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ASSET MANAGEMENT

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Liquidity trends in the wake of Covid-19: implications for portfolio construction



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Editorial

The Covid-19 crisis has triggered the deepest liquidity squeeze since 2008. Unlike the Great Financial Crisis (GFC), an unprecedented real economy shock led to extremely quick deterioration of financial conditions and showed that, under extreme circumstances, liquidity may dry up not only within risk assets, but also within risk-free ones. The peak of this crisis hit in February/March. Market liquidity has improved noticeably since then, although it has not completely normalised yet and areas of weak liquidity remain.

The asset management industry has navigated this liquidity crisis and emerged mostly intact from it, despite having been hit by outflows and precipitous drops in asset prices. However, the liquidity crisis has highlighted once again the importance of a powerful and active liquidity management policy through liquidity buffers, swing prices, stress tests, and access to a wide and varied range of counterparties or instruments that may prove more liquid during market stress. This is crucial to fulfil the fiduciary duty and stand ready to meet all redemptions during liquidity squeezes while keeping the portfolio's structure unchanged in the interest of remaining investors. By doing this, large international players with global trading organisations may ensure the best mix of connectivity to liquidity venues and relationships with counterparties. Under extreme circumstances, they could even become liquidity providers themselves.

Going forward, investors should not be complacent about liquidity. In our view, investors should hold more, not fewer, assets for liquidity purposes irrespective of valuations consideration (this is the case for US Treasuries) and despite the apparent tranquillity in the market. The current situation is characterised by a decoupling between financial markets and the real economy. This will be a key vulnerability and a risk to the recovery if investors' risk appetite fades. A second wave of the virus, geopolitical tensions – most likely involving US-China relations – or idiosyncratic stories on EM could trigger volatility and liquidity squeezes.

Regarding financial markets, areas to pay attention to include decelerating monetary stimulus (although central banks will remain very accommodative) over the next months that may cause a sort of taper tantrum in markets and a possible re-pricing of inflation expectations. Another risk is that speculative buyers who exploited market dislocations early this year could reduce their exposure to lock in strong returns. Moreover, some excesses in terms of valuations are building up in some sectors and may trigger some profit-taking and unwinding of heavy positions. Within the corporate sector, highly leveraged firms may lose market access, possibly causing a spike in insolvencies and defaults, negatively affecting banks' balance sheets. These factors may put strains on market liquidity and need to be monitored carefully. This is why liquidity management should remain a focus for investors and for the asset management industry as a whole.

Liquidity must be integrated as a key dimension in the portfolio construction process, as it's the third pillar in addition to risk and return. Investors should no longer consider liquidity as exogenous and ex-post, an irregularly measured static element, but as a constant ex-ante endogenous dimension of portfolio construction. Liquidity should become one of the portfolio construction metrics and investors should make assumptions on the future dynamics of market liquidity as they do for all other portfolio metrics. This requires a large effort: collecting data, building methodologies, and setting norms and measurements. Liquidity should be assessed at the overall portfolio level and include the monitoring of trade-offs, namely the liquidity vs return trade-off, but also the trade-off of liquidity vs return, quality and yield at this point in the cycle.

In portfolio construction, investors should keep in mind the distinction between what is liquid and what is listed, and analyse liquidity at the asset class, segment and single instrument level. Liquidity can also be used to play opportunities that can emerge in periods of market stress. This has happened during the Covid-19 crisis, when investors able to distinguish between liquidity and solvency have exploited the dislocations to gain higher risk-adjusted returns. Entering a period of higher default risk, credit research is key to assessing areas of potential capital impairment risk, but also securities where market valuation does not reflect the credit risk profile and therefore offer a liquidity premium. Finally, investors should consider that the liquidity management approach is not universal and should be tailored around investment objectives and liquidity tolerance.

Covid-19 and a liquidity crisis: lessons learnt

“In March, at the peak of the Covid-19 liquidity crisis, the funding stress in the global financial system was the highest since 2008”.

The outbreak of the Covid-19 pandemic has triggered the **deepest liquidity crisis since the GFC, highlighting market fragility and the importance for investors of sound liquidity management.** There are four key lessons that investors can learn from this crisis.

LESSON 1 – Unprecedented real economy shocks can lead to extremely fast deterioration in global financial markets conditions

Liquidity in global financial markets came under extreme pressure in late February/March, when market participants started fearing that the Covid-19 outbreak would become a global pandemic. The resulting lockdown measures threw the global economy into an unprecedented deep recession, posing a threat to the stability of the global financial system. Unlike the GFC, **the Covid-19 crisis originated within the real economy and among risk-free assets, hitting dealers’ abilities to intermeditate.** In March, at the peak of the Covid-19 liquidity crisis, the funding stress in the global financial system was the highest since 2008. It has also been the fastest move ever from normal to highly stressed conditions in a period of just one month, signalling that unknown risks can result in extremely fast shocks in the markets. The swift and unprecedented reaction by global CBs prevented such an economic shock from triggering another financial crisis.

Figure 1. Funding stress in the global financial system was the highest since 2008



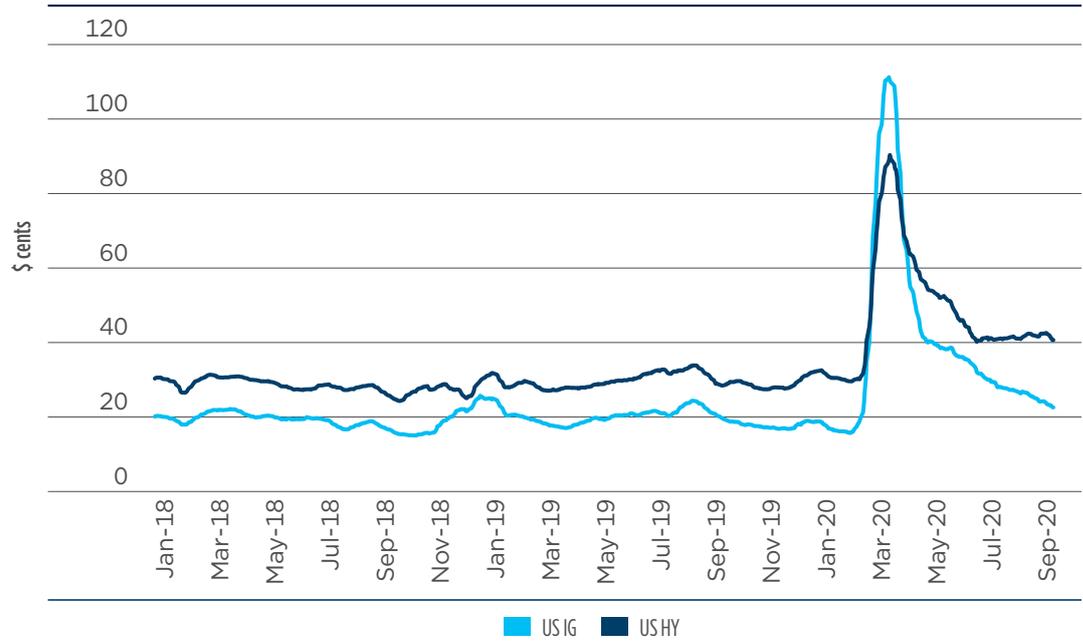
Source: Bloomberg, BofA, Amundi. Data as of 12 October 2020. The liquidity risk indicator is a measure of funding stress in the global financial system as measured by spread-based relationships in rates, credit and currencies.

