

THE QUESTION OF MARKET LIQUIDITY TAKING THE MEASURE OF CURRENT DEVELOPMENTS TO RESPOND ACCORDINGLY

*Comments Paper
by the Association Française des Marchés Financiers*

Vanishing liquidity. Recently published reports, papers and opinions ([cf. summary bibliography in Annex](#)) reveal that market liquidity has become a key concern for many financial market participants and observers, including first and foremost market regulators, supervisors and central banks.

Their new sensitivity can be traced back to several market disturbances in the recent period during which market liquidity abruptly declined or even dried up temporarily. Examples include the mini flash crash in US Treasuries on 15 October 2014, the currency market turmoil caused by the run-up in the Swiss franc after the Swiss central bank unexpectedly removed the euro peg on 15 January 2015, and the market shocks on 24 August 2015 sparked by uncertainty about the situation and outlook of the Chinese economy. Other examples, though seemingly less significant, further underline the magnitude of the issue.

Avoid a repeat of the subprime crisis. Although thankfully these disturbances were short-lived, their intensity sends a warning, given the importance of liquidity to orderly markets.

No one is forgetting that while the particular nature of the products involved played a decisive role, the subprime crisis was triggered in mid-2007 by a realisation that these products, previously thought of as liquid, were in fact virtually illiquid, posing a major risk to the representativeness of the prices at which they were traded. This created considerable uncertainty about the balance sheet value of participants that had acquired the products, especially banks, which unleashed the ensuing systemic crisis.

Build a more resilient system by strengthening the resilience of financial institutions. Since that time, the goal has been to vigorously strengthen the resilience of the financial system in general and of banks in particular, notably by bolstering the prudential requirements placed on financial institutions.

But greater resilience will have limited effect if orderly markets, of which liquidity is a key indicator, are not also in place. Without fairly stable and sustainable market liquidity, the price discovery process is undermined. This in turn raises questions about the valuation of many assets and, more generally, about the ability of economic agents to raise financing and hedge their risks cost effectively. The danger is that this situation could trigger the same spiral that in autumn 2008 dragged Western economies into a crisis whose fall-out continues to this day. Accordingly, the weaknesses exposed by the recently observed disruptions in liquidity need our full attention.

Recognise the increased role of the market, as the CMU initiative seeks to do. This attention is naturally accentuated by the market's growing role in financing the economy, managing risk and allocating savings. In Europe especially, the business funding model is set to continue to evolve to rely less on bank credit and more on the market. This course looks even more unlikely to be changed as it is underpinned by a determination among businesses to diversify their funding sources and by the effect of new regulations introduced since 2008 that restrict the lending capacity of Europe's banking system.

Within this evolving environment, the ability to provide fairly stable market liquidity is critical to achieving success in the Capital Markets Union (CMU) initiative launched by the European Commission and, beyond that, to ensuring that the European economy is properly funded, without which a return to sustainable growth looks unlikely.

Heightened risk of a spiral of crises. Yet the liquidity disruptions currently experienced by the market point to a situation whose consequences must not be underestimated. If nothing is done to restrain or repel the forces currently at work, it seems probable that liquidity crises that once had temporary effects could now escalate more easily and quickly into major crises owing to a lack of liquidity providers to respond adequately to demand from investors, whose behaviour is increasingly aligned.

Market liquidity thus appears to be a potential source of increased systemic risk as compared with the pre-crisis period, which is ironic given that this situation is partly due to the many substantive regulatory measures taken in response to the crisis.

Provide input from market professionals. The question of market liquidity and its management in times of crisis is a central issue for the market participants represented by AMAFI, obviously because their core business is at stake, but also, and more fundamentally, because the importance taken on by the markets means that ways must be found of making them function more effectively. Building directly on a paper focused on market making that was issued at the start of the year ([cf. Market making: Key for efficient markets that finance economic activity, AMAFI / 15-03, 6 January 2015](#)), some points of which are replicated in this document, AMAFI wishes to make its contribution to the market liquidity debate.

AMAFI believes that the value of its input lies not only in the objective data provided, but also in the fact that AMAFI speaks for practitioners whose closeness to the market naturally positions them to see clearly the profound changes underway and emerging trends.

Increasingly broad consensus about the situation, but uncertainty over the solutions. AMAFI's work in recent months points to a growing consensus about the current situation. Accordingly, this paper draws extensively on the different discussions on this topic and begins by recapping the issues raised by market liquidity and reviewing the recent upsurge in instances of liquidity stress (A), before exploring the squeeze effect resulting from the continual increase in demand for liquidity combined with a substantial decrease in the liquidity supply (B).

The third section seeks to identify a number of factors that, in AMAFI's view, deserve to be examined in greater depth (C). The possible solutions are naturally very diverse and involve a wide range of stakeholders with whom discussions should be continued. In any event, AMAFI believes that there is no single answer but rather that multiple solutions need to be deployed in a coordinated manner.

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A. THE SITUATION: INCREASING DISRUPTIONS TO THE LIQUIDITY THAT IS VITAL TO ORDERLY MARKETS

Take the measure of the market liquidity challenge. Secondary liquidity is crucial to orderly markets, both for those who trade there directly but also more broadly for all those who are affected by the values set by the market (A.1.). It is therefore necessarily worrying to see that notwithstanding a few reassuring but superficial aspects, there is evidence that market liquidity has become significantly weakened (A.2.).

A.1. Secondary liquidity is crucial to orderly markets

Individual and general interests. For any financial instrument, secondary liquidity plays a dual role. While in the case of debt and equity securities, it certainly serves the issuer's interest by determining the cost at which funding can be raised on the primary market (A.1.1.), secondary liquidity also more generally dictates the efficiency of the price formation process used to value assets and set up hedges, automatically in the case of mark-to-market instruments (A.1.2.).

This coming together of individual and collective interests explains the attention paid to factors that can promote market liquidity wherever possible¹ (A.1.3.).

A.1.1. Liquidity dictates the cost of capital

Market liquidity is vital to investors. The efficiency of a secondary market, whether organised or OTC, is directly correlated with its liquidity, that is, the fluidity with which a financial instrument can be traded by buyers and sellers. As it absorbs the quantities of an asset available for purchase or sale, an investor will be forced to lower or increase its price as appropriate to attract buyers or sellers not previously in the market. Thus, the more liquid an asset is, the easier it is to offload or, conversely, acquire even in large quantities without a counterproductive market impact.

All investors are naturally sensitive to market liquidity because it is needed to obtain the most precise possible measurement of the price at which a desired quantity of securities can theoretically be acquired without encountering a market impact (which is much trickier to measure). But in reality they are even more sensitive to it because liquidity determines their ability to quickly sell securities or reverse positions when the time comes, again with the smallest possible market impact.

Market liquidity and cost of capital on the primary market. It is this aspect that creates the close link between primary and secondary markets in the case of securities. No primary market investor is certain of holding securities to maturity (which could be infinite in the case of equity securities). Accordingly, the willingness of investors to invest and the price at which they are ready to invest, will depend directly on the ease with which they can connect with potential buyers when the time comes to sell. For this reason investors build a liquidity premium into the price at which they say they are interested in participating: the less liquid a security is, the higher the liquidity premium will be and the lower the investment price will be relative to the results of a "normal" analysis of the fundamentals.

Box 1: Assessing market liquidity

Academic research has identified four dimensions that may be used to measure market liquidity:

- depth (ability to execute large trades without causing a substantial price change)
- tightness (spread between bid and offer prices)
- immediacy (speed of execution)
- resilience (price reversion following disturbances).

¹ Steps may be taken to improve market liquidity but it will always be hard, if not impossible, to make a financial instrument liquid if it is not structurally liquid.

The primary market is where companies, central governments and other institutions, such as local authorities and supranational and national institutions, raise the funds they need. Secondary market liquidity thus dictates the ease with which these agents can finance themselves cost effectively, i.e. without a high or excessive risk premium in the investment price.

Box 2: Do not confuse market liquidity and monetary liquidity

Although the two may interact, as discussed later, market liquidity and monetary liquidity should not be confused.

Monetary liquidity, which is regulated by the central bank, pertains to the quantity of fully liquid assets circulating in the economy. Other concepts also exist, including funding liquidity, i.e. the ease with which economic agents can obtain external finance, and bank liquidity, i.e. the ability of a bank to meet its immediate commitments.

On these points, cf. the February 2008 Special Issue of the Banque de France's Financial Stability Review, and particularly A. Crockett's article entitled "Market Liquidity and Financial Stability".

Cost of capital, cost of risk. However, market liquidity is not only important to fund-raising through issuance of debt and equity securities. It is also crucial to hedging risk, an area in which derivatives markets now play a big role. The liquidity of these markets will directly determine the ability of economic agents, including industrial firms, merchants, manufacturers, issuers and investors, to use derivatives markets to hedge their risks without unnecessary excess cost.

For all users of derivatives markets, a clear line can thus be traced between the cost of capital and the cost of risk, with the latter necessarily feeding back to the former.

A.1.2. Liquidity and general interest

Market liquidity and efficiency of the price formation process. Secondary market liquidity is not merely important to individual investors and issuers. It is also vital to the price discovery function performed by the market: the higher the number of trades is, the more the resulting price will be set optimally with regard to market fundamentals. High liquidity indicates:

- on order-driven markets, the matching of large buy and sell quantities;
- on price-driven markets, competition between many market makers offering buying and selling prices.

The price set by the market enables project contributors (mainly companies) to put a value on their assets and strategy, set their cost of capital (i.e. the price at which they can raise fresh capital) and identify the price at which they can acquire other companies or be themselves the acquisition target for another entity. But it is also through this price that savers can put a value on their investments and that economic agents can use derivatives markets to hedge their risks cost effectively.

Importance stressed by the IMF. In its most recent report on global financial stability, the IMF points out that when liquidity declines, prices become less "informative" and less aligned with fundamentals, and tend to overreact. Less resilient liquidity, meanwhile, impairs the ability of the economy to absorb shocks and increases contagion effects and volatility, which can cause fire sales and lead to a disorderly transition from one economic state to another.

Illustration 1: Why is resilient liquidity important?

Effect of Diminished Liquidity	Implication
Less market making	More difficult to execute trades without affecting asset prices Greater asset price volatility Further breaches of value-at-risk limits leading to forced sales of assets
Reduced activity in repo (repurchase agreement) markets	Less funding available for hedge funds to arbitrage away discrepancies in asset prices More difficult to trade short positions, affecting market efficiency More difficult to hedge market risk Likely sporadic "snapbacks" in some asset prices as dislocations are corrected
Lower trading in single-name CDS	No single instrument to trade credit risk in an individual company Hedges move to CDS indices, with fragmentation between indices and single-name CDS Less efficient hedging of credit exposure
Cutback in interest rate swaps	More difficult to hedge floating or fixed interest rate exposure
Liquidity herding	Greater fragmentation of liquidity and breakdown of relationships between assets More difficult to hedge risks in financial markets Greater use of foreign exchange markets as proxy hedges More difficult for banks to manage good-quality liquid asset portfolios

Source: IMF staff.

Note: CDS = credit default swap.

Source IMF, GFSR - Global Financial Stability Report, October 2015.

Liquidity and market manipulation. Liquidity is also a shield against market manipulation. The more liquid a market is, with many buyers and sellers interacting, the more the resulting prices will be representative of actual interests both at a given moment and over time. This means that any attempts to manipulate will be made difficult and obvious (thus easier for the authorities to spot and punish) and have shorter-lasting effects. Conversely, markets with little or weak liquidity allow participants with relatively limited trading capacities to create and amplify movements that are unjustified by the fundamentals; in such situations, skewed information provided deliberately by a manipulator is not corrected by a more intense flow of information reflecting actual trading interests in the instrument in question.

A.1.3. What are the factors in plentiful and resilient liquidity?

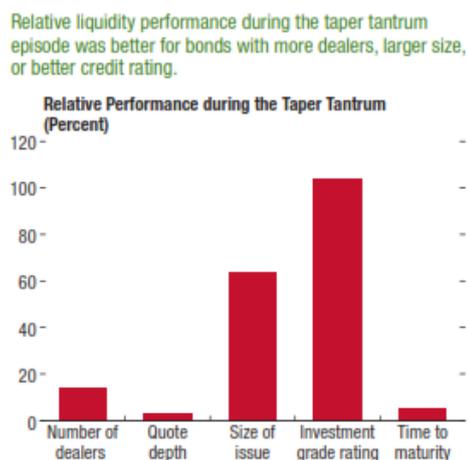
Market makers play a special role. Market liquidity depends on a number of factors. These include issue size, of course, but also the presence of intermediaries playing an active role as distributors to client investors², the existence of a long-term investor relations strategy, and the establishment of liquidity contracts on order-driven markets³ (*on these aspects, cf. also C.2.3*).

² Notably by publishing financial analyses. A recent paper highlights the link between analyst coverage and cost of capital (*The Real Effects of Financial Shocks: Evidence from Exogenous Changes in Analyst Coverage*, F. Derrien and A. Kecskés, *Journal of Finance*, vol. 68, issue 8, August 2013, p. 1407).

³ On this aspect, cf. AMAFI standard liquidity contract (*AMAFI / 09-21a and b*).

Beyond this, however, market liquidity depends on a fairly large number of exogenous factors for each individual participant, including the number of players, their diversification (objectives, investment horizons, benchmarks, etc.), the ease with which portfolios can be funded (role of repos and access to central bank liquidity), confidence in the ability to quickly hedge risks or reverse a position, even during a temporary bout of stress, the robustness of market infrastructures, the stability and effectiveness of the legal framework, and so on. In this setting, market making plays a special role whose importance cannot – and must not – be underestimated (*cf. abovementioned AMAFI / 15-03*). As illustrated by the taper tantrum in May 2013, when the Fed triggered market upheaval with the announcement that it was scaling back its asset purchasing programme, the number of market makers has a major influence on liquidity. Ultimately, liquidity is a positive externality that is self-reinforcing (the more market makers there are, the more liquidity there is and the more active traders there are).

Illustration 2: Contribution of factors to the liquidity performance of corporate bonds during the taper tantrum



Sources: Markit; and IMF staff estimations.
Note: The figure shows the contribution of each factor to a non-financial corporate bond's liquidity performance during the taper tantrum episode. Liquidity is measured using Markit's liquidity score, which is a composite index of market liquidity. Solid columns mean statistical significance at least at the 10 percent level. See Annex 2.2.

Source: IMF, GFSR cited above.

A.2. Growing liquidity risk

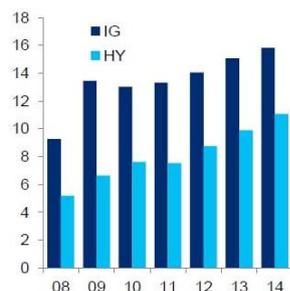
Different signals. In recent months, several sharp corrections, including repeated flash crashes, have revealed a contrasting liquidity situation, to say the least, on several markets, with periodic surges in volatility, which is a signal of reduced liquidity. On a more general level, market participants are concerned about increased difficulties in executing large orders without a significant price impact and about degraded immediacy on several markets.

