MORNING BRIEFING
July 13, 2017

There's an App for That

See the collection of the individual charts linked below.

(1) Living in 3D. (2) Want to live in a pretzel? (3) Replacing construction workers with printers. (4) 3D buildings going up in Dubai, China, and Mars. (5) Build your fast-drying home in a day. (6) Pain won't go away for retailers. (7) Pigs selling discounted lipstick. (9) Bezos and Alexa going after the Geek Squad. (10) Shorting malls is easy: There's an ETF for that. (11) Make Brazil hot again!

Industry Focus: Construction in 3D. When you think of 3D printing, manufacturing airplane parts may come to mind. Or perhaps manufacturing kids' toys does. But it's time to think bigger, much bigger. 3D printing is being used to build homes and buildings around the world.

Sometimes, the printers are housed in a factory where portions of the building are manufactured and then shipped to the construction site. Sometimes, the 3D printer is sent to the construction site, and it is used to make the building right there and then. Typically, a computer program tells the "printer" where to squirt a fast-drying liquid concrete material. It does so repeatedly, in many layers, until the structure is built, often in under a day.

If widely adopted, the benefits to the industry—and humanity—could be huge. Construction would be much less wasteful as well as faster and cheaper to help those in need. Or it could be used in very high-end designs, because anything you create in a computer can be turned into reality via 3D printing. Curved walls or domed ceilings are no problem. That said, the new technology will result in fewer construction jobs. Then again, there certainly is a shortage of construction workers in the US currently.

I asked Jackie to take a tour around the world (on her PC) to see what some of the bigger players in the industry are accomplishing. Some of the sources she references below are unfamiliar to us, so we can't vouch for their accuracy. That said, there's enough activity in the space that a trend seems to be solidly underway. If just some of what these articles report is true, the future of 3D construction is building quickly. Here for your wonderment is Edifice Rex:

(1) *3D in the desert*. Last year, Dubai launched the Dubai 3D Printing Strategy, which focused on additive printing of medical products, consumer products, and construction. The city aims to have 25% or more of its buildings built using 3D printing technology by 2030.

"The future will depend on 3D printing technologies in all aspects of our life, starting from houses we live in, the streets we use, the cars we drive, the clothes we wear and the food we eat," said Vice President and Prime Minister of the UAE and Ruler of Dubai, His Highness Sheikh Mohammed Bin Rashid Al Maktoum, according to a 4/27/16 article in *Gulf Today*. He added, "This technology will create added economic value and benefits worth billions of dollars during the coming period. We should have a share in this growing global market. This technology will restructure economies and labour markets as the use of unskilled labour will come down compared to the current situation, especially in the construction sector. It will also redefine productivity because the time needed for 3D printing of buildings and products will be 10% of the time taken in traditional techniques."

Just about a year later, a laboratory building, the R&Drone Laboratory, was constructed in Dubai using a 3D printer created by CyBe Construction, a Dutch company, according to a 6/2 article on 3ders.org. CyBe's 3D printer, dubbed the "RC 3Dp," moves on caterpillar tracks and built the foundation and walls of the 168-square-meter building in three weeks. Another contractor built the roof, stairs, doors, and bathrooms.

One of Dubai's next projects is a 3D-printed skyscraper by US startup Cazza Construction. The firm plans to use cranes, concrete, and steel rebar, according to a 3/12 article in ConstructionWeekOnline. Cazza's CEO, 20-year old Chris Kelsey, had previously told ConstructionWeekOnline that the firm's manufacturing process was capable of providing labor cost savings of up to 90% and could build a 3D-printed, three-story house in two days.

(2) *3D in China*. Chinese construction company Winsun made headlines in 2013 for 3D printing 10 standalone houses in China. It followed up by printing a five-story apartment building and an 11,840-square-foot villa. Most recently, Winsun agreed to print 17 office buildings in Dubai and entered into a $1.5 billion contract with Saudi Arabian company, Al Mobty Contracting, to print "at least 30 million square meters of 3D construction projects in Saudi Arabia. The new project is said to have been made to relieve a national housing crisis that has escalated lately," according to a 3/22 article on 3Dinsider.com.

Winsun's "ink" is made of cement, sand, fiber, and an additive. About half of the materials come from construction waste or mine tailings. The company makes the walls in a factory and assembles the building onsite. Its technology can make hollow structures to accommodate piping, wiring, and insulation.

