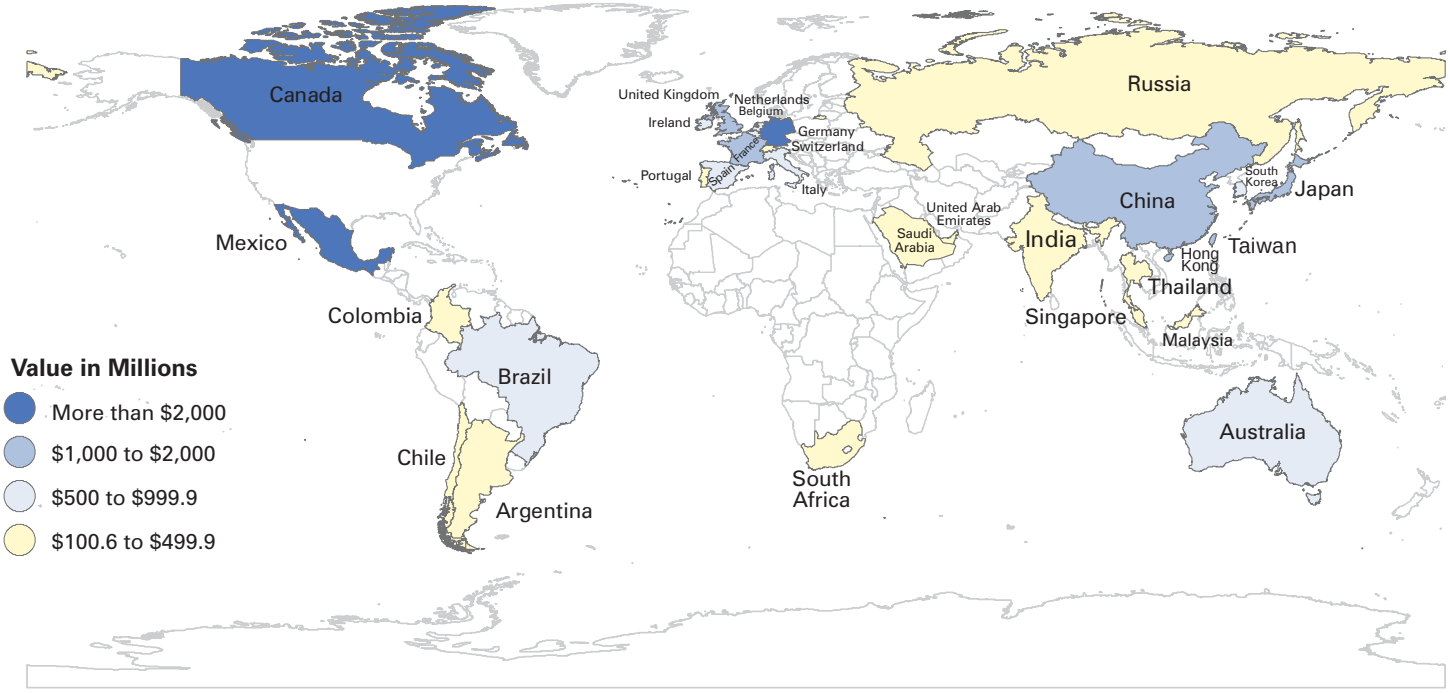
Source: WISER Trade

countries with decelerating exports (Spain, China, Brazil and Germany) have experienced economic turmoil following years of strong growth, hence the negative position. For example, exports to Spain grew by triple digits between 2000 and 2010, but more recently the Spanish economy has been suffering.

Figure 16 compares the annual rate of change in exports to Indiana's top 10 export partners for three successive years. Countries with the most vibrant growth over the past three years include Mexico (26.2 percent), Japan (25.2 percent), South Korea (19.8 percent) and Spain (19.6 percent). For 2009-2010, the smaller export destinations had stronger import growth than the larger countries—perhaps indicating their growing wealth and purchasing power. In subsequent years, however, the rapid growth was not sustained.

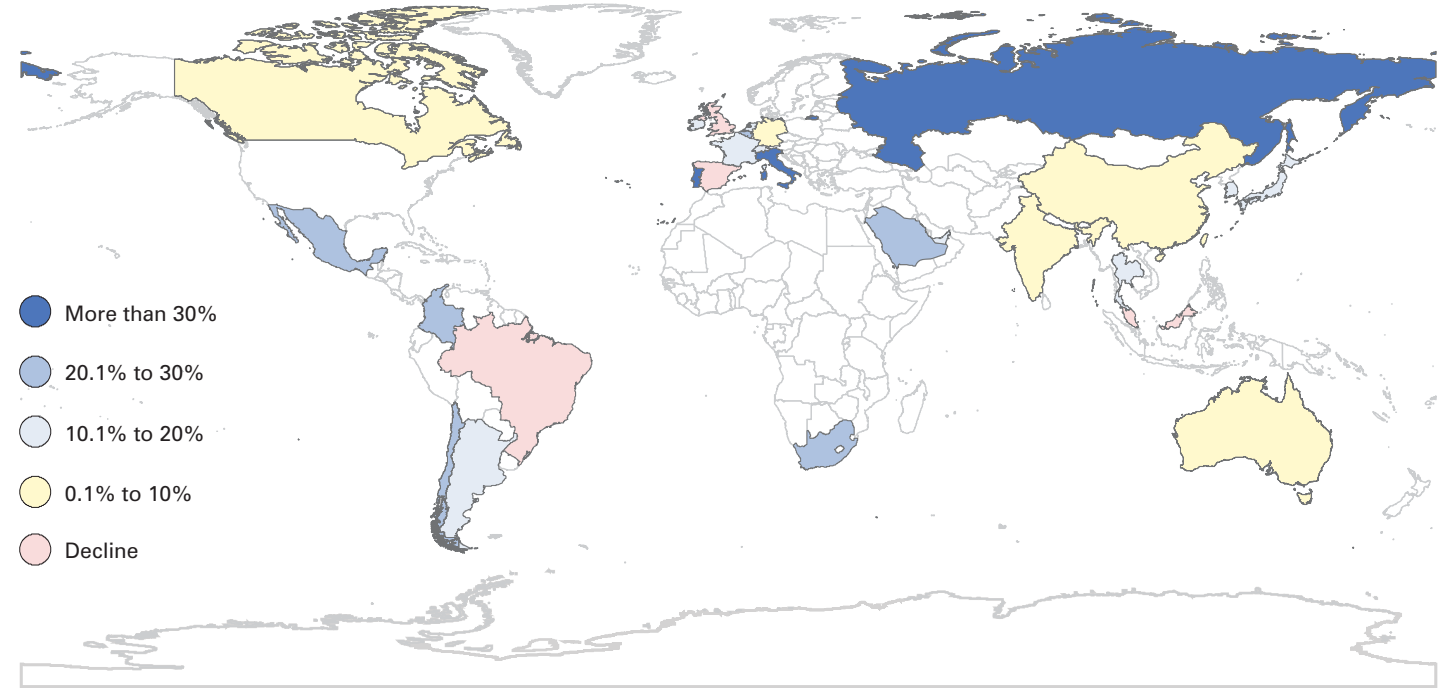
"Countries with the most vibrant growth over the past three years include Mexico (26.2 percent), Japan (25.2 percent), South Korea (19.8 percent) and Spain (19.6 percent)."

Figure 17: Destinations of Indiana Exports Exceeding $100 Million, 2012



Source: WISER Trade

Figure 18: Indiana's Average Annual Export Growth by Destination, 2010 to 2012

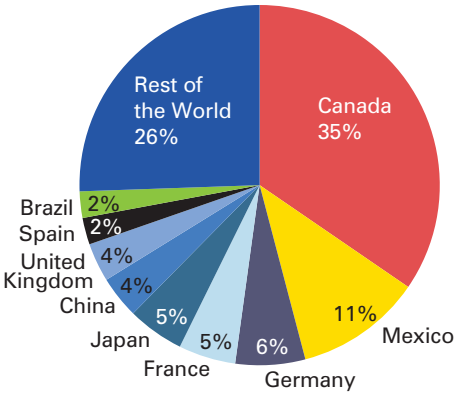


Note: Includes countries importing more than $100 million.
Source: WISER Trade

In 2012, 201 countries imported Indiana goods, but only 30 had export values greater than $100 million (see **Figure 17**). These 30 countries accounted for 94.8 percent of all Indiana exports.

Figure 18 presents growth rates for Indiana exports from 2010 to 2012 for those economies importing over $100 million. The average annual growth rate for these countries from 2010 to 2012 was 9.6

Figure 19: Top Indiana Export Destinations, 2012



Source: WISER Trade

> *China and Germany had the most dramatic and consistent growth over the past decade.*

percent—slightly higher than the 9.0 percent for all of Indiana's export destinations. The growth rates were something of a mixed bag, with the majority experiencing positive growth rates since 2010. That said, import growth levels in the eurozone countries have varied considerably recently, which may reflect the differing impacts from the euro crisis.

Figure 19 shows how the top 10 countries compare with respect to their share of Indiana's exports.

Table 5 identifies the largest changes in export sales for the top five export destinations in 2012 for each of the leading export industries. For example, pharmaceutical exports increased $1.2 billion from 2011 to 2012, with France contributing nearly half of the increase.

