




# Made in the South:

A Bad News, Good News Story





**“Made in the Southeast” isn’t as catchy as “Made in the USA,” but it’s becoming more commonplace following years of disappearing manufacturing jobs in the region.**

**Manufacturers are setting up shop, but can affordable land and labor offset other looming challenges?**

Like a hulking red-brick tombstone for a bygone era, the abandoned textile mill looms over the main street in Lanett, Ala. The WestPoint Home Inc. sign out front is fading. Windows are broken. Vines creep up the 120-year-old façade.

After its workforce dwindled over decades from 2,500 to 370, the Lanett Mill finally closed in 2006. It was among dozens of plants that produced sheets, towels, clothes, and other textile products in this area known as “the Valley” that straddles the Alabama-Georgia border near Interstate 85. The mills once employed tens of thousands here and throughout the Southeast. But automation and rock-bottom wages overseas claimed nearly nine of every 10 apparel and textile manufacturing jobs in Alabama and the Southeast between 1990 and 2010, according to figures from the U.S. Bureau of Labor Statistics, or BLS (see chart 1 on page 24).

#### **A new arrival makes a big splash**

Forlorn as the Lanett Mill is, the present and future of U.S. manufacturing is nearby. Just five miles—but, figuratively, light-years—from the ghost mill stands the year-old, \$1 billion Kia Motors assembly plant. With 3,000 workers and its own Georgia Power electric substation and water tower on site, the Korean carmaker’s first North American factory is like a small city sprawling over 2,200 acres. Immaculate, hushed production floors churn out an average of a vehicle a minute. Employees in Kia-logoed polo shirts move among stations. Many of the workers stand or walk on wood—a flooring more accommodating to the human anatomy than concrete. Precisely choreographed robots look like alien creatures, dipping and swiveling, welding doors and hoods, and gently fitting windshields into automobile skeletons.

“You can get into the rhythm, and it’s like ice skating; it just looks like a natural flow,” said Randy Jackson, Kia Motors vice president and the first local hire at the West Point, Ga., plant. “That comes with technology being right, processes being right, but also having humans that understand how they’re functioning in their processes and roles.”

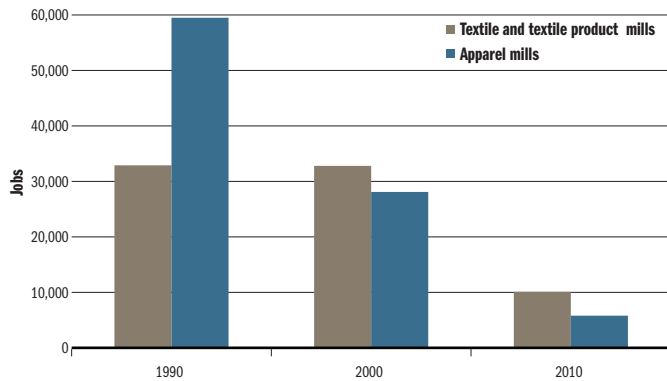
There’s been no shortage of humans hoping to fill Kia’s roles. Three waves of hiring drew more than 120,000 applications. The overwhelming response, Jackson noted, was typical for the industry. It also was probably no surprise in the Valley region. Unemployment in Troup County, home of West Point and the Kia plant, reached 14.3 percent during 2009, the year before Kia opened. Seven miles from the plant, the town of Valley, Ala., suffered joblessness of 19 percent during 2009. Both rates as of May remained above the national level but were considerably lower than two years ago—11 and 12.1 percent, respectively.

