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The future of finance: Are you ready?

BANKING ON A RECOVERY
Peter Dixon

EQUITY BETA – OR HOW MUCH RISK ARE FUND MANAGERS TAKING?
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THE DIGITAL BUSINESS OF STRUCTURED PRODUCTS: TODAY AND IN FUTURE
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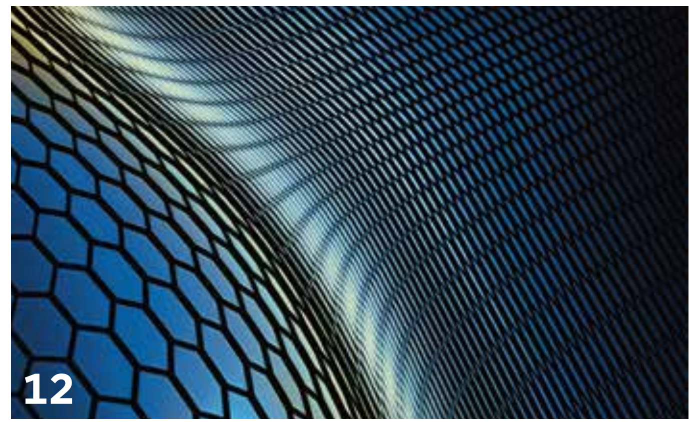

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The magazine for the discerning institution

JAIME URIBE
Head of Products and Clients
Equity Markets & Commodities

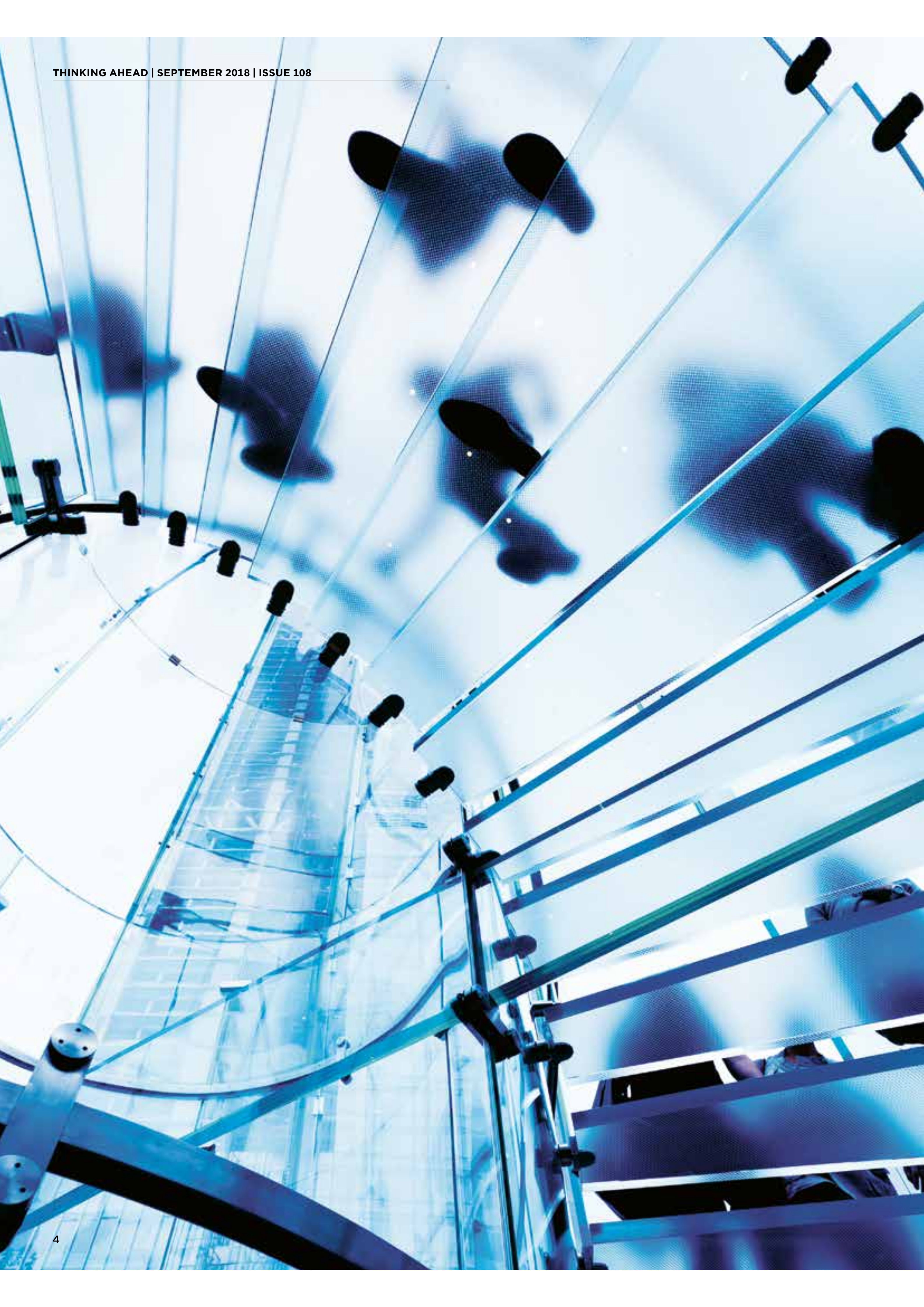
As we return to our desks from summer breaks, it can be easy to think that nothing has changed, but in the investment universe, that's never the case. While some of us were walking, swimming or sunbathing, a few currencies were falling victim to new bouts of volatility, another exotic ETF or two will have opened up, and fund managers around the globe will have taken a long, hard look at their allocations and made tough decisions.

However, in this month's edition of 'Thinking Ahead', we take a look at changes that we need to anticipate in the future. While we have no crystal ball, we can certainly benefit from keeping our eyes on the issues that are already keeping investors on their toes. These include financial regulation and the differing attitude taken by regulators on either side of the Atlantic. Regulation of advancements in technology is also a consideration, such as the use of AI in investing and the growth in popularity of the cryptocurrency markets. While a cryptocurrency ETF has yet to get the SEC seal of approval, most feel that this is just a matter of time, and if one leads, it's certain that many will follow. And no discussion of the unknowns that lie ahead would be complete without touching on Brexit, which – so many months down the line – continues to offer few signs of clear progress.

Once again, I hope that you are finding 'Thinking Ahead' a useful tool in helping you navigate the investment waters, whether they be tranquil or turbulent. If you have any feedback or suggestions on the magazine and what you would like us to write on, do please send them over to me at **ThinkingAhead@commerzbank.com**.

Yours,

Jaime Uribe



Banking on a recovery

PETER DIXON
Global Equities Economist
peter.dixon@commerzbank.com

Perhaps if the regulatory authorities had been aware of the disruption that would follow in the wake of their decision to declare Lehman Brothers insolvent in 2008, they would have thought twice about it. This was the catalyst for the deepest global recession in 80 years and prompted the monetary authorities to step in to prop up the global financial system.

As a quid pro quo, regulators imposed major regulatory change on the industry which will continue to shape banks' business models well into the future. Banks also face technical advances which are disrupting the face of the industry. But despite these challenges, rumours of the death of traditional banking have been greatly exaggerated.

The macro backdrop

It is exactly ten years since the Lehman's bankruptcy set off a chain reaction in the financial markets that prompted the biggest economic collapse since 1929. The prime cause of the bust was excess leverage that had built up in the banking system (Chart 1), aided and abetted by some irresponsible activity by banks themselves and lax oversight by the regulatory authorities.

> 'The fallout from the crisis proved far less disruptive than the Great Depression of the 1930s.'

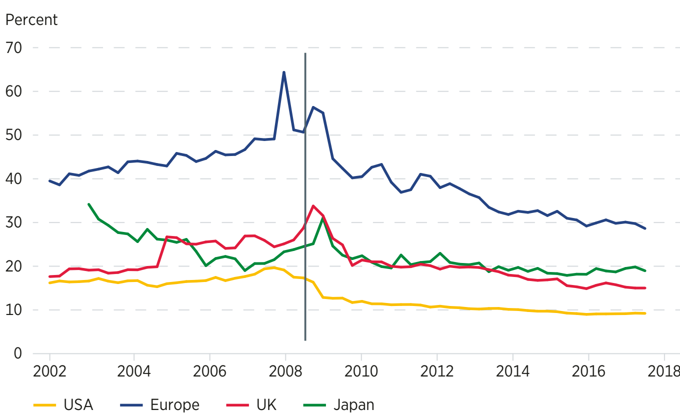
Thanks to an unprecedented degree of monetary easing, the fallout from the crisis proved to be far less disruptive than the Great Depression of the 1930s but it nonetheless exposed the limits of the pre-2008 financial system.

From an economic standpoint, economic prosperity is clearly growing at a slower pace than before the great recession of 2008-09. In the ten years to 2007, UK real household incomes grew at an annual average rate of 3%; over the period 2008 to 2017 the rate slowed to 0.8%. The experience across the eurozone has been similar, with average annual growth of 1.9% in the seven years prior to the crash but 0.2% in the decade thereafter. This may well be the result of the collapse in productivity growth which has defied adequate explanation but which is one of the key drivers of long-term prosperity.

A perception that living standards are not improving at the same pace as pre-2008 has resulted in a backlash against globalisation – a view that has been fuelled by the rise of China, which is viewed in some quarters as getting rich at the West's expense. Rising economic nationalism has placed limits on the EU's ambition and although the single currency has survived intact, it survived a near-death experience in the wake of the Greek debt crisis and highlighted that a fixed exchange rate system needs much more than a single monetary policy to survive. Arguably, the problems in the EU coupled with a backlash against immigration gave rise to Brexit, whilst mounting concerns about the rise of China were the catalyst for the rise of Trump.

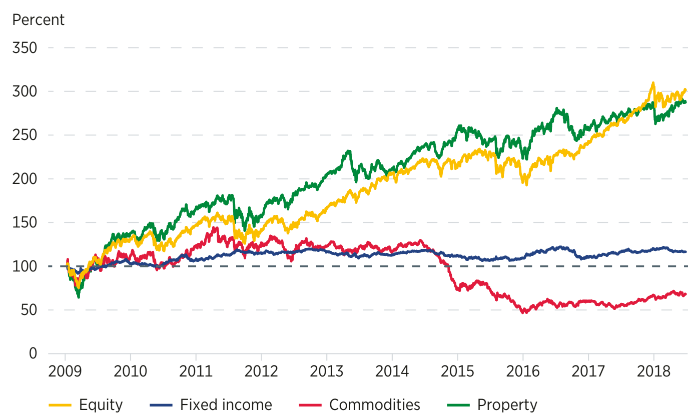
But whilst the geopolitical environment has changed considerably over the past decade, markets have boomed. Since reaching a trough in early 2009 global equities have generated total returns of 300% whilst property returns are closer to 350% (Chart 2). Fixed income and commodities have done less well, with the former very much a casualty of the ultra-low interest rate environment. The fact that central banks in the industrialised world – with the exception of the Fed – have held interest rates at levels consistent with the crisis conditions of 2009 has proven to be both a blessing and a curse. On the plus side it prevented an economic meltdown on the scale of the 1930s. But against that, there are significant negative consequences associated with the prolonged period of low interest rates. For one thing,

Chart 1: Excessive bank leverage prior to 2008
Assets relative to equity



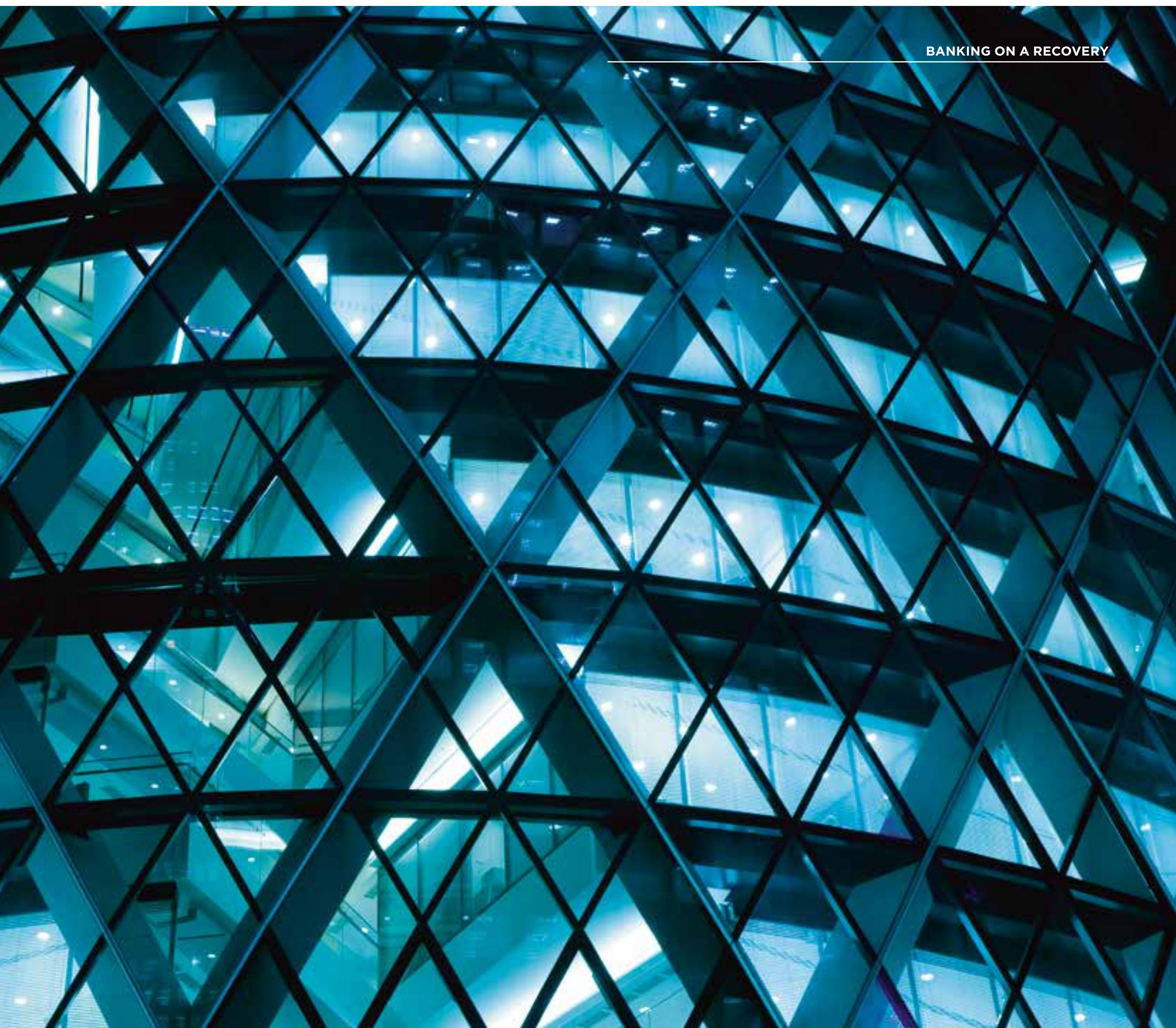
Source: BIS

Chart 2: Equities and property were the place to be
Indices, 1 January 2009 = 100