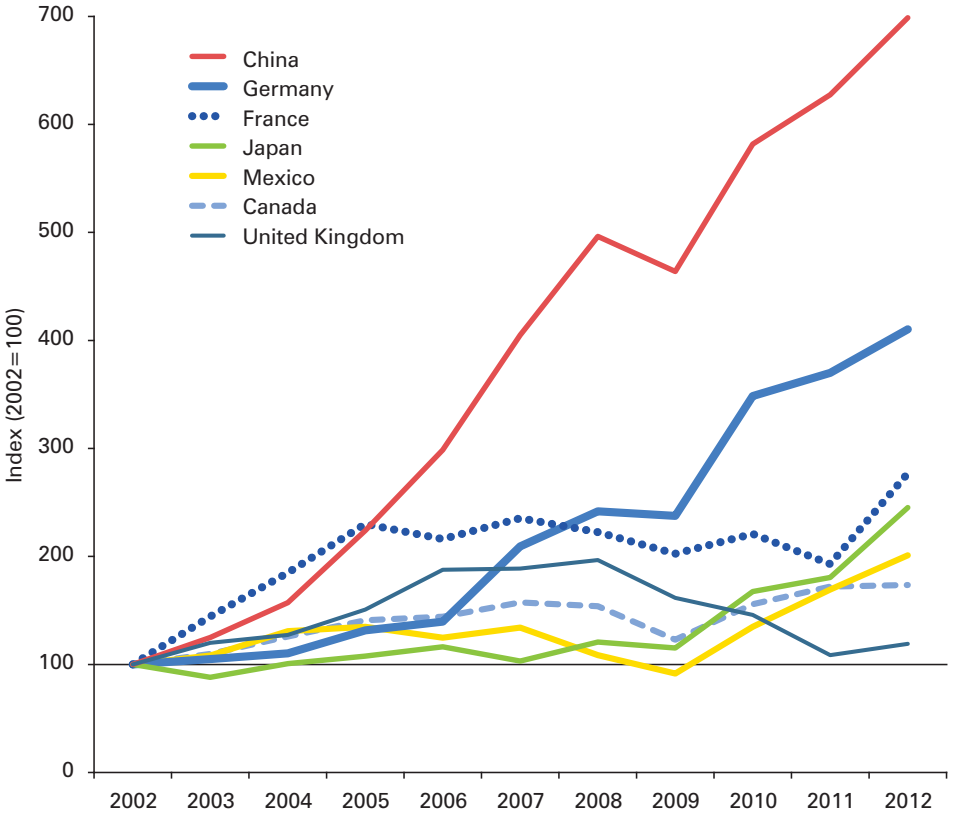
Figure 20 presents the seven destinations importing more than $1 billion from Indiana in 2012 and their

Table 5: Indiana's Change in the Value of Exports by Destination for Five Largest Industries, 2011 to 2012

Export Destination	Vehicles and Parts	Pharmaceutical Products	Industrial Machinery	Optical and Medical Instruments	Electrical Machinery
World Total	-589.9	1,159.9	452.1	178.3	330.8
Canada	-35.6	-105.8	5.9	15.0	84.5
Mexico	126.7	-1.7	264.5	0.1	9.6
Germany	-0.3	94.5	14.5	89.0	55.0
France	4.0	519.2	10.7	-16.1	40.5
Japan	5.5	214.3	-6.4	41.4	1.3
China	65.2	-5.2	-87.8	42.6	18.0
United Kingdom	9.6	-80.7	6.7	4.6	3.6
Spain	1.5	91.0	13.0	-1.6	0.7
Brazil	-12.3	-21.9	90.8	-0.5	14.2
South Korea	0.5	149.3	13.1	-4.5	-7.3

Note: Values are in millions of dollars. Shaded cells indicate destination countries that did not experience at least a $10 million movement in exports.
Source: WISER Trade

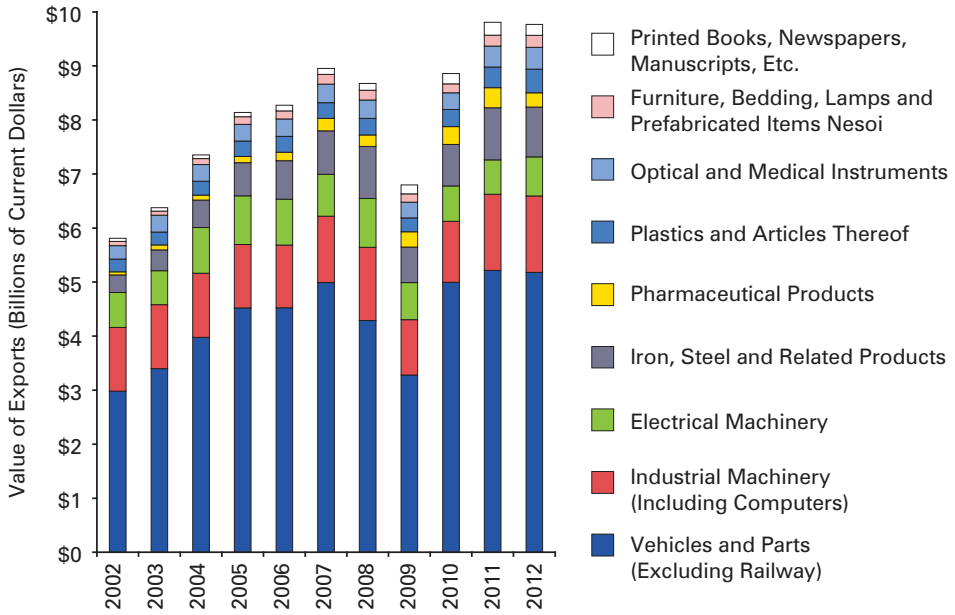
Figure 20: Indiana Export Index for Countries Importing More than $1 Billion, 2002 to 2012



Source: WISER Trade

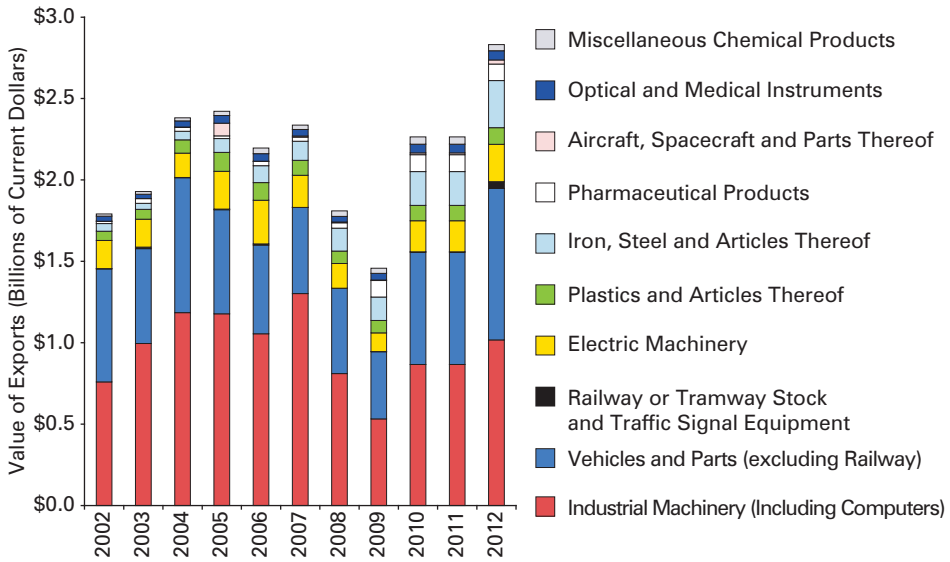
> *Canada and Mexico trade heavily in vehicle and parts and industrial machinery (likely transportation equipment related), whereas half of Germany's imports were in pharmaceuticals.*

Figure 21: Indiana Exports to Canada by Industry, 2002 to 2012



Note: Nesoi stands for "not elsewhere specified or indicated."
Source: WISER Trade

Figure 22: Indiana Exports to Mexico by Industry, 2002 to 2012



Source: WISER Trade

import trends since 2002. China and Germany had the most dramatic and consistent growth over the past decade. The 2012 export value to China is nearly seven times its 2002 value, and Germany has quadrupled its import value in the past decade.

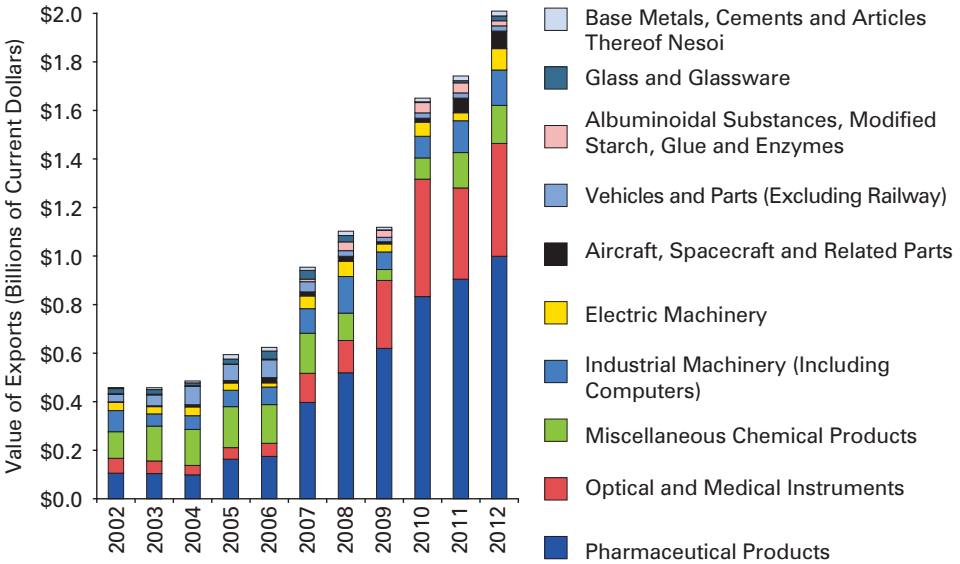
Figure 21 through **Figure 23** detail the top 10 exports from Indiana to Canada, Mexico and Germany, respectively. Canada and Mexico trade heavily in vehicle and parts and industrial machinery (likely transportation equipment related), whereas half of Germany's imports were in pharmaceuticals. In 2012, the top 10 Indiana shipments to Canada stagnated, but overall, exports increased by $92.1 million, or 0.8 percent.

