

# EQUIPMENT MARKET REPORT

**On-the-Go**



**In depth analysis of the  
Compact Equipment  
Market's Outlook**

**an exclusive eBook  
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**OEM** Global product development solutions for mobile OEMs  
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**A**griculture Machinery Production, in both the U.S. and Europe, is accelerating while China Agriculture Machinery Production contracts. U.S. Agriculture Machinery Production is 15.7% above the year-ago level while Agriculture Machinery Production in Europe is set to rise through early 2018 before edging lower during the remainder of the year.

Construction Machinery Production is increasing in both the U.S. and Europe. An ongoing rise is probable through 2018 for U.S. Construction Machinery Production, and ascending U.S. Mining Machinery Production will extend through the third quarter of 2018. General rise in the macroeconomy will support accelerating growth in Europe Construction Machinery and Mining Production in 2018. |

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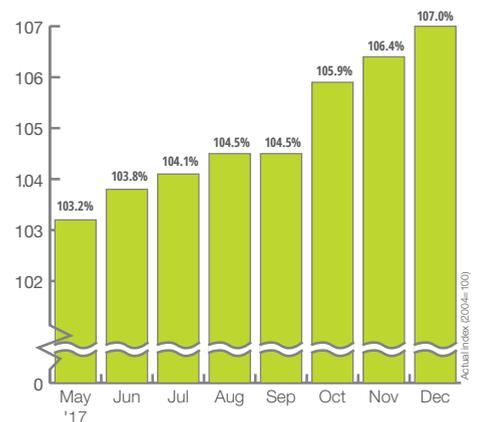
**QUESTIONS?**

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**U.S. Leading Indicator:**

- The U.S. Leading Indicator is rising.
- Rise in the Indicator signals rise for the U.S. economy through the first half of 2018.

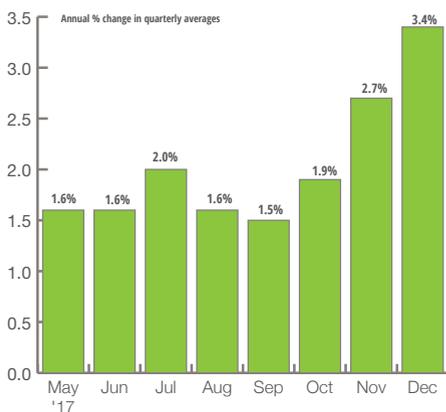


**Editor's Note:** Please note that this chart has been modified on the Y-axis to show the trend more easily.



## U.S. Total Industrial Production:

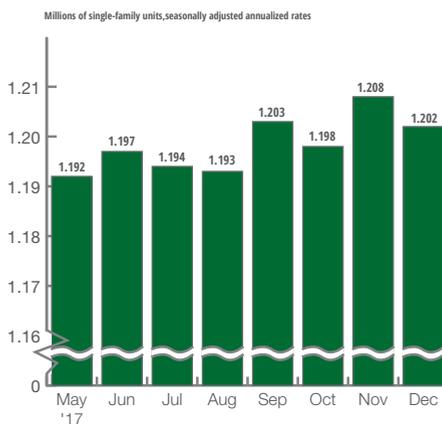
- U.S. Industrial Production during the 3 months through November was up 2.6% year over year.
- Leading Indicator evidence suggests that Production will accelerate upward through mid-2018.



## Housing Starts:

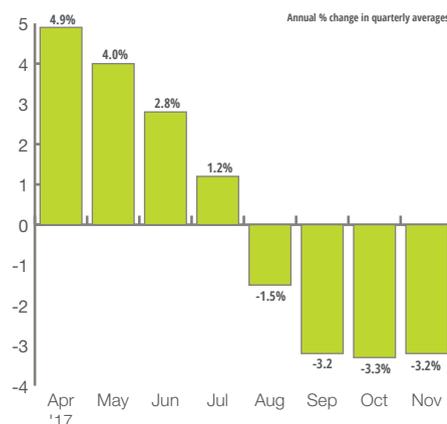
**Editor's Note:** Please note that this chart has been modified on the Y-axis to show the trend more easily.

