

# AA View

## Liquidity Collapse: Why has it become so hard to trade?

### Summary

- Trading securities became very difficult over March. Whilst market liquidity has now started to normalise, large trades can still have disproportionate impacts on prices, and investors need to be careful about transacting, particularly when selling assets.
- Over the week of March 16<sup>th</sup>, many financial markets where trading is done 'over-the-counter' essentially froze. There is the possibility that a major spike in risk aversion could cause this to happen again.
- Exchange traded markets have tended to perform better but 'market depth' has disappeared.
- The lack of liquidity means that forced selling has had a larger impact on prices, leading to very large differences between actual quoted prices and 'fair' prices. These are often referred to as "price dislocations" and provide opportunities for investors to make significant short-term returns.



### The dash for cash

This March has seen a sharp fall in the price of risk assets as Covid-19, together with an oil price war have taken their toll on markets. There are two main mechanisms for the impact on financial market prices. Firstly, the profit potential for many companies across the world has fallen, with many companies likely to make losses and bankruptcies likely to increase. Secondly, a 'liquidity crisis' has taken hold in financial markets, with the ability of investors to transact in securities significantly curtailed. This note focuses on the second aspect. The need of some investors to raise liquidity, 'a dash for cash', has ended up impacting some market prices more than the extent justified by the deterioration in fundamentals. We think that being aware of liquidity-based dislocations is important as it has created opportunities for investors. This has meant that there are

elevated 'liquidity risk premia' (additional return for taking liquidity risk) available to investors at the moment.

### What do we mean by market liquidity?

Market liquidity is defined in different ways, but we think it is best thought of as the easiness with which an asset can be bought or sold at a price close to the quoted market price, before the trading process starts. If a sizeable amount of an asset can be bought or sold quickly at or very close to the prevailing market price, then it is considered to be liquid. If the process of transacting is slow and/or involves trading away from where the market price was quoted before the trading process started, then the asset is said to be illiquid. The term liquidity is often used in other contexts too, including how much money is flowing within an economy and how much credit is available. Whilst the concepts are different, these different forms of liquidity are all inter-related.

## Why is market liquidity important?

Market liquidity is important for investors. Many will need to access their investments to fund expenses, including retirement benefits, margin calls, or, in the case of investors who use leveraged vehicles, recapitalisation events<sup>1</sup>. Instant access bank deposits are the most liquid asset available but at times of financial stress there may be concerns about the safety of uninsured deposits. Treasury bills are a safe cash equivalent. However, even here we have seen signs of illiquidity. Normally the yield difference between Treasury bills quoted for buying or selling would have been less than 1/10th of a basis point. However, this spread widened over the week of 16<sup>th</sup> March to a point that a U.S. 6-month Treasury bill yield was -3 bps to buy, and 6bps to sell, a difference in yield of around 100 times larger than normal.

This doesn't mean that Treasury bills haven't done their job (the difference in yield for Treasury bills has a limited price impact as their rate duration is very low and, even at these wider levels, the cost of trading is still far tighter than in other asset classes). However, when *even* Treasury bills are impacted we know that financial markets are not behaving normally. As we move up the risk spectrum, market liquidity has deteriorated further. In the sections below, we discuss where the impacts have been greatest. We think this is important not only for clients who have strong cash demands and need to know where they can still raise cash, but also for those clients who might be in the fortunate position of having ample liquidity and the ability to deploy in places where prices have become 'dislocated' from their fundamental values.

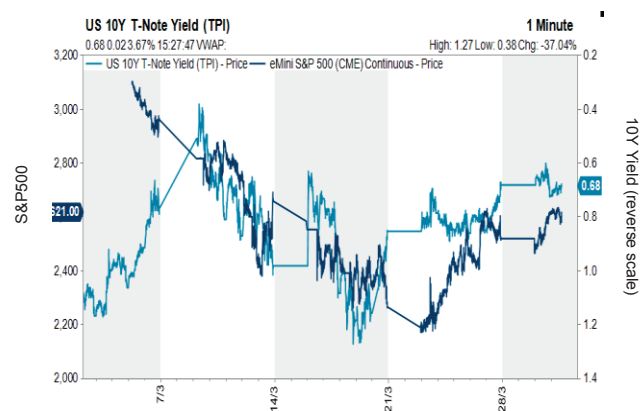
Illiquidity can impact not just direct investments but holdings in funds too. Swing pricing (whereby if there are more redeemers than buyers of the fund the price 'swings' to the bid price of the assets) means that the cost of liquidity would be borne by those investors who want to trade rather than those investors who stay invested. In recent weeks, this meant that underlying illiquidity in the assets have been reflected in the amount of money they received when redeeming units.<sup>2</sup>

Many real estate funds have now 'gated' (it has become impossible to make withdrawals from a fund). Even at the more liquid end, investors in short-duration credit funds looking to withdraw capital will have seen bigger swings than they would have anticipated before the liquidity crisis in March.