Many Kia employees are former textile workers, Jackson said, but the “team members,” as Kia calls its staff, also include seasoned autoworkers, ex-nurses, teachers, and fast-food employees. They came through a screening that includes role-



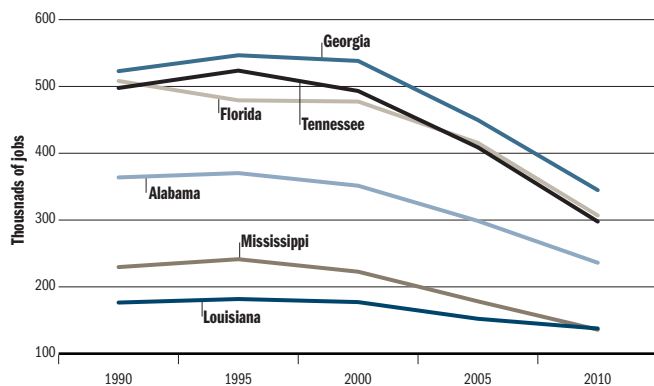
**The Kia Motors plant in West Point, Ga., has had a large economic impact since it began production in 2010, employing 3,000 people and producing 300,000 cars annually.**

Chart 1  
Alabama Apparel and Textile Jobs



Source: U.S. Bureau of Labor Statistics

Chart 2  
Southeastern Manufacturing Employment



Source: U.S. Bureau of Labor Statistics

playing with Kia teams and a 20-hour tryout on Kia production equipment. Employees at the plant receive anywhere from 30 to 300 hours of training.

At Kia and other manufacturers, low-skilled, repetitive work is as obsolete as a hollowed-out textile mill, experts say. A few hours north, in Chattanooga, the German automaker Volkswagen opened a plant in May 2011. The company is joining a local community college and Tennessee Technological University to create a bachelor of science degree in industrial technology to train workers for VW, its suppliers, and other manufacturers. In recruiting prospective staff, Kia officials want people who value

learning, flexibility, and—critically—showing up consistently and promptly, Jackson said.

In fact, earlier this year the Georgia General Assembly acknowledged the growing importance of “soft skills” such as punctuality, the ability to learn, appropriate workplace attire, and the ability to work as a team when it passed legislation allowing the Governor’s Office of Workforce Development to establish certification in soft skills. The initiative is informally referred to as “Punctuality 101.”

### The Southeast reflects nationwide trends

Conditions in the Valley reflect the state of manufacturing in the Southeast and the country. Factory employment was in steep decline when the recession hit in 2007 and made it even steeper. The Southeast from 2000 through 2010 lost roughly 800,000 manufacturing jobs, or 35 percent of its total, according to the BLS (see chart 2). Manufacturing’s share of all nonfarm jobs in the region fell by roughly the same degree: from 12 percent in 2000 to 8 percent in 2010. It had been 16 percent in 1990. This move away from the factories is a long-term phenomenon. In 1970, 25 percent of employees in the Southeast held a factory job.

This trend is not isolated to the Southeast, of course. Nationwide, manufacturing employment dipped by a third from 2000 to 2010, while the sector’s share of all nonfarm jobs fell from 13 percent to 9 percent.

The shuttered mill in Lanett is among hundreds across the Southeast. Textiles and apparel were some of the largest manufacturing employers in most southeastern states until well into the 1990s but have suffered the heaviest job losses. Other sectors with dramatic declines include furniture, in Mississippi and Tennessee, and wood products. Across the region, jobs have vanished in virtually every category of manufacturing.

Plants like Kia’s have helped limit some of the losses. So far in the 21st century, transportation equipment and food stand out as manufacturing sectors that have either gained jobs, in a state or two, or at least recorded smaller losses than other industries. There are exceptions. Florida in the past 20 years has lost nearly half of the 62,000 transportation equipment jobs it had. The Sunshine State has also shed more than half of the 91,000 computer and electronic product manufacturing jobs it boasted in 1990.

### Output remains strong

For all that, the news in manufacturing is not all grim. Even as many factories have closed or downsized, output has not fallen