- U.S. Housing Starts during the 12 months through November totaled 1.208 million units. Starts are up 3.7% compared to 1 year ago, but the pace of rise is diminishing.
- Strengthening consumer trends, such as rising wages and disposable personal income, will support rising Starts through late 2018.



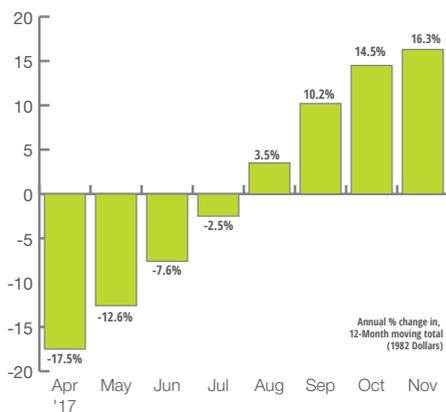
## Private Nonresidential New Construction:

- U.S. Private Nonresidential New Construction (down 3.4% year over year) will decline through the first half of 2018.
- Corporate Profits, which lead U.S. Private Nonresidential Construction by about 2 years, indicate decline will extend through the first half of 2018.



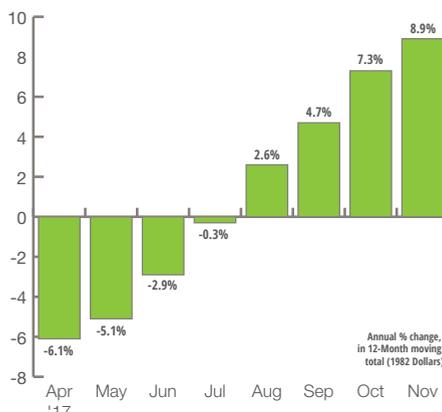
## Construction Machinery, New Orders:

- U.S. Construction Machinery New Orders were up 14.5% year over year and will rise through late 2018.
- Accelerating growth for U.S. Mining (excluding oil and gas) Production is lifting demand for surface mining machinery, a component of Construction Machinery.



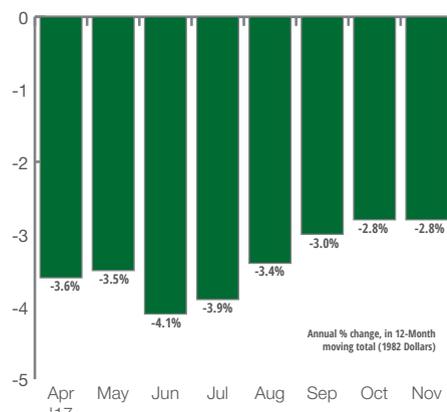
## Farm Machinery & Equipment Shipments:

- U.S. Farm Machinery & Equipment Supplies will rise through the first half of 2018.
- Cyclical rise in the Caterpillar Stock Price (9-month lead time) signals rise could extend into the second half of 2018.



## Total Public New Construction:

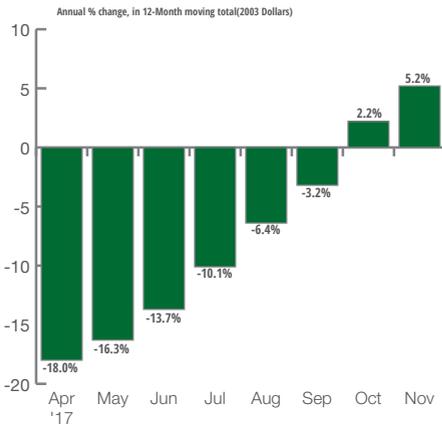
- Construction during the 12 months through October was down 2.9% from last year.
- Recovery will extend during the next one to two quarters.