LESSON 2 – Under extreme circumstances, liquidity dries up, not only affecting risk assets, but also risk-free assets

During the acute phase of the Covid-19 crisis, liquidity suddenly dried up. The S&P 500’s depth is estimated to have fallen by over 90%, to levels worse than those experienced during the 1929 stock market crash, according to JP Morgan. Credit spreads skyrocketed and the VIX volatility index hit its highest level since 2008. Primary market activity halted in the high yield (HY), leveraged loans and private debt segments. Some markets dried up completely, making any trade hard to execute, and bid-ask spreads widened across market segments, with market makers becoming increasingly risk-averse and reluctant to make prices.

“The liquidity dry-up was exacerbated by the role of quantitative trading, with record volatility forcing further deleveraging among quantitative and risk-controlled (VAR) strategies”.

Figure 2. US IG and HY markets bid-ask spreads, 20-day average, US cents



Source: MarketAxess, Amundi. Data as of 12 October 2020.

Electronic trading broke down in most asset classes, especially for the credit space. In general, liquid instruments, such as the US Treasury, were also affected. **The repricing in ten-year US Treasury yields was about six times larger than what was priced ex-ante into options markets.** The liquidity dry-up was exacerbated by the **role of quantitative trading and risk strategies that were forced to sell in an environment of rising volatility.** This triggered a **negative feedback loop of volatility, illiquidity and outflows, highlighting the underlying market fragility.**

LESSON 3 - Derivatives can be a source of liquidity in the search for a risk management tool in times of crisis

Not all markets have been affected in the same way. For example, the CDS¹ indexes acted as an alternative liquidity source to both trade and hedge credit risk. This is confirmed by the sharp rise in trading volumes for CDS, showing how **derivatives, when used wisely, can be a powerful risk management tool for investors, bringing benefits to the financial market as a whole** (see Q&A: The trading desk's view). Derivatives allow investors to hedge unwanted risk and are a powerful and effective risk management tool. When markets are disrupted and spreads widen, cash portfolio turnover can become very expensive. Instead, derivative exposure can be built with a small upfront cost, used to hedge a specific risk -- even for a short period of time -- and unwound quickly when it is no longer needed, as derivatives are often more liquid than the underlying asset. However, since they create leverage, derivatives must be used within a strong risk management framework and in combination with a powerful technological infrastructure.

LESSON 4 - When market liquidity vanishes, central banks acting as buyers of last resort help to restore market functioning

Against the backdrop of falling market liquidity, central banks (CB) injected ample macro liquidity. Main CBs took swift and bold action, relying on both familiar and innovative tools to stabilise liquidity conditions and support the economy (see Central banks action during the Covid-19 crisis). **They have become the de-facto buyers of last resort of financial markets.**

¹A CDS is a bilateral agreement between a protection buyer and a protection seller in which the buyer agrees to make fixed periodic payments to the seller in exchange for protection against a credit event of an underlying asset or portfolio of assets. The underlying may be a single reference entity (single-name CDS), a portfolio of reference entities (CDS index), or a particular amount of losses in a basket of reference entities (tranche CDS). Source: Federal Reserve Bank of New York.

“Derivatives, when used wisely, can be a powerful risk management tool for investors, bringing benefits to financial market functioning”.

Central banks actions during the Covid-19 crisis

At the onset of the Covid-19 crisis, central banks applied lessons learnt during the GFC:

- **Act quickly and massively**, unlike the Eurozone response in 2008-09, which was slow and tepid.
- **Do whatever is needed to keep financial markets and credit intermediation functioning.**
- **Moved a step further, also working with fiscal policy this time** (global fiscal stimulus should total around 3.5% of global GDP this year). As we pointed out in a recent [paper](#), the borders between monetary and fiscal policy have become blurred, leading to de-facto debt monetisation.
- **Prevent capital flight** from emerging markets (EM).

In addition, major CBs have moved beyond their limits and expanded their toolboxes:

- **US Federal Reserve:** cut official rates by 150bps, restarted its QE programme worth \$700bn and now **including HY bonds**; restarted swap lines, supporting repo markets and funding facilities originally introduced in 2008 to address liquidity and credit issues across markets.
- **ECB:** launched a €750bn pandemic emergency purchase programme (PEPP) with **high flexibility to deviate from the capital key rule**; suspended limits on EU government borrowing for a total epidemic response worth €3.2tr.
- **BoE:** official rates cut by 65bps; revived its QE programme, with extra buying of both government and corporate bonds, taking the total up to £645bn; introduced a £330bn plan of loan guarantees to businesses.
- **BoJ:** announced **unlimited purchases** of government bonds and increased equity purchases through ETFs; it will pay institutions that take up loans.
- **EM CBs:** EM CBs undertook **aggressive monetary easing**, cutting policy rates to all-time lows despite currency weakness and capital outflows. Some of them have embarked on **unconventional policy measures** for the first time ever. Fifteen EM CBs have announced new or increased government bond buying across multiple instruments to deal with the unprecedented impact of Covid-19.

Put together, G4 CBs have expanded their balance sheet by about 20% of GDP over just three months, compared to 6% in the first year of the GFC. The Fed's balance sheet has increased by about \$3tr since end-February and topped \$7tr in June. Most of this growth has been the result of securities purchases, mainly Treasuries and MBS.