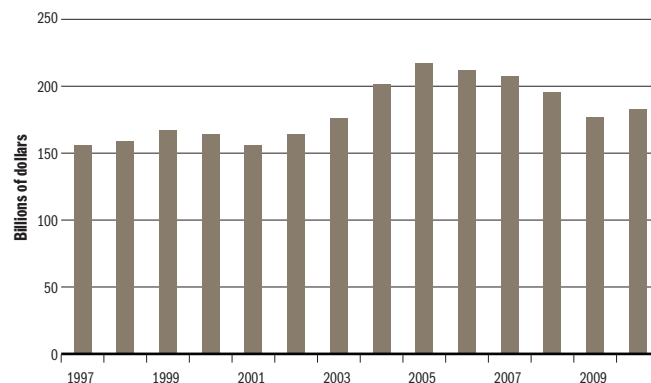




**Manufacturing in the Southeast has undergone dramatic changes. These factories in 1909 (top left) and 1912 (top right) helped make textiles a regional economic powerhouse, but a century later they have been supplanted by plants such as Kia Motors' gleaming facility.**



**Chart 3**  
**Southeastern Manufacturing Output**



Note: Dollars are expressed as 2005 dollars.  
Source: U.S. Bureau of Economic Analysis

dramatically. In the conventional view of an American manufacturing decline—we don't make anything anymore—one truth is often overlooked: manufacturing as a share of the nation's gross domestic product has remained steady at 11–13 percent for the past 25 years, according to the U.S. Bureau of Economic Analysis (BEA).

The same dynamic has held in the Southeast in recent years. In real 2005 dollars, manufacturing's share of the region's annual economic output fluctuated between 11 and 13 percent from 1997 through 2010, according to BEA figures. The peak in the region was in 2005, the trough in 2001.

What's more, manufacturing has helped to lead the nation's economic recovery, tepid though it's been. Manufacturing value-added—a measure of an industry's contribution to GDP—rose 5.8 percent in 2010, a sharp return to growth after declining for two straight years, according to the BEA. Likewise in the Southeast, factory output in 2010 inched up 3 percent from the year before after falling the previous two years (see chart 3). As a result of this modest rebound, each of the six states in the Southeast has seen a small bump in manufacturing employment

since the recessionary lows of late 2010 or early 2011. However, manufacturing once again showed signs of slowing by mid-2011.

#### **Doing about the same with less**

Manufacturers are on a relentless march to increase productivity. Offshoring work to lower-wage countries has cost jobs, particularly in nondurable goods-making industries like textiles and apparel. In addition, though, productivity per worker in U.S. manufacturing in recent years has been soaring by 10–15 percent annually. “That is nothing less than astonishing,” said Matthew Murray, who studies manufacturing as a professor of economics

and associate director of the University of Tennessee Center for Business and Economic Research in Knoxville.

Productivity in manufacturing has increased faster on average than in the overall economy, Atlanta Fed President Dennis Lockhart pointed out in a speech this year. At Kia's Georgia plant, it is easy to see why. It takes workers just six minutes to adjust three-story-high stamping presses, which exert 2,400 tons of pressure on sheets of steel, so that instead of forging hoods they mold trunks or doors, said Kia spokesperson Corinne Hodges. In another tactic aimed at flexibility, the plant stocks just a four-hour supply of many parts. Trucks carrying seats made in neighboring Harris County arrive every hour throughout the plant's three daily shifts. The factory must be nimble enough to swiftly reconfigure its processes to produce only what wholesale distributors have already ordered.

"We're building vehicles that are sold," Hodges said.

This sort of hyper-efficiency across manufacturing means fewer jobs but also higher wages. Nationwide, manufacturing workers on average are paid \$200 more a week than employees in all of private industry—double the premium of 20 years ago, Lockhart said. In Tennessee, according to Murray's team of researchers, the average pay for a manufacturing job last year was about \$52,000, 23 percent higher than for all nonfarm jobs.

Manufacturing wages in the state also increased about 6 percent from 2009 to 2010, twice as much as overall average pay.

Manufacturing jobs remain important to communities and the regional and national economy for several other reasons as well. In small towns and rural areas, especially, factories are often among the few large employers and municipal taxpayers, Murray said. Consequently, those areas suffer acutely when a big plant closes or lays off workers.

Making things also generates more ancillary economic activity than service industries do. Jay Moon, CEO of the Mississippi Manufacturers Association, said in a recent Atlanta Fed podcast that manufacturing is "far and away the largest income-generator of any sector in the economy." He also said every manufacturing job, on average, creates three to four other jobs to support it, though some economists believe the ripple effect, while real, is less potent.

