MORNING BRIEFING
September 21, 2017

Chips & Bricks

See the collection of the individual charts linked below.

(1) Here's to you, Mrs. Robinson. (2) Semi whisper. (3) There's a GPU for that. (4) Nvidia is winning the games. (5) The brain behind AI. (6) The chip behind the wheel. (7) Beyond beds, baths, and toys. (7) Do you want a side of mortar with that online order?

Industry Focus I: Semis. "Plastics." It's perhaps the most famous word ever spoken in a movie. Say it softly, and people of a certain age know exactly what you're talking about: *The Graduate*, the 1968 classic movie starring Dustin Hoffman. A neighbor takes Hoffman's character Ben aside at his parents' party and in hushed tones tells the recent college grad: "I just want to say one word to you. Just one word. Are you listening? 'Plastics.' There's a great future in plastics. Think about it. Will you think about it? Enough said."

Today, the neighbor would be whispering "semis" … as in "semiconductors." They're in everything, and the need for them appears to be growing exponentially. The S&P 500 Semiconductors stock price index is up 19.2% ytd through Tuesday's close (*Fig. 1*). The industry is expected to grow revenues by 6.0% over the next year and profits by 7.5% (*Fig. 2*). The industry sports a below-market forward P/E ratio of 14.8 (*Fig. 3*).

While those expectations are perfectly satisfactory, they're hardly worth hushed tones. However, the industry averages mask the extraordinary. Behind the Semiconductor stock index's composite ytd return is a broad range of stock moves. At the bottom of the barrel is Qualcomm, down 19.8% ytd, and Intel, up 2.7%.

Conversely, Nvidia shares have soared 75.5%, besting all of the FAANG (Facebook, Apple, Amazon, Netflix, and Alphabet's Google) stocks ytd and by a wide margin. The closest competitors in this performance derby: Facebook and Netflix, which each are up 50.0% ytd. Let's take a look at the market's semiconductor darling and consider whether it's worth whispering about:

(1) *Big dreams.* Like all good tech darlings, Nvidia has a great story. It was dreamed up in 1993 by three friends—Chris Malachowsky, Curtis Priem, and Jen-Hsun Huang—sitting around one night in a Denny's restaurant. Huang is the company's CEO, Malachowsky is a member of the executive staff and a senior technology executive of the company, and Priem was the company's chief technical officer until 2003 when he retired.

Huang has his own interesting story. He was living in Thailand with his family in 1973, when there was social unrest. His parents sent Huang and his brother to live with his aunt and uncle in the US. The boys were sent to the Oneida Baptist Institute, a boarding school in eastern Kentucky, which the family thought was a prep school but at the time was a reform school for troubled kids. Those attending studied, but also had chores. Huang's brother worked on the tobacco farm, and Huang had to clean bathrooms. Now Huang presides over company events in a Steve Jobs-like uniform of black pants, black shirt, and black leather jacket.

(2) *Fun and games*. Nvidia made its name designing graphics processing units, or GPUs, chips that process graphics often used in video games played on consoles or computers. The gaming business generates $1.2 billion, or 53.2% of the company's total FQ2 revenue. The growth in that business is up an amazing 52% y/y in fiscal Q2, which ended July 30, according to the company.

Gaming has moved well beyond your teenage son sitting in the basement playing games on a console. Check out the International Dota 2 Championships, which were held in August. Sixteen teams of five persons each played the online video battle game Dota 2 over six days. The winning team received $10.9 million, and the entire prize pool totaled $24.8 million! As Huang pointed out in Nvidia's Q2 conference call, the purse is twice as much as the prize money at the US Open, golf's richest event. Viewers watched the "eSports" championships online or at Seattle's KeyArena. The final rounds were also available on ESPN2 and ESPN3.

