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Economy

Housing & Construction

Retail

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Construction Tech Education Grows

New Tech Affects Construction

AI Impacts Construction

AI Drives Retail Sales and Marketing

Mobile 3D Printers Impact Construction

Target Pilots New Store Concept

Bosch | Dremel

RotoZip | Vermont American

CST/berger | freud | Sia

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US ECONOMY

Exchange Rates November 30, 2017

Euro	1 Euro = \$1.190	\$1.00 = 0.840 Euros
Canadian Dollar	1 CAD = \$0.776	\$1.00 = 1.288 CAD
Japanese Yen	1 Yen = \$0.009	\$1.00 = 112.299 Yen
Chinese Yuan	1 Yuan = \$0.151	\$1.00 = 6.613 Yuan
Mexican Peso	1 Peso = \$0.054	\$1.00 = 18.635 Pesos

Market Watch November 30, 2017

DOW	24,272	3.8%
NASDAQ	6,874	2.2%
S&P 500	2,648	2.8%

All three indexes posted strong gains for November, driven by good economic news and hopes for a tax cut. It was the eighth consecutive month of gains for the market, the longest streak of monthly gains for the DOW in more than 20 years and the first time the DOW closed over 24,000. The DOW rose 3.8% to close at 24,272, the tech-heavy NASDAQ rose 2.2% to close at 6,874 and the S&P, the index most closely followed by economists, rose 2.8% to close at 2,648.

Consumer Confidence Rises to 129.5

The New York-based Conference Board's Consumer Confidence Index rose to 129.5 in November after rising to 125.9 in October. It was the highest level of consumer confidence in almost 17 years and marked the fifth consecutive month of increases for the index. The Present Situation Index increased to 153.9 in November after rising to an upwardly revised 151.1 in October and the Expectations Index rose to 113.3 after rising to 109.1 in October. The Conference Board noted that confidence remains high among consumers, and they are generally more upbeat. Economists say a level of 90 indicates that the economy is on solid footing and a level of 100 or more indicates growth. Analysts caution that the real driver behind consumer spending is income growth and that labor market trends are a more accurate predictor of consumer behavior.

Consumer Spending Rises 0.3%

Consumer spending rose 0.3% in October after rising a downwardly revised 0.9% in September. The September gain was the largest increase since August 2009, lifted by consumers in Texas and Florida replacing automobiles destroyed by hurricanes Harvey and Irma. Core consumer spending rose 0.1% in October after rising 0.5% in September. Personal incomes rose 0.4% in October after rising by the same percentage in September. Wages rose 0.3% and the savings rate increased to 3.2% after falling to 3.0% in September, the lowest level since December 2007. The Fed's preferred measure of inflation, the personal consumption expenditures (PCE) price index excluding food and energy, rose 0.2% in October after a similar increase in September. The core PCE was up 1.4% in the 12 months through October. The core PCE has been below the Fed's target of 2.0% for more than five years. Consumer spending is closely watched by economists because it accounts for 70% of U.S. economic activity.

Consumer Prices Rise 0.1%

The Consumer Price Index (CPI) rose 0.1% in October after rising 0.5% in September. The CPI was up 2.0% from October 2016. Core inflation, which excludes food and energy, rose 0.2% in October after rising 0.1% in September and was up 1.8% year over year. Core inflation has consistently been below the Fed's target of 2%. Most of the rise in prices came from a 0.3% increase in the shelter index, as the energy index fell because declining gasoline prices outweighed increases in other energy components.

Unemployment Remains at 4.1%

The unemployment rate remained at a 17-year low of 4.1% and the economy added 228,000 new jobs in November. Job gains were widespread, with manufacturing adding 31,000 jobs and construction adding 24,000. Even sectors where employment has been falling, such as retail, did well, with retailers adding 18,700 beyond typical seasonal hiring, the best month for retail since January. Average weekly paychecks have increased by 3.1% over the last 12-months, the first time that reading has topped 3% in nearly seven years. However, much of that gain came from Americans working longer hours. Average hourly pay increased 2.5%. Economists note that wages should be going up more because there is a record number of unfilled job openings and employers consistently report that finding workers is difficult. Ten years ago, before the start of the

Great Recession, the average hourly wage was rising more than 3% annually.

Durable Goods Orders Fall 1.2%

Durable goods orders fell 1.2% in October after rising 2.2% in September. It was the first decline in durable goods orders since July. Much of the decline was driven by an 18.6% plunge in orders for commercial planes, a typically volatile category. Excluding the volatile transportation category durable goods orders increased by 0.4% in October after rising 0.7% in September. Orders for non-defense capital goods excluding aircraft, a closely watched indicator of business spending, fell 0.5% after rising 1.3% in September. It was the biggest drop in that category since September 2016. Shipments in the same category, which factor into GDP, rose 0.4% in October after rising an upwardly revised 1.2% in September. Shipments of core capital goods have now risen for nine consecutive months. The durable goods report is often both volatile and subject to sharp revisions.

Chicago PMI Falls to 63.9

The Chicago Purchasing Managers' Index (PMI) fell to 63.9 in November after rising to 66.2 in October. It was the lowest level for the index in three months. The New Orders component retreated after reaching the highest level since June but remained at a healthy level. Order Backlogs was the only other component to lose ground during the month after reaching a 43-year high in October. The jump in recent gains was attributed to a carryover of orders after the recent storms. Prices Paid reached the third-highest level this year, with firms reporting that a wide range of input prices did not drop as expected after rising during the hurricanes. Companies faced longer supplier lead times in November, and MNI Indicators said that the longer lead times and solid demand led to companies stockpiling goods. The question posed of respondents in November was the effect of anticipated increases in interest rates on their activities. A total of 75% of respondents thought an increase in rates would have no material impact; 23% thought it would harm their business.