Source: Bloomberg

Past performance or achievements are not indicative of current or future performance.



they reduce the incentive to save, and low rates have damaged the returns derived from long-term financial products (such aspensions). Additionally, there is an argument that easy monetary policy hampers the efficient allocation of capital by propping up zombie companies. Last but not least, low interest rates have had a significant impact on the performance of the banking sector.

Banks: Emerging from the storm

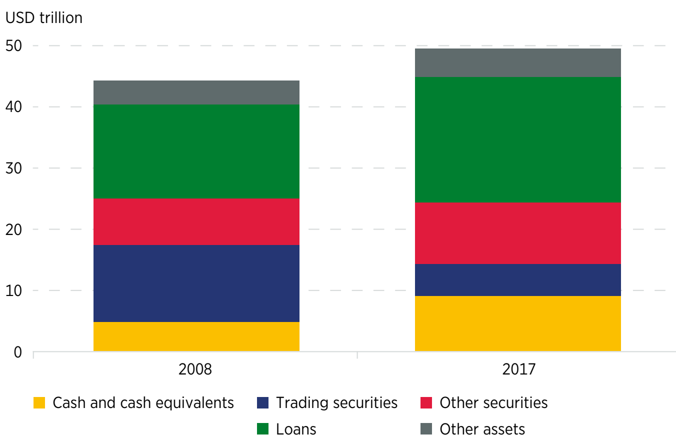
A decade ago banks bore the brunt of public anger, having been perceived to be the cause of the global meltdown. This is not wholly fair given the lax attitude of regulators, governments and central banks which were not prepared to take the unpopular measures necessary to take the steam out of the system. Although monetary authorities may have been somewhat slow to act before the crisis blew up, they reacted quickly to ensure that the banking system did not go into meltdown by pumping in huge quantities of liquidity. However, this stoked public opinion into believing that bankers had not only caused the crash but were being rewarded for their trouble.

The truth was rather more prosaic. We warned in the immediate aftermath of the Lehman's bust that the authorities were likely to extract a quid pro quo from banks in return for their support, and that is exactly what happened. The Basel III legislation, unveiled in 2010, proved to be a comprehensive overhaul of the

financial sector which changed the way in which banks operated. The first element of this policy required banks to hold much more loss-absorbing capital, with a required minimum capital buffer of 7% to 8.5% compared to an effective pre-crisis buffer of 4%.

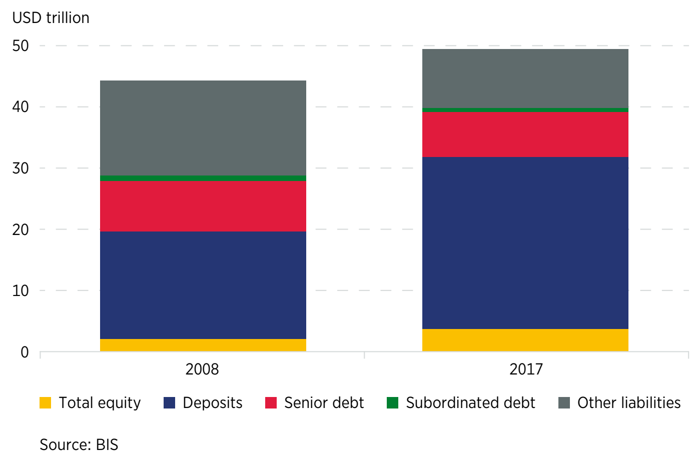
A second element of the legislation focused on enhancing the consistency and comparability of banks' risk-weighted assets (RWA). Prior to 2008 banks used their own internal models to derive measures of RWA which varied significantly across institutions because they used very different models. A study conducted by the Bank for International Settlements (BIS) in 2013 pointed out the extent to which different model assumptions could affect the capital buffer, with their findings indicating that two banks with an identical asset base might

Chart 3: A better balanced asset base ...
Assets of 28 global systemically important banks



Source: BIS

Chart 4: ... and a less riskier liability structure
Liabilities of 28 global systemically important banks



Source: BIS

report capital ratios that differ by up to 4 percentage points depending on the models used. Accordingly, the new rules are designed to impose a much greater degree of uniformity in this area, thus enhancing transparency.

Although we will never fully know how successful the new legislation proves to be until it is tested in a crisis, regulators' regular stress tests give grounds for optimism. Chart 1 indicates that leverage ratios have fallen sharply whilst capital shortfalls have been eliminated. Meanwhile, balance sheets have changed significantly in the past decade with a higher proportion of the asset base comprised of loans at the expense of trading securities (Chart 3) whilst deposits make up a larger share of liabilities (Chart 4).

But as the BIS has pointed out, a crucial area of banking resilience is profitability since this determines the extent to which banks can recover from losses. Although much progress has been made to weatherproof bank balance sheets, profitability – particularly in Europe – has not recovered. The ten largest eurozone banks, for example, registered profits in 2017 that were 20% below 2006 levels whilst in the UK the profitability of the Big 5 remains 30% lower than pre-2008 levels. Matters are somewhat different in the US, where aggregate profitability climbed above pre-recession levels as long ago as 2015. Admittedly, pre-2008 profit levels may be an inappropriate benchmark given the significant degree of risk to which banks were exposed, but conventional measures such as price-to-book ratios for European banks are still generally below one which suggests that investors are not very optimistic with regard to a recovery in profits.

'The Basel III legislation proved to be a comprehensive overhaul of the financial sector.'

The outlook for the banking sector: Technical challenges

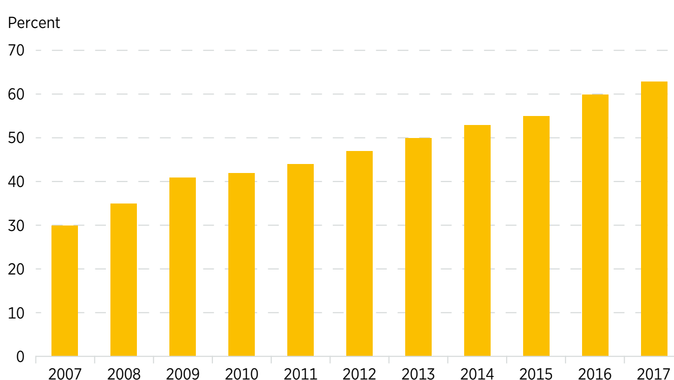
Banks are suffering from two main issues as they recover from the shock of 2008. On the one hand they have faced high compliance costs as they seek to implement the new regulatory requirements. Thus, banks have been forced to exit certain business areas as they conserved capital to comply with the new regulations. In addition they have faced higher administrative costs as they put the systems in place to ensure compliance. Both of these factors have acted as a drag on profitability. A second problem is that the actions of monetary authorities to rescue the economy resulted in low interest rates and a flattening yield curve, both of which have acted as a further headwind to profitability. Over time, the adverse effects of these forces are likely to fade. This is partly due to the process of implementing the Basel III legislation nearing its completion, but also because we are nearing the end of the period of exceptional monetary easing as central banks wind down their quantitative easing (QE) programmes and begin to raise interest rates. But this does not mean that life is about to get easier for banks. Far from it: the traditional banking model may be about to change considerably.

'The traditional banking model may be about to change considerably.'

Aside from having to respond to changes imposed by regulators, banks have been subject to a series of exogenous shocks in the form of technological change which has forced them to rethink their business models. Although there is a lot of hype surrounding the need for banks to engage with the new digital world, there is no doubt that it has significantly disrupted business. For example, survey evidence suggests that online banking penetration in the UK now exceeds 60%, having doubled over the past decade (Chart 5) – a similar trend to the US.

At its simplest, this means banks no longer need to maintain such large (and expensive) property portfolios, which will help

Chart 5: Online banking penetration in the UK



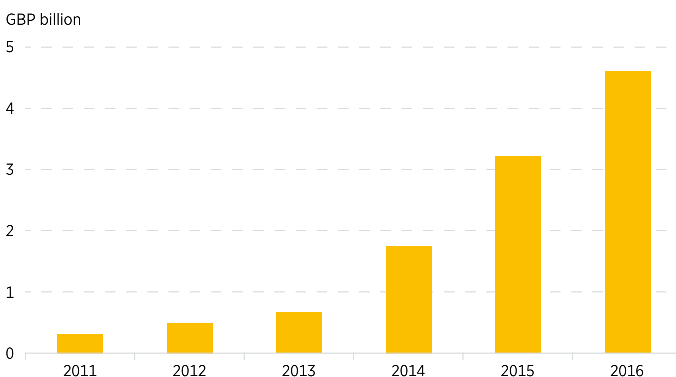
Source: Statista

to reduce the cost base. Indeed, the initial phase of the digital revolution is all about cost control, with the rollout of mobile apps, online bill payment and online products simply providing existing services in a more convenient form. But it is likely that whilst digitisation may change the structure of the cost base, there is little evidence that it will lead to an outright reduction in costs in the near future. Banks may be able to substitute labour for capital, thereby reducing wage costs, but there are considerable infrastructure costs involved in setting up a digital infrastructure. Moreover, such investment has a long payback period and given the pace at which technological trends change, banks are rightly cautious regarding the extent to which they are prepared to commit to digital projects.

> 'The inital phase of the digital revolution is all about cost control, providing existing services in a more convenient form.'

A more digital-focused banking sector will also change the regulatory requirements facing banks. Data security will rise up the list of challenges as institutions process a rising number of online transactions and thus store ever larger volumes of data. Aside from the obvious problems associated with hacking, know-your-customer (KYC) requirements will become more onerous as transactions take place via the impersonal medium of the web rather than on a face-to-face basis.

Chart 6: UK alternative finance market volume



Source: University of Cambridge, CME Group Foundation

Responding to the challenge: The new business environment

Low cost entrants, with more of a focus on clicks than bricks and mortar, are likely to intensify the challenges facing traditional banks. One area which has been much touted is peer-to-peer lending (P2P) which its proponents believe could put pressure on the role of the bank as an intermediary matching those with excess liquidity with those experiencing a liquidity shortage. But whilst this sector has experienced rapid growth in recent years, with a UK survey pointing to a rise in P2P lending of 43% in 2016, the numbers involved are still very small (Chart 6). Moreover, one of the most dynamic players in this market, the San-Francisco-based Lending Club, has recently run into major difficulties following governance issues. Following similar problems at the likes of Facebook and Uber, this highlights that life for disruptors is not always easy and often the long-established market incumbents are able to fend off new competition whilst they adapt to changed market conditions.

Consequently, much of the flashy material pumped out by management consultancies about how fintech is about to revolutionise the banking industry represents hype as viewed from the C-Suite rather than the experience of many people at the sharp end. That said, banks increasingly will have to manage a multi-channel product in order to provide a service for their younger, more tech-savvy clients. However, this is more likely to be a slow transformation process which plays out over many years than a big bang.

These extended timescales, and the fact that banks generally have sufficient resources to invest small amounts in experimental products, suggests they have time on their side to allow them to decide which areas are worth expanding into and which can be left to newer entrants. For example, banks are experimenting in areas such as blockchain in order to determine whether it really is a game-changing innovation. So far, its wider applications have been limited. But it may yet find a role in areas such as contract processing, secure trading platforms and payments systems from which banks will not wish to be excluded.

> 'In addition to the tech revolution, the changed regulatory environment is also likely to influence banks' business models.'