#### **One job means more jobs**

Auto assembly operations are an oft-cited case of this "multiplier effect." For example, Jackson, the Kia vice president, said nearby suppliers to the company's West Point plant employ nearly 8,000 people. Kia also notes that some three dozen other new businesses have started in the West Point area since the plant's arrival.



## **3-D Printing Adds New Dimension to Manufacturing**

**T**he jewelry business is set in its ways. Jewelers today still use a technique that is thousands of years old to create new pieces of jewelry. Called lost-wax casting, this process starts with a pencil-and-paper sketch of a ring, necklace, or other piece. The sketch eventually becomes the model for a mold. The entire process takes more than 40 hours.

Jewelers use the mold, or prototype, to mass-produce hundreds or thousands of units, much as automakers churn out cars. This process has worked for, well, thousands of years.

#### **Moving past the cookie cutter**

But the way jewelers create new models is changing. Thanks to an emerging method of manufacturing known as three-dimensional printing, companies like

Stuller Inc. in Lafayette, La., can fashion a custom-made prototype or even a finished piece of jewelry in just 15 hours—less than half the time it takes using the traditional method of lost-wax casting, said Coby Blanchard, Stuller's chief supply chain officer. Stuller typically uses 3-D printing to build a piece based on a unique design e-mailed by a customer, a retail jewelry store. Stuller also uses the technique to rapidly build prototypes so that, for instance, a merchant can see a piece and give input while the piece is still in development.

Over the past year, the volume of product Stuller made using 3-D printing rose by 200 percent. "It is a significantly growing part of our business," Blanchard said. "But, overall, it's relatively small and new." Stuller Inc.'s founder and chairman,





Foreign automakers have come to be viewed as something akin to manufacturing saviors in the Southeast. States fight fiercely for the plants with generous tax breaks, publicly funded training programs, and other financial incentives. The “transplants” indeed appear to be the main reason transportation equipment has remained one of the region’s biggest manufacturing employers. Since 1990, foreign-based automakers have opened 15 assembly plants in the United States, nine of those in the six states in the Atlanta Fed’s district, and another in South

Carolina, according to a report from the Congressional Research Service (see the table on page 28).

“This southern migration is largely attributable to foreign investors being drawn to the U.S. South’s low-cost land and labor, along with states that promote more flexible labor regulations and do not appear to have a strong pro-union sentiment,” the report states.

The Congressional Research Service report noted that from 2003 through 2009, Alabama added more than 12,000 automo-

Matthew Stuller, serves on the board of directors of the New Orleans Branch of the Atlanta Fed.

Printing in 3-D does not happen on paper. A CAD (short for “computer-aided design”) image is fed to a special 3-D printer. Instead of spraying ink onto paper, the printer shoots a substance such as wax, plastic, or a composite material onto a surface. Then the syringe moves a fraction of a millimeter at a time and builds an object by depositing the material layer by layer.

This process is known as “additive manufacturing,” since it makes something by adding material, in contrast to traditional “subtractive manufacturing” that fashions a product by cutting, drilling, or smashing it out of a bigger original piece of metal or plastic. The method has

been around, with continuous refinement, since humans made their first arrowhead. Additive manufacturing, on the other hand, has been around for only about 20 years, but its uses have recently expanded and gained more attention. Additive manufacturing is used by jewelers like Stuller, as well as makers of dental and medical implants, automotive parts, aerospace companies, and others.

#### **Multiplying uses**

Firms large and small are making things with 3-D printing technology. In May this year, General Electric established an Additive Manufacturing Lab. GE Aviation designers believe the new designs and material properties “hold the promise of radically improved performance, reduced weight, fuel consumption and greenhouse

gases in the exhaust of aircraft engines,” according to a GE website.

The *Economist* magazine in February declared that 3-D printing from digital designs “will transform manufacturing.” The *New York Times* reported in September 2010 that while some question how the technology will move from manufacturing applications to producing consumer goods, “its use is exploding.”

