

Yardeni Research



MORNING BRIEFING March 25, 2020

Searching for Silver Bullets

Check out the accompanying chart collection.

(1) The Lone Ranger. (2) A horse named "Silver" and a gun full of silver bullets. (3) Cure worse than the disease? Social distancing crushing global economy. (4) Make millions of masks, and make us wear them when we go out of the house. (5) Eight other steps to free us from house arrest. (6) We disagree with the CDC's case against surgical masks. (7) Don't fight the Fed. (8) China's economy may be recovering, but their overseas customers are falling into a severe recession. (9) Good news: Busts are followed by booms. (10) Imperial College COVID-19 Response Team's report may be too alarmist.

Editorial: Who Is That Masked Man? One of my favorite television shows when I was a kid growing up in Cleveland, Ohio was "The Lone Ranger." It aired on the ABC television network from 1949 to 1957, with Clayton Moore in the starring role. Jay Silverheels, a member of the Mohawk Aboriginal people in Canada, played the Lone Ranger's Indian companion Tonto.

The fictional story line maintains that a patrol of six Texas Rangers is massacred, with a sole member surviving. The "lone" survivor disguises himself with a black mask and travels with Tonto throughout the West to assist those challenged by outlaws. The Lone Ranger rides a horse named "Silver" and uses silver bullets.

At the end of most episodes, after the Lone Ranger and Tonto leave, someone asks the sheriff, "Who was that masked man?" The sheriff responds that it was the Lone Ranger, who is then heard yelling "Hi-yo, Silver, away!" as he and Tonto ride away on their horses.

We need the Lone Ranger's silver bullets now to kill the virus before social distancing leads to the collapse of the global economy and widespread lawlessness. We need an alternative to social distancing, which has been enforced by government decrees requiring us to stay home. In effect, these 24/7 curfews are akin to martial law. We aren't likely to tolerate this situation for more than a few weeks.

Hopefully, social distancing for a few weeks and widespread testing will allow us to return to our normal lives in a few weeks. Meanwhile, we should produce billions of surgical masks to wear when we venture out of our homes. Indeed, the government should mandate that everyone wear a mask outside their homes until the crisis passes. Authorities are doing that in many places in Asia now.

That's easier said than done. The shortage of N95 masks is even forcing hospitals to ration them. In a memo distributed to his colleagues, Dr. Craig R. Smith, the chair of the department of surgery at New York-Presbyterian, said the hospital is "consuming 40,000 such masks per day, which is estimated to reach 70,000 per day" at peak levels. The federal government should pay for the mass production of masks and make them available for free to everyone.

In his Town Hall meeting yesterday, President Trump said he would like to see the economy open up by Easter. That may just be a long enough time to flatten the curve, or even suppress the virus, but nobody knows. Here is a list of the other steps that should free us from house arrest so we can resume our normal lives sooner rather than later:

- (1) *Mass testing*. Mandate testing for those who think they've been infected or exposed; mandate random sample testing for high-community-outbreak areas.
- (2) Quarantines. Quarantine the sick and isolate the vulnerable.
- (3) Surveillance. Track the infection status of all citizens (tested positive, not tested, tested negative, recovered, i.e., immune). Require some marker of status. Order quarantines on the infected and their households.
- (4) *Antibody tests*. Test anyone who may have been exposed but showed no symptoms for antibodies that suggest they've had and recovered from the virus. Give them special status. Focus on healthcare and eldercare workers.
- (5) *Increase hospital capacity.* Make use of unused spaces in hospitals, makeshift hospitals in convention centers, college dormitories, and hotels.
- (6) Ventilators. Build more. Share between states. Test split-ventilator usage.

- (7) *Nursing homes.* Mandate special protections for nursing homes, hospitals, and other vulnerable communities.
- (8) *Drugs*. Continue to work on finding a vaccine, cures, and treatments that may lower the severity of the disease for better outcomes to reduce the strain on hospitals.

Thankfully, the <u>private</u> and <u>public</u> sectors already are scrambling to manufacture more masks, but they need to move faster. If everyone (or even just the most vulnerable of us) were mandated to wear one and we had the available supply, it could be one of the keys to our freedom.

