WHATEVER THEY'VE GOT

THE MONETARY, FISCAL & HEALTH POLICY RESPONSE

March 27, 2020

The sudden stop in the global economy due to the spread of the coronavirus requires an aggressive response from monetary, fiscal and health authorities. We saw considerable progress this week, although much uncertainty remains.

Our framework for analyzing the economic and financial market impact of the coronavirus has been to assess the outlook for the monetary, fiscal and health policy responses. There was significant progress this week on the monetary and fiscal front, with less progress evident on the health policy side. Global central banks are unleashing vast programs to purchase assets to improve market liquidity, and they are starting to have an effect. Progress on fiscal programs to support worker income and backstop business credit has been made, headlined by the U.S. Senate's passage of an estimated $2.2 trillion package this week. On the health policy front, testing across the U.S. has accelerated, and we expect levels to reach that of South Korea (viewed as the gold standard) within two weeks. Markets are closely watching new case levels in Italy and Spain as new indicators about how the curve may develop in the U.S. We still expect a fall in new daily cases, and a peak in active cases in the April-to-May timeframe. Financial market volatility, while still historically high, has moderated in recent days as there has been modest improvement in market liquidity. Our investment strategy team met early this week to assess the current state of affairs. We concluded that the likely combination of monetary, fiscal and health policies on the way improved the outlook for financial markets over the next year — especially after the significant sell-off in stocks over the last month. While volatility is likely to remain high in the coming months, we believe investors will be rewarded by being patient through this volatility and remain moderately overweight risk in our global policy model.

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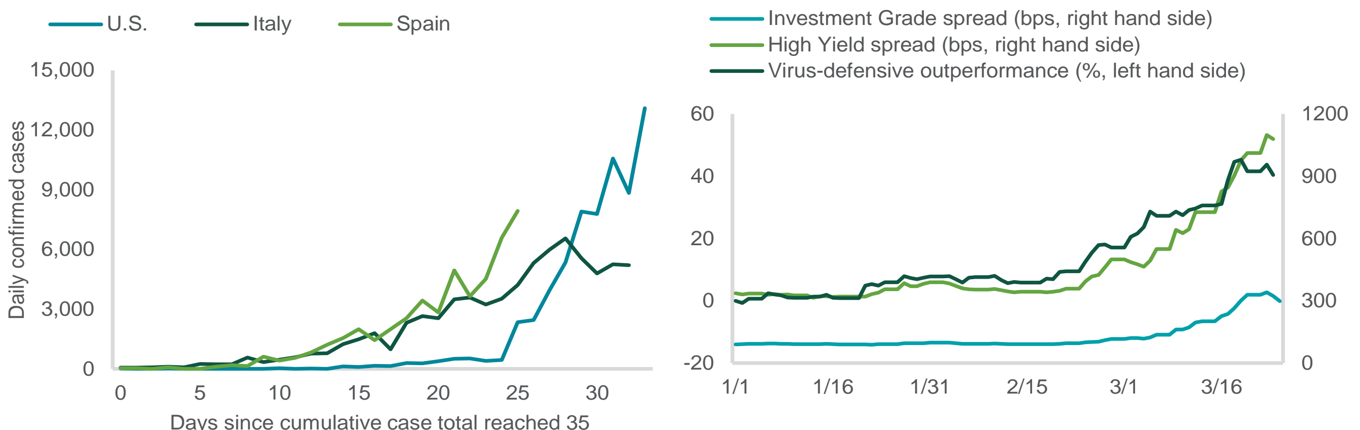
EXHIBIT 1: LOOKING FOR SIGNS OF IMPROVEMENT

New cases in Italy may be stabilizing, and virus-defensive stocks have stopped outperforming.



Source: Northern Trust Asset Management, Bloomberg. Returns are cumulative year-to-date. Virus-defensive outperformance proxied by equity performance of U.S. listed companies expected to outperform in the event of health pandemic (Goldman Sachs Stay at Home Index) minus those expected to underperform (Goldman Sachs Health Risk Exposure Index). Data through 3/25/2020.

MONETARY POLICY UPDATE: LIQUIDITY BARRAGE

Central bankers were the first out of the gates to attack the financial fallout from the coronavirus. First order of business was to increase liquidity in the financial system — leading to policy rate cuts around the world and new quantitative easing programs for those central banks reaching the limits of lower interest rates. In the U.S., the Federal Reserve first cut rates by 50 basis points (bps) on March 3, then by another 100 bps on March 15, bringing it back into zero interest rate policy. It has now pledged to buy unlimited amounts of Treasury and mortgage-backed securities (including commercial mortgages) — starting with purchases of $75 billion and $50 billion per day, respectively. As of March 25 (latest data reported), the Fed balance sheet sits at $5.2 trillion. That is a $1.5 trillion increase since last September, when the Fed began increasing its repo operations to help calm the bank lending markets — already under some stress even before the virus hit. It stands to almost double its balance sheet if all facilities are exhausted (see below).