In addition to the tech revolution, the changed regulatory environment is also likely to influence banks' business models. Changes in balance sheet management are one area to which banks will have to pay more attention in future. Traditionally, asset-liability management (ALM) involved the efficient management of capital, funding and liquidity requirements to ensure that banks could meet client demand whilst minimising the risks to their capital position. But matters have become more complicated following the introduction of the Basel III legislation which has introduced a liquidity coverage ratio (LCR). This is defined as the stock of high-quality liquid assets to net cash outflows over a 30-day period in a stressed environment, and is intended to remain above 100%.

One of the consequences of this requirement is that holding a higher proportion of risk-free assets on the balance sheet will reduce profitability, due to the fact that they generally yield less than the returns that would be generated from commercial lending. In order to maintain profit margins, banks may well have to be more selective about the kind of business they are prepared to engage in if they are to maintain profit margins. This might involve them pulling out of those business areas which are too capital-intensive (or at least reduce their engagement) which in turn might offer opportunities for new entrants willing to plug the gap.

LAST WORD

The banking industry of the future will obviously look very different to that of the past. For one thing, the economic environment has changed and the pre-2008 boom years are unlikely to be seen in the Western world for some time to come. But the regulatory environment has changed too: in the same way as the Glass-Steagall Act of 1933 changed the nature of the US banking industry following the 1929 crash, so the Basel III legislation will have a similar impact on the post-Lehman's world. Banks also have to cope with technological disruption which threatens many areas of their core business. But although they may not generate profits at the rate they once did, banks have emerged from the 2008–09 crisis in a sufficiently robust state to meet these new challenges head-on.

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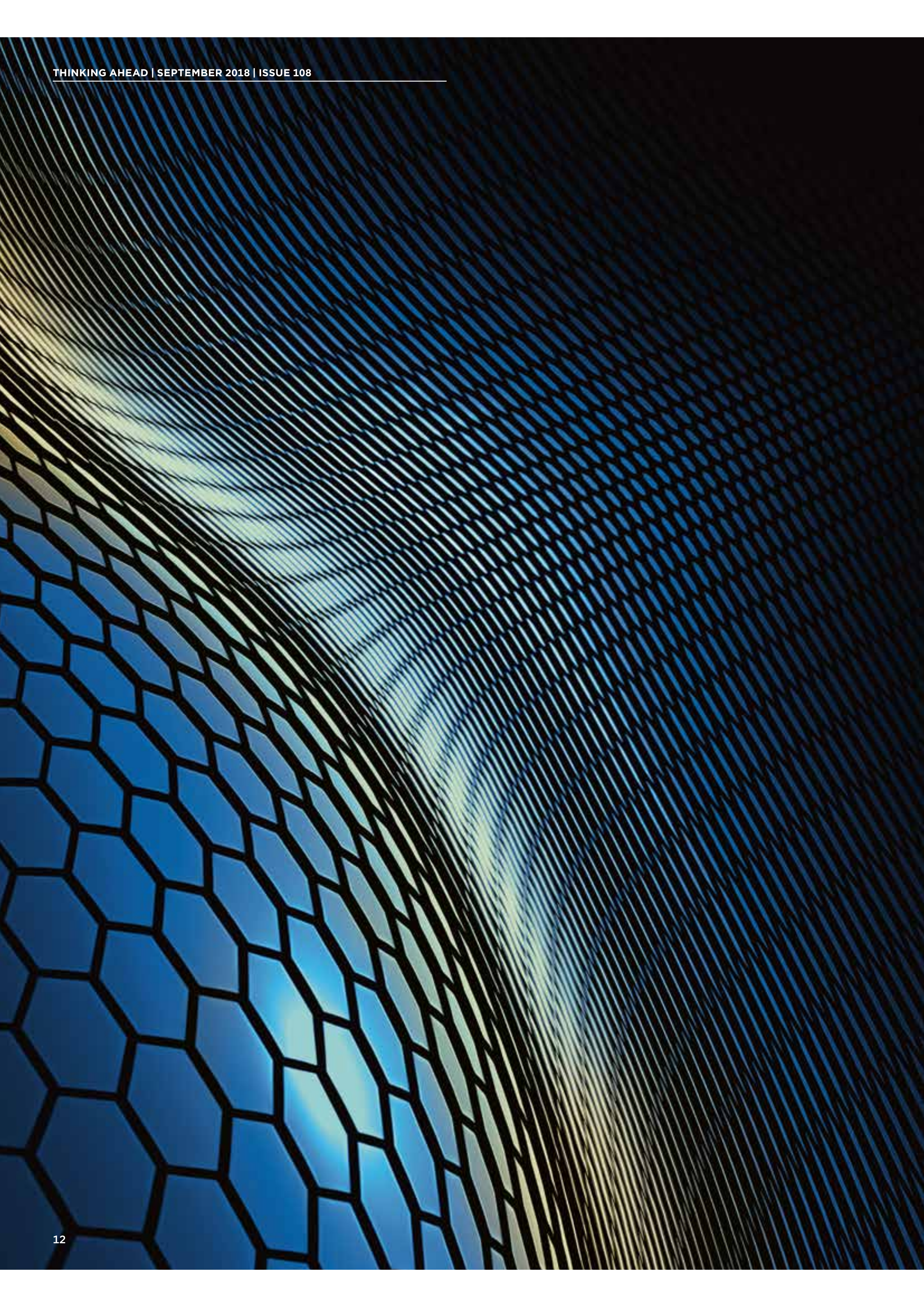


Equity beta – or how much risk are fund managers taking?

ALEXANDER KRÄMER
CFA, FRM
Head of Cross Asset Strategy
alexander.kraemer@
commerzbank.com

MATTHIAS BAUSCH
Cross Asset Strategist
matthias.bausch@
commerzbank.com

Investing has a lot of components – but one of the most important is timing. One needs good timing to invest before a particular trade is too crowded, and to exit before the vibes tip. In particular, one does not want to enter a trade the moment the vibes tip or to exit it the second it would pay off. This is still hard to quantify, but using a well known financial market variable – the beta – we present a means of estimating the equity exposure of fund managers. This helps judge whether there is further room for equity markets to rise or if the market is about to reach the limits of upside.

The idea: Using the equity beta to gauge the fund industry's risk exposure

In finance, beta describes the sensitivity of a security versus the broad market (see box). Hence, an investor running a beta above one in their portfolio can be described as willing to take greater risks, and vice versa. If a majority of investors are currently taking on more risks than they did in the past, this could signal that further upside is limited – as the ability to take on further risk is limited. What's more, along with risk exposure vulnerability to adverse developments also rises. A too strong exposure to the

market is hence a warning sign that one should take particular note of. In contrast, strong risk aversion on the part of market participants limits further downside and actually provides an interesting point for re-entering the market.

'Along with risk exposure, vulnerability to adverse developments also rises.'

The pitfalls of the simple approach

We originally started with the idea of estimating the equity allocation of the fund industry rather than just the current equity exposure. And indeed, the beta of a fund is the true equity allocation if the portfolio itself has a beta of one. In this case, however, we don't need an estimate of a fund's beta. Just looking at daily fund performance divided by the performance of the broad market would yield an accurate estimate of the fund industry's equity exposure on a daily basis. However, we believe assuming this is likely to be misleading – not only in the case of individual actively managed funds (at least the managers are paid for taking active positions) but also for an aggregate of active funds. In practice, using only the daily return of a fund or the fund industry to estimate the equity or risk exposure produces a fluctuating series which is of no use (Chart 1).

Implementing the idea: Which beta to use?

So, the simple approach doesn't work, which leads us to using a more smoothing measure – the aforementioned beta. We are looking for a measure that is both timely and robust in its estimate. Using a too long time horizon for the equity beta will identify turning points in the positioning only with a very long time lag (Chart 2). At the same time, a too short time horizon will again present us with the problem that noise is having too much impact on the estimate. Our solution to gauge the equity exposure of equity fund managers is a weighted version of the 20-day beta, which puts greater emphasis on more recent developments but not at the cost of greater volatility in the measure.

However, we still need to bear in mind that this is an estimate – and estimates can be wrong. By using confidence intervals we can at least be certain to some extent that the true estimate will be within a certain range. Generally speaking, the greater the volatility of the market, the more accurate the estimate. In other cases, it is likely that the estimate is distorted by other sources of performance, e.g. costs, cash, or the fund industry's alpha.

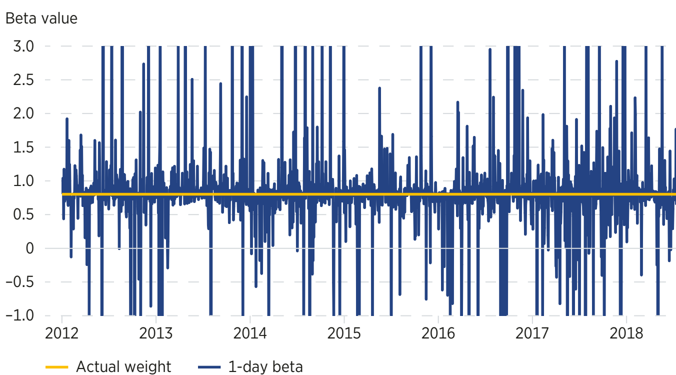
'Our solution to gauge the equity exposure of equity fund managers is a weighted version of the 20-day beta.'

Application in the real world

Moving on from theory to practice, one needs to define a proper fund universe as well as an appropriate benchmark to measure

Chart 1: Using only daily returns to estimate the true equity exposure of the fund industry delivers large outliers

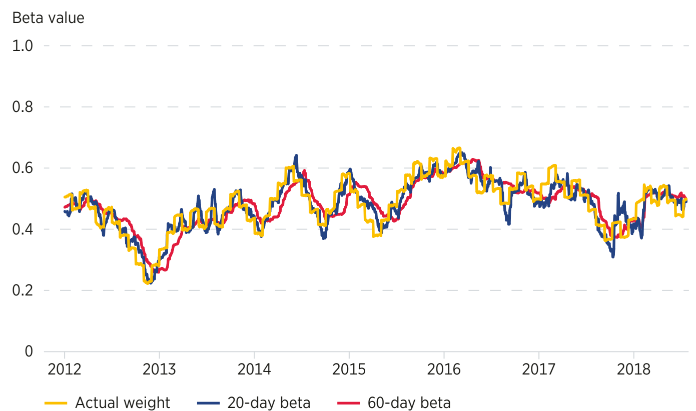
Estimated equity allocation using benchmark returns and a portfolio consisting of 80% equities, 20% cash, plus 'noise'



Source: Bloomberg, Commerzbank Research

Past performance or achievements are not indicative of current or future performance.

Chart 2: The 20-day beta is a fast and robust estimate of the actual portfolio exposure



Source: Bloomberg, Commerzbank Research

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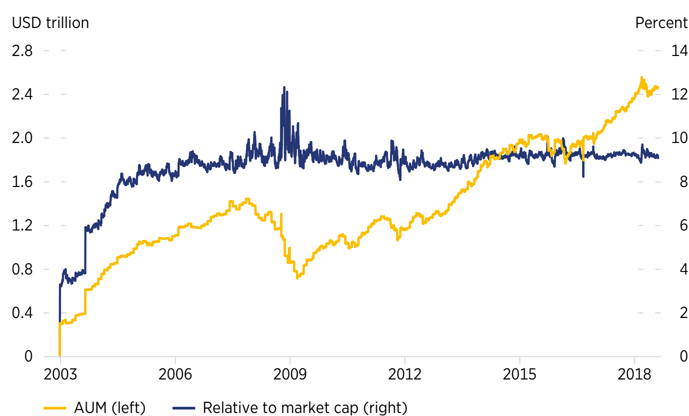
the beta against. The US stock market is a good starting point as it is less fragmented than the European market, and the net asset values (NAVs) of funds are reported on a closing basis. We look at funds investing in growth, value, and a blend of both, and take the largest 50 actively managed funds by assets under management (AUM) for each category. Based on data from Morningstar, the Top 50 funds cover circa 80% of AUM in the fund universe of active funds (Table 1). These assets under management have been fairly stable as a percentage of the total market cap of the Russell 1000 since 2005 (Chart 3). On a side

Table 1: Our US fund universe covers the largest 50 funds from the categories US large blend, US large value, and US large growth

		Large blend	Large growth	Large value
Number of funds	Aggregate	608	454	439
	Excl. passive funds	323	351	289
	Commerzbank peer group	50	50	50
Assets under management (in USD billion)	Aggregate	3,265	1,721	1,245
	Excl. passive funds	796	1,404	924
	Commerzbank peer group	613	1,145	770

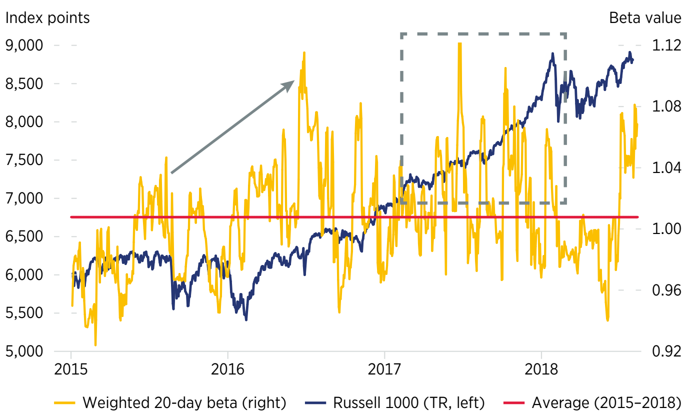
Source: Morningstar, Commerzbank Research