Yes, we know: The Centers for Disease Control and Prevention (CDC) does not recommend that the general public wear N95 respirators or surgical masks to protect themselves from respiratory diseases, including COVID-19. In particular, the latter don't filter or block very small particles in the air transmitted by coughs and sneezes. However, a friend in the medical supply business tells us that they are effective in stopping the release of those particles by infected people who wear them. Surgeons wear masks to protect patients from their mouth-borne germs, not the other way around. The CDC warning seems to be about saving the masks for the hospital workers. The solution is mass production in the millions per week.

Strategy: Don't Fight the Fed. In my new book <u>Fed Watching for Fun & Profit</u>, I wrote: "I learned early in my career that Martin Zweig was right when he famously said, 'Don't fight the Fed.'" Zweig was a highly respected analyst and investor. Yesterday's big rally in the stock market followed the Fed's announcement on Monday morning that QE4 was no longer limited to \$700 billion but could extend to infinity and beyond. The Fed has turned into the Bank of Japan, offering an open-ended commitment to buy almost every financial asset forever, including investment grade corporate bonds. Joe and I think that Monday might have made the low in this bear market.

Global Economy: A Severe But Short Recession? As Debbie discusses below, the March flash PMIs for the US, Europe, and Japan show that the freefall in China's PMIs during February has infected the rest of the global economy, which has fallen into a steep recession. However, there are already a few anecdotal signs that China's economy started to recover in March. They suggest that China's March PMIs should rebound, though they are likely to remain well below the 50.0 breakeven level. Consider the following:

(1) China. A March 24 <u>article</u> in CNNBusiness reported: "China is trying to jump-start its huge economy without triggering a second wave of coronavirus cases. It's a high-stakes experiment that could provide clues for countries agonizing over how long to keep their shutdowns in place as a global recession begins and millions of jobs are lost.

"The country where the pandemic began was almost completely shut down in late January as the number of coronavirus cases mounted. The drastic measures appear to have brought the virus under control: Locally transmitted infections have plummeted, and a lockdown on most of Hubei province—ground zero of the pandemic—is being lifted this week."

China's M-PMI and NM-PMI fell to record lows of 35.7 and 29.6 during February (*Fig. 1*). They should move higher in March, especially the NM-PMI. The problem for the M-PMI is that global demand for Chinese manufactured exports is taking a dive along with the economies of the US and Europe.

- (2) *US*. In the past, US recessions were led by downturns in manufacturing. This time, the recession is being led by the services economy as a result of shutdowns in industries including airlines, hotels, and restaurants. The US M-PMI edged down from 50.7 during February to 49.2 during March, according to the flash estimate. But the NM-PMI plunged from 49.4 to 39.1 over this period (*Fig. 2*).
- (3) *Europe*. Manufacturing was just starting to recover in the Eurozone at the beginning of the year. The region's M-PMI rose to 49.2 during February, the best reading since February 2019 (*Fig. 3*). But it dropped to 44.8 during March. The NM-PMI experienced a free fall from 52.6 during February to 28.4 during March.
- (4) *Japan*. The March flash estimate for Japan's M-PMI dropped to 44.8 from 47.8 during February (*Fig. 4*).

The only good news in this deluge of bad news is that busts are followed by booms. Recessions and their recoveries tend to be V-shaped. This one will be too once the virus crisis passes, which we expect will happen this summer. Very few of us are likely to be infected by the coronavirus, but we are all getting cabin fever for sure. Once we can resume our normal daily lives, the initial economic recovery is likely to be very strong indeed as lots of pent-up demand fuels lots of spending.

Virology: Mitigating a Worst-Case Scenario. By now, lots of us have either read or heard about the Imperial College COVID-19 Response Team's March 16 <u>report</u> titled "Impact of non-pharmaceutical interventions (NPIs) to reduce COVID19 mortality and healthcare demand." It suggests that even with effective mitigation strategies over an 18-month period, US hospital capacity could easily be overwhelmed. Even if mitigation effectively provided for all patients to be treated, about 1.1 million people might die, it concluded.

Those estimates are especially unnerving because the report was written by Neil Ferguson (the eminent virologist, not the historian Niall Ferguson) and his team of virologists. They reportedly are the best of the best when it comes to epidemic modeling. The team has so much clout that an advance of its report reportedly so alarmed President Donald Trump that he changed his previously sanguine stance on the virus, sparking the White House's March 16 pivot to the "15 days to Slow the Spread" guidelines.