The second order of business was to act as lender of last resort (and, thereby, also improving liquidity), in an attempt to restore proper functioning in the credit markets. For the Federal Reserve, this meant dusting off many of the lending facilities created during the global financial crisis and adding a few new ones as well. These programs include:

- **Commercial Paper Funding Facility** (CPFF) announced March 17; Fed purchases commercial paper directly from companies
- **Primary Dealer Credit Facility** (PDCF) operational March 20; Fed supports primary dealers (24 selected trading counterparties of the Fed) in the purchase of a wide range of financial securities
- **Money Market Liquidity Facility** (MMLF) newly created program (though similar to a program used from 2008-2010) — operational March 23; Fed provides liquidity to prime money market funds to ensure orderly operations
- **Term Asset-Backed Securities Loan Facility** (TALF) announced March 23; Fed lends to support the issuance of asset-backed securities (credit card receivables, etc.)
- **Primary Market Corporate Credit Facility** (PMCCF) newly created program — operational March 23; Fed purchases debt directly from companies
- **Secondary Market Corporate Credit Facility** (SMCCF) newly created program — operational March 23; Fed purchases corporate debt (and exchange-traded funds that invest in that debt) on the open market

Taken together, this alphabet soup of lending facilities supports a wide array of financial lending — from ensuring companies have access to short-term lending through the commercial paper markets (vital for companies to meet day-to-day obligations) to ensuring money market funds maintain the necessary liquidity to meet client withdrawals (often corporations desperate to raise cash). The addition of the primary and secondary corporate credit facilities is noteworthy, representing an expansion of the Fed's 2008 measures whereby the Fed is now able to purchase qualifying corporate debt, both in the markets and directly from companies. All of these programs are backstopped by the U.S. Treasury to the tune of $454 billion in aggregate and then levered up by the Fed to meet demand – potentially over $4 trillion, effectively doubling the Fed's balance sheet. In total, this is a response that dwarfs the 2008 remedy both in size of asset purchases/lending and in scope. Clearly, the Fed is not messing around this time after learning the lessons of the financial crisis — that is to be bold and go big.

Around the globe, the monetary policy response has also been swift and decisive. Interest rates, where possible, have been lowered aggressively towards zero and large-scale quantitative easing programs resurrected. The European Central Bank has unsurprisingly wielded the biggest bazooka with a combined €870 billion increase in its bond buying program, but the Bank of England and Bank of Japan have not been far behind. Besides these measures, central banks all across the globe have implemented a raft of targeted measures to boost liquidity, free up capital for bank lending and provide cheap sources of funding. A summary of global central bank actions can be found in Exhibit 2.

EXHIBIT 2: MONETARY POLICY SUMMARY

Central banks globally have responded quickly and in significant size.

Central Bank	Measure
Federal Reserve	3/3: Cut policy rate 50 basis points (bps) 3/12: Increased reverse repo operations $1.5 trillion 3/15: Cut policy rate 100 bps to 0%-0.25% range 3/16: Increased reverse repo operations by $500 billion 3/17: Commercial Paper Funding Facility (CPFF) 3/20: Primary Dealer Credit Facility (PDCF) 3/23: Money Market Mutual Fund Lending Facility (MMLF) 3/23: Term Asset-Backed Securities Loan Facility (TALF) 3/23: Primary Market Corporate Credit Facility (PMCCF) 3/23: Secondary Market Corporate Credit Facility (SMCCF)
European Central Bank	3/12: €120 billion bond purchase program 3/19: €750 billion bond purchase program
Bank of England	3/11: Cut policy rate 50 bps 3/11: £300 billion stimulus plan 3/19: Offers unlimited QE for large company financing
People's Bank of China	3/13: Cut policy rate 50 bps
Bank of Japan	3/13: Ample liquidity to financial firms
Reserve Bank of Australia	3/3: Cut policy rate 25 bps

Source: Northern Trust Asset Management.

FISCAL POLICY UPDATE: INCOME AND CREDIT SUPPORT

The virus's negative impact on the economy and health of U.S. citizens forced Congress to work toward fiscal stimulus measures. The first measure totaling $8.3 billion passed into law on March 6. The bill focused on additional funding for the Centers for Disease Control and Prevention and other health organizations looking to inform and fight the virus's spread. The law would also increase the availability of coronavirus tests and subsidize small businesses. On March 18, President Donald Trump signed the second virus-related measure totaling about $100 billion. This measure provides improved sick and paid leave, better unemployment insurance benefits, additional funding for Medicaid and food programs, and free testing for the uninsured. The latest phase passed through the Senate early Thursday morning with the expectation of becoming law within days. This stimulus package totaling about $2.2 trillion is the largest in U.S. history with the components listed below. Congress expects these measures to go into effect in two to three weeks versus two to three months during the time of the global financial crisis.