Wholesale Prices Rise 0.4%

The Producer Price Index (PPI) rose 0.4% in October after rising 0.4% in September and was up 2.8% over the past twelve months, the biggest annual increase since 2012. Core

inflation, which excludes volatile food, energy and trade services prices, rose 0.2% in September for the third consecutive month and was up a record high 2.3% year over year. The PPI for inputs to construction was up 3.9% year over year. The PPI shows that inflation is building in the pipeline and a stronger dollar and better global growth could cause core PPI to rise in coming months, according to economists.

Q3 GDP Grows 3.3%

GDP grew 3.3% in the third quarter, up from the 3.0% growth first reported and 3.1% growth in the second quarter. It was the fastest pace of growth in three years. The improvement was led by stronger business investment, with spending on equipment, especially in transportation-related areas, rising 10.4% instead of the 8.6% first reported. Public spending also contributed to stronger GDP, with government spending revised from a small decline to a modest increase. Consumer spending was revised down slightly, from 2.4% to 2.3%, but was still solid. The price index for personal consumption expenditures (PCE), which is the Fed's preferred measure of inflation, rose at a 1.5% annual rate in the third quarter, up from the second quarter's increase of 0.3%. Repairs and rebuilding could boost economic growth in coming quarters, particularly in building sectors.

Job Openings Near Record High

There were 6.09 million jobs available at the end of September, little changed from August and close to the record high of 6.14 million reached in July, according to the latest Job Openings and Labor Turnover Survey, or JOLTS. Job openings for the third quarter were up 7% from third quarter 2016. The lack of growth in open jobs was attributed to a drop in the number of jobs for restaurants and hotels, due to widespread damage in the wake of Hurricanes Harvey and Irma, which struck many vacation spots in Texas, Florida and other southeastern states. Overall, thousands of businesses were closed, which likely held back hiring. Total hires fell 2.7% to 5.27 million in September, the lowest level in five months. Employers have a dwindling pool of those out of work to choose from. There were just 1.12 unemployed people, on average, for every open job in September. During the 2008-2009 Great Recession, that figure reached 6 unemployed people for every available job. There were nearly 3.2 million quits in September, near the post-recession peak reached in May. The pace of quits has been fairly steady for the past 18 months. Economists warn that the

record level of job openings could negatively impact economic growth. The JOLTS report is one of Fed Chair Janet Yellen's preferred economic indicators.

Fed Leaves Rates Unchanged

The Federal Reserve left interest rates unchanged but offered an optimistic view of the US economy that could lay the groundwork for a widely anticipated quarter-point rate increase in December. The central bank's rate-setting committee said its preferred benchmark for inflation "remained soft" but the labor market is getting stronger and economic activity is steadily picking up. It would be the third rate increase in 2017.

Powell Nominated to Lead the Fed

President Donald Trump nominated Federal Reserve Governor Jerome Powell, a former private equity executive, to be the central bank's next chairman, passing over current chair Janet Yellen, reportedly because Trump said he wanted to "put his own stamp" on the Fed. Powell favors a cautious approach to raising interest rates and has been a loyal supporter of the current chair, Janet Yellen, so his appointment isn't expected to bring any significant changes to the Fed's policies.

HOUSING & CONSTRUCTION

Housing Starts Rise 13.7%

Housing starts rose 13.7% in October to a seasonally adjusted annual rate of 1.29 million units after a slight upward revision to September's numbers. It was the highest housing production reading since October 2016. **Single-family starts rose 5.3% in October** to a seasonally adjusted annual rate of 877,000 and were up 8.4% since January. Multifamily starts jumped 36.8% to 413,000 units after falling in September. **Regional starts were mixed.** Combined single-family and multifamily housing production rose 42.2% in the Northeast, 18.4% in the Midwest and 17.2% in the South. Starts fell 3.7% in the West.

Building Permits Rise 5.9%

Building permits rose 5.9% in October to a seasonally adjusted annual rate of 1.297 million units after falling to 1.22 million in September. **Single-family permits rose 1.9%** to 839,000 units after rising to 819,000 units in September while multifamily

permits fell for the second consecutive month, dropping 9.5% to 458,000 units. Permits rose in all four regions. They increased 13.0% in the West, 4.1% in the Northeast, 3.8% in the Midwest and 3.0% in the South.

New-Home Sales Rise 6.2%

Sales of newly built, single-family homes rose 6.2% in October to a seasonally adjusted annual rate of 685,000 units from a downwardly revised September reading. It was the highest sales pace since October 2007. Year-to-date, new home sales are 8.9% above their level over the same period last year. There was strong growth at entry-level price points in markets where builders are able to meet the demand. The inventory of new homes for sale was 282,000 in October, which is a 4.9-month supply at the current sales pace. **New home sales rose in all four regions.** Sales rose 30.2% in the Northeast, 17.9% in the Midwest, 6.4% in the West and 1.3% in the South. Sales of new homes are tabulated when contracts are signed and are considered a more timely barometer of the housing market than purchases of previously-owned homes, which are calculated when a contract closes.

Existing Home Sales Rise 2.0%

Total existing-home sales increased 2.0% in October to a seasonally adjusted annual rate of 5.48 million from a downwardly revised 0.4% increase to 5.37 million in September. Sales were 0.9% below a year ago. **Single-family home sales rose 2.1%** to a seasonally adjusted annual rate of 4.87 million in October from 4.77 million in September, but are still 1.0% under the 4.92 million pace a year ago. The National Association of Realtors says that sales are still below year ago levels because low inventory is limiting choices for prospective buyers and keeping prices high. Lagging sales in Florida and Texas post-hurricanes are also impacting overall numbers. Total housing inventory at the end of October dropped 3.2% to 1.80 million existing homes available for sale, 10.4% lower than a year ago and has fallen year over year for 29 consecutive months. Unsold inventory is at a 3.9-month supply at the current sales pace, down from 4.4 months a year ago. **Sales rose in all regions,** with existing home sales in the Northeast climbing 4.2%, sales in the Midwest rising 0.8%, sales in the South increasing 1.9% and sales in the West growing 2.4%.

