

Investment Strategy Overview



Over The Bridge to the Other Side

April 2020

MACRO OVERVIEW..... 7

Rapid Decline Followed by Rapid Recovery.....7

The Paycheck Protection Program (PPP).....8

What role is the dollar playing in financial conditions and what may lie ahead?..... 11

What role is the collapse in oil prices playing in the market volatility and what might investors anticipate for them?..... 12

FIXED INCOME..... 13

Into The Valley 13

Over The Bridge..... 15

The Other Side 15

EQUITIES 16

Into The Valley 16

Over The Bridge..... 17

The Other Side 19

To the New Frontier..... 20

MARKET STRUCTURE CHANGES 20

How does increased market volatility impact exchange-traded funds?..... 20

THEMATIC INVESTING..... 21

Which industry trends do we expect to see emerge from the coronavirus crisis?..... 21

We hope the insights that follow provide a better understanding of the past few weeks and, more importantly, the potential paths in the months and year ahead across a variety of areas. As we experience the “valley, travel over the bridge, to the other side, and on our way to the new frontier” we do this with an understanding that there is strength in numbers and strength in society.

Christopher Hyzy

Chief Investment Officer

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To put it bluntly, for April and potentially the month of May market and economic activity are more than likely to exhibit some of the sharpest downswings in history as the economic shutdown measures due to the coronavirus take full effect. This is to be expected. In addition, the health data is likely to continue to show a significant rise in infection cases given the uptick in testing and the fact that we are still in the data catch-up phase with the aggressive social distancing and shutdown measures. Moreover, more states and cities are expected to show new outbreaks while others begin to crest.

This should confirm our overall view that science is what gets us back to the “new normal.” Therefore, as we wait for the pandemic curve to flatten the economic numbers are more than certain to exhibit record levels of contraction. We believe the markets ultimately look through the economic abyss and take their full cue from the health data (both the curve and advancements of testing and treatments).

Given this, with all the talk about the shape of the market and economic recoveries it is important to understand that each crisis has different components even if the data regarding economic contractions and/or market volatility appears to be similar. Various crises produce a number of different responses from facilities/programs designed to address liquidity to stimulus bills passed into law to support the economy or even, as we all are experiencing now, aid packages produced to provide relief regarding individual cash flow needs and/or questions over solvency. Over the course of history there have been a number of different playbooks to address the situation at hand. The current situation has a third element to it that is a significant unknown, exogenous shock—a health crisis. As we have all been witnessing, the liquidity and economic playbooks of times past did not include today’s most important element—a playbook for the war on the coronavirus.

The health crisis playbook is not only likely to take more time and effort, but a long-standing, strong public/private partnership with a significant investment across the entire healthcare spectrum. St. Louis Federal Reserve (Fed) President James Bullard described the aid package, basically, as pandemic relief and a massive “investment in humanity” rather than comparing it to previous policy packages driven by structural recessions or depressions. While the public and private sectors continue to do what is necessary to control and combat the virus and, hopefully, help cure this virus, we want to outline the inner workings of the financial and economic responses that have been released. We also outline the potential portfolio adjustments, including rebalancing strategies, that investors should consider through the bottoming process and into the path of recovery. As we have discussed recently we believe there are five signs that we should watch to better assess the length and ultimate level and stability of the bottoming process in markets, which are laid out in the following table.

Exhibit 1: Our Five Signs of a Market Bottom

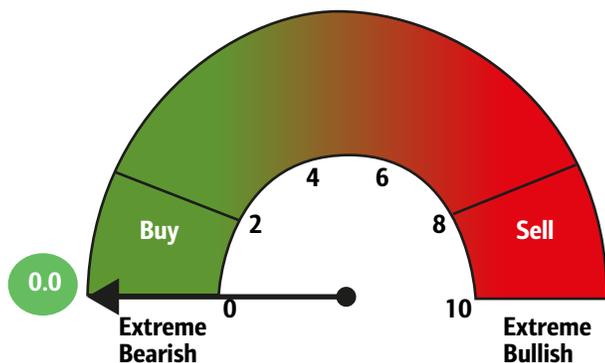
Signs	Description	Metrics to Watch	Current Status
1. Capital Flows More Freely	We are watching for signs of credit improvement and liquidity in the daily funding markets, which is being supported by the various facilities put in place by the Federal Reserve and Treasury Department.	Bond issuance and fund flows activity, across investment grade, municipal bonds and high yield.	Investment grade issuance has improved dramatically compared to earlier in the year, reaching a record \$260.7B in March. Outflows have generally continued.
2. Stock/Bond Correlations Normalize	We need to see the relationship between bonds and stocks shift back to a somewhat normal inverse relationship. This will allow investors to manage risk in their portfolios more effectively by diversifying across asset classes.	Correlations between broad equity and bond market indexes (e.g. the correlation between the S&P 500 and the 10-Year Treasury Yield).	Bond yields are beginning to return to normal, as equity prices move in the opposite direction of bond prices.
3. Volatility Recedes on Down Days	We need to see the volatility recede when the markets are experiencing down days.	Chicago Board Options Exchange’s (CBOE) Volatility Index (VIX) MOVE Index Daily/weekly equity and fixed income index price swings	Market volatility has fallen about 40% from record highs. Importantly, there has been a generally consistent downward trend on up days and even on some down days.
4. U.S. Dollar Starts to Weaken	A stronger dollar is a symptom of global financial stress and deflationary forces. Persistent dollar weakness could be confirmation that deflationary forces and funding pressures are abating and global growth is making a turn.	Bloomberg Dollar Spot Index	The dollar has started to show signs of peaking, falling by 4.1% for the week ending March 27 but still remains near an all-time high.
5. Markets Ignore Bad News Flow	Poor news flow regarding the virus and the overall economy/corporate profits needs to begin to be ignored by the broader market. This could start to happen once the number of new cases peaks.	The number of new coronavirus cases in the U.S. and globally including Italy, Spain and others.	The number of new cases in the U.S. and parts of Europe have continued to increase at a fast pace, while China’s rate of new cases has slowed substantially.

Source: Chief Investment Office. Data as of April 2, 2020.

[RETURN TO TABLE OF CONTENTS ►](#)

In the past week, we have witnessed many of these signs already working their way through the capital markets. Most of the fixed income markets are functioning again as liquidity has been injected into the system at unprecedented levels while credit spreads have narrowed in key areas outside of high yield. The stock to bond relationship has returned to a more normal one in which equity prices move in the opposite direction of bond prices. Equity volatility has not only receded from record high levels, it has also begun to decline slightly in down markets during the past week. And as the new foreign exchange swap line facility opened up to more central banks outside the U.S. and the \$2 trillion relief package was moving through Congress, the U.S. dollar began to crest and roll over. We will need to experience a consistent move lower as the realization of reflation takes hold, in our view. Finally, there have been limited instances in which bad news flow was ignored by the markets, one example being the record spike in unemployment claims, but this is an area that is likely to remain sporadic, especially given the fluidity of the data regarding the coronavirus and the expected very sharp contraction in Q2 economic numbers yet to be released. Combine these five signs with one of the more telling investor positioning gauges, the BofA Global Research Bull & Bear Indicator, which is at 0, the maximum bearish level on a scale of 0-10, and we are encouraged that the bottoming process is already underway with both fixed income and equity markets stabilizing at improved levels relative to the first half of March.

Exhibit 2: BofA Bull & Bear Indicator (scale 0-10)



Components of BofA Bull & Bear Indicator

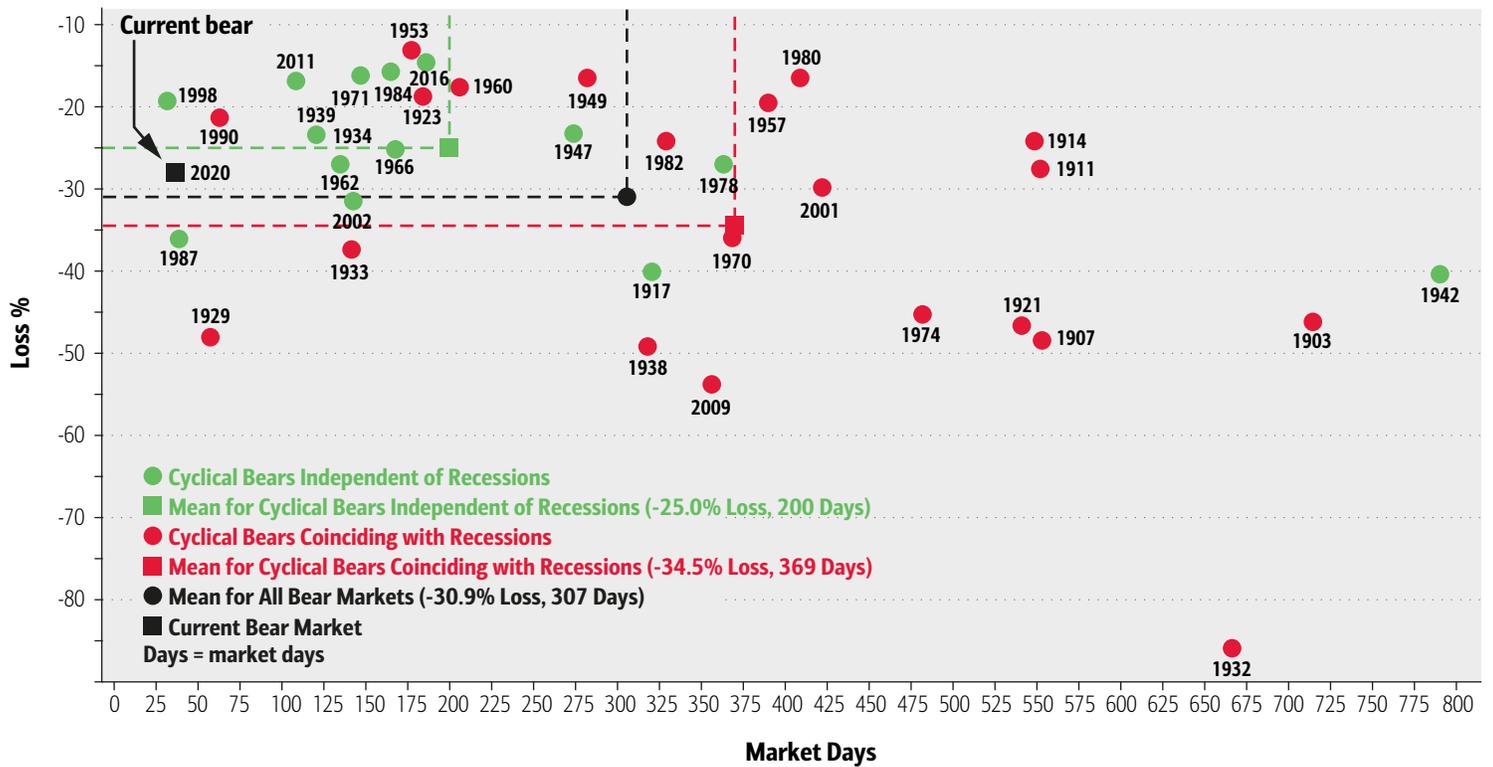
Components	Percentile	Sentiment
Hedge fund positioning	26%	Bearish
Credit mkt technicals	3%	V. Bearish
Equity market breadth	5%	V. Bearish
Equity flows	42%	Neutral
Bond flows	2%	V. Bearish
Long-only positioning	29%	Bearish

Source: BofA Global Investment Strategy. Data as of April 2, 2020. The indicator identified above as the BofA Bull & Bear Indicator is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other purpose, without the prior written consent of BofA Global Research. This indicator was not created to act as a benchmark.