Last week, we got a glimpse of what's coming in mobile gaming when augmented reality games being developed for the new iPhone X were included in Apple's presentation on the phone. Apple developed its own GPU chip for the iPhone X. Apple's older phones have GPU chips based on technology from Imagination Technologies. Nvidia hasn't been successful in supplying chips into the phone industry, and Apple's arrival on the GPU scene is certainly a competitive threat to be watched.

In addition to gaming, Nvidia chips power artificial intelligence, deep learning, autonomous vehicles, and cryptocurrencies. While these are much smaller businesses than the gaming operation, they are the areas that have captured analysts' imaginations.

(3) *The brains behind AI*. Nvidia's Datacenter business includes chips used in artificial intelligence (AI) and deep learning. It kicked in $416 million, or 18.7% of the company's fiscal Q2 revenue. Shares sold off after the Q2's results were announced, reportedly because the segment grew revenue by only 2% q/q. The 175% y/y growth wasn't satisfactory. The explosion of activity that's occurring and will occur in data centers, including high-performance computing, PC activity in the cloud, inferencing, and live video should mean plenty of demand for Nvidia's chips.

"If you have a data-intensive application, and the vast majority of the future applications in data centers will be data intensive, a GPU could reduce the number of servers you require or increase the amount of throughput pretty substantially," explained Huang in the Q2 conference call. "Just adding one GPU to a server could reduce several hundred thousand dollars of reduction in number of servers. And so the value proposition and the cost savings of using GPUs is quite extraordinary."

(4) *Bitcoin could bite*. The company's OEM and IP unit generated only $251 million of fiscal Q2 revenue, but it did grow 61% q/q and 54% y/y driven by the desire for chips that run the servers used in mining cryptocurrencies. Recent news that China is outlawing the trading of bitcoin has raised concerns that this area won't see further growth. The segment is 11.3% of total revenue. If cryptocurrencies are kaput, the company certainly will feel the loss. However, Nvidia has plenty of other growth areas to propel it forward.

(5) *Behind the wheel*. Nvidia's Automotive segment, with $142 million of revenues, grew revenues only 1% q/q and 19% y/y last quarter. However, it's another potential growth area if autonomous vehicles go mainstream with Nvidia chips under the hood. Huang gave investors his vision of the future in the Q2 earnings conference call:

"Starting next year, you're going to start to see robot taxis start to come to the road. We're working with a handful, maybe I guess about six or seven really exciting robot taxi projects around the world. And you could see them start to go into a prototype or beta testing starting now, and then next year you'll see a lot more of them. And starting 2019, you'll see them go into real commercial services. And so those are robot taxis, what some in the industry call Level 5s, basically driverless cars.

And then the fully autonomous … driven cars, branded cars will start hitting the road around 2020 and 2021. So, the way to think about it is this year and next is really about development. Starting next year and the following year is robot taxis. And then 2021 to forward you're going to see a lot of Level 4s."

(6) *Priced for perfection?* At a recent $187.35, Nvidia shares trade at 51.9 times analysts' consensus estimate of $3.61 for fiscal 2018 and 47.4 times the $3.95 consensus for fiscal 2019. Fiscal 2018 earnings are expected to grow 40.5% y/y, but that rate slows sharply the following year to 9.4%. Fiscal 2019 earnings estimates would have to be revised upward sharply to justify the stock's multiple. None of the above is a recommendation to buy/hold/sell, only the facts. Enough said.

Industry Focus II: Crushed Bricks. News out of the retail sector continued to lay bare the competitive nature of the business. Bed Bath & Beyond shares cratered almost 16% on Wednesday after the company missed Q2 earnings expectations and lowered its forecast for the future. Meanwhile, Toys R Us' US operations filed for bankruptcy protection. The toy retailer, which was taken private in a 2005 LBO, didn't even wait for the holiday season to fill its coffers before waving the white flag. And Kohl's announced plans to accept returns on behalf of Amazon clients in some of its stores.