Additive manufacturing apparently rebounded quickly from the recession. In 2010, revenues produced by all additive manufacturing products and services grew 24 percent after declining 10 percent in 2009, according to Wohlers Associates Inc., a Colorado-based consulting firm. ■

## Auto Plants in the Southeast

Year Open	Company	Location	Employees	Annual production capacity
1948	General Motors <sup>a</sup>	Shreveport, La.	923	
1983	Nissan	Smyrna, Tenn.	6,000	550,000
1997	Nissan (powertrain assembly only)	Decherd, Tenn.	1,250	n/a
1997	Mercedes-Benz	Vance, Ala.	2,800	174,000
2001	Toyota (engine plant only)	Huntsville, Ala.	768	n/a
2001	Honda	Lincoln, Ala.	4,000	300,000
2003	Nissan	Canton, Miss.	4,500	400,000
2005	Hyundai	Montgomery, Ala.	2,500	300,000
2010	Kia	West Point, Ga.	3,000	300,000 <sup>b</sup>
2011	Volkswagen	Chattanooga, Tenn.	2,000 <sup>c</sup>	150,000
Fall 2011 <sup>d</sup>	Toyota	Blue Springs, Miss.	2,000	150,000

Notes: <sup>a</sup>Slated to close in 2012; <sup>b</sup>projected to be 360,000 in 2012; <sup>c</sup>projected to be 2,300 by fall 2011; <sup>d</sup>projected opening date  
Sources: Companies, Congressional Research Service, news accounts, chambers of commerce

tive manufacturing jobs while the United States as a whole lost 231,000. Alabama in the past decade has attracted assembly plants owned by Mercedes-Benz, Honda, and Hyundai, along with a Toyota engine factory.

That influx helped Alabama become the only southeastern state to gain transportation equipment-making employment between 2000 and 2011. Longer term, since 1990, the region's employment in the sector has declined by 5 percent, a less dramatic drop than in most other manufacturing categories.

Of course, major automobile plants do not open often. Amid short-term economic difficulties and longer-term challenges, the transformation of southern manufacturing continues. "Southern states built the manufacturing sector on the backs of unskilled labor," Murray said. "But we continue to see the shift away from low-wage, low-skill manufacturing to a much more technologically based production process."

That sort of work demands a different breed of worker, as Kia and Volkswagen's hiring and training requirements illustrate, making it crucial that more of the region's people at least complete high school, Moon noted. For now, the Southeast lags in high school graduation rates and college attendance. Among the region's states, only Florida meets or exceeds the U.S. ratio of 84.6 percent of people 25 and over with a high school diploma, according to the U.S. Census Bureau. All the southeastern states are below the national average in the percentage of people with bachelor's degrees.

Other trends might hold more promise. For one, because of shipping costs, it makes sense to build bulky, durable products—cars, tractors, and appliances, for instance—close to

the consumers, Murray and others said. That factor bodes well for the United States and the Southeast. Second, labor costs and other expenses are rising rapidly in some developing countries, notably China. As the cost gap with China shrinks, U.S.-based companies are more likely to locate plants in the United States, according to the Boston Consulting Group, which has offices in 42 countries. Hal Sirkin, a senior partner at the firm, points to NCR's decision to return some production of its ATMs to the United States, and Columbus, Ga., specifically, as an example of this phenomenon. In an October 2009 announcement, an NCR executive said "in-sourcing" ATM production would "decrease time-to-market, improve our internal collaboration, and lower our current operating costs."

Sirkin said Chinese manufacturing wages are rising 15–20 percent a year as employers compete for scarce skilled workers. Boston Consulting figures that flexible work rules and government incentives are making states—including Mississippi, Alabama, and South Carolina—"increasingly competitive as low-cost bases for supplying the U.S. market."

Nonetheless, the region is unlikely to reverse the drastic loss of manufacturing jobs, said UT's Murray. Rather, the Southeast will probably continue to see fewer, but higher-paying and more sophisticated, production jobs. "We'll still create some manufacturing jobs," Murray said. "But the net will continue to decline." ■

*This article was written by Charles Davidson, a staff writer for EconSouth.*