A.2.2. Seemingly reassuring indicators...

High volumes and narrow spreads... At first glance, the most immediately accessible indicators, notably for equities and bonds, offer some comfort as to the functioning and fluidity of financial markets.

Illustration 3: Reassuring signals in the USA...

Figure 1. Credit volumes at record highs
US cash credit annual volume, \$tn



Source: Citi Research

Figure 2. Govt volumes little affected by QE
\$tn, fixed Apr2015 FX, annual

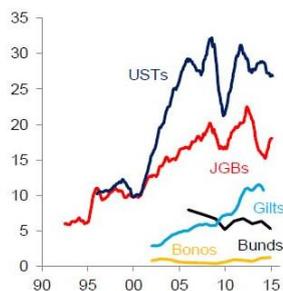


Figure 3. Equity volumes: off peak, but rising
Index, 1990=100

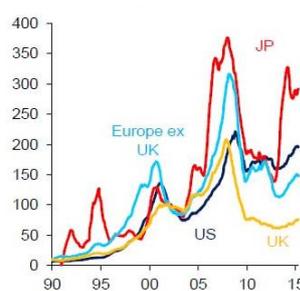
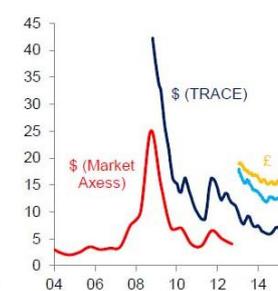


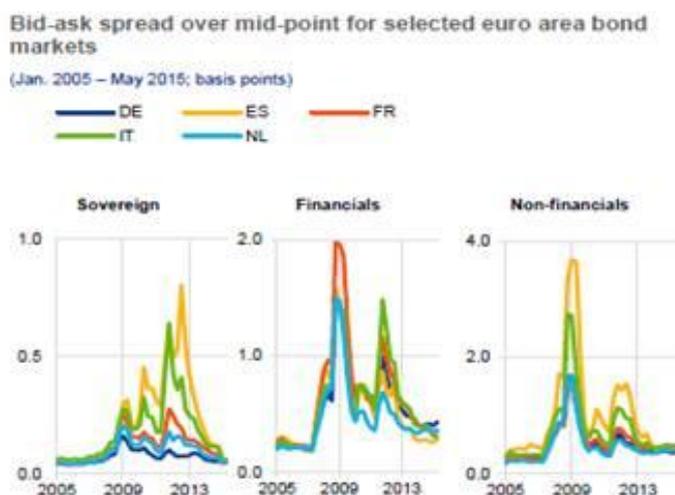
Figure 5. Bid-offer in credit (bp of spread)



Trading volumes remain high and bid-offer spreads are at record lows.

These indicators have also displayed a fairly reassuring pattern over the recent period, at least for the most liquid assets (equities and sovereign debt), with volumes trending upwards since 2008 and spreads falling to pre-crisis levels and approaching record lows.

Illustration 4: ... and in the euro area



Source: ECB

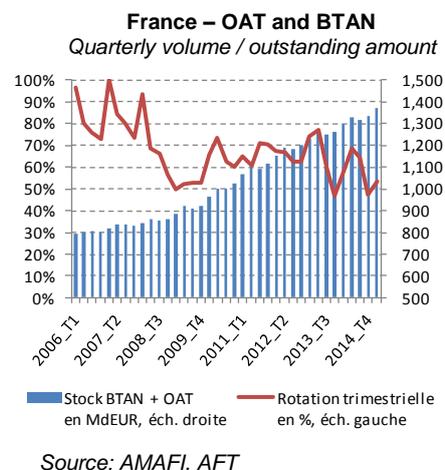
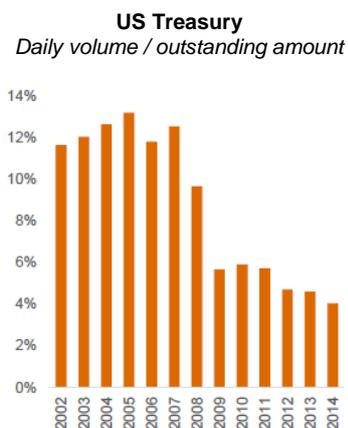
A.2.2. ... But these cannot conceal a more worrying state of affairs

Other indicators are a better guide to the true state of liquidity. A more in-depth analysis reveals a deterioration in liquidity conditions on most markets, even those not under stress. Several interconnected developments point to degraded financial market liquidity.

Turnover ratios have significantly declined

The fixed income market is especially affected. Bonds have experienced an especially marked decline, despite the fact that trading volumes have increased in recent years. This particularly reflects the sharp increase in outstanding amounts of securities, which has gone hand in hand with growth in assets under management (*cf. also B.1.2. below*).

Illustration 5: Turnover ratios have declined on bond markets

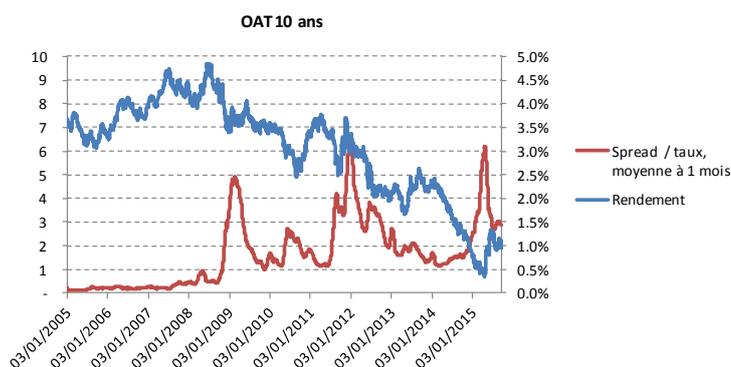


This shift, which displays fairly pronounced differences by zone and asset type, with the biggest impact on historically more electronic markets, does not denote a change in the nature of investors, since the proportion of long-term investors has not increased (*cf. below illustration 8*). Rather, it points to an alignment of investor interests owing to the monetary environment (*cf. below B1.1.*) and the growing difficulties faced by participants in revealing buying and selling interests without impact.

The cost of executing an order has increased for investors

Lower absolute bid-offer spreads have not offset the fall in yields over the recent period. As a result, investors executing buying or selling interests are having to give up a growing number of days of carry. For example, the cost of executing an order in ten-year French government bonds (OATs) has increased eightfold from less than one-quarter of a day of carry before the crisis to more than two days now.

Illustration 6: Expressed in days of carry, bond spreads have increased



Source: AMAFI, Tradeweb

Moreover, although statistics are not available on this aspect, the push by market intermediaries and especially banks to reduce risk-weighted assets (RWAs) and inventories has led to greater customer segmentation, with the result that a medium-sized investor will probably find it slightly more complicated to quickly execute large orders in off-the-run securities.

Average trade size has decreased

Illustration 7: Decline in the average size of a trade in US investment grade corporate bonds



Source: BIS, 2015 Annual Report

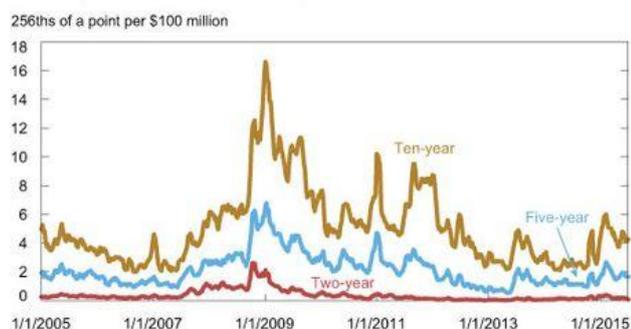
Increased electronic of markets has surely contributed to this development. The decline in average trade size has been especially pronounced on US corporate bond markets, where electronic traders (principal trading firms) occupy an important place.

The depth of trading interests has declined, and the impact of trades has increased

This effect goes beyond bonds to encompass all financial instruments (*cf. illustrations 8 and 9 on the next page*). For example, the PwC report notes a similar effect in futures: “JPMorgan estimated one investor could have traded 100 contracts of 30-year Bund futures in early 2014 without moving the market significantly. In May 2015, that number had fallen to 20 contracts” (*cf. Bibliography in annex*).

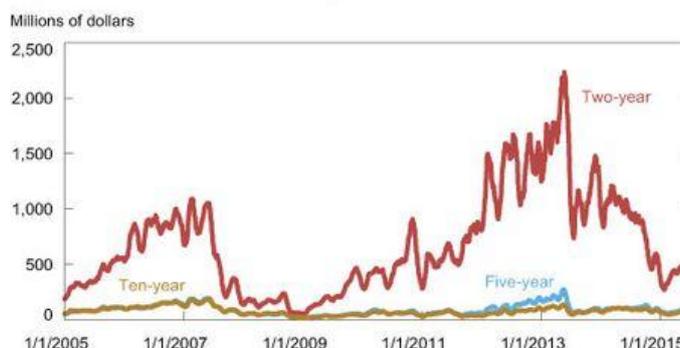
Illustration 8: Increased price impact, reduced market depth in the USA...

Price impact of trades has recently risen



Source: Authors' calculations, based on data from BrokerTec.
Notes: This chart plots the four-week moving average of slope coefficients from weekly regressions of five-minute price changes on five-minute net order flow for the on-the-run notes. Price is per \$100 par.

Depth has declined from recent highs

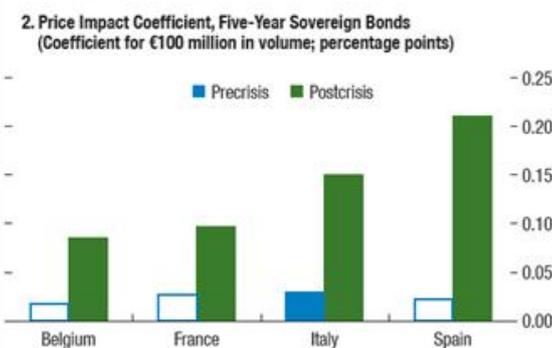


Source: Authors' calculations, based on data from BrokerTec.
Notes: This chart plots the twenty-one-day moving average for on-the-run notes. Data are for order book depth at the inside tier, summed across the bid and offer sides.

Source: US Fed blog

Illustration 9: ... and Europe

The price impact of trades has risen in some European countries.



Note: The figure shows the estimated price associated with a €100 million purchase of a five-year on-the-run government bond for the following countries: Belgium, France, Italy, and Spain. Solid bars indicate that the impact is statistically significant at least at the 10 percent level.

Source: IMF, GFSR cited above

A.2.3. A weakened price formation mechanism

When liquidity vanishes, prices feel the impact. In this new market environment, aside from the fact that it is increasingly difficult for investors to execute their orders without an impact even under “normal” market conditions, the deterioration in liquidity has the extremely visible effect of causing liquidity to dry up virtually immediately during periods of stress, accompanied by massive, erratic price swings.

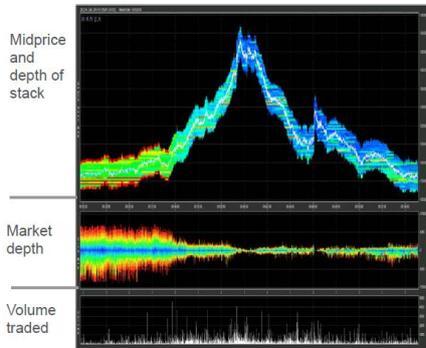
We are seeing increasingly frequent and exemplary illustrations of this phenomenon. Three events in particular stand out:

- Flash crash on the US debt market on 15 October 2014
- Chinese shock of 24 August 2015
- Glencore’s performance between 25 September and 6 October 2015.

Flash crash on the US debt market on 15 October

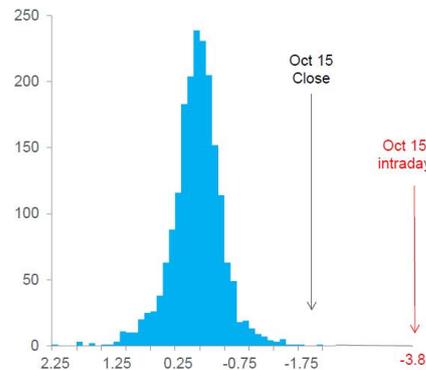
Depth just disappeared...

Intraday movements in 10y UST futures on 15 Oct 2014;
red=better liquidity, blue=worse



Source: Nanex representation of TY data (CBOT)

...making for unprecedented price moves
Histogram of Blue Eurodollar futures daily moves expressed in
standard deviations of 3m range, 2006-14



Source: CME, Citi Research.

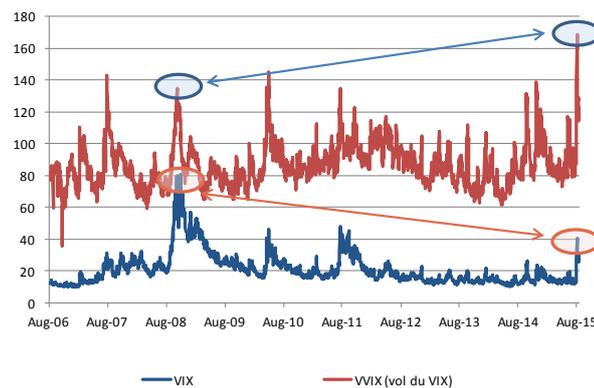
Illustration 10:
Citi analysis of the
flash crash on
15 October 2014

Chinese shock of 24 August 2015

On that day, despite an absence of economic news, markets experienced a volatility shock (measured by the change in the VIX index) on a scale comparable to that caused by the Greek crisis and exceeded only by the shock attributable to the Lehman failure.

Notably, the implied volatility of the VIX (or VVIX), which measures the market's difficulty in providing hedges against volatility risk, hit unprecedented levels on 24 August.