Builder Confidence Rises to 70

Builder confidence rose two points to 70 in November, the highest reading since March of this year and the second highest on record since July 2005, according to the National Association of Home Builders/Wells Fargo Housing Market Index (HMI). Two out of the three HMI components registered gains in November. The component gauging current sales conditions rose two points to 77 and the index measuring buyer traffic increased two points to 50. Meanwhile, the index charting sales expectations in the next six months dropped a single point to 77. Looking at the three-month moving averages for regional HMI scores, the Northeast jumped five points to 54 and the South rose one point to 69. Both the West and Midwest remained unchanged at 77 and 63, respectively.

Mortgage Rates Steady

A 30-year fixed-rate mortgage (FRM) remained virtually unchanged at the end of November at 3.92% after rising slightly to 3.94% at the end of October. At the end of November last year 30-year rates averaged 4.03%.

POWER TOOL INDUSTRY

Robert Bosch

According to Bosch executive Gerhard Steiger, who started his career at Robert Bosch three decades ago, the corporate culture has changed drastically. When he started, failure was completely unacceptable. But today failure is an option, as long as it can be used to help create something even better. The new thinking is a result of Bosch's decision to encourage more of a startup mentality within the company.

Stanley Black & Decker

From the Robert Baird and Goldman Sachs Global Industrial Conferences:

The tools business is anticipated to account for close to \$9 billion in revenue this year. They anticipate the tools segment will deliver organic growth of close to 9% this year and at the high end of their range of 4% to 6% for 2018.

They have ten plants in the United States that are producing tools to sell in the U.S.A. and now about 40% of what they sell here is actually produced domestically. Their goal is to get to 80% U.S. production.

Today Craftsman is essentially a Chinese-produced product line. When they introduce it in Lowe's in the middle of 2018 it will be a much more Americanized product, and that will continue as time goes on. They believe the Made in the U.S.A. positioning is very important.

Using Industry 4.0 in their plants has enabled them to reduce labor by 30% so they can be competitive with tools produced overseas.

They did not talk much about the Craftsman introduction at Lowe's request because Lowe's did not want to disclose their strategies. They did confirm it will be a comprehensive program covering all categories that will begin in mid-2018 and be in full force by 2019. It will be strongly supported with investment dollars, shelf space, digital marketing and a powerful brand statement. There will be brands coming out of Lowe's when Craftsman goes in, both their brands and competitors'.

They feel as if FlexVolt will be a billion dollar product line in four to five years; however CEO James Loree said that not everyone in the company agrees with this goal, especially the people who have to commit to the numbers. They are introducing 10 to 20 SKUs a year that are increasingly replacing corded tools. However, their experience thus far shows that their corded tools are actually growing and their 20-volt tools, especially DC brushless ones, have been given a boost by FlexVolt.

When they merged Stanley and Black & Decker, B&D had 9% margins; today they have 18% margins.

Because they have invested \$3 billion in their tools business over the last year or so, they will be looking in other areas, such as industrial and security, for mergers and acquisitions candidates.

They believe the home store channels still have two to three years to go in the current cycle of growth and expect housing to continue to grow over that time period.

They've made a lot of changes in the last three years to their distribution network within Tools. They've added two

large new distribution centers (DCs), one in the U.S. and one in the U.K. They plan to add another in the U.S., most likely in the middle of the country.

Other News:

SB&D will open a new 300,000 square foot manufacturing facility in Mission, Texas in early 2018 that will produce DeWalt power tools. It's SB&D's third manufacturing facility in Texas. The company says it's part of their commitment to making products in the U.S.A.

SB&D is working with READY Robotics, which develops fully integrated robotic systems capable of being deployed in hours compared to the weeks or months normally required. SB&D's director of Infrastructure Innovation, Harry Zhong, says they are always looking for disruptive technologies that will change the way they manufacture and will also shift the way they design and validate.

SB&D has created a new C-suite position, Chief Technology Officer. Dr. Mark Maybury will form a small, agile team to work across the company's businesses and functions. The team will advise and counsel management on technological threats and opportunities.

SB&D extended and expanded their licensing agreement with JAKKS Pacific. JAKKS will continue to manufacture, market and distribute to all retail channels B&D branded role-play tools for kids. In addition, JAKKS will be introducing a new line of Stanley branded kids' products such as toy hand and power tools at Walmart stores in the U.S. and Canada this holiday season.

TTI/Techtronic Industries

Milwaukee Tool has spent \$33 million expanding their corporate campus in Brookfield, Wisconsin. The new four-story, 207,000-square-foot addition is connected to their older facility, which has 183,000 square feet on one level. The new building was designed to "immerse the employees in an environment reflective of the users they design and develop tools for," with such innovative touches as door handles fashioned from large drill bits and large lighting fixtures with features made from industrial materials such as pipes and heating conduits. The addition features open air creative and cross-functional meeting space, a wide variety of furniture and office space choices, in-

creased natural lighting and an environment designed to stimulate creative thinking and problem solving.

A Milwaukee employee was charged with making the bomb threats to Milwaukee Tool's plant in Greenwood, Wisconsin that began in September, continued in October and escalated during November, when the tool maker received an additional three bomb threats. Authorities said the \$10,000 reward did not actually play a role in leading police to Ottawa Anderson, 20, who now faces up to 10 years in prison and a \$10,000 fine on each bomb-threat count.

Trimble

Trimble plans to build a 65,000 square-foot research dome and a 4,000 square-foot support building in Ohio. The dome will primarily be used for indoor research and development and product testing, as well as a training center for dealers and customers to review their products. Trimble is building the dome because they estimate that they lose 120 work days each year due to inclement weather and outside conditions. These days are often during the winter when customers are available to meet with them and see demonstrations of the products. The dome will allow customers to come to Trimble during their "slower seasons" and Trimble will be able to do research and development year-round. Trimble already has a data center and a distribution center in Huber Heights, the location of the new dome center.

Trimble was named a leader in the 2017 Green Quadrant Analysis for Integrated Workplace Management Systems (IWMS). Trimble's Manhattan software got the highest score for functionality and also got high marks for breadth. Trimble is dedicated to delivering solutions to manage the entire continuum of building construction and real estate management. The Green Quadrant is an independent benchmark of IWMS.

