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MANUFACTURING FORECAST 2018: OPPORTUNITIES AND OBSTACLES

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WELCOME

The manufacturing industry has topped a lot of headlines containing differing views over the past year. What's actually happening, and where does U.S. manufacturing truly stand?

In this issue of the GrayWay, we dive into recent developments, including tax reform and efforts to reduce the regulatory burden, which are helping U.S. manufacturers compete globally. These positive advances are cause for celebration and optimism for the future. Still, we must not forget the areas that continue to need work such as infrastructure and workforce acquisition and retention. Overcoming these challenges will significantly set the stage for growth for the industry.

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THE OUTLOOK FOR MANUFACTURING IN 2018

INSIDE THIS ISSUE

REVVING UP AND READY TO GROW

Three Reasons Why 2018 Looks Bright for Manufacturers

Analysts predict the 2018 U.S. manufacturing sector will include plenty of sunshine because of recent developments in economic growth rates, tax rates and regulation — and good news for manufacturing means good news for the entire economy.

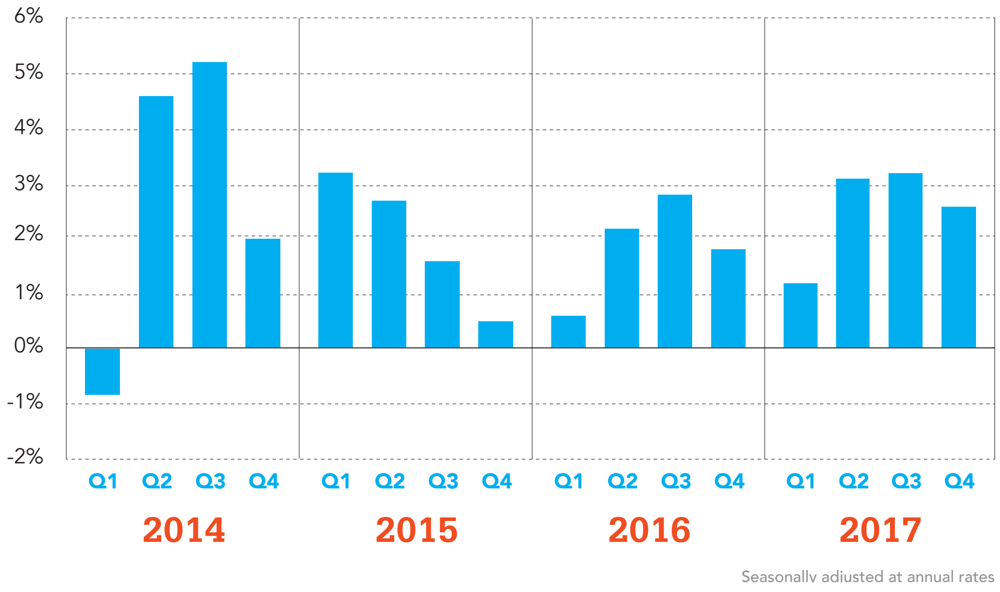
The recent reduction in the U.S. corporate tax rate from 35 percent, one of the highest rates in the world, to 21 percent starting earlier this year is being touted as one of the main reasons for optimism.

The National Association of Manufacturers (NAM), the largest manufacturing trade organization in the U.S., says the tax cuts will help American businesses compete more effectively in the global marketplace.

According to the NAM and other proponents, resources that had previously gone to paying taxes can now go toward growing businesses, leading to more investment in the U.S. and higher wages for American manufacturing employees.

The tax cuts' package also lets businesses deduct more of the cost of capital investments such as land, machinery and buildings, providing more incentive for expansion.

Real GDP: Percent change from preceding quarter



Source: U.S. Bureau of Economic Analysis

Manufacturers themselves have high hopes for positive effects from lower taxes. In the NAM's latest polling of its members, 63 percent said tax reform would encourage them to spend more on facilities and equipment; 58 percent said they would expand their businesses; and 54 percent said they would hire more workers. Companies are already responding to tax reform by acting in these very responsible measures that will boost the economy

"By providing relief to small businesses especially, Congress has strengthened the heart of the modern manufacturing economy," NAM President and CEO Jay Timmons wrote in an opinion piece in January.

Timmons noted that President Trump described tax cuts as "rocket fuel" for the economy.

"We've been given the fuel. Now we will put it to work," Timmons wrote.

Even before the tax cuts package had been approved, attention at the national level had turned toward reducing regulation. While the U.S. remains among the top 10 easiest places in the world to do business, the Council on Competitiveness notes "that rank is declining."