- $500B business lending. $454B will go to businesses, states and other municipalities. The remainder will go to passenger airlines, cargo air carriers and companies related to national security
- $376B will support small business with loan forgiveness and subsidies
- $340B in appropriations fund for hospitals and public health
- $290B directly helps individuals under certain income levels to support loss of work
- $250B for unemployment insurance
- $232B for corporate tax relief which includes suspending the Net Operating Loss limitation
- $150B will help replace lost tax revenue for state and local governments
- $32B in payroll grants to employees of airlines, cargo companies and contractors

The fiscal policy response in the rest of the world has been quicker but also smaller and more incremental. In Europe, fiscal measures to counter the economic fallout were rolled out relatively quickly at the national level, but on average totaled 'only' 1.5% of gross domestic product (GDP), be it in addition to substantial automatic stabilizers (for instance, a more robust social safety net) and 10% of

GDP in liquidity facilities including loan guarantees. The big fiscal bazooka, whether through newly issued 'Coronabonds' or the deployment of the European Stability Mechanism (ESM) fund, still has to be shot. Australia has been more aggressive in its fiscal response while Japan is currently debating a similarly sized package worth 10% of GDP. Overall, we have little doubt that the stimulus will continue to come through as required. A summary of fiscal policy actions can be found in Exhibit 3.

EXHIBIT 3: FISCAL POLICY SUMMARY

The U.S. leads the way; Europe becomes more aggressive.

Country/Entity	Measure
European Commission	3/14: Coronavirus Response Investment Initiative, directing €37 B to help affected sectors
IMF	3/16: Ready to mobilize $1 T lending capacity
France	3/17: France is releasing emergency budget including €45 B of spending plus €300 B of loan guarantees
Spain	3/17: Will allocate €200 B to offset coronavirus impact
Netherlands	3/17: Government announces tax exemptions to paying 90% of wages
Canada	3/18: $54 B emergency response funding for Canadians
U.S.	3/19: Government announces paid leave for the sick, unemployment insurance and free testing 3/25: $2 T stimulus package
Germany	3/21: €150 B in debt spending
Japan	3/23: Spending of $137 B
China	Feb/Mar: $1.3 T in stimulus through credit, monetary, and fiscal measures.

Source: Northern Trust Asset Management, Cornerstone Macro. Data through 3/25/2020.

EARNINGS OUTLOOK: HIGHLY UNCERTAIN, BUT THERE WILL BE A REBOUND

Global equities continue to be extremely volatile as markets absorb incremental news flow on the health threat and the associated economic harm, as well as the offsets of significant monetary and fiscal stimulus. At the recent market lows, equities were pricing in something far from a full "V-shaped" recovery. Markets have bounced this week on hopes that the fiscal package will have efficacy in staving off a protracted economic downturn, allowing investors to "look across the valley" to what conditions will be on the other side of the health threat. Focusing purely on 2020 company earnings is increasingly irrelevant. Instead, we are focused on the combined 2020 and 2021 outlook to understand what "normalized" earnings will look like post-crisis — the appropriate consideration for valuing the market. To that end, we do believe a portion of the economic damage being done today is unrecoverable. Our 2021 earnings forecast ($160/share; see Exhibit 4) is below the level earned in 2018 and 2019, taking us well off the prior trajectory of expectations. As our analysts are working through their earnings outlooks and getting further guidance from companies, we will be updating these estimates in early April at our next tactical asset allocation meeting. At the recent lows, however, the U.S. market was trading at 14x our 2021 estimate, notably below long-term averages (~16x) despite record-low interest rates and enormous monetary and fiscal accommodation.

Looking ahead, we believe the risk-reward tradeoff remains skewed positively for the U.S. equity market even after this week's gains. While near-term setbacks are possible if not probable, we expect that as the health outlook improves, the market's focus will shift to the combination of pent-up demand and significant policy stimulus — something seemingly already underway this week. To be clear, the virus poses significant near-term economic challenges — small businesses will suffer disproportionately, unemployment will rise meaningfully and earnings will take a significant intermediate-term hit. We do not expect the market to recover to prior levels in the near-term as we have fallen off the prior trajectory of growth. However, a recovery should be facilitated by the lack of structural imbalances in the economy leading up to this crisis — in stark contrast to the financial crisis. We will have to continue to assess the longer-term impact the virus will have on day-to-day economic,

psychological and political functioning, but we think we will be able to reassess that impact at higher market levels.