RETAIL

Retail Sales Rise 0.2%

Retail sales rose 0.2% in October after rising an upwardly revised 1.9% in September. The slight increase in sales was still better than economists had expected. Sales were up 4.9% from October 2016. Gasoline sales fell sharply as prices dropped after surging before and during the hurricanes.

However, automobile sales continued to rise as people replaced vehicles lost in the hurricanes and dealers offered bargains marking the end of the model year. Receipts at service stations decreased 1.2% in October. That followed a 6.4% gain in September. Excluding automobiles, gasoline, building materials and food services, core retail sales, which factor into GDP, increased 0.3% in October after climbing 0.5% in September. Sales at gardening and building material stores fell 1.2% in October after surging 3.0% in September. Sales at online retailers fell 0.3% after rising 0.5% in September. Retail sales account for one-third of all consumer spending, with services accounting for the other two-thirds.

Post Office Increases Holiday Delivery

The U.S. Postal Service is planning to offer next-day service with packages delivered Sundays during the holiday delivery period in 20 major U.S. cities. Consumers will be able to place online orders with participating retailers before a cutoff time on Saturday. Postal carriers will pick up merchandise from local stores for delivery the following day. The program is similar to the Sunday package deliveries the Post Office currently handles for Amazon. Nearly 850 million parcels are expected to be delivered in the U.S. from Thanksgiving to New Year's Eve, a 13% increase over last year.

Holiday Shopping Update

More than 50 retailers were closed on Thanksgiving Day, including Lowe's, Home Depot, Ace Hardware and Sam's Club. Other retailers opened later on Thanksgiving. Target wanted to give their employees a breather, so they opened at 6 p.m. Thanksgiving night and closed at midnight before reopening at 6 a.m. on Black Friday. However, Target also gave holiday shoppers a jump by offering select Black Friday deals in all of its stores and on its website on Monday November 6.

The number of people visiting U.S. stores on Thanksgiving and Black Friday dropped 4% from last year, according to RetailNext. Online sales increased 18% to \$7.9 billion, according to software company Adobe Systems. Some retailers offered in-store deals that were not available online in order to entice people to shop in the store. Deloitte projects that e-commerce sales will grow 18% to 21% over the holiday shopping season.

Cyber Monday was the biggest online shopping day in U.S.

history as consumers spent \$6.59 billion shopping online, up from \$5.65 billion last year. Consumers spent \$5.03 billion online on Black Friday. The strongest surge in online purchases was between 8 p.m. and 11 p.m. in every time zone as consumers quit researching and paid for items in their carts.

For both Cyber Monday and Black Friday mobile users made up more than 47% of all visits to shopping sites, with 39.9% shopping on smart phones and 7.6% shopping on tablets.

The Home Depot

Q3 sales rose 8.1% to \$25.03 billion. Comp store sales overall rose 7.9%; comp sales for the U.S. rose 7.7%. Average ticket rose 5.1%, with average ticket growth impacted by commodity price inflation in lumber, building materials and copper. Transactions rose 2.5%. Results beat analysts' expectations.

Hurricane-related sales positively impacted their comp store sales growth by about \$282 million during the quarter. The gross margin on hurricane-related sales was considerably less than the company average. They also incurred approximately \$104 million of hurricane-related expenses. Operating profit for the third quarter was negatively impacted by about \$51 million.

From their Q3 Conference Call with Analysts:

Due to their outperformance in the third quarter and sales from the rebuilding efforts associated with the storms they increased their sales and earnings guidance for the year.

They now expect fiscal 2017 sales to increase by 6.3% with positive comps growing 6.5%. They expect hurricane-related spending to impact sales through the first half of 2018. As people move from preparation for the storms into recovery they see a more normalized mix of sales across the business. They are projecting a longer stretch of sales due to Hurricane Harvey because so much of the destruction was due to flooding and many people were uninsured.

Mexico and Canada both posted positive comp sales in local currency. They opened one new store in Mexico during the quarter.

Online sales grew 19% for the quarter and now represent 6.2% of total sales, with approximately 45% of online orders in

the U.S. picked up in stores. More than 85% of online order returns are done in stores. They used to believe that some categories would not actually sell online, but in the past several years they've come to realize that it is all interconnected and that online sales come from almost all categories.

Store delivery grows every week and they are currently piloting other delivery options.

The supply chain and their supplier partners did a fantastic job of supporting the business despite the high demands caused by major hurricanes in Florida and Texas and wildfires in California, including 236 stores that had to be closed for some period during the quarter. It added up to a cumulative 809 days, which was the equivalent of having 2.2 stores closed for an entire year. They are focused on creating the fastest and most efficient supply chain in home improvement and to do that they are planning and collaborating much more with their vendors and synchronizing the flow through the supply chain.

Pro sales gains outpaced DIY sales for the quarter once again, but they saw healthy gains in both categories. Sales to professional customers grew double digits for the quarter, with similar growth rates in both high-spend and low-spend pros. Their Pro-heavy categories, including lumber, wire, insulation, gypsum and hand tools, saw double-digit growth for the quarter. Storm related categories also saw significant growth, with double-digit comps in generators, wet/dry vacs, tarps and ladders.

Comps in non-impacted markets remained strong with healthy growth in both ticket and transactions.

In the fourth quarter they will introduce important new power tool offerings, including the DeWalt FlexVolt cordless air compressor that works with all the pneumatic tools customers already own. They are also introducing Makita's new LXT product line offering 36-volt power to reciprocal, circular and miter saws as well as grinders.

They are working with product manufacturers to increase their connected and smart home offerings and find the best ways to display these types of products in a home center.

They are rolling out Pro MRO, which gives pro customers shopping in their stores access to the Interline catalog and they are seeing those sales increase week after week.

They are also focusing on their ProPurchase card, which they described as a pro access card. It gives the Interline customers access to shop their stores and swipe their cards and have their purchases billed back onto their accounts.