This meant that investors have sometimes had to sell other assets including treasuries, which we think has exacerbated the unusual event of Treasury prices being positively correlated with risk assets. Historically this has only tended to happen when

markets are concerned about high inflation (which is usually thought of as being bad for both risk assets and nominal bonds).

### Treasury and equity prices started to be positively correlated from March 9th



Source: FactSet. Data as at 31 March 2020. NB yields are on a reverse scale. Rises in yields are equivalent to Treasury prices falling.

## What has happened to trading desks?

Ever since the financial crisis, the willingness of bank trading desks to 'make markets' in financial securities and derivatives (that is to provide a price that they're prepared to both buy at and a slightly higher price they're prepared to sell at) has been limited. Making markets involves having to run large inventories of assets. With regulators insisting that banks hold more loss-absorbing capital (predominantly equity) against these holdings, the attractiveness of trading these assets has declined. This has impacted their activity both on exchanges and in over-the-counter markets (OTC). It is these OTC markets where banks are particularly important.

Where securities and derivatives are traded on electronic exchanges, liquidity provision has increasingly come from algorithmic high frequency trading firms rather than traditional market makers. However, in times like today these algorithmic models will become more risk averse and these firms will retreat from offering large bids and offers. The amount of securities or derivatives that can be traded at the 'top of the market' (the best bids and offers) has dropped hugely over the weeks of 16<sup>th</sup> and 23<sup>rd</sup> of March relative to the previous twelve months' average, with one manager claiming that equity futures have had 75% less market depth and short-dated interest rate futures 90% less.

OTC markets typically operate in assets where there are far too many different securities for each to have an active listing. Corporate bonds are often traded OTC. Whilst a company typically will only have one or a couple of different share classes, a large company may have dozens of different bonds outstanding, each with very different characteristics. Whilst there

<sup>1</sup> This is where a fund holds too little collateral for the amount of nominal exposure it has, and therefore has to raise money from the holders of the funds. This is analogous to investors who use leverage directly and may need to post 'variation margin' when a position moves against them. Whereas sometimes high-quality

collateral can be posted for variation margin, cash is needed for fund recapitalisation events.

<sup>2</sup> In the U.S. '40-Act' funds are more common and investors trade at the NAV. This can make investors who remain invested more vulnerable to large numbers of other investors redeeming.

are some bond exchanges, a large part of the market remains OTC. Similarly, in derivatives markets, users that require some bespoke elements will typically buy these OTC.

Many investment banks, who are particularly important for OTC trading, will be seeing other demands on their loss-absorbing capital. This is making them relatively risk averse. A few have already announced they expect losses on their lending books from the coronavirus. All banks will have seen a mark-to-market loss on a large proportion of their securities book. However, this needs to be put in to the context of both less risky proprietary books and banks being far better capitalised than in the Global Financial Crisis (GFC). Whilst many dealers were bankrupt on a mark-to-market basis during the GFC, we do not think this is the case today. That said, banks are having other calls on their capital. They often provide revolving credit facilities (overdrafts) to customers who may be drawing these down because of the coronavirus. Since 9 March 2020 \$161 billion<sup>3</sup> of these 'revolvers' have been drawn down. This has used up large amounts of their liquidity. We believe that many of the Federal Reserve liquidity measures (see below) have been designed to circumvent the need for companies to draw down their revolvers.

Another important factor, which wasn't a feature of the 2008 crisis, is that most bank trading desks are in disaster recovery mode. This means that traders will either be working remotely or spread out at disaster recovery sites. The psychological impact of this should not be neglected. Without the information flow which comes from being in close physical proximity to other traders, as well as the huge amount of uncertainty that the virus is creating, their willingness to make markets may be reduced.