The measures put in place have proved effective and **market liquidity conditions have improved noticeably since March**, as CB actions helped contain volatility and stabilise market liquidity across asset classes. Today, **several months into the crisis, investor sentiment has moved back to less-stress-than-normal territory.**

Figure 3. Investor sentiment has turned more positive since early May



“Central banks have become the de-facto buyers of last resort of the financial markets”.

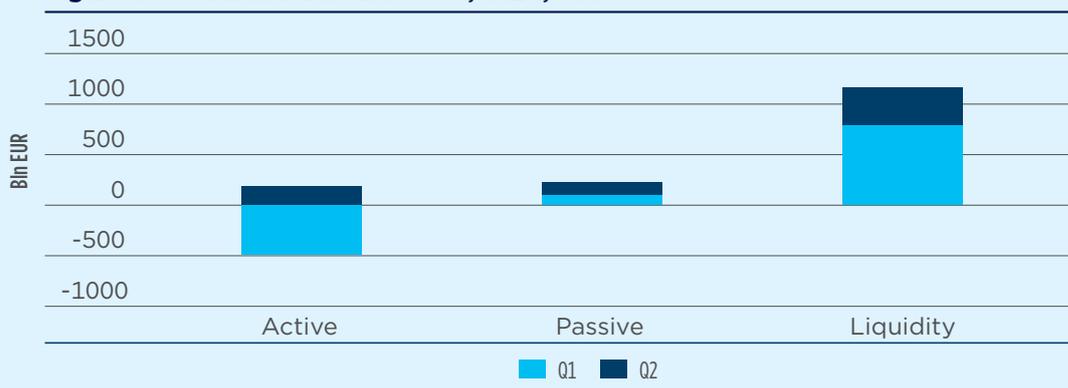
Source: Bloomberg, BofA, Amundi. Data as of 12 October 2020. The Flow indicator is a measure of investor sentiment for equities, bonds, and money markets, calculated using investor flows and volumes.

Focus: the asset management industry during the Covid-19 crisis

“The asset management industry has emerged shrunken but mostly intact from the recent market turmoil”.

The asset management industry has emerged shrunken but mostly intact from the recent market turmoil. The crisis weighed on the broader asset management industry in the first quarter of 2020, when a mix of outflows and severe market effects hit AuM globally. Global investors have sought safety and put record amounts of cash into money market funds (over €1tn of inflows in the first half of the year) while active funds were sold massively, especially in the first quarter. ETFs held up, with slightly positive net flows.

Figure 4. Global mutual fund flows, 1H20, €bn



Source: Broadridge, Amundi. Data as of 12 October 2020.

Many funds have activated emergency liquidity management tools. Only a few have been unable to meet redemption requests or been forced to suspend trading. Just 117 funds out of the almost 35,000 sold in Europe were suspended, according to Fitch Ratings, for a total of around €54bn of assets affected by the suspensions. The latter have been concentrated within Nordic countries, where the suspension of redemptions is the only liquidity management tool available for funds. This suggests that the regulations governing investment funds are working as they should. The resilience among investment funds has been conditional on unprecedented CB support. According to calculations by rating agency Fitch, CBs have stumped up a total of \$93.8bn globally to support investment funds since the start of the crisis. As the Covid-19 crisis drags on and some corporates are downgraded or go bust for a variety of reasons (eg, inability to service their debt, reduced business opportunities), asset managers could experience further hits to their portfolios and see a possible new wave of redemptions. With liquidity below pre-crisis levels and challenging in some market areas, there is the risk that some assets become hard to value, possibly triggering further fund suspensions. In order to protect investors from a potential liquidity crisis, **asset managers could implement a powerful and active liquidity management policy**, with high liquidity buffers, both at the fund and the group level, with granular stress testing to exploit entry points and avoid a liquidity trap in case of a deteriorating economic outlook. This could allow asset managers to fulfil their **fiduciary duty and stand ready to meet all redemptions** even amid stressed market conditions and remain focused on keeping the portfolio's structure unchanged in the interests of the remaining investors.

In this respect, big may be good. **Large asset managers with a diversified client base and access to different liquidity pools may be better positioned to face additional liquidity challenges compared to smaller players with less access to liquidity and possible higher concentration of assets among few investors.** But being big is not enough. It is also important to carefully select the best tools from a liquidity standpoint to implement certain investment ideas. Liquidity has to become a key element of the portfolio construction policy that every asset manager should put in practice (see Chapter: The role of liquidity in portfolio construction).

“A key point for good liquidity management in stress times is to adopt an active liquidity management policy, maintain adequate liquidity buffers, and try to keep the portfolio's structure unchanged despite the outflows in order to protect the remaining clients invested”.

What is next regarding liquidity risk?

Because of CB actions, **financial markets will exit the Covid-19 crisis even more flooded with macro liquidity compared to their situations at the onset of the crisis.** However, despite the above-noted improvements, **dislocations remain.** Generally, market liquidity is now thinner and more expensive than it was before the outbreak. **As a result, liquidity remains vulnerable to market movements and to idiosyncratic news that could cause it to dry up quickly, especially in EM.**

Table 1. Liquidity assessment of different market segments pre- and post-crisis

Segment	Liquidity assessment vs pre-crisis level	Recent trend
Government bonds	GOOD	Benign conditions
IG credit	GOOD	Stable conditions compared to end-2019. However, liquidity is thinner and more expensive, subject to idiosyncratic risk
HY credit	SOME CHALLENGES	Liquidity stabilised, although at lower level compared to 2019. Liquidity is characterised by low resilience and high sensitivity to idiosyncratic stories
EM bonds	SOME CHALLENGES	Some challenges in specific areas and for large sizes. Overall liquidity stabilised, although at a lower level compared to 2019. Liquidity is characterised by low resilience and high sensitivity to idiosyncratic stories
DM equities	GOOD	Liquidity is abundant. Volumes are significantly higher than pre-Covid levels, although volatility is higher, with higher risk of large intra-day swings and large market impact on orders
EM equities	GOOD	Liquidity stable compared to pre-Covid levels, although volatility is higher, with higher risk of large intra-day swings and large market impact on orders
Forex	WORSE	Both G7 and EM are far away from the liquidity levels seen at the start of the year. Turkey is the largest challenge, with widening spreads as funding conditions remain challenging

Source: Amundi as of 12 October 2020. **For illustrative purposes only**, views are subject to change.