Other News:

THD is dropping dangerous chemicals such as formaldehyde as part of a strategy to "go greener." They will be strengthening chemical oversight practices in paint, carpet, vinyl and laminate flooring and insulation. Several other national retailers, including Walmart, Target and Costco, have already cut back on many of these dangerous substances.

Lowe's

Q3 sales rose 6.5% to \$16.8 billion, ahead of expectations of \$16.6 billion. Comp store sales rose 5.7%, well ahead of expectations. Comp store sales in U.S. stores rose 5.1%. Lowe's said they can trace \$200 million in sales to the hurricanes in Texas and Florida.

From Lowe's Q3 Conference Call with Analysts:

Comp sales growth of 5.7% was driven by a 4.8% increase in comp average ticket and transaction growth of 0.9%.

Total customer transactions grew 0.7% and total average ticket grew 5.8% to \$72.63. Hurricane-related sales contributed 140 basis points to comp growth. Lumber and building materials led product category growth with double-digit comps, driven by Pro demand, hurricane prep and cleanup and inflation. Appliances also posted double-digit comps. They achieved positive comps in all regions and all product categories.

Online comps grew 33% over the quarter, and they are seeing positive customer response to their evolving omni-channel capabilities. According to CEO Robert Niblock, they were recognized by *Fortune Magazine* as one of the top 10 most engaged companies. Right now 60% of online sales are picked up in store and 40% of those customers buy additional products while they are in the store.

Lowe's Canada delivered high single-digit comps, and they made further progress integrating RONA, continuing their rollout of appliances and converting their second RONA big-box store to a Lowe's branded store.

Their integration of Maintenance Supply Headquarters and Central Wholesalers remains on track.

Their third quarter consumer sentiment survey showed that consumers have an increasingly positive view of both the national economy and their personal financial situation.

They announced that Chief Operating Officer Rick Damron will be retiring in February after 36 years with Lowe's, the last five as COO. He will be succeeded by Richard Maltsbarger, currently their Chief Development Officer and President, International.

They sent more than 1,000 truckloads of products to areas impacted by the hurricanes, and added Account Executive ProServices, or AEPs, to the Texas and Florida markets to support incremental demand. They expect hurricane recovery to begin in the fourth quarter and extend into 2018. They expect the magnitude and benefit to have more impact in Texas than in Florida.

Lowe's donated more than \$2.5 million in disaster relief after Hurricanes Harvey and Irma, part in cash and part in product donations.

They've seen great customer response to MyLowe's since they expanded the benefits of the program. They have 1.5 million new memberships. MyLowe's customers typically spend 15% more than other customers.

They increased the number of associate hours over the quarter and will continue to optimize labor allocation to make sure staff is available to respond to customers when they are needed and improve traffic conversion. They are taking several actions to drive better conversions, and have been able to start tracking traffic inside the stores.

They are working to improve the productivity of their supply chain and streamline costs as well as improve fulfillment options for customers. They are working to consolidate freight shipments for both imported and domestic freight.

They believe the partnership between Stanley Black & Decker and Lowe's that will see the introduction of Craftsman products in stores and online in the second half of 2018 will bring a wide range of innovative products into all of their channels.

Inventory turnover was 3.94, an increase of five basis points over the third quarter of last year.

They are now able to narrow their delivery windows for Pros to a two-hour time frame. Pros currently account for about 30% of their business.

They are seeing really strong Pro results in Canada, given their higher mix of the Pro across their different banners, including those stores specifically focused on the Pro in both Quebec and western Canada.

Other News:

Lowe's will expand their smart home product offering into 70 U.S. stores after a pilot in three California stores was successful. Lowe's partnered with San Francisco-based b8ta to create a "curated selection" of more than 60 smart home products, including security systems, thermostats, cameras, lighting and speakers. Lowe's will also be able to capture information on how customers are interacting with the displays and adjust product content accordingly. What's called The SmartSpot section is located near the front of the 70 stores. Customers can view product details and pricing on iPads and use smartphones to test out products.

Lowe's will add about 400 new jobs in the greater Charlotte region as they add staff for both estimating and coordinating installations. Lowe's added 300 positions to the central production office in Wilkesboro earlier this year.

Walmart

Q3 sales rose 4.2% to \$123.18 billion, exceeding analysts' expectations. Comp store sales excluding fuel rose 2.7% in the U.S., the biggest gain since the first quarter of 2009. Customer counts rose 1.5%, and Walmart reported that shoppers added one extra item to their carts. Ecommerce sales grew 50%. Walmart said that U.S. online sales should be about \$11.5 billion this year and global ecommerce sales should be \$17.5 billion. While growth is impressive, that still accounts for less than 4% of Walmart's overall sales.

Walmart's holiday strategies include having more helpers positioned throughout stores to assist shoppers, offering 165,000 product demonstrations and throwing themed holiday "parties." Walmart is offering more hours to current employees

rather than hiring seasonal workers for Christmas. Walmart is offering discounts on items if customers order them online and then pick them up in store.

Walmart has tripled the number of items available online for the holidays to 60 million items, and will provide free two-day shipping on more than 2 million products when the order size exceeds \$35. Stores and the website will also offer more exclusive products from brand name companies such as Cuisinart and Bose.

Walmart has implemented some unusual strategies to help trim expenses, including producing slightly smaller shopping bags, which saved \$20 million, and shortening the length of its receipts, which will save \$7 million. Walmart has also added express lanes to their pharmacy, financial services and returns departments. Walmart is also working at negotiating better terms with suppliers.

Walmart has also introduced a dual pricing strategy for online and instore which some analysts described as “interesting” and others called “wildly contrarian.” Walmart’s real objective is to drive traffic to stores. Along those lines, they are now showing both the online and instore price for products when they differ. For instance, a box of mac ‘n cheese was \$1.48 online and \$1.28 in stores. Customers who order online but pick up in store will pay the lower price.