Ferguson's team concluded that suppression of the virus is the only viable strategy. The problem is that this involves maintaining a virtual global economic shutdown until a vaccine is found, which could take 18 months or so. The collateral damage to our economic, financial, social, and political order would be massive, as I discussed in yesterday's *Morning Briefing*.

However, better outcomes are possible. Here are some of Melissa's observations based on the Imperial College report:

(1) *Reproduction*. To understand the difference between suppression and mitigation, it's important first to understand the basic reproduction number (R⁰, or r-naught). R⁰ represents the average number of secondary infections generated by one infectious individual, according to the Imperial College of London's Coursera course on COVID-19 (see Week 3).

R⁰ may be lowered early in an epidemic by non-pharmaceutical interventions (NPI) and later in an epidemic as either herd immunity occurs, whereby enough of the population has been infected to naturally reduce R⁰, or a vaccine is developed. For COVID-19, R⁰ is thought to be around 2.9, which is significantly higher than around 1.5 for the flu, according to the course. (See our 3/17 *Morning Briefing* for a comparison of other COVID-19 characteristics to the flu.)

(2) *Mitigation*. Mitigation "focuses on slowing ... epidemic spread" to reduce "peak healthcare demand while protecting those most at risk of severe disease from infection." That's also known as flattening the curve. R⁰ is reduced with mitigation, but not below 1. So daily case

counts would continue to grow but at a slower rate. Ideal mitigation strategies modeled by Ferguson's team for the US combine case isolation, household quarantine, and social distancing of vulnerable populations.

- (3) *Suppression*. Suppression "aims to reverse epidemic growth, reducing case numbers to low levels and maintaining that situation indefinitely." The goal of suppression is to reduce R⁰ to below 1, which would result in the decay of daily case counts. Ferguson's team writes that suppression may require school and university closures as well as social distancing of the entire population.
- (4) Social distancing. The good news is that the US government and private institutions have taken unprecedented actions to suppress the pandemic. Schools and universities have been closed, businesses have been shuttered, employees have been sent home to work or to not work at all, mass gatherings have been canceled, travel has been suspended from infected areas. Governors in New York, California, and other states have issued orders just short of a full-fledged lockdown.
- (5) Costly solution. The bad news is that these interventions come at a severe economic and social cost. More bad news is that some form of the NPIs would have to be maintained from now until we have a vaccine, which may be up to 18 months from now, to prevent a resurgent outbreak, concludes the Ferguson report.
- (6) Room to socialize. Realistically, we know that we cannot sustain this way of life for that long without causing an economic and financial catastrophe. Prosperity aside, any semblance of economic order as we knew it could be buried. Thankfully, Ferguson's analysis does not assume that we live all shuttered up for the entire 18 months!

Let's look at chart A in the report's appendix together. If from late March through August, we all hunker down pretty much as we are doing now, then we can expect not to exceed hospital capacity until the virus resurfaces later in the year. More specifically, Ferguson's team assumes that lifting the modeled NPIs after about five months would give us about a two-month reprieve followed by a second November resurgence of the virus, peaking in late December.

Ferguson suggests that there may be periods where we can toggle the social floodgates, loosening them temporarily during the 18-month window and then tightening them back up as

soon as there is evidence of hospital capacity becoming strained at some pre-determined threshold. That's not an ideal solution, but it beats the alternative.

- (7) *Expansion*. Ferguson's analysis does not model the possibility of expanding healthcare capacity. It should be possible to expand capacity enough during the preliminary shutdown phase to accommodate some level of social interaction that's a semblance of the old days.
- (8) *Taleb's critique*. We also wonder: If heavy intervention is effective in lowering R⁰ to zero, couldn't COVID-19 be eradicated? Evidence from the Asian countries that seem to have contained the virus suggest that this might be possible. Nassim Nicholas Taleb, a statistician and former option trader and risk analyst, has <u>concluded</u> it's wrong to assume resurgent outbreaks.

Because "[a]fter a few weeks of lockdown almost all infectious people are identified, and their contacts are isolated prior to symptoms and cannot infect others. The outbreak can be stopped completely with no resurgence as in China, where new cases were down to one yesterday, after excluding imported international travelers that are quarantined," the reviewers write. The most helpful policy stance may be to "go all out" and "refine the effort over time with improved tracing, testing, and other protocols."