Furthermore, we also believe it is important to understand the various types of bear market and, finally, the potential shapes of the recoveries. There are three main types of bear market structures and declines, in our view. Each has different components, reaction functions, and recovery speeds and shapes. The three are Structural, Cyclical and Exogenous Shocks. Briefly stated, the most common types of bear market are structural and cyclical. A structural bear market generally unfolds as significant imbalances have been built up and leverage is high (e.g., the Great Financial Crisis of 2008–2009). Policy responses are designed to help improve liquidity and solvency in some cases, which can take longer to pull through than expected. Cyclical bear markets (e.g., the dot-com bubble of 2000–2001) are generally due to some sort of policy error such as raising rates too quickly or too sharply, or instituting a new “growth” tax on the economy. These types of bear market tend to work in conjunction with recessions and have traditionally fallen on a median basis by some 34% from their peaks, according to Bloomberg data, before stabilizing and eventually recovering as central bank policy reverses. Lastly, an exogenous shock bear market like the current coronavirus crisis (secondarily the present oil price war shock) can generally occur without notice and with sharp force, include “unknowns,” and be not as protracted, rather sharp, deep and most likely shorter than grizzly structural bear markets, given the enormous policy responses that usually develop and due to the health of the economy going into shock.

[RETURN TO TABLE OF CONTENTS ►](#)

Exhibit 3: The 2020 Bear Market Compared to Cyclical Bear Markets



Sources: S&P Dow Jones Indices, Ned Davis Research Calculations. Data as of April 1, 2020.

We believe the current double exogenous shock has shifted from Phase I—liquidity concerns—to Phase II, which we characterize as the bridge period, in which relief packages are designed to plug the gap or buffer the resulting sharp contraction in the economy. Economic data during this period is likely to continue to be sharply negative given its “shock” nature, especially due to the unknown duration, at this point, of the health crisis. At this time we expect the markets to take their cue from the aforementioned five signs of a market bottoming process. We believe rebalancing portfolios during this phase as the bottoming process materializes (currently underway) makes sense and helps to adjust portfolios back to strategic and/or tactical asset allocation targets. Current rebalancing strategies may include dollar cost averaging plans that re-risk a set amount over a set time frame. They may also incorporate combination strategies (rebalance back to targets but don’t necessarily include set increments and/or time) that re-risk based upon the capital market activity that unfolds in the early phases as the business cycle matures and the profit cycle bottoms.

Phase III then becomes the “other side” of the bridge, which could also entail strategies to re-position portfolios given new data materializes. This phase includes a potential recovery that slowly unfolds with the consumer starting out tentatively as the workforce comes back online in stages and, possibly, in rolling geographies before the full pent-up demand takes over. The pent-up demand stage, in our opinion, is Phase IV, which involves a more robust economy and a profit cycle that climbs back to previous levels. Finally, Phase V is years away, in our view, but it is the beginning of the “new frontier” (the newly adjusted economy and consumer and business behaviors).

[RETURN TO TABLE OF CONTENTS ►](#)

Exhibit 4: Our Five Phases of the Workout Process from an Exogenous Shock

Phase	Timeframe	Description
Phase I: The Liquidity Phase	March/April 2020	Unprecedented liquidity facilities put in place to stabilize capital markets, covering Money Market Funds, Commercial Paper, Asset Backed Securities, Corporate/Municipal securities and others. Total liquidity injections could total \$2T (approx. 10% of gross domestic product [GDP]). The Fed's balance sheet has already risen by about \$1.6T over the past month.
Phase II: The Bridge or Economic Buffer Period	Q2 and Q3 2020	Relief package known as Coronavirus Aid, Relief, and Economic Security Act ("CARES Act") of some \$2T, including household payments, small business relief, support for state/local governments and corporations at its core. Policymakers are likely to consider additional measures as necessary. The fiscal stimulus measures announced around the world over the past two months add up to \$5T, which represents 5.8% of global GDP; focus on the healthcare system, low-income workers, paid sick leave, small businesses and corporations.
Phase III: The Other Side	Q4 into 2021	After an initial snap-back from a numbers perspective a more tentative "social" entrance back into the economy creates an expected U-shape economic recovery and markets climb the wall of worry. Forecast U.S. real economic growth of 30% and 6.1% in Q4 and 2021 respectively.
Phase IV: The Pent Up Demand Cycle	2021–2022	Economic growth builds and gathers momentum as pent up demand builds and is released and the tentative social nature fades a little. Positive news regarding virus treatments and vaccines could accelerate.
Phase V: The New Frontier	2022–2025	A new frontier builds as new behaviors cement themselves into daily consumer and business life. New industries are born and innovation accelerates into high gear. Expect an increase in healthcare spending, especially outside the U.S., and changes to global supply chains including the drug supply chains. Also expect a boost to everything "E": e-health, e-sports, e-groceries, e-learning, e-finance, e-entertainment. Also automation and robotics.

Sources: Chief Investment Office; BofA Global Research; Cornerstone Macro. Data as of April 2, 2020. The economic and market forecasts presented are for informational purposes as of the date of this report. Economic or financial forecasts are inherently limited and should not be relied on as indicators of future investment performance.

Moreover, there have been many discussions about the potential shape of the economic and/or market recovery. The BofA Global Research recently described the expected economic recovery as U-shaped due to the "saucer" turn beginning in Q3/Q4 2020 and into 2021 as consumers and businesses will likely increase spending cautiously. Economic shapes can be very different than market recovery shapes given the "discounting" nature of the capital markets. In fact, a recovery in "the numbers," particularly after such a deep contraction as we expect, could resemble a V simply because of how the numbers shake out. For example, the BofA Global Research is forecasting -6% GDP for 2020 and a +6% GDP growth for 2021. This is in effect a V in numbers over a 12-month timeframe. However, the path is different. The path is more like a U-shaped recovery due to the impact on behavioral tendencies of the consumer and how, and in what way, they come back into the broader economy.

Therefore, it is possible that a U-shaped economic recovery can include a V-shaped market recovery well beforehand. Many market participants have been signaling this in the past few weeks. In our view, the market recovery path or shape is more akin to a square root type of shape but with a W bottom. Without getting too detailed in this regard we expect a "sawtooth" equity market path with an upward bias in time as the five signs mature and the first three to four phases evolve.

Our portfolio strategy has been rebalanced (re-risked upward in equities and lower in duration in fixed income where appropriate) back to our tactical targets from earlier this year. We believe investors should consider this strategy through the bottoming process if portfolios are below pre-determined targets. Maintain high levels of diversification as an anchor in a core multi-asset class approach and consider more active management* given the still high levels of volatility.

Our preferences remain the U.S. relative to the rest of the world (both developed international and emerging markets [EMs]), and large caps and higher quality exposure across asset classes in general. Current equity yields are more attractive than bond yields. We have lower-than-benchmark duration in fixed income and view investment grade credit as attractive and Treasury exposure as still a "ballast" in portfolios against equity volatility.

* Active management seeks to outperform benchmarks through active investment decisions, such as asset allocation and investment selection.

[RETURN TO TABLE OF CONTENTS ►](#)

Two additional points. When oil prices ultimately trough, the secular low in inflation expectations could be upon us. Therefore, a portfolio strategy shift (increase inflation hedges, real assets, increase in EMs) may be appropriate at a later date in the future. Alternatively, if rates stay low for a lot longer than expected, with short-end yields marginally higher than the zero line if not slightly negative, then free cash flow yield (Technology and Healthcare sectors mainly) and high-quality dividend yield in equities should be rising further in demand, in our view. Investors are likely interested in hearing about the “deflation versus inflation debate” in the years ahead. The Fed has told us that they plan to be aggressive and that they understand the need to establish more assertive efforts to get inflation up to enough over their inflation target. Simply put, they do not want to follow the same path as Japan or Europe. This realization and whether or not the Fed sticks to inflation targeted policies is likely to drive portfolio decisions (specifically - the stock versus bond trade off) for years to come, in our opinion.

What are some of the risk factors that could delay or alter our expectations for a recovery and eventual move through the phases?

- The pandemic curve continues to steepen well into Q3, or consumer behavior remains cautious coming out of the crisis, hampering the service sector and stalling our expected economic recovery;
- A potential deep credit default cycle develops starting with the energy sector given the collapse in oil prices as well as some targeted consumer-based areas that rely on entertainment, travel, leisure and off-line retail spending;
- Lack of a large enough and coordinated fiscal plan in Europe leads to another sovereign debt crisis with Italy in focus;
- The U.S. dollar experiences an unexpected large decline as global investors question the U.S. fiscal standing; and
- Lack of virus containment in vulnerable developing countries with weak healthcare systems and crowded populations leads to funding crises and inability to prevent seasonality of the disease.

None of these risk factors are included directly in our base case but we will be watching for any new developments. It is difficult to parse through and the data remains fluid at this point but the most important factor to determine the ultimate strength and sharpness of the recovery remains the overall control and management of the virus.