Indiana exports to Mexico increased by $618.7 million, or 18.8 percent, in 2012. Nearly all of the top 10 exporting industries to Mexico experienced a trade increase, with the exception of iron and steel products. However, the top three export industries were the heavyweights in contributing to the export growth (industrial machinery: $264.5 million; vehicles and parts: $126.7 million; and railway or tramway stock: $249.8 million). Aircraft and spacecraft exports made its first entry into the top 10 imported industries in 2012.

Exports to Germany rose by $212.1 million (10.9 percent) from 2011 to 2012. Pharmaceutical products and optical and medical instrument exports contributed mightily to

the expansion with increases of $94.5 million and $89.1 million, respectively. Only two industries in the top 10 hit soft patches—vehicles and parts ($0.3 million) as well as a sub-category within the chemical sector, namely, albuminoidal substances, modified starch, glue and enzymes ($20.3 million).

Figure 23: Indiana Exports to Germany by Industry, 2002 to 2012



Note: Nesoi stands for "not elsewhere specified or indicated."
Source: WISER Trade

Indiana Export Industries

Table 6 presents the top 10 export categories for Indiana in 2012. These industries constitute 84.3 percent of all exports out of Indiana.

Vehicles and parts retained its perch as Indiana's largest export industry in 2012, despite its slight decline in export value. Pharmaceutical products regained its number two spot from industrial machinery thanks to its strong growth in 2012. If the current trends for the top two industries continue, pharmaceutical products may become the top exported industry in the near future.

Since 2002, four industries had double-digit average annual growth: aircraft, spacecraft and related parts (29.8 percent), pharmaceutical products (24 percent), iron, steel and articles thereof (11.3 percent), and optical and medical instruments (10.1 percent), as shown in **Figure 24**.

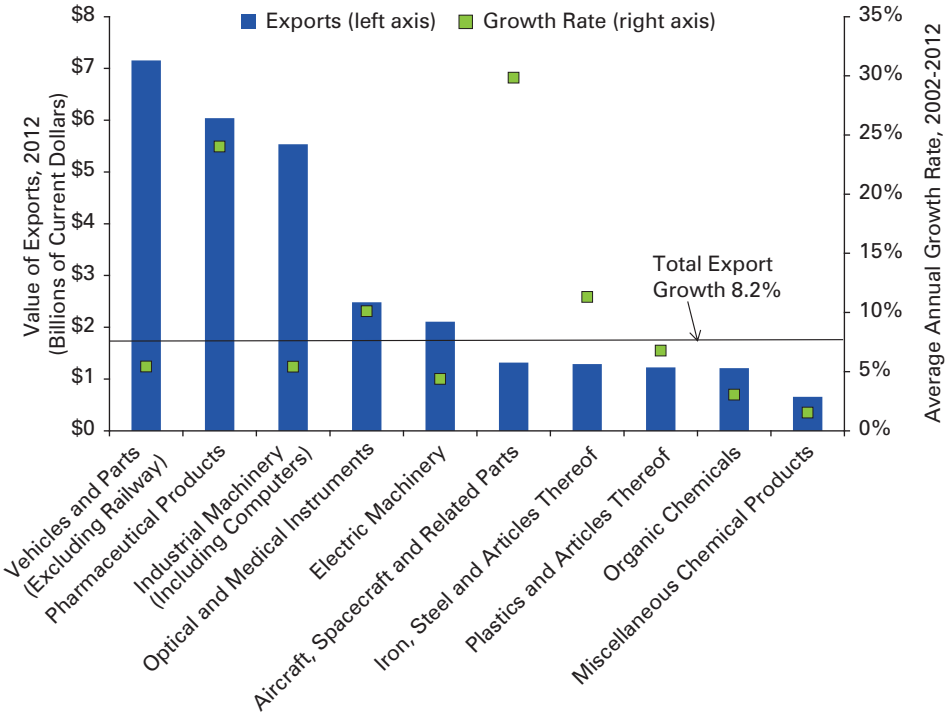
> *"Vehicles and parts retained its perch as Indiana's largest export industry in 2012, despite its slight decline in export value."*

Table 6: Indiana's Top 10 Export Industries, 2002 to 2012

Industry	Exports (in millions) 2012	Average Annual Growth Rate 2011-2012	Average Annual Growth Rate 2002-2012
Vehicles and Parts (Excluding Railway)	$7,156	-7.6%	5.4%
Pharmaceutical Products	$6,040	23.8%	24.0%
Industrial Machinery (Including Computers)	$5,536	8.9%	5.4%
Optical and Medical Instruments	$2,484	7.7%	10.1%
Electric Machinery	$2,109	18.6%	4.4%
Aircraft, Spacecraft and Parts Thereof	$1,318	37.0%	29.8%
Iron, Steel and Articles Thereof	$1,289	-10.7%	11.3%
Plastics and Articles Thereof	$1,225	9.3%	6.8%
Organic Chemicals	$1,209	-17.6%	3.0%
Miscellaneous Chemical Products	$656	3.8%	1.5%

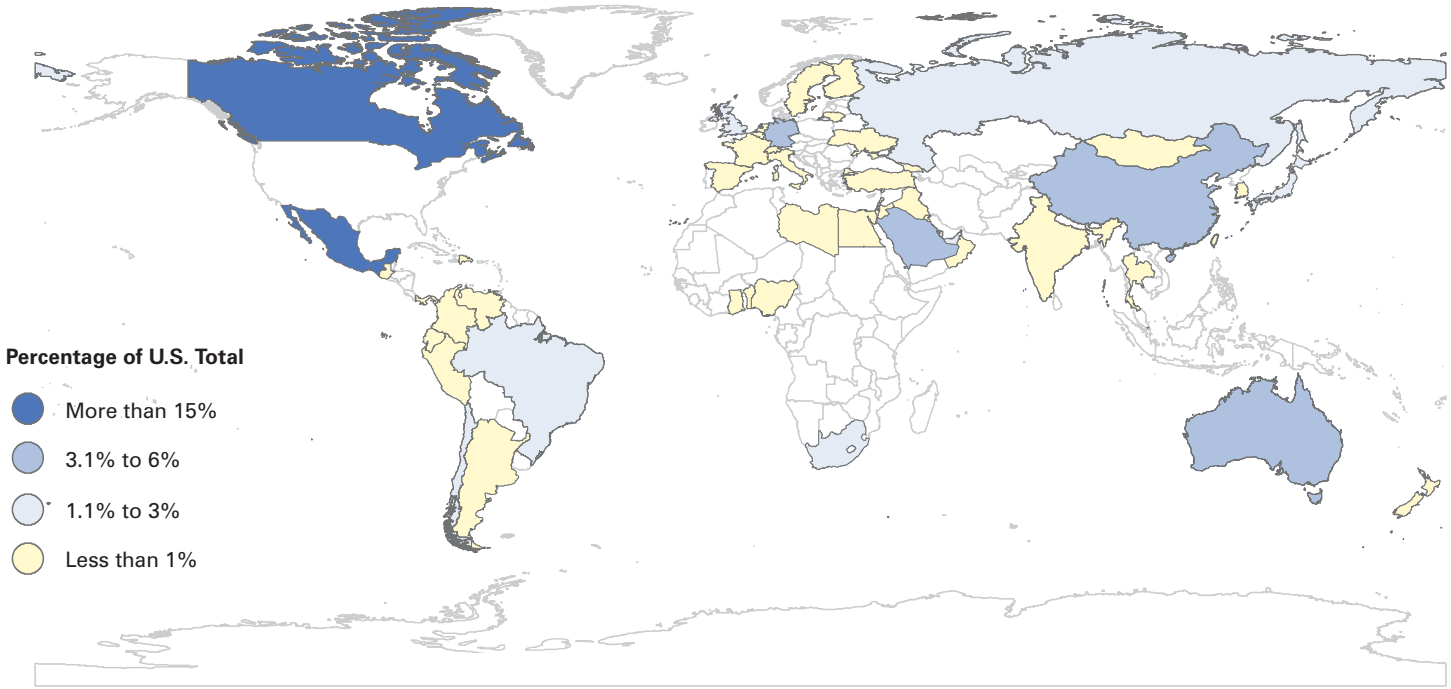
Note: Industries are defined by the Harmonized System of Commodity Classifications.
Source: WISER Trade

Figure 24: Indiana's Top 10 Export Industries, 2002 to 2012



Source: WISER Trade

Figure 25: Destinations for U.S. Exports of Vehicles and Parts (Excluding Railway), 2012



Note: Includes countries with export purchases greater than $200 million.
Source: WISER Trade

The following section of the report provides detailed information regarding the top 10 export industries in Indiana.

