MORNING BRIEFING
April 13, 2017

Creative Destruction

See the collection of the individual charts linked below.

(1) The headline stories that aren't on front pages are important too. (2) Now that Fed is tightening, bull market in stocks feeds on earnings. (3) Thursdays are when we contemplate creative destruction throughout the US economy. (4) US economy continues to create more jobs than it destroys. (5) JOLTS and NFIB survey showing lots of unfilled job openings. (6) Apple is disrupting chip industry as it turns to making its own hardware. (7) Google's TPU is another example of a software company making its own hardware. (8) Will Tesla clobber auto dealers the way Amazon is clobbering malls? (9) Spring is in the air for home prices as demand exceeds supply.

US Economy: Exceptional. The headline financial news tends to be dominated by front-page stories about monetary and fiscal policies. The Fed and other central banks have certainly gotten lots of press since the financial crisis of 2008 as they have pledged to do "whatever it takes" to avert another financial meltdown and to revive economic growth. Since Election Day, there have been more stories about the outlook for fiscal policy. In recent days, geopolitics has made a big comeback following the Trump administration's cruise missile attack on a Syrian airfield and rising tensions in US relations with North Korea.

The bull market in stocks certainly has been charged up by the ultra-easy monetary policies of the Fed. Indeed, some naysayers have argued that were it not for the Fed's QE bond-purchasing program, stocks wouldn't have performed so well. Their Exhibit A was the apparently close correlation between the Fed's holdings of securities and both the S&P 500 stock price index and its total market capitalization (*Fig. 1* and *Fig. 2*).

However, the Fed terminated its QE program at the end of October 2014, yet the S&P 500 is up 16.6% since then into record-high territory. That's because earnings, which stalled from the second half of 2014 through the first half of 2016, have resumed climbing to new record highs as well. As Joe and I observed yesterday, S&P 500 forward earnings suggests that actual earnings will continue to rise solidly over the next 12 months to around $135 per share from $119 last year (*Fig. 3*). That's assuming there won't be a recession over this period. The forward estimate may also be too low since Trump's MAGA program of deregulation and tax cuts could boost earnings by at least $10 per share if it is implemented sooner rather than later.

The bottom line is that the headlines that get all the attention tend to overshadow the dynamic changes occurring in the US economy. On a daily basis, I try to provide a balance in the "What I Am Reading" email we send you at 6:15 am every day except Sunday. (See also the *WIAR archive*.) On Thursdays, Jackie and I like to focus on some of the most interesting aspects of the ongoing process of creative destruction in so many industries, which makes our economy truly exceptional. In our opinion, no one does creative destruction better than Americans, because we accept and welcome the consequences more than most other major industrial economies.

Before we update some of the more interesting recent developments in a few industries, let's review how well the US labor market has recovered. There certainly has been a lot of destruction of jobs in recent years on a secular basis. There was also a great deal of unemployment on a cyclical basis. But the economy is now creating plenty of jobs, with the major problem being finding people to fill them. Consider the following:

(1) *JOLTS.* The number of quits totaled 3.1 million during February, according to the latest JOLTS report released by the Bureau of Labor Statistics (*Fig. 4*). It remains at a cyclical high. Hires have been fairly steady just north of 5.0 million per month since September 2014. Job openings have been a bit higher, exceeding the hiring pace 24 of the past 26 months.

(2) *NFIB.* According to the National Federation of Independent Business, 31% of small business owners had positions they were not able to fill during March (based on a three-month average of the data) (*Fig. 5* and *Fig. 6*). That's the highest reading since February 2001. Not surprisingly, it is highly correlated with the percentage of consumers confirming the "jobs plentiful" characterization of the labor market in the Conference Board's monthly survey of consumer confidence. It is also inversely correlated with the "jobs hard to get" percentage. In March, 31.7% said jobs are plentiful (the highest since August 2001), while 19.5% said jobs are hard to get (the lowest since July 2007).