Sears

Sears is reportedly getting tough terms from suppliers for the holidays, with some suppliers stopping shipments and others adjusting payment terms. Sears reportedly is paying cash up front to guarantee shipments from LG Electronics and Samsung. Credit analysts say that Sears needs to raise about \$1.5 billion a year to fund operations, but still has assets it can sell to keep afloat. Chairman Eddie Lampert reportedly still believes Sears can become a viable company. He only goes to Sears’ headquarters in Illinois a few times a year; instead, execs visit him at his \$42 million estate on Florida’s exclusive Indian Creek Island.

MarketWatch reports that Sears is losing share in key categories including appliances, tools and outdoor products. They expect The Home Depot to capture the biggest share of the business Sears is losing.

Ace Hardware

Q3 revenue rose 9.1% to \$1.34 billion and comp store sales rose 7.1%. Total wholesale revenues rose 9.0% to \$1.28 billion. Sales rose across all departments, with outdoor living and lawn and garden posting the largest gains. Ace added 43 new domestic stores in the third quarter and cancelled 34 stores, leaving the co-op’s domestic store count at 4,366 at the end of the quarter, up 31 stores from Q3 last year. According to CEO John Venhuizen hurricane-related activity accounted for 18% of third quarter revenue growth.

Westlake Ace Hardware is acquiring seven stores from Buikema’s Ace Hardware in the Illinois and Chicago area. The deal is expected to close in early January.

The Chicago Tribune named Ace Hardware a 2017 Top Workplaces. The prestigious award ranks Ace No. 5 among all large companies to work for in Chicagoland. Surveyed team members at Ace Hardware scored their employer especially high across all areas of satisfaction, and rated the connection they feel with their employer 18% above the industry average. The survey is administered by Energage LLC, a leading research firm that specializes in organizational health and workplace improvement. Energage says that their research consistently shows that what is most important to employees is a strong belief in where the organization is headed, how it’s going to get there and the feeling that everyone is in it together.

True Value

Gross billings of \$492.2 billion and revenue of \$364.4 million for the third quarter were relatively flat compared to Q3 last year. Comp sales rose 3.3% for the quarter and 4.2% at Destination True Value (DTV) stores. Sales increased in eight of the nine product categories, led by Hardware, Lumber & Building Materials, followed by Hand & Power Tools.

W. W. Grainger

At their annual analysts’ meeting, CEO DG Macpherson told attendees that accelerating growth with large and medium customers in the U.S. remains their top priority. For the full year of 2017 Grainger reiterated their sales guidance of 1.5% to 2.5% growth. For the full year 2018, Grainger forecasts sales growth of 3% to 7%.

Amazon

Amazon has started subsidizing the prices of select items sold on its site by third-party sellers. Sellers will still be paid the asking price for their items; Amazon will cover the difference. On Amazon's seller central, some businesses have voiced concerns that applying discounts to their goods devalues their products and causes consumers to buy from Amazon rather than from the manufacturer directly. Amazon is not allowing companies to opt out of the new discounts.

Some analysts who focus on the retail industry think that Amazon is testing the merits of owning a brick and mortar retailer by creating 1,000-square-foot zones at 10 Kohl's stores. Kohl's has more than 1,100 stores in 49 states.

Amazon is installing package rooms in some of the country's largest apartment complexes that altogether represent more than 850,000 units across the U.S. Many of the Amazon locker systems are expected to be installed before the peak of the holiday shopping season. The lockers are designed to prevent lobbies and mail rooms from being overrun with packages and secure packages so residents can pick up items after hours.

Amazon opened an instant pick up and return center in San Jose, California a few blocks from San Jose State University. Anyone can use the facility to pick up or return packages. Orders made before noon by Amazon Prime customers can be picked up at the center later that day, with free Prime shipping.

Amazon will be rolling out Amazon-branded pop-up stores inside Whole Foods markets by the end of the year. The pop-up stores will let shoppers demo Amazon devices, including Amazon Echo, Echo Dot, Fire TV and tablets and Kindle e-readers.

Interpublic Group beat out Publicis Group to retain Amazon's \$1 billion+ of global media planning and buying. Amazon launched a review of the business over the summer. IPG first won the business in 2013.

The Information reports that Amazon Web Services plans an AI push with the "Ironman" project. The code-named project offers an AI-focused upgrade to AWS' "data warehouse" service that collects data from various points in the company then stores all the data in one spot. AWS also wants to make it

easier for clients to use the open-source deep learning framework TensorFlow, which Google created. TensorFlow helps with image recognition, speech recognition and other processes driving the AI industry. AWS brought in \$4.58 billion in the most recent quarter and stands far ahead of the competition in market share.

A recent survey of 1,000 Amazon Prime members showed that 75% of them intended to renew their memberships. While that seems like a solid number, Costco has a membership renewal rate of 90%. However, analysts say that Amazon Prime's renewal rate is probably higher, as Prime members are enrolled in autopay.

Dallas-Fort Worth is at the top of the list of prospective sites for Amazon's new HQ2, according to an in-depth analysis by *The Wall Street Journal*. Dallas-Fort Worth is followed by Boston, Atlanta, Washington D.C. and Chicago.

CANADA SNAPSHOT

GDP Rises 0.2%

The Canadian economy grew 0.2% in September after edging down 0.1% in August, according to Statistics Canada. The increase beat economists' expectations. On an annualized basis, GDP improved 1.7% in the third quarter, exceeding forecasts for an increase of 1.6%. The second quarter estimate was revised down to 4.3% from the previously reported 4.5% increase.

Bank of Canada Holds Rates at 1%

The Bank of Canada held its target interest rate steady at 1% at the end of October after surprising markets by raising rates to 1% in early September. Analysts said that the pause in rate increases came amid uncertainty over North American Free Trade Agreement (NAFTA) negotiations and the potential impact of increases on home owners who are "buried" in debt. The bank noted they are still optimistic about Canada's economy but growth is slowing from the strong pace set earlier this year. Many observers are now ruling out another rate hike from the central bank this year, rather than predicting another increase in December, and say it may be March or April before the bank raises rates again. The Canadian dollar has been drift-

ing down against the U.S. dollar, and has lost ground since peaking in early September.