Finally, sections of this Investment Strategy Overview highlight both a description and our view on what we call “the valley, over the bridge, to the other side, and on to the new frontier!” We describe the “valley” as the fastest decline in the history of the equity markets, the significant illiquidity in the fixed income markets and the sharp economic impact; the “bridge” as the unprecedented policy responses and relief packages; the “other side” as the characteristics of the eventual economic recovery; and the “new frontier” as the potential shift within the broader economic, financial and investment landscape over the next five-plus years.

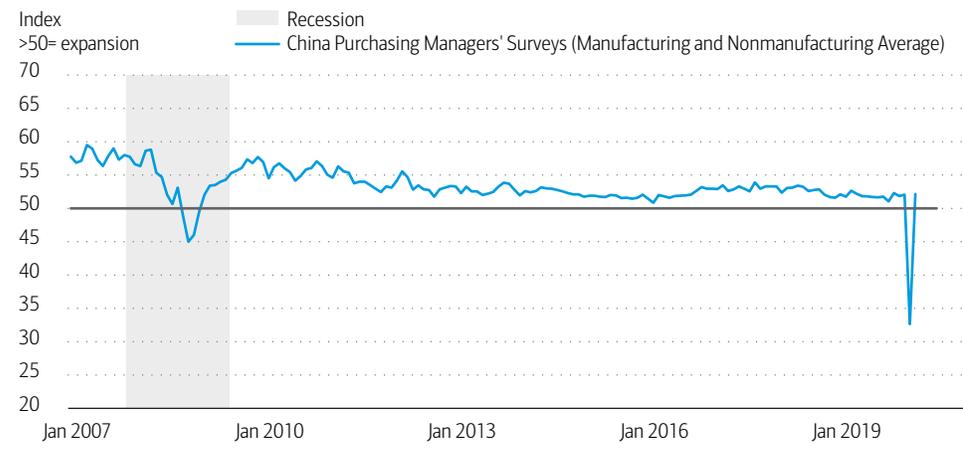
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MACRO OVERVIEW

Rapid Decline Followed by Rapid Recovery

The global reaction to the coronavirus shock is unprecedented compared to past epidemics, and comparisons with past economic crises fall short because prior recessions were not deliberately engineered in the public interest. Never before have major economies been deliberately shut down to bring a health crisis to manageable proportions so that healthcare systems are not overwhelmed and loss of life is minimized. The phased sudden stops in the global economy are likely to be followed by phased sudden recoveries like we are already seeing in China where the first wave landed. The surprise recovery in China's composite Purchasing Managers' Index (PMI) illustrates what's likely to happen as the world economy goes back to work (Exhibit 5). The bounce-back in China's PMIs exceeded all analysts' expectations.

Exhibit 5: A Surprise Recovery in China's Economic Activity



Source: China Federation of Logistics and Purchasing. Data as of March 30, 2020.

The massive U.S. fiscal and monetary response helps assure that a more prolonged recession can potentially be avoided. Not only is it the biggest stimulus package since World War II, it is designed to be deployed rapidly to address a “10-12 week scenario” of economic shutdown, according to Treasury Secretary Mnuchin, one of its key architects (Exhibit 6). If the shutdown lasts longer, more will come, he says. In the meantime, the administration is preparing to “publish criteria, developed in close coordination with the nation's public health officials and scientists with respect to continued risks posed by the virus.” Each county in the U.S. will then be assigned a federal category of “high risk,” “medium risk,” and “low risk,” according to data-driven criteria. This will allow “low-risk” areas of the country to reopen first in a staged rollout.

Exhibit 6: Biggest fiscal stimulus ever meant to deal with a “10-12 week scenario;” potentially more to come if needed

Estimate of major provisions in the CARES Act in billions of dollars

Provision	Cost (\$ billion)
Rebates to individuals	290
Small businesses	376
Loan forgiveness	349
Loan subsidies	17
Emergency Economic Injury Disaster Loan (EIDL) grants	10
Corporate tax relief	232
Payroll grants to airlines/cargo/contractors	32

Table continued on the next page →

[RETURN TO TABLE OF CONTENTS ►](#)

Estimate of major provisions in the CARES Act in billions of dollars

Provision	Cost (\$ billion)
Exchange Stabilization Fund (ESF) loans/loan guarantees/investments	500
Airlines/cargo	29
Businesses important to national security	17
Fed Section 13 (3) 2008 lending facilities*	454
Unemployment insurance	250+
Coronavirus relief fund	150
Appropriations	340
Hospitals/veterans care	117
Federal Emergency Management Agency (FEMA) disaster fund	45
Department of Education	31
Supplemental Nutrition Assistance Program (SNAP) & child nutrition	25
Strategic national stockpile	16
Vaccines/therapeutics & other medical	11
Department of Defense	11
Other	85
TOTAL	2170

Source: Ways and Means Republicans, Senate Republicans, and Cornerstone Macro. As of March 27, 2020. *Note: Section 13(3) in 2008 to extend credit to all eligible borrowers within a particular class of nonbank financial firms or to a particular segment of financial markets.

The Paycheck Protection Program (PPP)

In order to help small businesses with near-term liquidity concerns and to encourage the retention of employees (and the continuance of their wages) the Coronavirus Aid, Relief, and Economic Security Act ("CARES Act") includes a complicated set of rules for government guaranteed loans and grants to eligible businesses. To then shift the burden and cost to the federal government, those businesses may be eligible to have all or a portion of the loans forgiven.

Loans to Small Businesses—Nearly \$350 billion is allocated for helping small businesses through a PPP loan—those generally with less than 500 employees, whether they are for profit or not-for-profit. Individual sole-proprietor, independent contractor and other self-employed individuals are eligible for loans. The primary form of assistance is in the form of government guaranteed loans and grants facilitated by the U.S. Small Business Administration (SBA), although additional lenders can be authorized by the Department of the Treasury.

Loans can be made up to a maximum of \$10 million (but the amount of the loan is generally a formula tied to the payroll costs of the business during the one-year period before the loan, which could result in a lower loan amount). Loan proceeds can be used for payroll costs (salaries, sick leave, medical leave, insurance premiums) and certain administration expenses (mortgage, rent and utility payments), in addition to existing allowable uses under SBA rules. However, "at least 75% of loans proceeds must be used for payroll costs" according to SBA rules. This requirement will effectuate the core purpose of the program and ensure finite program resources are devoted to keeping workers paid and employed.

Borrowers must make a good faith certification as to the necessity of the loan and that they will use the loan for appropriate purposes.

[RETURN TO TABLE OF CONTENTS ►](#)

PPP loans cannot have a maturity beyond 10 years and an interest rate above 4%. In an “interim final” rule issued by the SBA on April 2, 2020, it was determined that all PPP loans will have identical terms: a two-year maturity and an interest rate of 1%. These loans will have a 100% government guarantee if made by June 30, 2020. Principal and interest payments will be deferred, not waived, for six months.

Loan Forgiveness—A PPP borrower may be eligible for loan forgiveness equal to the amount spent by the borrower during an 8-week period after the loan origination date (capped at the loan amount) for:

- payroll costs (excluding compensation above \$100,000),
- interest payments on any mortgage obtained prior to February 15, 2020,
- rental lease payments (in force before February 15, 2020) and
- utility payments (for services which began before February 15, 2020).

Non-payroll costs are capped at 25% of the loan forgiveness amount according to the SBA.

There are further complicated rules reducing the amount that could be forgiven based on a reduction of the businesses’ employees and the reduction of the employees’ wages compared with the prior year.

Any amount of the loan that is forgiven will not be considered taxable income to the business or individual owners of the business.

Source: Chief Investment Office, U.S. Congress. Data as of April 3, 2020.

The contour of the crisis is shaped around the pandemic curve, which has been defined first in Asia. According to modeling research estimates, the pandemic’s timeline has followed a similar pattern in each region. The rise in new cases tends to peak about six weeks after the outbreak begins and decline for about six weeks thereafter. Once new cases begin to decline phased reopenings can likely begin. The surge in China PMIs illustrates the resumption of normal activity after this roughly three-month timeline. Other countries as different as Korea and Italy show the same six-week timeline to peak new cases followed by declines. On this timeline U.S. cases should peak between mid-April and May and the economy should start growing in June.¹

China is ahead in this process and is expected to be back to normal conditions this month after deep cutbacks comparable to those currently happening in the U.S. and Europe. While domestic activity is close to being restored in China, the hit to the rest of the world will restrain its growth rate because it is heavily export dependent. However, within the next few weeks, the rest of the world should be where China is today, in our view.

Europe is lagging the world in its response because of the lack of a centralized approach. As in the Financial Crisis of 2008-2009, the European Union’s fiscal approach is scattered and the needed monetary policy approach is facing resistance. Countries have also chosen to go their own ways with respect to border security. In short, the ties holding the union together are being severely tested and the policy response is much weaker than in the U.S. In a world moving rapidly into a future requiring faster policy action, the European Union’s structural governance weakness is a major liability.

¹ Source: Fundstrat as of March 24, 2020.

Unlike Europe and China, the U.S. has chosen to apply a fiscal stimulus commensurate to the economic shutdown effects on GDP. The onslaught of evidence that U.S. growth is collapsing has caused forecasters to cut their outlooks for second-quarter GDP growth continually over the past few weeks. Currently, estimates are clustered in a range of about a 10%-to-30% annualized decline. A three-month hit at the upper end of this range amounts to a drop of around \$2 trillion.

It is thus not a coincidence that the fiscal package to address this crisis is also about \$2 trillion, plus several trillion dollars of balance sheet capacity for the Treasury and Fed to support businesses and the financial system until things return to normal. The unprecedented speed, size and scope of this package and its specific features aimed at filling the void as it occurs reflect the improved ability of policymakers to assess and respond to specific areas in a timely fashion, thanks to modern data flows and analytics. It also reflects the unusual nature of the shock. Both monetary and fiscal stimulus are being applied at a rate an order of magnitude greater than any time since World War II. The Fed, for example, is buying more each day than it purchased in a month during the 2008–2009 Financial Crisis.

Many expectations for a second-quarter GDP drop of an unprecedented 10% to 30% assume no fiscal response. A fiscal response of comparable magnitude to the shock should theoretically offset it, but that will of course depend on improvement on the health front. In any event, the policy response should go a long way toward cushioning the blow and helping put the economy back on track in the second half.

