



MORNING BRIEFING

May 19, 2020

OK, Zoomers!

Check out the accompanying [chart collection](#).

(1) Vaccine on the fast track. (2) Genetic sequencing to the rescue. (3) Messenger RNA bearer of good news. (4) Copy-and-paste approach to killing viruses before they kill us. (5) Using digitization and robots to speed up production of vaccines. (6) Phase 1 passed, on to Phases 2 & 3! (7) A vaccine that could cure the economy. (8) Tracing the outlook for real GDP. (9) How long will it take for a new high in real GDP? (10) Work-from-home may be more popular with employers than employees. (11) Productivity booster. (12) Unhappy hours for commercial landlords.

Virology I: There's a Vaccine for That. The S&P 500 soared 3.2% yesterday on news of the development of a possible vaccine against COVID-19 ([Fig. 1](#)). Jackie and I anticipated the news in the March 5 [Morning Briefing](#) and in the April 23 [Morning Briefing](#). Here is what we wrote:

(1) *March 5.* “President Trump met with drug company executives on Monday, asking them to speed up work on a vaccine. Normally, it takes years to formulate a new vaccine, move it through trials, get it approved, and distribute it through the health care system. But a number of companies are working on ways to make new vaccines in a matter of months using vaccine rapid response platforms. The difference means doctors could inoculate individuals with the vaccine while an outbreak is ongoing rather than years after it has passed. Larger quantities of vaccines can also be made using the new method.

“The traditional method of making a vaccine involves killing or weakening a virus and injecting it into the body. Proteins in the virus trigger the body’s cells to produce antigens. The new version of developing a vaccine uses genetic sequencing.

“On January 10, Chinese scientists uploaded the genetic sequence of the COVID-19 virus to a public website for the scientific community. It took Moderna, a biotech drug company, less than two months to use that genetic sequence to develop a vaccine for COVID-19. Moderna has shipped the vaccine out for human testing, putting it in the lead in the race to develop a

vaccine. If all goes well, it will take 12 to 18 months to get regulatory approval in the US, even as development is fast-tracked at home and abroad.

“Messenger RNA (mRNA) instructs our cells to make proteins. Moderna has used COVID-19’s genetic code to create an mRNA that will instruct our cells to make a small amount of COVID-19 proteins. These proteins trigger the production of COVID-19-specific antibodies that provide immunity to the virus. Since the mRNA never goes into the nucleus of cells, there’s no concern about it changing the cell’s genome.”

(2) *April 23*. “Using mRNA should dramatically lower the cost of vaccine development. ‘We call mRNA the software of life,’ Stephane Bancel, CEO of Moderna, said in a April 3 MIT Management [article](#). ‘You can copy and paste the information into a lot of drugs by using the same technology.’ That means ‘the way we make mRNA for one vaccine is exactly the same way we make mRNA for another vaccine.’ It just carries a different genetic sequence depending on the disease. As a result, the company was able to quickly switch from its development of a vaccine for the MERS-CoV virus to working on a COVID-19 vaccine. The two viruses have similar genetic sequences.

“Different vaccines using mRNA involve the same manufacturing processes and facilities, which should bring down vaccine development costs. Moderna also aims to speed the time to market and scale by using digitalization and robots. The firm’s human trials are underway, and it hopes to produce ‘millions of doses per month later this year, ramping up to “dozens of millions of doses per month toward next year,”’ Bancel said.”

(3) *May 19*. Yesterday morning, Moderna [announced](#) positive early findings: Forty-five patients between the ages of 18 and 55 were dosed with 25, 100, or 250 micrograms of the company’s experimental drug. After receiving a second booster shot, those at the 25 and 100 dosage levels were found with antibody levels that were equal to or exceeded those found in patients who recovered from COVID-19.

The press release stated: “The potential advantages of an mRNA approach to prophylactic vaccines include the ability to combine multiple mRNAs into a single vaccine, rapid discovery to respond to emerging pandemic threats and manufacturing agility derived from the platform nature of mRNA vaccine design and production. Moderna has built a fully integrated manufacturing plant which enables the promise of the technology platform.” (See also Monday’s CNBC [interview](#) with Moderna CEO Bancel.)

A knowledgeable doctor friend emailed me the following instant upbeat analysis: “This is the one of the genre that sends the RNA code to the immune system, and not the virus. Which means it’s easier (by orders of magnitude) to produce, and bodes well for safety. It also means that there is a new potential weapon against other diseases in the future.”

No wonder the stock market soared yesterday. We wouldn’t be surprised if all the chatter about retesting the March 23 low is now replaced by talk of retesting the February 19 record high!