Unemployment Falls to 5.9%

The unemployment rate fell by 0.4% to 5.9% in November, the lowest rate since February 2008. Employment increased in Canada for the second consecutive month, rising by 80,000 in November. In the 12 months to November, employment was up by 390,000 (+2.1%), with all the gains attributable to full-time work (+441,000 or +3.0%) as part-time employment was down slightly. Over the same period, total hours worked grew by 1.0%. The unemployment rate trended downwards in the 12 months to November, falling 0.9% over this period. The employment increase in November was largely among private sector employees, including the construction industry, as both public sector employment and the number of self-employed were little changed.

Consumer Confidence Rises to 55.37

Consumer Confidence in Canada increased to 55.37 in November from 55 in October of 2017, according to the Conference Board of Canada. Consumer Confidence in Canada averaged 53.21 from 2010 until 2017, reaching an all-time high of 56.40 in August of 2014 and a record low of 46.80 in February of 2016. National confidence remains significantly above the level at the beginning of 2017. The monthly Index of Consumer Confidence is constructed from responses to four attitudinal questions posed to a random sample of Canadian households.

Consumer Prices Rise 1.4%

The Consumer Price Index (CPI) rose 1.4% on a year-over-year basis in October after rising 1.6% in September. On a seasonally adjusted monthly basis, the CPI was up 0.2% in October, matching September's increase. Prices were up in seven of the eight major CPI components in the 12 months to October, with the transportation and shelter indexes contributing the most to the increase. The clothing and footwear index declined on a year-over-year basis.

NAFTA Talks Bog Down

What Canadian media refers to as the "shredding" of NAFTA would reportedly reduce Canada's GDP growth by 1% over five to 10 years. The Royal Bank of Canada esti-

mates that doing away with NAFTA would result in a 4% increase in tariffs for Canadian exports to the U.S. It would also lead to lower profits for companies and higher prices for consumers. In a *Wall Street Journal* survey, private-sector economists estimated that there is a 26% chance that the U.S. will withdraw from NAFTA. If the U.S. did withdraw, 85% of economists surveyed said it would damage GDP growth, with 7% of those saying it would push the Canadian economy into recession. The Bank of Montreal estimates that ending NAFTA would reduce U.S. GDP by 0.2% and trim 1% from Canada's GDP. An agreement needs to be reached by the end of March 2018.

Canada Litigates Over U.S. Softwood Lumber Duties

The Canadian government is launching litigation via the World Trade Organization over anti-dumping and countervailing duties the U.S. Department of Commerce has set on softwood lumber imports from Canada, calling the move "deeply troubling." The U.S. government claimed that exporters from Canada sold softwood lumber in the U.S. market at 3.20% to 8.89% less than fair value. The Commerce Department also said Canada is providing unfair subsidies to its producers of softwood lumber at rates from 3.34% to 18.19%.

Housing and Construction News

Housing starts rose to 216,770 units in October after falling to 215,153 units in September, according to Canada Mortgage and Housing Corporation (CMHC). This trend measure is a six-month moving average of the monthly seasonally adjusted annual rates (SAAR) of housing starts. CMHC says that new home construction remains very strong, and the seasonally adjusted number of starts has been above 200,000 units in nine of ten months so far this year. CMHC uses the trend measure as a complement to the monthly SAAR of housing starts to account for considerable swings in monthly estimates and obtain a more complete picture of Canada's housing market. The standalone monthly SAAR of housing starts for all areas in Canada was 222,771 units in October, up from 219,293 units in September. The SAAR of urban starts increased by 2.5% in October to 205,935 units. Multiple urban starts increased by 12.5% to 149,593 units in October. Single-detached urban starts decreased by 17.1%, to 56,342 units. Rural starts were estimated at a seasonally adjusted annual rate of 16,836 units.

Building permits rose in September for the first time in three months, with strength in non-residential making up for some weakness in the residential sector. Canadian municipalities issued \$7.9 billion worth of building permits in September, up 3.8% from August. A 1.7% decrease in the residential sector was more than offset by a 13.9% increase in the non-residential sector.

Mortgage rates on a fixed 5-year closed mortgage dropped to an average of 3.39% at the end of November from 3.51% at the end of October.

Retail Sales Rise 0.1%

Retail sales edged up just 0.1% to \$49.1 billion in September after unexpectedly dropping 0.3% in August. Higher sales at gasoline stations, primarily due to higher prices, were the main contributor to the small gain. Excluding gasoline sales, retail sales actually fell 0.2%. The drop in sales was widespread. In Canada, retail sales account for about half of all consumer spending, and are considered a proxy for overall consumer spending.

Retail Outlook

The Canadian retail sector as a whole can expect to see strong sales growth this year, according to The Conference Board of Canada's Canadian Industrial Profile: Autumn 2017. Robust employment gains across the country and the 'wealth effect' created by elevated house prices have provided a boost to consumer spending in Canada this year. Sales are expected to rise by as much as 11% in home improvement stores in 2017. However, the Conference Board noted that starting next year record levels of household debt will weigh on consumer budgets, limiting their spending and slowing retail growth. The elevated housing prices are keeping some consumers from purchasing a new home, and instead they are choosing to renovate, driving up spending at home improvement stores.

Canada Retail Notes

At their annual analysts' meeting Grainger CEO DG Macpherson told attendees that they are looking at a significant business model reset in Canada that should increase profitability in a shorter time frame, with their single-channel businesses continuing strong revenue growth while expanding operating margins.

Amazon is finally making their Echo line of voice-controlled speakers powered by Alexa available in Canada. They'll be sold at retailers including the Source and Best Buy. Amazon says Alexa will include a new English voice with a "Canadian accent." Amazon is also opening the Alexa Skills Kit and Alexa Voice Service for local developers and hardware makers to create integrations build on Alexa for the Canadian market. Amazon Prime Music streaming is now also available to Prime members in Canada.