Industry Focus I: Chip Wars. Is a turf war brewing in the chip industry? More hardware and software companies seem to be designing and manufacturing their own semiconductor chips. Leading the trend: none other than Apple. That might explain why the S&P 500 Semiconductor Equipment index is up 19.5% ytd while the Semiconductors index is up only 2.7%. Here's a look at some of the recent developments:

(1) *Dialog left speechless.* On Tuesday, Dialog Semiconductor shares tumbled 20% after an analyst warned that Apple may develop its own power management chips. That's a huge threat to Dialog, which generates about 74% of sales from Apple. A Bloomberg article on 4/11 cited a research report from Karsten Iltgen, an analyst at Bankhaus Lampe: "'We believe that Apple is setting up power-management design centers in Munich and California,' said Iltgen. 'We hear from the industry that about 80 engineers at Apple are already working on a PMIC with specific plans to employ it in the iPhone by as early as 2019.'" The Bankhaus Lampe analyst downgraded Dialog to a sell rating from hold.

(2) *Hard to imagine*. Imagination Technologies Group had a similar experience last week when its shares plunged almost 7% on news that Apple would stop using its graphics technology in new products within two years, according to a 4/3 Bloomberg article. Apple kicks in just over half of Imagination Technologies' revenue. The news is an interesting twist given that Apple is Imagination's fourth-largest shareholder, with an 8.1% stake as of early February.

(3) *Beware Mr. Chips.* Apple is also designing a new chip for its Mac laptops to power the keyboard's Touch Bar feature, Bloomberg reported on 2/1, citing people familiar with the situation. Apple is using ARM Holdings technology to build the chip, which is expected to use less energy. "Building its own chips allows Apple to more tightly integrate its hardware and software functions. It also, crucially, allows it more of a say in the cost of components for its devices," the article stated. Apple already designs its own smartphone processors, instead of using Qualcomm's chips.

(4) *Searching for speed*. Not to be left behind, Google has been developing its own chips to run machine-learning applications faster than the competition's chips. Google published a study on the chips, called "Tensor Processing Units" (TPU), which it has been using since 2015.

A Google 4/5 blog explains what the company has achieved by designing the chip: "TPUs allow us to make predictions very quickly, and enable products that respond in fractions of a second. TPUs are behind every search query; they power accurate vision models that underlie products like Google Image Search, Google Photos and the Google Cloud Vision API; they underpin the groundbreaking quality improvements that Google Translate rolled out last year; and they were instrumental in Google DeepMind's victory over Lee Sedol, the first instance of a computer defeating a world champion in the ancient game of Go."

TPUs also allowed the company to use existing servers instead of having to build out additional server farms to handle computing traffic. The company claims its chip is faster and uses less energy than competing chips from Intel and Nvidia. "A TPU was on average 15 to 30 times faster at the machine learning inference tasks tested than a comparable server-class Intel Haswell CPU or Nvidia K80 GPU. Importantly, the performance per watt of the TPU was 25 to 80 times better than what Google found with the CPU and GPU," explained a 4/6 article on the study in TechWorld.

However, Nvidia countered that Google's TPUs from 2015 might top Nvidia's older chips, but not its new ones, like the Tesla P40. "According to Nvidia, all of these improvements allow the P40 to be highly competitive to an application-specific integrated circuit (ASIC) such as Google's TPU. In the Nvidia-provided chart below, the Tesla P40 even seems to be twice as fast as Google's TPU for inferencing," according to a 4/10 article on Tom's Hardware. "What we're seeing from both Google's TPU, as well as Nvidia's latest GPUs is that machine learning needs as much performance as you can throw at it. That means we should see chip makers strive to optimize their chips for machine learning as much as possible over the next few years, as well as narrowing their focus (for training or inferencing) to squeeze even more performance out of each transistor."

(5) *Carbon: The new silicon?* One more recent development to watch is the push to use carbon instead of silicon on chips. IBM researchers claim to have found a way to use carbon on chips to make them six to 10 times faster than modern silicon chips within a decade. They'd also use "far less" electricity, according to an 11/14/16 article in *Wired*.

The development is important because there's wide expectation that Moore's Law, which says the number of transistors that can fit on a silicon chip will double every two years, is coming to an end because transistors are getting too small to manufacture efficiently.