Chart 3: Our peer group covers circa 9% of the total market cap of the Russell 1000



Source: Bloomberg, Commerzbank Research

Chart 4: Setbacks in equity markets have often been preceded by a high equity beta



Source: Bloomberg, Commerzbank Research

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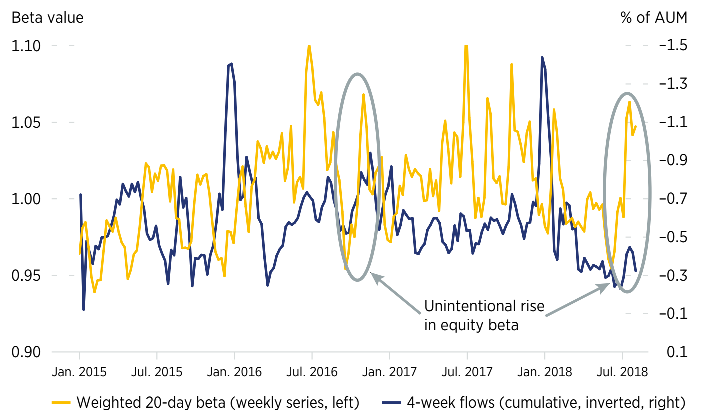
Chart 5: Unintentional versus intentional increase in equity beta



Source: EPFR, Bloomberg, Commerzbank Research

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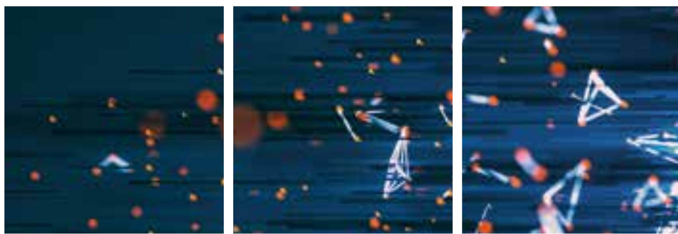

note: while large blend is the largest fund category in terms of AUM, most of these funds are passive index trackers. Our aggregate fund index is weighted according to AUM, putting a greater emphasis on larger funds whose equity exposure is more likely to move the market. We use the same approach for international equity funds, using the MSCI World as a benchmark as most funds are benchmarked against this index. For Europe, we additionally adjust for the fact that fund NAVs are sometimes reported intraday. Chart 4 shows nicely that setbacks in equity markets are in many cases preceded by an elevated equity beta in the US fund industry.

> 'The beta analysis supplements fund flow data.'

Putting it into perspective: Flow data and equity beta

With the equity beta, we have introduced a measure for the current risk profile of (equity) fund managers, but there are other things that determine whether a higher risk profile in equity investors' portfolios will lead to an adverse development in markets. Obviously, if market participants other than equity fund managers are currently equally optimistic on equity markets, a correction is likely to be more pronounced than if it was only equity fund managers taking the risk. In this regard, it is important to watch the beta of the fund industry in combination with survey-based sentiment, e.g. our aggregated sentiment indicator presented in the June issue of 'Thinking Ahead'. What is more important is that beta analysis supplements fund flow data, i.e., the rise in the fund industry's beta might be unintended and due rather to stronger-than-normal outflows. The case of an unintentional rise might be even more important as fund managers may have to take additional steps to reduce their exposure to the equity market, e.g. by selling stocks (Chart 5).

FINAL THOUGHTS

Analysing the equity beta of the fund industry provides additional insights into the current risk exposure of market participants. It complements other indicators like survey-based sentiment and fund flows. An accumulation of too many too bullish positioning indicators is clearly a signal to stay out of the market. With the advantage of hindsight it will be up to you to judge whether the high equity beta of equity funds at the beginning of August was a reliable indicator of a setback in equity markets.

WHAT IS THE BETA FACTOR?

In finance, beta is a statistical measure of the volatility (dependency) of a stock compared to the overall equity market. A high beta means that a certain stock displays more fluctuations than the benchmark index. As a result, high-beta stocks should beat the market as prices rise and underperform as prices fall. For example, if an investment has a beta of 1.2, this implies that a 20% larger movement of the single stock than the benchmark index is expected: if the market rises by 5%, the investment will increase by 6%. By contrast, if the market falls by 5%, the investment drops by 6%. For low-beta stocks, the opposite applies. The beta factor is therefore a measure of the risk for the systematic, non-diversifiable risk of a share, while volatility measures the idiosyncratic risk. The return on a stock can be estimated as the sum of alpha plus the product of beta and the market return. Mathematically, beta is defined as the quotient of the covariance of the single share with the total market divided by the variance of the market. Another representation involves the correlation coefficient instead of the covariance. In this case, the beta equals the product of the correlation between the stock and the market, the ratio of the volatility of the stock and the overall market volatility. The higher the correlation with the market and the greater the volatility of the stock relative to the market, the higher its beta.

The digital business of structured products: Today and in future

DANIEL HERNANDEZ
EMC Head of E-Connectivity Solutions
daniel.hernandez@commerzbank.com

Over the last few years, the structured products world has seen how technology and digitalisation have gone from being typical buzzwords used by consultants in every 2020 business plan to an actual reality that has impacted our industry directly in many different ways. Both issuers and distributors of structured products have embarked on technology projects either to satisfy recent regulatory requirements, to increase operational efficiency, or to enhance the service level they offer to their customers like never before.

However, this wave to digitalise the structured products business has also meant that a number of new players – fintechs, technology providers, platforms, etc. – have had the vision to identify gaps in the business that needed filling and successfully emerged to become key partners and play an important role in many of the steps of the distribution and management of structured products.

In light of this month's main topic – 'The future of finance' – we caught up with a number of these structured products platforms and technology providers to get their views on both the current state of the digital business of structured products and the future of our industry (please refer to pages 26 and 27 for further information).

The digital business of structured products in the future

'Digitisation has served as the lifeline for structured products business', says Mahesh Bulchandani, Director and CEO Europe at FinIQ, when explaining how an industry that has faced increased pressure from regulators over the last decade and had fallen out of favour from some investors due to the financial crisis had managed to survive and grow exponentially over the last few years.

> 'Digitisation has served as the lifeline for the structured products business.'

However, digitalisation entails not only IT investment but also a new mindset and new players. On the one hand, it is true that both increased investment in technology and innovation have accelerated the automation of the creation and processing of structured products, introducing new opportunities for market participants and ultimately changing market structure. Nevertheless, on the other hand, banks no longer possess a monopoly when it comes to bringing innovation into the market, as distributors and end clients now benefit from a new set of market participants who also contribute to shaping the infrastructure and digital landscape in which structured products operate.

If there is one thing that all these new players have in common, it is that they were able to identify, a number of years ago, key structural gaps in the structured products industry, and that they have all invested heavily, succeeding in digitalising different parts of the structured products business over the last few years. Consequently, given their proven success, we were most interested to hear their thoughts on what gaps they believed were still to be filled and to understand what overall they thought was the future for the digital business of structured products.

It is no surprise to hear that they all still believe that the future is digital. 'It's 100% the future, just like virtually every other business, the move from 0 to 100% into digital is just a matter of time,' says Steve Price, CTO at Privatam, a view that is in line with the vision shared by Sean Morgan, Global Head of Sales at OTCX who expects: 'The structured product world to become digitalised in many areas like the equities and futures market did in the late 90s/early 2000s.'

Biju Kulathakal, CEO and co-founder of Halo Investing, links the future development of the digital business of structured products to the innovations and developments that all these digital platforms are bringing onto the market: 'As these platforms grow in scope and depth, innovations in access, understanding, transparency and post-trade management will allow more investors to use structured products.' Already we see some banks and platforms automate price discovery to help end users make faster decisions and integrate risk management, overall facilitating the increased liquidity in the digital business of structured products. Milind Kulkarni, Global CEO at FinIQ, provides a similar insight and expects this to continue being a driver to both banks and platforms who have to continue innovating every year: 'As more and more clients participate in the structured products segment for their investment or trading objectives, this problem is only going to make things difficult for banks. Hiring quotation-making staff is not sustainable. Given this background, the digital platforms will have to become smarter with each passing year.'

In any case, it is clear that digitalisation and increased investment in the technology of structured products will bring opportunities to the overall business. On the sell side, as costs are lowered and better service is provided to more and more clients, for instance, as Asaf Seri, President and COO of Modelity Technologies explains, 'by automating all different steps in the life cycle of structured products, we are not just lowering the costs and increase efficiency for the market players, but we also contribute to the expansion of a number of end clients who can purchase structured products'. But, equally importantly, as Werner Kunz, Senior Product Manager of Avaloq highlights, 'the next wave of digitalisation must happen at the buy side', as distributors and end customers become more and more digital and start to realise that they also need to consider what areas of the value chain they are responsible for digitalising.

> 'Even retail clients will have access to tools to create and execute their own bespoke structured product.'

Per Nordstrom, Head of Sales at Contineo, predicts that the digital business will stop being a private banking topic but will also start playing a prominent role in the more institutional segments of our industry: 'I foresee not only private banking customers but also institutional customers to be

active and trade customised and non-customised structured products on a digital platform in the future'. This is a view shared by Nicolas Gaumont, co-founder and Managing Director at RiverRock Technology Solutions Limited, who expects that even 'retail clients will have access to tools to create and execute their own bespoke structured product for as little as EUR 1,000 with the issuer of their choice'.

Finally, regulation is an additional factor that Karim Faraj, Global Head of Front Office Derivatives at Bloomberg, also believes will play an important factor in shaping the digital business of structured products, as 'regulation will continue to drive digitalisation of structured products to help manage the costs of compliance, as well as increase the incentive for manufacturers and distributors to collaborate and offer liquidity. We may also see standardisation of products to a point where clients can get secondary prices from multiple dealers'.

Digitalisation along the structured products value chain

Then, where is digitalisation most effective? The value chain for structured products – all the way from pricing and product discovery to post-trade settlement and life cycle management – provides a large number of different operational steps that are perfect candidates for automation and digitalisation. Although,

as Nicolas Gaumont from RiverRock states: 'Digitalisation brings value at every stage of the transactional chain', traditionally, price discovery and other pre-trade tasks have been the main areas where issuers and distributors have focused their investment in digitalisation, leading to the emergence of pricing and structuring platforms that facilitated the journey towards the execution of the transaction. Biju Kulathakal from Halo also highlights this aspect: 'On the sell side, automated processes that drive down the cost of issuance result in lower notional minimums – in turn driving more sales and potentially lowering fees.'

> 'Digitisation brings value at every stage of the transactional chain.'

But it feels as if this trend is starting to change. Martin Weibeler, Senior Product Manager at Primegate, believes that 'within a very short perspective there will be a change coming that the end-to-end automatisation or the post-trade services will become more important than pricing itself'. Mahesh Bulchandani from FinIQ believes that, although price discovery and order execution have been the two crucial pillars of digitisation so far, 'for established players the focus has shifted to pre-trade checks, documentation and independent monitoring of post-trade events'. This view is also shared by Contineo's Per Nordstrom: 'Life cycle management (i.e. post-trade information) is critical for ensuring investors have transparency in the performance of their structured products, and we foresee the full automation of this process across issuers.'

However, the investment in innovation across the value chain is not always driven by customer demand, as regulation is also a driver for innovation as Asaf Seri from Modelity highlights: 'We are now in the age of regulation, and we see how the market participants are struggling under the burden of regulation.' Pre-trade checks, post-trade reporting, specialised documentation and compliance are also main areas that require automation and digitalisation in order to scale any digital offering across a whole network.

Unfortunately, this is easier said than done. 'We are aiming at more standardisation in post-trade processing by using standard APIs and message protocols for both the actual trade and life cycle events', is the response given by Werner Kunz from Avaloq, when asked why the value chain is not

fully digitalised already. Not only do we find major geographical, product or client requirement differences across the digital structured products business, but the lack of standardisation across the main players creates issues and concerns to most technology providers, and, as Bloomberg's Karim Faraj highlights, the lack of standardisation across the industry is one of the main issues that needs to be addressed in order to be widely beneficial to the industry: 'Benefits from digitalisation will be seen along the whole value chain, especially if the industry comes together and standardises the nomenclature of products and events that occur throughout the life cycle.'

An effective distributor digital offering: The key ingredients

Whereas everyone in our survey is clear that digitalisation is the future and that it is important to pay attention to digitalising the post-trade element of the structured product's life cycle, the different platforms we have spoken to share rather different views with regard to what constitute the key ingredients for an effective digital offering.

Product origination, price discovery and execution are, according to Steve Price (Privatam), the three key ingredients to have an effective digital offering, a view that is very much in line with OTCX's Sean Morgan who highlights that 'enabling pricing and execution to be more efficient opens up increased volumes in under-serviced customers who today aren't able to access a full range of products'. This seems to be true for European distributors, where the digitalisation of structured products is still a few years behind in comparison to their Asian peers, where most private banks and other structured products players already use actively different digital price discovery and execution venues – some days sending more than 10,000 pricing requests – as platforms have worked with them to automate the increasing demand for structured products that has been seen over the last few years. For instance, FinIQ's Mahesh Bulchandani's key ingredients for an effective distributor digital offering don't focus on technical capabilities, but instead on a platform's ability to integrate with other applications of the distributors to support decentralisation of duties or a platform's proven record to work on mobile devices.

> 'Most private banks and other structured products players in Asia already use actively different digital price discovery and execution venues.'