The news is the latest reminder of the stark differences between the winners and losers in the retail industry. Shares of the winners are up nicely ytd through Tuesday's close: Internet & Direct Marketing Retail (30.9%), Computer & Electronics Retail (23.6), and Home Improvement Retail (15.2) (*Fig. 4*, *Fig. 5*, and *Fig. 6*). Those in competitive areas are having a horrible year: Apparel Retail (-12.9%), Department Stores (-20.7), Food Retail (-22.0), and Automotive Retail (-25.7) (*Fig. 7*, *Fig. 8*, *Fig. 9*, and *Fig. 10*). Let's take a look at the latest news flow:

(1) *Trouble at home*. Bed Bath & Beyond reported earnings of $94.2 million, or 67 cents a share, down from $167.3 million, or $1.11 a share a year earlier. The quarter's results were depressed by the company's restructuring ($0.08), Hurricane Harvey ($0.02), and the new share-based payment accounting standard ($0.01). Analysts were targeting 95 cents a share in earnings. Same-store sales dropped by a mid-single-digit percentage y/y in Q2, while digital sales surged more than 20%.

The company also reduced its 2017 forecast to $3.00 a share, down from $4.58 a share last year. In April, the company thought earnings could fall as much as 10%, and analysts expected earnings of $4.01 a share, a 9/19 *WSJ* article reported. The shares, which dropped into the S&P 400 from the S&P 500 this summer, are down more than 40% ytd.

(2) *No game*. Toys R Us had been talking in August with its creditors about an out of court restructuring for its US and Canadian businesses, but no deal ensued. Then on September 6, word of a potential bankruptcy filing leaked on CNBC, which spooked suppliers, according to a 9/19 Bloomberg account.

The article states: "Within a week, almost 40 percent of the vendors were refusing to ship toys and other products without immediate cash payment and in some cases, payment of all outstanding obligations. The vendors faced pressure at their end, too, as their credit insurers and financing firms also withdrew." So once the vendors got nervous, the company had little alternative but to file for bankruptcy protection. The company's unsecured bonds due in 2018, which traded near 100 cents on the dollar in August, fell to 19 cents on the dollar.

Toys R Us was highly leveraged from its 2005 leveraged buyout, with more than $5 billion of debt that cost $400 million a year to service. It also faced intense competition from Amazon, Walmart, Target, and others. The company doesn't plan to close stores, although the retailing industry certainly would benefit if it did take some capacity out of the market.

(3) *Deal with the devil?* Kohl's announced that 82 of its stores across Los Angeles and Chicago would offer free returns for Amazon customers beginning in October. Kohl's will pack and ship the items back to Amazon at no cost to customers. Kohl's will have designated parking spots near the store entrance for Amazon's customers.

This partnership follows another, announced earlier in the month, where 10 Kohl's stores in Los Angeles and Chicago will provide 1,000 square feet of space to display the Amazon smart home experience. Customers will be able to purchase Amazon "devices, accessories and smart home devices and services directly from Amazon, within select Kohl's stores," Kohl's 9/6 press release stated. Customers can expect to see the Amazon Echo, Echo dot, Amazon Fire TV, and Fire tablets on display, among other things.

Kohl's has more than 1,100 stores in 49 states, so this experiment affects only a small number of its storefronts. The deals could certainly boost store traffic or even lay the groundwork for a deeper venture with Amazon. However, a skeptic might argue that Kohl's may be allowing the fox into the hen house. Kohl's shares have climbed roughly 10% since before the first announcement. Either way, it seems clear that Amazon, which also recently purchased Whole Foods, is looking to add bricks and mortar to complement its online operation.

