AQR Macro Wrap-Up
Special Edition

Once Again, A Crisis Like No Other

March 31, 2020

Leo Tolstoy wrote that all happy families are alike, but each unhappy family is unhappy in its own way. If the Russian novelist had applied this to markets, he might have written that all quiet market environments are alike, but each crisis affects markets in its own way.

The current economic crisis has been unique in many ways. It is most frequently compared with the financial crisis of 2008 but it is very different in its origin.[1] It was not caused by something internal to the markets such as excessive mortgage debt, but from an external health crisis. It was a shock which broke the economy from the outside and took markets with it.

The effects, however, seem familiar. It has led to a lack of liquidity, a breakdown of funding markets and in some cases forced selling of assets, all of which existed in the past. Many investors had thought the market moves in 2008 were so extreme that they would not see anything comparable in their lifetimes. Yet here we are less than twelve years later.

When economic historians write the story of 2020, they may find a very complex mechanism through which the health crisis affected the economy. For the folks on the ground now, it seems fairly simple. A huge amount of production and consumption has stopped. Revenues at businesses have plummeted. Many businesses which were completely viable in January are unable to meet their expenses or pay their creditors in March. There is the potential for a negative chain reaction among these creditors which are banks, investors, states and then ultimately the federal government. This is another way of saying the economic system can't function when activity completely stops for a period of weeks and months.[2]

> Few people doubt that the companies within the economy are productive and have value, they just don't know which will survive the crisis to be productive.

Markets have had to adjust to the change in outlook and the very high likelihood of recession, but asset prices in times of economic crisis do not exclusively reflect these expectations. They can also reflect a change in risk tolerance, and lower prices can be the result of forced selling as a consequence of the

[1] Some compare it to past health crises. There haven't been any of this magnitude since the Spanish Flu over a hundred years ago. It is worthy of note that the Spanish Flu did not lead to an economic crisis.

[2] While credit is the means through which the crisis transmits through the economy, it is hard to imagine a system which would do better. Even if all financing were done through equity, this type of event would have a devastating effect.

need for liquidity to pay off those creditors. In terms of equities and other assets, few people doubt that the companies within the economy are productive and have value, they just don't know which will survive the crisis to be productive.

In some ways markets' reactions to crises are intuitive. If a crisis is caused by mortgage defaults, then mortgage-backed securities will probably suffer. But it can also affect seemingly unrelated securities. In 2009 for example, convertible bonds were extremely dislocated even though they had little to do with the ostensible cause of the trouble. By that point, many assets' prices more reflected the condition of the holders of those assets than the condition of the assets themselves.

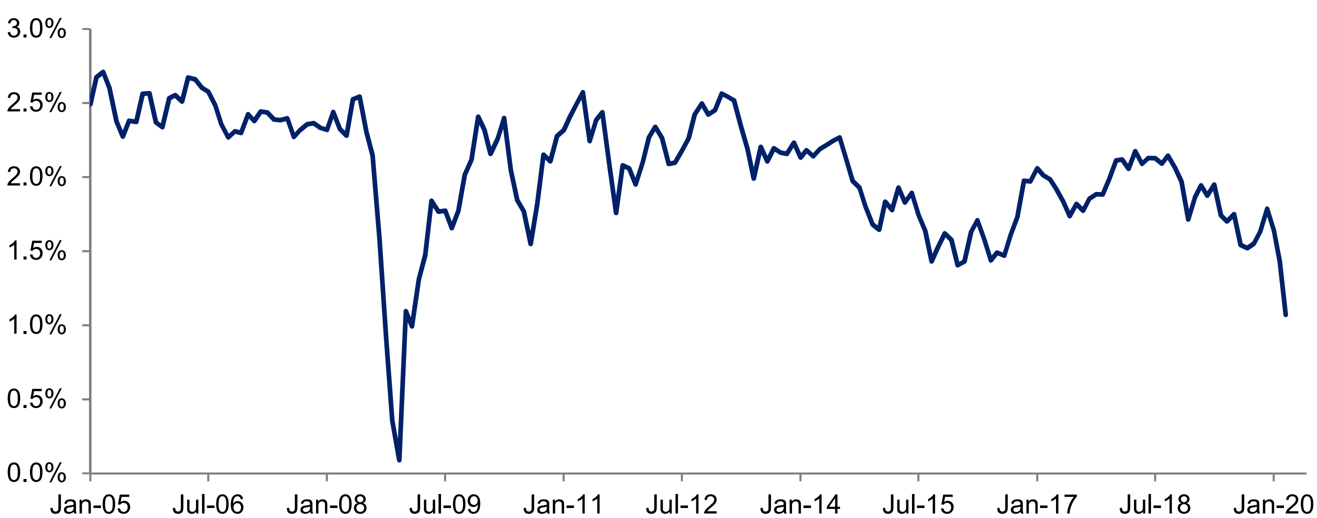
Recently, there have been some enormous moves in many asset prices in a very short time. We're all aware of the fall in equities, but there are some more interesting (in our opinion) moves in other assets which give some insight into the unique facets of the current environment. Let's take a look at three of them.