(Full disclosure: None of us at Yardeni Research directly owns shares of Moderna.)

Virology II: The Three Phases. So Moderna’s vaccine has just passed the Phase 1 clinical trial. There are still Phases 2 and 3 to go. A successful clinical trial process continues until the developer files a marketing application with the US Food and Drug Administration (FDA) or a regulatory agency in another country for the medication to be approved for doctors to prescribe to patients. Here are excerpts from a handy [crib sheet](#) from CoNCERT Pharmaceuticals on the three phases:

(1) *Phase 1.* “During Phase 1 studies, researchers generally test a new drug candidate in healthy volunteers (healthy people). In most cases, 20 to 80 healthy volunteers participate in Phase 1.”

(2) *Phase 2.* “In Phase 2 studies, researchers administer the drug to a larger group of patients (typically up to a few hundred) with the disease or condition for which the drug is being developed to initially assess its effectiveness and to further study its safety. A key focus of Phase 2 studies is determining the optimal dose or doses of a drug candidate, in order to determine how best to administer the drug to maximize possible benefits, while minimizing risks.”

(3) *Phase 3.* “For diseases affecting many patients, Phase 3 studies typically involve 300 to 3,000 participants from patient populations for which the medicine is eventually intended to be used. Participants are assigned to receive either the medication being evaluated or a control group that receives either the current standard of care treatment or a placebo ...”

(4) *Approval*. “Phase 3 trials are sometimes also called pivotal trials. If the drug is approved [by the FDA], doctors can prescribe the medication for their patients.”

US Economy: The Outlook for Real GDP. Moderna’s vaccine obviously could be a gamechanger depending on how well it does during Phases 2 and 3. It may very well be the first vaccine ever to determine the shape of an economic recovery.

Yesterday, Debbie and I revised our real GDP outlook. We wrote: “The good news is that the projected growth rate for Q2 is so bad that the depression-like recession might last just two quarters (Q1 and Q2), with real GDP growing again during Q3 and Q4. We are revising our real GDP forecast to a drop of 40% during Q2 followed by gains of 20% during Q3 and 5% during Q4. We no longer expect Q3 to be a down quarter.” (See [YRI Economic Forecasts](#).)

I asked Debbie to calculate where our forecast would take real GDP by the end of this year. She reports that real GDP peaked at a record high of \$19.2 trillion (saar) during Q4-2019 ([Fig. 2](#)). It dropped 4.8% (saar) during Q1. If it plunges 40% (saar) during Q2, it would be down 13.0% from its record high. If it then rebounds 20% during Q3 and 5% during Q4, it would recover to \$17.7 trillion, or 7.8% below the record high. Let’s keep going:

(1) *2021*. Given what we know today, our most likely scenario for 2021 is 4% (saar) growth in real GDP during Q1 and Q2, followed by 3% per quarter during Q3 and Q4. That would bring real GDP up to \$18.3 trillion by the end of 2021, still below the record high.

(2) *2022*. During 2022, we expect growth to settle down to 2% (saar) per quarter. If so, then real GDP would end up that year at \$18.7 trillion, only 2.6% below the record high.

Given the recent good news about possible vaccines and cures, we are inclined to believe that we are more likely to revise our current base-case outlook in a more optimistic direction. We wouldn’t be surprised to see real GDP making new highs again by mid-2022. Stay tuned.

Brave New World: Home Front. In my recent Zoom video calls with some of our accounts, I am often asked to discuss how my firm has been operating on a virtual basis since 2007, when we first opened for business. After providing a brief background on how we did so and how easy it is, I say, “By the way, congratulations! As a result of the Great Virus Crisis [GVC], you are officially operating your firm on a virtual basis already.” We are all Zoomers now!

Actually, at Yardeni Research, we rely on old-fashioned internal emails to do what we do much more so than on video or audio conference calls. We exchange approximately 300 email messages among ourselves each day when we produce the *Morning Briefing*.

Our effort is coordinated by Sandy, our editor, who works from her home in Pennsylvania. She sets up the publication's template at the start of the day. I start writing the stories for the top sections of the *Morning Briefing* along with Debbie, Melissa, Joe, and Jackie. We pass along the bits and pieces of the copy to Sandy during the day. She sends all of us the latest edited draft so we can continue to add to it, while Mali works on filling in the blanks for the data points in our text and assembles the compilation of charts that accompanies each of our briefings.