CALENDARS

US. Thurs: Leading Indicators 0.2%, Jobless Claims 303k, Philadelphia Fed Manufacturing Index 18.0, FHFA House Price Index 0.4%, Weekly Consumer Comfort Index, EIA Natural Gas Report. **Fri:** Composite, Manufacturing, and Nonmanufacturing PMI Flash Estimates 54.9/53.0/55.5, Atlanta Fed Business Inflation Expectations, Baker-Hughes Rig Count, Kaplan. (Bloomberg estimates)

Global. Thurs: Eurozone Consumer Confidence -1.5, BOJ Policy Balance Rate & 10-Year Yield Target -0.10%/0.00%, BOJ Monetary Policy Statement, ECB Publishes Economic Bulletin, Draghi, Kuroda, Lowe. **Fri:** Eurozone, Germany, and France Composite PMI Flash Estimates 55.5/55.7/55.0, Eurozone, Germany, and France Manufacturing PMI Flash Estimates 57.2/59.0/55.5, Eurozone, Germany, and France Nonmanufacturing PMI Flash Estimates 54.8/53.8/54.8, France GDP 0.5%q/q/1.7%y/y, Canada CPI 0.2%m/m/1.5%y/y, Draghi. (DailyFX estimates)

STRATEGY INDICATORS

Stock Market Sentiment Indicators (*link*): Our Bull/Bear Ratio (BBR) climbed to 2.66 this week after falling the prior six weeks from a five-month high of 3.70 to a 10-month low of 2.33 over the period. Bullish sentiment was back above 50.0% for the first time in five weeks, advancing to 50.5% this week from 47.1% last week—which was the lowest since just before the election; it was as high as 60.2% eight weeks ago. Bearish sentiment slipped to 19.0% from a post-election high of 20.2% last week, remaining above the narrow 16.5%-18.3% range shown most of this year. The correction count dropped to 30.5% from 32.7% last week—which was near its high for this year of 33.6% recorded four weeks ago. The AAII Ratio shot up to a 10-month high of 65.3% last week from 45.0% and 38.5% the previous two weeks. Over the two-week period, bullish sentiment jumped from 25.0% to 41.3%, while bearish sentiment sank from 39.9% to 22.0%.

AC World ex-US MSCI (*link*): This index is up 19.4% ytd in dollar terms after rising 1.7% in 2016. In local-currency terms, the index has risen a lower 10.7% ytd compared to its 4.1% gain for all of 2016. Local-currency forward revenues improved 0.6% m/m, and has risen 6.2% from a five-year low in March 2016 to near its highest level since November 2015. Forward revenues has been more stable longer term and is down just 4.7% from its October 2014 record high. Local-currency forward earnings has performed better, with a 1.2% rise m/m and an 18.8% rise from its six-year low in March 2016 to its highest level since October 2008, but remains 7.5% below its September 2008 record. Revenues are expected to rise 7.2% in 2017 and 4.8% in 2018 following a 1.0% decline in 2016, and earnings are expected to rise 16.4% (2017) and 8.6% (2018) after rising 3.9% (2016). Analysts are forecasting STRG of 5.5%, down from a seven-year high of 6.8% in March and up from a cyclical low of 2.3% in March 2016. Their STEG forecast of 10.5% is down from a four-year high of 14.1% in March, but up from their 6.3% forecast in January 2016, which was the lowest in seven years. The implied profit margin is expected to rise to 7.7% in 2017 from 7.1% in 2016 before improving to 8.0% in 2018. The forward profit margin forecast of 7.9% is at a six-year high now. NERI was negative in September for a second month following seven straight positive readings, but edged up to -0.4% from -0.8% and is down from a 76-month high of 2.7% in May. That compares to a 51-month low of -11.3% in March 2016. The P/E edged up m/m to 14.2 from 14.1 and is down from a 22-month high of 14.4 in May, which compares to a 16-month low of 12.4 in February 2016 and a six-year high of 15.3 in April 2015. The index's 11% discount to the World P/E has improved from a record-low 13% discount in early March.