"A better balance is needed to enable the development and commercialization of new technologies and services in the U.S. and to upgrade infrastructure," the council said in its December 2017 Clarion Call report.

The Trump administration is requiring that, for every new regulation, two prior regulations be identified for elimination.

The Brookings Institution concluded that another possible result might be the removal of layers of outdated rules and the "freeing of Americans' energies for productive purposes and unleashing economic growth."

If reducing reduction and cutting taxes helps manufacturers, they will be able to build on a recent history of U.S. economic expansion.

The nation's Gross Domestic Product (GDP) grew by more than 3 percent in the second and third quarters of 2017 — the first time growth above 3 percent occurred in two consecutive quarters since 2014.

Manufacturing GDP rose from $5.05 trillion to $5.71 trillion over the last decade. Employment in the sector has risen steadily since 2010, and there are even more signs of momentum going forward.

The national Institute for Supply Management (ISM), the largest supply management association in the world who produces one of the most reliable economic indicators available, said that its manufacturing index was 59.1 in January — down slightly from 59.3 in December after increasing from 58.2 in November. Any reading higher than 50 indicates increased factory activity.

"With a report like this, I can't do anything but smile," Tim Fiore, chair of the ISM manufacturing business survey committee, told the Associated Press.

In addition to developments at the national level, recent local indicators are showing growth.

For example, Marquette University and the Institute for Supply Management-Milwaukee reported that manufacturing in the upper Midwest is continuing to expand. The researchers' index of factory activity in the region reached 65.57 in December. It was the highest level recorded since November 2014.

"Fundamentally, I cannot think of a better time to be in business, or in the case of our students, going into business," said Douglas Fisher, director of Marquette's Center for Supply Chain Management. "The economy is strong, and the strength does not appear to be fragile."

Nearby, the Chicago Business Barometer — an economic index based on data from local membership of the Institute for Supply Management in that city — also showed strength in December. The measurement of production, new orders, order backlogs, employment and supplier deliveries rose to 67.6 in December, the highest level since March 2011.

In both the Milwaukee and Chicago reports, as in the national ISM report, a measurement of 50 or higher indicates expansion from the previous month.

This kind of good news for manufacturing is excellent news for the American economy overall. Manufacturing's growth remains vitally important due to its multiplier effect: each manufacturing job creates 4.6 additional jobs, and manufacturing in high-tech industries creates 16 additional jobs for every job in those industries, pointed out Deborah Wince-Smith, president and CEO of the Council on Competitiveness.

"It has a tremendous spillover effect," Wince-Smith said.

With lower tax rates and the prospect of fewer regulations in a positive economic climate, manufacturers — and the rest of us — have good reasons to anticipate a prosperous 2018.

"Fundamentally, I cannot think of a better time to be in business, or in the case of our students, going into business."

— Douglas Fisher, Director
Marquette's Center for Supply Chain Management

ROADBLOCKS AHEAD

Eroding Infrastructure, Expanding Global Markets and Evolving Job Descriptions Challenge Manufacturers in 2018

While the 2018 outlook for manufacturing in the U.S. appears promising, challenges remain. Among them are decaying infrastructure; a dearth of workers skilled in automation; and difficulty identifying new markets.

U.S. manufacturers depend on infrastructure in order to efficiently acquire materials and reliably transport their finished products, but the state of the nation's roads, bridges and other public works continues to decline.

The American Society of Civil Engineers (ASCE) graded America's infrastructure a D+ in its 2017 evaluation. The report card cited a decline in parks, solid waste management and public transportation. It also noted there had been no improvement in four years in aviation, bridges, dams, drinking water, energy and roads.

Deborah Wince-Smith
President and CEO
Council on Competitiveness

Meanwhile, the *New York Times* reported spending on government construction projects in 34 states, was lower last year than in 2007, adjusting for inflation. The trend has continued this year.

Amid the deterioration on the ground, the nation also faces challenges in the skies. The ASCE report gave aviation infrastructure, such as airports and air traffic control systems, a "D."

"We have a very advanced airspace infrastructure for our military, but we don't for civilian purposes," said Deborah Wince-Smith, president and CEO of the Council on Competitiveness.

"We ought to be the first ones to do Uber in the sky — we invented the aerospace industry."

The focus for decades has been on maintenance and repair, and it's now time to make improvements, said Robyn Boerstling, vice president, for infrastructure, innovation and human resources policy for the NAM.

Robyn Boerstling,
Vice President
NAM

"I think what manufacturers are hungry for is a broad sweeping vision to modernize the infrastructure system — and a plan," Boerstling said.