Martin Weibeler of Primegate similarly doesn't include pre-trade elements amongst the key ingredients for a distributor's effective digital offering, but instead focuses on more technical matters such as standardising buy side/sell side APIs or ensuring acceptable speed, as well as catering for the different regulatory requirements of each business. Bloomberg's Karim Faraj also comments on the need to have well-defined schemas and APIs, along with being generic enough to handle all asset classes, products and workflow components seamlessly and consistently in order to 'facilitate the quick addition of new offerings that can localise the product for each market segment and country'.

> 'Through technology you can provide your clients a better knowledge base and education.'

A different angle is covered by Per Nordstrom from Contineo, whose views on the key ingredients focus on the users: 'I think the key ingredient is user adoption. Relationship managers and dealers are still accustomed to legacy workflows such as voice trading which is less efficient and leads to errors.' While Asaf Seri from Modelity believes that digitalisation can ultimately help increase knowledge and 'through technology you can provide your clients a better knowledge base and education'.

The role of artificial intelligence in structured products

Artificial intelligence (AI; along with distributed ledgers) has been an area which many have expected to play a key role as 'the next disruptor' in the structured products industry as in other asset classes, such as cash equities or forex (FX), where AI is already used to automate decisions or enhance execution, suggesting trades that offset risk and increase internalisation.

Some players, for example Bloomberg, already actively use AI as part of their data processing and 'continually process an enormous universe of unstructured information across the world to break news that has the potential to move markets' but, as Bloomberg's Karim Faraj explains: 'AI can also be used to customise offerings targeted to client investment profiles (asset classes, underlying, currencies, product types, risk

appetite, target returns, etc.), as well as help with relative value trading and the timing to enter trades.'

This is especially true of the structured products domain, given the number of permutations possible, as Milind Kulkarni from FinIQ suggests: 'AI can easily assist in shortlisting what products are relevant for a given client situation.' This view is also shared by Biju Kulathakal from Halo Investing, who believes in the application of AI 'to explain product suitability and provide recommendations for different products'; or Nicolas Gaumont from RiverRock, who also believes that AI will help to check and match each and every client's risk profile, as distributors are now forced to design an exponentially growing number of bespoke solutions 'which is not scalable without the help of technology, and this is where we believe AI could play an important role'.

'We have found that using AI allows the firm to detect fraud faster and highlight potential risk areas.'

A different angle is provided by Per Nordstrom from Contineo, who considers AI to still be in its infancy with robo-advisors and other wealth management tools not yet at the development stage nor ready for consumer adoption, and he actually finds the best case for its use to be in cybersecurity for financial institutions: 'We have found that using AI allows the firm to detect fraud faster and highlight potential risk areas.'

What is the future for the structured products specialist?

If everything is to go digital, if the whole value chain is going to be automated and if robots and artificial intelligence are to create the best products and obtain the best prices, what role will structured product specialists and/or relationship managers play in the future?

Well, although the roles will change, hardly anyone believes that the machines will take over the world for now. 'The human element will always be important to the process,' explains Sean Morgan from OTCX, as he believes that the requirement for a client-facing role will always exist. Technology and digitalisation will help all users, including product specialists, aiding them in determining suitable products, which will provide an increasingly meaningful service to the customers.

'There will be a mindset change,' states Martin Weibeler from Primegate. Digital platforms will allow relationship managers to take a more active role in the request-for-quote (RFQ) process and, potentially, structured product specialists will now have to sell the platform instead of selling the product as the client or the relationship manager will be able to structure the product on their own.

But this change is not necessarily considered a threat. On the contrary: this can be seen as an opportunity to increase the quality of product and service. As Halo's Biju Kulathakal highlights: 'Across the market we have seen the ways in which relationship managers have leveraged technology to deliver better advice and investment solutions to their clients.' This view is in line with Bloomberg's Karim Faraj, who believes that 'in a more automated environment, client relationship managers and product specialists can focus their time on high-touch service and on educating clients about structured products. Attracting new investors will help build new business and grow the total market'.

So, why is the structured products business still not fully digitalised across the board? Well, although based on our peers' feedback, it would seem more a question of when rather than why, the reality is that digitalisation requires a level of investment and a degree of standardisation that goes directly against the benefit that a structured product brings to the world of finance, namely flexibility with reduced costs, or 'the variety and personalisation it provides to the individual', as described by Asaf Seri from Modelity. In addition, digitalisation is not so easily transportable into the heterogeneous and traditionally varied distribution networks that today use structured products as an important vehicle within their investment mix.

'Digitalisation seems more a question of when rather than why.'

On the other hand, although it is not likely that our industry will be completely digitalised, the benefits that digitalisation have already brought to the first networks who have adopted digital structured products – i.e. increased business volumes whilst reducing the costs of issuance, increased transparency and service levels, etc. – along with the efforts and innovations that all these new fintechs, platforms and technology providers have brought to our industry, have shown the way

and paved the future for others willing to consider migrating parts of their traditional businesses to a digital structured products franchise.

In any case, we are pleased that the demand for delivery of structured products via digital channels has been growing over the last few years, and it now represents a substantial part of our current global business within the EMC division of Commerzbank, particularly as we are able to provide customers with full front-to-back, straight-through processing (STP) of investment products via different channels:

- Via third-party platforms: Commerzbank is already working with a number of the most important third-party investment product venues that provide customers with price discovery and execution services
- Via direct connectivity: Commerzbank communicates directly with the customer's IT infrastructures, either via FIX connections or using our state-of-the-art email connectivity interfaces
- Via the exchanges: Commerzbank can facilitate the price discovery and issuance of investment products within the most important exchanges for those customers who prefer to transact on these venues

If you would like to find out more on our capabilities and solutions on e-connectivity, please approach our Electronic Sales Trading team on **emcelectronicsalestrading@ commerzbank.com.**

The descriptions below are those of the contributors to the article. Commerzbank has sought general feedback of these product platforms and technology providers.

The comments below are not of Commerzbank, but those of each representative third party.

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Avaloq is driving the digital transformation and automation of the financial services industry.

Based on our fully integrated banking software, we create powerful digital experiences provided through a standardised Business Process as a Service (BPaaS) or Software as a Service (SaaS) model to banks and wealth managers. Our solutions give financial institutions the freedom to focus on channel and product innovation, client service, client trust and growth.

With more than CHF 4,000 billion in assets managed worldwide, our customers are the leading banks of today and tomorrow.

Avaloq is the only independent provider for the financial services industry to both develop and operate its own software, which makes us a world leader in efficient banking solutions. To further spur innovation, we work with customers, other fintechs, universities and hundreds of third-party developers in a uniquely collaborative way we call the Avaloq Ecosystem.

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Bloomberg, the global business and financial information and news leader, gives influential decision makers a critical edge by connecting them to a dynamic network of information, people and ideas. The company's strength – delivering data, news and analytics through innovative technology, quickly and accurately – is at the core of the Bloomberg Terminal. Bloomberg's enterprise solutions build on the company's core strength: leveraging technology to allow customers to access, integrate, distribute and manage data and information across organisations more efficiently and effectively.

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contineo

Contineo is the first industry supported, open messaging network for private banks and wealth management firms to access issuers of structured products. It is also the first firm to offer structured product data feeds, illuminating this previously opaque market for the very first time. Together we are a community with a shared vision and purpose.

We believe that technology should be intuitive, easy to access, and available to all participants. This means creating an open messaging standard in concert with the buy side and sell side, and enabling access to all parties, including other certified technology vendors.

This mission is shared by our current subscribers, who recognise the importance of an open, efficient and transparent network.

For more information, visit http://contineo.link/

FinIQ
The Financial Engineering Company

FinIQ is a financial technology company offering product and services ranging from cross-asset structuring, trading, sales and distribution, compliance and post-trade solutions to banking wealth management industry. FinIQ's system covers trading workflows for foreign exchange, FX options, equity derivatives, swaps, bonds, funds, notes, shares and structured products.

For over a decade, FinIQ has maintained its position as Asia's top structured products distribution platform. Over 40 financial institutions and banking groups worldwide including 17 leading market makers have strengthened their capabilities by incorporating the FinIQ systems into their value chain. The company also holds the distinction of being the only platform provider worldwide offering liquidity links for three major asset classes viz. fixed income, FX options and equity OTC derivatives.

For more information, visit http://www.finiq.com.sg/

HALO

Halo is America's first independent, multi-issuer technology platform for structured notes. Halo is quickly becoming one of the world's largest structured notes platforms due to its ownership

of the structured note technology ecosystem, being the first to democratise the product, and ultimately, make the product extremely more efficient for issuers and investors alike.

Halo works with 15 of the world's largest issuers and operates in North America, Europe, Africa and Asia (Latin America coming in the fourth quarter of 2018). Our hubs are located in Chicago (HQ), India and Singapore. Halo was built for the buy side, having a heavy focus on data and AI, ultimately delivering the most advanced idea generation, analytics, life cycle management and customer suitability in the industry.

For more information, visit https://haloinvesting.com/

RiverRock Technology Solutions Limited is an innovative fintech solutions provider for structured investments. Its digital structured products multi-dealer platform LinkedTrade, launched in March 2018, leads the way in the digital transformation of the structured products industry.

LinkedTrade is a multi-dealer platform, Software as a Service (SaaS), which empowers private banks and asset managers to achieve a higher level of efficiency, to reduce costs, and to provide their end clients with groundbreaking solutions in designing and trading bespoke structured products. New opportunities provided by artificial intelligence highlight the need to implement such solutions within our industry, and LinkedTrade is using machine learning algorithms to outperform traditional services and provide immediate responses to clients' needs.

For more information, visit https://www.linkedtrade.eu/

Established in 2000, Modelity Technologies Inc. is a financial technology company that provides a comprehensive solution for structured products, derivatives and other complex financial products. The solution, used by dozens of financial institutions worldwide, provides regulatory compliance, product analysis, sales training, client education, streamlined document generation and operation of the financial products.

In 2018, Modelity launched a new marketplace for financial instruments. The marketplace extends Modelity's solution providing trading, structuring and execution capabilities.

For more information, visit https://www.modelity.com/

OTCX is the leading independent portal and strategic workflow solution for price discovery and negotiation in OTC derivatives and multi-asset structured products. We are best known for delivering strategic solutions, quickly, that are innovative, yet proven, multiregional and cost-effective.

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Primegate is a multi-issuer platform of Commerzbank AG which offers to issue tailor-made certificates with just a few clicks. With its premium partners Boerse Stuttgart and Société Générale, Primegate provides state-of-the-art service in the certificates area. Currently, there are approximate 10,000 product-underlying combinations available including the automatic generation of regulatory documentation within seconds.

For more information, visit https://primegate.com

Privatam provides its clients an access to truly innovative investment products, as well as unbiased investment advisory, research and around-the-clock back office support aided by unrivalled technology. We have carved out distribution agreements with best-of-breed managers in multiple asset classes.

We understood that investing could be transformed by new technology. Our dream was to provide a wider range of investments and better tools to achieve more.

For more information, visit https://www.privatam.com/

The future of the ETF industry from an issuer's perspective

FRANK MOHR
Head of ETF Sales Trading
frank.mohr@commerzbank.com

STEVE COHEN
Managing Director
EMEA Head of iShares and Index Investments

MARK WIEDMAN
Senior Managing Director
Global Head of iShares and Index Investments, Member of BlackRock's Global Executive Committee

Frank Mohr: As the EMEA and the Global Head of iShares, Steve and Mark you see probably a lot of investors in the world. What are the trends and developments in the financial industry?

Steve Cohen: More broadly, there is a growth of indexing and a growth of ETFs generally. We can talk a little bit about why. One of the big drivers is a shift to a more fee-based advisory which is led by the US. With MiFID II coming in, that trend is increasing over here in Europe. The way investors build portfolios is changing too, as there are better analysis tools available now.

Portfolio construction will undergo a bit of a revolution which will open up a lot of portfolios to new types of instruments like ETFs. There is much higher price sensitivity in how

portfolios are built, across all elements of asset management: from alternatives and illiquid credit to indexing. We are seeing higher price sensitivity from clients, and thus much more demand for value for money.

Mark Wiedman: I think there are two changes, first, how investors are trading, and then, second, how they are investing. How they're trading, I think, is changing. It's a structural shift towards more and more on-exchange trading, more and more transparent trading.

And that shift is expressed in Europe with MiFID II transparency, but it's also expressed through the rise of ETFs as a way of trading, for example in bonds. Commerzbank has always been strong in bond ETFs: ETFs as a way of trading bundles of bonds, as opposed to trading just individual bonds.

And there's that shift in institutional investors' use of ETFs, as a way of transacting risk when historically they would have either traded derivatives or the underlying securities. That is a big trend, and it has to do with the exchange liquidity of ETFs as well as the higher balance sheet costs of investment banks.

Overall, that's led to more and more ETF trading and led to Commerzbank's being a leader in this area. We are seeing a net expansion in the use of ETFs and of indexing instruments as a way of getting market exposure and not paying for alpha unless you really want it. As part of that, I think, we're also seeing a shift in how people redefine what active management is as people historically have thought of it as securities selection.

Frank Mohr: Digitalization is also a big word in the industry, and everybody is talking about that. Where do you see the biggest impact of digitalization?