Strong economic fundamentals and pro-growth policies in place prior to the pandemic shock combined with a timely and aggressive monetary and fiscal policy response suggest that the unparalleled speed of decline in economic activity is likely to be matched by an equally unusual speed of recovery. Assuming the pandemic curve follows current expectations based on the experience of the earlier countries, we believe the level of disruption and blow to confidence should start to dissipate by late in the second quarter, if not before. The main risk is shifting toward a much stronger second-half GDP growth rate than consensus expectations as the massive monetary and fiscal stimulus lingers well past the health crisis. BofA Global Research currently projects this type of economic recovery path from around July onward and into 2021, assuming the health crisis shows further improvement.

In the heat of the action to head off a more prolonged economic collapse, little attention is being paid to the longer-term consequences of a fiscal deficit that is likely to approach 15% of GDP. Indeed, market signals, like the dollar exchange rate against other currencies and long-term interest rates, are not flashing warnings about potential negative consequences from bigger deficits. In fact, one of the stress signals of tightening financial conditions has been the strength of the greenback, as the financial implosion forced a massive \$12 trillion of short-dollar funding to partially unwind in the dash for cash. The dollar would not be so strong if the markets feared the big new deficits.

Also contrary to orthodox views about the inflationary consequences of big deficits is the collapse in market-based expectations for inflation. Not since the Financial Crisis of 2008-2009 has the outlook for inflation been so low. At around 1%, the long-term outlook for U.S. inflation has joined the ranks of Europe and Japan, where inflation has been chronically below central bank targets.

This means that to prevent a deflationary depression outcome, the Fed needs “to print a lot of money” by buying massive quantities of Treasury securities, as they have recently pledged in announcing an open-ended program of quantitative easing. As discussed in our March 16, Capital Market Outlook article *Time to Get Serious About Inflation*, the Fed is likely to announce a new, more focused policy approach to hitting its inflation target. Its “*broad review of the strategy, tools, and communication practices it uses to pursue the monetary policy goals established by Congress...*” is set to conclude by mid-year.

[RETURN TO TABLE OF CONTENTS ►](#)

The timing is fortuitous, since the Fed is likely to embark on a more intense effort to raise inflation just when the Treasury will be providing an unprecedented supply of debt for the Fed to monetize, including hundreds of billions of dollars to support family incomes across the U.S.

In essence, this is a first experiment in Modern Monetary Theory (MMT), the idea that monetary policy should fund fiscal spending to support the economy. The key to preventing abuse of this process is to leave the Fed as the independent guardian of the money supply, based on the limits necessary for it to reach and maintain its inflation target.

In a recent report, French economist Charles Gave argued that *"the Covid-19 outbreak is paving the way for a universal basic income funded by MMT (aka the magic money tree)..."* Basically, the failure of major central banks to support a nominal growth environment consistent with their inflation mandates had already set the stage for MMT. The coronavirus recession has provided the necessary political catalyst to speed up its implementation.

Policy has built a bridge over the coronavirus valley. The warp speed of events strains the capacity of policymaking institutions around the world. Thankfully, U.S. policymakers have risen to the occasion. The ever rising pace of technological change implies even bigger challenges on the other side of the bridge, where the transformation to the virtual world continues to accelerate. A major rethink of the rules for globalization is going to shape this transformation.

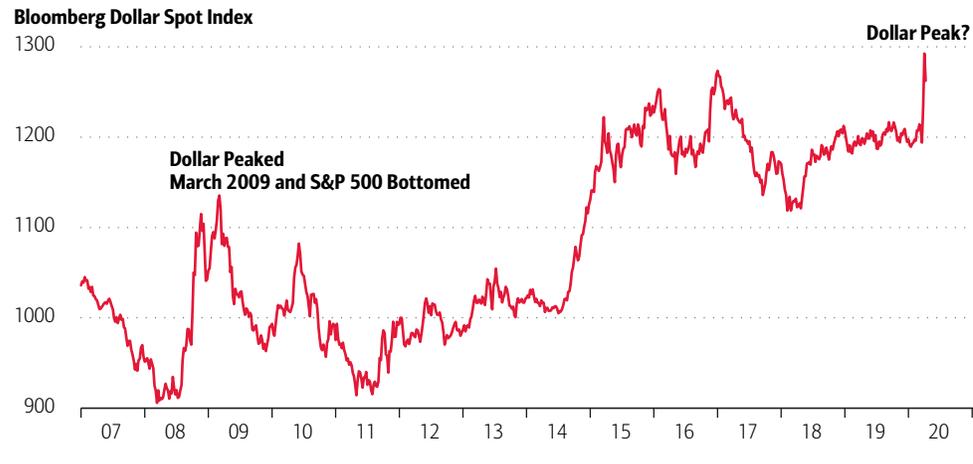
What role is the dollar playing in financial conditions and what may lie ahead?

If there were any doubts about the U.S. dollar's status as the world's reserve currency, they have been put to rest the last few months. The dollar has strengthened against nearly every major and EM currency year-to-date and the Bloomberg Dollar Spot Index reached an all-time high on March 23. The strength of the dollar reflects its reserve status, the relative strength of the U.S. economy prior to the coronavirus crisis as well as the flight-to-quality from the pandemic itself, which caused massive demand for dollars as financial stress rose and risk-off sentiment set in. Ensuing currency volatility led to the unwinding of carry trades, punishing EM currencies and raising the cost of dollar-denominated debt. Meanwhile, the onset of a global recession has reduced demand for commodities, which are priced in dollars, further reducing the supply.

A stronger U.S. dollar is serving to tighten financial conditions and exacerbate deflationary forces both in the U.S. and abroad. Aggressive reflationary policy by central banks along with much needed Fed dollar liquidity facilities to relieve funding pressures should ultimately lead to a weaker dollar, in our view. Recent activity in foreign exchange markets suggest we may be in the early phases of a dollar peak, but we will likely also need to see persistent relief from the coronavirus crisis to reinforce the global recovery.

Importantly, the dollar will be a key indicator to watch for a turn in equities and other risk assets. For example, during the Financial Crisis of 2008-2009 the Bloomberg Dollar Spot Index rolled over coincident with the bottom in the S&P 500 in March 2009. Dollar weakness was confirmation that deflationary forces and financial stresses were abating and global growth was making a turn.

Exhibit 7: King Dollar could signal a turn in risk assets



Source: Bloomberg/Haver Analytics. Data as of 3/26/2020. **Past performance is no guarantee of future results.**

What role is the collapse in oil prices playing in the market volatility and what might investors anticipate for them?

The spread of the coronavirus sapped global energy demand at the same time an already well-supplied market merged with an oil price war that saw two of the largest producers (Saudi Arabia and Russia) plus the United Arab Emirates (UAE) raise production. The oil market also had a pre-existing condition (oversupply and ample capital) that made it vulnerable to a demand shock, similar to conditions in the U.S. housing market in the lead up to the Great Recession. The demand shock and price wars are pushing a deleveraging cycle that is likely in its early stages, in our view. Oil companies and countries are rebalancing for the long-term. For investors, consolidation and persistent volatility in the energy space should be expected.

The longer the market operates in a state of oversupply the more inventory builds up on land and on ships at sea. Potential U.S. fiscal bailout options for targeted oil companies may only serve to add to the global surplus. Further, while the Saudi/Russia disagreement is cited as the source of the near-term oversupply there are secular themes at work. Climate change, the shift to green energy and the prospect for peak oil demand in the years or decades ahead encourage countries with low production costs to monetize oil assets and they may be willing to do so at low prices. For example, the two countries with the largest proven reserves, Venezuela and Saudi Arabia, have production costs that are well below even current prices.² While perma-bulls will cite fiscal budget breakevens that are much higher as reasons for oil prices to move higher, there seems to be a focus more on market share at the expense of price and revenues for social spending. While both Saudi Arabia and Russia have foreign reserves and can manage lower prices for longer to some extent, other oil-producing countries such as Iraq, Nigeria, Libya and Venezuela will likely struggle at these prices.

On the demand side, this will also be the first year when oil demand falls since 2008. While the demand collapse is directly related to the spread of the coronavirus and the slowdown in manufacturing, shipping, air freight, commercial air travel and general transportation, as mentioned the longer-term demand dynamics are also shifting. The end result is a double barrel problem for the U.S. energy industry which has higher production costs than other major producers—a simultaneous oil price war and slowing global oil demand.

The U.S. energy industry experienced an amazing resurgence over the last decade due to innovation and technology, capital markets and investors open to funding the industry

² Source: Organization of the Petroleum Exporting Countries (OPEC), Annual Statistical Bulletin, 2018.

regardless of cost of capital or returns on capital, and old fashioned U.S. ingenuity resulting in the U.S. becoming the world's largest oil producer. However, the “dry hole” for the U.S. energy industry is that the economics do not work for U.S. exploration and production (E&P) companies at \$25-\$35 oil prices. This means a lengthy price war or a prolonged impact of the virus on demand will increase the financial pressure on smaller and weaker energy producers and U.S.-centric oil service companies. On that note, BofA Global Research sees downside risks for oil prices in the near term without coordinated production cuts with the potential for prices to fall below \$20 per barrel. For the calendar year they expect Brent crude oil prices to average \$37 per barrel and West Texas Intermediate (WTI) to average \$32 per barrel with downside risk.

FIXED INCOME

Into The Valley

Even with 2008 as a reference point, the recent volatility and painfully quick drawdown in markets has been unprecedented. A silver lining for bond investors, though: price drops on high-quality bonds caused by poor liquidity—and not a significant decrease in cash flows—can set the stage for very good prospective returns. In an era of “lower for longer” rates, this is an opportunity that may provide much-needed relief for disciplined savers.

The coronavirus health crisis and oil price war were a double shock for markets that effectively caused a global “run-on-the-bank” for U.S. dollars. As many banking functions have been transferred away from commercial banks to financial markets, a scramble for cash now impacts broad equity and fixed income markets more, and individual banks less.

A liquidity drain exhibits itself in different ways. For an individual, a “dash for cash” is literal: head to the ATM, withdraw more cash. A corporation acts similarly, but its cash sources are different—and many of them do not reside within traditional commercial banks.

For example, companies use commercial paper (CP)—effectively bonds with less than one year to maturity—as a cash source, issuing CP as short as overnight to dealers. Like individuals, companies also use money market funds to invest excess cash.

In a liquidity crunch, corporations tap both sources: issue CP and make fund withdrawals. Money funds, however, are themselves large buyers of CP; so corporations securing cash from both avenues can increase CP supply dramatically. Too much new issue CP supply—from corporate issuers; too much existing CP supply—from money market investors, selling CP they own to the secondary market to fund withdrawals.