The current situation is characterised by a **decoupling between financial markets and the real economy, dubbed 'the great disconnect from macro fundamentals'**. This will be a key vulnerability going forward and a risk to the recovery if investors' risk appetite fades. Thanks to the ongoing CB action, market liquidity is no longer perceived as an issue. **However, investors should not be complacent with regard to liquidity conditions.** Different triggers may cause investors to return to a risk-off stance.

Among these triggers, **on the economic front**, the most relevant are:

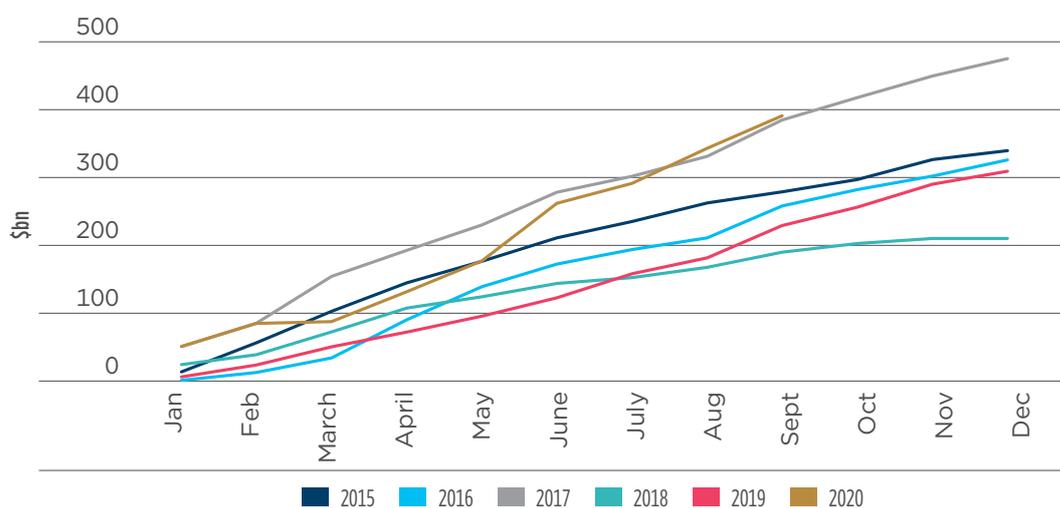
- Second wave of the virus with renewed lockdowns, halting the nascent recovery;
- Geopolitical incident, with renewed tensions between the US and China, extending from trade issues to the tech sector and possibly also to the race for a Covid-19 vaccine; and
- Idiosyncratic stories on EMs

“Moving into 2021, monetary stimulus may be less aggressive (but still very accommodative) at a time when the economy starts to recover. A marginal shift in market expectations could trigger higher volatility”.

On financial markets, the main risks are:

- Moving into 2021, monetary stimulus may be less aggressive (but still very accommodative) at a time when the economy starts to recover. In addition, inflation expectations may adjust to incorporate a cyclical rebound. A **marginal shift in market expectations would play as a sort of taper tantrum in markets washed by liquidity and would increase market volatility and dislocations.**
- Another risk is that **speculative buyers** in the first part of the year – who exploited dislocations in credit markets and posted strong returns – **will reduce their exposure to lock in profits.**
- **Some excess building in terms of valuations** (the IT sector reaching new all-time highs) and the growing dominance of big five US technology companies (also in terms of liquidity) were exacerbated by the Covid-19 crisis. Any **unwinding** of positions, with the end of the long duration trade, on any crowded trade could put further strains on market liquidity.
- **Corporate-sector vulnerabilities.** Highly leveraged firms may lose market access, possibly triggering a spike in insolvencies and defaults. This would hit banks’ balance sheets and impair the role of the banking sector as a liquidity provider. **HY issuance has been massive over the past few years, with faltering quality, especially in the US market.** It will be paramount to manage liquidity carefully and be highly selective.

Figure 5. US HY cumulative issuance, \$bn



Source: Bloomberg, Amundi Research. Data as of 12 October 2020.

All these elements may put strains on market liquidity and need to be monitored. Moreover, the pandemic may intensify some vulnerabilities that have built up over the past decade or trigger further market volatility:

“If the economic recovery proves short-lived and reverses, these vulnerabilities may amplify the resulting tightening in financial conditions, causing more instability and further liquidity shrinkage”.

- **Today, banks are better positioned on both the capital and liquidity fronts** than they were at the onset of the GFC. However, their **resilience may be tested in some countries** in the face of large market and credit losses, pushing them to cut back their lending to the real economy and amplifying the slowdown in economic activity.
- **Further stress may build up for non-bank financial corporations** due to the recession.
- **Some EM and frontier markets will face high external refinancing requirements** and may need financial support from international institutions to meet their obligations.

These themes will be key going forward, as they highlight the fragility of the financial system. **If the economic recovery proves short-lived and reverses, these vulnerabilities may amplify the resulting tightening in financial conditions, causing more instability. This is the reason why liquidity management should remain a key focus for investors and for the overall asset management industry.**



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Focus: Using ETFs to manage liquidity in stressed markets

During the Covid-19 crisis, ETFs managed to provide continuous access and resilient liquidity even in those market segments where the liquidity dry-up was most acute. Monetary authorities -- including the BoE, the Bank for International Settlement (BIS) and the Fed -- have recognised this resilience of and the associated role of ETF prices as a means of price discovery. **This experience could boost the role of ETFs as a tool to manage liquidity risk.**

Resilient liquidity in volatile times

During the March sell-off, volatility spiked to levels unseen since the GFC. This, coupled with strong selling pressure, led to reduced liquidity across asset classes. ETFs were able to offer instant market access to investors with transparent, executable prices to trade on, albeit at wider bid-ask spreads, reflecting the liquidity dry-up in underlying instruments. Estimated traded volumes in the European ETF market were about two to three times their 2019 averages, with significant flows trading on the secondary market. ETFs acted as a shock absorber, offering a liquidity buffer and allowing for flexible risk management. This was particularly relevant in the fixed income space, where investors could sell credit ETFs -- including HY ones -- when trades in some of the cash bonds were hard or even impossible to execute.

Figure 6. Euro IG ETFs, average bid-ask spread



Source: Amundi, Bloomberg. Data as of 25 September 2020.

“ETFs can be an instrument of financial stability, and a powerful tool for risk management”.