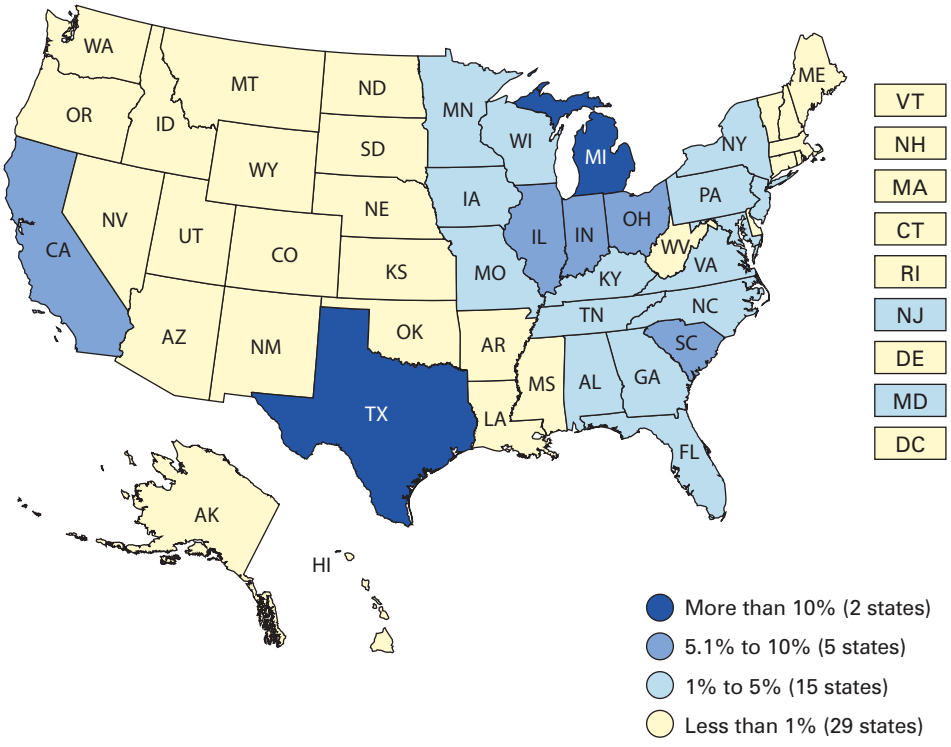
Vehicles

Figure 25 displays the share of 2012 U.S. vehicle and parts exports for destination countries with export purchases greater than $200 million. Canadian purchases of vehicles and parts have slowly rebounded since the downturn in 2009 and have yielded a 3.8 percent average annual growth rate since 2002.

The share of vehicles and parts earmarked for Canada has slowly dwindled from 58 percent in 1999 to 37.8 percent in 2012. Mexico—America's second-largest trading partner—has seen a slight increase in its share of vehicles and parts, commanding 15.2 percent of U.S. exports in 2012.

Of the top 15 countries that imported vehicle and parts products, nine had double-digit average annual

Figure 26: Share of U.S. Vehicle Exports (Excluding Railway), 2012



Source: WISER Trade

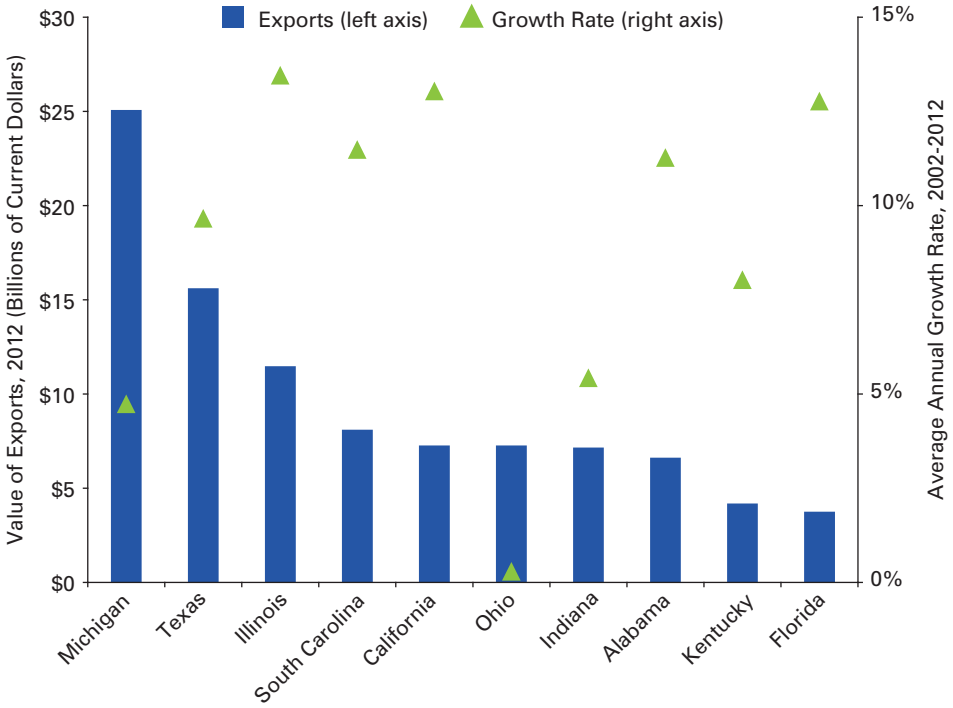
growth rates from 2002 to 2012: China, Saudi Arabia, Australia, United Arab Emirates, Chile, Russia, Brazil, South Africa and Nigeria. Individually, these countries import a relatively small share compared to Canada or Mexico, but collectively they imported 22.3 percent—exceeding Mexico's share.

Figure 26 presents the state sources of U.S. vehicle and parts exports. Michigan is the dominant leader with an 18.8 percent share, followed by Texas at 11.7 percent. Michigan's share has fluctuated from a high of 24.9 percent in 2002 to a low of 16.1 percent in 2009, with a meager average annual growth rate of 4.3 percent in the past decade. Texas' share has steadily increased, as evidenced by its 12.7 percent average annual growth rate since 2002. In 2012, Indiana ranked seventh with 5.4 percent of the total category. This follows a drop from third in 2010 and fifth in 2011 due to an increase in exports from Ohio, Illinois and South Carolina. The eight states with sales above $5 billion collectively accounted for 66.6 percent of exports in the vehicle and parts category.

Figure 27 graphically recasts the data for the top 10 vehicle and parts exporting states. All of these states had positive growth rates in the past decade, with Illinois and California leading the pack at 13.5 percent and 13.0 percent, respectively. As can be seen in the chart, Indiana's export value (approximately $7 billion) is very similar to South Carolina, California, Ohio and Alabama—hence the ever-changing rankings.

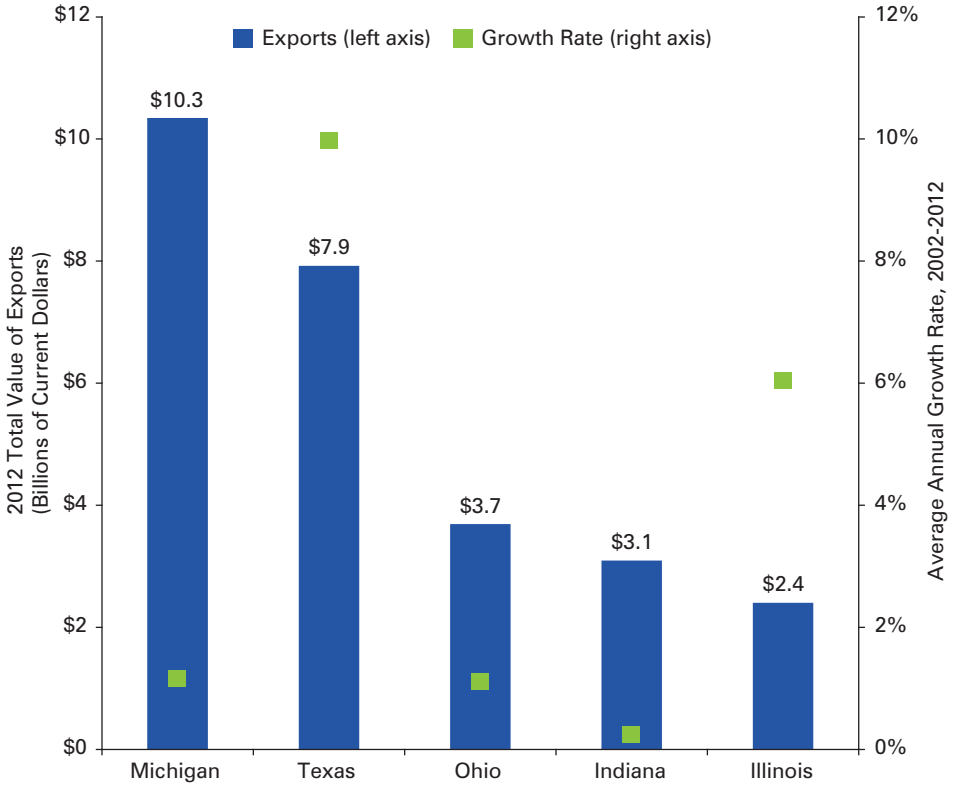
Indiana's top exported commodity within the broadly defined vehicles and parts industry was motor vehicle parts and accessories. **Figure 28** shows the top five exporting states for this commodity. Michigan was the leader in this category in terms of sales volume ($10.3 billion) followed by Texas ($7.9 billion). In the past decade, Michigan has posted languid average annual growth

Figure 27: Leading States in the Export of Vehicles and Parts (Excluding Railway), 2002 to 2012



Source: WISER Trade

Figure 28: Top Five Exporting States of Motor Vehicle Parts and Accessories, 2002 to 2012



Source: WISER Trade

> *Among all states, Indiana has been the top exporter of pharmaceuticals since 2009.*