3D construction cuts down on both labor and the time needed to build a structure. "For example, construction of a two-story 1,100 (square meter) mansion took one day of printing, two days of assembly, with internal bar structures erected in advance, requiring three workmen only," according to a case study attributed to the Boston Consulting Group as part of the Future of Construction Project at the World Economic Forum. Therefore, the technology can benefit emerging countries, where there can be a shortage of skilled construction workers.

Winsun has also constructed an office in Dubai, on which it claims to have saved about 80% on construction costs, 60% on labor, and 60% on waste. "To date, the company has sold more than 100 houses of various types, many of them in Dubai, the largest with a floor space in excess of 5,000 square meters," the case study noted.

(3) *3D in outer space.* One of the US deans of 3D printing is Dr. Behrokh Khoshnevis, a professor of engineering at the University of Southern California and director of its Center for Rapid Automated Fabrication Technologies (Craft). His printing construction method, called "Contour Crafting," can build a house in a day and cut down on the construction cost by 30%, according to a 7/20/16 *NYT* article.

Khoshnevis is also working with NASA to build structures using Contour Crafting on the moon from materials available there. In a 2012 TEDx Talk, he discussed what 3D manufacturing of buildings will mean for the world, including the ability to provide inexpensive housing to folks now living in slums.

(4) *Home in a day*. Apis Cor, a San Francisco-based company headed by Nikita Cheniuntai, claims to have built a 400-square-foot home in Russia in just 24 hours using 3D printing, at a cost of about $10,000.

According to a 3/7 article on Engadget.com: "The company used a mobile 3D printer to print out the house’s concrete walls, partitions and building envelope. Workers had to manually paint it and install the roofing materials, wiring, hydro-acoustic and thermal insulation, but that didn’t take much time.” Don’t miss the video in the link above!

Sector Focus: Retail Reeling. Earlier this week, while Amazon captured upbeat headlines with Prime Day deals, a number of retailers reported dismal news. So while Amazon.com shares were up 4.2% for the week ended Tuesday, the S&P 500 Specialty Stores index fell 6.3%, Apparel Retail dropped 7.4%, and Department Stores lost 7.7% (*Fig. 1*). Here are some of the low lights of the past week:

(1) *The wedding is off.* News that Abercrombie & Fitch was unable to sell itself sent the teen-retailer’s shares tumbling 21% to $9.59 on Monday. The company had told the market in May that it was in “preliminary” discussions, and its shares topped $14 for a brief period. Abercrombie is in good company. Neiman Marcus Group and Macy’s have also been unable to find buyers. But things could be worse. Competitors Aéropostale, Wet Seal, and American Apparel have filed for Chapter 11 bankruptcy protection, a 7/10 *WSJ* article reminds us.

(2) *Lipstick on a pig*. In an effort to lure shoppers into their stores, department stores are doing the unthinkable: discounting lipstick. Last month, Lord & Taylor offered 15% off almost all cosmetics and fragrances, Bloomie’s gave shoppers a $25 reward card for every $100 beauty purchase, and Macy’s offered 15% off cosmetics, the 7/10 *WSJ* reported. The news slammed Ulta Beauty’s high-flying stock, which fell 7.6% over Monday and Tuesday. Ulta, a cosmetics retailer, had previously proven immune to competition from Amazon. But investors weren’t anticipating that Amazon’s pressure on department stores would push the department stores to discount cosmetics, which could hurt Ulta.

(3) *Piranhas attacking geeks*. Best Buy’s Geek Squad service—where employees go to customers’ homes to answer tech questions—was one way the company differentiated itself from Amazon. But Amazon is showing its ability to emulate, in addition to innovate. “Over the last few months, Amazon has quietly been hiring an army of in-house gadget experts to offer free Alexa consultations as well as product installations for a fee inside customer homes,” according to a 7/10 Recode article citing multiple anonymous sources and job postings. “The new offering, which has already rolled out in seven markets without much fanfare, is aimed at helping customers set up a “smart home”—the industry term used to describe household systems like heating and lighting that can be controlled via apps, and increasingly by voice. While Amazon has a marketplace for third parties to offer home services, like TV mounting and plumbing, these new smart-home-related services seem important enough to Amazon that it is hiring its own in-house experts.” Best Buy shares fell 7.2% over Monday and Tuesday.