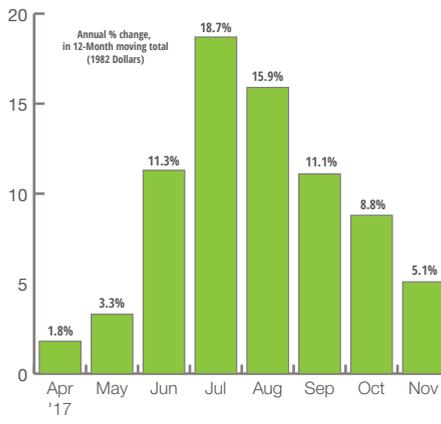
## Heavy-Duty Truck Shipments:

- U.S. Heavy Duty Truck Shipments transitioned to an accelerating growth trend in October (up 2.2% year over year).
- The ITR Checking Points™ system suggests accelerating growth will extend through the next one to two quarters.



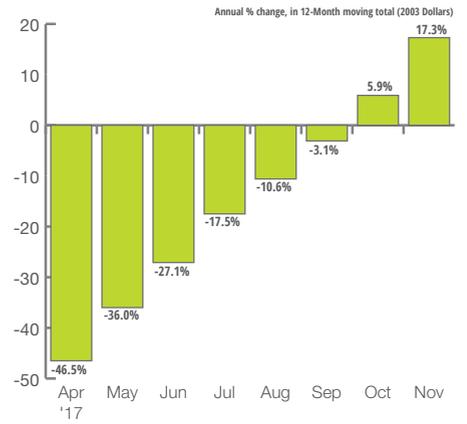
## Defense Industry, New Orders:

- October U.S. Defense Capital Goods New Orders were 9.0% above the year-ago level on an annual basis.
- Plan for this segment to rise through 2018.



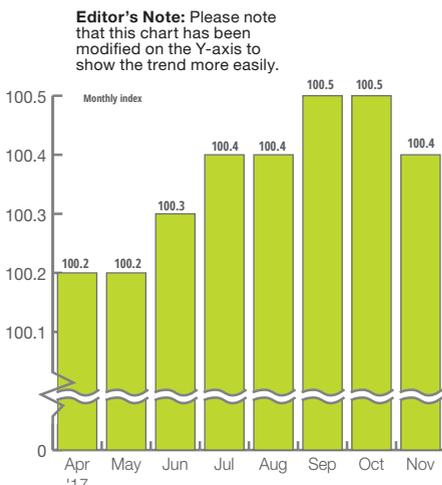
## Mining, Oil & Gas Field Machinery New Orders:

- U.S. Mining, Oil, & Gas Machinery New Orders transitioned to an accelerating growth trend in October (up 6.6% year over year).
- Rising Oil Prices bode well for New Orders growth prospects next year.



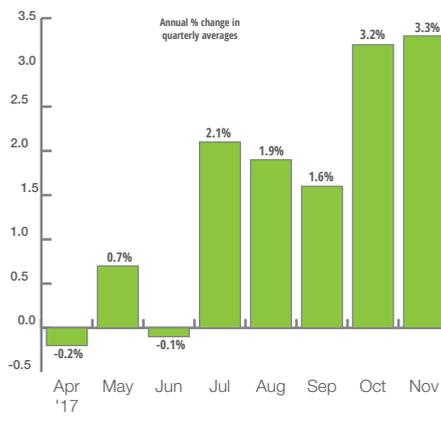
## Euro Area Leading Indicator

- The Europe Leading Indicator declined in October.
- Tentative decline in the Indicator signals slowing growth in late 2018.