Mark Wiedman: The equity market is already fully digitalized. The progressive digitalization of the bond market and the ability of buy-side investors, asset owners and asset managers to trade directly with each other is a transformation. The first part is the ability to trade individual bonds directly through platforms. I think equally interesting is the ability to trade bundles of risks, specifically bond ETFs, back and forth. Those are effectively digitalizing what the underlying voice-over-the-counter markets used to be. That is the transformation I see happening in the institutional marketplace, and really it has advanced a long way in the last 10 years. People have been talking about electrification of bond markets for about 25 years, but it's really been post-financial crisis that we've actually started to see that happen.

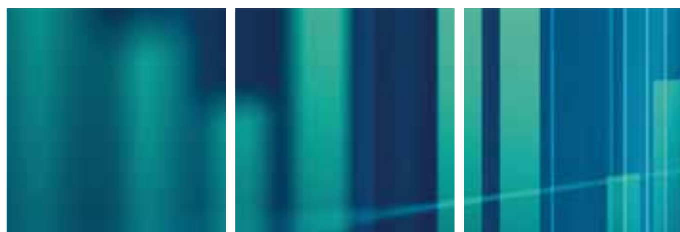
The other big trend is that wealth management is going to undergo a big transformation – for example in the way which portfolios are built, how clients interact with wealth managers. It will shift towards a mixture of in-person and digitally-driven, computer-driven interaction.

We're still in the very early stages of that shift. There's much more talk than actual change, but long-term, if you look at Germany or the United States, digital is now the dominant way that people think of buying. That shift towards a digital way of getting everyday goods ultimately will change how wealth management happens. And the question is which institutions will be first to actually be those digital leaders?

Frank Mohr: That leads me to my next question. Robo-advisors is the big theme: will robo-advisors change the ETF industry, or how can it change the ETF industry?

Mark Wiedman: I think the technology of offering digital solutions, not individual robo-advisors, is going to sweep through wealth management. The winners will likely be those institutions that adopt those digital technologies as part of how they interact with clients. We have a partnership with Scalable Capital, here in Germany and throughout Europe, with the goal of helping our clients, who are financial institutions, deliver digital solutions to their clients.

That's where the big transition will happen. The adoption of digital technology for interacting with clients leads to a much more structured, rational, policy-driven portfolio construction, done centrally by a wealth institution, which naturally leads to a logic of using ETFs as the basic building blocks and the primary driver of returns. And we're no longer having individual advisors picking individual funds that they like; they're applying a policy, and that tends to use a lot of scaled ETFs.



Frank Mohr: Where do you see the further growth potential in the ETF industry? Keeping in mind that we have been in a bull market for the last decade, where do you see the growth?

Steve Cohen: I think that people sometimes conflate bull markets and ETF usage, so if you think about what Mark said about trading and portfolio construction, whether we're in a bull market or a bear market will obviously determine overall asset flows for the financial industry. But ETF usage, to us, is a structural, secular growth story as ETFs become more central to portfolio construction and trading.

And I think part of that is getting people to think of ETFs as a tool to help you make better portfolio decisions. And getting people past this concept of active versus passive. ETFs ultimately are instruments that you use actively in a portfolio. You're going to have to manage portfolios and continue to grow portfolios, irrespective of market conditions.

ETFs are evolving, so we're seeing more granularity in the exposures that you can take through ETFs. This means that you can use them for different market cycles or different parts of the cycle, whether that's equities, or fixed income.

For example in US fixed income, people think about strategies within ETFs that actually can adjust to the different parts of the credit cycle. So I think the evolution of products will help drive ETF usage, irrespective of market cycle.

And the other forces we talked about are secular forces around the changes of wealth management, which again are irrespective of a bull market or a bear market.

Frank Mohr: That means retail is a big part of it?

Mark Wiedman: Today, the European ETF market is around EUR 700 billion, in 2023, we project that market will reach over EUR 2 trillion. The big driver of that growth, we think, will be the filling in the market that doesn't exist yet in Europe, which is the retail market. If you look at the United States, at least half of the assets, maybe two thirds, in ETFs sit with individuals.

That market doesn't exist in Europe. MiFID II, with price transparency and suitability requirements, will change how wealth managers build portfolios directly for their clients. As wealth managers shift towards using lower-cost vehicles, including ETFs, we'll see that growth of hundreds of billions of dollars as those portfolios shift towards lower-cost underlying ingredients to achieve an asset allocation.

Frank Mohr: You mentioned MiFID II. Can MiFID II be a blueprint also for other regions like Asia?

Mark Wiedman: If you look at the shift towards fee-based wealth management, it was driven by regulation. It has happened first in the UK, the Netherlands and Switzerland, then in the United States, and then with MiFID II, across Western Europe.

So far, there has not been much movement in Asia among wealth managers, amongst private banks, and the regulation of those private banks. I think that theregulators in Hong Kong and Singapore are carefully watching what's happening in Europe but, so far, I think they're willing to simply wait and see.

What is happening is that global private banks that operate out of Switzerland, Germany, the UK, or the United States are tending to shift their business models in Asia to mirror what they do in Europe and North America. That shift is bringing fee-based wealth management to Singapore, and Hong Kong, and other wealth markets in Asia. But it's not really being driven by regulators, at least so far.

Frank Mohr: Is it driven by the banks, by the fees?

Mark Wiedman: Global financial institutions, like large organizations everywhere, like to have similar standard policies as to how they do business. If you do business on a fee basis in Zurich, you're likely to want to do it on a fee basis in Singapore or Hong Kong. And your clients who book in multiple centres will increasingly expect similar arrangements.

The shift in Asia towards fee-based wealth management, and therefore towards the use of ETFs, that shift has largely been led by Swiss and other private banks that already have shifted to a fee basis in their home country.

Frank Mohr: The banks in Hong Kong, in Singapore, and other parts of Asia are adopting already.

Mark Wiedman: But it's not being driven by the local demand. It's driven by the headquarters. But it's happening to enough institutions simultaneously that they may stimulate a change in the marketplace.

More importantly, this shift towards fee-based management was not driven by regulators in the United States either; it was accelerated in 2015 and 2016, in the United States, by the Department of Labor Fiduciary Rule, but it had already been running for 15 years. So market forces can go a very long way in changing how advisors get paid, how private banks get paid, but it's not reached regulators in Asia yet.

In Japan, there's much talk about fee-based wealth management but so far there's little action by the Financial Services Agency (FSA) as well.

Frank Mohr: We are, around this table, all big fans of ETFs, but everyone is talking about the benefits – low-cost, tax-efficient, whatever – so let's talk about the risks. What would you say are some of the risks associated with ETFs?

Mark Wiedman: I think ETFs in fact contribute to the financial system's stability. The reason is that ETFs allow institutions and individuals to meet and trade efficiently on exchange even when the underlying securities markets are under stress. The historical model, prior to the financial crisis, was that banks had to intermediate risk for people to trade in many markets.

What's now happened is, if you want to trade bonds – or as replacements for swaps and futures – you can now use ETFs as a potential tool. So we think that's a contributor because it is an unleveraged, pass-through vehicle that can be traded directly between buyers and sellers of risk. And that reduces stress on bank balance sheets during times of market stress.

We see this consistently, whenever there is a rapid movement in investor flows, examples would be the end of 2015 with credit concerns in US high-yield or in volatility as in February of 2018. We see huge increases in the secondary trading volumes of ETFs, where investors trade directly with each other. That is all pressure that's being taken off of bank balance sheets.

The number one long-term concern we have about ETFs is not about ETFs themselves, it's what ETFs require: a functioning equity market to trade efficiently. If the equity market itself experiences interruptions, then ETFs – as all securities – can't function properly. And we saw this in August of 2015. It's not primarily a problem about ETFs, but the breakdown of the equity market in the US back then expressed itself most visibly through ETFs because ETFs require trading to actually price properly.

If that infrastructure isn't there, then any listed security can't function properly. So my big concern is not about ETFs, and by ETFs I mean unleveraged, pass-through vehicles, which is the vast majority of the trillions of ETFs in the world. My concern is not about those products, it's about the trading ecosystem.

Frank Mohr: Do you think risk can come from the product itself? We see some new launches, interesting, fancy ideas: what happens if these things don't work?

Mark Wiedman: Our concern is about clients' understanding of what they're buying, and the language and the terminology used around more complex products can be somewhat confusing. Lots of things, including synthetic, leveraged, inverse products are called ETFs; we think ETF is a word that's best used to describe plain vanilla, pass-through, unleveraged vehicles. Those, I have very little worry about.

I am more concerned about clients buying, for example, volatility-driven, exchange-traded products, not fully understanding how those products work. So we saw, in February of this year, volatility-linked ETPs perform as they were supposed to, if you read the prospectus. But probably not as some of the buyers expected them to.

And I think we need a naming system that clarifies that there are uncomplicated things called ETFs, and then there are other things that you should understand, that are not as

simple and might perform a little differently from what you expected as a buyer.

Frank Mohr: Where is the market in five years?

Mark Wiedman: I think the global market and the European market double in the next five years. In the short term, we should recognise that ETFs are also trading vehicles and so we could have a zero or a negative year in growth, if there was a bear market. In the long term, however, the secular drivers, the underlying, fundamental drivers of growth which are value for money, ETFs as a trading tool, ETFs as alpha instruments in active portfolios, and then the shift towards fee-based wealth management, most notably under MiFID II here in the European Union – these forces will drive growth.

We think at 13 to 15% per year, for at least the next five years. So then, in 2023, the global industry will go from USD 5 trillion today to USD 12 trillion, or from EUR 700 billion today in Europe to something like EUR 2 trillion in 2023.

If I had to say which market will probably grow the fastest, my bet would be on the European market, primarily because the wealth market will fill the gap. You will find very few ETFs in portfolios directly owned by clients and their wealth managers' advisory portfolios. That is in very sharp contrast to what you'd see in the United States.

And the real difference is, historically, how private banks get paid. As private banks get paid on a fee basis, they'll just simply use a lot more ETFs.

Frank Mohr: Thank you very much, Mark and Steve for that interview.

Commerzbank Disclaimer

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ASSET AND PORTFOLIO MANAGEMENT

ETF Market Making

FRANK MOHR
Head of ETF Sales Trading
frank.mohr@commerzbank.com

Developed markets equities managed to put in a remarkable recovery over the month of July, though overall trading volumes were low. This summer rally took the MSCI World to its highest level since February 2018, aided by the combination of gains in the US as well as in Europe. As a result, at the beginning of August, the VIX dipped to its lowest level since May.

A more differentiated picture could be seen in emerging markets, with some struggling as others rebounded. The MSCI Emerging Markets Index suffered clearly from the weak performance of Chinese equities, hurt by both the ongoing trade tensions with the US and fears of an economic slowdown. Nevertheless, Brazilian equities put in a strong recovery from recent bouts of weakness while the MSCI India closed near to the all-time high it struck back at the beginning of 2018.

Commerzbank ETF Sales Trading executed more than 130,000 ETP-related transactions during the month of July. Due to the holiday season in Europe, traded volumes were seasonally lower than in the preceding months. The asset class breakdown was again in favour of equity-related transactions, which took a share of 84% of all trades executed. Fixed income increased its share to 14% and commodities represented 2%. While transactions in fixed income and commodities were balanced on the buy and sell sides, equities were clearly buy-side-dominated.

Unsurprisingly, the US was once more the most actively traded region. Corporate profit gains have stretched across all S&P sectors, from energy to healthcare, adding fuel to a stock-market rally that has taken major US indexes to near-record levels. Some of the biggest US companies have achieved their strongest earnings growth since the recession, boosted by lowered tax rates and a robust economy that is fuelling demand across industries. Some 27% of all trades executed were related to the US, with the buy side clearly dominating. The US was followed by the eurozone (16%), global (14%), Germany (11%) and Europe (10%). Emerging markets took a share of 4%, within which China itself took 2% in addition. Both were buy-side-focused.

The most traded underlying among equities was the EURO STOXX 50, which took 8% of all trades executed and was actively traded on both the buy and the sell side. The S&P 500 came second (7%), followed by the MSCI World (5%) and Germany's DAX (4%). The Nasdaq 100 saw a swathe of profit-taking following disappointing company news; US technology shares underperformed the S&P 500 over the past month. That said, the Nasdaq 100 saw trading activity on both the buy and the sell side.

Sector-wise, financials took the lead with a share of 20%. The most traded underlying was the S&P Financials Select, which counted for 2.4% of all trades executed. Financials were followed by technology (16%), energy (11%) and real estate (11%). Most actively traded on the buy side were automobiles, consumer staples and technology. The sell side was led by consumer discretionary, construction and real estate.

Turning to fixed income activity, the most traded underlying was Commerzbank Bund Future Short, with interest triggered by rising (long bond) yields in core Europe. It took 2% of all trades, with all transactions taking place on the sell side. In addition, Barclays US Treasury 1–3 Years, JPM EMBI Global Core and Barclays Euro Aggregate Corps were actively traded on the buy and the sell side.

The combination of a strong US dollar and the aforementioned trade tensions not only damaged appetite for Chinese stocks but also weighed on commodity prices. The Bloomberg Commodity Index saw a continuation of its medium-term downtrend, with the most traded underlyings being the Commerzbank Commodity ex-Agri and LBMA Gold.