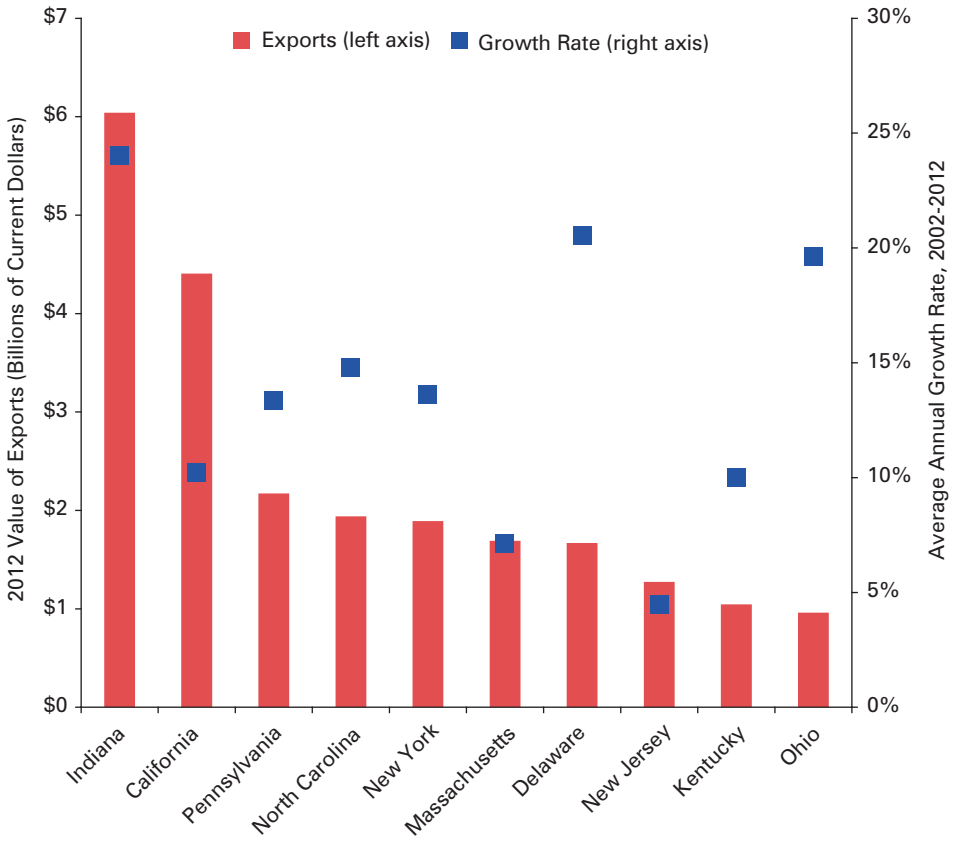
rates relative to Texas. If this trend continues, Texas will rival Michigan for the number one spot. Ohio and Indiana had relatively similar export values, with Ohio posting a slightly stronger growth rate, enabling it to continue surpassing Indiana. The top three destinations for Indiana's motor vehicle parts and accessories exports were Canada, Mexico and China.

Pharmaceuticals

Nationally, pharmaceutical products were the 11th largest exported commodity; however, in Indiana it's the second-highest-valued exported commodity. Among all states, Indiana has been the top exporter of pharmaceuticals since 2009. Indiana and California comprised 15.1 percent and 11 percent of the nation's exports, respectively, and their shares have grown over the years. (Puerto Rico contributes 22.1 percent of the nation's pharmaceutical exports, but since it's not a state, its total is excluded from state ranking calculations.) **Figure 29** shows Indiana's 24 percent average annual growth rate surpassing all other top 10 exporting states, explaining its growing share of the nation's exports in this category.

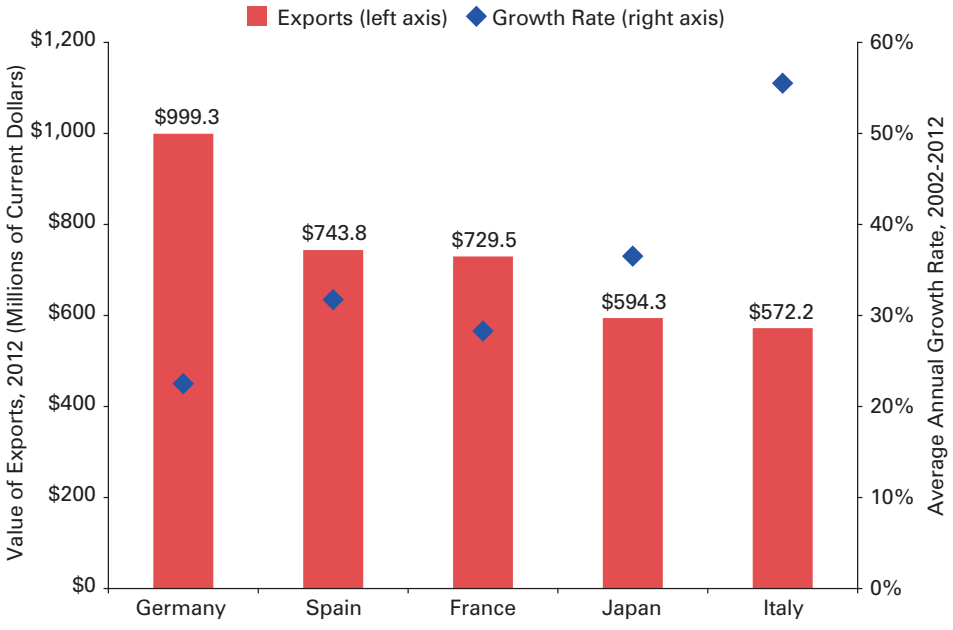
Figure 30 presents the top five export destinations for Indiana's pharmaceuticals in 2012. Four of the five destination countries were in Europe, an important region to

Figure 29: Leading States in the Export of Pharmaceuticals, 2002 to 2012



Source: WISER Trade

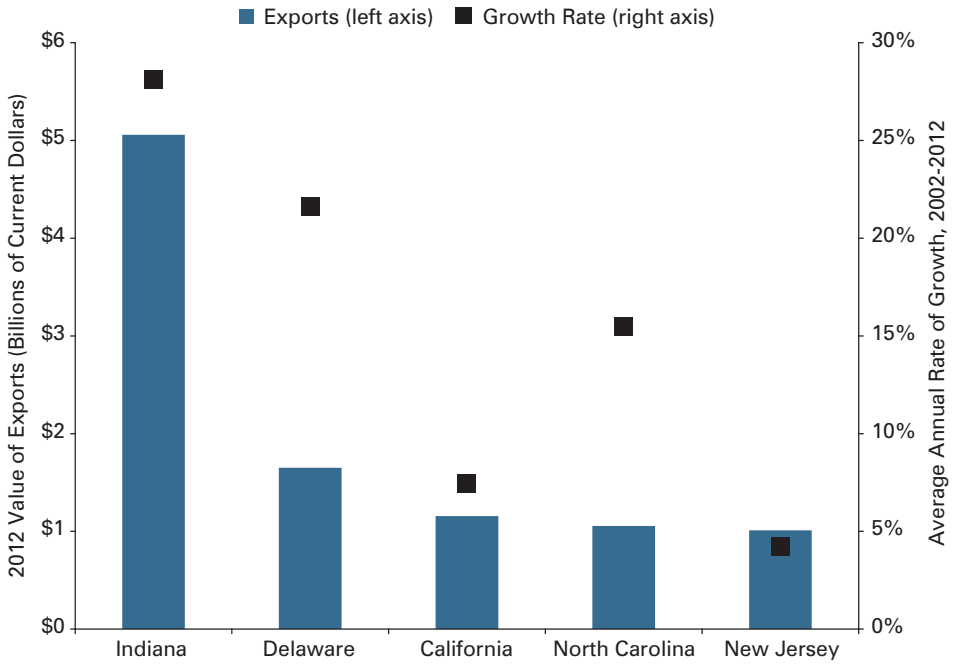
Figure 30: Indiana's Top Five Export Destinations for Pharmaceutical Products, 2002 to 2012



Source: WISER Trade

"Of the six pharmaceutical products exported from Indiana, medicines comprise the lion's share of the export activity (83.7 percent)."

Figure 31: Top Five Exporters of Medicines, 2002 to 2012



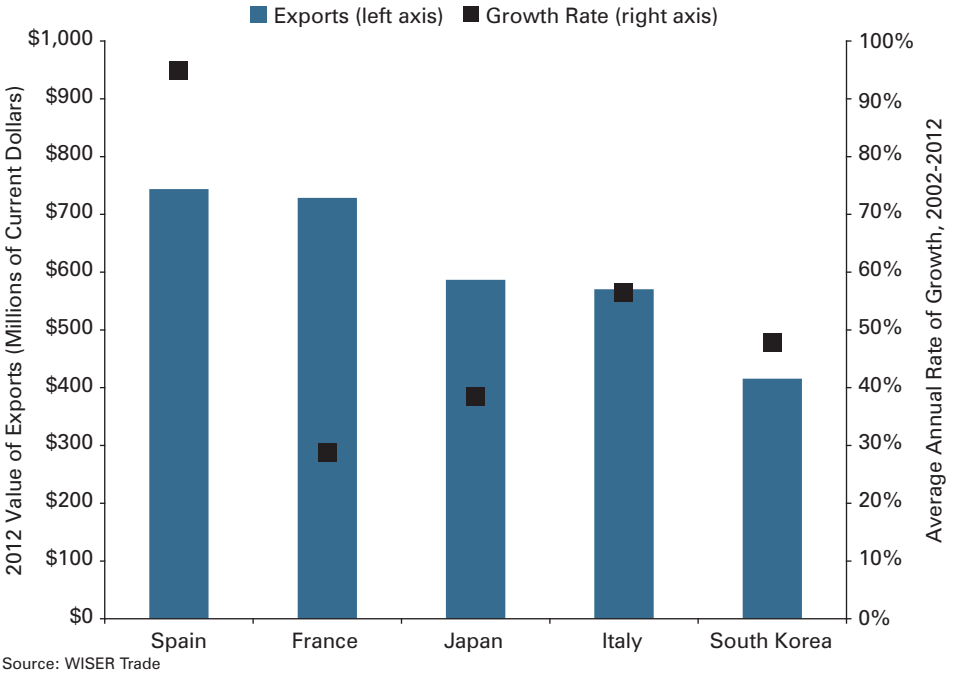
Source: WISER Trade

Indiana's pharmaceutical industry. In 2010, Germany claimed the top spot as an importer of Indiana's pharmaceutical products—replacing the United Kingdom—and has held onto this position through 2012.