(9) *Protocols*. Upon the origination of the COVID-19 breakout, Chinese officials reportedly released hundreds of teams to conduct contact tracing. Exposed individuals were identified and tracked. Contact tracing helps to mitigate the spread because knowing who is infected and who has been exposed is critical for containing the virus through quarantine and isolation. One complication is that nobody knows yet how contagious asymptomatic positive individuals may be, but that doesn't seem to have prevented these strategies from being successful. South Korea, which has seen a decline in daily new case counts, also has engaged extensively in these practices.

One reason that the US has not jumped into contact tracing may be concern about privacy infringement. Another is logistics: The US hasn't tested extensively enough yet to have identified most of the infected, though the US government is actively ramping that up.

The bottom line is that if the US does begin to do much more testing and engage in contact tracing during the economic suppression period, that along with expanding hospital capacity

could make the difference between an effective shutdown period measured in weeks or months and one that takes over a year.

CALENDARS

US: Wed: Durable Goods Orders Headline & Ex Transportation -1.0%/-0.4%, Core Nondefense Capital Goods Orders & Shipments -0.3%/0.1%, Home Price Index 0.4%, MBA Mortgage Applications, DOE Cruse Oil Inventories. **Thurs:** Jobless Claims 1.5mil, Kansas City Fed Manufacturing Index -10, GDP & PCE 2.1%/1.7%, GDP & Core PCE Deflators 1.3%/1.2%, Wholesale Inventories -0.4%, EIA Natural Gas Storage. (DailyFX estimates)

Global: Wed: Germany Ifo Business Confidence Survey, UK Headline & Core CPI 1.7%/1.5% y/y. **Thurs:** Germany Gfk Consumer Confidence 7.7, UK Retail Sales Including & Excluding Fuel 0.7%/1.1% y/y, UK Sovereign Debt to be Rated by Fitch, BOE Bank Rate & Asset Purchase Target 0.10%/£635b, ECB Publishes Economic Bulletin. (DailyFX estimates)

STRATEGY INDICATORS

S&P 500 Earnings, Revenues, Valuation & Margins (*link*): Analysts are now reading the COVID-19 memo. Consensus S&P 500 forward revenues and earnings fell during the latest week at the fastest pace since 2009. Forecasts for 2021 revenues and earnings are tumbling too and helped the forward estimates to decline. Forward revenues dropped 1.1% w/w to its lowest level since October and is now 1.7% below its record high in mid-February. Forward earnings tumbled 2.3% w/w to its lowest level since April 2019 and is now 3.2% below its record high in early March. Forward growth forecasts are tumbling too. Analysts expect forward revenues growth of 3.5% and forward earnings growth of 5.9%. The revenues growth measure was down 0.8ppt w/w and earnings growth dropped 1.7ppts. Forward revenues growth is now the lowest since April 2016 and 2.8ppts below its seven-year high of 6.3% in February 2018. Forward earnings growth is down 9.2ppts from a six-year high of 16.9% in February 2018 and matches its 34-month low of 5.9% in February 2019. Prior to the passage of the Tax Cuts and Jobs Act (TCJA), forward revenues growth was 5.5% and forward earnings growth was 11.1%. Annual growth expectations for 2020 are deteriorating rapidly. Analysts expect revenues growth of 2.7% in 2020 compared to the 4.3% reported in 2019. That's down 1.2ppts w/w and 2.2ppts since the start of the year. They're calling for earnings growth to improve to 2.9% in 2020 from 1.6% in 2019, but the 2020 growth rate tumbled 2.6ppts w/w and is down 5.0ppts since the beginning of the year. The forward profit margin

dropped 0.1ppt to a 26-month low of 11.8% and is down 0.6ppt from a record high of 12.4% in September 2018. That compares to 11.1% prior to the passage of the TCJA in December 2017 and a 24-month low of 10.4% in March 2016. Analysts now expect the profit margin to remain steady y/y in 2020 at 11.5% and improve 0.8ppt y/y to 12.3% in 2021. Valuations have been extremely volatile on both a daily and weekly basis. For those following the weekly snapshot, the S&P 500's forward P/E fell 1.9ppts w/w to a 77-month low of 15.9, and is down from 19.1 in mid-February, which was the highest since May 2002. That's up from 14.3 during December 2018, which was the lowest reading since October 2013, and down 23% then from the 16-year high of 18.6 at the market's valuation peak in January 2018. The S&P 500 price-to-sales ratio fell 0.21ppt to a 49-month low of 1.65, which compares to mid-February's record high of 2.29. That's up from 1.75 during December 2018, when it was the lowest since November 2016, and down 19% from its then-record high of 2.16 in January 2018.