EMU MSCI (*link*): The EMU's MSCI price index has gained 24.1% ytd in dollar terms after falling 1.2% in 2016. In euro terms, the price index is up a lower 9.4% ytd following a 1.8% gain for all of 2016. Euro-based forward revenues edged down less than 0.1% m/m, but has improved 2.8% from its six-year low in May 2016 to 1.5% below its cyclical high (August 2015) and 8.1% from its record high (September 2008). Euro-based forward earnings had stalled from 2011 to 2016—but is now 6.5% above its prior cyclical high in September 2015 to its highest level since September 2011. It remains 23.0% below its record high (January 2008) after rising 0.3% m/m, but has improved 14.2% from its 23-month low in June 2016. Analysts expect revenues to rise 5.1% and 3.3% in 2017 and 2018, respectively, after falling 1.8% in 2016, but think earnings will rise 11.4% in 2017 and 8.4% in 2018 following a 4.9% increase in 2016. Forecasted STRG of 3.7% is down from a six-year high of 5.0% in April, but up from 2.0% in May 2016. Forecasted STEG of 9.0% is down from a 78-month high of 21.0% in February, which compares to a seven-year low of 5.7% in April 2016. STEG had been higher than LTEG (12.6%) from July 2016 to May 2017, but is trailing now. The forward profit margin has improved 1.7ppts to a six-year high of 7.4% from a cyclical bottom of 6.2% in May 2013. The implied profit margin is expected to improve to 7.2% in 2017 from 6.8% in 2016 before rising another 0.3ppt to 7.5% in 2018. NERI was negative in September for a second month following eight straight positive readings, falling to a 14-month low of -4.2% from -2.2% in August. Those readings are down from a 131-month high of 8.1% in May, which compares to a 24-month low of -13.2% in April 2016. The P/E of 14.3 is up from 14.2 in August, which compares to a 13-year high of 16.4 in April 2015 and a 30-month low of 12.2 in February 2016. That represents a 10% discount to the World MSCI's P/E now, up from a record-low 25% discount during 2011. But the current reading is still well below the 1% premium during April 2015—the post-euro-inception record high.

Emerging Markets MSCI (*link*): The EM MSCI price index is up 28.7% ytd in US dollar terms after rising 8.6% in 2016. In local-currency terms, EM has gained a lower 23.5% ytd compared to a 7.1% gain in 2016. Local-currency forward revenues rose 1.4% m/m and is up 7.3% from a four-year low in June 2016 to 9.6% below its November 2014 record. Local-currency forward earnings has fared substantially better, rising 2.6% m/m to its first record high since January 2014; it has improved 24.3% from April 2016's six-year low. Revenues are expected to rise 9.8% in 2017 and 8.3% in 2018 following a 2.3% gain in 2016, leading to earnings gains of 21.1% (2017) and 12.0% (2018) following a 7.7% rise in 2016. Forecasted STRG of 8.7% is back on an uptrend since early 2016, but is down slightly from a four-year high of 9.6% in late January. STEG of 13.9% is down from 14.3% a month ago, and is below LTEG (20.5%) again. The implied profit margin is expected to improve to 6.9% in 2017 from 6.3% last year before edging up to 7.2% in 2018. The forward profit margin of 7.1% is the highest since January 2013 and up from a record low of 6.0% in February 2016, but remains more than 3ppts below its 10.3% record high in December 2007. NERI—negative for 79 months—improved m/m to -0.7% from -1.6%, which compares to a 75-month high of -0.6% in May and an 83-month low of -10.2% in March 2016. Emerging Markets' valuation has been more stable recently than that of the rest of the world. The P/E was up to 12.5 from 12.3, but is down from an 11-month high of 12.6 in early August, which nearly matched the highest P/E since January 2010 and compares to a 17-month low of 10.2 in August 2015. The index is trading at a 21% discount to the World MSCI P/E, up from a 10-year-low 30% discount in August 2016.