(4) *Shorting bricks & mortar.* ProShare Advisors is offering three new ETFs that allow investors to bet against retailers. According to a 7/10 Bloomberg article: “The ProShares UltraShort Bricks and Mortar Retail fund and ProShares UltraPro Short Bricks and Mortar Retail fund will seek to use derivatives to generate daily returns of two or three times the inverse of an index comprising the most at-risk U.S. retailers. … Meanwhile, the ProShares Long Online Short Bricks & Mortar Retail ETF will track an equal-weighted benchmark that includes U.S. and overseas stocks, the filings show.”

(5) *Desperate numbers*. The damage done to department store stocks can’t be understated. The S&P 500 Department Stores stock price index is down 57.7% from its 2015 peak (*Fig. 2*). The industry’s forward earnings multiple has shrunk to 10.2, from 16.1 in 2015 (*Fig. 3*). And analysts expect earnings to fall 2.2% over the next 12 months (*Fig. 4*).

The S&P 500 General Merchandise Stores index hasn’t fared much better, down 31.8% from its 2016 peak (*Fig. 5*). The industry’s forward P/E has shriveled from almost 20 in 2015 to a recent 13.6 (*Fig. 6*). Here too, analysts see earnings dropping 0.4% over the next 12 months (*Fig. 7*). Investors wisely have avoided the sale on retail stocks.

Brazil: Doing the Bossa Nova. Please welcome Sandy Ward as a Contributing Editor to Yardeni Research. Sandy, like Jackie, was formerly a senior editor for *Barron's.* I asked her to start off by bringing us up to speed on a couple of major emerging economies. Here is her piece on Brazil:

While the MSCI Emerging Markets Latin America index has turned in a more-than-respectable performance so far this year, climbing 11.7% in US dollars through Tuesday's close vs 8.3% for the S&P 500, Brazil barely contributed. Argentina delivered blistering gains, posting the top performance among all emerging markets at 40.8%, while Mexico is up 25.6% ytd. Even Chile and Peru have posted double-digit ytd increases.

In contrast, Brazil was the laggard, gaining 5.0% ytd, with 3.7% of that coming on Monday and Tuesday. Only the emerging markets of South Africa, Jordan, Pakistan, and Russia have performed worse than Brazil ytd (*Fig. 8*). Besieged by the worst recession in 25 years amid a collapse in commodities and beset by political turmoil, it's no wonder that Brazil has struggled. Still, it was the top performer in 2016, soaring 61.3%, and a look behind the numbers shows encouraging signs that the worst may be over for Latin America's largest economy.

Indeed, big U.S. multinational firms with sizable business interests in Brazil, such as International Paper and Schlumberger, have said they believe the economy has bottomed. Since late June, Brazil's MSCI stock market index has turned in a scorching performance, vaulting into positive territory (5.0% ytd as of Tuesday's close) after being down as much as 18% between its February high and June low. Forward earnings has been climbing, driving share prices higher (*Fig. 9*). Earnings is forecast to jump by 26.5% this year, yet Brazil's stock market is trading at 10.8 times earnings (*Fig.10*).

Bossa Nova, one of Brazil's best-known musical genres, means "new trends" in Portuguese. In the universal language of the stock market, there clearly are some new positive trends taking place in this Latin American country at long last. Consider the following:

(1) *GDP growth*. Real GDP continues to recover smartly, boosted by a rise in exports (*Fig. 11* and *Fig. 12*). The 0.4% y/y contraction during Q1 was the best showing in two years.

(2) *Real exports and imports.* Exports jumped 4.8% in Q1 into positive territory despite a tainted-meat and corruption scandal that has led to widespread bans of Brazilian poultry and meat around the world. The scandal threatens to bring down President Michael Temer, the structural reformer who also has been indicted on charges of taking bribes from meatpacking giant JBS SA after only a year in office. Brazil is the world's largest exporter of beef and poultry. Powering exports to their biggest gain in two years were sales of oil, iron ore, and soybeans. Imports rose sharply.

(3) *Gross fixed capital formation.* Capital spending remained in negative territory during Q1 but showed marked improvement as investors continued to gain confidence. During Q2, there's been a series of deals that suggest a new level of optimism, despite the political turmoil. In late May, Buenos Aires-based venture capital firm Kaszek Ventures said it raised $200 million for a fund that will invest in Internet start-ups focused on agriculture technology, education, and health care. It is Kaszek's third fund; about two-thirds of the investments across its funds are in Brazil, and that will continue.

"We believe that Brazil will still be the largest recipient of our capital and where we invest the most," said one of the founding partners, according to the 6/30 *NYT* article linked above. American investors in the new fund include Sequoia Heritage, a fund of funds connected to Sequoia Capital, and the Dietrich Foundation of Pittsburgh. Another investor: Accel's Kevin Efrusy, responsible for that firm's early bet on

Facebook. Kaszek's first two funds focused on financial technology and software services.