S&P 500 Sectors Earnings, Revenues, Valuation & Margins (link): Consensus forward revenues fell w/w for all 11 sectors and forward earnings was down for all but Health Care. Energy had both measures get crushed w/w, but Consumer Discretionary, Industrials, and Real Estate also posted notable declines. Forward revenues and earnings remain closest to record highs for 2/11 sectors: Health Care and Tech. Forward P/S and P/E ratios are down sharply for all sectors, and from recent record or cyclical highs for Communication Services, Consumer Discretionary, Information Technology, Real Estate, and Utilities. Due to the TCJA, the profit margin for 2018 was higher y/y for all sectors but Real Estate. Just five sectors (Consumer Staples, Financials, Industrials, Materials, and Tech) are expected to record higher margins y/y in 2020, down from eight expected to do so in early March. During 2019, just two sectors improved y/y: Financials and Utilities. The forward profit margin rose to record highs during 2018 for 8/11 sectors, all but Energy, Health Care, and Real Estate. Since then, it has moved lower for nearly all the sectors including seven in the latest week alone. Utilities is the only sector with its forward profit margin at a record high. Here's how the sectors rank based on their current forward profit margin forecasts versus their highs during 2018: Information Technology (22.2%, down from 23.0%), Financials (17.8, down from 19.2), Real Estate (15.4, down from 17.0), Communication Services (14.8, down from 15.4), Utilities (13.8, record high), S&P 500 (11.8, down from 12.4), Health Care (10.5, down from 11.2), Industrials (9.7, down from its record high of 10.5% in mid-December), Materials (9.7, down from 11.6), Consumer Staples (7.4, down from 7.7), Consumer Discretionary (7.0, down from 8.3), and Energy (4.4, down from 8.0).

S&P 500 Sectors Net Earnings Revisions (*link*): The S&P 500's NERI weakened m/m in

March to a 47-month low from a six-month high in January, and was negative for the 15th time in 17 months. NERI tumbled to -12.1% in March from -4.4% in February, which compares to a record high of 22.1% in March 2018. NERI fell m/m for all 11 sectors; that compares to 5/11 improving in February and 8/11 in January, which was the highest since all 11 improved m/m in May 2019. NERI was positive in March for one sector, down from two in February and four in January, which was the most since June 2019. Materials has the worst track record, with 18 months of negative NERI, followed by Industrials (17), Consumer Discretionary (16), and Utilities (14). Information Technology's NERI turned negative m/m in March for the first time in four months. Here are the sectors' March NERIs compared with their February readings: Health Care (1.2% in March [11-month low], down from 4.0% in February), Tech (-3.5, 6.1), Utilities (-3.6, -3.0), Consumer Staples (-7.0 [14-month low], -3.2), Communication Services (-7.8 [22-month low], -3.1), Financials (-9.3, 0.0), Real Estate (-10.2 [23-month low], -3.7), Consumer Discretionary (-17.4 [11-year low], -6.5), Industrials (-22.8 [four-year low], -15.4), Energy (-27.7 [four-year low], -12.4), and Materials (-30.4 [four-year low], -24.2).

US ECONOMIC INDICATORS

Regional M-PMIs (*link*): Three Fed districts have now reported on manufacturing activity for March—Philadelphia, New York, and Richmond—and show a sharp contraction in activity. The composite index (to -10.7 from 15.8) plunged 26.5 points to its lowest reading since May 2009—after expanding at its fastest pace since October 2018 last month. Both the New York (to -21.5 from 12.9) and Philadelphia (-12.7 from 36.7) measures swung from expansion to contraction—with the New York region contracting at its fastest pace since March 2009 and Philly's since July 2012. Meanwhile, Richmond's (2.0 from -2.0) gauge showed growth was basically flat in that region. March new orders (-8.3 from 15.2) declined at the fastest pace since February 2016 after expanding at a solid pace in May, as measures for the New York (-9.3 from 22.1) and Philadelphia (-15.5 from 33.6) regions tumbled 31.4 points and 49.1 points, respectively; Richmond's (0.0 from -10.0) billings were flat—after contracting in February. March's employment measure dropped to -1.5 from 8.1 and 16.1 the prior two months, with factories starting to pare back payrolls. Richmond (-7.0 from 8.0) and New York manufacturers (-1.5 from 6.6) began cutting jobs, while Philly's (4.1 from 9.8) hired at the slowest pace in just over four years.