(6) *Adding the digits*. After climbing 24.7% in 2016, the S&P 500 Semiconductor index is up only 2.7% ytd through Tuesday's close (*Fig. 7*). The Semiconductor industry is expected to see a nice pop in revenue and earnings this year, but projected growth slows sharply in 2018. Analysts expect the industry to produce revenue growth of 10.8% this year and 5.0% in 2018. Likewise, earnings are expected to jump 23.9% this year and only 8.6% in 2018. The market isn't pricing in much, with a forward P/E of 14.6 (*Fig. 8*).

Meanwhile, the S&P 500 Semiconductor Equipment index continues to soar, gaining 19.5% ytd on top of a 47.1% jump in 2016 (*Fig. 9*). This year's rally comes despite expectations that the stellar earnings growth this year will moderate sharply in 2018. Analysts expect revenues to jump 24.3% this year and 2.6% in 2018, and they see earnings jumping 44.5% this year and 3.5% next year. The industry's forward P/E ratio is modest, sitting at 14.5 (*Fig. 10*).

Pioneering computer scientist Alan Kay famously said: "People who are really serious about software should make their own hardware." Looks like people are starting to listen.

Industry Focus II: Broken Chains. There was more dour retail news in the headlines this week. Rue21, a teen retailer with about 1,000 stores, is reportedly preparing to file for bankruptcy as soon as this month, according to 4/7 Bloomberg article. In addition, Gymboree, a children's clothing retailer controlled by Bain Capital, is preparing a bankruptcy filing, Bloomberg reported on 4/11. It operates roughly 1,300 stores.

Troubles in retailing made headlines last week when the March employment report showed that jobs at general merchandise stores were disappearing at an accelerating pace. These retail jobs dropped by 34,700 in March, following drops of 23,400 in February and 12,800 in January (*Fig. 11*).

Nine retailers filed for bankruptcy protection in Q1, equal to the entire number of filings in all of 2016, according to a 3/31 CNBC article. The uptick in filings may mean there will be more filings this year than in 2008, when 20 retailers filed, or in 2009, when there were 18 filings.

The CNBC article also pointed out that retailers filing for Chapter 11 are now more likely to end up liquidating, instead of restructuring, to live another day. The article blames a 2005 change in the bankruptcy code, "[which] trimmed the timeline retailers have to gain approval for sale or reorganization. While they used to be able to spend more than a year in bankruptcy, they now have 210 days to decide whether to keep a store's lease. Because going-out-of-business sales can take 90 days to run, senior lenders often try to make that decision in as little as 120 days."

Banks have noticed the problems plaguing retailers, and the 4/12 *WSJ* reported that lending terms to mall landlords are tightening. "Loan terms have become more conservative. The average size of a retail real-estate loan was $8.3 million in 2016, down from $12.2 million in 2015, according to data from Real Capital Analytics. The average loan-to-value ratio fell to 66% in 2016 from 70% in 2015, while the average occupancy rate of the underlying properties rose to 98% in 2016 from 92% in 2015," the article states.

While strong malls have been able to replace closed stores and will be just fine, weak malls that are unable to find replacements may begin to decline, with their property values dropping sharply. One example cited in the article: "JC Penney and Macy's closed stores at Hudson Valley Mall in Kingston, N.Y., in 2015 and 2016, respectively, and the value of the mall plummeted 90%. The mall was valued at $87 million in 2010. Last December, Kroll Bond Rating Agency said it was worth $8.1 million."

Industry Focus III: Tesla Charges Ahead. Auto retailers would be wise to watch the evolution in the retail industry closely. For just as Amazon has changed how we buy clothes, Tesla aims to change how we purchase cars. And except for folks who enjoy haggling, few find going to buy a car to be the most pleasant experience. We'd guess that consumers would be open to a different way of purchasing a car if one were offered. Tesla aims to sell cars directly to consumers, bypassing the dealership network that traditional auto manufacturers have established.

So far, the dealerships have fought the advent of Tesla outposts by leaning heavily on state laws protecting dealerships; they have had some success, but if history is any guide, their efforts will ultimately be fruitless. "In the 1920s, the American Horse Association mobilized to block the spread of internal combustion technologies by lobbying for laws against heavy trucks on public roads and granting horses special legal status in urban areas," according to an article published last year in the University of Michigan Law School Scholarship Repository. We all know how well that situation played out for the horses.