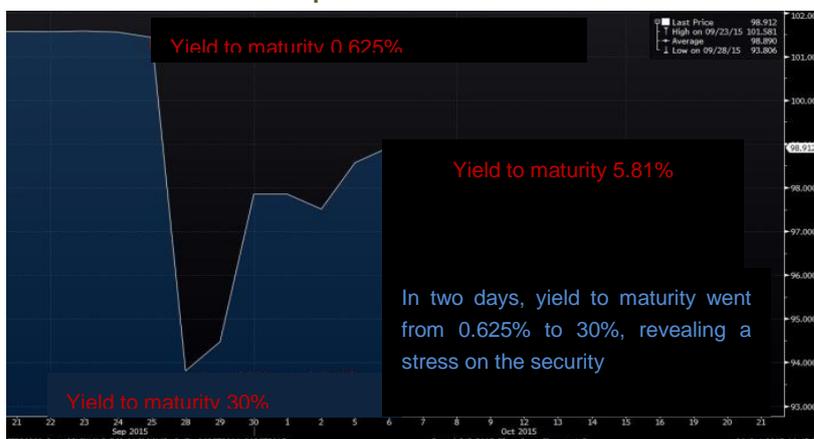
Illustration 11: The Chinese shock of 24 August 2015 brought an explosion in implied volatility



Source: SG Research, Bloomberg

Glencore's performance between 25 September and 6 October 2015

Illustration 12: Yield on Glencore 3.625% 2016 notes between 25 September and 6 October 2015



Source: Bloomberg

While the Glencore share price see-sawed at the end of September 2015, the company's bonds experienced even bigger swings. In just two days, the average yield to maturity of 3.625% notes maturing in 2016 rocketed from 0.625% to 30% (a 4,800% increase) before falling back to 5.81%.

A liquidity illusion... The general state of the markets is such that the BIS is now talking about a “liquidity illusion”⁴ that masks deep weaknesses, with occasionally misleading developments.

Statistics aside, what is certain is that, when interviewed as part of studies on market making and liquidity, market practitioners are voicing their concerns about the state of liquidity (cf. in particular the Committee on the Global Financial System’s report on market making, the ICMA’s report on corporate bond secondary markets, and PwC’s report on liquidity).



⁴ Note that “*the risk of ‘liquidity illusion’ has increased: market liquidity appears ample in normal times, but vanishes quickly during market stress*” ([BIS, 2015 Annual Report, June 2015](#)).

B. THE CAUSES: A SQUEEZE EFFECT CREATED BY THE COMBINATION OF INCREASED UNDERLYING DEMAND FOR LIQUIDITY AND REDUCED SUPPLY

Increasingly well-documented causes. With the market liquidity that is vital to orderly markets suffering more frequent disturbances, the causes had to be identified. These are now fairly well documented, with a wide range of analyses being produced in recent months.

This work points to a squeeze effect created by increased underlying demand for liquidity ([B.1.](#)) combined with reduced supply ([B.2.](#)). The “market intermediaries”⁵ that have traditionally provided liquidity are responding to regulatory changes by subjecting their business operations to a strategic review process, the result of which has been a withdrawal from some of these functions. The pronounced imbalance between liquidity supply and demand is creating a situation of considerable weakness ([B.3.](#)).

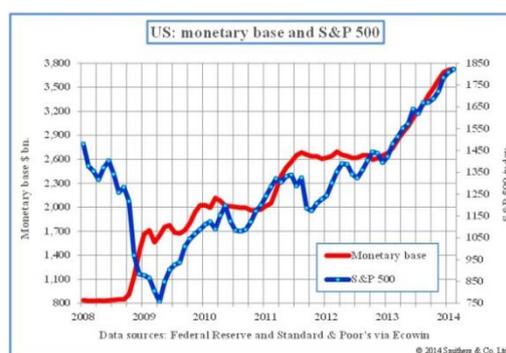
B.1. Underlying demand for liquidity is growing strongly against a backdrop of ultra-accommodative monetary policies

Monetary liquidity masks the need for market liquidity. In response to the crisis, central banks have pursued monetary policies over the last few years that involve injecting large amounts of monetary liquidity into their economies. Aside from their macroeconomic effects, these policies maintain the “liquidity illusion” on financial markets mentioned by the BIS⁶ ([B.1.1.](#)), which, for the time being, is masking the considerable increase in the need for immediacy on the markets ([B.1.2.](#)).

B.1.1. Current monetary policies favourable to investors virtually across the board

Policy rates have never been so low for so long. For some time, central banks have been pursuing non-standard policy measures to rekindle economic growth and avoid recession. This has led to a situation that is exceptional in more than one respect, with quantitative easing (QE) and low interest rate policies that are unprecedented in terms of both their scale and duration.

Illustration 13: US monetary base and S&P 500



⁵ This term encompasses two broad categories of participant: banks that engage in market activities, most often alongside pure banking operations (deposits, lending, and so forth); and “pure” market traders, which, in the European Union, do business under investment firm status. As liquidity providers, these “market intermediaries” often act on own account.

⁶ BIS report cited earlier.

US policy rates have not been raised since 2006, several monetary areas have reached the zero lower bound (ZLB), and the world's major central banks have introduced asset purchase programmes. Nominal and real interest rates have reached rock-bottom levels, with some sovereign bonds now trading at negative rates (over USD 2 trillion between April 2014 and May 2015 according to BIS statistics), in a symptom of asset pricing difficulties.

Pronounced effects on markets. Beyond the effects that these vigorous measures were hoped to achieve, whether in terms of freeing up bank balance sheets or available cash for investment, the use of non-standard policy measures has had insufficiently analysed impacts on the availability of instruments and the stance of investment strategies.

In this setting of easy access to central bank liquidity, four observations deserve special attention.

Safe assets are becoming increasingly scarce

QE goals and increased collateral requirements. Asset purchase programmes have introduced unprecedented competition between central banks and other economic agents for high-quality assets, leading to crowding-out effects. The QE programme launched by the ECB, for example, aims to purchase up to EUR 60 billion a month in European sovereign debt.

The growing scarcity of assets traditionally viewed as safe and available for trading has been further exacerbated by the increased push to find assets of sufficient quality to be used as collateral, resulting from new rules introducing collateralisation obligations, particularly EMIR in Europe (*cf. for example article by J. Metzger, Eurofi Riga Newsletter*).

The hunt for yield has prompted a shift to riskier assets

Miscalculation of the risk/reward trade-off? Through crowding-out, reduced availability of safe assets has helped to cause a large proportion of investments to shift towards assets that previously had less appeal. The hunt for yield in a low interest rate environment, which has affected the return on non-risky assets, has lent powerful support to this movement.

The influx of investors into lower quality assets and away from their historically preferred investments creates competition for these products. A noteworthy effect of this from a market point of view is the potential for mispricing, i.e. pricing not necessarily justified by economic fundamentals. In other words, investors may accept risk/reward trade-offs that would have been hard to defend before the financial crisis.

Box 3: The Fed and ECB QE programmes

QE is a money creation plan: the central bank transfers cash to holders of financial securities in return for acquisitions of these securities on the market. This cash increases the money supply and supports consumer price indices (classical theory says that prices are proportional to the money supply).

The idea is that agents that receive cash reinvest it in the real economy by taking part in capital increases, bond debt issues and providing loans.

QE has a side effect. It boosts the prices of financial assets directly, because central bank purchases exert upside pressure on securities, particularly government bonds, and indirectly, because economic agents also buy securities on the market with the cash transferred to them.

QE and the expectations that it generates have thus been a major upside driver for equity markets and company valuation multiples: in the USA, the cyclically-adjusted PER has risen from 15 to 25. Since 2009, the Fed's balance sheet has swelled from 5% to 25% of US GDP, while the S&P index has tripled over the same period.

In doing this, QE has also helped to get banks back on track, by lifting the value of their assets and equity. Higher prices have also contributed to increased corporate mergers and industrial redeployment.

This mechanism, then, supports the business and earnings of large businesses, even if this is not its primary objective.

Increasingly unidirectional investments

Sustainable valuations? The fact that interest rates have fallen to unprecedented levels is already a considerable disruption, supporting fears that plentiful liquidity might lead many markets – not just financial, but also real estate – to climb to unsustainable valuation levels. There is also a danger that the exceptionally expansionary nature of today’s monetary policies might prompt investors to base investment decisions less on an analysis of economic fundamentals and more on the promise of higher prices linked to the seemingly inevitable continuation of monetary injections⁷.

Forward guidance from central banks is tending to lead investors in this direction. It is certainly a pity that investors are not engaging in sufficiently critical analyses. Yet taking the opposite stance and going against the market could result in a potentially prolonged period of damaging losses for principals until the market factors in this aspect. Also and most importantly, the leading role naturally played by central banks means that taking an opposing position is risky as it would constitute economically irrational behaviour.

Formation of speculative bubbles

Risk that the markets’ credibility could be damaged. The effects of the ultra-low interest rate policies pursued by central banks are compressing risk premiums on equities, credit and liquidity, thereby increasing the market’s capacity to create large speculative bubbles.

These bubbles could well burst once the process of exiting these policies begins, during which the transition to a new environment of “normal” risk premiums will have to be managed in markets that are less liquid and hence easier to disrupt. Aside from the inevitable chaos resulting from the heavy losses that will be sustained by many economic agents, this situation will once again hurt market credibility.

B.1.2. At the same time, investors’ need for immediacy has never been greater nor covered such a wide range of assets

A dangerous cocktail. Immediacy is the speed with which an order can be executed and constitutes one of the fundamental dimensions – the time dimension – of the definition of market liquidity.

While the desire to minimise market impact has been a key underlying factor over the past few years in the steady rise in demand for immediacy among investors (*on these aspects, cf. A.1. above*), this underlying trend is now experiencing powerful momentum, even as we are seeing sharp growth in the number and value of financial instruments in circulation. This is a dangerous cocktail that is having an unfavourable effect on the path of market liquidity.

Illustration 14: Share of redeemable funds in financial asset holdings



Sources: Boston Consulting Group, TheCityUK, ICI Global, Bank Calculations.

(a) Assets held in mutual funds, money market funds and ETFs used as a proxy for ‘redeemable’ funds as they typically offer investors the option to redeem at short notice. Other includes separately managed accounts, hedge funds and private equity.
(b) Data for MMFs starts in 2005 and ETFs in 2000

⁷ *The liquidity paradox*, Matt King, Citi Research, 4 May 2015.

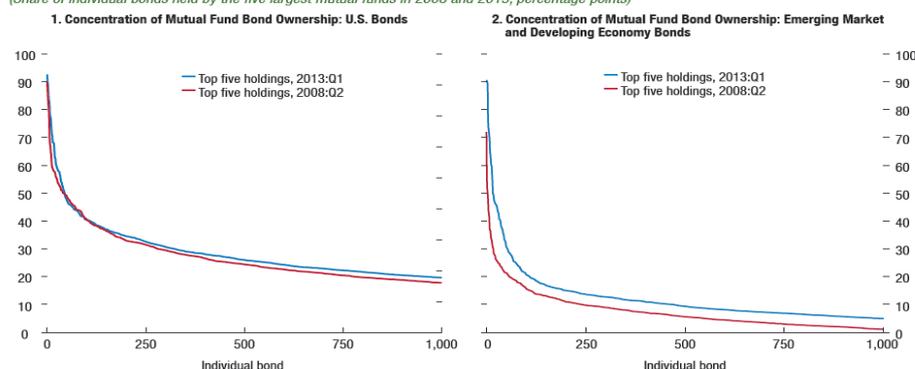
Increased need for immediacy owing to the growing presence of collective investment schemes...

Growing share of redeemable funds and concentrated asset holdings. The increased need for immediacy stems in particular from the growing presence of asset managers, and especially of redeemable funds. These investors have a statutory requirement to ensure short-term liquidity (daily in the case of most of these funds) for their liabilities.

This underlying demand is further increased by the growing concentration of asset holdings with a few large players, which is promoting uniform investment practices. The top-20 asset managers worldwide held over 60% of assets under management in 2012 compared with 50% in 2002, and the trend has gathered momentum since the crisis. Moreover, the hunt for yield has resulted in even more pronounced levels of concentration in certain exotic asset segments.

Illustration 15: Concentration of bond ownership has increased since 2008

(Share of individual bonds held by the five largest mutual funds in 2008 and 2013, percentage points)



Source: IMF, GFSR April 2015

More uniform behaviour. Concentration also increases the probability of uniform movements, especially in the event of market stress, which is another factor in the increased underlying demand for immediacy. This is illustrated by the strong correlation between ownership concentration and the fall in asset prices during the shocks of 2008 and 2013 ([cf. IMF, GFSR April 2015, p. 107](#)).

... Amplified by the rise of index investing

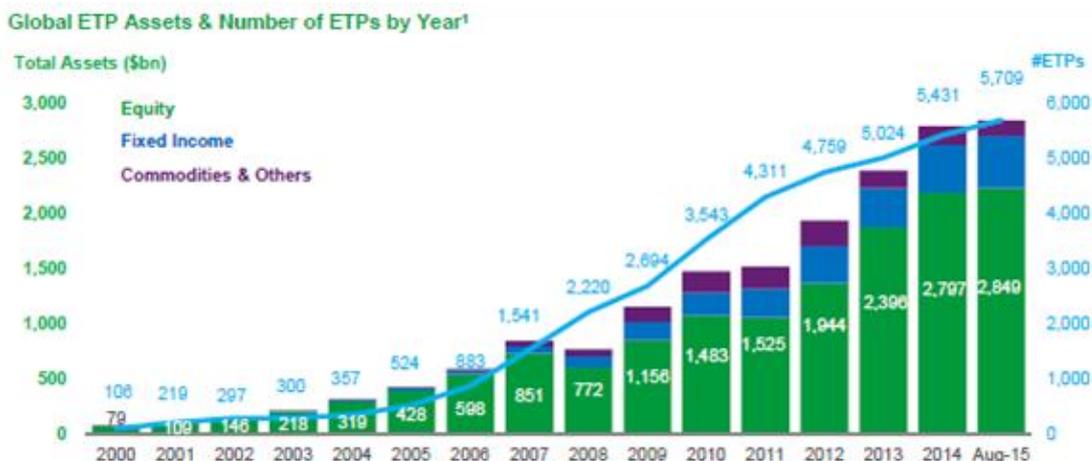
ETFs gain ground. The reduced variety of positions taken is also attributable to sharp growth in new management techniques, with the rise of index investing, whose development is linked to the cost reductions enabled by using benchmarks. The main result of this has been the rise of the market in exchange-traded funds (ETFs), which did not even exist in 2000, but which has risen swiftly – bond ETFs in particular have surged in the recent period – to reach USD 3,000 billion today.

By its very nature, index investing promotes uniform behaviour, since the benchmarks that are used, if not similar or identical, are often closely linked. The rise of this type of investing and the resulting decline in the relative share of investors who base decisions on their own analysis⁸ may thus cause market trends to become abnormally amplified. Admittedly, under “normal” market conditions, ETFs have built-in secondary liquidity that can help investors overcome difficulties resulting from reduced liquidity of the underlying assets. But experiences tells us that this intrinsic liquidity vanishes when underlying assets

⁸ But this can also give such investors directional force on the market. This is at any rate the accusation that is often levelled at hedge funds.

come under valuation stress⁹. In such cases, the interests of unitholders – most often expressed through redemption requests – become aligned, with the result that demand for liquidity has no other response than that offered by the creation/redemption mechanism, putting added strain on liquidity and the valuation of the underlying assets.