As too much supply meets shrinking demand, supply shocks lock-up markets. Bond dealers are limited in how much CP they purchase to own; dealers are “moving docks, not warehouses”—their natural function is to find end investors, not act as end investors themselves.

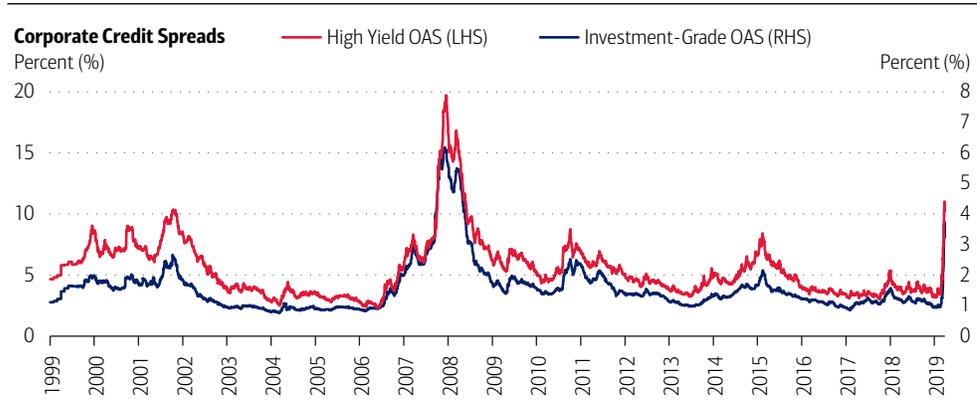
This shock cascades across markets. Money funds, unable to sell CP at decent levels, look to raise cash in other ways. They may stop lending “repo”—short-term loans secured by high-quality bonds. When they stop lending repo to dealers, dealers may have less to on-lend to other customers: a hedge fund using repo to finance Treasury bonds that are hedged with Treasury futures; a mutual fund using leverage to increase returns in a bond portfolio; a mortgage real estate investment trust (REIT) using repo to finance its mortgage-backed security (MBS) holdings.

While not exhaustive, every element of the above happened in mid-March. Companies struggled to issue CP; money funds had difficulty selling CP, and several required cash infusions from their parent companies; hedge funds had trouble financing speculative positions, roiling Treasury markets and creating never-before-seen volatility; investors came in on a Sunday afternoon attempting to sell billions of dollars of MBS that they could no longer finance.

[RETURN TO TABLE OF CONTENTS ►](#)

This caused significant damage across all fixed income markets. Investment grade bonds hit yields (4.6%) and spreads (+363 bps) that have not been seen in over 10 years; corporate spreads have never been wider than these levels outside of the Financial Crisis of 2008-2009. High yield hit almost 11% yields and leveraged loans hit 13% yields.

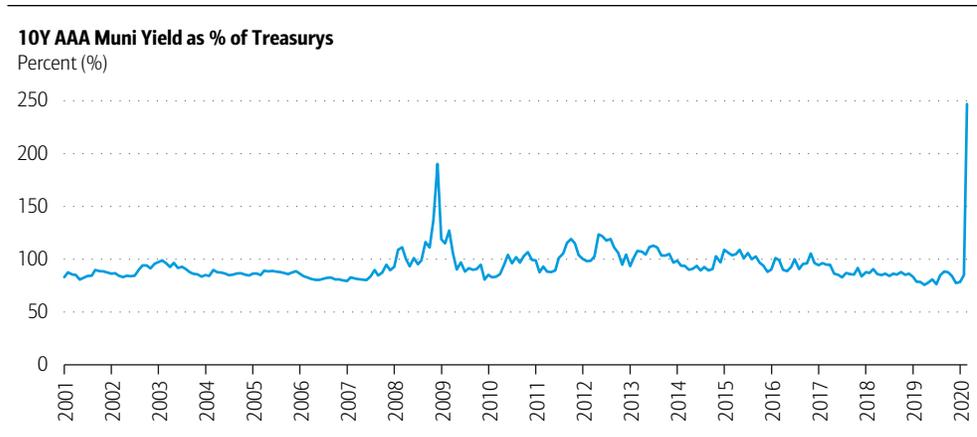
Exhibit 8: Coronavirus and an oil shock push spreads to recessionary levels



Source: Bloomberg. Data as of March 25, 2020. OAS=option-adjusted spread.

Even the municipal bond market, generally considered a safe-haven for risk-averse investors, saw severe dislocations. From January 2019 through February 2020, retail demand for munis had been extremely strong, and municipal bond mutual funds and exchange-traded funds (ETFs) saw a record \$120 billion of net inflows. However, in the coronavirus flight to quality, this quickly reversed; investors redeemed a record \$26 billion from muni funds in the two weeks ending March 25. The resulting bids-wanted peaked at over 12x their historical average, overwhelming the relatively narrow muni investor base (mostly tax-sensitive individuals). Municipal bond yields soared over 200 basis points from March 9 to March 20, with muni-to-Treasury yield ratios skyrocketing even above their highs from 2008 (muni yields and ratios have since receded from these high levels, but remain elevated).

Exhibit 9: Munis lose their flight-to-quality status



Source: Bloomberg. Data as of March 25, 2020. **Past performance is no guarantee of future results.**

The dash for cash was especially disruptive to short-term munis. Variable rate demand notes (VRDNs), which are held in municipal money markets as well as many municipal bond funds, saw very large tenders in mid-March. Dealer inventories rose from \$7 billion on March 11 to over \$25 billion on March 18, causing the benchmark rate on weekly VRDNs to shoot from 1.28% to 5.20% (it re-priced on April 1 at 1.83%, with dealer inventories down to more normal levels).

- From peak-to-trough, the losses in only two weeks were staggering: -15% in corporates; -11% in municipals; -21% in both high yield and loans. However, unprecedented levels of fiscal and monetary stimulus, as discussed below, sparked strong rallies in these sectors during the last week of March.

Over The Bridge

In a strange quirk of fate, the Financial Crisis of 2008-2009 may actually have had a huge benefit, in retrospect: forestalling an even greater crisis now. In 2008, policymakers were driving blind; but the Fed now has a roadmap. It is significantly easier to dust off the 2008 playbook rather than to create a totally new one.

And this is exactly what the Fed has done—the same things they did in the 2008-2009 Financial Crisis:

- Immediately drop rates to near zero, start buying securities in large size;
- Re-start a program to help companies issue CP (the Commercial Paper Funding Facility);
- Re-start a program to help funds sell CP (the Money Market Mutual Fund Liquidity Facility);
- Re-start a program to help dealers fund securities (the Primary Dealer Credit Facility);
- Re-start a program helping securitization deals (the Term Asset-Backed Securities Loan Facility);
- Make U.S. dollars available to central banks across the globe (FX Swap Lines).

In addition, the Fed managed to create two new programs to:

- Help companies issue debt (the Primary Market Corporate Credit Facility); and,
- Help investors sell corporate bonds and ETFs (the Secondary Market Corporate Credit Facility)

The Fed is even helping out munis. Municipal paper maturing in less than 12 months, including VRDNs, are now eligible collateral in the Money Market Mutual Fund Liquidity Facility. Furthermore, the CARES Act provides for the creation of a Federal Reserve facility to make open market purchases of state and municipal debt (as well as direct loans to those entities), with \$454 billion in first-loss capital provided via the Treasury's Exchange Stabilization Fund (ESF).

All of this—which took several months to cobble together in 2008—was accomplished in only one week in 2020.

The Other Side

From this point forward, prospective bond returns may be quite good, in our view. High-quality bonds now yield substantially more than inflation—that has not always been the case over the past decade. Furthermore, investment grade corporates do not carry significant credit risk, so investors' cash flows are likely very similar to what they were before the recent crisis. The average credit losses in the investment grade market are only 0.05% per year since 1983; the highest rolling five-year average was 0.17% after the Financial Crisis of 2008-2009. We do not believe the cash flow profile of a diversified investment grade corporate bond portfolio has changed materially, and—while there may certainly be more downside in market prices, as market conditions change—investors who have the willingness and ability to tolerate further volatility can potentially be compensated over the long term with these higher yields. Furthermore, the Fed's unprecedented actions to support the primary and secondary corporate bond markets may help to set an effective "cap" on how high rates or spreads may move, in our view. For this reason, we have moved from neutral to slightly positive on investment grade corporate credit.

[RETURN TO TABLE OF CONTENTS ►](#)

For high yield bonds, however, credit losses are a material drag on total returns. Even factoring in extremely high credit losses over multiple years, though—like those witnessed in the 1990s recession, the technology, media and telecommunications (TMT) crisis, and the Financial Crisis—current yields do provide adequate compensation and positive expected loss-adjusted returns over a multi-year time horizon. However, that does not insulate investors from market value losses, as volatility ebbs and flows and actual credit losses start to materialize. Therefore, any addition of high yield risk should be down in a measured way with a multi-year time horizon in mind.

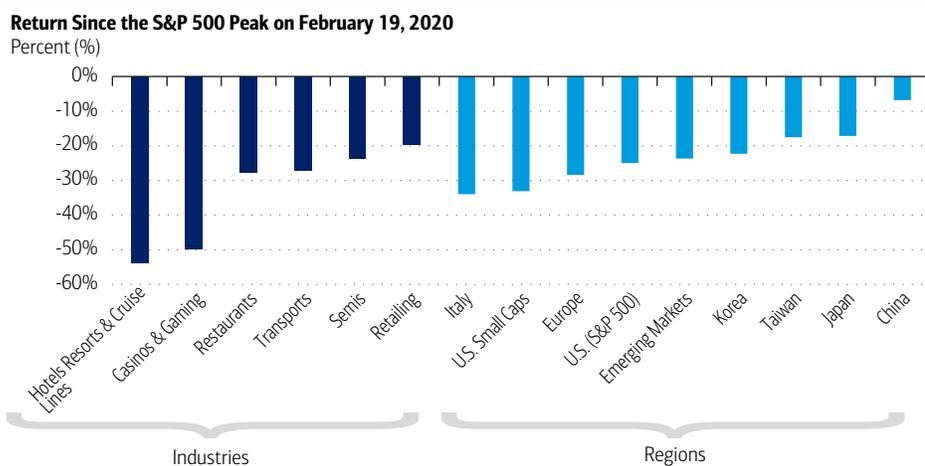
We do expect the coronavirus to increase fiscal and budgetary pressures for most states and local governments, with a decline in sales and income tax collections and an increase in government service costs over the near-term. Positively, states and local governments enter this current period after over a decade of economic expansion and increasing tax collections, and most have filled their rainy day funds to strong levels. Also, the CARES Act provides for \$150 billion to states and local governments, along with \$100 billion to hospitals, \$31 billion to education, \$10 billion to airports, and \$25 billion to transit authorities. While we expect a modest deterioration in muni credit quality, we do not expect a significant increase in municipal bond defaults over the near-to-intermediate term.