Price discovery in dried up market segments

The Covid-19 crisis has also highlighted the price discovery role of ETFs. With trading being limited, prices were non-executable on many cash bonds, making it difficult for investors to value portfolios properly and manage risk. The prices did not reflect the opportunities for investors to trade bonds. Meanwhile, credit ETFs were showing continuously updated and executable prices, which reflected the market pricing of the underlying bonds. Hence, ETF prices provided an indication of the bonds' fair prices, **acting as a means of price discovery.** This role was recognised by the BIS, which concluded, *“Compared with the relative staleness of bond prices and NAVs, ETF prices can be useful tools for market monitoring and valuable inputs to risk management models that require up-to-date assessments, for instance trading book risk models”*². The fact that the Fed decided to include ETFs in its QE programme is an endorsement of the resilience of the pricing model of ETFs, especially since the Fed made it clear it would not purchase securities if it did not think the value was fair. **It is also a confirmation that ETFs can be instruments of financial stability and powerful tools for risk management.** Thanks to their price adjustment mechanisms, ETFs were able to maintain continuous liquidity.

²BIS Bulletin N. 6, “The recent distress in corporate bond markets: cues from ETFs”, Sirio Aramonte and Fernando Avalos, 14 April 2020.

The role of liquidity in portfolio construction

“Liquidity can be seen as the third pillar in portfolio construction theory, in addition to risk and return”.

Now we focus on how liquidity considerations could be integrated into sound portfolio analysis. Liquidity can be seen as the **third pillar in portfolio construction theory**, in addition to risk and return. Traditional portfolio analysis is based on the assumption that all assets are liquid at any time. However, the Covid-19 crisis has shown that such an assumption may not be met at times of high financial market stress. For this reason, liquidity has to be included in the theoretical framework for an overall analysis. There are at least three relevant considerations for investors when approaching the liquidity theme.

1. There is still confusion between macro and market liquidity:

- **Macro liquidity:** liquidity has strong macroeconomic features and could be identified with various monetary aggregates and, more generally, at the level of the balance sheet of central banks.
- **Market liquidity:** liquidity in the market is defined as the ability to trade a large order on a given financial instrument with a limited price impact. This depends on supply/demand dynamics (funds flows, for example) that can vary over time and are mainly related to the number of intermediaries and type of intermediaries negotiating with regard to a certain security, market environment or regulation.

Keeping in mind these two different liquidity definitions, a paradox may develop: despite the ample liquidity at the macroeconomic level, this can dry up at the micro level, as experienced at the beginning of this crisis, forcing further accommodation by central banks to restore market functioning.

2. Liquidity is a double-edged sword: a risk but also an opportunity

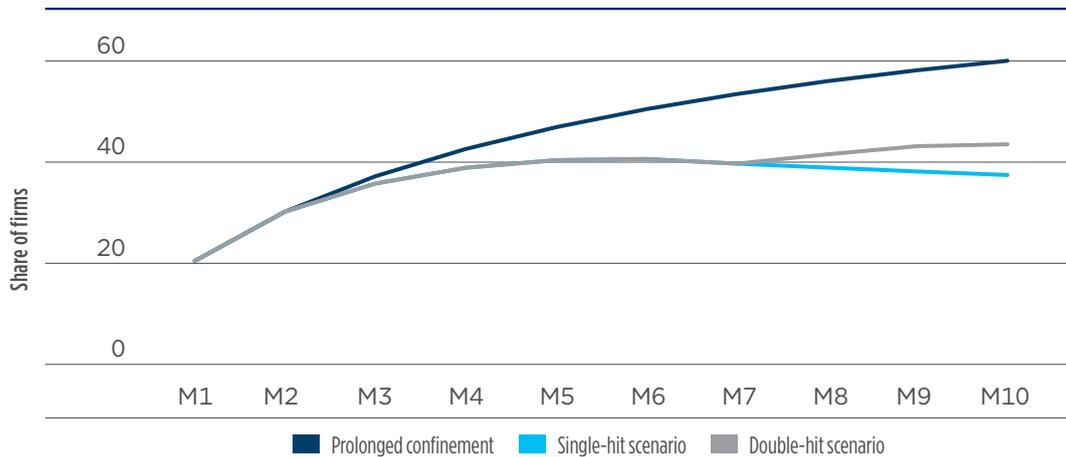
Vanishing market liquidity must be seen as a risk in the context of being exposed to high costs in case of liquidation of certain positions to meet redemption and or to reduce portfolio risks. In fact, market liquidity shortages can result in the inability to meet liabilities and lead to undesired changes in the portfolio structure. This has materialised in the post-2008 environment, when the retreat of banks from market-making operations, coupled with a frantic QE-led search for yield, pointed to looming asset-liability mismatches.

However, in periods of dislocation, market illiquidity can also offer opportunities, and as such, is a potential alpha pool for investors with sufficient liquidity buffers able to enter the market on a contrarian move and buy distressed asset with potentially high intrinsic value.

The opportunity side has materialised during the Covid-19 crisis, when investors able to distinguish between **liquidity and solvency** – in what has been, at least initially, a liquidity crisis centred on the corporate credit curve – have exploited market dislocations to gain higher risk-adjusted returns. CBs are providing a liquidity bridge and access to credit to corporations thorough a variety of facilities, while governments are helping with fiscal-relief measures. According to a recent OECD [study](#), up to 60% of firms would face liquidity shortages in a Covid-19 double-hit scenario with no policy intervention.

However, CBs will not be able to fix the **solvency issue** if companies cannot make enough revenues. If a business model is unsustainable -- or severely hit by social distancing and other new safety provisions -- monetary stimulus can only delay, but not avoid, defaults, with a ‘zombification’ of the corporate sector. In the end, bankruptcies will materialise, undermining balance sheets of banks and institutional investors.

“Keeping sufficient levels of liquidity is not only a way to mitigate risks in the face of a downturn, but also offers the ability to enter the market during phases of dislocations when opportunities arise”.

Figure 7. Liquidity shortfall without policy intervention under three scenarios

Source: OECD, Amundi. Data as of 12 October 2020. Share of firms refers to the percentage of firms facing liquidity shortfalls under three different scenarios. The prolonged-confinement scenario envisages a sharp drop in activities in each month considered, being agnostic on the length of the confinement and on the transition to normality. The single-hit scenario foresees a sharp drop in activity lasting two months, followed by a four-month progressive transition towards normality, and a return to pre-crisis activity levels from the seventh month after the start of the epidemic. The double-hit scenario overlaps with the single-hit scenario for the first seven months, but then models a second outbreak from the eighth month onwards.