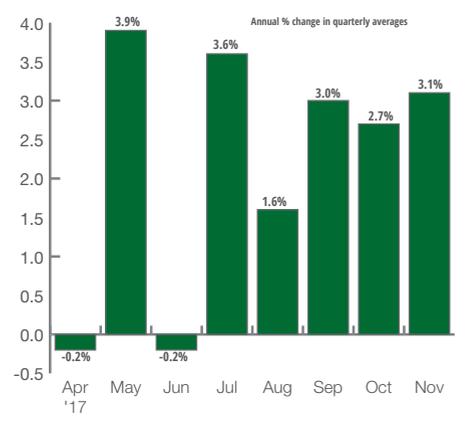
## Industrial Production, United Kingdom:

- U.K. Industrial Production during the 3 months through October was up 3.0%.
- Production will rise through 2018, albeit at a slowing pace of growth.



## Industrial Production, Germany:

- Germany Industrial Production during the 3 months through October was up 2.6%.
- The November Germany Purchasing Managers Index (PMI) reached the highest level in more than 6 years and signals additional growth for the German economy in 2018.



# IMPROVED VERSATILITY

# Propels Compact Equipment Market Forward

Flexibility, transportability and lower cost makes compact equipment an attractive option over traditional, larger and more specialized machinery.

by Michelle Kopier

**F**or several years now, the compact equipment market has seen strong and consistent growth. Starting with the economic downturn a decade ago, larger premium equipment purchases dropped significantly as contractors and owners tightened up budgets. The rental market saw a surge of interest for that same reason as contractors realized that high cost,

premium, specialized equipment was not worth owning and having sit idle on a job site for several days or weeks at a time.

If one good thing came out of the economic recession for the off-highway equipment market, it was a smart and realistic reevaluation of equipment purchases versus rentals, and a more long-term view for new job bids. “As we continue to come

out of the downturn, customers are looking to take on a more diverse range of job opportunities, as well as how they can reduce the cost of a job while gaining flexibility with a finite set of equipment. Compact equipment’s versatility, flexibility and transportability provide that opportunity,” says Graham Hinch, Division Manager, John Deere Commercial Worksite Products.

“We see the traditional customer who would normally buy construction machines like backhoes and crawlers take a closer look at compact track loaders and compact excavators to see if they could get the work done with a few attachments versus buying more task specific equipment,” Hinch says. “Compact equipment is more productive than it has ever been, more flexible, and more versatile which is attracting a lot of new customers to that space.”

The compact equipment market addresses a common focus for equipment purchasers and users which is return on investment—but not just acquisition costs, but over the product’s lifetime. Rental company owners as well as the owner/operator are paying more attention than ever before to the overall versatility



ASV HOLDINGS,  
INC.



ASV's RT-75 has 18 in. (475 mm) wide rubber tracks with undercarriages that are supported by flexible torsion axles that give the operator a smooth ride while it crawls over rough, uneven surfaces.

ASV HOLDINGS, INC.



of each piece of equipment, the productivity gains it can provide, as well as total costs after the sale.

### Individual equipment type insights

Breaking down the compact equipment market into individual machine types, the industry is trending away from wheeled skid steers and toward compact track loaders (CTLs) and compact excavators. “We’ve seen CTLs and compact excavators hold stronger market growth over skid steers,” says Hinch. “While I think the skid steer industry will always have a place, we’re just not seeing the product growth rates we are seeing with other product segments.”

“Track loaders have been a dominant and growing market that has been replacing wheeled skid steers for many applications for the past ten years,” says Buck Storlie, Testing and Reliability Leader for ASV Holdings, Inc. (ASV). In 2017, ASV saw its CTL segment surpass skid steers in market share in both the U.S. and Australia. The company sees other regions around the world trending in the same direction, although at a slower rate.

The CTL unit is seen to have a broader array of applications and conditions within which it can work. “From a productivity standpoint, in terms of flotation, stability, pushing power, and the flexibility with the rubber tracks, a CTL can work on more types of terrain and take on more jobs than a traditional wheeled skid steer can,” says Hinch. “With the CTL’s flexibility, we’re seeing our customers able to pursue and bid on more and different types of jobs than they could before.”