EQUITIES

Into The Valley

After a strong finish to 2019, equity markets globally have been hit by a pair of exogenous shocks including the ongoing coronavirus outbreak as well as oil prices crashing by 53%.³ The S&P 500 officially entered a bear market 16 trading days following its February 19 peak, making it the fastest end to a bull market since the Great Depression era. Large caps have outperformed small caps during the selloff (-25% versus -33%), while Europe, Japan and EMs have fallen 28%, 17%, and 24% respectively, with industries exposed to consumer discretionary spending like travel/leisure dropping even more sharply (Exhibit 10). Markets remain under significant pressure, with the VIX hitting an all-time high on March 16th, as investors price in a global recession that may have already begun.

Exhibit 10: Industry and regional returns since the S&P 500 peak on February 19, 2020



Source: Bloomberg as of March 27, 2020. Korea is the Korea Stock Exchange KOSPI Index, China is the Shanghai Composite, Europe is the STOXX Europe 600 Price Index, Japan is the Nikkei 225, Taiwan is the Taiwan Stock Exchange Weighted Index and Italy is the FTSE MIB Index.

Over the past month, the outlook for global economic activity has continued to weaken as the impact from the ongoing coronavirus outbreak intensifies. This will likely weigh significantly on corporate earnings, and we now expect S&P 500 earnings per share to drop 29% in

³ Source: Bloomberg from March 5, 2020 to March 27, 2020.

2020, led by cyclical sectors including Energy, Financials and Industrials, as well as Consumer Discretionary industries like travel/hospitality and restaurants. BofA Global Research has revised their year-end price target for the S&P 500 to 2,600, from 3,100, reflecting the growing headwind to equities from the virus. The imposition of a whole-country lock-down in Italy, Spain and parts of the United Kingdom suggests economic growth and earnings will slow sharply across Europe as well. A slowdown in manufacturing is expected to hit Japan hard along with a slowdown in tourism, which fell by 58% in February led by a remarkable 91% drop from China.⁴ As a result, consensus earnings expectations for 2020 have been revised lower for both Europe and Japan over the past few weeks (now -11.8% and +0.1% respectively)⁵ and we expect further downside especially given their exposure to cyclical sectors.

The extent of the recent sell-off in the S&P 500 is in line with the average historical bear market sell-off at -34% from peak to trough, despite only taking 33 days (Exhibit 11). The price-to-earnings (P/E) multiple declined by 7.5 points, or 34%, from recent highs. Bond yields also collapsed by as much as 111 basis points from their peaks while concerns about a potential recession have driven corporate credit spreads and volatility to multi-year highs. Bear markets can be painful, and on average they unfold over 455 days from peak to trough. However, history suggests that once they trough, the average return after 12 months is 39%, so investors who stay in the market tend to be rewarded over time.

Exhibit 11: A Bear Market Dashboard (from 1946 to March 23, 2020)

Bear Market Metric	Current*	Average	Median	Minimum	Maximum
S&P 500 Drawdown	-34%	-34%	-32%	-20%	-57%
Trailing 12 Month Earnings per Share Decline	N/A	-39%	-42%	-24%	-52%
Trailing 12 Month Sales Decline	N/A	-9%	-11%	-2%	-12%
Days from Peak to Trough	33	455	482	33	1111
Days to Recover from Trough to Previous Peak	–	735	434	83	2114
12 Month Forward Return from Trough	–	39%	34%	23%	69%
Price/Earnings Contraction	7.5	6.4	6.4	1.6	13.3
Dividend Yield at Trough	2.7	3.2	3.4	2.0	4.1
10 Year Treasury Yield Decline	-1.11	-2.98	-3.46	-1.11	-3.90
Increase in Volatility (VIX)	583%	405%	378%	148%	718%
Investment Grade Credit Spread Increase	2.8	4.1	4.1	2.8	5.4
High Yield Credit Spread Increase	7.9	12.6	12.6	7.9	17.4

*Current sell-off uses March 23, 2020 as the trough. Note: S&P 500 Drawdowns, Number of Days from Peak to Trough, Number of Days to Recovery, Price/Earnings Contraction and Dividend Yield at Trough uses peak/trough dates of S&P 500 bear markets. All other data refers to peaks/troughs for the respective metrics occurring around the same time periods, where data was available. Average, Median, Minimum and Maximum columns all include the current bear market except for Days to Recover and 12 Month Forward Return from Trough. Price/Earnings Ratio is based on trailing earnings. Investment Grade and High Yield spreads are Bloomberg indexes. Sources: Bloomberg; Chief Investment Office. Data goes back to 1946, as of March 23, 2020.

Over The Bridge

Despite the historic selloff and economic gloom, underlying forces like policy stimulus and bruised sentiment among others are laying the foundation for a recovery in equity prices.

Investor sentiment has turned bearish as reflected in the latest AAIL⁶ survey which signaled more than 52% of retail investors were bearish, the largest share since 2013. In addition, the BofA Global Research Bull & Bear Indicator has fallen to 0 as April 2, and the Global Fund Manager Survey (FMS) cited the fourth largest rise in cash holdings since 2001, from 4.0% to 5.1%, both representing contrarian buy signals. Corporate insiders are also reportedly buying the most shares relative to ones they've sold since 1999,⁷ a sign that they are seeing value in the context of the longer-term picture.

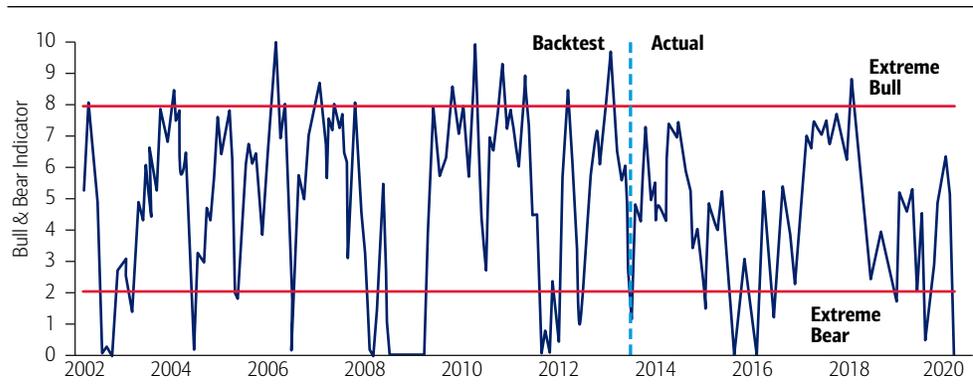
⁴ Source: Evercore ISI as of March 19, 2020.

⁵ Source: FactSet as of April 2, 2020.

⁶ American Association of Individual Investors, as of March 26, 2020.

⁷ Source: Bloomberg as of March 17, 2020.

Exhibit 12: BofA Bull & Bear Indicator History



Source: BofA Global Investment Strategy. Data as of April 2, 2020.

In leveraging the lessons from the Financial Crisis of 2008-2009, policymakers have responded with 'shock and awe'-sized stimulus, which should help to cut off the left tail for growth and sentiment. In the U.S. the government has officially passed a \$2T fiscal spending package while the Fed has cut rates to zero and indicated 'unlimited quantitative easing (QE)' to ensure smooth market functioning. The European Central Bank (ECB) has engineered easier financial conditions by launching a massive asset purchase program, while monetary policy remains ultra-accommodative in Japan. At the same time, fiscal stimulus is beginning to gain traction as Eurozone finance ministers have reportedly agreed to 120B euro of fiscal stimulus and announced other measures worth 1.2T euro to help companies avoid bankruptcy and mass layoffs.⁸ Germany is also considering a stimulus package that could total \$810B, with even more spending to come once the virus is contained.⁹ And since the outbreak, China has implemented numerous easing moves that include rate/fee/tariff cuts, easing credit, and increasing government spending to support housing and autos. The effectiveness of fiscal stimulus measures at cushioning the impact from the outbreak will be key for the economic recovery.

The strength of the U.S. financial system should also serve as an important bedrock for the recovery. Bank stocks are currently reflecting a U.S. recession and the accompanying pickup in defaults and weaker profitability. However the improved level of liquidity and capital that banks hold on their balance sheets should leave them in a better position to absorb losses without endangering the stability of the financial system, thanks to measures implemented by the Fed following the Financial Crisis of 2008-2009, such as stronger capital requirements, stress-testing, and new liquidity regulations.¹⁰ Indeed, according to the Fed, the most recent stress test from June 2019 indicated that banks should be capable of lending even in the event of a severe global recession as they remain well-capitalized, with high levels of liquid assets and stable sources of funding.¹¹ This suggests that rather than being a part of the problem as they were in the lead-up to the Financial Crisis of 2008-2009, banks could be positioned to be a part of the solution.

A key catalyst for a rebound in equities will also be signs of progress toward containing the virus outbreak. According to BofA Global Research, every additional week added to the duration of the economy's shutdown damages not only the current and subsequent quarters, but also likely portends a deeper confidence shock and an even weaker post-shutdown recovery. That said, it is encouraging that economic activity is stirring back to life in China with reports indicating the work resumption rate outside of Hubei province is around 60% for small/medium firms and more than 95% for larger firms.¹² Signs that the number of coronavirus cases in the U.S. and Europe is peaking and the medical community

⁸ Source: Reuters "Europeans ask what has EU done for us? Answer: 2.5 trillion euro stimulus" as of March 19, 2020.

⁹ Source: Reuters "Germany eyes post-virus stimulus package" as of March 24, 2020.

¹⁰ BofA Global Research "This is not 2008". March 13, 2020.

¹¹ Source: Financial Stability Report, Board of Governors of the Federal Reserve System, November 2019.

¹² Source: Reuters "Over 95% of larger Chinese firms outside Hubei resume work: Official" as of March 12, 2020.