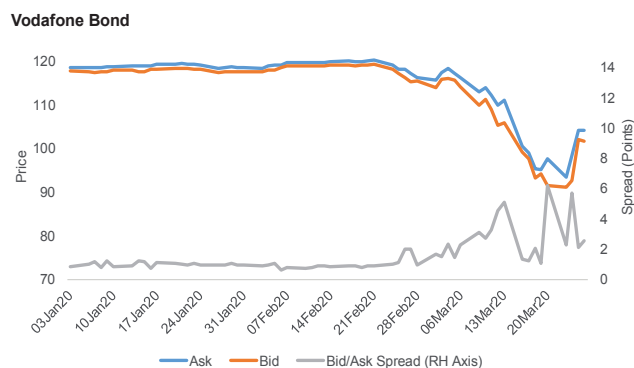
## An escalation in trading costs

The banks' failure to make markets was even affecting relatively riskless and previously liquid trades. A growth area over the last decade has been the rise of what is known as the 'delta-one' desk. These provide exposure to equity indices in various different forms for investors. An investor might want to switch from physical exposure (e.g. an exchange traded fund or ETF) to a synthetic form (such as a future). The cost of doing this traditionally would have been around a basis point (0.01%) but this rose to around 35 basis points (bps) over the week starting 16<sup>th</sup> March with some dealers refusing to make prices at all.<sup>4</sup> Although the situation has improved in recent days, 'market depth' (how big a trade can be implemented at the current market price) remains limited and trading costs are still higher than earlier in the year at around 3bps.

Transition managers are also reporting higher than usual costs at around 2-3 times higher than usual trading costs for equities and 5-10 times for fixed income. According to Goldman Sachs, the median S&P 500 stock costed 4 bps to trade at the start of the year, but this has now risen to over 14bps. When it comes to trading less liquid assets such as corporate bonds and asset-backed securities (ABS), spreads can be even wider. If we take

a recently issued Vodafone (a company that gets 13.5% of its revenue from Italy, but as a mobile network, is in a relatively virus-immune sector) bond for example, we can see that the bid and offer prices used to be less than one point (1% of the nominal value of the bond), but over the week of 16<sup>th</sup> March, widened at times to over 6 points.

### Wide Bid-Ask Spreads in Corporate Bonds



Source: Bloomberg

Even this wider bid-ask spread likely underestimates the increase in liquidity costs for several reasons:

- In normal times investors will often be able to trade inside the bid-ask spread
- Dealers are only offering to trade small amounts
- If a counterparty tries to execute against these prices, the deal may vanish
- The amount of assets that a dealer might be bidding for may be a fraction of the amount needed to be sold. The new bid price after the initial bid is used up may be substantially lower than the initial bid.

In order to minimise market impact, managers try to spread out orders over time where possible. In a widely circulated manager commentary, one manager complained about it taking a week to offload a 'on-the-run' (the most liquid bond which serves as a benchmark) 5-year Australian Treasury bond. Normally, such a transaction would be done within minutes. The manager also mentioned rolling over of a GBPUSD currency hedge (a transaction that is normally nearly instantaneous) taking an hour.

## Is credit being moved by illiquidity or deterioration in fundamentals?

High yield markets have fallen particularly sharply, not only because of liquidity issues, but also because of concerns that the economic fall-out from Covid-19 could cause a wave of defaults. Lower prices mean higher credit spreads. This compensates investors not only for the expected credit losses but a credit risk premium too: the amount of credit losses is uncertain and investors want to earn an additional return for

<sup>3</sup> Source: Bloomberg. As at 27/3/2020

<sup>4</sup> Source for these levels are non-attributable conversations with various managers.

bearing that uncertainty. However, we also think that some of the increase in spread is due to a rise in illiquidity risk premium. Any allocation to high yield bonds now could effectively be locked-up for an unknown length of time given the difficulties and costs of getting in and out. Investors could therefore face a high potential cost if they suddenly need those funds for something else or an 'opportunity cost' if it stops them deploying capital in other areas which might be more attractive.

### High yield spreads have risen but still aren't at GFC levels



Source: ICE BAML Indices

Interestingly, leveraged loans have performed worse than high yield bonds. Loans have historically been seen to be offering more protection than high yield bonds as they rank senior to them (i.e. if a company defaults loans will be repaid before high yield bonds).

### Loan returns have been worse than high yield bonds

Bond Indices	March 2020 Return	12 Month return
iBoxx Non Gilts Sterling	-5.7	1.5
Merrill Lynch US Corporates	-7.5	4.4
Merrill Lynch EMU Corporates	-6.8	-3.2
Merrill Lynch US High Yield	-11.7	-7.4
JPM EMBI Global Div Composite	-14.4	-8.8
JPM GBI-EM Global Div Composite	-8.4	-1.8
Credit Suisse Leveraged Loan	-13.9	-12.3
Credit Suisse Euro Leveraged Loan	-14.9	-11.8

Source: ICE BAML, FactSet, JP Morgan, Credit Suisse. As at 31/3/2020.

