



Module Risk Management – Search for Yield

Hello everyone, my name is Cees Harm van den Berg, board member at CFA Society VBA Netherlands and Senior Strategist at APG Asset Management.

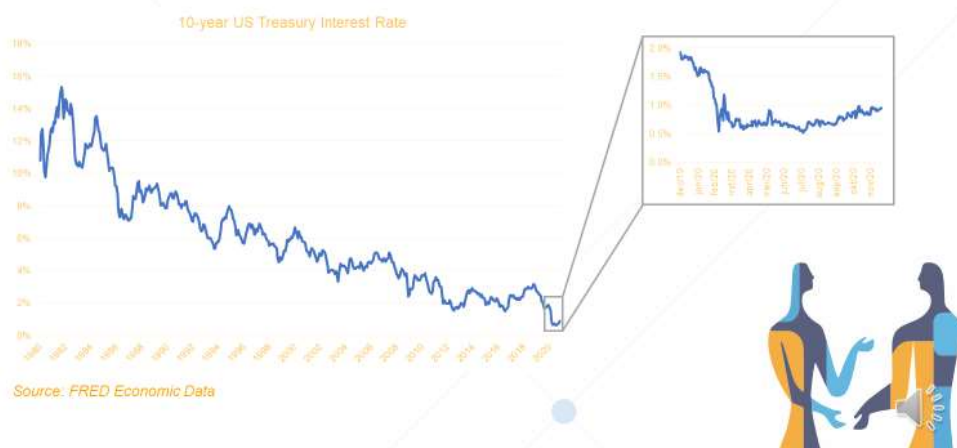


In this part of the module Risk Management I am going to talk about the possible consequences of interest rate changes on the portfolio, with attention to the duration and spreads on credit and high yield bonds. Of course, I will take the current situation in financial markets into consideration.

MiFID II Stay Compliant Program

CFA Society
Netherlands | vba

Declining Interest Rates



Over the last couple of decades we have seen interest rates of safe government bonds gradually decline. During times of stock market crashes and subsequent recessions, like the Dot Com Bubble and the Great Financial Crisis, prices of government bonds increased rapidly and yields fell. This is related to both a flight to safety, causing higher demand for safe government bonds, and expansionary monetary policy, with lower short term interest rates and an increase in money supply. During the recent CoVid-19 outbreak we have also experienced a further decrease in interest rates, resulting in a substantial part of the government bond universe having yields close to or even below 0%. Central banks have communicated that they will keep their reference rates low for the next couple of years, partly due to the impact of CoVid-19 on the economy. It is therefore unlikely rates will increase in the near future. On the other hand, with rates close to or even below 0% it also seems unlikely rates will decrease further. Central banks have hinted that their monetary tools have depleted (meaning they cannot decrease rates further) and pointed to fiscal policy to help stimulate economic growth. The future for interest rates remains uncertain. This is an important risk for investors as interest sensitive assets, like government bonds and credits are often a big part of an investor's portfolio.