Market #1: Treasury Inflation Protected Securities

First up are TIPS breakevens. TIPS breakevens measure inflation as measured by the consumer price index. When inflation goes up, they pay higher coupons, so they are a pure bet on inflation. For those interested in fixed income details, breakevens are a combination of being long a Treasury Inflation Protected Security and short a Treasury bond. Both are government bonds and do not have any additional credit risk beyond that of the U.S. government.

Short maturity breakevens are very sensitive to changes in prices of the most volatile parts of the consumer price index. They tend to move with gasoline prices. In the past month, breakevens have been hit by a double whammy. The coronavirus health crisis has coincided with a price war among two of the largest producers of oil, Russia and Saudi Arabia, which has led to a sharp fall in crude oil and gasoline prices. A drop in demand for most goods outside of hand sanitizer and toilet paper is also cutting into prices. It is no surprise that TIPS breakevens are among the securities most affected by this crisis.

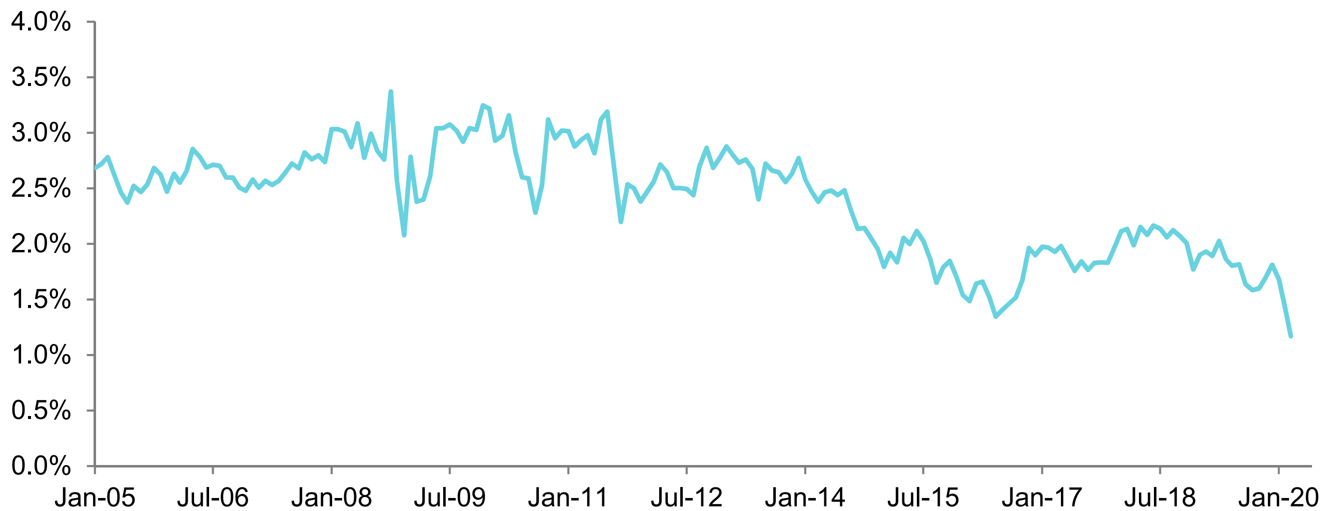
No Surprise: Inflation Expectations are Lower
10-Yr TIPS Breakeven
January 1, 2005 – March 26, 2020



Source: AQR, Bloomberg as of 3/26/2020

While this is a particularly bad environment for TIPS, it is not the first time we've seen a collapse in oil prices. In 2008, oil prices fell from a much higher peak to similar levels. And there was some liquidation of TIPS after the Lehman Brothers bankruptcy.[3] Yet by some of our measures, TIPS have become even more dislocated than they were back then. This time, weakness has also extended to longer maturity TIPS.

Long-Term Inflation Expectations Hit Record Lows
5-Yr 5-Yr Forward Breakeven
January 1, 2005 – March 26, 2020



Source: AQR, Federal Reserve, Bloomberg as of 3/26/2020.

The above chart shows five year forward breakevens. This is what the market is pricing for 2025 to 2030, which is long after lower oil prices have made their way to consumers. It is very unlikely that oil prices will continue to fall at this rate continually for another ten years. What the prices may reflect is a view that inflation will never come back and that we are permanently mired in disinflation.