MARKET TRENDS

Construction Tech Education Growing

Thaddeus Stevens College of Technology in Pennsylvania, which has several programs in the construction trades, is seeing record enrollment. Popular programs include carpentry, metal fabrication and welding technology, along with a new program in software engineering. The National Center for Education Statistics said undergraduate enrollment in the U.S. increased by 29% at two-year postsecondary institutions between 2000 and 2010 before falling off during the recession. The center is projecting enrollment at two-year schools to increase by 21% between 2015 and 2026, while overall undergraduate enrollment could grow by 14% over that span to 19.3 million students. Dancause credits local initiatives like Construction Trades Day, an annual event developed by Clay Township-based Landmark Homes in partnership with Thaddeus Stevens, for growing enrollment interest. The event introduces local high school students to career opportunities in the construction industry.

New Tech Affects Construction and Engineering

Today's construction activity is at 2007 levels, and there are now at least 100,000 fewer skilled workers industry wide. McKinsey & Company estimates that if the industry adopted new technology to catch up to productivity gains in other sectors it could increase output by \$1.6 trillion annually. Pulling together and sharing project information in the construction and engineering sector has been difficult, which has hurt productivity. But funding for construction technology startups is on the rise, with those startups raising \$10 billion in investments from 2011 through early 2017, according to McKinsey & Company. Most of that technology focuses on the construction

phase, including enterprise resource planning (ERP) systems and document management tools. While roughly 1,000 companies were found to make products for construction, less than 200 developed solutions for design, preconstruction or operations.

AI Impacts Construction

A recent feature in *Engineering News Record* notes that artificial intelligence's deep learning abilities could have a significant impact on safety in construction. Deep learning is a system for artificial intelligence (AI) modeled after the human brain. With deep learning, computers learn from experience, the same way people do. Construction is the second-largest industry in the world, projected to reach \$10 trillion by 2020, according to market reports based on data released by the Construction Intelligence Center. Construction is also one of the least safe industries, currently causing 20% of U.S. worker deaths, according to the U.S. Dept. of Labor.

An AEC start-up called Smartvid.io, has created a software that inspects project photos and videos from construction sites and automatically detects safety risks. It was described as a jobsite inspector who never sleeps. Technology makes it possible for computers to "see" and recognize what's in a picture and be trained to spot things that are missing, from someone not wearing a hardhat or safety vest to scaffolding or stairs that lack railings. The skills don't require programmers; instead Smartvid.io shows its AI engines hundreds of thousands of photos of construction sites that have been identified as either safe or dangerous. The deep-learning system analyzes the data and teaches itself how to spot potential problems. There is also progress being made with autonomous construction vehicles and heavy equipment.

Leading manufacturers have demonstrated prototypes of self-driving dump trucks and front loaders. In the not-too-distant future, autonomous construction equipment, including bulldozers, graders and excavators, will be a common sight on jobsites around the world. AI is expected to continue making important contributions to safer construction environments. Generally, there are two kinds of AI solutions: fully autonomous tools, such as self-driving vehicles or car-welding robots, and technology that complements human judgment, yielding insights we just don't have time to find on our own.

AI Drives Retail Sales and Marketing

Artificial Intelligence has almost unlimited applications in retail sales and marketing, according to an analysis by *Businessworld*. Nearly 55% of Amazon's sales come from personal recommendations made by AI and ML algorithms. AI can compare the preferences for each customer, sourced from hundreds of data points, which allows retailers to reach out with a customized path to closing a sale. Shoppers also receive suggestions based on what they've already bought. AI programs can also be used for image search or video search. Pinterest Lens lets customer point their camera at anything from a piece of furniture or an item of clothing and PL will help them find it online. This same mechanism drives a Guided Product Search that shows customers products that match what the AI thinks they are looking for. Sometimes this approach can backfire. Amazon recently reviewed its website after a British television report stated that Amazon's algorithms were automatically suggesting bomb-making ingredients that were "Frequently bought together." The Amazon customers receiving the suggestions were buying products such as cooking ingredients. Google and Facebook have also come under fire for allowing advertisers to direct ads to users who searched for or expressed interest in racist sentiments and hate speech.

Chatting with AI

Amazon wants people to be able to have long (20 minute) conversations with Alexa in the future. In order for that to happen, AI Lindsay, the vice president of Amazon's Alexa Engine, says that Alexa would have to be everywhere and you would need to be able to talk to her from anywhere. Alexa would have to do all the things you would want an intelligent assistant to do for you, in a very conversational way. These capabilities would eliminate the need for a touch screen; you would just talk to Alexa and she would talk back to you.

Mobile 3D Printers

The Army Corps of Engineers and University of Illinois are among the organizations testing 3D printers that would allow the Army, Marines, National Guard, NASA and private companies to print concrete buildings, barriers, culverts and other structures on location. The printers can fit into a container or a cargo plane and be shipped to remote locations, allowing less expensive structures to be built with less manpower. Instead of buying plywood in the U.S. and paying to ship it to Afghanistan in order build barracks, the new three-dimensional printers can

use sand, gravel and other aggregates from local sites to build concrete structures for a fraction of the price. On top of that, it can be done with fewer people, and more durably. Caterpillar is another partner, helping to make it possible to quickly and cheaply erect structures in disaster areas like Houston. At this point, the printer can produce barracks huts 16 by 32 by 8 feet high. NASA also has a long-term interest in the mission.

Target Pilots New Approach to Stores

Target has given their two-level store at Nicollet Mall in downtown Minneapolis a \$10 million overhaul that combines digital and technology upgrades, elevated merchandise presentations and fulfillment services. Nicollet Mall is literally next door to Target's headquarters. The location is one of 45 remodels they've completed to date, with 65 more stores on track to be renovated before the holidays. The look is very modern, with concrete floors, wood-plank walls, LED lighting and elevated product displays. Merchandise is displayed in specialty shops throughout the store and home products are displayed in lifestyle settings. The remodeled food and beverage department has been moved to the front of stores. They are also testing a "Made in Minnesota" collection that includes products from local businesses and makers.