Duration and Spread Duration



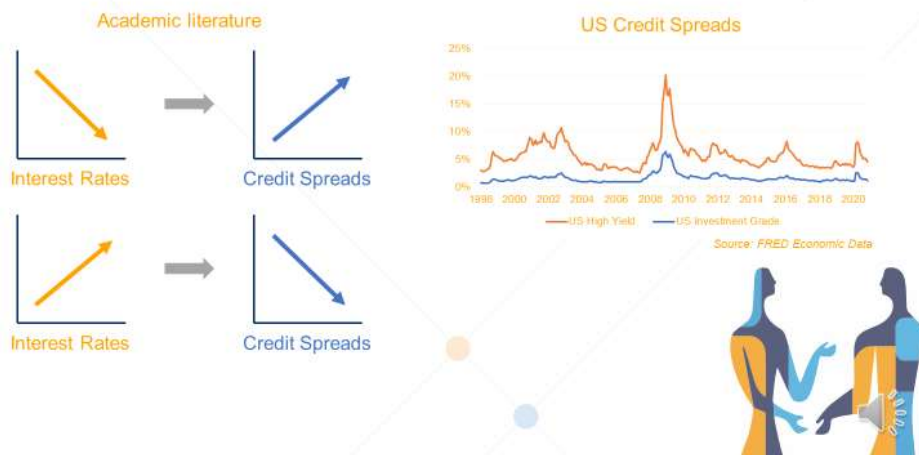
To be able to describe the possible consequences of interest rate changes on a portfolio it is important to understand the concepts of duration and spread duration. Duration is a useful measure as it helps investors calculate the sensitivity of any asset or liability to interest rate changes. It can be calculated by taking the price (or present value) before and after a small interest rate shock: usually 1 basis point or 0,01%. It is also a measure of how long it takes, in years, for an investor to be repaid the bond's price by its cash flows. It can therefore also be calculated by taking the average time until the remaining cash flows are paid. While duration measures the sensitivity of any asset or liability to interest rate changes, spread duration measures the sensitivity of an asset to changes in the credit spread. As with duration, it can be calculated by taking the price (or present value) before and after a small shock in the credit spread: usually 1 basis point or 0,01%. With the spread duration an investor knows the impact of spread changes on the price of a bond. While this is useful, it does not measure actual spread volatility as it does not account for the height of the spread. For an accurate measure of the spread volatility in a portfolio the Duration Times Spread (or DTS) measure is used, developed by Robeco in the early 2000's and now the market standard. DTS is calculated by multiplying the spread duration with the spread and allows the comparison of the volatility of bonds with different durations and spread levels.

MiFID II Stay Compliant Program

CFA Society
Netherlands | vba

Relation Interest Rates and Credit Spreads

CFA Society
Netherlands | vba



5

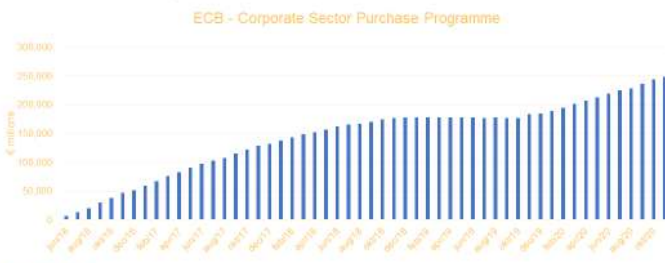
An important consideration in describing the possible consequences of interest rate changes on a portfolio is the relationship between interest rates and credit spreads. Although academic research is divided, there is evidence that interest rates and spreads are negatively related. This implies that when rates decline, spreads rise and vice versa. The economic rationale behind this is that in an economic expansion, interest rates rise while corporate results improve and risks reduce, lowering spreads. In an economic contraction, interest rates fall while corporate risks increase, increasing spreads.

MiFID II Stay Compliant Program

CFA Society
Netherlands | vba

Central Bank – Monetary Policy

CFA Society
Netherlands | vba



Source: ECB

Between 8 June 2016 and 19 December 2018 the Eurosystem conducted net purchases of corporate sector bonds under the corporate sector purchase programme (CSPP). As of January 2019, the Eurosystem continued to reinvest the principal payments from maturing securities held in the CSPP portfolio. As of 1 November 2019 the Eurosystem restarted net purchases under the CSPP.

6



While this negative relationship seems to hold over time, the Corporate Sector Purchase Programme from the European Central Bank has distorted the relationship severely. The ECB has been a big buyer of credits over the last decade, thereby directly decreasing spreads during a period of decreasing interest rates. Indirectly, the ECB has effectively lowered borrowing costs for corporates which improves debt sustainability and consequently lowers credit spreads.