This is a rather sudden realization for markets to come to. Especially because the long-term effects of the coronavirus may not be disinflationary. While there has been a short-term drop in prices, the crisis may result in a reversal of some of the forces which have kept inflation low for so long. For example, it may accelerate deglobalization as countries fear disruptions to supply chains. The response may also mute the deflationary effects. While massive monetary stimulus does not necessarily mean that inflation will surge, it makes deflation far less likely. On the topic of deflation, there is another peculiar characteristic to TIPS – they can't pay negative coupons, and principal payments aren't allowed to fall below the original face value when the bonds were issued, so there is something resembling a floor on them.[4]

> Inflation will be very low this year, but breakevens may be pricing it to stay low for a very long time.

[3] GAO: "Treasury Inflation Protected Securities Should Play a Heightened Role in Addressing Debt Management Challenges," 2009.

[4] It isn't a hard floor. TIPS can lose value if inflation is low, but interest rates go up a lot. Also, if TIPS are not bought at par, the floor does not help much as capital depreciation could substitute for a negative coupon.

More likely, the extreme move in TIPS breakevens is the result of a move in investor preference away from inflation as an asset class. Inflation will be very low this year, but breakevens may be pricing it to stay low for a very a long time. This pricing may also be because of forced liquidation. For a government security, the TIPS market is surprisingly concentrated. If any one of a few big players needs liquidity, it could result in a dislocated market, which is exactly what we've seen this month.

Market #2: Investment Grade Bonds

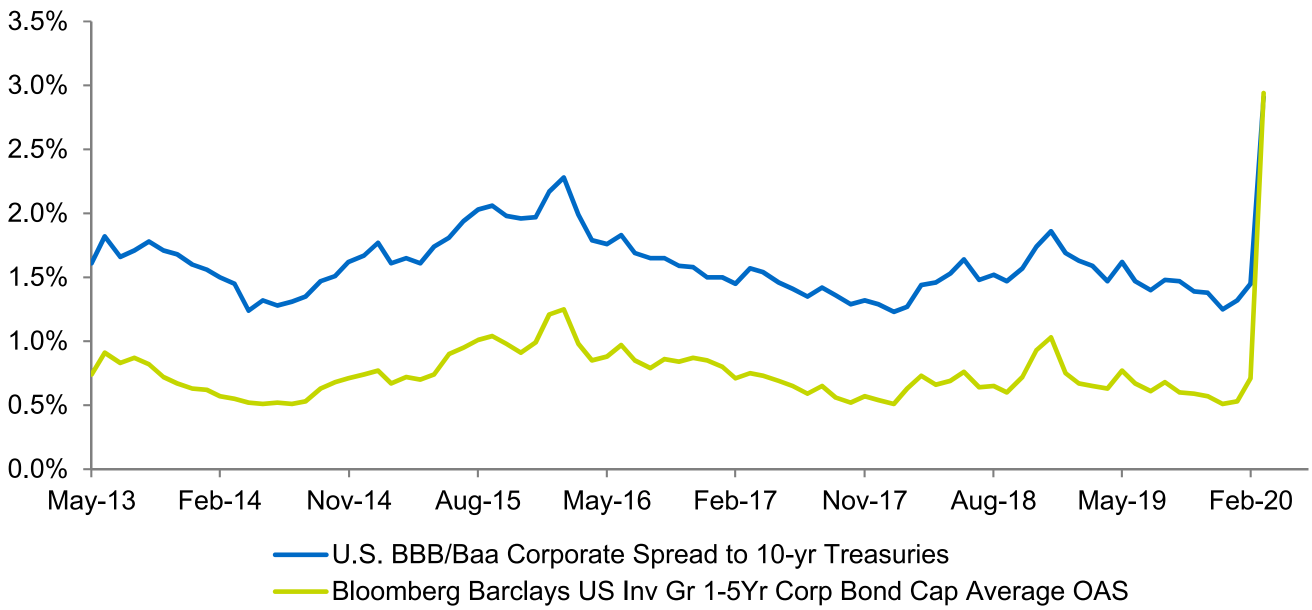
Next up is another fixed income market: Investment Grade (IG) bonds. During an economic expansion, the IG market can seem like one of the sleepiest. For long periods of time, spreads over equivalent Treasuries will trade at a fairly steady level and not be all that responsive to macroeconomic events while default rates remain low. During these periods, much of the volatility in IG bonds comes from the underlying exposure to interest rates. IG bonds can seem very much like buying government bonds with a little extra yield.