Of the six pharmaceutical products exported from Indiana, medicines[6] comprise the lion's share of the export activity (83.7 percent). **Figure 31** shows Indiana and Delaware as the top two states, with Indiana being responsible for 20.4 percent of the national share. (Puerto Rico accounted for 31.3 percent of this category's total, but was excluded since it is not a state.)

Figure 32 shows the top five foreign destinations of Indiana's medicines. Spain and France are the leading importers of all Hoosier exports of this commodity, purchasing 14.7 percent and 14.4 percent, respectively. Strong double-digit growth has propelled this

Figure 32: Indiana's Top Five Destinations for Medicines, 2002 to 2012



Source: WISER Trade

[6] Medicaments is the official title of the commodity, but for ease of understanding the term medicines is used in this report.

> *In 2012, Indiana's export of industrial machinery was worth $5.5 billion and had experienced a 5.4 percent average annual rate of growth.*

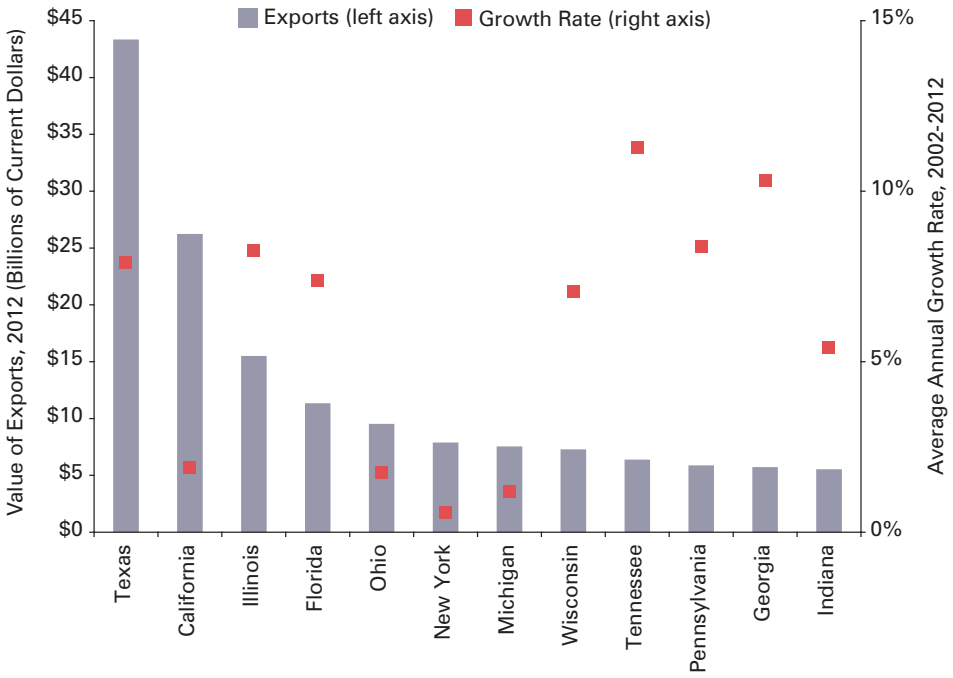
commodity's export growth. Spain leads the pack on this measure with a 94.8 percent average annual growth rate from 2002 to 2012.

Industrial Machinery

Figure 33 presents export value and growth among the top state exporters of industrial machinery. Indiana ranked 12th in 2012, returning back to the spot it held beginning in 2008. Texas and California continue to dominate the market. There are many other smaller states, however, that export between $5 million and $10 million in industrial machinery with robust average annual growth rates, such as Tennessee and Georgia. In 2012, Indiana's export of industrial machinery was worth $5.5 billion and had experienced a 5.4 percent average annual rate of growth. Meanwhile, Texas exported $43.3 billion with a 7.9 percent growth rate.

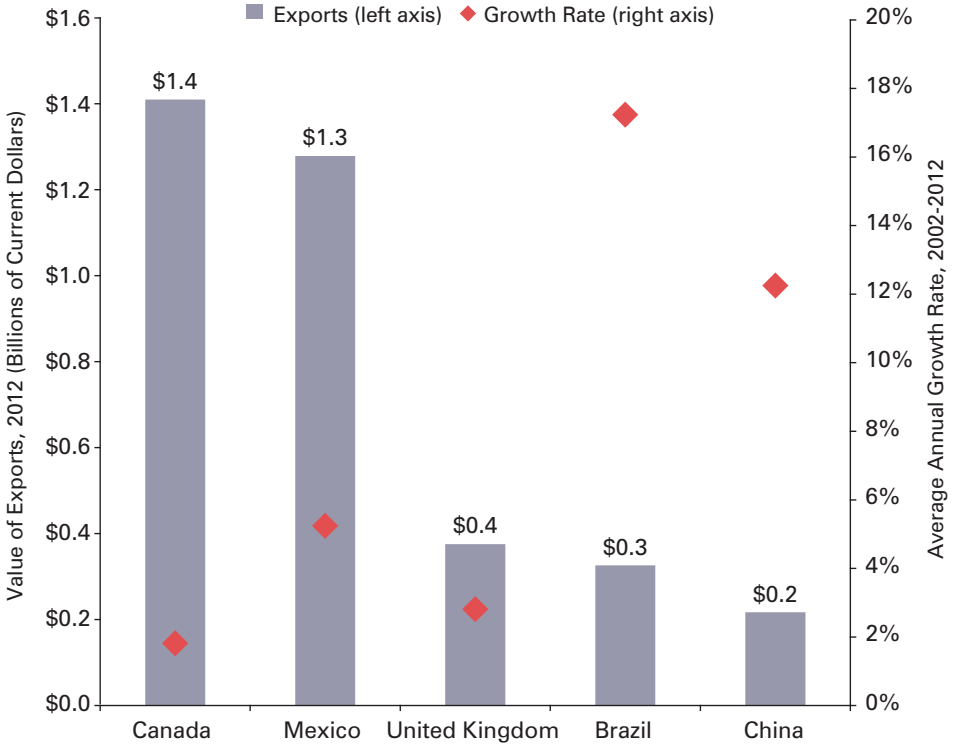
Figure 34 plots the value of exports and the average annual rate of growth for industrial machinery exports to Indiana's top five destinations. Clearly Canada and

Figure 33: Leading States in the Export of Industrial Machinery, 2002 to 2012



Source: WISER Trade

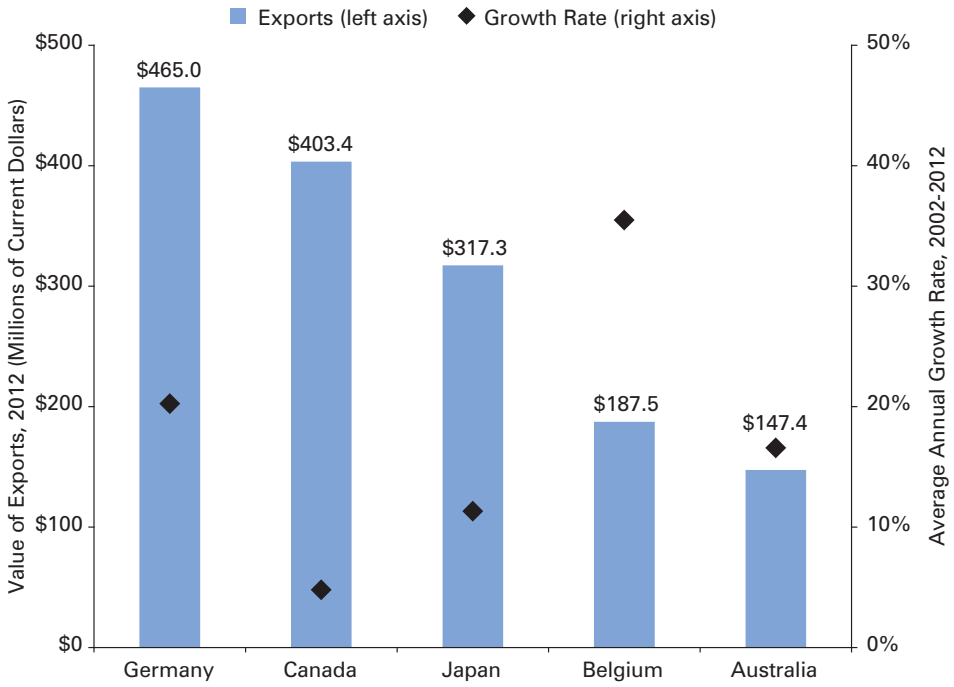
Figure 34: Indiana's Top Five Export Destinations for Industrial Machinery, 2002 to 2012



Source: WISER Trade

"Following the stalled export growth in 2010 to 2011, Indiana's electrical machinery industry saw a strong growth of 18.6 percent in 2012."