“Our customers want to be able to work more days and in more places,” says Storlie. “In more severe conditions like rain and mud where a wheeled skid steer could get stuck, a CTL can continue to do the job.”

“The applications for these machines vary greatly from the initial phases of a large construction project where the machines can be found unloading trucks and delivering materials to the closing stages where they can be utilized for parking garage construction and landscaping. That versatility is really what propels this segment of the telehandler market,” explain John Boehme, Senior Product Manager of Telehandlers, and Rogério dos Santos, Director of the Telehandler Platform at JLG Industries, Inc. Another segment of the compact equipment market experience strong demand is the compact telehandler, which continues to be popular for applications where a small footprint and lower machine height would be preferred or required over a traditional telehandler model, such as parking garage construction.

Not unlike CTLs and compact excavators, compact telehandlers are also seeing increased interest due to their versatility through a growing number of attachment options. A customer will always be looking to maximize his or her versatility by doing more with less, so the ever-expanding attachment offerings allow each user to perform several different tasks with a single machine.

### Productivity with less power

A huge propeller of compact equipment growth has been the development of more productive, efficient and compact engine systems over the course of the past decade as government regulations have pressed engine manufacturers to reduce emissions while customers have insisted it not impact overall performance.

“With the efficiency of lower horsepower engines, customers are able to consider that while a machine may not be able to dig as deep or large of an area as a larger piece of equipment, and it may take them a bit longer to complete the task, they can also now bid on five other jobs they couldn’t compete for with larger traditional pieces of construction

equipment. And, by investing in a few attachments, their equipment portfolio has grown in capability but not overall units, and their portfolio of business opportunities has grown. Our customers are gravitating toward that flexibility,” Hinch says.

While there are always tradeoffs by going with a lower horsepower compact vehicle model, engine manufacturers are continuing to work to be able to squeeze more productivity out of a smaller envelope.

ASV’s Storlie also notes that the 74 hp class of vehicles is becoming more popular to leverage less stringent emissions requirements. “That particular class of equipment is being pushed to get more performance out of 74 hp. At ASV, we achieve that by minimizing losses on other systems like the drive system and hydraulics. Anything you can do to get the power off of the engine and put directly toward the ground or the attachment to do work is a huge benefit for the customer,” says Storlie.

The construction industry overall is trending away from traditional control methods and toward electrohydraulic controls, particularly in larger equipment, which is in return trickling down to control expectations for compact equipment operation. Leveraging more precise electrohydraulic controls allows manufacturers to optimize and customize the performance and features of the system to each unique operator or application.

“Along with the Tier 4 engines came engine control units (ECUs) and more on-board electronics,” continues Storlie. “Once you introduce that onto the machine, the options just continue to progress. With electronic control adoption, we’re seeing a higher demand for the ability to adjust the machine to specific applications, attachments and operators, particularly on our higher-end machines.”

“Electrohydraulics allows an operator to get into the vehicle cab and configure the machine to his or her own skill level for the task at



The John Deere 333G compact track loader features 96.6 hp (72 kW) of power.

JOHN DEERE

hand. For example, we can program onboard controls specific to the boom load height so with a single push of a button the operator can deliver the load to the truck accurately every time and not have to manually manipulate the load each time to complete the same task over and over. This technology exists and is already being used by larger and more costly equipment, but it's definitely something our compact equipment operators are looking for now," Hinch says.

Improved versatility and productivity also means a machine is able to perform more tasks and work for longer hours, which means operators are spending more time in the cab. This has translated into increased focus and attention on the operator comfort and overall working environment for future equipment designs. Features such as more efficient HVAC systems, more comfortable seats, rearview camera systems, cab pressurization and creature comforts like Bluetooth radio are all areas of interest for the



**LEFT and FAR LEFT:** John Deere's 333G CTL's vertical-lift boom offers more lift height and reach at the top of the lift path for more truck-loading ability. **Three-way switchable controls and electrohydraulic joystick performance provides more operating flexibility.**

The John Deere 30G compact excavator features a Tier 4 Yanmar 3-cylinder engine.



customer to make the longer hours on the job more enjoyable.