Investment Grade Spreads Have Widened but Not as Much as They Did in 2008
Spread of BBB Investment Grade Bonds Over Treasuries
U.S. BBB/Baa Corporate Spread to 10-Yr Treasuries
January 1, 2005 – March 26, 2020

Source: AQR, Bloomberg as of 3/26/2020.

This graph looks at the spread between the lowest rated IG bonds and Treasuries. As it turns out, IG bonds are not quite Treasuries lite. The extra yield is there for a reason. While IG bonds may seem safe, they do not have the full faith and credit of the U.S. government, and their issuers don't have their own sovereign currency. Many of the top-rated companies can easily withstand a few months of lost revenue, but others may find themselves in more tenuous situations. When spreads are tight, it doesn't take many defaults to eat up that spread.

Short-Term Bonds Have Gotten the Worst of It
BBB Investment Grade and 1-5 Yr Investment Grade Spreads
May 1, 2013 – March 26, 2020



Source: AQR, Barclays, Bloomberg as of 3/26/2020.

The biggest hit has come in the shorter maturities. To some extent this makes sense during a crisis. The probability of default is higher in the short run – if the companies can survive then they are far less likely to default in the following years. However, there is more to the divergence than just that. Short term money markets have not been functioning well. Many participants are pulling back on risks and funds are facing redemptions which require them to sell bonds. That may explain some of this dislocation.

Bonds have certainly become riskier, but the fall in IG reflects both liquidity and uncertainty.

The other issue is composition. Companies' ratings are not fixed, and in times of stress, these ratings are more likely to be downgraded. Debt levels have risen in recent years, and sizable portions of the companies in IG indexes border on the high yield category.[5] Investors may fear ending up with a portfolio of so called "fallen angels" when they buy a basket of IG companies.[6] Downgrades may reduce their usefulness as collateral or make them ineligible for some Fed programs. As a result, they may avoid the entire sector until that gets sorted out. This uncertainty may remove one of the natural stabilizers of IG spreads.

Bonds have certainly become riskier, but the fall in IG reflects both liquidity and uncertainty. It is not as severe as it was in 2008, although it has moved more quickly. In some ways the current situation is worse for the companies in the IG index, because they are facing a larger drop in demand. But they are also getting more direct help. Whereas the TARP bailouts and Fed programs were aimed at helping banks, creditors and market function, there is more direct support for corporate borrowers this time. That may have prevented an even deeper fall in their value.

[5] Wall Street Journal: "There Have Never Been So Many Bonds That Are Almost Junk," 9/20/2018.

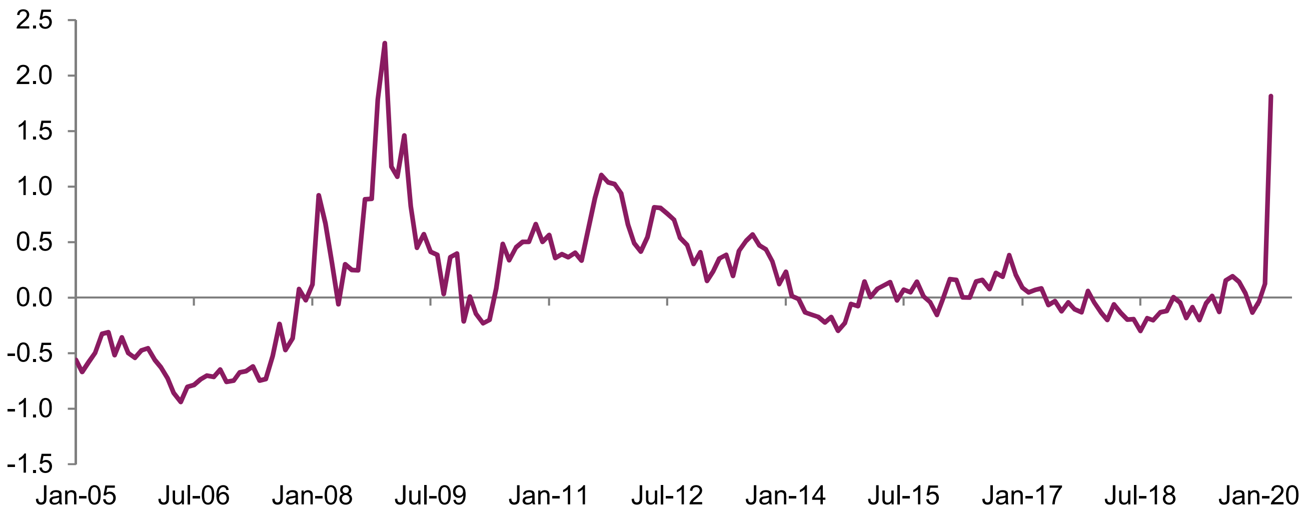
[6] Fallen Angel was a 1988 single by hair metal band Poison. It also refers to high yield companies which were IG prior to downgrades.