However, private equity financed buy-outs have increasingly had their debt come entirely from the leveraged loans market, meaning that there may be no high yield debt which is subordinated to the loans, so loans no longer enjoy the advantage of being higher-up in the capital structure.

In addition, loans may be suffering from liquidity issues. The main buyers of leveraged loans are collateralized loan obligations (CLOs), and these are not likely to be in a position to be big net buyers of new loans any time soon. At the margin an important seller has been loan exchange traded funds (ETFs), which have to sell loans and buy back units if the funds trade at discounts to NAV. The market for loans is also particularly

opaque with prices not available on data terminals such as Bloomberg or Reuters, making it harder for price discovery to occur.

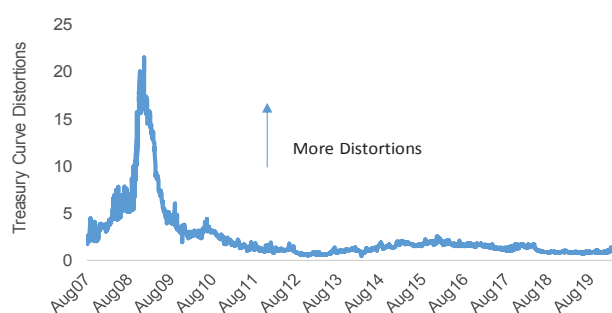
Even in assets which are generally seen as being 'default remote' or 'money good' (unlikely to be impacted by a credit default), such as the AAA-rated tranches of asset backed securities, the bid price has fallen dramatically, with one-way bid prices for these senior tranches being quoted in the 80s (per 100 nominal) in the week of the 16<sup>th</sup> although prices have since bounced back. Banks tend not to hold much inventory here and they will often not have many of these assets for sale either (unless they have just bought from a forced seller), meaning that investors who are able to buy these assets at distressed levels can often be limited to bank desks and funds which are well placed to act quickly.

## How does this compare to the 2008 Global Financial Crisis?

A variety of managers have described features of the current market environment as being unprecedented. The length of time needed to execute and the number of dealers refusing to make prices have reportedly been worse than during the global financial crisis (GFC). However, these things are very difficult to objectively measure and the evidence we have is largely anecdotal. When it comes to more objective statistical measures, the current crisis does not seem to be on the same level as the GFC for U.S. Treasury bonds. One such measure is Bloomberg's U.S. Treasury Liquidity Index<sup>5</sup>. This measures the difference in yields between less frequently traded bonds and where a model suggests these bonds should be on the basis of more liquid benchmark yields.

### Quantitative Measures suggest Less Stress than in 2008

#### Bloomberg Treasury Liquidity Index



Source: Bloomberg

This would suggest that Treasury liquidity conditions, whilst distorted to an extent versus recent years, are not particularly strained versus the GFC. We think this is misleading. The curve is much flatter now than during the Lehman bankruptcy and the

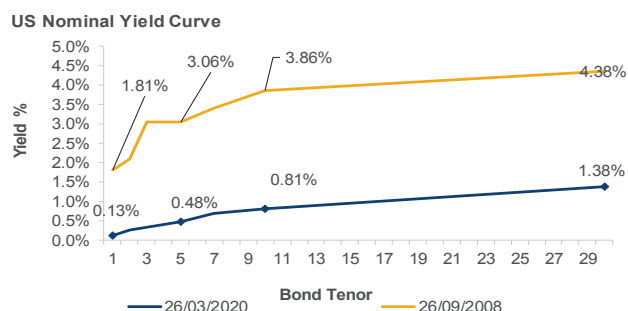
<sup>5</sup> The Index is a measure of the distortions in the US Treasury market for bonds with a maturity of 1-year or greater, based off where they should be if the curve is relatively smooth. Bloomberg argues "when liquidity conditions are favorable the average yield errors are small as any dislocations from fair value

are normalized within a short time frame. Under stressed liquidity conditions, dislocations from fair value implied by the curve fitter can remain persistent resulting in large average yield errors."



subsequent GFC. It is also less “convex”. Back in 2008, the curve was quite steep and then flattened off between 10 years and 30 years, whereas now the yield increases more linearly for longer dated bonds. This lack of curvature means it has been relatively easy for bond markets to price where a yield should be for bonds between the major benchmarks. It is also possible that the inefficiency may be in the major benchmarks themselves. Some managers have reported dealers refusing to quote on the 30 year U.S. Treasury, something which again is unprecedented.