CFA Society
Netherlands

vba

MiFID II Stay Compliant Program

CFA Society
Netherlands | vba

Consequences for Investment Portfolios

CFA Society
Netherlands | vba



7

As discussed, it is uncertain where interest rates move from here and also how this will relate to spreads. There are risks and consequences involved in any scenario. If interest rates decrease further, investors who are long duration (duration of assets > duration of benchmark) will see their portfolio increase more in value than their benchmark, while investors who are short duration (duration of assets < duration of benchmark) will see their benchmark increase more in value than their assets. Pension funds are a good example of the latter. Their benchmark for interest rate products are typically the liabilities, which have a very long duration. Declining interest rates have caused the funding status of pension funds to deteriorate. In the opposite scenario of interest rates increasing, investors who are long duration will see their portfolio decrease more in value than their benchmark, while investors who are short duration will see their benchmark decrease more in value than their assets.

CFA Society
Netherlands

vba

MiFID II Stay Compliant Program

CFA Society
Netherlands | vba

Consequences for Investment Portfolios

CFA Society
Netherlands | vba



Long spread duration investor: assets decrease in value



Long spread duration investor: assets increase in value



8

If the negative relation between interest rates and spreads holds, a further decrease in rates would be accompanied by an increase in spreads. This could hurt investors who are long spread duration (or long DTS), if the loss created by the long spread duration is higher than the gain from the long interest rate duration. The higher the spread duration or DTS of the portfolio (for example when investing in high yield bonds) the larger the impact will be. If interest rates rise, spreads could decline, benefiting investors who are long spread duration (or long DTS), again if the gain created by the long spread duration is higher than the loss from the long interest rate duration. But as central banks have been buyers of corporate credit and fiscal policy has supported corporates, spreads are already low and there is little room for spreads to move further down. This has caused investors to move into high yielding corporate bonds with lower credit ratings, which have also seen spreads decrease.

CFA Society
Netherlands

vba



Consequences for Investment Portfolios



Besides government bonds and credits, interest rates also indirectly impact other parts of an investment portfolio. Investments in real and/or illiquid assets (like real estate, infrastructure and private equity) are often leveraged and therefore performance depends on the level of interest rates. High interest rates make leverage expensive, which could lead to lower valuations. Given the current low level of interest rates, a large number of investments are valued at a relatively high level, causing risks to be mainly to the downside.

Finally, interest rates are often the basis of future return expectations. Low interest rates therefore result in low expected returns. This can seriously harm investors who have an explicit return target. Good examples are foundations who rely on investment returns to achieve their goals, like providing grants, or insurance companies for their income. Low returns could result in mission impairment or cause these investors to search for yield outside their traditional investment universe.



Module Risk Management

Extra risks involved in the search for yield



In this part of the module Risk Management I am going to talk about the extra risks involved in the search for yield, taking current interest rate developments into consideration. As discussed, interest rates and yields across the mainstream fixed income asset classes are currently low. This has resulted in a search for yield as investors requiring investment returns have started to look outside their usual investment universe. Although this has been happening since central banks started with their expansionary monetary policy after the Great Financial Crisis, the CoVid-19 outbreak has resulted in even lower yields and hence a further search for yield. In this part we will look at the extra risks involved in this search for yield, being credit risk, interest rate risk and illiquidity risk.



Moving down the Credit Spectrum

Moody's	Fitch	S&P
Aaa	AAA	AAA
Aa	AA	AA
A	A	A
Baa	BBB	BBB
Ba	BB	BB
B	B	B
Caa	CCC	CCC
Ca	CC	CC
C	C	C
Default	Default	Default