Market #3: Municipal Bonds

Municipal Bonds have also come into focus this month. They were often considered one of the least tactical markets. Their historical default rates are very low. Their yields are often low compared to other bonds, because their coupons are usually not subject to federal (and sometimes state and local) taxes. There used to be a commercial which asked "Is now the right time to buy municipal bonds? If you're in a nasty tax bracket, the answer is always yes." Hardly a tactical argument.

Generally, non-taxable investors have little reason to invest in them. And while in the past their spreads to Treasuries have reacted to the macro environment or liquidity crunches, it's been a fairly tame market when compared to corporates.

Even Boring Munis Have Widened
Spread of Municipal Bonds Over Treasuries
Bloomberg Barclays Municipal Bond Index Yield to Worst, Spread to 10-Yr Treasuries
January 1, 2005 – March 26, 2020



Source: AQR, Barclays, Bloomberg as of 3/26/2020.

Not this time. Municipal bonds have taken the biggest hit by far in their history. States face some serious challenges. Their revenues are going to collapse, and they face continued demand for social services including healthcare. This explains part of the reason for the fall in bond values. What is really striking about the fall is the magnitude. The spread between munis and Treasuries is not as straightforward as it might seem because muni bonds have their own specific structures, often with a call feature. In addition, the value of the tax benefit varies with tax rates and the needs of taxable investors. It's easy to make a chart that looks extreme, but in this case, even a more conservative chart reveals a large dislocation. While munis are not as concentrated a market as TIPS, they still appear to be a victim of liquidation by some holders.

Conclusion

In addition to these three fixed income markets, we've seen some dislocations in other markets, most notably in Equity Value. But not all markets have gone to extremes. For example, European debt spreads are nowhere near where they were during the crisis there a few years ago. Convertible arbitrage spreads are well below their peaks in 2008. The current crisis has come on much faster and has already hit high frequency economic data much harder than it did in 2008.[7] But from a market perspective, it's been slightly less severe.

To understand this crisis, it's important to look at the ways this has affected the financial markets. We've seen three important features across the three markets discussed. There have been problems with financing, meaning companies or states or other entities can't borrow. There has been liquidation, meaning folks have sold securities to raise cash regardless of the fundamentals or price of that security. Finally, there are concerns about the actual viability of businesses and other borrowers. The concern is that after the smoke clears and funding and markets normalize, they may still be unable to pay their debts. This can be called solvency risk.

In 2008, financing was a huge problem. The banks had taken large hits on various housing-related portfolios and were unwilling to lend to each other or just about anyone else. With banks unable to lend, capital markets froze. And this led to liquidation on a massive scale. In 2020, we are seeing liquidation in each of those markets. Financing is also a problem, but it is less structural than it was in 2008. Capital markets are again frozen, but most banks are still able to lend. They are just experiencing extremely high demand for money. This may be why municipal bonds are more dislocated than IG bonds this time. There is more liquidation, but financing is less of a problem.

The Fed programs are designed to help the capital markets. They are buying Treasuries, mortgage-backed securities, and corporate bonds, as well as providing banks with liquidity. Usually during slowdowns, the Fed tries to stimulate the economy by encouraging borrowing, but in this case these programs are aimed at keeping the markets functioning. This will provide the financing needed to prevent further liquidation. They may very well be successful. But there will still be concerns about solvency. In 2008 large swaths of the housing market were insolvent, and it appeared as though many banks were as well, but for the rest of the economy it was a financing problem. There wasn't much doubt that airlines or retailers or oil companies were viable businesses.

> The Fed and Congress are trying to keep these businesses around until the crisis ends. If you are betting on any of these dislocations, you are betting the authorities will be successful in building that bridge to viability.

In 2020 there is a greater uncertainty because the duration and extent of the economic shutdown are unclear. Companies may lose revenue for a long period of time. No business can withstand that forever. There is even concern that it will break states' budgets, which may be part of the reason that the munis have performed so badly. The Fed and Congress are trying to keep these businesses around until the crisis ends. If you are betting on any of these dislocations, you are betting the authorities will be successful in building that bridge to viability. Because if they do cross that bridge, returns will be much happier than the end of any of Tolstoy's novels.[8]

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[7] For example, weekly initial jobless claims data published by the Bureau of Labor Statistics rose more than ten-fold in the week through March 21st.

[8] Or so I've heard. They were long.

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