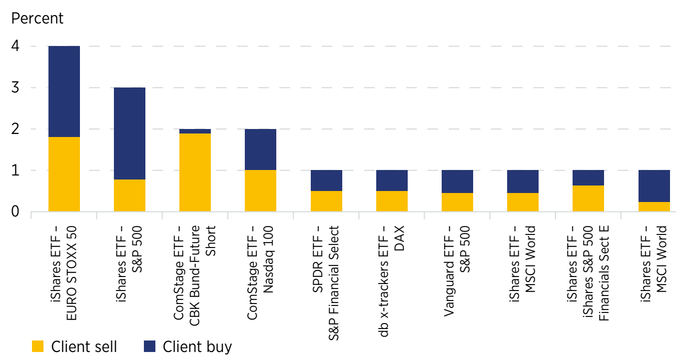
Commerzbank ETF flow from 01/07/2018 to 31/07/2018

Asset class in % of total	Client sell	Asset class / Underlying	Client buy	Asset class / Underlying
	46%		**54%**	
84%	**38%**	**Equity**	**46%**	**Equity**
	4%	EURO STOXX 50	4%	S&P 500
	3%	S&P 500	4%	EURO STOXX 50
	2%	DAX	3%	MSCI World
	2%	MSCI World	2%	DAX
	1%	Nasdaq 100	1%	Nasdaq 100
	1.68%	S&P Financial Select	1%	MSCI Emerging Markets
	0.60%	MSCI EMU	0.90%	MSCI USA
	0.59%	MSCI Emerging Markets	0.85%	MSCI EMU
	0.54%	UK 100	0.75%	S&P Financial Select
14%	7%	**Fixed income**	7%	**Fixed income**
	2%	CBK Bund-Future Short	0.43%	Barclays US Treasury 1-3 Yr Term
	0.28%	JPM EMBI Global Core	0.29%	JPM EMBI Global Core
	0.26%	Barclays Euro Agg Corps	0.27%	Barclays Euro Agg Corps
	0.26%	Barclays US Trsy 10 Yr Term	0.26%	Deutsche Börse EUROGOV DEU 10+
	0.23%	Barclays US Treasury 1-3 Yr Term	0.26%	Barclays Euro Agg Treasury 1-3 Yr
2%	0.74%	**Commodity**	0.82%	**Commodity**
	0.29%	LBMA Gold Price	0.29%	CBK Commodity ex-Agri
	0.08%	CBK Commodity ex-Agri	0.25%	LBMA Gold Price
	0.06%	Brent Oil	0.05%	Gold Spot
	0.06%	Gold Spot	0.04%	Brent Oil
	0.06%	LBMA Silver Price	0.04%	LBMA Silver Price

Source: Commerzbank, ETF Market Making. Data as of July 2018

In % of total	Issuer	Underlying	Ratio	
			Client sell	Client buy
4%	iShares ETF	EURO STOXX 50	45%	55%
3%	iShares ETF	S&P 500	26%	74%
2%	ComStage ETF	CBK Bund-Future Short	94%	6%
2%	ComStage ETF	Nasdaq 100	50%	50%
1%	SPDR ETF	S&P Financial Select	50%	50%
1%	db x-trackers ETF	DAX	50%	50%
1%	Vanguard ETF	S&P 500	45%	55%
1%	iShares ETF	MSCI World	45%	55%
1%	iShares ETF	iShares S&P 500 Financials Sect E	63%	37%
1%	iShares ETF	MSCI World	23%	77%

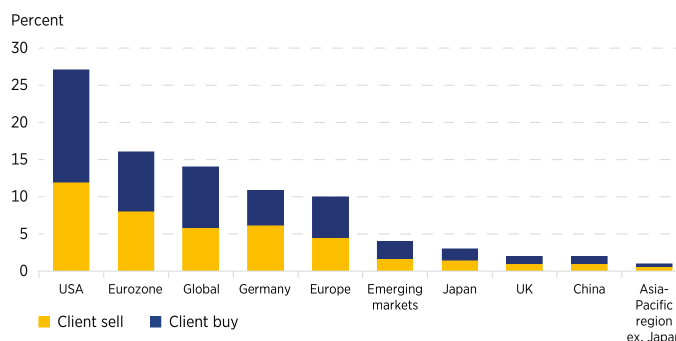
Most traded ETFs from 01/07/2018 to 31/07/2018



Source: Commerzbank Corporates & Markets / ETF Market Making

In % of total	Region	Ratio	
		Client sell	Client buy
27%	USA	44%	56%
16%	Eurozone	50%	50%
14%	Global	41%	59%
11%	Germany	56%	44%
10%	Europe	44%	56%
4%	Emerging markets	41%	59%
3%	Japan	48%	52%
2%	UK	45%	55%
2%	China	45%	55%
1%	Asia-Pacific region ex. Japan	55%	45%

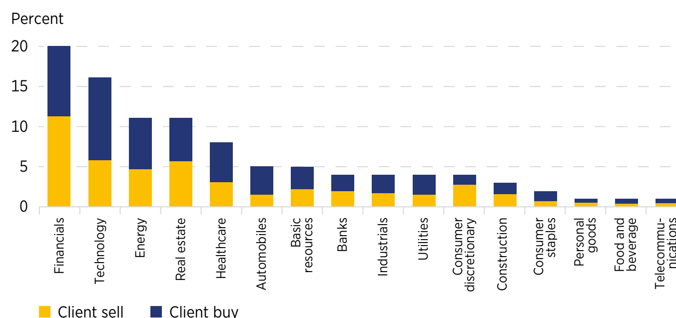
Most traded ETFs by region from 01/07/2018 to 31/07/2018



Source: Commerzbank Corporates & Markets / ETF Market Making

In % of total	Sector	Ratio	
		Client sell	Client buy
20%	Financials	56%	44%
16%	Technology	36%	64%
11%	Energy	42%	58%
11%	Real estate	51%	49%
8%	Healthcare	38%	62%
5%	Automobiles	30%	70%
5%	Basic Resources	43%	57%
4%	Banks	48%	52%
4%	Industrials	42%	58%
4%	Utilities	37%	63%
4%	Consumer discretionary	69%	31%
3%	Construction	53%	47%
2%	Consumer Staples	35%	65%
1%	Personal goods	49%	51%
1%	Food & beverage	38%	62%
1%	Telecommunications	45%	55%

Most traded ETFs by sector from 01/07/2018 to 31/07/2018



Source: Commerzbank Corporates & Markets / ETF Market Making

Fund Forum Berlin, June 2018

In mid-June, Berlin was the setting for the world's largest investment management event. Over the course of three days, hundreds of fund buyers, asset managers and service providers were able to meet and get up to speed on the latest trends in investment management, ESG, regulation and fintech.

ESG investment (with its focus on environmental, social and governance projects) was a key topic at the event, with several presentations from both fund providers and fund buyers. There was a clear consensus from fund buyers that ESG is fundamental when choosing investment managers. Today, many fund buyers require their investment managers to engage directly with companies on these aspects of their industry. The aim is not just to save the planet, but also to ensure that their businesses are sustainable.

Disruption and transformation were also major themes presented during the seminar. Speakers analysed some of the most potentially disruptive technologies, those that are poised to have the most significantly impact on today's industries. These included artificial intelligence (AI), big data, blockchain, robotics and virtual reality.

Industries as diverse as retail, financial services, transportation and travel will change dramatically in the coming years. The old brick and mortar shops and banks will be replaced with online alternatives, and in some industries automation and robots will continue to replace more manufacturing jobs. Some of the most common job functions, such as truck drivers, retail salespeople and cashiers, may vanish entirely in the next couple of decades.

These radical changes will affect the employment of hundreds of millions of people. Many will need to acquire new skills at a much more rapid pace than in the past as some professions disappear in their entirety. This could also mean that people entering the labour force in their twenties might have to change career several times before retirement. More than ever, the days where you could enter a job and hold it to retirement are over.

On a more positive note, new jobs are being created at an equally fast pace. Roles such as digital marketing specialist, podcast producer, big data analyst, app developer and sustainability manager did not exist ten years ago. As has been the case since the first industrial revolution, with the invention of the steam engine in the 18th century, humans will find new ways to be more efficient, live longer and, perhaps, also live happier lives.

FundForum International

For more information, please contact Morten Rasmussen of Structured Solutions: **morten.rasmussen@commerzbank.com**.

EQUITIES

Five-year memory Phoenix autocall on European banks

KEY FEATURES

- **Term:** 5 years
- **Currency:** USD or EUR
- **Issue price:** 100%
- **Underlying:** EURO STOXX Banks Price Return Index
- **Product category rating:** 2

  The product ('securities') provides a soft capital protection. If and only if (a) there is no credit event and (b) the investors hold the securities until maturity and (c) no predefined market event made the protection disappear, then the initial capital is not at risk.

Product Rationale

Here, we present a product suitable for investors who have a bullish view on European banks in the next five years. Capital levels and bank profitability continue to build in this sector, the global economy is strengthening and, at least in the US, interest rates are rising, with the hope that Europe will follow.

S&P Global Ratings said that its top 50 rated European banks turned a corner last year, a decade after the start of the financial crisis, and are likely to continue down this brighter path in 2018.

The product has the following features:

- Investors will receive a coupon, if on any observation date the underlying is at or above a certain level, compared with its strike level
- Investors will receive their invested capital in addition to the coupon, if the underlying is at or above a certain level compared with its strike level. The product will then terminate
- This product is capital-protected but subject to the credit risk of the issuer, if the underlying is above a certain level at maturity, compared with its strike level

Product Description

- **Issuer:** Commerzbank AG
- **Maturity:** 5 years
- **Currency:** USD or EUR
- **Underlying:**

Underlying name	Bloomberg ticker
EURO STOXX Banks Price Return index	SX7E Index

- **Observation frequency:** Annual
- **Autocall trigger:** 100%
- **Coupon barrier:** 80%
- **European barrier:** 65%
- **Coupon level:** 7% (for EUR) / 10% (for USD)
- **On each observation date:**
  - If the underlying closes above the coupon barrier, then the investor receives: (T + 1) x Cpn
  - If the underlying closes above the autocall trigger, then the investor receives 100% and the product is redeemed
- **At maturity:**
  - If the product has not been redeemed early and if the underlying closes above the coupon barrier, then the investor receives: 100% + (T + 1) x Cpn
  - Otherwise, if the underlying closes above the European barrier, the investor receives: 100%
  - Else, the investor receives: U(f) / U(i)

  Where:
  - U(f) is the final level of the underlying
  - U(i) is the initial level of the underlying
  - Cpn is the coupon level
  - T is the number of previously unpaid coupons

Key Benefits

- Investors receive a coupon and may receive their invested capital back early if their bullish view on European banks is correct

Key Risks

- The level of capital protection is subject to the credit risk of Commerzbank
- If the performance of the underlying is less than −35% after five years, the investor's capital is at risk
- Please also refer to Additional Risk Disclosures below

Key Sensitivity Factors

Delta	Vega	Correlation
+	–	0

Legend: ++/−−: very sensitive, +/−: sensitive, 0: none

Additional Risk Disclosures

Before investing in this product, investors should carefully consider its appropriateness and suitability, and the following additional risks: 1. Issuer Risk: Any failure by the issuer to perform its contractual obligations, when due, may result in the loss of all or part of the invested capital. 2. Counterparty Risk: Any failure by Commerzbank AG to perform its contractual obligations, when due, may result in the loss of all or part of the invested capital. 3. Market Risk: Various market factors may affect the value of the investment or the underlying assets, including but not limited to the impact of volatility, interest rates, dividends (if any), foreign exchange. 4. Liquidity/Secondary Market Risk: Under normal market conditions Commerzbank will endeavour to provide a secondary market price. However, Commerzbank has no obligation to make a secondary market in the instruments concerned. Accordingly, under some circumstances, the secondary market for the investment may be limited and subject to wide bid/offer spreads. 5. Reinvestment Risk: The risk that the investment redeems prior to maturity at a time when reinvestment opportunities are not favourable for the investor. 6. Redemption Risk: The risk that the investor may receive substantially less than the amount invested, if they liquidate the investment prior to maturity. 7. Tax Risk: There may be tax implications based on where the investor resides. Please consult a tax professional before investing. 8. Legal Risk: There may be legal restrictions depending on where the investor is domiciled. It is advised to seek legal guidance prior to investing. When specified, the terms 'guaranteed' and 'protected' are subject to the creditworthiness and solvency of Commerzbank and although financially strong there is the possibility that returns may not be met in the unlikely event of a Commerzbank failure. For additional information on the product features and key risks, please contact your sales advisor or refer to the contacts page.

EQUITIES

Five-year outperformance note on European banks versus US banks

KEY FEATURES

- **Term:** 5 years
- **Currency:** USD or EUR
- **Issue price:** 100%
- **Underlyings:**
  - Société Générale SA
  - ING Groep NV
  - Barclays PLC
  - BNP Paribas SA
  - Crédit Agricole SA
  - JPMorgan Chase & Co.
  - Goldman Sachs Group Inc.
  - Citigroup Inc.
  - Morgan Stanley
  - Bank of America Corp.
- **Product category rating:** 2

The product ('securities') provides a soft capital protection. If and only if (a) there is no credit event and (b) the investors hold the securities until maturity and (c) no predefined market event made the protection disappear, then the initial capital is not at risk.

Product Rationale

Here, we present a product suitable for investors who have a bullish view on European banks in the next five years. Capital levels and bank profitability continue to build in this sector, the global economy is strengthening and, at least in the US, interest rates are rising, with the hope that Europe will follow.