Still, another vulnerable area is cybersecurity infrastructure, Wince-Smith said. New systems of hardware are needed as the nation struggles to deal with penetration of security systems and identity theft.

"Cybersecurity has to be taken to a new level now," Wince-Smith said. "I would put that really at the top of the list."

For visible infrastructure, at least, help might be on the way from the federal level, as the Trump administration has promised an extensive plan for infrastructure improvement.

A problem that's harder to define but no less important is what's being called the "skills gap" — a shortage of workers who have the skills needed for technologically advanced manufacturing.

Where a worker might once have stood at an assembly line performing the same task all day, what's now needed is critical thinking and "precision skills," Wince-Smith said.

By 2025, the Council on Competitiveness reported, there could be two million U.S. manufacturing jobs unfilled due to lack of qualifications.

Automation is helping manufacturers address the skills gap, but an increase in automation means more trained workers are needed to manage the technology.

"As working side-by-side with machines becomes the norm, more jobs in the sector will require specialized digital and technical training," the McKinsey Global Institute said in its Making It in America: Revitalizing U.S. Manufacturing report last year. "Technologies they will entail are still very new, and they never stop evolving."

While schools can provide basic math and digital skills, they will be hard-pressed to keep up with the changes; apprenticeships might be a bigger part of the solution, the report stated.

"Instead of fretting about a skills gap, we should be focused on the real challenge of knitting together the supply and demand sides of the labor market," said Andrew Weaver, assistant professor in the School of Labor and Employment Relations at the University of Illinois at Urbana-Champaign, in the *MIT Technology Review.*

"Thinking about the real financial and institutional mechanisms necessary to make, say, apprenticeships work is far more productive than perennially sounding alarms about under-skilled workers."

Creative thinking is also needed if American manufacturers hope to find new customers in an increasingly fragmented global marketplace. More than 95 percent of the world's consumers live outside the United States, according to the U.S. Chamber of Commerce.

And by 2025, consumption in emerging markets will hit $30 trillion, up from $12 trillion in 2010, McKinsey has projected.

Identifying and serving those potential customers pose a complex problem for manufacturers.

"Tapping into demand growth in emerging economies requires knowing exactly where and how to compete," the report said. "Markets such as China, India, Brazil, and Africa represent an enormous opportunity, but they have significant regional, ethnic, linguistic, and income diversity."

Information and the ability to leverage it is a key factor in being able to compete.

Marina Schwartzman
Senior Account Manager
Euromonitor

"Your clients are global citizens with full access to information and products from anywhere in world," said Marina Schwartzman of Euromonitor, an independent provider of global market research. "They may demand something new one day that you won't be ready to provide if you're unable to anticipate global trends. You need to stay tuned with new products and services launched worldwide, new concepts of channels that are emerging abroad and new ways of interacting with your clients if you want to be competitive in a fast-moving market."

Manufacturers who find ways to solve the puzzles presented by infrastructure, employees' skills and global markets will have a distinct advantage in the year ahead.

Source: Council on Competitiveness, 2017 Clarion Call

THE NEW FACE OF MANUFACTURING

A Q&A with Matthew Benzik, 25, a service engineer for SLM Solutions in Wixom, Mich., who installs and services industrial metal 3D printers.

What led you to work in manufacturing?

My time at Michigan Tech as a student in the mechanical engineering technology degree program was what told me that I should be in manufacturing in some way. I've always had a knack for working with my hands and troubleshooting systems on the fly, and so being in manufacturing as a service engineer is just about as perfect fit as I could find.

What are the most common uses for 3D printing you see?

I work with customers that do everything from medical to rocket parts, so mostly I see customers replacing parts that used to be cast with 3D printed versions. These new versions also include optimizations for strength, weight and part count reductions which were impossible, say, 10 years ago.

Why should young people consider manufacturing careers?

I think young people should consider manufacturing because there will always be a need to make things. As we get more advanced with our techniques, there is going to be a need for highly skilled and technically minded individuals who can utilize the technology, and also push it forward.

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China Jushi USA Corporation, a leading manufacturer of fiberglass reinforcements and fabrics to the reinforced plastics industry worldwide, selected Gray Construction to design and build its first U.S. manufacturing facility, which is currently under construction.

The new campus will include five buildings totaling 660,000 s.f. as well as an 80,000-ton production line designed to supplement the U.S.'s growing composite material industry including marine, construction, infrastructure, transportation and alternative energy.

The company has been operating in the U.S. market for over 20 years with distribution centers in Columbia, S.C.; Elkhart, Ind.; and Irwindale, Calif. The new "intelligent" facility will incorporate cutting-edge technologies and equipment and will serve as the company's new U.S. headquarters.

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