[RETURN TO TABLE OF CONTENTS ►](#)

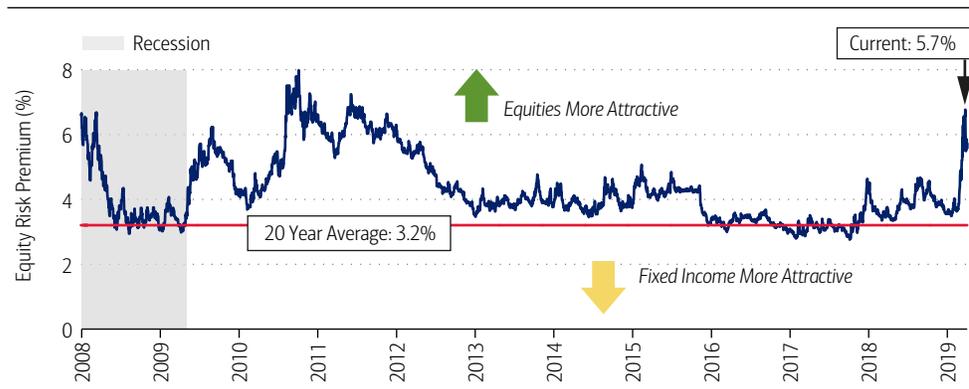
is progressing towards a viable vaccine should enable investors to look beyond the worst case scenario from a health crisis point of view. When this happens sentiment should push P/E multiples higher with the outlook for corporate profits improving thereafter.

The Other Side

We recommend a high-quality bias within global equities, preferring U.S. large-caps, whose healthier balance sheets should be better-positioned to withstand the higher market and cash flow volatility we expect this year. Tighter credit conditions will pressure small caps more as almost 70% of small cap debt is high yield versus less than 10% for large caps.¹³ Growth should continue to outperform Value which has higher relative weight in Financials and Energy, as oil prices and interest rates remain depressed.

Equity valuations are also far more attractive than they were heading into 2020, both in absolute terms and relative to fixed income, and should set up attractive entry points for long-term investors once fundamentals begin to improve (Exhibit 13). The current equity risk premium of 5.7% is higher than the historical average of 3.2%, and in the 94th percentile of its historical range, which makes expected equity returns more attractive than those for fixed income.

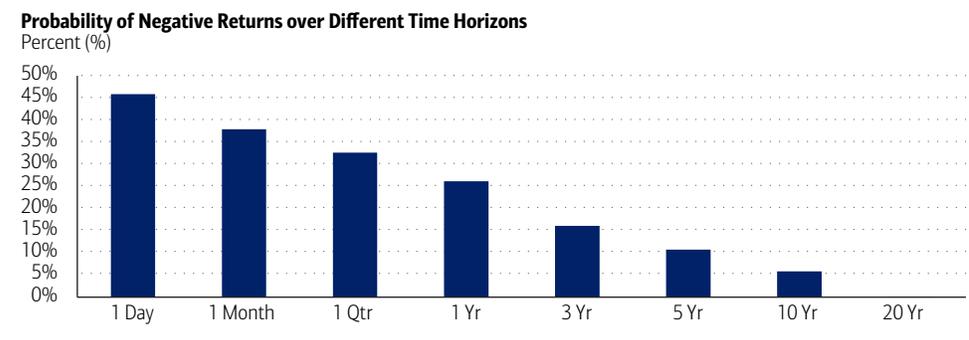
Exhibit 13: Equity valuations have become more attractive



Source: Bloomberg. Data as of March 31, 2020. **Past performance is no guarantee of future results.**

Recent market developments underscore the importance of diversification in portfolios, both within equities and across asset classes, to help mitigate periods of higher-than-expected volatility. During periods of heightened market stress and economic uncertainty, we believe that investors should extend their time horizons and think from a long-term perspective, which helps lower the probability of experiencing negative equity returns (Exhibit 14).

Exhibit 14: A longer time horizon lowers the probability of negative equity returns



Source: BofA Global Research. Data since 1929, as of 2020.

¹³ Source: BofA Global Research as of March 24, 2020.

Outside the U.S. we believe that risks are rising for EM equities, which are likely to face headwinds in the near term from dollar strength, low oil prices and slower global economic growth. While economic activity in China may recover sooner than in other EMs, it will likely face weaker demand from abroad as many countries remain shut down. Furthermore, once the impact from the virus outbreak starts to ease, EMs may still face headwinds from less fiscal flexibility compared to Developed Markets, the structural reorganization of global supply chains and the potential resurfacing of trade/technology tensions between the U.S. and China. We maintain our slight underweight stance on International Developed Market equities especially Europe which remains saddled with an incoherent fiscal union, a weak banking system, Brexit uncertainties and negative interest rates. Ultimately, a pickup in interest rates as economic growth and inflation expectations recover is a key prerequisite for better relative performance for European and Japanese equities, in our opinion, but we are not there yet.

To the New Frontier

Post the coronavirus crisis, and thinking long-term, we anticipate a number of structural changes to economic activity (manufacturing and services), creating a new frontier for certain industries. Think rising demand for biosecurity activities, including monitoring and tracking devices for populations internal and external. Global healthcare is set to become more remote and mobile, which portends more earnings upside for both providers of hardware (such as smartphones) and tele-medicine firms. In that the massive work-at-home shift in the U.S. has put unprecedented strains on telecommunications networks (slower internet speeds, a spike in internet traffic, clogged phone portals, etc.), we expect greater spending on 5G telecom networks, fiber optics infrastructure, and related activities. Even after the crisis passes, the number of remote workers is expected to remain larger. The “localization” of global supply chains entails more spending on robotics and 3-D printing, while business-to-business and business-to-consumer deliveries will more often be via unmanned drones. Finally, the proliferation of human tracking and monitoring, among many other activities, suggests even more data aggregation and therefore soaring demand for cloud-based services.

MARKET STRUCTURE CHANGES

How does increased market volatility impact exchange-traded funds?

During times of increased volatility, the prices of the underlying securities that make up an ETF may become difficult for the market to determine, and the price of the ETF may reflect that uncertainty. Examples:

- International markets that are open at different times than U.S. markets.
- Less frequently traded securities like bonds or bank loans.
- Any market that is digesting unexpected, significant news.

Market makers react to this by increasing the size of the spread to compensate for the increased uncertainty, and net asset values (NAVs) may lag the price of the ETF as the underlying positions are re-priced. As conditions normalize, spreads tend to narrow back to previous levels and ETF price premiums and discounts to NAV also narrow.

Investors should consider using ETF-trading best practices in both volatile and normal markets:

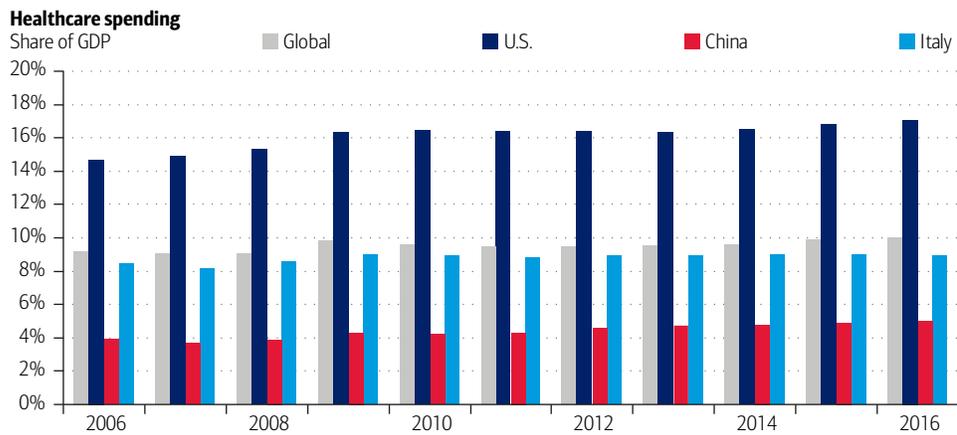
- Consider using a “limit” order, one specifying a limit on the buying or selling price.
- Use caution if trading at market open or close.
- Consider extreme fluctuations which can lead to premiums or discounts to NAV and potentially higher costs.

[RETURN TO TABLE OF CONTENTS ►](#)

Which industry trends do we expect to see emerge from the coronavirus crisis?

On the other side of the economic valley, we anticipate a range of structural changes across several key industries that should continue to unfold long after the coronavirus crisis. The healthcare sector will clearly lie at the center of the policy response, both in the immediate term and beyond. The virus has revealed major shortfalls in capacity across healthcare systems around the world, in both emerging and developed economies. This highlights a fundamental lack of preparedness not only for medical emergencies, but also to meet growing demands over the coming years from ageing populations and rising incidence of chronic disease. We therefore expect spending on healthcare infrastructure to increase globally over the years ahead as medical service providers look to build demand-surge capacity for diagnosis, treatment and monitoring. Healthcare expenditure has remained relatively stable at 9%-10% of global GDP over the past several years with large disparities in both spending and efficiency across individual countries (Exhibit 15). The U.S. leads the major developed economies in total outlays at around 17% of GDP, with most developed countries in Western Europe such as Italy (9%), Germany (11%) and France (12%) around the global average. Lagging far behind are many large economies in Asia, including China (5%), India (4%) and Indonesia (3%), and the coronavirus crisis is likely to bring forward much-needed investment in medical equipment and healthcare facilities across these markets.

Exhibit 15: Global healthcare spending has remained relatively stable over the past several years



Source: World Bank. Data as of 2019.

Greater reliance on remote patient care is one of the key solutions that is likely to emerge from the crisis. This is a suite of remote communication tools that uses smartphones and other connected devices to aid patient and provider decision-making, including early intervention through remote monitoring or prevention of unneeded doctor visits through remote diagnosis. Mobile health devices (whether specialized telemonitoring equipment or smartphones with dedicated health applications) are able to send data in real-time between patient and provider, tracking symptoms to ensure timely treatment, while remote consultation services can help doctors avoid unnecessary in-person meetings when their time would be better spent with patients in greater need of direct contact.