Tesla has 108 stores and galleries scattered across 26 states and Washington DC, according to its website. The stakes are undoubtedly high, as 2.0 million employees worked in auto retail in March compared to 944,400 in auto manufacturing (*Fig. 12*). With Tesla's market capitalization now in the same ballpark as General Motors', auto retailers certainly are watching.

Industry Focus IV: Scarce Homes. After a cold and rainy start to spring, New York's daffodils are in bloom, and that means the spring home-selling season is underway. Our guess: Sellers will be in the driver's seat because new and existing home inventories remain extremely lean. Investors are anticipating a good season, with the S&P 500 Homebuilding index up 23.9% ytd, making it the fourth-best-performing industry we track.

There were 1.75 million existing homes available for sale in February, about the same as January's level, which was the lowest in just over 17 years (*Fig. 13*). The ratio of existing single-family homes for sale to existing single-family homes sold edged up from January's record low for the series going back to 1999 (*Fig. 14*). In addition, financing remains inexpensive, with the 30-year mortgage yield at 4.08%.

One area of concern is the sharp run-up in both new and existing home prices. Median single-family existing home sales prices, using the 12-month average, jumped 5.6% y/y in February to $236,160, an all-time high. Likewise, new home prices jumped 4.0% y/y in February to $310,500, which is finally above where new homes were selling just before the bubble burst in 2007 (*Fig. 15*).

For new-home builders, another area that might constrain their ability to break new ground is the tight labor market. JOLTS shows that 169,000 construction industry jobs are unfilled, five times the amount at the end of 2010. The problem is laid out in a 2/1 article in Curbed.com. The CEO of Vantage Homes, which operates in Colorado Springs, told the website that it could have built 20 more homes last year if it had more labor available. The company builds on average 120-150 homes a year.

As long as unemployment remains low and the Fed raises interest rates gradually, real estate agents should remain busy.

CALENDARS

US. Thurs: Jobless Claims 243k, Headline, Core & Core Less Services 0.0%/0.2%/0.2%, Consumer Sentiment Index 97.0, Weekly Consumer Comfort Index, EIA Natural Gas Report, Baker-Hughes Rig Count. **Fri:** Headline & Core CPI 2.6%/2.3% y/y, Retail Sales Total, Ex Autos, Ex Autos & Gas, and Control Group 0.0%/0.2%/0.3%/0.3%, Business Inventories 0.3%. (Bloomberg estimates)

Global. Thurs: Germany CPI 0.2%m/m/1.6%y/y, China Trade Balance $12.5b, Australia Employment Change & Unemployment Rate 20k/5.9%. **Fri:** Japan Industrial Production. (DailyFX estimates)

STRATEGY INDICATORS

Stock Market Sentiment Indicators (*link*): The Investors Intelligence Bull/Bear Ratio (BBR) climbed for the second week this week to 3.22 from 2.73 two weeks ago, which was the first reading below 3.00 since the end of November. Bullish sentiment has rebounded 6.8ppts the past two weeks to 56.3%; six weeks ago the reading was 63.1%—which was the most bulls since 1987! Nearly all of the two-week move to the bulls came from the correction camp, which sank 6.2ppts to 26.2%. Bearish sentiment barely budged over the two-week span, edging down from 18.1% to 17.5%. The AAII Bull Ratio dropped for the second week last week from 55.6% to 41.7% over the period. Bullish sentiment fell from 35.3% to 28.3% over the two-week span, while bearish sentiment rose from 30.5% to 39.6%.

S&P 500 Earnings, Revenues & Valuation (*link*): S&P 500 consensus forward revenues and earnings both rose to record highs last week. The forward profit margin forecast rose to a 19-month high of 10.8% from 10.7%. That remains near the record high of 10.9% in September 2015 and compares to a 24-month low of 10.4% in March 2016. Forward revenue growth for the S&P 500 edged down w/w to

5.4% from 5.5%. That compares to 5.8% in late January, which was the highest since May 2012 and up from a seven-month low of 2.7% in late February 2016. Forward earnings growth improved to 10.8% from 10.7%, but is down from 11.7% in early January; that was the highest since October 2011 and compares to an 11-month low of 4.8% in February 2016. Valuation fell to an eight-week low of 17.5 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. S&P 500 forward revenues and forward earnings are enjoying a tailwind now from easier y/y comparisons for Energy and improving prospects for Financials, but currency translation looks likely to remain a challenge. Looking at last week's results ex-Energy, the forward revenue and earnings growth rates are lower at 4.1% and 8.2%, respectively. However, the ex-Energy forward profit margin improves to 11.4%, which is close to its record high of 11.5% in August 2007.