#### Yields were much higher and the curve more convex during the Lehman Bankruptcy

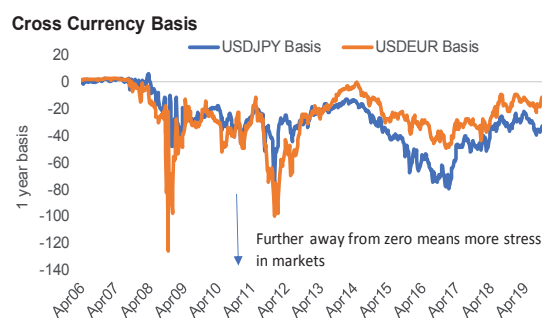


Source: FactSet

Another indicator of high levels of financial market dislocation is in the cross-currency swap market. This market is where banks swapped their local currency for another currency, usually U.S. dollars, in order to fund their international lending books. Distortion in this market is measured by something called the ‘cross currency basis’. The further this is away from zero, the more stress the market is under.

The USDJPY basis is currently wider than it was in the 2008 crisis, although it has not got to levels seen in 2016 when there were worries about a hard landing in China and concerns about what that might do to other Asian economies. USDEUR cross currency basis is still far tighter than it was in the GFC, but this is in part because European banks have retrenched from international trade financing markets.

#### Stress in foreign exchange markets remains elevated despite the Fed’s Swaps Programme



Source: Bloomberg

The Federal Reserve (Fed) has re-invigorated swap lines with other central banks in order to reduce the stresses in FX markets (see below). However, intriguingly there were initially very limited impacts on cross currency basis when the measures were announced, suggesting that market participants are constrained and can’t trade according to their expectation of how cross currency basis will evolve in the future. Indeed as we discuss below price distortions have persisted after central banks have announced measures which should address the asset classes that are impacted.

## Central bank liquidity actions

Central banks have tried to restore both calm and liquidity to markets through a variety of policy measures, including Quantitative Easing (QE) and various liquidity schemes. These are likely to result in a very large expansion in the size of the Fed’s balance sheet. This has already risen to over \$5.3 trillion (as at 27<sup>th</sup> March 2020) from \$4.1 trillion at the end of 2019. Bank of America projects that the various measures announced will take the size of the Fed’s balance sheet to over \$9 trillion by the end of the year. By contrast the Fed took its balance sheet from around \$900bn in the summer of 2008 to \$2.3 trillion the following year. Central bank liquidity provision is distinct from market liquidity but the two are inter-related. One particular measure we think is important is the Primary Dealer Credit Facility (PDCF). This was created in the GFC, and then resurrected on March 17<sup>th</sup> 2020. It enables broker-dealers to use risky assets as collateral to borrow money from the Fed. Its resurrection didn’t seem to have much impact on markets.

On the 23<sup>rd</sup> March the Fed announced a broader range of measures including the Term ABS Loan Facility (TALF) which will directly buy the senior tranches of auto and credit card ABS. Although over the rest of the week conditions in markets started to normalise, it wasn’t until it looked like the U.S. Congress was going to pass a bill authorising a \$2 trillion stimulus for the U.S. economy that we started to see financial market normalisation. This suggests it is not necessarily a shortage of liquidity tools (at least for dealers) that is causing the issues but risk aversion amongst those dealers. This means that liquidity risk premia will continue to be influenced by news on COVID-19 despite the Fed’s actions.

We have also seen other central banks including the European Central Bank (ECB) and the Bank of England (BOE) increase liquidity support measures. This includes the ECB’s Pandemic Emergency Purchase Programme (PEPP) which will see purchases of €870 billion of securities. However, there is no direct equivalent to the PDCF, and CLOs are excluded from the ECB’s LTRO (Long-term Refinance Operations).