Figure 35: Indiana's Top Five Export Destinations for Optical and Medical Instruments, 2002 to 2012



Source: WISER Trade

Mexico are Indiana's primary export market for this industry.

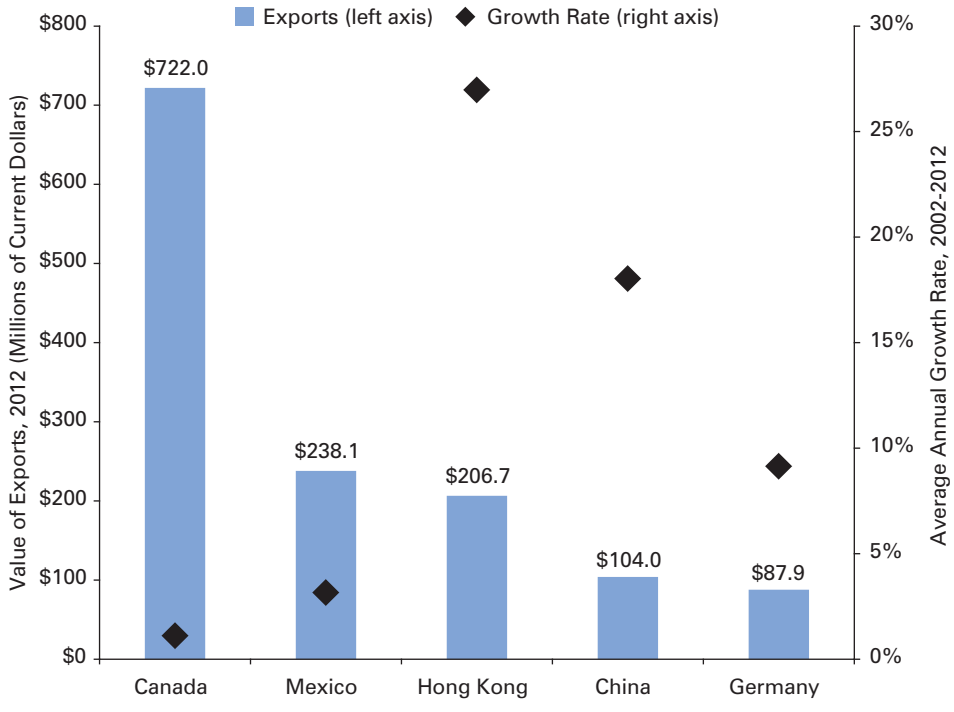
Optical and Medical Instruments

Figure 35 profiles the top five foreign markets for Indiana's optical and medical instrument exports. Germany and Canada continue to battle for the first place position. In the past several years (except for 2011), Germany has experienced strong growth—contributing significantly to its average annual growth rate of 20.2 percent in the past decade. The remaining three countries rounding out the top five had double-digit growth in the past decade. Australia and Belgium have increased their imports of optical and medical instruments in the past five years, so it is yet to be seen as to whether this upswing is sustainable.

Electrical Machinery

Following the stalled export growth in 2010 to 2011, Indiana's electrical machinery industry saw a strong growth of 18.6 percent in 2012. **Figure 36** shows export sales volume

Figure 36: Indiana's Top Five Export Destinations for Electrical Machinery, 2002 to 2012



Source: WISER Trade

and growth rates for Indiana's top five electrical machinery markets and, again, shows how Canada dominates the Indiana export landscape for this industry.

Aircraft, Spacecraft and Related Parts

Since 2002, Indiana exports of the aircraft and spacecraft industry has expanded at an average annual rate of 28.9 percent. This growth has been fueled by double-digit annual growth rates by the top 20 destination countries. Unlike industrial and electrical machinery industries where Canada is the dominant market, France is the leading export destination, attributed to a $209 million surge in aircraft and spacecraft product imports in 2012. As **Figure 37** also shows, exports to Mexico and Germany surged. This industry will be one to watch as exports have grown robustly for Indiana aircraft and spacecraft products and, given the diverse portfolio of destination markets, these exports are not dependent on the economic health of any one country.

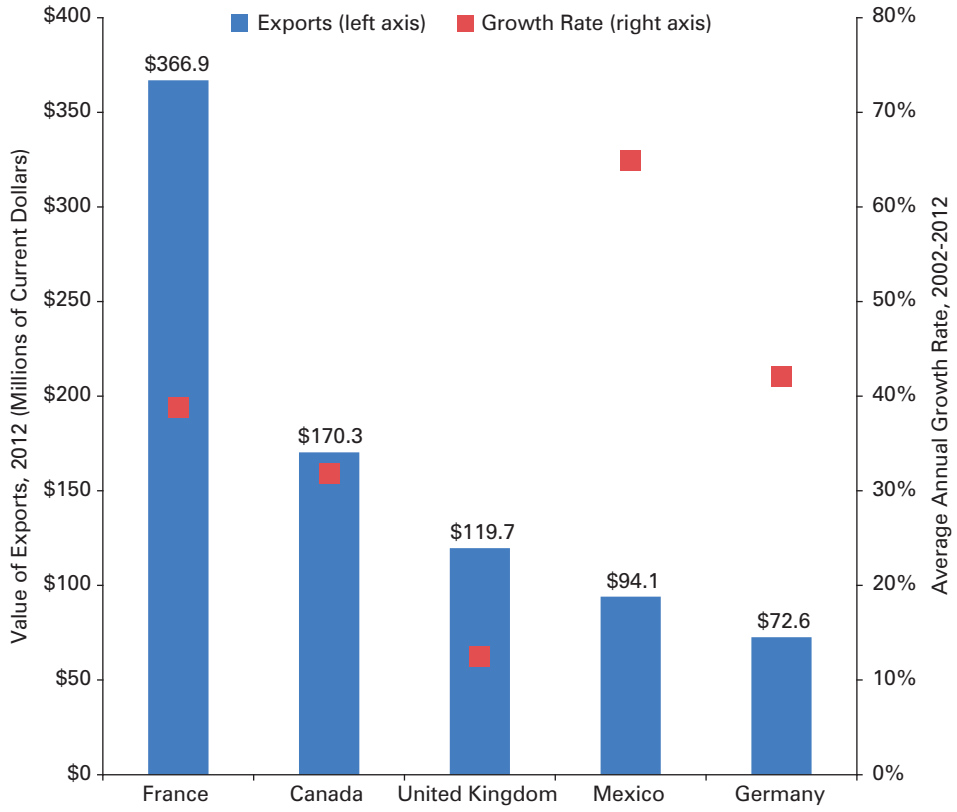
The Remaining Top 10 Exported Industries

The remaining top 10 exported industries tend to have a dominant destination country—Canada or a European country. An interesting pattern is emerging. Canada and Mexico tend to import heavy industry products used in the auto sector while industries that create products used in the life sciences tend to be shipped to European countries.

Figure 38 shows the top five destinations of each industry category in 2012.

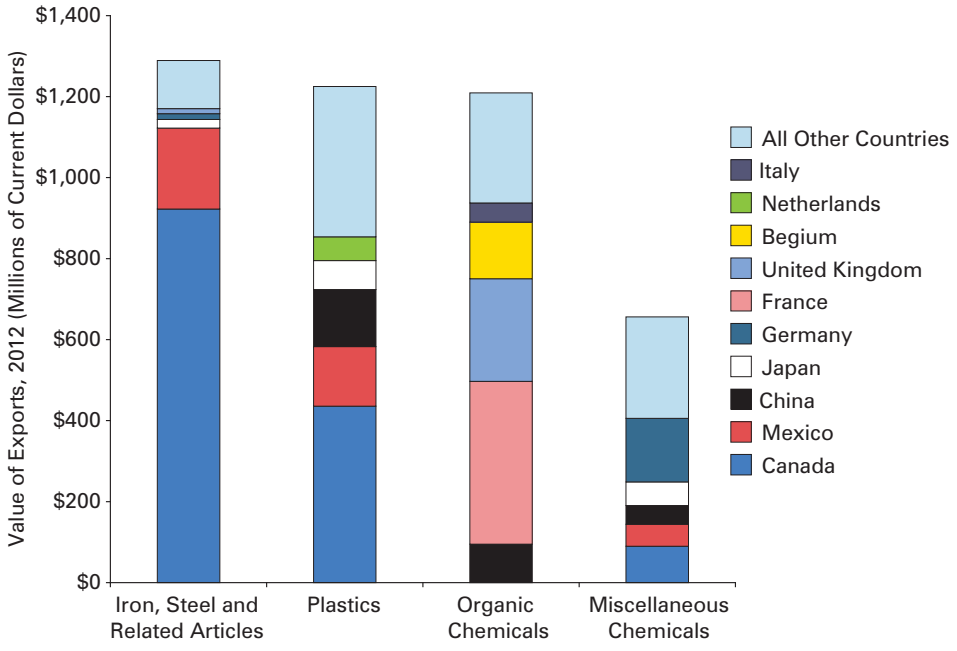
Within the iron, steel and related articles industry, Canada and Mexico remained as the top two importers, with Canada purchasing 71.6 percent of Indiana's exports and Mexico purchasing 15.5 percent. Canada and Mexico were also the

Figure 37: Indiana's Top Five Export Destinations for Aircraft, Spacecraft and Related Parts, 2002 to 2012



Source: WISER Trade

Figure 38: Top Five Destination Countries of Indiana's Remaining Top 10 Exported Industries, 2012