Other recent deals: Softbank of Japan said in late May it would contribute $100 million to the privately held 99, a competitor to Uber. And a China-backed $20 billion fund announced last year to help finance the construction of railroads to link agricultural areas to ports started taking investment pitches in late June.

(4) *IPOs.* More companies have launched IPOs in Brazil this year than in all of 2016, when only one company went public, according to a 4/18 Leaders League post. Azul, the Brazilian airline started by the founder of JetBlue, raised R$2 billion in an early April IPO—the biggest IPO in the country since 2013. That followed on the heels of two other public debuts: Movida, the car rental company, and Instituto Hermes Pardini, a health care company.

Investment bankers estimate that activity will pick up sharply in the year's second half, and up to 15 or more firms could go public. XP Investimentos, which bills itself as "the Charles Schwab of Brazil," is expected to go public this month, and Grupo Notre Dame Intermedica, a dental and health care insurer, is also considering a public offering later this year. A sign of things to come: The family that owns Latin America's largest construction group—Oldebracht SA, known for building airports, highways, and hydroelectric plants around the world—plans to bring all its businesses public in the next three to four years as it seeks to recover from a bribery scandal, reported an article in the 6/30 *WSJ*.

(5) *Foreign direct investment.* Regulatory reforms enacted in 2016 to attract more foreign investment are working. In the first two months of this year, US$16.8 billion flowed into Brazil from abroad, a record for the timeframe and up 57% from the same period in the year-ago period. The money flowed to all sectors of the economy, according to the Brazilian government, with the industrial sector topping the list, followed by services and agribusiness & mining. This follows the US$15.4 billion that flowed into Brazil in December 2016, the highest amount since 2010, according to the government. On 4/4, the *WSJ* reported that Exxon Mobil was in talks to expand in Brazil through joint ventures with the state-controlled Petrobras, gaining access to deep-water oil reserves, as well as with U.S.-based producer Hess.

Economic conditions in Brazil are far from perfect—unemployment is at record highs, and the charges against Temer cast uncertainty on pension and other reforms—but the trends are encouraging enough to dance the Bossa Nova.

CALENDARS

US. Thurs: Jobless Claims 245k, PPI Headline, Core, and Core Less Trade Services 0.0%/0.2%/0.2%, Treasury Budget, Weekly Consumer Comfort Index, EIA Natural Gas Report, Yellen, Brainard, Evans. **Fri:** Headline & Core CPI 1.7%/1.7% y/y, Retail Sales Total, Less Autos, Less Autos & Gas, and Control Group 0.1%/0.2%/0.4%/0.4%, Headline & Manufacturing Industrial Production 0.3%/0.2%, Capacity Utilization Rate 76.8%, Business Inventories 0.3%, Consumer Sentiment Index 95.1, Baker-Hughes Rig Count, Kaplan. (Bloomberg estimates)

Global. Thurs: Germany CPI 0.2%m/m/1.6%y/y, China Trade Balance $43.0b, BOE Credit Conditions & Bank Liabilities Survey. **Fri:** European Car Sales, Eurozone Trade Balance (euros) 20.2b, Japan Industrial Production. (DailyFX estimates)

STRATEGY INDICATORS

Stock Market Sentiment Indicators (*link*): The Investors Intelligence Bull/Bear Ratio (BBR) fell this week for the second week, from 2.95 to 2.69 over the period, nearing its low for this year of 2.60. (The BBR has been below 3.00 in seven of the past eight weeks, after being above most of the year.) Bullish sentiment made a roundtrip the past two weeks, sinking 4.9ppts to 50.0% after rising 4.9ppts the prior two weeks to 54.9%. All the bulls fled to the correction camp, which rose 4.9ppts the past two weeks to 31.4%—within a percentage point of its high for the year of 32.4% recorded at the end of March. Bearish sentiment ticked down to 18.6% this week after ticking up from 18.6% to 18.8% last week. The AAII Ratio fell last week for the second week, from 53.0% to 49.8%. Bullish sentiment fell from 32.7% to 29.6% the past two weeks, while bearish sentiment rose from 28.9% to 29.9%.