## How has the Fed helped illiquidity premia in ABS?

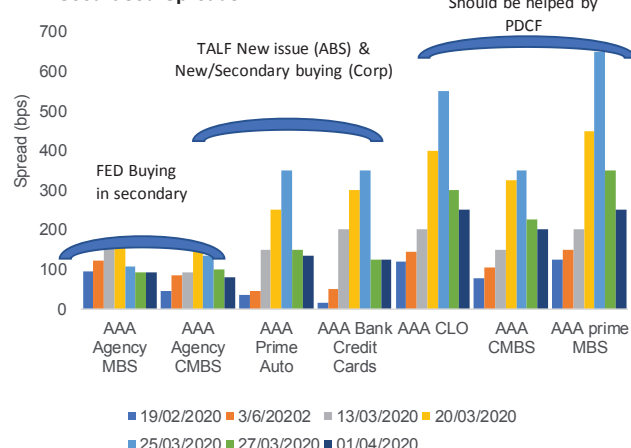
We believe one of the best examples of elevated illiquidity risk premia being priced in to assets is in the market for AAA Asset Backed Securities (ABS). These are the most senior claims on a pool of assets and are protected from losses in the underlying

pool by the existence of junior tranches which absorb losses first. On-the-whole, we think these remain what is termed 'default remote'. This means that even if the economic situation was to deteriorate further these securities won't default.

There is widespread cynicism about securitisations and their ratings because U.S. AAA subprime mortgage securitisations proved not to be AAA risks during the GFC. However, the technology behind the securitisations has improved hugely since the crisis. Macro risks are better recognised in the modelling process. Models recognise that the probability of default on an asset can vary dramatically overtime. Consequently, the most senior tranches have had to have far more subordination (loss absorbing tranches below them) than before the crisis. This applies even to CLOs where the most senior tranches avoided defaults, and even when it comes to the subordinated tranches credit losses were limited.

### More recent Fed programmes appear to have kick-started the normalisation process

AAA Securitised Spreads



Source: Schroders

Recent Fed programmes have helped create liquidity for securitised credit funds and boosted other form of securitised credit. However, we still think there is further normalisation to go. Although the returns available from these levels are moderate, we think that they're low risk, and now is an attractive entry point for producing above cash returns with very low default risks.

## What does the liquidity collapse mean for clients?

The current environment makes it very hard for investors to transition between different funds. Where dealing cannot be avoided, checking with Aon's manager research team is essential in order to ensure that fair value adjustments (adjustments to the usual method of calculating the NAV to reflect market conditions) are reasonable and that the speed of the intended redemption doesn't depress valuations.

For those clients in the fortunate position to they have spare cash to put to work, there remains some interesting opportunities.

The biggest illiquidity induced price dislocations tend to be in the most opaque areas of financial markets where price discovery is limited. We have argued above that senior tranches of securitisations are one-area where potential returns seem to be high relative to the risks. We think for buy and maintain investors today's levels represent an attractive entry point, although it is quite possible that spreads could return towards their recent highs if there are more bad news on the virus.

Another opaque area is in private assets. If the coronavirus crisis was to force distressed sales of private assets, there will certainly be opportunities down the road.

### Price dislocations create opportunities for investors with spare cash

Asset Class	Examples	Liquidity Impact	Remaining Price Dislocations
Equity	Large Cap Equities	Moderate to Low	No
	Small Cap Equities	Moderate	Moderate
	Equity Futures	Low	No
Fixed Income	IG Corporate bonds	Moderate	Moderate
	Short-dated Credit	High	Yes
	Nominal Treasuries	Low to Moderate	No
	Index-linked (particularly US TIPS)	Moderate	Yes
	Asset Backed Securities (incl. CLOs)	Moderate to High	Yes
Currency	Spot	Low	Moderate
	Cross-currency swaps	High	Yes
Private Assets	Private Equity	High	N/A
	Private Debt	High	N/A
	Real Estate	High	N/A
	Infrastructure	High	N/A

Source: Aon

For investors who can bear more risk, there may be opportunities in the more subordinated tranches of ABS, but we caution that these are exposed to significant credit risk if the Covid-19 situation was to deteriorate. We would therefore recommend investing via a manager who is able to identify which securitisations are robust, as well as keeping some powder dry for further dislocations down the road.

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## Aon's Global Asset Allocation Team

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With over 160 years of combined experience, the team is one of the strongest in UK investment consultancy today.

Our experts analyse market movements and economic conditions around the world, setting risk and return expectations for global capital markets.

The team use those expectations to help our clients set and, when it is right to do so, revise their long-term investment policies.

We believe that the medium term (1–3 years) has been under-exploited as a source of investment performance. Maintaining medium term views that complement our expectations for the long term, we help our clients to determine when to make changes to their investment strategy.

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