3. Listed and liquid are two different concepts

There is confusion when it comes to assessing the liquidity of listed and unlisted instruments. There appears to be the assumption that listed instruments are liquid, as they are supposed to benefit from the presence of market makers and a large pool of intermediaries, while unlisted instruments do not. The reality is more nuanced. In fact, there are listed instruments that can have thin order books, especially at times of volatility spikes, when market makers can be reluctant to trade under extreme market conditions. There are also instruments that, more generally, display lower liquidity. This is usually the case for small caps or some derivative instruments that -- despite being traded on stock exchanges -- may see very little volume (i.e., listed options with long-term expiry dates). On the other hand, some unlisted instruments can be highly liquid despite being negotiated OTC (over the counter). This is the case, for example, of CDS indexes that -- as mentioned in Lesson 3 in the previous chapter -- have been very liquid during the crisis (see also the Q&A section at the end of this document). According to the Federal Reserve of New York, "Today, CDS indexes are the most common instruments for assuming credit risk exposure. They are more liquid and trade at smaller bid-ask spreads than baskets of cash bonds or single-name CDS contracts"³. All the above considerations imply that liquidity at the asset class, segment and single instrument level should be taken into account in the portfolio construction activity.

Active investor principles regarding liquidity management

Taking into consideration the lessons learnt from the crisis so far and the key considerations on the liquidity front, we believe investors should build their liquidity management approaches around some key principles.

Do not be complacent regarding liquidity risk, despite the huge macro liquidity in place

The Covid-19 crisis is a reminder that liquidity mismatches happen and that there is a trade-off between returns and liquidity. It is true that excess liquidity can harm return potential, but liquidity is key in times of crisis.

→ Entering the next phase of the Covid-19 crisis, when defaults will rise and uncertainty will prevail until a vaccine is approved, investors should hold more, not less, assets for liquidity purposes irrespective of valuation considerations (this is the case for US Treasuries) and despite the current calmness of the market.

“Not all listed instruments are highly liquid and liquid ones can experience liquidity dry-up in periods of turmoil. Some unlisted contracts, contrary to common belief, can be highly liquid, as in the case of CDS indexes”.

³Source: Federal Reserve of New York, Economic Policy Review, Volume 26, Number 3 June 2020.

“The Covid-19 crisis is a reminder that liquidity mismatches happen and that there is a trade-off between returns and liquidity. With high uncertainty ahead this is time to hold more liquid assets than what apparently seems needed.”

Expect rising volatility in the US dollar as its role as dominant currency is challenged

The expansion of CB balance sheets must not mask the risk of an erosion of the global US dollar liquidity base. One by one, the factors that have lubricated global growth have turned negative: euro/dollar operations have shrunk in number; the oil price collapse has stopped the recycling pump of petrol dollars and turned the budgeting equation of oil producers into a nightmare; the rise in protectionism and populism and the fall in global trade have played a key role. These trends have been exacerbated by the Covid-19 crisis.

→ This will not help much for investors on the level of the US dollar as a currency, but rather points to rising volatility and financial/real disruption.

Combine credit research and liquidity assessment

Entering a period of higher default risk, credit research is key to assessing areas of potential capital impairment risk, but also securities where market valuation does not reflect the credit risk profile and therefore offer a liquidity premium.

→ As periods of market sell-off may result in indiscriminate selling of assets, these periods also offer a wide dispersion in terms of liquidity premia that active investors can benefit from.

Make assumptions on liquidity as a key metric for portfolio construction

In the traditional portfolio construction approach, based on risk and return assessments, all assets are supposed to be liquid at any time and therefore liquidity is not taken into consideration. However, this assumption is contradicted by reality. Not only are not all asset liquid, but liquidity is also dynamic and changes over time.

→ Therefore, liquidity must be fully integrated as a key dimension in the portfolio construction process. Investors should no longer consider liquidity as exogenous and ex post, and irregularly measured static element, but as a constant ex-ante endogenous dimension of portfolio construction. Liquidity should become one of the portfolio construction metrics and investors should make assumptions on the future dynamics of market liquidities, as they do for all the other portfolio metrics. The new efficient frontier must incorporate the trade-off between risk, return and liquidity.

→ This requires a large effort collecting data, building methodologies, setting norms and measurements. Only what can be measured can be managed. In addition, as liquidity is not static, but varies over time depending on regulatory changes, market environment and investor behaviour, it is paramount to make a continuous assessment of the liquidity profile of any invested instrument.

→ This assessment would allow investors to look for the best way on the liquidity front (not only on risk and returns) to implement any investment idea. This could be through a CDS instead of a bond or through equity or other derivatives.

In the liquidity management approach, consider all the trade-offs

Liquidity should be assessed at the overall portfolio level. In terms of risks, this allows for the mitigation of liquidity risk to some extent, with other assets offering a different risk and liquidity profile. In terms of alpha generation, liquidity premia should be considered as a source of alpha that investors could exploit by combining public and private assets. Within the portfolio construction activity, investors should also consider all the different trade-offs that investment decisions imply. There is a trade-off between locking-in capital to cover potential outflows in periods of stress and being fully able to seize opportunities counter-cyclically -- just like there is a trade-off between locking in capital in private markets and exploiting dislocations in public ones.

→ The trade-off between liquidity and performance should be viewed as the most relevant issue, and more relevant than the traditional return vs volatility trade-off. A given level of liquidity implies some type of performance.

Adjust liquidity dynamically through calibrated liquidity buffers

Crises offer both risks and opportunities. Therefore, investors should embrace a dynamic approach to liquidity management. On the risk front, it is key to properly calibrate the liquidity buffers based on granular stress testing. This should help define the proper

“Liquidity should become one of the portfolio construction metrics. Only what can be measured can be managed. Therefore, it is important to regularly assess the liquidity of all investments”.

buffer to support performances in a period of crisis. Liquidity management cannot only be counter-cyclical.

→ This is why it should be seen as a sound portfolio discipline based on systematic profit-taking when prices are up. Exiting a bull market phase with a proper liquidity pool is key to benefiting from price dislocation due to liquidity squeezes. In this respect, liquidity management should be viewed as a natural area for active management -- in particular, to benefit from mean reversion.

“Any investment decision will imply a series of trade-offs. The trade-off between liquidity and performance is now more relevant than the traditional return and volatility trade-off”.

Try to keep a portfolio’s structure unchanged as much as possible

This should happen despite the redemption requests in order to protect those clients that stay invested (**swing pricing mechanism**). Being able to do this will depend on many factors, including the macroeconomic scenario, the prevailing market conditions, the bid-ask spread, and the fund’s own liquidation strategy. As such, when cash has to be made, portfolio managers should try to sell a share of all the assets held in the fund, not only the easiest to liquidate.