### Advanced technology considerations

Higher cost, premium larger pieces of construction equipment like motor graders and excavators gain productivity and efficiency improvements with onboard precision systems like grade control. Telematics is another example of a higher cost technology oftentimes seen onboard larger, more expensive equipment units to allow customers with high asset investment to monitor their machines' performance, fleets and multiple job sites. Asset protections like curfews and geofencing also reduce risk for

high cost vehicles. Performance monitoring on individual machines can alert a dealer as to the health of a machine to be more proactive with servicing needs, but also mitigate unnecessary downtime if no service intervention is necessary for scheduled maintenance.

All of these benefits make a job site and an operator more efficient and effective, helping to reduce operating costs and add to the bottom line for the owner. Thus, those vehicle systems and customer expectations are being requested in the compact equipment space.

However, that high cost is difficult to justify for the lower overall purchase price of a compact piece of equipment. “For some customers, adding the cost of a traditional grade control system may not make sense given the investment made on the compact machine itself. At John Deere we are looking at innovative solutions that will deliver the level of precision a customer is looking for while also taking into consideration the overall cost,” says Hinch. “We need to look at other ways we can deliver the precision and performance expectations a customer requires to get the job done efficiently.”

So, where is the future of compact equipment headed technologically? According to Hinch, “There are opportunities to further refine how the machine interacts with other machines, with suppliers, with dealers, with John Deere and its customers to establish how best to integrate the vehicle into the whole value chain of what a customer is trying to accomplish.” Today, a remote-controlled skid steer may not be considered a mainstream option, but there are areas of the business that warrant a machine without an operator due to dangerous or hazardous environmental conditions. Remote controlled technologies combined with a precision system could eventually be integrated into a compact piece of equipment to automate specific jobs on a construction site, for example.

“John Deere always has to eval-

uate technological investments and integrations not only in the near term for functional benefit to the customer, but also long-term to ensure onboard systems can utilize third party systems an owner may already be using and future technologies that may need to be incorporated years down the line,” Hinch says.

In the end, especially for future compact equipment development, if a technology doesn’t add productivity, lower operating costs and improve uptime, then it’s just technology for technology’s sake and likely not worth the cost.

### Market projections

The future outlook of the compact equipment market is bright as John Deere, ASV and JLG all see their segments continuing to grow into the next several years. “Population expansion and growth expanding from major cities beyond existing suburbs will continue to fuel the growth of compact equipment due to the need for machines to work in smaller spaces,” note Boehme and Santos of JLG.

Hinch sees John Deere’s customers continuing to gravitate toward compact equipment options over the course of the next several years with sustained interest in the flexibility, versatility and transportability compact equipment can offer.

At minimum, 2018 looks to be

another good year in terms of market growth for John Deere’s compact equipment segment. “We’re seeing the fundamentals of the economy—the drivers of the business for the construction and agriculture industries—to be favorable, thus we feel the compact equipment market will continue to grow for the next year, specifically in the U.S. and Canada,” Hinch says.

The compact equipment market’s increasing popularity is also pulling it into new markets as equipment owners and operators find ways to better leverage a smaller machine, such as ASV’s largest CTL, the RT-120 model. “We’re selling that model with a stabilizing and milling attachment to the asphalt market. With that application, we’re able to run a 1-meter wide unit with a large enough milling head attachment to replace more dedicated and specialized asphalt equipment like cold planers, millers and grinders,” says Storlie.

Customers are trending that way because of the ease of transportability of smaller and lighter weight compact equipment. If an operator is able to get the job done well and on time with a smaller unit, then getting the machine to and from the job site faster and easier becomes advantageous, and that goes for any application where large vehicle transport is cumbersome and costly. |



The RT-120 Posi-Track Loader seen operating in a forestry application.