A related issue that is frequently raised during my video discussions is whether working from home will continue after the GVC. I think it will. However, I continue to observe that very few of the folks participating in my Zoom video chats seem to have dedicated offices in their homes. Almost all of them seem to be working in their dens or living rooms on laptops. This suggests that many of them expect to be going back to work rather than to continue working from home after the GVC. Many tell me that they have cabin fever and can hardly wait to go back to their companies' offices. Then again, whether office workers even have the option of doing so will depend on their employers. Consider the following:

(1) *Fewer big-city offices.* A May 16 *WSJ* [article](#) about this subject is titled "When It's Time to Go Back to the Office, Will It Still Be There?" It concludes: "There will likely be fewer offices in the center of big cities, more hybrid schedules that allow workers to stay home part of the week and more elbow room as companies free up space for social distancing. Smaller satellite offices could also pop up in less-expensive locations as the workforce becomes less centralized."

(2) *Work from home forever.* Last week, in San Francisco, Twitter Inc. notified employees that most of them could continue to work from home indefinitely. In early May, Google and Facebook extended their work-from-home policy through the remainder of 2020. Many company managements are marveling at the remarkable success of the work-from-home experiment and how little productivity appears to have been impacted after millions of employees in technology, media, finance and other industries have been forced to work remotely for months. Arguably, productivity in many cases has been boosted by the new routine, which eliminates the wear-and-tear and time required to commute to work and travel for business.

(3) *Unhappy hours for commercial landlords.* To keep their companies' culture intact while their employees are physically apart, company managers are conducting online happy hours, virtual chess tournaments, and game nights. Meanwhile, they are re-evaluating their real-estate space and office layout to accommodate a schedule where employees could work from home some days each week. Some are considering decentralizing their offices, with more located in suburban locations closer to where their employees reside. Others are informing their landlords that they won't be renewing their leases.

(4) *Other advantages.* The May 17 *WSJ* included an [article](#) titled "Silicon Valley's Next Big Office Idea: Work From Anywhere." Some tech executives "see advantages in the shift to remote work, such as accelerating tech companies' efforts to spread their workforces beyond the West Coast hubs of Seattle and the San Francisco Bay Area. Soaring property prices and cost-of-living in those regions have made it ever harder to find enough talent, and fueled criticism that the tech giants have made the areas unaffordable."

(5) *Contrary indicator.* Ironically, the pre-GVC boom in office buildings turned out to be a contrary indicator again. In the past, companies tended to build new headquarters during booms just in time to open them during the inevitable busts. The completion of the construction of record-tall skyscrapers has been one of the most dependable contrary indicators of an imminent recession.

This time, the tech titans have invested heavily in new office buildings in recent years. In 2017, Apple built a \$5 billion spaceship-shaped headquarters in Cupertino, California. Apple Park is one of the most expensive corporate campuses ever built. Salesforce.com occupies a 61-story tower in the heart of San Francisco. Amazon.com resides in a giant, tree-filled glass sphere in Seattle. The May 17 *WSJ* article observes: "By design the spaces are open so people can easily come in contact with one another—the very opposite of social distancing."

CALENDARS

US: **Tues:** Housing Starts & Building Permits 0.95mu/1.00mu, API Crude Oil Stock, Powell.
Wed: MBA Mortgage Applications, EIA Crude Oil Inventories, FOMC Minutes. (DailyFX estimates)

Global: **Tues:** Germany ZEW Economic Sentiment 33.5, UK Employment Change &

Unemployment Rate 65k/4.4%, Japan Machine Orders -7.1%*m/m*/-9.5%*y/y*, Lane. **Wed:** Eurozone Headline & Core CPI 0.4%/0.9% *y/y*, Eurozone Consumer Confidence Flash -24, UK Headline & Core CPI 0.9%/1.5% *y/y*, Canada CPI -0.6%*m/m*/-0.1%*y/y*, ECB Non-Monetary Policy Minutes, Lowe, Lane. (DailyFX estimates)