→ The costs of executing the orders to meet large redemption requests should be passed on to those investors who originated the flows. In this way, remaining holders are protected in terms of valuation. Such tools can encourage investors to stay invested and give fund managers time to reposition their portfolios while addressing subscriptions and redemptions.

Adjust the liquidity management policy to the investment goals

Finally, investors should consider that the **liquidity management approach is not universal** and should be tailored to investment objectives and liquidity tolerance.

Table 2. Liquidity management in multi-asset (MA) portfolios

	Income-oriented MA portfolios	Liquid (e.g., UCITS funds) conservative portfolios	Liquid diversified growth portfolios	Institutional bearing illiquid assets
Approximate % of potentially illiquid assets (over one week to liquidate) in portfolio and type	20%	10%	5%	Sometimes separated buckets for illiquid assets (e.g., real estate, infrastructure, private debt). Normally 5-15%, depending on benchmark/ risk profile
Normal conditions liquidity buffer	2%	4%	5%	5%
Stress conditions liquidity buffer	4%	8%	10%	10%
Type of assets used to provide liquidity	Cash, money market funds, Treasuries, equities			
Comments on liquidity management	Assets committed to pure cash stay relatively low vs other MA strategies because of income distribution needs. Focus on improving DTS (while keeping EM and HY exposure), rising quality of credits	Quality of credits usually kept high, preference for using DTS budget in the government bond space, where CBs can intervene better (e.g., BTPs)	Usually only the level of cash increases vs average to reduce the equity drawdown, but liquid assets ratio is among the highest in the MA range	Depending on flow dynamics, the use of cash can be increased above normal target levels to anticipate an eventual liquidity crisis

Source: Amundi as of 12 October 2020.



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Q&A: Trading desk's view on liquidity

What is your assessment of the Covid-19 crisis from a trading-desk perspective?

With the outbreak of the Covid-19 pandemic, the first half of 2020 was one of the busiest times on trading desks since the 2008 credit crunch. In line with the virus' pattern, in February and March, financial markets were severely impaired and dysfunctional. For a few weeks between end-February and mid-March, electronic trading broke down in most asset classes, particularly in the credit space, where price and liquidity discovery shifted largely to voice trading. We witnessed three phases:

- Between end-February and early March, **trading volumes increased** dramatically, as investors reacted to the new scenario by heavily re-balancing portfolios and putting in place hedging strategies. **Liquidity became more expensive but did not overtake the 2008 peak.** This suggests that the market functioned reasonably well and market makers managed to meet rising liquidity demand.
- In March, with the crisis worsening everywhere, the **price of liquidity spiked** as dealers started to reduce the liquidity supply, mainly caused by challenging funding conditions.
- By early April, trading volumes had recovered to levels slightly higher than the pre-Covid-19 values, mainly supported by central bank intervention. Liquidity was more abundant, and its price had reversed to levels similar to those observed before the Covid-19 crisis, although still slightly higher.

What was the behaviour of market participants during the crisis?

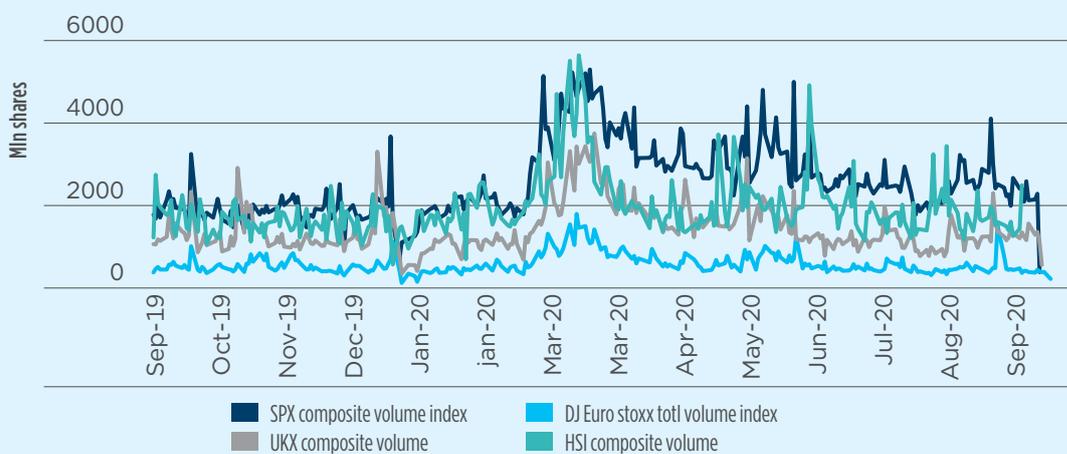
As financial markets became volatile and illiquid, market makers started feeling uncomfortable about showing price commitments on electronic platforms. However, the large majority of bulge investment banks continued to provide liquidity at good price, de facto supporting financial markets and avoiding further deterioration. On the other hand, brokers and smaller banks appeared to be more risk-averse and their support vanished when real money firms needed it the most. **This shows how not all liquidity providers have the same level of reliability.**

Where do we stand now in terms of market liquidity on equity?

As lockdown measures were lifted and economies slowly recover, liquidity has improved across all asset classes, with trading volumes back to pre-Covid-19 levels in most markets. On the equity side, global volumes are up YTD, although they remain lower than their March peak. In US equities, volumes are up 34% compared to pre-Covid-19 levels but still 54% lower than the March peak. There has also been a similar recovery in Europe, the

“For a few weeks between end-February and mid-March, market liquidity had vanished from electronic trading platforms, as market makers became progressively more risk-averse and reluctant to make prices”.

Figure 8. Global equity trading volumes, shares in millions



Source: Bloomberg, Amundi. Data as of 12 October 2020.