New Home Sales (*link*): New single-family home sales in February slipped 4.4% to 765,000 units (saar), after jumping 10.5% in January to a new cyclical high of 800,000 units. Regionally, sales versus a year ago posted double-digit gains in the Northeast (47.1% y/y), West (24.7),

and Midwest (15.6), with the South (6.3) holding in single digits. Meanwhile, February saw the supply of new homes on the market edge down for the second month to an 18-month low of 319,000 units—representing 5.0 months' supply. Inventory was 6.7% below a year ago, the sixth consecutive y/y decline. In the meantime, March data show NAHB's Housing Market Index (HMI) ticked down to 72, remaining near December's reading of 76—which was the highest since June 1999. Data were collected prior to March 4—so the stock market drop and the escalation of the coronavirus won't be visible until April's report.

GLOBAL ECONOMIC INDICATORS

US PMI Flash Estimates (*link*): US companies reported the steepest downturn in the history of the series, dating back to 2009, according to flash estimates. The weakness reflects concerns about the ongoing coronavirus outbreak, reflecting widespread declines in activity across the manufacturing and service sectors. March's C-PMI (to 40.5 from 49.6) sank to a record low, as did the NM-PMI (39.1 from 49.4), while the M-PMI (49.2 from 50.7) dropped to a 127-month low. According to the report, "The survey underscores how the US is likely already in a recession that will inevitably deepen further. The March PMI is roughly indicative of GDP falling at an annualized rate approaching 5%, but the increasing number of virus-fighting lockdowns and closures mean the second quarter will likely see a far steeper rate of decline."

Eurozone PMI Flash Estimates (*link*): "COVID-19 outbreak leads to largest collapse in business activity ever recorded," was the headline of this month's IHS Markit's flash estimate report. The C-PMI (to 31.4 from 51.6) sank to a record low, with the service sector especially hard hit—notably industries such as travel, tourism, and restaurants—with the NM-PMI (28.4 from 52.6) plunging to a new record low. The downturn in manufacturing was less severe, with the M-PMI (44.8 from 49.2) dropping to a 92-month low. Looking at the top two Eurozone economies, flash estimates reveal that Germany experienced a weaker downturn than France. Germany's C-PMI (37.2 from 50.7) plunged to a 133-month low, as the NM-PMI (34.5 from 52.5) contracted at a record pace while the M-PMI (45.7 from 48.0) dipped to a two-month low. In France, the coronavirus outbreak triggered a record contraction in both the C-PMI (30.2 from 52.0) and the NM-PMI (29.0 from 52.6) while the M-PMI (42.9 from 49.7) sank to an 86-month low. Meanwhile, the rest of the Eurozone reported an even steeper decline than seen in both France and Germany, led by the sharpest fall in service-sector activity ever recorded; manufacturing output shrank at the steepest rate in almost 11 years.

Japan PMI Flash Estimates (*link*): Japan's economic downturn escalated this month

according to Jibun Bank, source of March's flash estimate. The C-PMI (to 35.8 from 47.0) recorded the sharpest contraction in economic activity on record, primarily driven by the service sector, as the NM-PMI (32.7 from 46.8) showed a record decline in service activity as tourism plunged. Supply-chain disruptions pushed the M-PMI (44.8 from 47.8) lower, though paling in comparison to the service-sector debacle. The March report notes: "The prospects for Japan's economy this year weren't particularly good before the outbreak of COVID-19, with the country's economic potential dwindling due to an ageing workforce and declining population."

Contact us by email or call 480-664-1333.

Ed Yardeni, President & Chief Investment Strategist, 516-972-7683
Debbie Johnson, Chief Economist, 480-664-1333
Joe Abbott, Chief Quantitative Strategist, 732-497-5306
Melissa Tagg, Director of Research Projects & Operations, 516-782-9967
Mali Quintana, Senior Economist, 480-664-1333
Jackie Doherty, Contributing Editor, 917-328-6848
Valerie de la Rue, Director of Institutional Sales, 516-277-2432
Mary Fanslau, Manager of Client Services, 480-664-1333
Sandy Cohan, Senior Editor, 570-775-6823

Copyright (c) Yardeni Research, Inc. Please read complete copyright and hedge clause.