S&P 500 Earnings, Revenues & Valuation (*link*): S&P 500 consensus forward revenues rose 0.3% w/w to a record high, and forward earnings was at a record high for a 14th straight week. The forward profit margin forecast edged up w/w to a record high of just over 11.0%. The profit margin's record high is its first since September 2015 and up from a 24-month low of 10.4% in March 2016. Forward revenue growth for the S&P 500 dropped w/w to 5.2% from 5.3%, and is down from 5.8% in late January, which was the highest since May 2012 and compares to a cyclical low of 2.7% in February 2016. Forward earnings growth improved to a six-month high of 11.3% from 11.2%. It's now nearing January's 11.7%, which was the highest since October 2011 and compares to a cyclical low of 4.8% in February 2016. S&P 500 forward revenues and forward earnings growth are enjoying a tailwind now due to easy y/y comparisons for Energy and improving forward growth rate forecasts for revenues (STRG) and earnings (STEG) for Industrials, Materials, Tech, and Utilities. However, Energy's contribution to forward growth peaked at the start of 2017. Looking at last week's results, the S&P 500 ex-Energy's STRG of 4.6% is 0.6ppt lower and STEG of 9.4% is 1.9ppts lower. However, the S&P 500 ex-Energy forward profit margin improved to a record high of 11.6% from 11.5%, and is its first since August 2007. Valuation fell w/w to 17.6 from 17.8, which compares to a 13-year high of 18.0 in early March and a 15-month low of 14.9 in January 2016. On an ex-Energy basis, valuation fell to 17.2 from a 15-week high of 17.5, and is down from a 13-year high of 17.6 in early March.

S&P 500 Sectors Earnings, Revenues & Valuation (*link*): Consensus forward revenue forecasts rose last week for 10/11 sectors (all but Energy), and forward earnings rose for all 11 sectors. Forward revenues and earnings are at or around record highs for 5/11 sectors: Consumer Discretionary, Consumer Staples, Health Care, Industrials, and Tech. Energy's forward revenues is at an eight-month low now after stalling at a 15-month high since March, and its forward earnings is stalled at early June's 21-month high. The forward P/S ratio rose w/w for 3/11 sectors, and the P/E ratio rose for just one sector (Financials). Health Care is surging recently; its P/E of 16.4 and P/S of 1.74 are near their highest levels since August 2015, but remain well below their early 2015 highs of 17.9 and 1.88, respectively. Financials' P/E is up from 12.0 before the election to 14.0, and is approaching the post-election high of 14.6 in early March. With Energy's forward revenues and earnings up from cyclical lows in early 2016, its valuations are coming back to Earth; its P/S ratio of 1.29 compares to a record high of 1.56 in May 2016, and its P/E of 24.8 is down from a record high of 57.5 then. Higher y/y margins occurred for only 7/11 sectors in 2016, but margins are expected to improve in 2017 for all but Real Estate and Utilities. However, Real Estate's forecasted margin should improve as the year progresses when gains on property sales are included in the forecasts. Here's how the 11 sectors rank based on their current 2017 forecasts: Information Technology (to 19.9% in 2017 from 19.2% in 2016), Real Estate (16.9, 25.2), Financials (15.5, 14.3), Telecom (11.3, 11.2), Utilities (10.9, 11.4), S&P 500 (10.6, 10.1), Health Care (10.4, 10.3), Materials (9.9, 9.4), Industrials (9.2, 8.9), Consumer Discretionary (7.3, 7.2), Consumer Staples (6.7, 6.5), and Energy (4.3, 1.2).

GLOBAL ECONOMIC INDICATORS

Eurozone Industrial Production (*link*): Output in May jumped to a new cyclical high. Industrial production (excluding construction) rose for the third straight month, by 1.3% in May (the fastest growth since last November) and 2.0% over the period. May's gain was driven by sizable gains in capital (2.3%), consumer durable (1.8), and consumer nondurable (1.2) goods production, while energy and intermediate goods output climbed 0.9% and 0.3%, respectively; capital, consumer durable, and intermediate goods production all reached new cyclical highs during the month. The top four Eurozone economies show production gains exceeding1.0% in France (1.9), Spain (1.6), and Germany (1.4), while Italy's rose 0.7%. Of the remaining countries for which data are available, the biggest gains were recorded in Lithuania (3.8), Ireland (2.1), Latvia (1.7), Slovenia (1.6), and the Netherlands (1.0); the biggest losses were posted in Portugal (-1.0) and Malta (-0.9). Yearly growth rates for Germany (4.8% y/y), France (3.4), Spain (3.4), and Italy (2.8) all accelerated from April's pace.

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