Illustration 16: The ETF market has grown strongly since the financial crisis



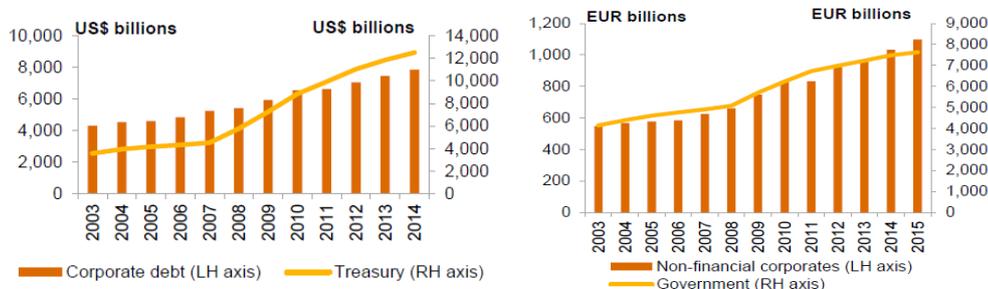
Source: Blackrock – ETP landscape

Outstanding financial instruments hitting valuation peaks...

Increasing use of market financing. There is no doubt that the value of financial instruments circulating on the markets has increased sharply. We have seen sharp growth in primary issues of debt instruments as well as in equity market issuance.

The increase in the total amount of outstanding assets, which reflects vibrant performances by primary markets, is partly attributable to the monetary policy largesse that has boosted the volumes to be invested while guaranteeing issuers access to low-rate financing, even at long-dated maturities. Changes in bank prudential ratios have also been influential, by making market financing more competitive relative to credit. Another factor has been the determination of issuers to diversify their funding sources by looking more to the financial markets, which has exacerbated the increasing scarcity – either on the way or already in effect – of bank credit¹⁰.

Illustration 17: Sharp growth in the outstanding amount of US and European bonds



Source: SIFMA, ECB and PwC report

⁹ Over 300 ETFs had to suspend trading in the USA for 35 minutes on 24 August 2015 ([cf. Les Echos, 29 September 2015, p. 32 – in French only](#)).

¹⁰ France is something of an exception in Europe in this regard, as bank lending, particularly to SMEs and mid-tier firms, is actually stable or rising.

... and increasingly diverse instruments in circulation

130,000 euro-denominated bond issues. The presence of a greater number of issuers with increasingly diverse funding needs has also pushed up the number of financial instruments in circulation. Bloomberg, for example, identified 130,000 euro-denominated bond issues in June 2015, up more than 10% in one year.

B.2. Reduced liquidity supply as banks pull out of their traditional role as liquidity providers

Banks, traditional providers of liquidity. There is no doubt that banks, which we take here to mean all participants that have a role in liquidity provision, notably including investment firms¹¹, are playing a major part in the current reduction in liquidity supply. The framework within which they are required to operate has seen profound changes, with the introduction of considerably tougher requirements. This has forced banks to carry out strategic reviews of their operations¹², which they regularly update in response to new developments¹³. As part of a broader scaling back of market activities, one effect of these reviews has been significant retrenchment from liquidity provision, an area where banks have traditionally been the key or even sole players.

The major reduction in banks' liquidity providing activities and the underlying reasons for this have been widely documented in recent months in a great many publications¹⁴. Given the wealth of research conducted, whose findings are largely shared by AMAFI, it is important to distil the factors needed to understand the movements currently underway.

B.2.1. In terms of providing liquidity to the markets, banks now play a fraction of the role that they used to play before the 2008 crisis

Decline in capital allocated to market making... Since 2008, banks have steadily withdrawn from the market making activities that used to see them play a major role in providing liquidity to the markets and with respect to their clients (*cf. AMAFI / 15-03 cited earlier*). This retrenchment, which individual banks have steered through the amount of capital they allocate to market activities, is primarily visible through reductions in balance sheets and trading book inventories.

¹¹ In Europe, investment firms, which are subject to virtually the same framework for doing business, are also active in market making. Because they are generally smaller than banks, they operate with a narrower scope, often confining their activity to organised market platforms. In the USA, by contrast, prior to the 2008 crisis, there was a clear distinction between commercial banks and investment banks. The latter, which have a status close to that of European investment firms, had bigger trading activities than those of European banks. This distinction has all but vanished now, as one of the effects of the crisis was that the commercial banks took over the main investment banks.

¹² These strategic reviews do not concern only banks, but also all other firms affected by the new regulations. However, banks are subject to additional requirements because of the specific role that they play.

¹³ This analysis is especially important because, in the case of banks, a look at their balance sheets shows that they have taken steps under pressure from analysts and investors to anticipate upcoming regulatory developments and set up "management buffers" to be able to cope with future increases linked to stress tests.

¹⁴ Engaging in market making makes sense only if this business is profitable enough to at least generate the return that the institution has targeted given the risk exposure. On these questions, cf. PwC report from August 2015.

The large investment banks have drastically reduced their market activities. In their fixed income operations, where market making plays an especially vital role¹⁵, balance sheets have shrunk by around 30% since 2010 and a further 10%-20% potential reduction is forecast in the coming years.

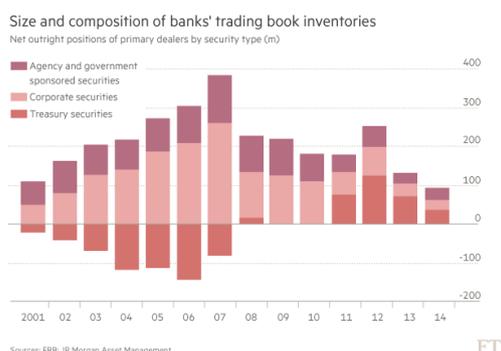
... Reflected in reduced inventories... This is leading to a sharp decline in the securities inventories held by investment banks, which are needed for market making¹⁶.

Illustration 18: Changes in balance sheet of investment banks supporting market activities

	Changes in balance sheet 2010-14	Further potential reduction
Rates & repo	~ -30%	-15% to -25%
FX, EM, & Commodities	~ -25%	-5% to 0%
Credit & Securitised	~ -30%	-5% to -15%
Equities	~ 0%	-5% to 0%
Total	~ -20%	-10% to -15%

Source: Oliver Wyman

Illustration 19: Size and composition of trading books



... And fewer market makers. This retrenchment has also translated into a decline in the number of market makers doing business in a given financial instrument. In European corporate bonds, for example, the average number of market makers per instrument more than halved between 2009 and 2013, falling from nine to four ([Source: Morgan Stanley, reported in Pictet, Shifting sands: how a banking retrenchment is reshaping Europe's corporate bond market](#)).

In the USA, out of the eight main dealers in US Treasuries today, just two are banks acting as market makers.

Liquidity and market making: correlated factors. This withdrawal by market makers is impacting liquidity. The IMF notes a positive correlation between the number of market makers in a bond and that bond's liquidity resilience, estimating that the presence of an additional market maker increases a bond's relative performance by 15% ([cf. IMF, GFSR cited above, p. 59](#)).

B.2.2. A tougher regulatory framework is causing liquidity providers to retrench

Change in the old economic equilibria. Numerous regulatory requirements were stiffened in response to the crisis, while some new rules were introduced. In particular, steps were taken to improve the systemic resilience of financial institutions (banks and investment firms) by strengthening the prudential framework. At the same time, major changes have been or will be made to market rules and the tax framework that directly affect the business of liquidity providers.

¹⁵ Because of their substantial trading volumes, bond markets are largely organised according to a price-driven model where market makers compete by proposing prices following a request for quotes.

¹⁶ On this aspect, cf. particularly AMAFI /13-25 cited above, p. 10.

While these developments have differing impacts, together they materially change the economic equilibrium of a number of activities. As a result, institutions that are active in these areas have been forced to abandon activities whose profitability has fallen too low under the new capital requirements, as well as those that, to be profitable, would entail resources that are no longer consistent with strategic guidelines. Banks are right at the heart of the review process, which has resulted in some drastic changes, including a massive withdrawal from market making, an activity that is chiefly comprised of high-volume, low-margin flow business¹⁷.

a. Prudential rules are the main reason for the retrenchment

New requirements either ahead or already in effect. Prudential rules must be understood in the broad sense to include not only those that came out of the Basel Accords, and particularly the Basel 3 package, which applies to the solvency and liquidity of financial institutions, but also banking structure and resolution reforms.

Some measures have already been implemented, some will come into force in the months and years ahead, while others are still on the drawing board. Their effects differ across asset classes and businesses, but all of them contribute to reducing the capacity of affected institutions – and especially banks – to provide liquidity to the markets.

Basel 3 has considerably raised solvency and liquidity requirements

New rules raise the required amount and quality of capital. Basel 3 has introduced new demands in terms of the capital requirements placed on banks. Some of the new rules make it more expensive for banks to trade on financial markets and provide liquidity on these markets. This is especially true for market making in sovereign securities, whose inventories have become costlier even as their yields decline.

Box 4: Basel 3 strengthening capital adequacy ratios

The prudential rules for financial institutions, set at international level through the Basel Accords, seek to ensure the resilience and stability of the financial system.

Basel 2.5 (CRD 3 in Europe) was implemented following the crisis, while Basel 3 (CRD 4 in Europe) was adopted in 2010 and is being phased in between 2013 and 2019.

These rules set the capital standards that apply to market positions held by banks and equivalent market participants (investment firms in Europe), and directly affect their capacity to position themselves as market makers (*cf. AMAFI / 15-03 cited above*). The rules are also designed to ensure that financial institutions are able to meet their liquidity needs. To this end, the rules classify financial assets according to maturity and liquidity criteria, and strictly regulate the positions that banks may hold, in terms of the asset/liability balance, with a view to liquidating positions during times of stress.

The new rules¹⁸ include the following:

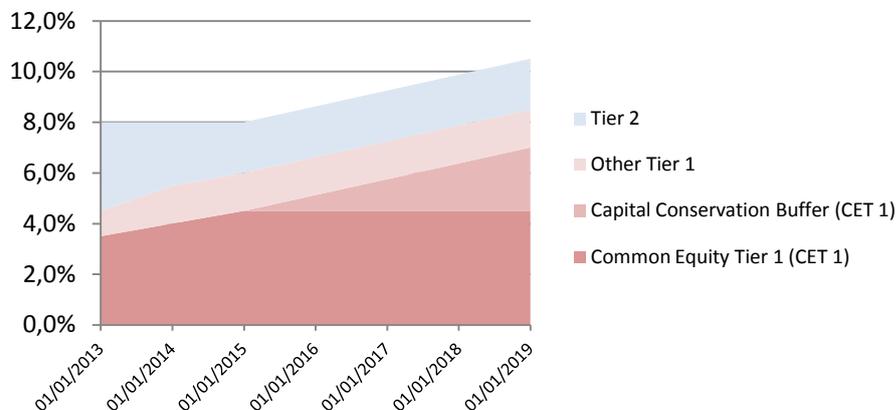
- A requirement to raise the quality and level of capital to cover risk-weighted assets (RWAs). This has pushed up the cost of capital and prompted a withdrawal from businesses offering inadequate profitability relative to capital consumption (*cf. illustration 14 on the next page*). Thus, Core Equity Tier 1, which used to be set at 2%, has been increased to 4.5%, while the required level of Tier 1 capital, which was around 4% before the crisis, will be raised to more than 8% in 2019, including a “conservation buffer”. Supplementary bank-specific¹⁹ buffer requirements are also in place and could reach 5% in 2019.

¹⁷ A market efficiency explanation is also possible: high margins, which are only possible in a weakly or non-competitive universe, represent an additional cost for the investor that is passed on directly to the issuer’s cost of capital (*cf. A.1.1. above*).

¹⁸ And in a setting where the calculation of capital requirements has been profoundly changed by the introduction of stress VaR in 2011, the incremental risk charge (IRC) and the CVA VaR or Kcva in 2014.

¹⁹ In addition to the abovementioned capital conservation buffer (i) banks may be subject to a Pillar 2 add-on, (ii) a specific surcharge of between 1.0% and 3.5% will be applied to systemic institutions and (iii) a countercyclical buffer, currently set at zero, may be recalibrated at a later date.

Illustration 20: Basel 3 impact on banks' capital



Source: Basel Committee, AMAFI

- A capital charge for variations in counterparty risk (Kcva), which severely restricts exposures linked to long-dated derivatives, uncollateralised exposures and exposures to counterparties with a high credit risk or those without a liquid CDS market to hedge the risk²⁰.
- A leverage ratio designed to cap the leverage of financial activities. This ratio, which has been disclosed by banks since early 2015, will be included in capital standards in 2018 (at least 3% of Tier 1). Because it is based solely on balance sheet size rather than on the risk associated with the business, it encourages banks to withdraw from activities that are objectively low-risk and correspondingly generate little income, but that, owing to the leverage ratio, consume too much capital²¹.

Expected effects of the FRTB. More recently, the Basel Committee undertook a Fundamental Review of the Trading Book (FRTB) to look at the rules in this area. These rules are scheduled to be finalised at international level in late 2015 for implementation in 2018. The purpose is to obtain a more refined and stable definition of assets assigned to the trading book and the banking book, but also, and more importantly, to overhaul the methods used to recognise risk, with models applied at trading desk rather than institutional level.

²⁰ The European Parliament included a Kcva exemption for non-financial companies in CRD 4. However, this exemption, which is not consistent with the Basel Committee's approach, may not remain in place because of work currently underway within the European Banking Authority.

²¹ Particularly regarding repos / securities lending and borrowing or market making in sovereign securities.

Since capital requirements are expected to increase as a result, financial institutions have built this aspect into their reviews²².

LCR and NSFR. The 2007-2008 financial crisis revealed that, overall, before tackling solvency issues, banks had to deal with liquidity problems, which, in some instances, had spilled over significantly to the wider financial system. Basel 3 thus introduced two ratios aimed at limiting bank exposure to liquidity risk: the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR).

- The LCR is designed to promote banks' short-term resilience by ensuring that they have sufficient high quality liquid assets (HQLAs) to cope with a serious liquidity crisis lasting 30 days. This ratio is being phased in and will be increased from 60% in 2015 to 100% in 2019. It forces banks to tie up large amounts of instruments on their balance sheets, diverting significant resources (in terms of total assets and allocated capital), which are no longer available for traditional liquidity providing activities, and also, ironically, turn banks into liquidity consumers.
- The NSFR seeks to reduce funding risk over a longer horizon by requiring banks to fund their activities through sufficiently stable sources to mitigate the risk of subsequent financing difficulties. The mechanism is expected to enter into force in 2018 and its procedures have not yet been determined.

Based on the currently proposed procedures, however, the ratio would severely impact repo activities, which are vital to the liquidity of market trading, and derivatives activities²³.

Banking structure reforms

Separate market activities. Banking structure reforms have been launched in various countries, including the Volcker rule in the USA, which bans pure proprietary trading, the Vickers reform in the UK, which requires banking groups to ring-fence retail operations, and the European Union's Barnier proposal, which draws on the findings of the Liikanen Report²⁴ and which, as it stands²⁵, calls for a structural separation of trading activities from deposit, payment and credit operations.