3

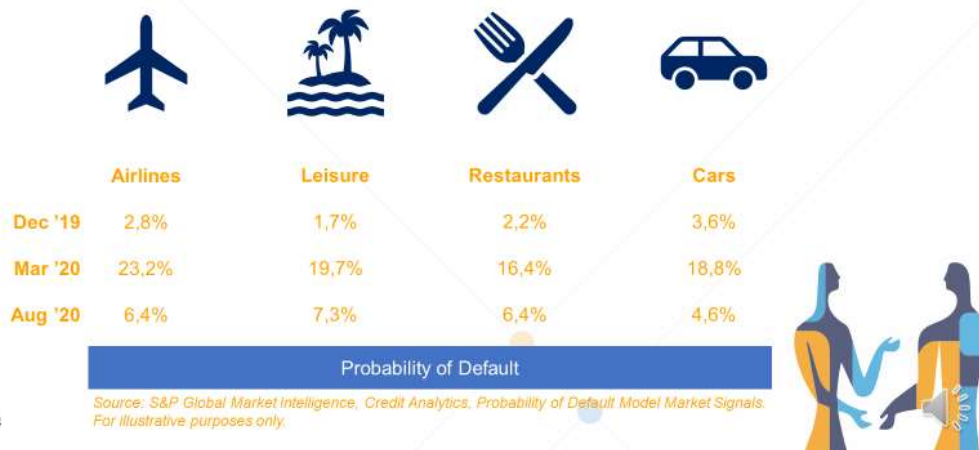
The main source of extra risk for investors in their search for yield comes from additional credit risk. As mainstream fixed income asset classes, like government bonds and investment grade credit, have low yields, many investors have moved down the credit spectrum into for example high yield credit and emerging market credit. These asset classes have lower credit ratings reflecting the higher credit risk. Prices are more dependent on financial results compared to investment grade alternatives, making them more volatile, and carrying a higher risk of default. Besides that, as investors have moved into high yield bonds this has also caused more sector specific risks as this part of the spectrum is dominated by the energy sector and financials, which comes with additional volatility. During and after the CoVid-19 outbreak the risk of companies experiencing a downgrade or going into default has grown. As investors have invested more into these lower-quality parts of the credit spectrum, they have therefore also experienced more (unrealized) losses and volatility in their portfolios.

MiFID II Stay Compliant Program

CFA Society Netherlands | vba

Sectors hit by CoVid-19

CFA Society Netherlands | vba



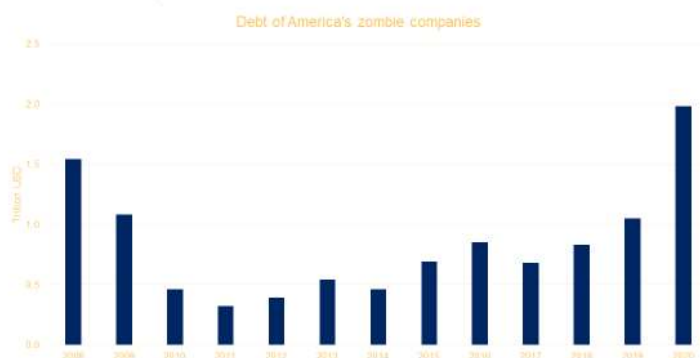
Airlines, leisure, restaurants and car manufacturers are amongst the sectors that have been hit hardest by CoVid-19. To support these companies and reduce the risk of companies going into default, governments have stepped in with expansive fiscal policies.

MiFID II Stay Compliant Program

CFA Society
Netherlands | vba

Surge in Zombie Companies

CFA Society
Netherlands | vba



Source: Bloomberg
Note: 2020 figures are as of most recent quarterly data

5



But there is also a growing risk from these expansive fiscal policies by governments in 2020, in response to the CoVid-19 outbreak. As governments are supporting all businesses by providing extra financial measures, like tax breaks, several companies that would normally not survive, for example because they are unproductive, are now able to survive. These are so-called zombie companies, and this risk of zombification has increased significantly since the CoVid-19 outbreak¹. When economies start to recover, these companies might be a serious drag on economic growth. Also, defaults will grow when financial conditions are tightened in the future. Additional credit risks may be mitigated by staying higher in the capital structure, beware of zombie companies and subordinated lending at an advanced part of the credit cycle, and bias portfolios towards secured, collateral backed securities.