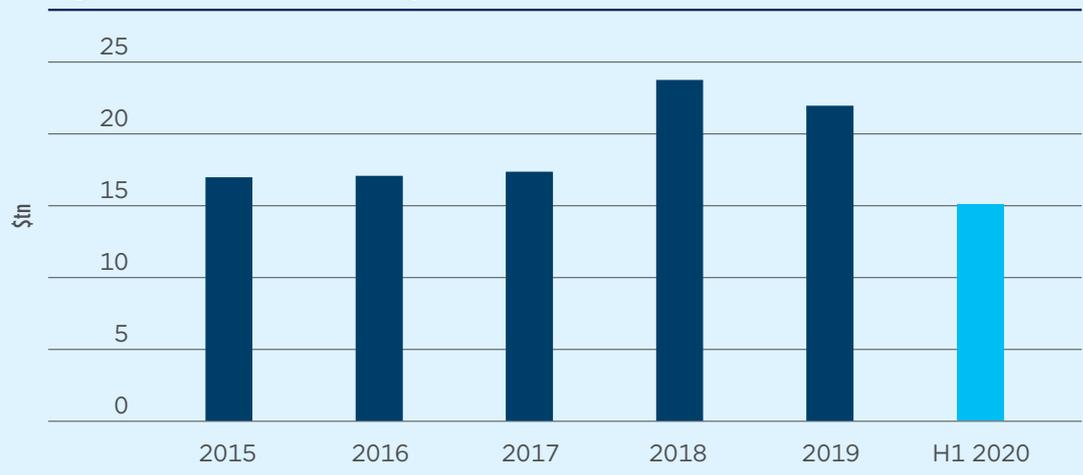
“The role of CDS indexes has been pivotal as an alternative liquidity source both for trades and to hedge credit risk”.

United Kingdom and Asia, although the comparison to the March peak remains worse than in the United States (down 76%, 71% and -69%, respectively).

What has been the impact of the crisis on the credit market?

On the credit side, we witnessed a wild widening of credit spreads in February-March, followed by a subsequent extensive retracement. At the peak of the crisis, dealers struggled to offer liquidity as they were trying to offload risk from their portfolios. The **role of CDS indexes was pivotal as an alternative liquidity source**, both for trades and to hedge credit risk. In fact, trading volumes in CDS indexes increased notably during this period, both internally and for the market in general.

Figure 9. CDS notional traded, \$tn



Source: IHS Markit, Amundi. Data as of 14 September 2020.

In the second quarter of 2020, international European debt capital market (DCM) volume was up 71% globally compared to the same period of 2019. This shows that, despite the spike in volatility and the reduction in the global level of liquidity, **capital markets have functioned well during the turmoil. They are playing an essential role in connecting liquidity providers with liquidity takers, together with supporting issuers in addressing their funding needs and refinancing requirements.** In recent months, liquidity conditions have improved in **credit markets**, where the average daily trading volume has increased meaningfully across both the IG and HY segments. Spreads have narrowed significantly since their March peak, even though they remain wider than their pre-Covid-19 levels. In some ways, **the crisis has forced credit markets to return to a more fundamentals-based approach, with some repricing of risk, after having been technically driven for a long time.**

What is your view on liquidity in forex markets?

With regard to **forex markets**, liquidity conditions have also improved, but have not retraced yet to their pre-outbreak levels. Here, volumes remain generally tiny (in May, they hit a 15-year low) even though they surged in June, when markets started to factor in the risk of a second virus wave. This shows how amounts to be cleared during risk-off phases could be large, posing an ongoing risk to FX markets. Despite the above-noted improvements, **dislocations remain.** Market depth in the FX market is around 35% below its pre-Covid-19 levels in absolute terms, according to JP Morgan estimates.

“Liquidity in FX markets remains below pre-crisis levels, with areas of vulnerability”.

Conclusion

Liquidity remains vulnerable to market movements and to idiosyncratic news that could cause it to dry up quickly. For investors, it is important to have access to multiple sources of liquidity. In this respect, large international players with global trading organisations may ensure the best mix of connectivity to liquidity venues and relationships with counterparties.

Definitions

- **Alpha:** The additional return above the expected return of the beta-adjusted market return; a positive alpha suggests risk-adjusted value is added by the money manager compared with the index.
- **Asset purchase programme:** A type of monetary policy wherein central banks purchase securities from the market to increase money supply and encourage lending and investment.
- **Basis points:** One basis point is a unit of measure equal to one one-hundredth of one percentage point (0.01%).
- **Bid-ask spread:** The difference between the highest price that a buyer is willing to pay for an asset and the lowest price that a seller is willing to accept.
- **Bond ratings:** If the ratings provided by Moody's and S&P for a security differ, the higher of the two ratings is used. Bond ratings are ordered highest to lowest in a portfolio. Based on S&P measures: AAA (highest possible rating) through BBB are considered investment grade; BB or lower ratings are considered non-investment grade. Cash equivalents and some bonds may not be rated.
- **Credit Default Swap (CDS):** A credit default swap (CDS) is a financial swap agreement that the seller of the CDS will compensate the buyer in the event of a loan default or other credit event.
- **Credit spread:** Differential between the yield on a credit bond and the Treasury yield. The option-adjusted spread is a measure of the spread adjusted to take into consideration possible embedded options.
- **Default rate:** The percentage of issuers that failed to make interest or principal payments in the prior 12 months. Default rate based on BofA indices. Universe consists of issuers in the corresponding index 12 months prior to the date of default. Indices considered for corporate market are ICE BofA.
- **Fallen angel:** A fallen angel is a bond that was given an investment-grade rating but has since been reduced to junk-bond status due to the weakening financial condition of the issuer.
- **FX:** FX markets refer to the foreign exchange markets where participants are able to buy and sell currencies.
- **Market depth:** It is the market's ability to sustain relatively large market orders without impacting the price of the security.
- **Market makers:** Financial intermediaries that enter buy/sell quotes to give liquidity to a financial instrument. Market makers buy and sells for their own account (and as such, this activity can be capital intensive) with the goal to profit from the bid-ask spread differential.
- **MBS, CMBS, ABS:** Mortgage-backed security (MBS), commercial mortgage-backed security (CMBS), asset-backed security (ABS).
- **Option-adjusted spread (OAS):** It is the measurement of the spread of a fixed-income security rate and the risk-free rate of return, which is adjusted to take into account an embedded option.
- **Quantitative easing (QE):** QE is a monetary policy instrument used by central banks to stimulate the economy by buying financial assets from commercial banks and other financial institutions.
- **Spread:** The difference between two prices or interest rates.
- **Solvency:** Solvency is the ability of a company to meet its long-term debts and financial obligations.
- **Volatility:** A statistical measure of the dispersion of returns for a given security or market index. Usually, the higher the volatility, the riskier the security/market.
- **VIX:** VIX is the CBOE volatility index. The VIX index is a measure of market expectations of near-term volatility on the S&P 500 (US equity).

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