While they take different approaches, all of these reforms seek to introduce a more or less strict separation of market and retail banking activities. However, the fairly broad ban on banks' pure proprietary activities has already caused:

- The disappearance of flows that, regardless of banking resilience considerations, contributed objectively to market liquidity, notably through arbitrage activities, even though arbitrage, according to its basic definition, carries little or no risk.

²² In this respect, note that operational requirements and the risks of capital variability (when an individual trading desk no longer meets the requirements to be eligible for the internal model) may lead smaller firms to opt for the standard method, which would by all appearances be highly punitive (RWAs quadrupled on average according to a study by the Global Association of Risk Professionals) and probably cause them to withdraw from some or all of their current market activities.

²³ As regards repos, notably in sovereign securities, the reform as it stands contains asymmetric treatment of short-term repos and reverse repos (under six months), which would hinder market making in these products by introducing an artificial liquidity cost for transactions that are in fact balanced. Treatment of derivatives, meanwhile, is so unfavourable that the Basel Committee estimates that applying the rules to the current outstanding amount held by banks would result in a stable funding requirement of EUR 1 trillion ([Basel Committee's Basel III Monitoring Report, Sept. 2015, p. 40](#)).

²⁴ High level expert group on reforming the structure of the EU banking sector, Final Report, 2 October 2012, known as the [Liikanen Report](#).

²⁵ The proposal is still under discussion, as the European Council and Parliament have yet to come to an agreement on the appropriate mechanism.

- Increased management complexity and regulatory risk for international banks that are subject to several similar but not identical frameworks and that must track certain specific indicators (portfolio age and turnover, reasonable near term demand of clients), which, overall, exerts downside pressure on inventories.
- An increase in costs associated with the market activities kept on by banks, including those relating to market making. In particular, the implementation of audit and compliance frameworks to differentiate market making from discontinued or ring-fenced pure proprietary trading has automatically pushed up market making costs and cut into return on equity (ROE).

Application of ratios to market activities only. Furthermore, while these structural reforms were supposed to ensure compliance with Basel ratios (*cf. above*) only within market activities rather than at group level²⁶, the changes will inevitably force affected banks to cope with additional constraints in these activities and correspondingly to increase the restrictive nature of their strategic approach to market making.

Reforms linked to bank recovery and resolution

Dealing with bank failures. The pointed question of ensuring the orderly resolution of bank failures was raised in the wake of the financial crisis after governments were forced to step in to inject liquidity and even capital into banking systems. To be able to respond more effectively and swiftly in the event of a new crisis, measures were taken to set up resolution authorities, to require banks to draw up credible recovery and resolution plans, and to impose minimum requirements in terms of debt instruments eligible for a bail-in (as opposed to a bail-out using taxpayers' money) so that a failing institution could be recapitalised using its own resources in an emergency.

The first measures were introduced in the USA through the Dodd-Frank Act and in Europe through the Bank Recovery and Resolution Directive – BRRD ([Directive 2014/59/EU of 15 May 2014](#)). The impact of these measures on market making has been felt primarily through strengthened prudential requirements relating to TLAC and the resolution fund.

TLAC. In the case of the 30 or so global banks identified as systemically important, the Financial Stability Board (FSB) proposed in November 2014 to set a minimum level for the items available to absorb losses in the event of a bail-in, known as total loss-absorbing capacity (TLAC). According to this requirement, from 2019, total capital and eligible debt²⁷ must be equal to at least (i) 16% to 20% of RWAs and (ii) twice the leverage ratio of these institutions.

For a large proportion of these institutions, adjusting to this new constraint will mean (i) issuing new debt, so increasing the cost of doing business and creating the need to review the minimum levels of profitability required of these activities, and/or (ii) optimising the size of operations (putting the accent on RWAs or balance sheet size as applicable). In all cases, the adjustments will impact market activities (notably liquidity provision) that are the least profitable with respect to their RWAs or balance sheet size.

Creation of a Resolution Fund. The fact that the largest financial institutions in the euro area will have to contribute to the Single Resolution Fund (SRU) will necessarily affect their strategy in terms of market activities. This contribution, which is estimated at EUR 55 billion between 2016 and 2024, is an additional charge for financial institutions and, since it is based on balance sheet size, will hit market activities especially hard, giving an incentive to scale them back.

²⁶ In practice, the Volcker and Vickers reforms mostly get around this difficulty, with the threat mainly affecting banks subject to the European reform.

²⁷ Capital here means before buffers, cf. above. Furthermore, the notion of “eligible debt” still has to be clarified, notably as regards structured notes.

b. A withdrawal exacerbated by market regulations and taxation

Magnifying effects. While the reviews of market activities being conducted by financial institutions in general and banks in particular are first and foremost shaped by changes in prudential standards, developments in market regulations and taxation also have an impact. While these other aspects may not guide the reviews, they will inevitably magnify the scope of decisions dictated by prudential regulations.

MiFID 2 and the deterioration of liquidity provision functions. In Europe particularly, but also in the USA albeit under conditions that are strikingly different in some cases, the requirements applicable to market trading have undergone deep-seated changes.

The European Union is putting the final touches to the MiFID 2 arrangements²⁸ scheduled to enter into effect in early 2017, which seek to enhance pre- and post-trade market transparency while curbing the share of OTC trading and encouraging trading to move to electronic venues. In practice, and although some measures have not yet been definitively calibrated, MiFID 2 is expected to materially change the requirements applicable to the business of liquidity provision, first by significantly increasing the probability that firms' positions will be revealed and the speed with which this happens, and second by subjecting firms to specific restrictions in terms of presence, access to quotes, and even the aggressiveness of prices offered. Although graduated according to asset liquidity and order size, these requirements will surely change the nature of liquidity provided to the markets, by promoting the rise of high-frequency traders on markets that they have been absent from until this point and, conversely, by discouraging traditional liquidity providers from trading in large quantities on behalf of their customers (*cf. C.2.1. below on the impact of high-frequency traders on market liquidity*).

Box 5: Market structure reforms

Beyond the reforms aimed at improving the resilience of financial institutions, the crisis also triggered an overhaul of market rules to try and prevent a repeat of the observed failings. The USA brought in the 2010 Dodd-Frank Act, while Europe adopted EMIR in 2012 ([Regulation \(EU\) No. 648/2012 of 4 July 2012 on OTC derivatives, central counterparties and trade repositories](#)) followed by MiFID 2 in 2014, which enhanced the requirements for market intermediaries, banks and investment firms.

These rules, not all of whose obligations are yet in force, and which are not 100% standardised between Europe and the USA, are geared in particular to implement the G20 objectives on OTC derivatives. Accordingly, they introduce requirements on trade reporting, central clearing and trading on transparent venues for the most standardised derivatives, as well as bilateral margin requirements for non-cleared derivatives.

Tougher tax rules. The major difficulties facing many financial institutions prompted some governments to take vigorous action to ensure their long-term survival and avoid a major systemic crisis. Although other factors played a part, these measures, which involved taxpayers' money²⁹, were unable to prevent the financial crisis from turning into an economic crisis. As a result, spurred on by public opinion³⁰, governments took a punitive stance in the post-crisis period, toughening the tax rules applicable to financial institutions and financial transactions, which were combined with fiscal targets and, in some cases, with the idea that tax mechanisms could also support financial regulation objectives by containing market activities that were deemed not to be useful. As a result, in several countries, the profitability of market activities was affected by a growing tax burden.

²⁸ Which, through Directive 2014/65/EU of 15 May 2014 and Regulation 2014 (EU) 600/2014 of 15 May 2014, amend the current Directive 2004/39/EC of 24 April 2004 on markets in financial instruments.

²⁹ Sometimes temporarily, as in the case of France. The Treasury ultimately turned a profit.

³⁰ Sometimes supported by the notion that the financial sector does not pay its share of public expenditures, which is false in France's case. In 2010, during discussions following the economic and financial crisis about whether to introduce a financial activities or a financial transactions tax, the European Commission found that France already had a financial activities tax in the shape of a payroll tax that did not exist in other countries and that already contributed more than EUR 10 billion (EUR 13.1 billion in 2014), of which the financial sector bore 85% ([cf. Taxation Papers SEC\(2010\)1166: Financial sector taxation No. 25, Annex B2, p. 43](#)). The situation has worsened since according to the 2013 report by the Council on Mandatory Contributions (Conseil des Prélèvements Obligatoires – CPO), which found that the share of overall mandatory levies paid by financial sector companies increased from 4.9% in 2010 to 5.2% in 2012 and then 5.3% in 2013 ([cf. Mandatory levies and financial sector companies, CPO 2013 Report – in French only](#)).

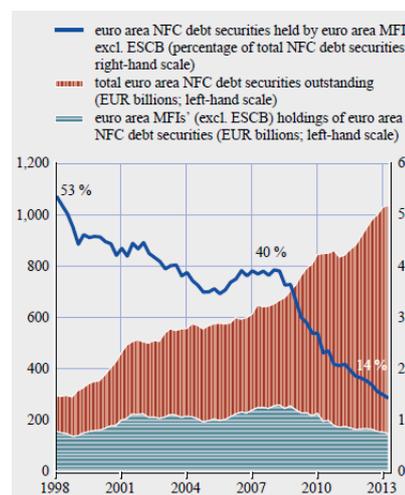
Accordingly, the financial sector was asked to make a contribution, in some cases a fairly heavy one, via balance sheet taxes such as the UK bank levy or France's systemic tax. Furthermore, following the introduction of a financial transactions tax (FTT) in France and Italy, 11 EU countries are currently working on an initiative that would introduce a shared FTT under enhanced cooperation arrangements. While the outlines of this project are still being sketched out, there is a significant risk that associated market making, inventory and hedging activities might only receive reduced waivers, making them less profitable and hence less sustainable for affected firms.

B.3. The imbalance between liquidity supply and demand creates a worrying weakness, especially with monetary policy normalisation ahead

Liquidity supply and demand are moving in opposite directions. The liquidity supplied by banks and investor demand for immediacy have moved in diametrically opposed directions in the recent period: while liquidity supply has shrivelled up, underlying demand for immediacy has surged, supported as we have seen by a combination of factors, including robust growth in market size, increasingly varied instruments in circulation, and more uniform investors exhibiting more aligned investment behaviours.

This squeeze effect can be seen, for example, in the European corporate debt market, which has expanded by 40% since 2008, while bank balance sheets devoted to these holdings has halved.

Illustration 21: Financial market size and inventories move in opposite directions



Source: ECB

Risks of monetary policy normalisation. The normalisation ahead, which has already begun in the USA, with the Fed ending its asset purchases in 2014 and expected to hike rates by the end of 2015, may well reveal just how uncomfortable the liquidity situation is on the markets. After being masked until now by the illusion of easy liquidity, the true level will be exposed as markedly reduced.

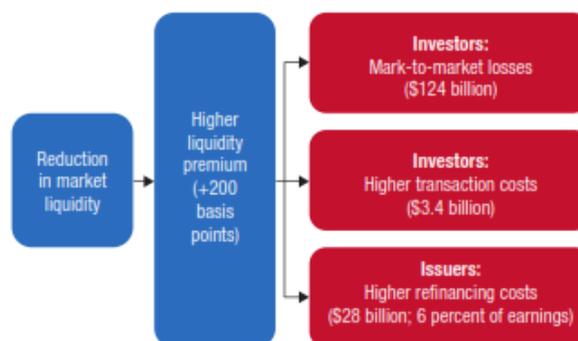
Although the monetary authorities have tried to prepare economic agents for this prospect, an increase in rates will result automatically in the reallocation of many securities portfolios. Given the factors discussed above, this reallocation could very well lead to fire sales or even set off a brisk downward spiral, not simply because a large number and wide range of assets are affected, but also because the ability to provide liquidity is significantly diminished, with market makers no longer able to play the shock-absorbing role that they have in the past (*cf. also Illustration 11 and Box 4 above*).

Systemic risk. From many perspectives, then, this exceptional period of active interventions by central banks looks like an interlude, which can obviously be explained in terms of providing macroeconomic support, but which is steering the market towards a liquidity illusion, bubbles and an exit fraught with risk.

Ultimately, the mismatch between strong growth in underlying demand for immediacy and reduced liquidity provision capacity poses a major risk to the stability of the financial system. The latest update of the IMF's Global Financial Stability Report underlined the systemic nature of liquidity risk on financial markets, estimating that the costs to investors of a liquidity crisis could exceed EUR 100 billion.

Illustration 22: Systemic implications of a liquidity shock

A risk premium shock results in costs to high-yield issuers and investors.



Sources: Federal Reserve; Oliver Wyman; Securities Industry and Financial Markets Association; Trade Reporting and Compliance Engine (TRACE); and IMF staff estimates.
Note: Issuance costs account for 6 percent of high-yield companies' one-year earnings as of 2015:Q1.

Making a success of CMU? Already, this mismatch makes CMU impossible. For CMU to succeed, European financial markets must have the capacity to absorb, under good secondary liquidity conditions, a growing mass of debt and equity instruments. Yet as we have seen, the supply of secondary liquidity is already inadequate with respect to current demand, and the nature of the factors restricting it mean that, as things stand, this supply will probably be constant at best but is more likely to decrease for the foreseeable future and will certainly not be elastic to growing demand.



C. WHAT ARE THE POSSIBLE WAYS FORWARD?

Move from recognising the situation to looking for solutions. While there is broad consensus about the factors underlying the current situation, the solutions are less clear-cut, while the stakes are high. The primary goal here is therefore to sketch out the possible ways forward.

Our approach must seek to reflect the complexity of the issue and, more importantly, the effects of overlapping regulatory initiatives (cf. above). Interactions between the objectives assigned to these initiatives and market liquidity call for very careful weighting, which should be done within a broad framework involving the many affected stakeholders, and financial regulators first and foremost.

Address “routine” rather than major crises. The current liquidity situation is worrying because it looks capable of transforming a routine liquidity crisis, which would previously have resolved itself fairly naturally and relatively quickly, into a major crisis with virtually systemic effects. This is a key point: too often this discussion has been dismissed based on the argument that liquidity providers do not play a role in a systemic crisis, as shown by what happened in 2008.

It is certainly true that during a major crisis, no private firm can proactively provide liquidity if the market is in free-fall, so central banks have to handle crisis management by injecting cash into the system. Yet we cannot deny that market makers play a role during “routine” periods of stress. Risk may be greater than it is during periods of low volatility, but it can be managed by participants equipped to analyse and manage it, particularly through hedging instruments.

Two avenues of discussion. With this in mind, the discussion should follow two avenues. First examine the potential ability of new players to act as liquidity providers in the future to replace those that are withdrawing ([C.1.](#)). Second, based on the findings of this analysis, identify the steps to take more generally to foster a new and stable balance between liquidity supply and demand, using a range of measures involving different market participants ([C.2.](#)).