CFA Society
Netherlands

vba

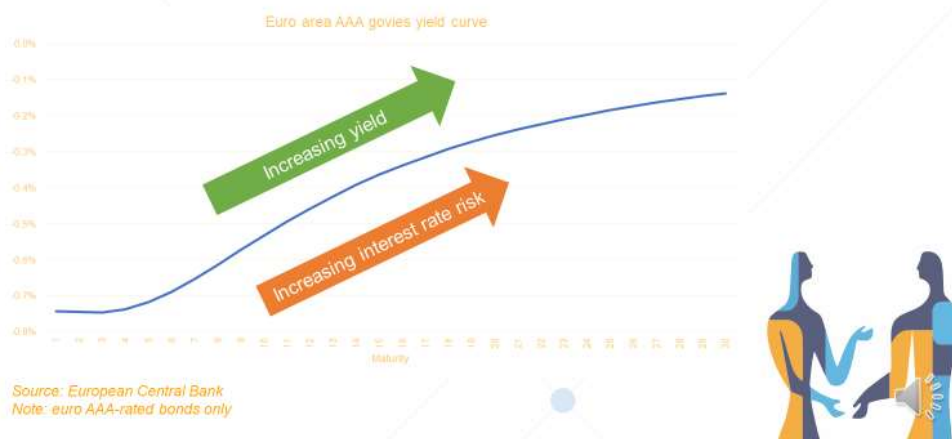
¹ <https://www.bloomberg.com/news/articles/2020-11-17/america-s-zombie-companies-have-racked-up-1-4-trillion-of-debt>

MiFID II Stay Compliant Program

CFA Society
Netherlands | vba

Moving up the Interest Rate Curve

CFA Society
Netherlands | vba



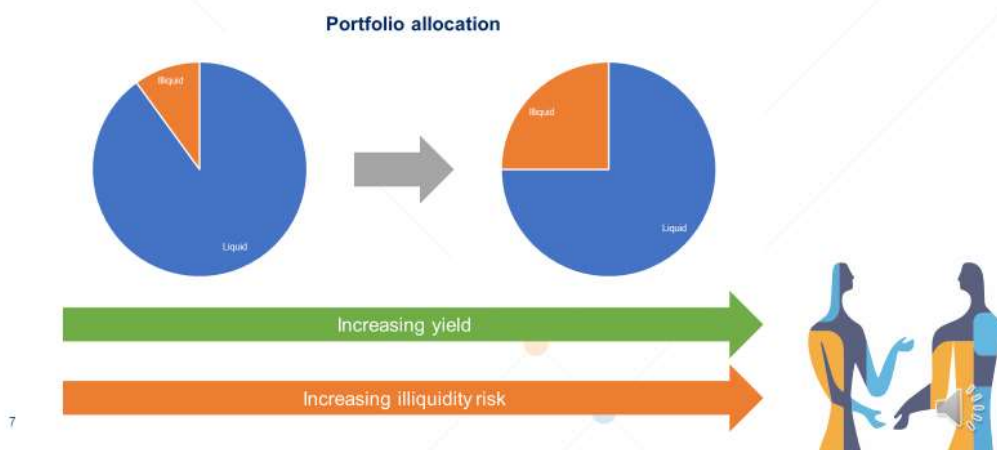
Another source of extra risk for investors is additional interest rate risk. As central banks keep short term interest rates low, investors move up the interest rate curve into longer dated bonds to find additional yield, which is also known as duration extension. As discussed in the previous part, longer dated bonds come with a higher duration and therefore more interest rate risk. Although the future for interest rates is uncertain, there is a possibility that as the economy recovers, central banks have to tighten their monetary policy by increasing interest rates. Investors who have increased the duration of their portfolios in search for yield will be hit hard as long dated bonds can decrease in value substantially. Investors who are short duration (like most pension funds) will welcome an increase in interest rates, as their liabilities will decrease more in value than their assets, as explained in the previous part. Besides investors, issuers also face additional interest rate risk as a large amount of extra debt has been raised which has to be refinanced at higher rates as these rise. This will directly affect the cashflows an issuer otherwise would be able to spend on dividends, capex etc.