S&P 500 Sectors Earnings, Revenues & Valuation (*link*): Consensus forward earnings forecasts rose last week for all 11 sectors, and forward revenues rose for all but Tech. 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 and earnings are at or near 18-month highs. Forward P/S and P/E ratios both fell w/w for 8/11 sectors. Financials' P/E is up from 12.0 before the election to 13.5, but that's down from a post-election high of 14.6 in early March. Health Care's P/E of 15.6 and P/S of 1.63 are down from early March's 19-month highs of 16.1 and 1.70, respectively, and remain well below their early 2015 highs of 17.9 and 1.88, respectively. With Energy's forward revenues and earnings improving, its valuation is beginning to come back to Earth; its P/S ratio of 1.34 compares to a record high of 1.56 in May 2016, and its P/E of 27.0 is down from a record high of 57.5 then. Higher y/y margins occurred for only 7/11 sectors in 2016, and 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 20.0% in 2017 from 19.2% in 2016), Real Estate (16.2, 25.2), Financials (15.7, 14.4), Telecom (11.2, 11.2), Utilities (10.8, 11.4), S&P 500 (10.5, 10.1), Health Care (10.4, 10.3), Materials (10.1, 9.4), Industrials (9.0, 8.8), Consumer Discretionary (7.3, 7.2), Consumer Staples (6.7, 6.5), and Energy (4.4, 1.1).

US ECONOMIC INDICATORS

Import Prices (*link*): Import prices in March advanced 4.2% y/y, near February's 4.8%—which was the biggest 12-month gain since February 2012. It had bottomed at -11.6% in September 2015. Petroleum prices advanced 52.1% in the 12 months through March, down from February's seven-year high of 74.8%. Nonpetroleum products accelerated 1.2% y/y—turning positive in December (0.3% y/y) for the first time since November 2014. In March, total import prices slipped 0.2% after a three-month gain of 1.4%. Nonpetroleum prices rose for the third month by 0.2% m/m and 0.5% over the period, while petroleum prices plummeted 3.6% after a three-month surge of 12.9%.

GLOBAL ECONOMIC INDICATORS

Global Leading Indicators (*link*): In February, the OECD's composite leading indicators (CLIs)—designed to anticipate turning points in economic activity relative to trend six to nine months ahead—pointed to stable growth momentum in the OECD (100.1) as a whole. While CLIs for the Eurozone (100.4), particularly France (100.5) and Italy (100.1), anticipate stable growth momentum, growth is expected to gain momentum in Canada (100.7), Germany (100.6), and the US (99.8). The UK's CLI (99.8) is still pointing to tentative signs of growth gaining momentum, although Brexit uncertainty remains. As of the major emerging economies, the assessment is the same as last month's, with CLIs in Brazil (102.0), Russia (101.3), and China (99.6) indicating growth picking up and India's (99.4) still showing an easing in growth momentum.

Eurozone Industrial Production (*link*): Output unexpectedly fell in February, while January's advance was only a third of the initial estimate. Industrial production (excluding construction) slumped 0.3% after a revised 0.3% increase in January, down sharply from the 0.9% preliminary gain. February's decline was led by a 4.7% plunge in energy output; nondurable goods (-1.1%) production was also lower. These losses were partially offset by gains in intermediate (1.0) and capital (0.9) goods output; consumer durable goods production was flat. The top four Eurozone economies show declines in output in France (-1.6) and Spain (-0.3) and gains in Italy (1.0) and Germany (0.8). Of the remaining countries for which data are available, the biggest decline in output was recorded in Ireland (-15.5), though its readings have been very volatile lately. The biggest gains in production were posted in Slovenia (3.6) and Latvia (3.2). On a positive note, the Eurozone's M-PMI hit a six-year high of 56.2 in March, with Germany (58.3), Italy (55.7), and France (53.3) CLIs all showing an acceleration in activity.

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