C.1. Could alternative liquidity providers take the place of the traditional players?

A process of destructive creation? Various opinions have been voiced in the recent period, with some commentators arguing that the current situation could contain the seeds for a process of destructive creation³¹. Since nature abhors a vacuum, the place previously occupied essentially by “market intermediaries” will inevitably be taken by other firms, with the current imbalance being merely, to take a Schumpeterian view, the sign of a transitional phase needed for the newcomers to establish themselves. Some asset managers have expressed views along these lines in recent months.

However, to assess the effectiveness of such an alternative ([C.1.2.](#)), let us first review the broad characteristics of a liquidity provision function ([C.1.1.](#)).

³¹ “With further growth of market-based intermediation activities expected due to likely structural changes in the financial system, supervisory authorities need to anticipate ancillary risks, such as concentration risks, for example generated by the potential rise of new systemic institutions, cross border exposures and regulatory arbitrage. Structural change may also go along with destructive creation, implying challenges for supervisors and management in terms of sustainability of business models, in particular for banks.” ([cf. March 2015 Report by the Joint Committee of European Supervisory Authorities, p. 7.](#))

C.1.1. What does it mean to act as a liquidity provider?

A function made necessary by demand for immediacy. As stressed earlier (*cf. above A.1. and B.1.2.*), owing to the inevitable timing differences between the supply of and demand for financial instruments on the part of economic agents, a third party capable of taking a temporary position is often required to be involved, particularly since investors are increasingly keen to avoid an unfavourable market impact caused by the lack of a counterparty/counterparties that is/are immediately present to meet their buying or selling interest in full.

To operate efficiently, any liquidity provider must therefore have a number of features.

Able to actively and regularly take contrarian positions

Real value provided. The value of market making is frequently challenged on the grounds that this function is performed in markets that are often already liquid and thus has no real utility. Setting aside the fact that few instruments have the natural liquidity required to automatically verify such a claim, this argument overlooks at least two aspects that make market makers essential:

- First, many transactions³² are conducted off organised platforms, which, like village marketplaces, are designed to bring together buyers and sellers within the same trading system. Bilateral transactions require an individual assessment by each participant of the other party's ability to satisfy the obligations arising from the trade (including settlement and delivery obligations in the case of securities) and hence of the counterparty risk. For the investor, as for the clearing house that potentially interposes itself, it is important to be able to deal with properly-identified parties that are subject to strict rules as regards their capacity to meet their obligations.
- Second, as already mentioned, the immediacy provided by market makers, which requires them to hold inventories or "books" of securities and to be able to efficiently manage the risks arising from their positions, is essential to an ever growing number of customers. A market maker enables investors to control the market impact of their orders by removing exposure to changes in the value of assets when they are selling securities or buying protection, or, if they are buying, to enjoy the returns immediately and without surprises.

Ability to be positioned opposite to the market. Furthermore, it is when market liquidity deteriorates that the ability take a contrarian position relative to immediate market movements becomes truly meaningful. This is when the market risk incurred through a position is at its greatest, because the market maker is never totally sure of being able to reverse its position at an attractive price.

³² Either because of their specific features, particularly in terms of volume, or as a result of market practices (bond market).

In any event, a market maker's remuneration reflects the existing liquidity of the instrument itself and of the instruments used to hedge risk. If only because of competition from other market makers, this remuneration will be lower in a liquid market where there is less risk.

Market makers cannot come and go. Market making is a commercial business based around the notion that customers identify a particular participant as likely to offer attractive prices. Market makers must therefore be routinely present, even in times of market stress.

Know the markets and be able to analyse the risks

Increasingly complex analyses. Assuming the risk of taking a contrarian stance requires an intimate knowledge of the market and the ability to analyse risk, especially at a time when financial instruments are diversifying and swelling in number as markets become more interconnected. The requisite level of expertise is rising all the time and with it the level of sophistication and cost of the tools used, especially in IT.

As a result, unless the necessary investments are made to maintain this expertise, not only will the business fail to be profitable, but the institution itself will be under threat. This is surely one of the reasons for the major role played by banks in market making.

The leverage challenge

Acceptable risk/reward trade-off owing to leverage. Because it involves real risks, market making requires remuneration that is set accordingly, recalling that the corollary to this remuneration is the return on the asset bought or sold by the investor: the more the one increases, the more the other declines, and vice-versa. One of the underlying reasons for the major role played by banks in market making is thus unquestionably the fact that they operate with a capital mix featuring substantial leverage. This allows them to accept lower remuneration than that required for the same business financed solely by equity, given the risks incurred.

However, this also obviously requires appropriate supervision by the institution itself and by regulators and supervisors (*cf. above B.2.2.*), for which special expertise is essential.

C.1.2. Do asset managers offer an alternative to the bank withdrawal?

Various initiatives. The new market configuration has resulted in a shift in liquidity risk, which is now more extensively borne by asset managers. Their share in holdings of financial instruments has risen sharply, while that of corporate and investment banking has declined.

Illustration 23: US asset holdings of investment funds and security brokers and dealers move in opposite directions

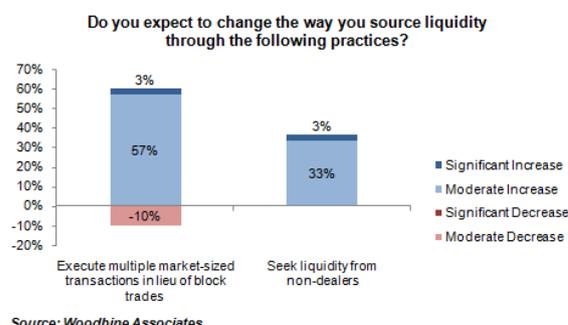


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In this setting, asset managers are taking part in the changes in market structure and are seeking alternatives to using market makers to trade in large volumes for their customers. At the far end of the scale, some firms are thinking about positioning themselves as price makers while others are launching order matching platforms.

But only hedge funds look capable of truly performing a liquidity providing function

Illustration 24: Asset managers are looking for alternatives to the liquidity offered by market makers



The need for a clear mandate. Market making is a risky business, which in the case of a collective investment scheme means that participating investors must have a clear understanding of this risk through the mandate that they give to the manager. But even supposing that this mandate is obtained

and that the activity is compatible with management company status as defined in the relevant regulations, it is not enough by itself. The scheme must also be able to operate within a framework that is compliant with the requirements of market making.

Box 6:
Balance sheet constraints on investing

The liability liquidity requirements applicable to some asset managers, with liquidity measured daily in the case of a number of funds, and marking to market of assets can have extremely procyclical effects during a market event, with the risk of an accelerated collapse in the event of massive redemptions.

Furthermore, managers are subject to constraints in terms of returns, and even regulatory restrictions in some jurisdictions, which prevent them from holding cash in quantity to be able to trade where necessary. Their ability to mobilise the balance sheet is thus lower than that of corporate and investment banks, and the solutions being examined (such as credit lines) do not seem at this time to be able to meet this challenge.

This looks hard to square with the function of a CIS, which is supposed to engage in pure investments be subject to periodic (often daily) valuation and be broadly invested at all times. The only entities that look able to satisfy these requirements, given their characteristics, are hedge funds and alternative investment funds. Their peculiarity is that their funds are tied up for a fairly long period without being subject to ongoing liquidity or daily valuation requirements. What is more, they enjoy far greater latitude in their management than CIS do.

Capabilities up to the challenge?

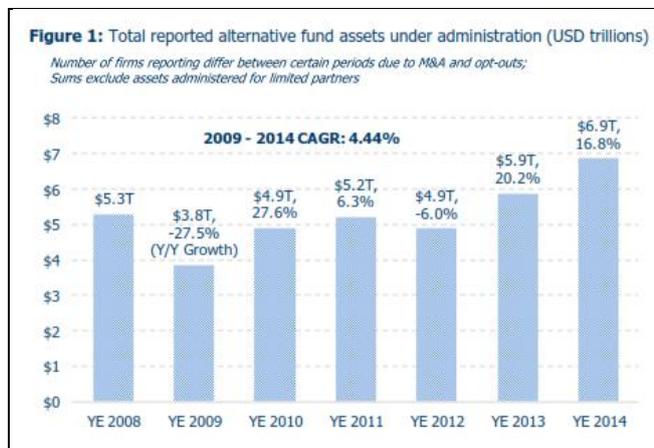
What assets might they draw on? Hedge funds could in theory play a market making role more easily. But for this, the assets that they might be likely to use for this purpose would still have to be appropriate for the challenge. In other words, is there reasonable assurance that enough investors are ready to entrust them for a sufficiently long period with the funds needed to perform the role previously played by the traditional liquidity providers?

What portion of hedge funds' assets could actually be used for this purpose? This question is especially important because three complementary factors need to be taken into account:

- First, hedge funds can only play with the same level of leverage as banks under specially adapted regulations given the systemic risk involved in the use of leverage. Especially amid the extensive discussions over shadow banking, it would be ironic indeed if this aspect were overlooked, given that it is what is driving the bank withdrawal. This casts doubt about whether hedge funds could move into the place vacated by banks.

- Next, because they would be seeking to generate returns for their investors, hedge funds would not be subject to the same commercial incentives as financial institutions, which see market making as a way to round out the services they offer their customers.
- Also, hedge funds are tending to behave more like collective investment funds according to the IMF, lessening their capacity to provide liquidity in the event of market stress (*cf. IMF, October 2014 GFSR, p. 35 and 36*).

Illustration 25: Assets under management by hedge funds



Source: Evestment

Conduct a thorough discussion. This question deserves a thorough discussion, particularly since the capacity of buy-side players to assume a liquidity-providing role and take over from retrenching financial institutions will dictate the attention that needs to be paid to other potential solutions. The smaller their capacity is, the more necessary it will be to consider other avenues.

C.2. A wide range of necessary measures influencing different liquidity factors

Cyclical effects must not mask the need for targeted structural measures. Current monetary policies, whose goals reach beyond the market alone, are having a major impact on market functioning as well as on disruptions to market liquidity. While these cyclical effects seem set to last for a while yet, they must not be allowed to conceal the structural causes that are at work and that need to be addressed.

Given the huge changes to the operating framework of liquidity providers, any effort to find solutions needs to involve a variety of measures, which should be deployed cumulatively at different levels in areas ranging from market functioning (C.2.1), investors (C.2.2), issuers (C.2.3) and market participants (C.2.4), to accounting standards (C.2.5), tax standards (C.2.6) and the tools available to regulators (C.2.7).

C.2.1. Market functioning

Careful trade-off between transparency and liquidity

Transparency is a response to asymmetry. After informational asymmetries were pinpointed as one of the major causes of the 2008 crisis, the authorities made financial market transparency the central plank for a number of reforms³³. Within Europe, MiFID 2 is the key regulatory instrument taking this action forward.

³³ This goal came out of the G20 Summit held in Pittsburgh on 25 September 2009. As Recital 4 of MiFID 2 states: "The financial crisis has exposed weaknesses in the functioning and in the transparency of financial markets. The evolution of financial markets has exposed the need to strengthen the framework for the regulation of markets in financial instruments, including where trading in such markets takes place over-the-counter (OTC), in order to increase transparency, better protect investors, reinforce confidence, address unregulated areas, and ensure that supervisors are granted adequate powers to fulfil their tasks".

The introduction of enhanced transparency obligations for trading venues, with caps on the amount of equities and equivalents that can be traded in dark pools, and the extension of pre- and post-trade transparency obligations to non-equity instruments (chiefly bonds and derivatives) are the most noteworthy examples of changes that will profoundly alter the way that certain market segments operate.

Potentially severe problems. As already stressed (*cf. above B.2.2.b.*), the transparency guidelines that are currently being finalised will, notably in the case of non-equity instruments, whose markets are essentially price-driven, undermine the operating conditions of liquidity providers doing large trades by increasing the risk that their positions could be revealed to third parties.

Without disputing the vital need to strengthen transparency, it is nevertheless crucial to ensure that this transparency is suited to the way in which the markets to which it is applied actually work. Otherwise, particularly in the case of large trades, there is a danger that the functioning of affected markets might be disrupted, hurting investors and indirectly issuers through the impact on transaction prices.

The need for an impact study. While the impact studies conducted in the lead-up to the Level 2 measures deserve serious criticism, MiFID 2's effect on market liquidity does need to be the subject of an in-depth impact study. This should be done fairly promptly after the new arrangements are implemented, so that provisions that turn out to be counterproductive can be quickly revised. Since the goal is to ensure orderly markets, close monitoring is especially necessary because European standard-setting procedures do not support quick turnaround times.

Such a study should consider the following in particular: the criteria for measuring the liquidity of different families of instruments, the requirements placed on liquidity providers (acting on-exchange or bilaterally), calibration of thresholds for pre-trade transparency exemptions and access to post-trade deferrals, along with the duration of these deferrals. Note also that these questions need to be examined in conjunction with those relating to the development of high-frequency trading (*cf. below*), which is supported, in contrast to large-volume liquidity provision, by the widespread introduction of pre-trade transparency and execution on electronic trading platforms.

The limited effects of electronic trading

Is electronic trading the miracle solution? Electronic trading has undeniably transformed (positively in many respects) a number of markets in standardised products, such as equities, futures and government securities. As a result, for some years now there have been regular attempts to explore the possibility of extending this solution to other instruments. In practice, though, efforts in this area, to set up a market platform to bring together buying and selling interests in other types of bond for example, have fallen flat.

While the fact that investors are unaccustomed to this trading approach is probably one reason for the failure, other more fundamental reasons should not be ignored. The main one is unquestionably the sheer quantity of instruments in circulation: according to ESMA, there are more than 130,000 euro-denominated bond issues, compared with approximately 5,750 listed shares in Europe, of which 2,600 are denominated in euros. While there is no doubt that the question of standardising bond issues (*cf. below C.2.3*) is closely tied to the ability to grow electronic trading on the bond market, the number of issuers that might profitably use this solution will remain small, so the number of issues in circulation will stay high. This makes it unlikely that buying and selling interests might be able to meet spontaneously on electronic trading venues³⁴. Put another way, venues that make it possible to concentrate existing but fragmented liquidity could increase market liquidity (positive externality) but cannot themselves create liquidity where it does not exist in off-the-run issues.

³⁴ The Oliver Wyman report cited earlier says of US corporate bonds: "Even for fairly liquid bonds only 70% of volumes would meet natural buy & sell orders in 1 month".

High-frequency trading: more effectively measure its real effects in terms of liquidity

Major growth. High-frequency trading (HFT) techniques have developed strongly and swiftly in recent years, supported by increased electronic trading and the introduction of competition between equity markets.