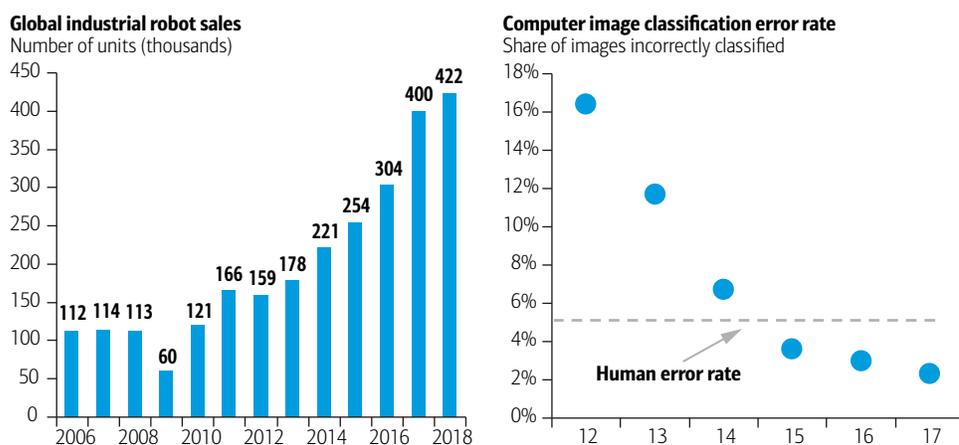
The trend toward automation in manufacturing and service operations is also likely to accelerate as we reach the other side of the coronavirus crisis. The twin supply chain shocks of recent years from the U.S.-China trade war and now the coronavirus crisis underscore the need for more resilience in the sourcing of intermediate goods and components in manufacturing (including pharmaceuticals), not only for operational purposes but also for reasons of national security and intellectual property protection.

[RETURN TO TABLE OF CONTENTS ►](#)

This should support the localization of manufacturing activity through faster adoption of robotics and new techniques such as 3D printing. More automation in both manufacturing and service activity will also bring a range of additional benefits in a post-coronavirus world. More restrictions, for example, on travel and migration are likely to exacerbate labor shortages in areas such as agriculture harvesting. Greater emphasis on hygiene will favor the use of robots over humans in packaged food preparation. And a potential tendency toward less person-to-person contact in key services such as transportation and retail is likely to encourage the delivery of these services with a reduced dependence on labor.

Industrial and service automation also stands to be enhanced by the significant improvements in artificial intelligence functionality of recent years (Exhibit 16).

Exhibit 16: Automation Trend To Be Supported By Continuing Improvement in Artificial Intelligence Functionality



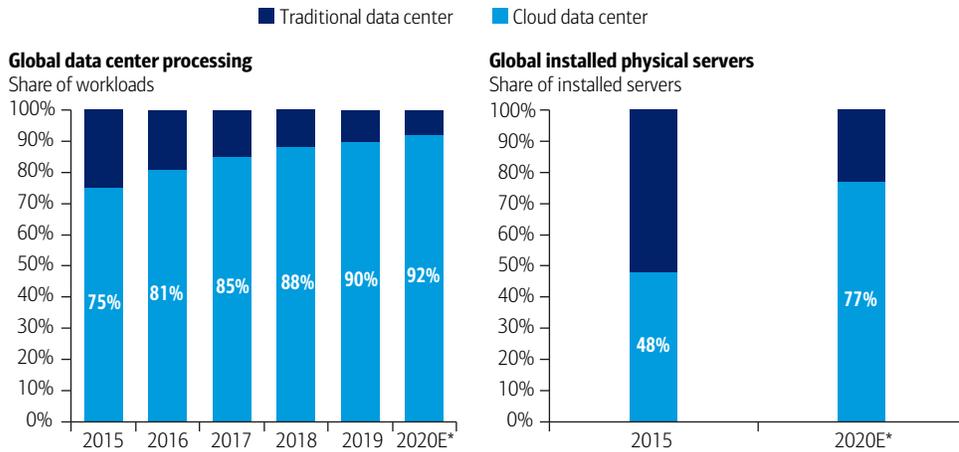
Source: International Federation of Robotics, ImageNet. Data as of 2019. Classification error rates based on ImageNet Large Scale Visual Recognition Challenge.

Computer vision software that can process data from machine-mounted cameras and sensors will increasingly allow industrial robots to operate in unstructured environments which require more flexible physical maneuvering. In agriculture for example, a significant portion of fruit and vegetable harvesting is still performed manually, but improvements in machine vision have already spawned robotic pickers that can identify produce that is ready to be harvested. And in retail, the number of cashier-less grocery stores is on the rise, using cameras and sensors to track items as they are removed from shelves and allowing customers to check out automatically with no need for human input. We believe this trend should also be strengthened in the wake of the coronavirus crisis.

Cloud computing should also be adopted more widely as an additional solution on the other side of the current downturn. Cloud-based services reduce the need for companies to invest in their own information technology capabilities. Instead, organizations and individual users across a range of industries can subscribe to centrally-hosted services via remote servers. This replicates many corporate functions that have traditionally been performed in-house, allowing end users to simply access cloud-based applications through a web browser. This not only cuts capital expenditure needs on software, servers and networking equipment, but also allows information technology (IT) capability to be scaled up or down according to user demand and allows users to benefit from the outsourcing of maintenance, support and upgrades. Demand for cloud-based software services has been on the increase with the expansion of social distancing, and this comes on top of the existing structural growth in demand for other cloud services such as remote storage and processing as global data volumes expand (Exhibit 17). With the likelihood of increased reliance on telecommuting for office workers and distance learning in education, we would expect an even greater demand for cloud services as global enterprises emerge from the coronavirus crisis.

[RETURN TO TABLE OF CONTENTS ►](#)

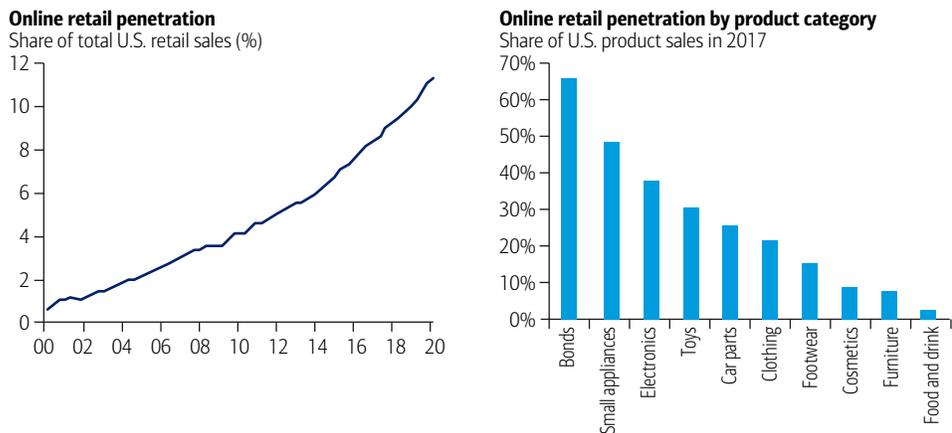
Exhibit 17: Cloud Services Providing a Growing Share of Computer Processing and Storage



Source: Cisco Systems. Data as of 2019. *E = estimate.

Shifts in consumer behavior are also likely to drive patterns of economic activity as we come out of the current downturn. Any persistent change in perceived risks around offline entertainment in large groups within the physical world should only reinforce the trend toward digital media in areas such as online gaming, virtual reality, video streaming and social networking. Rising mobile device penetration (particularly in emerging economies), faster broadband speeds and the rise of new online services are already causing global internet data usage to surge. And any persistence in behavioral changes in the direction of more social distancing is likely to be met with greater demand for digital services. This tendency should also extend to internet retail. Demand for online ordering and delivery across a range of consumer categories including household products and consumer staples has been on a steady increase over recent decades, but remains relatively low as a share of total retail sales (Exhibit 18). And online sales for individual categories such as food and drink stand well below the average, leaving even greater scope for increased penetration over the years ahead.

Exhibit 18: Internet Retail Rising as a Share of Total Retail Sales



Source: Census Bureau, Forrester Research. Data as of Q4 2019.

[RETURN TO TABLE OF CONTENTS](#) ►

Index Definitions

Securities indexes assume reinvestment of all distributions and interest payments. Indexes are unmanaged and do not take into account fees or expenses. It is not possible to invest directly in an index.

Indexes are all based in dollars.

The **S&P 500** includes a representative sample of 500 leading companies in leading industries of the U.S. economy. Although the index focuses on the large-cap segment of the market, with approximately 75% coverage of U.S. equities, it is also a proxy for the total market.

The **Bloomberg Dollar Spot Index** tracks the performance of a basket of leading global currencies versus the U.S. dollar. The index represents both developed and emerging market currencies that have the highest liquidity in the currency markets and the biggest trade flows with the U.S.

The **Chicago Board Options Exchange's (CBOE) Volatility Index (VIX)** is a market index that represents the market's expectation of 30-day forward-looking volatility. Derived from the price inputs of the S&P 500 index options, it provides a measure of market risk and investors' sentiments.

The **FTSE MIB Index** measures the performance of 40 Italian equities and seeks to replicate the broad sector weights of the Italian stock market. The Index is derived from the universe of stocks trading on the Borsa Italiana (BIT) main equity market.

The **Korea Composite Stock Price Index (KOSPI)** is an index of all common stocks traded on the Stock Market Division. It is calculated based on market capitalization.

The **Merrill Lynch Option Volatility Estimate (MOVE) Index** is a well-recognized measure of U.S. interest rate volatility that tracks the movement in U.S. Treasury yield volatility implied by current prices of one-month over-the-counter options on 2-year, 5-year, 10-year and 30-year Treasuries.

The **Nikkei 225** is the leading index of Japanese stocks. It is a price-weighted index composed of Japan's top 225 blue-chip companies traded on the Tokyo Stock Exchange.

China's composite **Purchasing Managers Index (PMI)** is calculated by the Chinese government using the results of a monthly survey of purchasing managers. The index is intended to capture the prevailing direction of economic trends in the manufacturing and service sectors. The purpose of the PMI is to provide information about current and future business conditions to corporate executives, analysts, and investors.

The **Shanghai Composite Index** is a market composite made up of all the A-shares and B-shares that trade on the Shanghai Stock Exchange. The index provides a broad overview of the performance of companies listed on the Shanghai exchange.

The **STOXX Europe 600 Index** represents 600 large, mid and small capitalization companies across 17 countries of the European region: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

The **Taiwan Stock Exchange Weighted Index** is comprised of companies traded on the Taiwan Stock Exchange (TWSE). The TSEC weighted index is made up of all the stocks in the Taiwan Stock Exchange and each is given a weight based on its market capitalization.

Important Disclosures

Opinions and market data are current as of April 6, 2020 unless otherwise specified.

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