STRATEGY INDICATORS

S&P 500/400/600 Forward Earnings ([link](#)): Forward earnings fell for all three indexes yet again last week, but the rates of decline continued to decelerate from their peaks five weeks ago. LargeCap's forward earnings dropped 0.9% to its lowest level since August 2017; MidCap's fell 3.0% to its lowest level since April 2016; and SmallCap's dropped 1.3% to the lowest point since December 2012. These indexes had begun a forward-earnings uptrend during March 2019 but stumbled from July to November before rising until mid-February. LargeCap's is now 21.2% below its record high at the end of January; that's the most since February 2010. MidCap's and SmallCap's are 30.2% and 41.8% below their October 2018 highs; that's the most since July 2009 for MidCap and the most below on record for SmallCap. The yearly change in forward earnings soared to cyclical highs during 2018 due to the boost from the Tax Cuts and Jobs Act (TCJA) but began to tumble in October 2018 as *y/y* comparisons became more difficult. In the latest week, the rate of change in LargeCap's forward earnings dropped to -19.4% *y/y* from -18.7% the week before. That's the lowest since October 2009 and down from 23.2% in September 2018, which was the highest since January 2011. MidCap's fell *w/w* to -31.4% *y/y* from -29.6%. That was the lowest since July 2009 and compares to a TCJA-boosted 24.1% in September 2018 (the highest since April 2011). SmallCap's dropped *w/w* to -38.6% *y/y* from -37.9%; that now surpasses the previous record low during July 2009 and compares to the TCJA-boosted eight-year high of 35.3% in October 2018. Analysts' *y/y* earnings growth forecasts for 2020 are down substantially in the past nine weeks, and further, albeit smaller, reductions are still ahead. Here are the latest consensus earnings growth rates for 2020 and 2021: LargeCap (-22.5%, 30.2%), MidCap (-33.0, 42.5), and SmallCap (-43.9, 56.2).

S&P 500/400/600 Valuation ([link](#)): Valuations moved broadly lower last week, but the SmallCaps had the biggest decline. LargeCap's forward P/E edged down 0.3pts *w/w* to 20.3 from 20.6. The prior week's reading had been the highest level since March 2002 and was up from 13.3 in mid-March, which was the lowest since March 2013. MidCap's 18.7 was down 0.5pts *w/w*, but SmallCap's tumbled 1.4pts to 20.2. That compares to MidCap's 10.7 and SmallCap's 11.1 in mid-March, which were their lowest readings since March 2009.

LargeCap's forward P/E based on pre-COVID earnings had been at 18.9 during mid-February, which was the highest level since June 2002. Of course, that high was still well below the tech-bubble record high of 25.7 in July 1999. Last week's level compares to the post-Lehman-meltdown P/E of 9.3 in October 2008. MidCap's P/E is down from a 22-month high of 17.4 in mid-December and the record high of 20.6 in January 2002. However, MidCap's P/E has been at or below LargeCap's P/E for most of the time since August 2017—the first time that alignment has prevailed since 2009. SmallCap's P/E is down from mid-December's 16-month high of 18.1 and a 15-year high of 20.5 in December 2016, when Energy's earnings were depressed. However, SmallCap's P/E is still below LargeCap's. It has been mostly below since last May—the first time that has happened since 2003. During mid-March, SmallCap's P/E was briefly below MidCap's for the first time since July 2008.

S&P 500 Sectors Quarterly Earnings Outlook ([link](#)): The March quarterly earnings books have been closed for six weeks now, but analysts continue to slash their estimates for the remaining quarter amid a “withdrawn guidance” environment in the worst earnings season in many years. The blended Q1 EPS forecast/actual rose 30 cents w/w to \$33.49. That represents a decline of 14.5% y/y on a frozen actual basis and -12.1% y/y on a pro forma basis. That compares to a 3.1% gain in Q4-2019, a 0.3% decline in Q3-2019, and y/y gains of 3.2% in Q2-2019, 1.6% in Q1-2019, 16.9% in Q4-2018, and 28.4% in Q3-2018 (which marked the peak of the current earnings cycle). Besides the small y/y decline in Q3-2019, the last time earnings fell markedly y/y was during the four quarters through Q2-2016. Five of the 11 sectors recorded positive y/y earnings growth in Q1, but none rose at a double-digit percentage rate. That compares to eight positive during Q4, when two rose at a double-digit percentage rate. Six sectors beat the S&P 500's pro-forma 12.1% decline in Q1. That compares to six in Q4 and seven in Q3, and is still up sharply from just three beating the S&P 500 during Q2-2019. Looking ahead to Q2, all sectors are expected to post worse growth on a q/q basis during Q2 and two are expected to report a loss: Consumer Discretionary and Energy. Here are the latest Q2-2020 earnings growth rates versus their blended Q1-2020 growth rates: Utilities (-2.1% in Q2-2020 versus 4.2% in Q1-2020), Information Technology (-8.0, 6.9), Real Estate (-12.9, -3.8), Health Care (-15.6, 6.9), Consumer Staples (-15.7, 5.2), Materials (-36.6, -12.3), Financials (-46.3, -37.9), Industrials (-87.2, -29.8), Consumer Discretionary (-106.2, -45.5), and Energy (-154.9, -30.5).

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