CFA Society
Netherlands

vba



Searching for Illiquidity Risk



Besides credit and interest rate risk, investors have also been searching for illiquidity risk, as this is an attractive premium to gather if one is able to invest for the long term. Where investors moved from the investment grade space to the high yield space, investors also moved from public markets to private markets. With the low interest rates the illiquidity premium is a possible source to boost investment returns. In the Netherlands this part of the search for yield was particularly strong in Dutch mortgages as insurance companies and pension funds have significantly increased their allocation to this illiquid asset class. Globally, asset backed securities and other private debt securities have seen large inflows as well. Although liquidity does not seem to be an issue for most investors at the moment, it could prove to be a big risk in the future. Especially when markets go down investors may find they are unable to sell their holdings, or only at a big discount.



Transaction costs during CoVid-19

	Approx. cost forced selling of USD 10 mln	US Investment Grade Corporate Bonds	US High Yield Corporate Bonds
Dec '19	Half Bid-Ask Spread	0,2%	0,4%
	Market Impact	0,2%	0,5%
	Transaction Costs	0,4%	0,9%
Mar '20	Half Bid-Ask Spread	0,7%	1,3%
	Market Impact	1,1%	2,2%
	Transaction Costs	1,8%	3,5%

Source: MSCI



The CoVid-19 market crash in March 2020 gave a good warning sign, with all asset classes showing wide bid-ask spreads. For example, transaction costs for investment grade and high yield corporate bonds were four times higher than usual. For more illiquid investments spreads were even larger or there was no market at all to trade as there were no buyers. This temporarily resulted in a big market dislocation for asset backed securities for example, trading substantially below fair value. For investors it is therefore important to analyse whether they can manage the illiquidity of their portfolio, and flag potential liquidity requirements. It is also important to have effective embedding of liquidity risk management in portfolio construction (regarding allocations and position sizing). For fund managers a diversified, sticky investor base would help to mitigate the probability of large sudden outflows in the event of a market wide sell-off.



**Module
Risk Management**
Search for yield and the liquidity
of the investment portfolio



In this part I will zoom deeper into the liquidity aspects of the search for yield.



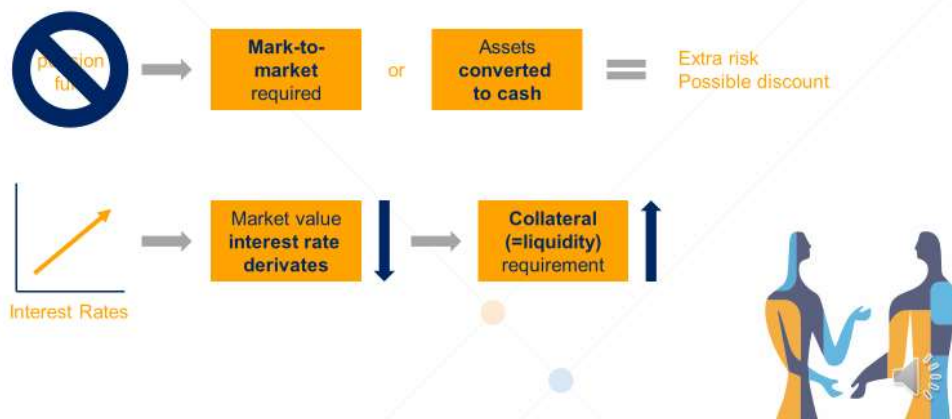
Search for Yield and Illiquidity



As discussed in the previous section private investments can offer attractive returns. It should be noted though that these asset classes are, by definition less liquid than many publicly listed asset classes like equities or fixed income. A portfolio of residential mortgages, unlisted real estate, infrastructure debt or private equity may take time to liquidate. Depending on supply-demand dynamics there may also be a price impact. Given their long term horizon, many institutional investors can sustain periods of market turbulence and therefore harvest the illiquidity premium.