HFT now boasts considerable market share. In a study published in December 2014, ESMA assessed the proportion of volumes traded by HF traders on European equity markets at between 24% and 43%³⁵. Meanwhile, eight of the ten largest traders on BrokerTec, a trading platform for US Treasuries, are “non-banks”, most being HFT firms, compared with just three at the end of 2006³⁶.

Box 7: Characteristics of high-frequency trading

It is generally agreed that HFT occurs when the following criteria are satisfied:

- trading purely on own account
- securities held for a very short period
- high proportion of orders cancelled shortly after being presented to the market
- neutral securities position at the end of the day
- use of colocation services to minimise latency.

Quality of liquidity. Because of its strong growth and particular trading procedures, HFT has been for some time now the subject of various and in some cases heated criticism. One frequently mentioned complaint concerns the quality of liquidity provided by HFT firms to the market: although very present when markets are operating “normally”, they are accused of retreating quickly when conditions take a turn for the worse, contributing to the “illusion of liquidity” that evaporates at the first sign of a shock.

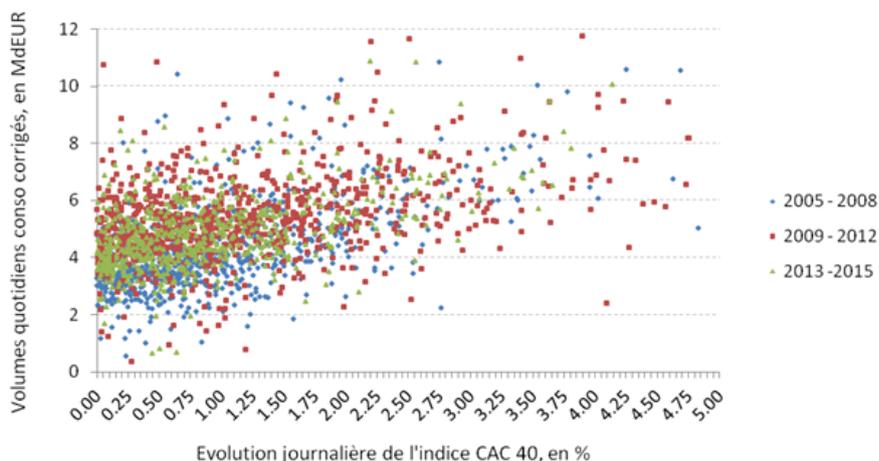
Setting aside the other questions raised by HFT, this aspect deserves a close analysis with regard to the question of liquidity discussed here, since there is evidence to contradict the notion that liquidity vanishes at the first sign of a shock.

Stable liquidity on the CAC 40. Relating Euronext and MTF market volumes to the size of the daily changes in the CAC 40 index and stripping out the price effect to measure the portion of index values that changes in a stressed situation, we see that over a one-day horizon, liquidity, after a period of dispersion at the height of the financial crisis (2009 / 2012), seems to revert to levels of quality and quantity that are similar to and even higher than those observed before the crisis and the rise of HFT. Obviously, these findings cannot be generalised, whether in terms of markets or HFT’s impact over shorter time horizons, without an in-depth study.

³⁵ *Economic Report, “High-frequency trading activity in EU equity markets”, ESMA, December 2014.*

³⁶ *“The fast and the furious: HFT in US Treasury markets”, Risk Magazine, 1 October 2015.*

Illustration 26: CAC 40 and liquidity resilience to market shocks



Source: AMAFI

So the debate is open, but as the analyses currently stand, this aspect does not seem to be a major factor in the issue discussed here, which is, moreover, primarily concentrated on price-driven markets that are hard to switch to electronic trading, i.e. those whose functioning is directly and materially affected by the withdrawal of traditional market makers.

C.2.2. Collective investing is a key component

A huge market presence. The market presence now acquired by collective investment players means that they must be part of any attempts to find solutions to the liquidity challenge. Asset managers are keenly aware of the weaknesses in the current liquidity situation (*cf. above Illustration 21*), and some are trying to shield themselves against the risk posed by massive redemptions, although the resources they are using look too specific to offer a real response³⁷.

A number of potential solutions are already being considered or rolled out.

Promote the emergence of long-term investors

The vital need for longer-term liabilities. Growth of long-term investors, whose longer holding periods are by definition less affected by market movements, is needed to make markets more stable: their presence mitigates the herding mechanisms that prompt other investors to head in the same direction during disruptions. They are also, perhaps most importantly of all, needed for the long-term and very long-term investments that our economies require.

There is no doubt that pension funds offer a powerful lever in this regard and that, in France at least, we have to get past the pointless opposition of pay-as-you-go versus funded systems: both approaches have pros and cons, but by combining them, it is possible to get the best out of each, with gains for beneficiaries and the economy alike.

³⁷ For example, one asset manager has been reported in the media as setting up a large credit line from its banks: "Aberdeen sets up \$500m hedge against bond redemptions" (*Citywire, 16 June 2015*). But this type of arrangement raises questions. For one thing, it is hard to imagine it being rolled out repeatedly: given the prudential restrictions placed on banks, these types of credit lines could not be granted to all asset managers, nor could they replace the volumes of liquidity provided by market makers.

An obvious link to accounting issues. For long-term investment to grow to meet requirements, however, these participants need, even more so than other players, an accounting framework that takes account of their investment horizon (*cf. below C.2.5*).

Continue efforts to match the liquidity of CIS assets and liabilities

The need for longer-term liabilities. Increased demand for liquidity is also the result of short-dated liabilities held by investors. This question is now being addressed, and work and developments in this respect need to be pursued.

Various regulations have been drafted or are under review in Europe³⁸ to manage the liquidity risk run by CIS. In September 2013, the European Commission published a proposal for a regulation on money market funds that seeks to introduce shared standards to boost the liquidity of these funds and ensure that their structures are stable. Similarly, after the 2009 UCITS IV Directive introduced a first round of measures in this area, liquidity management was given an important place in the 2012 consultation by the European Commission on revising the rules applicable to UCITS, in a sign that the authorities are paying more attention to the question of liquidity as considered from the angle of asset management.

Manage liquidity. The authorities have introduced numerous liquidity management mechanisms³⁹. The development of these new techniques and strengthened regulations in this area are extremely welcome in this new environment where liquidity is under strain. It is essential to give asset managers the means to cope with liquidity risk. Accordingly, measures taken in this respect should also be continued.

Among the avenues to explore, it might be appropriate to adjust CIS valuation and redemption horizons on a case by case basis: in many situations, the nature of investments (equities for example) would be consistent with weekly valuation and redemptions.

Box 8: Several mechanisms to control fund liquidity

In addition to the rules established under some regimes allowing regulators or managers to introduce suspensions during periods of stress (*cf. C.2.6*), various liquidity management mechanisms saw considerable development in the post-crisis years. These include:

- Notice periods consistent with the liquidity horizon to redeem CIS units
- Gates
- Swing pricing, which is a mechanism that can be used to ensure fair treatment of entering or exiting unitholders with respect to non-trading investors in the CIS, and to ensure that the investors that move quickest to redeem their units in the event of stress do not enjoy a windfall effect not granted to remaining investors
- Side pockets, which are compartments set up in exceptional situations to hold illiquid assets whose sale would not be in the interest of unitholders.

Be able to cope better with bouts of stress

Strengthen the supervisory framework for liquidity. Furthermore, and to be able to respond to the more specific risk borne by funds, especially during market suspensions, which would otherwise be unmanageable for them, it is important to think about ways to strengthen liquidity management mechanisms. Regulators have taken on this question, whether at the level of IOSCO⁴⁰ or the European Systemic Risk Board⁴¹, and some countries have already introduced suspension mechanisms for use by management companies or supervisors⁴². In particular, the framework for assessing liquidity risk, which

³⁸ The US rules on mutual fund investments are far less restrictive.

³⁹ Note the proposals recently made in this regard by the US Securities and Exchange Commission: <http://www.sec.gov/news/pressrelease/2015-201.html>.

⁴⁰ IOSCO Recommendations, October 2012.

⁴¹ ESRB Recommendation on money market funds, December 2012.

⁴² The UCITS IV Directive allows authorities to introduce suspensions. This power was granted to the AMF as part of the 2013 Banking Act.

includes a number of stress tests whose results have so far been deemed disappointing, needs to be strengthened.

More generally, these efforts to review and modify the operating framework for asset managers, which are still at the early stage, need to be continued. It is vital to improve the consistency between assets and liabilities, and to prevent liabilities from being reduced too quickly because of a run by unitholders looking to get out, with the result that the manager is forced into a disorderly disposal of assets.

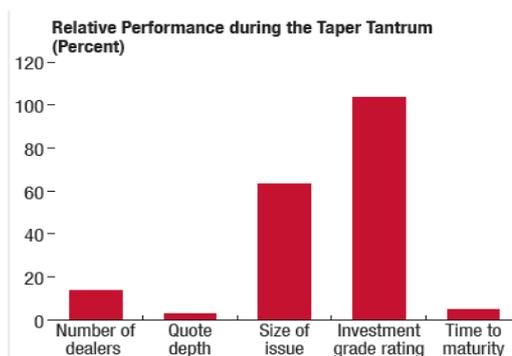
C.2.3. Offer issuers solutions to strengthen the liquidity of their securities

A direct interest. Market liquidity sums the individual liquidity of each instrument. As pointed out earlier (cf. A.1.1. above), issuers have a direct interest in ensuring the liquidity of their securities. Action needs to be pursued in several areas to this end.

Standardise bond issues: a solution that must not be underestimated

Less tailored to needs. The idea of standardising bond issues is gaining ground: if debt instruments were fungible with instruments already in issuance, the number of issues in circulation would be reduced, while liquidity would simultaneously be increased for each of these issues. The idea has support among some major international asset managers, which see it as a way to revitalise the market⁴³. It is an alluring proposal: the market is extremely fragmented at present with a great many small issues. Of Europe's 130,000 bond issues, 86% involve amounts of less than €50 million. Meanwhile, issue size does indeed appear to have been one of the main factors in ensuring stable, or at least resilient, bond liquidity during the recent shocks (cf. *Illustration 2, shown again opposite*). Standardisation would obviously facilitate the transition to electronic trading protocols as well (cf. C.2.1. above).

Illustration 2: Contribution of factors to the liquidity performance of corporate bonds during the taper tantrum



Source: IMF, GFSR cited earlier

However, the expected benefits need to be weighed against the drawbacks. For issuers, standardisation would carry a cost because financial flows would be less closely tailored to the economic flows connected with the projects being funded. From their perspective, such a development would be conceivable only if the additional cost were offset by the additional liquidity provided and by the related savings in funding costs.

A solution confined to a handful of large issuers. In any case, such an approach would only concern the very largest issuers, which would truly stand to benefit from rationalisation, echoing measures taken by many governments in recent years. Indeed, some have already started moving in this direction.

⁴³ "Lack of liquidity for corporate bonds harms issuers and investors alike, with attendant consequences for dealers and trading venues. A movement toward product standardization, accompanied by expanded e-trading venues and new trading protocols, along with changes in stakeholder behavior, is needed" (cf. [Corporate bond market structure: the time for reform is now, BlackRock, September 2014](#)).

Develop services for issuers that promote liquidity

Liquidity cannot be imposed, but it can be improved. Many instruments, especially those issued by smaller issuers such as SMEs and mid-tier firms, do not naturally have liquidity. It is therefore extremely important for issuers to be actively involved.

Ensure better information on market flows. Having a well-targeted, long-term investor relations strategy is key for investors and hence for issuers (provided it does not result in large additional costs that would place market financing at a disadvantage relative to bank financing). In this respect, knowledge of current buying and selling interests (geographical distribution, by investor type, etc.) is an important aspect for issuers to consider. For this reason, efforts to develop the supply of this information should be encouraged, subject to compliance with relevant rules, particularly on conflicts of interest.

The role of liquidity provision mechanisms such as liquidity contracts. Liquidity provision mechanisms are extremely important: by promoting trading, they enable buyers and sellers to find a counterparty while simultaneously enabling prices to be set and hence assets to be valued. In many countries, liquidity provision is considered to fall within the purview of market makers, which have an economic interest in supplying it. While this is true in some cases (*cf. also C.2.4. below*), the reality can be more complex. This is why France has developed a practice based around liquidity contracts, in which an issuer makes resources available to a liquidity provider so that the latter can independently trade on the market to promote the liquidity of the securities, ensure regular quotes and prevent price swings that are not justified by market trends. Discussed during the revision of the European Market Abuse framework, this practice has ultimately gained recognition for its merits.

The mechanism was originally introduced in France for exchange-traded equity securities (*cf. AMAFI standard liquidity contract, AMAFI / 11-23a and b*), but was more recently extended to exchange-traded bonds (*cf. Standard liquidity contract for debt securities, Europlace, 2012*). It is important to continue to support its development, especially in situations where market making mechanisms cannot supply the liquidity needed to ensure orderly markets.

Euro private placement: a key tool

Accepting illiquidity. The initiative that led to the establishment of Euro Private Placement (Euro PP) contracts has resulted in a major new tool that is gaining ground, amid growing appetite among investors to structure issues as private placements. The model has a dual benefit: investors get instruments that are suited to their needs and, being the sole holders, can hope for more stable valuation; for their part, issuers say that they enjoy more favourable conditions than those offered with public issues, as investors accept the illiquid nature of the product from the outset and do not insist on a new issue premium, or at least require a smaller premium.

The rise of Euro PPs is essentially an acceptance of the fact that continuous listing and liquidity requirements are counterproductive for certain instruments and that it is better to take this situation into account rather than force these instruments into a liquid market model that does not suit them. The consequences in terms of the regulations applicable to the affected investors still need to be examined to ensure that such instruments are not excessively disadvantaged.

Financial analysis, an important way to channel investor interest

MiFID 2, or an inexplicable desire to destabilise the existing model. Coverage of securities by financial analysts is acknowledged to be a factor that contributes to strengthened liquidity⁴⁴. It is therefore necessary to ensure that new rules do not suddenly disrupt the funding of financial analysis, which is an intellectual service with high value added. The funding model is already weak, particularly for the least liquid securities, which are often issued by SMEs and mid-tier firms.

This makes it extremely hard to understand the desire for an extensive revision of the mechanism used to fund financial analysis across all asset classes through MiFID 2 implementing measures, severing the link between remuneration and trading volume, particularly when considered in the light of the priorities stated by Europe through the CMU initiative⁴⁵.

Impact on financing for SMEs and mid-tier firms. With research capabilities for the SME and mid-tier segment waning fast in recent years, even though the financing solutions that the market is able to provide to these companies will be a key aspect in the economic recovery, the potential macroeconomic impact of the proposed European measures cannot be ignored.

The goal of protecting investors is a legitimate one, but so is that of funding SMEs and mid-tier firms. The challenge is therefore to weigh the various factors at work in order to strike an appropriate balance, even if this means setting different rules based on the nature of the affected companies (SMEs and mid-tier firms warrant ad hoc treatment) and instruments (since research on instruments other than equities is not paid for by commission, it does not raise the same challenges in terms of investor protection).