Outside of the U.S., the story is similar in nature. For both developed and emerging markets equities, we expect a significant earnings decline in 2020, followed by a 2021 rebound from depressed levels. Although we consider policy support in the U.S. more meaningful and less restricted, stimulatory measures should still provide a tailwind moving forward, assuming the health outlook improves over the coming months. The strength of the U.S. dollar has recently served as a headwind, but that headwind should lessen moving forward as such strength is unlikely to persist. The health outlook in a handful of emerging market regions is encouraging (e.g. China, South Korea and Taiwan), but relapse is still a risk and other countries may have not yet seen the worst (e.g. Spain, Brazil, Mexico and potentially India). Coming into the virus, European and Asian economies were weaker than in the U.S., perhaps making them less able to cushion the economic blow. Nevertheless, regional performance will primarily depend on the extent of the unpredictable nature of the virus.

EXHIBIT 4: EARNINGS FALL, THEN REBOUND

2020 estimates are largely a shot in the dark, but earnings should rebound in 2021.

	U.S.	Developed Ex-U.S.	Emerging Markets
2019 Actual	163	128	73
2020 Earnings ($/share)	135	103	60
Calendar Year Growth	-17%	-19%	-19%
2021 Earnings ($/share)	160	122	69
Calendar Year Growth	18%	18%	16%

Source: Northern Trust Asset Management, FactSet. Forecasts as of 3/24/2020; will be reviewed at our next Tactical Asset Allocation meeting the week of April 6. Index proxies are as follows: U.S. (S&P 500); Developed Ex-U.S. (MSCI World ex-U.S.); Emerging Markets (MSCI Emerging Markets).

HEALTH POLICY UPDATE: U.S. TESTING IS IMPROVING RAPIDLY

In our view, one of the most critical components for the national response to the outbreak is the diagnostic testing, which has been slow in the U.S. due to well-documented technical problems and bureaucratic delays. We are closely monitoring the progress in testing using national data and commentary from individual healthcare companies. As of Thursday morning, testing has significantly picked up pace with the latest count at a total of >433,000 tests performed, running at a rate of 60,000-70,000 per day. We estimate that the U.S. would need to do ~95,000 tests per day, and accumulate 1.8 million tests, to reach the same testing levels as South Korea (adjusted for differences in population). We believe this level could be achieved over the next two weeks. We caution that although testing has significantly improved, bottlenecks in the collection of specimens could still hamper and delay the current rate. Widespread diagnostic information is not only important to identify who is infected, but also to inform local governments if they should be enforcing heavier self-isolation measures. We believe regional decisions to transition from mitigation back to containment will rely on an adequate level of state-by-state testing data.

Over the past week, there have been a variety of academic reports released, which provide a wide range of projections as to the possible severity of the outbreak. For example, the Imperial College report from the U.K. provides a worst-case scenario of 80% of the U.S. population becoming infected, with a total mortality of 2.2 million. Another piece, released by two Stanford professors, suggests that the real mortality rate could be as low as 0.01%, lower than seasonal flu at 0.1%. We are cautious on these conclusions as certain academic reports could be intended to influence the policy response. We continue to rely on data from published medical reports, which suggests the mortality rate is in the range of 0.6% to 2.3%, and we are biased toward the lower end of this range.

With respect to a U.S. timeline, we continue to estimate a downward inflection in new daily cases and a peak in active cases in April to May. The timing could coincide with wider availability of diagnostic information, potentially providing a combination of positive events. One new variable is the desire to bring the regional lockdowns to an end by Easter Sunday on April 12, as articulated by President Trump. We believe that decisions to terminate isolation measures before it is appropriate run the risk of extending or worsening the outbreak. However, these decisions may be controlled by the governors, as they initiated the current lockdowns in the first place. We expect to see new infection numbers and diagnostic data over the next two weeks that will be highly informative for regional decisions, as well as our analysis.

CONCLUSION: HELP IS ON THE WAY

Perhaps wizened by the experience of the global financial crisis, policy makers have responded in urgent fashion to the economic and financial market risks of the coronavirus. Financial markets are forward-looking, and have reacted favorably this week in response to these developments. The hard economic numbers are only starting to surface — including this week's announcement of over 3 million initial claims for unemployment — compared with just 211,000 two weeks ago. We will be hit with more bad news on the health front in coming weeks, whether it is hospitals being strained in their intensive care units or an unexpected acceleration in cases in certain regions. We will be watching for the effectiveness of the monetary and fiscal policy announcements on economic conditions and market liquidity, along with the developments from a health policy standpoint. Conditions are not yet set for a material drop in volatility, so investors need to exercise patience and focus on a horizon at least 12 months out. With that focus, we think investors will be rewarded.

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