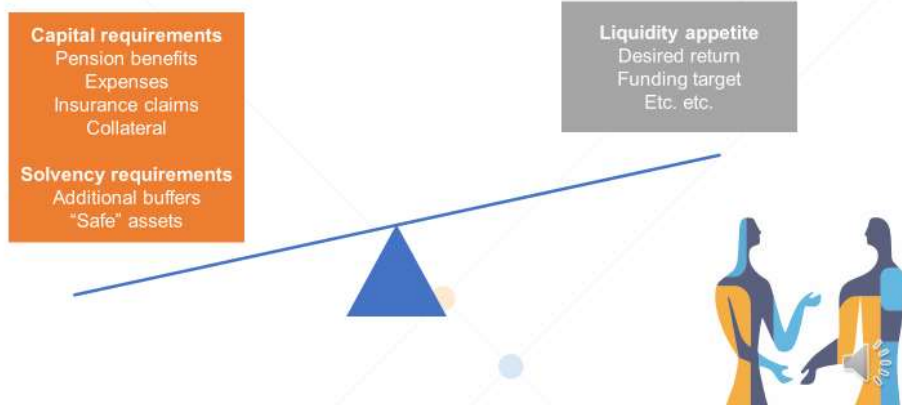
Pension Funds and Illiquidity



But there may be situations where a less liquid component of the portfolio becomes problematic. This could be the case when a pension fund decides to terminate its activities and transfer its assets to a third-party provider. In this situation either a mark-to-market valuation needs to be given to the assets or the assets need to be converted into cash. It may prove difficult to do this, and this adds risk exposure to the transaction. Another example is when interest rates rise, interest rate derivatives used by pension funds decrease in value. This requires collateral to be paid, often cash or safe government bonds, of which there is less in the portfolio, causing forced sale of the already depressed illiquid assets at larger discounts in an extreme scenario.



Liquidity Requirements



Besides these specific situations, required liquidity and, linked to that, capital requirements, determine the appetite towards illiquid assets for institutional investors like insurance companies and pension funds. These investors require liquidity to pay pensioners, insurance claims, cash expenses and collateral requirements for derivative overlays. Solvency requirements also impact the ability of insurance companies and pension funds to invest in certain illiquid assets. In general, this puts a limit on the allocation to illiquid assets in an institutional investor's portfolio, but there is not a one-size-fits all approach. Good risk management requires a well thought out liquidity plan and budget, which includes liquidity requirements in stress scenarios.



Open Ended Investment Funds



ESMA: 40% of high-yield bond funds face liquidity shortfall under severe stress

European Systemic Risk Board – May 2020:

- In line with its previous communications on investment funds, the ESRB emphasises the importance of the **availability and timely use of liquidity management tools**, especially in times of stressed market conditions.
- The timely use of liquidity management tools is a **key element of prudent liquidity risk management** by investment funds.
- In addition to protecting investors, the timely use of liquidity management tools also **reduces the risk of forced sales** of less liquid assets in periods of stress, helping to **guard against the adverse system-wide effects** stemming from fire sale dynamics across the financial system.



Another aspect of liquidity problems surfaced with open ended investment funds. The European Securities and Markets Authority ('ESMA') made this one of their priorities and deems illiquidity a risk that may lead to systemic failure. ESMA indicated 40% of high yield bond funds have insufficient liquidity. In case of large outflows, clients cannot be accommodated and managers resort to 'gating' or suspend trading. "Gating" is the practice of temporarily blocking withdrawals from an investment fund. ESMA points to the ESRB Recommendation and wants to underline its importance. In May 2020, the ESRB (European Systemic Risk Board) assessed potential financial vulnerabilities that could amplify the economic consequences of the coronavirus (CoVid-19) pandemic. In line with its previous communications on investment funds, the ESRB emphasises the importance of the availability and timely use of liquidity management tools, especially in times of stressed market conditions. Another one of their recommendations on liquidity risk in investment funds requires ESMA to coordinate a supervisory engagement exercise with investment funds to assess their preparedness in case of a new liquidity stress episode. This assessment should be based on the analysis of how funds have reacted since the onset of the CoVid-19 pandemic and their current situation, and on an estimation of their resilience to a future shock.