C.2.4. Reconsider prudential choices in light of the challenge represented by market liquidity

A major aspect. In view of the ability of alternative participants to replace financial institutions in their traditional role as liquidity providers (*cf. C.1.2. above*), it is worth revisiting the question of the balance and interaction between prudential reforms affecting banks operating on capital markets. Specifically, a proactive stance could be adopted on assets issued by SMEs and mid-tier firms.

Market liquidity, a factor in financial stability

A monetary policy challenge. The regulatory constraints placed on traditional liquidity providers, i.e. “market intermediaries”, and particularly banks, were introduced with the legitimate goal of strengthening financial stability.

But by doing this, since regulators were not primarily concerned about market liquidity questions, these restrictions introduced new risks, which were partly masked by the “liquidity illusion” created by exceptional market conditions and action by central banks. It has now become vital to more effectively address factors that weaken the markets.

⁴⁴ The production of investment research is a valuable way to get investors interested in opportunities that they would otherwise miss (*cf. also Derrien and A. Kecskés, cited earlier*).

⁴⁵ This situation is especially unwelcome since no discussion was held at Level 1 between European co-legislators and since this issue, despite the challenges it raises, was addressed only at Level 2, which is supposed to be confined to providing technical clarification of Level 1 measures (*cf. also MiFID 2 – Implementing measures – Paying for research, AMAFI / 15-10*).

The need for an assessment. With this in mind, and given the importance of market liquidity to orderly markets and, ultimately, to financial stability, it is essential to conduct a cost/benefit analysis of these rules, looking at the role played by liquidity providers, the analytical data now available⁴⁶ on the effects of the stricter rules placed on these providers, and the impact in terms of fragmentation. This analysis should be performed at a sufficiently granular level and take account of the impact of the various rules on different financial asset classes and on the different market activities performed by “market intermediaries”.

In other words, market liquidity is a major factor that should be taken into account more systematically by central banks (in their dual role as monetary policymakers and bank supervisors) and also by the authorities with responsibility for systemic risk (in practice central banks would be largely involved in this capacity too). Central banks and authorities are increasingly doing this, but this role needs to be more clearly defined.

Should the restrictions on banks’ liquidity provision functions be re-examined?

Identify excessive effects. While there is no question of rolling back the major progress made in recent years in terms of strengthening the stability of the financial system, the fact is that the cumulative impact of the new standards either already in place or on the way has not been examined as such. Specifically, the ability of the financial system in general and of the market in particular to play their role in financing the economy as efficiently as possible has not been truly taken into account. Restoring the resilience of financial institutions was the overarching need and overshadowed other considerations but their importance to orderly modern economies and social cohesion can no longer be ignored.

An in-depth review is therefore needed to identify any excessive and unwanted effects of certain rules. This review, which will require cooperation by prudential regulators, market supervisors and affected participants, should seek to identify those rules within the body of prudential standards that, either alone or cumulatively, have a disproportionately negative impact on market liquidity relative to the gains obtained in terms of financial stability. In this respect, the Call for Evidence on the EU Regulatory Framework for Financial Services held by the European Commission as part of the CMU initiative should be welcomed as a necessary first step. More generally, in future rulemaking, regulators need to give more thought to managing the continuum between market liquidity (which exists under “normal” market conditions) and “prudential” liquidity (which exists in a “stressed” situation), by adopting more holistic approaches and measuring interactions between different sets of standards.

Carefully weigh the choices currently being made. As part of this, the prudential standards presently at the drafting stage need to be recalibrated to provide a “sanctuary” for market making activities that are still viable. These activities, whose usefulness to financing the economy and hedging risk has been demonstrated (*cf. AMAFI / 15-03 cited earlier*), would benefit enormously from an exemption within reasonable limits (i.e. without a systemic impact) from the requirement to calculate certain ratios.

In any case, for the standards that are still under discussion, and as long as the crucial in-depth study has not been carried out, the principle of neutrality in terms of equity and funding costs should be applied going forward – most probably at regional level and at the level of each family of instruments – since it seems that any additional requirement is likely to be at the expense of orderly markets and, ultimately, of financing for the economy.

⁴⁶ The three European supervisory authorities appear to identify negative effects from regulations on market liquidity (*cf. August 2015 Report by the Joint Committee of European Supervisory Authorities cited earlier*).

Provide streamlined prudential treatment for assets issued by SMEs and mid-tier firms

Non-systemically important assets. In any event, non-systemically important assets held as part of market making activities, especially those issued by SMEs and mid-tier firms, should be subject to streamlined prudential treatment. By their construction, these assets do not pose a risk to the financial system, yet the support of liquidity providers is particularly necessary to keeping this market healthy and ensuring its liquidity. Strengthening this support would therefore help to restart the economy and promote its orderly functioning.

This is even more justified in Europe because these assets are already subject to preferential treatment in the banking book as defined by CRD 4. Expanding this type of treatment to the trading book would demonstrate authorities' backing for mid caps, whose financing is one of the core commitments made by the new European Commission as formulated in the CMU initiative launched by Commissioner Jonathan Hill in spring 2015.

C.2.5. Overhaul accounting standards

Adverse effects exposed by the financial crisis. The financial crisis was unquestionably exacerbated by the effects of accounting standards for which mark-to-market measurement was sacrosanct. When the market lacks the liquidity needed to perform its price discovery function, uncertainty over balance sheet values becomes unbearable.

Reduce procyclicality

Triggering downward spirals. Accounting standards have a cross-cutting impact insofar as they apply to all the participants considered above, i.e. investors, issuers and financial institutions. As a result, efforts to curb liquidity requirements must include limiting the procyclical effects of these standards in a crisis situation. This in turn entails thinking about valuing assets as a function of the holding period. Such an adjustment is vital to making these investments less sensitive to short-term variations and to mitigating the procyclical effects otherwise created. In this respect, there are questions over the impact during times of stress, particularly on low-liquidity securities, of the international financial reporting standards (IFRS) that have applied in Europe since 1 January 2005⁴⁷. IFRS notably introduced fair value (IAS 32 and 39), a concept that breaks with French accounting traditions and introduces a major driver of procyclicality.

Box 9: The adverse impact of IFRS 9

Among the potential effects of IFRS 9 Financial Instruments, which will be applicable from 1 January 2018, the European Financial Reporting Advisory Group (EFRAG) identified an issue linked to long-term equity investments.

Equities held by investors who provide capital in this manner will be measured by default at fair value through profit and loss (as trading assets are), which could generate volatility that is inconsistent with the holding period and the expected return on the investment. The option offered by IFRS 9 of measuring them at fair value through other comprehensive income (OCI) is unappealing because when the equities come to be sold, any capital gains or losses are not recognised in profit or loss but directly recycled from OCI to reserves.

In its draft recommendation on adoption of IFRS 9 by the European Union, EFRAG stressed the limits of the standard with respect to these long-term investments in equities and questioned the potential impact on investors' investment policies.

France's accounting standards authority (ANC) has also drawn attention to the potentially negative consequences of IFRS 9 and their inconsistency with Europe's determination to promote capital financing for businesses. The ANC additionally said that the standard was likely to have an adverse impact on investors' appetite for equity securities. This could pose a problem for banks, which will have to increase their prudential capital by issuing new equity instruments.

⁴⁷ Obligation to apply the IASB framework to companies listed on a regulated market ([Regulation \(EC\) No. 1606/2002](#)).

Systematic use of mark-to-market measurement can lend added momentum to a downward spiral. The consequences of these new standards, some of which are still in the process of being drawn up ([cf. Box](#)), have definitely not been adequately taken into account and need to be reconsidered in all cases where an immediate market value is not a key determining factor in the investment horizon (i.e. in practice for the vast majority of investors other than CIS).

Increased importance for long-term investors

An investment horizon requiring appropriate accounting methods. To encourage long-term investors, it is important to start out by recognising the specific nature of their investment horizon: outcomes cannot be measured in the same way because their timeframe is different from that of a short-term investment. There is therefore no reason why the same assets should be measured in the same way if they are held by, say, a CIS subject to daily quotes, a leveraged hedge fund, or a life insurer making a long-term commitment. It does not make sense to apply short-term valuation requirements to the assets of an investor with long-term liabilities. Rather such investors should be subject to specific value recognition standards and to different prudential standards from those introduced by Solvency 2.

Conversely, one could ask the question of how to guide investors with fairly long-dated liabilities towards longer-term assets and different horizons and valuation methods. This could and should promote investing that is less dominated by short-term indices and that thus consumes less market liquidity.

Recognise that some instruments are illiquid

Mark-to-market measurement may be inherently inappropriate. Some instruments, despite all efforts, will remain inherently low on liquidity. In this sense, they are less consistent with the ideal definition of a market instrument. The market is only meaningful when it brings buyers and sellers together, as this is what gives reality to the prices that it determines. It is therefore natural that the rules applicable to institutions and instruments alike should recognise this specificity, without excessively penalising these instruments, which play a vital role in enabling certain companies and projects to access market financing.

This is why, alongside efforts to improve the liquidity of each market segment where possible, regulations need to be steered towards a clearer and more explicit recognition of the fundamental lack of liquidity of certain instruments. This could be achieved through appropriate “market” regulations for these products⁴⁸ and through improved recognition by institutional investors of the true liquidity level of instruments, ensuring consistency with their financing approach and valuation and investment horizon. This will promote the emergence of longer-term solutions that are consistent with this weaker liquidity (the European long term investment fund (ELTIF) format is obviously be a first step in this regard).

C.2.6. Taxation definitely plays a role

Increasing market depth. Taxation definitely plays a role in steering savings and hence in the appeal of the market to individual investors, whether they are acting directly or through intermediation. And more savings on the markets means more liquidity for the markets.

⁴⁸ As suggested by AMAFI in its response to the CMU consultation ([cf. Building a Capital Markets Union – Contribution by AMAFI to the European Commission’s Green Paper, AMAFI / 15-28](#)).

While the aim here is not to enter into the details of a very particular issue with many implications, particularly from a fiscal perspective, it is nevertheless important to measure the adverse effects that taxation could have on market liquidity. Aside from the specific question of a FTT, whose cost would essentially be borne by end investors resident in participating countries (*cf. B.2.2.b. above*), taxation, especially when not correlated with the risk borne by investors that agree to finance the economy, can have a very disincentivising effect, to the point of turning individual participants away from instruments whose development appears to be in the collective interest (*on this aspect as regards France, cf. Taxation of savings and business finance – AMAFI Barometer 2015, AMAFI / 15 45, 1 October 2015 – in French only*).

C.2.7. Strengthen tools available to market authorities to alleviate the pressure

The authorities have a vital role to play. The role played by market authorities cannot be confined merely to rulemaking, supervising the markets and entities under their responsibility, and punishing offences. Liquidity and orderly markets represent a kind of common good, which is something that the crisis reminded us of.

This raises the need for a preventive analysis of liquidity risks, both overall and market by market, which would make it possible, for example, to identify in advance major segments whose liquidity could dry up quickly, as happened in 2007. Such situations also need appropriate regulation, notably with regard to the funding of participants' positions in these products and related leverage. A low-liquidity asset should, as we have seen, be funded by longer-term resources, *ceteris paribus*.

Avoid sharp upsurges. The 2008 crisis provided evidence, if such were needed, that the market could experience sharp upsurges with potentially harmful consequences for the overall economy. This raises the question of managing the market and of devising mechanisms that can nip a new crisis in the bud before funding channels seize up as they did in 2008. As we have seen, however, an analysis of recent market shocks seems to point to an increase in both the likelihood of a stressed situation escalating into vanishing liquidity and open crisis, and in the speed of such a shift.

Admittedly mechanisms are already in place that can be used to “halt” the market for a given period and give investors time to analyse the situation, preventing a downward (or sometimes upward) spiral from being triggered for reasons that have not been sufficiently thought through. These mechanisms, which are especially important at a time when many transactions are generated automatically, fall into two main categories: market authorities' powers to suspend trading; and mechanisms to suspend and limit trading on market platforms⁴⁹. In the current environment, however, it is not certain that these mechanisms, which are complex and tricky to implement and whose impact may be limited, are up to the task.

Two avenues to explore. This creates the question of whether it might be worth going further down this road. Two possible avenues, which could be combined to provide a graduated response, deserve to be explored.

- The first would consist in switching for a set period from continuous trading to periodic auctions subject to regulated price variations.
- The second would consist in declaring any trade performed during the suspension period as invalid on public policy grounds.

To ensure that these tools are operational quickly, the terms of their use should be specified at least for periods of liquidity stress. This would facilitate their use by regulators and their acceptance by the market.



⁴⁹ Activated at their initiative or to respond to regulatory obligations, these mechanisms may apply to all traders on a given venue or to select participants (HFT circuit breakers for example).

SUMMARY BIBLIOGRAPHY

(For additional information, please refer to the PwC study cited below)

Reports and opinions

- [Market liquidity – Resilient or fleeting?, Global Financial Stability Report 2015, IMF, 29 September 2015](#)
- [Report on risks and vulnerabilities in the EU financial system, Joint Committee of the European Supervisory Authorities, May 2015 and August 2015](#)
- [Global financial liquidity study, PwC, August 2015](#)
- [Annual Report, Bank for International Settlements, 28 June 2015](#)
- [“When Market Liquidity Vanishes”, Global Financial Stability Report, IMF, April 2015](#)
- [Wholesale Investment Banking Outlook, Oliver Wyman report for Morgan Stanley, 19 March 2015](#)
- [“Shifting tides – Market liquidity and market-making in fixed income instruments”, BIS Quarterly Review, Bank for International Settlements \(BIS\), March 2015](#)
- [Annual Report 2014, Office of Financial Research, December 2014](#)
- [Financial Stability Review, European Central Bank, November 2014](#)
- [Market-making and proprietary trading: industry trends, drivers and policy implications, Working Group chaired by Denis Beau, Committee on the Global Financial System, CGFS Papers No. 52, Bank for International Settlements, November 2014](#)

Academic papers

- [Market Making Under the Proposed Volcker Rule, D. Duffie, Report to the Securities Industry and Financial Markets Association, January 2012](#)
- [The Economic Consequences of the Volcker Rule, A.V. Thakor, Center for Capital Markets Competitiveness, summer 2012](#)

Miscellaneous

- [Dark pools and platforms vie to fix broken credit markets, Risk.net, 31 March 2015](#)
- [Financial Market Volatility and Liquidity – a cautionary note, speech by Chris Salmon, Bank of England, 13 March 2015](#)
- [Letter to Shareholders, Jamie Dimon, JPMorgan Chase, 8 April 2015](#)
- [Liquidity, Oaktree Note, Howard Marks, 25 March 2015](#)
- [Liquidity in markets, The Economist, 18 April 2015](#)