MSCI World & Region Net Earnings Revisions (*link*): Analysts' recent earnings revisions through September suggest improving optimism about profits across the world. Most regions weakened m/m during September and are down from their multi-year highs in May. The AC World MSCI's NERI was positive for an eighth month and for the first time since June 2011, improving 0.1ppt to 0.7% from 0.6% in August, but is down from a 74-month high of 3.3% in May. The AC World Ex-US was negative for a second month following seven straight positive readings, but improved 0.5ppts to -0.4% from a nine-month low of -0.8% and compares to a 76-month high of 2.6% in May. EM Eastern Europe reversed back into positive territory in September and has been positive in 11 of the past 12 months; Europe was negative for a second month following 10 positive readings; EAFE was positive for a 10th month; EMU was negative for a second straight month following eight positive readings. Emerging Markets' NERI was negative for a 79th straight month, paced by 75 months of negative readings for EM Asia and 14 months for EM Latin America. September's scores among the regional MSCIs: United States (3.4% in September, down from 4.0% in August), AC World (0.7, 0.6), EM Eastern Europe (0.7, 11-month low of 0.0), EAFE (0.1, 0.0), AC World ex-US (-0.4, nine-month low of -0.8), EM Asia (-0.4, -1.5), Emerging Markets (-0.8, -1.6), Europe (13-month low of -2.4, -1.8), Europe ex-UK (12-month low of -4.2, -2.8), EMU (14-month low of -4.2, -2.2), and EM Latin America (-5.0, -3.7).

MSCI Countries Net Earnings Revisions (*link*): NERI was positive for 12/44 MSCI countries in September, the lowest since July 2016, and down from 13/44 in August, 24/44 in July, and 29/44 in June, which was the highest since June 2010. NERI improved m/m in September for 21/44 countries, up from 14/44 in August and 10/44 in July, but still down from 32/44 in May, which had been the most since June 2016. China's NERI was at a 93-month high in September, followed by India's, at an 11-month high, and Belgium's (10-month high). On the flip side, Pakistan's was at a 101-month low, followed by those of New Zealand (49), Germany (16), Finland (14), France (14), and Sweden (14). The 18-month positive NERI streak for Hungary is the best, followed by those of Austria (16), China (13), Hong Kong (11), Poland (11), Turkey (11), Italy (10), and Japan (10). Brazil's NERI has been negative for 87 straight months, followed by the negative streaks for South Africa (40), India (35), New Zealand (16), Thailand (12), Mexico (11), and Pakistan (10). NERI turned positive in September for Switzerland. However, NERI turned negative in September for Korea and Spain. Hungary's NERI has been the strongest recently, with positive readings in 27 of the past 28 months.

US ECONOMIC INDICATORS

Existing Home Sales (*link*): The slump in existing home sales stretched into August despite strong demand. According to NAR's chief economist, "What's ailing the housing market and continues to weigh on overall sales is the inadequate levels of available inventory and the upward pressure it's putting on prices in several parts of the country. Sales have been unable to break out because there are simply not enough homes for sale." Existing home sales—tabulated when a purchase contract closes—fell for the fourth time in five months, by 1.7% in August and 6.1% over the period, to a 12-month low of 5.35mu (saar). Single-family sales sank 2.1% and 6.5% over the comparable periods to 4.74mu—the lowest in a year, while multi-family sales climbed 1.7% in August to 610,000 units (saar), after a two-month slide of 6.3% back to its low for the year. Regionally, sales fell 5.7% in the South and 4.8% in the West, with some of the former's decline hurricane-related; sales in the Northeast and Midwest rose 10.8% and 2.4%, respectively. Sales were barely above year-ago levels in the Northeast (1.4% y/y), Midwest (0.8), and West (0.8), and slightly below a year ago in the South (-0.9). (NAR noted that nearly all of the lost activity due to the hurricanes will likely show up in 2018.) The number of existing single-family homes on the market edged down for the third month to 1.66mu after rising steadily from 1.45mu in December to 1.74mu in May; still, inventory was 6.7% below a year ago, and has recorded y/y declines for 27 consecutive months. Unsold inventory was at 4.2 months' supply for the fourth month.

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