Source: WISER Trade

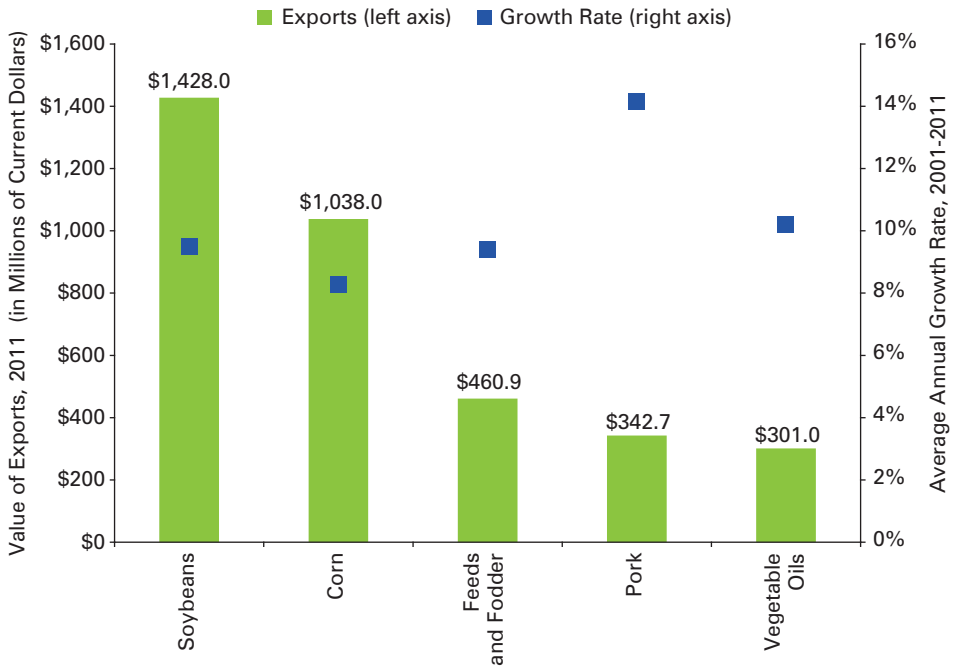
leading importers within the plastics industry. Canada imported $435.9 million in 2012, claiming over a third of the plastics export market and far surpassing the remaining top five countries. Growth in the organic chemicals category has been steady at 3 percent since 2002—despite dropping export volumes in 2011 and 2012. France remains Indiana's largest trading customer in this category, purchasing $401.7 million in organic chemicals in 2012. The United Kingdom reclaimed its second-place spot from Spain in 2012 by importing $253.6 million, an increase of $116 million from 2011.

Indiana exports of miscellaneous chemical products are growing slower than other top 10 industries, recording a 1.5 percent average annual growth rate since 2002. Germany is the top importer of Indiana's miscellaneous chemical products accepting $156.8 million worth of shipments in 2012. Canada is a distant second. Since 2002, the growth rate of exports to Canada was virtually nil. Mexico's imports of miscellaneous chemicals in 2012 and its 10-year trend indicate that it may overtake Japan in the next year or two. Collectively, the top five countries comprised 61.8 percent of Indiana's miscellaneous chemical exports in 2012.

Agriculture

Agricultural products also contribute mightily to the state's export activity; however, agricultural commodities are not extensively tracked by agencies that report the export of goods and services. Due to the homogeneous nature of agricultural commodities, it's nearly impossible to trace an individual agricultural product to its source state or determine the commodity's foreign destination. However, the Economic Research Service (ERS) division of the U.S. Department of Agriculture uses U.S. farm cash-receipts data to allocate export shares by state. The ERS methodology changed in 2012, so comparisons to past reports will not be entirely accurate.

Figure 39: Indiana Agricultural Exports, 2001 to 2011



Source: USDA Economic Research Service

Table 7: Share of U.S. Corn and Soybean Exports, 2011

State	Corn Exports (in millions)	Share of U.S.	Soybean Exports (in millions)	Share of U.S.
Iowa	$2,473.2	18.1%	$2,683.6	15.3%
Illinois	$2,313.6	16.9%	$2,514.6	14.3%
Nebraska	$1,639.4	12.0%	$1,599.5	9.1%
Minnesota	$1,275.1	9.3%	$1,434.9	8.2%
Indiana	$1,038.0	7.6%	$1,428.0	8.1%

Source: USDA Economic Research Service

Figure 39 plots Indiana's largest agricultural exports for 2011 (the most recent data available). In 2011, the United States exported $136 billion in agricultural products. Of that, $4.7 billion came from Indiana's agricultural products, ranking it eighth among all states. In Indiana, soybeans remained the top exported agricultural commodity at $1.43 billion, followed by corn at $1.04 billion. Together these two commodities accounted for more than half (53 percent) of the state's agricultural exports. Rounding out the top five were feeds and fodder, pork, and vegetable oils. Since 2001, Indiana's agricultural exports have had an average annual growth rate of 9.1 percent. Of the top five commodities, pork products have had the strongest growth at an average annual rate of 14.2 percent.

Table 7 lists the top states that contribute to soybean and corn exports. In both corn and soybean exports, Iowa and Illinois were the top two exporters with Indiana ranking fifth in both commodities for 2011.

Summary

Indiana recovered quickly from the adverse effects of the Great Recession, but the economic turmoil of the eurozone countries and slow recovery worldwide has inhibited acceleration in exports in 2012. That said, Indiana's exports grew at a higher rate than both the United States and the Midwestern states: Indiana's exports increased 6.5 percent, while exports grew by 4.5 percent nationally from 2011 to 2012. Midwestern exports increased 6 percent. Several of Indiana's export industries have had strong average annual growth rates over the past decade, including aircraft, spacecraft and related parts; pharmaceuticals; iron, steel and related products; and optical and medical instruments.

Exports play an important role in the Hoosier economy. Relatively speaking, exports are more important to Indiana than other states. While Indiana's economic output ranks 16th in the country, its dependency on exports ranks 11th. The sluggish growth in the eurozone over the next couple of years is a potential threat to the continued growth of Indiana exports—particularly in the life sciences sector. Fortunately, the dominance of the Canadian and Mexican markets, together with the possible potential for expanding exports to the emerging BRICS economies, may diminish the negative effects of sluggish European growth.

Appendix

Rank	Commodity	Annual Exports (in millions)		Percent Change	Commodity as a Percent of Total	Change (in millions)
		2011	2012	2011-2012	2012	2011-2012
	Total: All Commodities	$32,292	$34,431	6.6%	100%	$2,140
1	Vehicles and Parts (Except Railway)	$7,746	$7,156	-7.6%	20.8%	-$590
2	Pharmaceutical Products	$4,880	$6,040	23.8%	17.5%	$1,160
3	Industrial Machinery (Including Computers)	$5,084	$5,536	8.9%	16.1%	$452
4	Optical and Medical Instruments	$2,306	$2,484	7.7%	7.2%	$178
5	Electric Machinery	$1,778	$2,109	18.6%	6.1%	$331
6	Aircraft, Spacecraft and Related Parts	$962	$1,318	37.0%	3.8%	$356
7	Plastics and Articles Thereof	$1,121	$1,225	9.3%	3.6%	$104
8	Organic Chemicals	$1,468	$1,209	-17.6%	3.5%	-$258
9	Iron and Steel	$1,025	$785	-23.4%	2.3%	-$240
10	Miscellaneous Chemical Products	$632	$656	3.8%	1.9%	$24
11	Articles of Iron or Steel	$419	$504	20.4%	1.5%	$85
12	Railway or Tramway Stock and Traffic Signal Equipment	$78	$384	391.7%	1.1%	$306
13	Aluminum and Articles Thereof	$393	$373	-5.2%	1.1%	-$20
14	Meat and Edible Meat Offal	$211	$367	74.2%	1.1%	$156
15	Furniture, Bedding, Lamps, Prefabricated Beds and Nesoi	$358	$360	0.6%	1.0%	$2
16	Rubber and Articles Thereof	$259	$290	11.8%	0.8%	$31
17	Art of Stone, Plaster, Cement, Asbestos and Mica Etc.	$205	$287	40.3%	0.8%	$82
18	Printed Books, Newspapers, Manuscripts and Etc.	$297	$266	-10.5%	0.8%	-$31
19	Copper and Articles Thereof	$222	$188	-15.6%	0.5%	-$35
20	Mineral Fuel, Oil, Bitumin Substances and Mineral Wax	$183	$167	-8.8%	0.5%	-$16
21	Nickel and Articles Thereof	$155	$166	7.1%	0.5%	$11
22	Miscellaneous Articles of Base Metal	$129	$163	26.1%	0.5%	$34
23	Wood, Articles of Wood and Wood Charcoal	$150	$155	3.1%	0.4%	$5
24	Prep Cereal, Flour, Starch, Milk and Bakers Wheat	$133	$154	15.1%	0.4%	$20
25	Glass and Glassware	$125	$152	21.6%	0.4%	$27
26	Albuminoidal Substances, Modified Starch, Glue and Enzymes	$176	$147	-16.5%	0.4%	-$29
27	Tanning and Dye Extract, Paint, Putty, Inks and Etc.	$125	$139	11.7%	0.4%	$15
28	Paper, Paperboard and Related Articles	$146	$139	-4.9%	0.4%	-$7
29	Special Classification Provisions, Nesoi	$112	$137	22.7%	0.4%	$25
30	Soap, Waxes, Polish, Candles, Dental Preps and Etc.	$100	$114	14.7%	0.3%	$15
	Total of Top 30 Commodities	**$30,977**	**$33,171**	**7.1%**	**96.3%**	**$2,193**

Note: Nesoi stands for "not elsewhere specified or indicated."
Source: WISER Trade