S&P Global Ratings said that its top 50 rated European banks turned a corner last year, a decade after the start of the financial crisis, and are likely to continue down this brighter path in 2018.

Product Description

- **Issuer:** Commerzbank AG
- **Maturity:** 5 years
- **Currency:** USD or EUR
- **Underlyings:**

Underlying name	Bloomberg ticker
Société Générale SA	GLE FP Equity
ING Groep NV	INGA NA Equity
Barclays PLC	BARC LN Equity
BNP Paribas SA	BNP FP Equity
Crédit Agricole SA	ACA FP Equity
JPMorgan Chase & Co.	JPM UN Equity
Goldman Sachs Group Inc.	GS UN Equity
Citigroup Inc.	C UN Equity
Morgan Stanley	MS UN Equity
Bank of America Corp.	BAC UN Equity

- **At maturity:**

  The investor receives:

  Guaranteed capital + part x MAX [0 , (Perf(EUR) – Perf(US)]

  Where:

  – Perf(EUR) is the average performance of the European bank basket

  – Perf(US) is the average performance of the American bank basket

  – Part is the participation on the outperformance call

Currency	Guaranteed capital	Participation
USD	100%	220%
EUR	95%	100%

Key Benefits

- The investor receives the positive performance of the outperformance between the two baskets, which is uncapped

Key Risks

- If the American basket performance is higher than the European one, then the investor is flat on the performance of the product
- Please also refer to Additional Risk Disclosures below

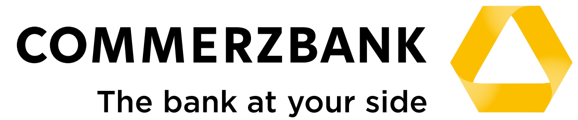
Key Sensitivity Factors

Delta	Vega	Correlation
+	+	–

Legend: ++/––: very sensitive, +/–: sensitive, 0: none

Additional Risk Disclosures

Before investing in this product, investors should carefully consider its appropriateness and suitability, and the following additional risks: 1. Issuer Risk: Any failure by the issuer to perform its contractual obligations, when due, may result in the loss of all or part of the invested capital. 2. Counterparty Risk: Any failure by Commerzbank AG to perform its contractual obligations, when due, may result in the loss of all or part of the invested capital. 3. Market Risk: Various market factors may affect the value of the investment or the underlying assets, including but not limited to the impact of volatility, interest rates, dividends (if any), foreign exchange. 4. Liquidity/Secondary Market Risk: Under normal market conditions Commerzbank will endeavour to provide a secondary market price. However, Commerzbank has no obligation to make a secondary market in the instruments concerned. Accordingly, under some circumstances, the secondary market for the investment may be limited and subject to wide bid/offer spreads. 5. Reinvestment Risk: The risk that the investment redeems prior to maturity at a time when reinvestment opportunities are not favourable for the investor. 6. Redemption Risk: The risk that the investor may receive substantially less than the amount invested, if they liquidate the investment prior to maturity. 7. Tax Risk: There may be tax implications based on where the investor resides. Please consult a tax professional before investing. 8. Legal Risk: There may be legal restrictions depending on where the investor is domiciled. It is advised to seek legal guidance prior to investing. When specified, the terms 'guaranteed' and 'protected' are subject to the creditworthiness and solvency of Commerzbank and although financially strong there is the possibility that returns may not be met in the unlikely event of a Commerzbank failure. For additional information on the product features and key risks, please contact your sales advisor or refer to the contacts page.



Commerzbank's Equity Markets & Commodities division is a proud sponsor of the Indonesian Wealth Management Forum 2018

This event welcomes c-level executives, product gatekeepers and business heads across advisory, compliance and technology to discuss industry topics and challenges within wealth management. Discussions on the day include:

- Identifying success stories and best practices
- Debating key issues with industry leaders
- Exploring how to add value to clients and manage the expectations of HNW and UHNW clients

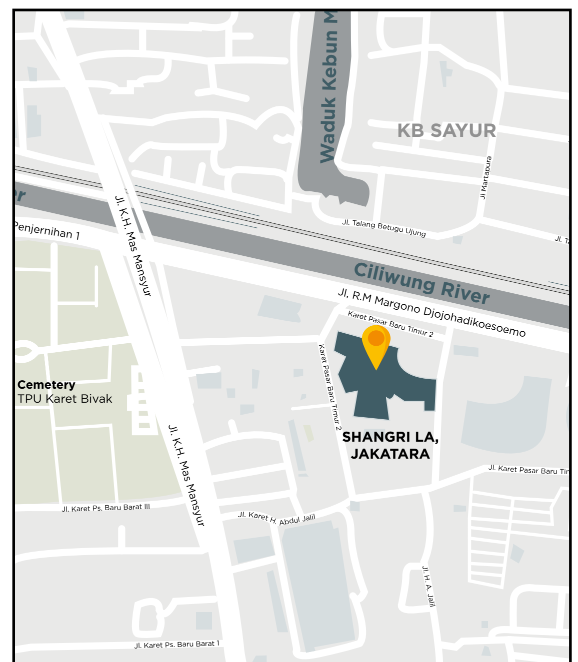
Product specialists will be on-site during this event.
If you would like to arrange a meeting with them, please contact kelly.harper@commerzbank.com.

Date and location

18 October 2018

Location
Shangri-La,
Jakarta, Indonesia

For more information, go to:
https://hubbis.com/events



ASIA FOCUS

Views from the Asia trading floor

FRANCK FAYARD
Head of Product Engineering, Asia
franck.fayard@commerzbank.com

Dollar gains amid rate hikes and China trade tensions

The USD/CNH exchange rate has risen by almost 10% since March this year, largely due to the continuous hiking of Fed interest rates and growing trade tensions between China and the US. In addition, due to the still strong US economic growth, the S&P 500 (SPX) is one of the few indices to deliver positive returns year to date. For most Asian markets, returns are in the red: Hong Kong (HIS) is down 7%, China (SHSZ300) 18%, Korea (KOSPI2) 9%, and Japan (NKY) 4%. Added to this, volatility in most Asian equity markets has been climbing since the third and fourth quarter of 2017.

That said, demand from private and retail banks in Asia remains relatively robust, though investors have become more cautious as so many Asian stock markets have continued to creep lower. We have also noticed that a growing number of investors are gradually shifting their views on the global equity market in a bearish direction, consequently purchasing downside hedges for their portfolio.

Amid the current uncertain market conditions, many Asian investors are looking for alternative investment ideas in assets that offer less volatile returns. With principal protection features, fund-linked derivatives have become a popular go-to solution. For diversification benefits, investors with a lot of fixed income exposure in their portfolio are also looking into multi-asset and long-short equity funds as alternatives. More exotic pay-offs are gaining in popularity, such as rainbow calls and best profiler, which offer exposure to a basket of funds instead of a single mutual fund.

ASIA FOCUS

Quanto autocall Phoenix note on Chinese tech giants

KEY FEATURES

- **Term:** 2 years
- **Currency:** qUSD
- **Underlyings:**
  - Tencent Holdings Ltd
  - Alibaba Group Holding Ltd – ADR
- **Issue price:** 100%
- **Product category rating:** 4

  The capital invested is fully at risk. The investor may lose potential gains and initial capital subject to the underlying performance and the issuer/counterparty risk.

Product Rationale

The new Chinese technology giants are becoming one of the largest investors in China, as they are active in more than 20 different sectors. Growth has been especially strong, which has placed nine Chinese tech companies into the biggest top 20 tech companies in the world.

While competition intensifies in their sector, Chinese tech companies still have space to grow as innovation continues to attract foreign investors and companies are looking for synergies in the Asian tech market. This can be seen in the start of new partnerships such as Alibaba and Starbucks to drive Chinese deliveries, and Tencent with Game of Thrones for the development and publishing of mobile games.

Sources:

https://www.bloomberg.com/news/articles/2018-08-02/starbucks-inks-alibaba-partnership-to-drive-china-delivery-push

https://www.yahoo.com/news/game-thrones-binge-watching-helps-142456295.html

Product Description

- **Issuer:** Commerzbank AG
- **Maturity:** 2 years
- **Currency:** qUSD
- **Memory coupon:** 2.75%
- **Underlyings:**

Underlying name	Bloomberg ticker
Tencent Holdings Ltd	700 HK Equity
Alibaba Group Holding Ltd – ADR	BABA UN Equity

- **KO barrier level:** 95%
- **KI barrier level:** 70%
- **Callable frequency:** Quarterly (starts on the second observation)
- **Coupon frequency:** Quarterly
- **Coupon barrier:** 70%
- **Early redemption:**
  - If Worst of Performance is greater or equal to KO barrier level: Denomination x 100%
- **At maturity:**
  - If the official closing level of the worst performing underlying on the final observation date is at or above its KI barrier level, the security holder will receive: Denomination x 100%
  - Otherwise: Denomination x P_F / P_I
- **Worst performing underlying:**
  The underlying, observed on the specific date, that has the lowest performance relative to its initial fixing level.
  Where:
  - P_F = Official closing level of the worst performing underlying on the final observation date
  - P_I = Strike price of the worst performing underlying

Key Benefits

- The European barrier level at 70% provides a strong protection for the investor
- The investor can receive a coupon up to 11% per annum

Key Risks

- In a strongly trending equity market, the investor potentially receives a lower return from the note than compared to investing in the underlying stock itself
- The investor is subject to the issuer risk of Commerzbank
- Capital invested is fully at risk.
- Please also refer to Additional Risk Disclosures below

Additional Risk Disclosures

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ASIA FOCUS

Three-month premium certificate note Xiaomi

KEY FEATURES

- **Term:** 3 months
- **Currency:** HKD
- **Underlying:** Xiaomi Corp.
- **Issue price:** 100%
- **Product category rating:** 2

  The product ('securities') provides a soft capital protection. If and only if (a) there is no credit event and (b) the investors hold the securities until maturity and (c) no predefined market event made the protection disappear, then the initial capital is not at risk.

Product Rationale

Despite their recent IPO, Xiaomi Corp. is the world's fourth largest smartphone manufacturer with an extensive range of revenues focused on the Internet of things. Meanwhile, their strong sales in Europe and India have boosted their core revenue, which have allowed them to broaden their product catalogue to non-Internet markets.

On the back of their IPO Xiaomi will continue to strengthen their presence in India as part of their 30% spending plan budget in order to grow their Internet services, which can provide an interesting defensive profile from the current trade environment.

Recent agreement reached between Hong Kong Exchanges and Shanghai and Shenzhen bourses will facilitate the inclusion of Xiaomi to their Stock Connect trading platform, allowing Chinese capital to be invested into the Hong-Kong-traded company.

This product is suitable for investors who have a bullish view on the underlying.

Sources:

https://www.cnbc.com/2018/07/18/xiaomi-shares-jump-after-hong-kong-china-exchanges-reach-agreement.html

https://www.bloomberg.com/view/articles/2018-07-09/captain-xiaomi-and-his-floating-empire-in-charts

Product Description

- **Issuer:** Commerzbank AG
- **Maturity:** 3 months
- **Currency:** HKD
- **Coupon:** 5.93%
- **Daily knock-in barrier:** 80%
- **Underlying:**

Underlying name	Bloomberg ticker
Xiaomi Corp.	1810 HK Equity

- **Payoff:**
  - If the underlying has never closed below the daily knock-in barrier, then the noteholder receives: 100% + coupon
  - Otherwise, the noteholder will receive: U(f) / U(i)

  Where:
  - U(f) is the final level of the underlying
  - U(i) is the initial level of the underlying

Key Benefits

- Enhanced investor return via conditional coupon
- Daily knock-in barrier at 80% provides soft protection

Key Risks

- The investor is subject to the issuer risk of Commerzbank
- Downside risk, if barrier is touched
- Capital invested is fully at risk.
- Please also refer to Additional Risk Disclosures below

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Contacts

PRODUCT SPECIALISTS

FIMEMCSPL@commerzbank.com

Flow Equity Derivatives
FIMFlowEquity@commerzbank.com
+44 (0)20 7475 4646

Structured Solutions
FIMSSG@commerzbank.com
+44 (0)20 7475 1390

ETF Market Making
FIMETF@commerzbank.com
+44 (0)20 7475 1759

REGIONAL SPECIALISTS

Europe / MENA

FIMEMCLDN@commerzbank.com

Benelux / France
FIMFrBenelux@commerzbank.com
be +44 (0)20 7475 4646

CIS
FIMCIS@commerzbank.com
+44 (0)20 7475 1447

CEE / Baltics / Balkan
CommerzbankStructuredProductsCEE&CIS@commerzbank.com
+49 69 136 47734

Germany / Austria
EqDer.Institutional@commerzbank.com
+49 69 136 22024

Iberia / LatAm
FIMIberia@commerzbank.com
+44 (0)20 7444 9350

Italy
FIMItaly@commerzbank.com
+44 (0)20 7475 3775

MENA
FIMMena@commerzbank.com
+44 (0)20 7475 1566

Scandinavia
FIMScandi@commerzbank.com
+44 (0)20 7444 9389

Switzerland
SwissInstitutionalDerivatives@commerzbank.com
+41 44 563 69 90

UK / Ireland
FIMUKIRE@commerzbank.com
+44 (0)20 7444 9378

Asia

FIMEMCASIA@commerzbank.com

China
FIMChina@commerzbank.com
+852 3988 0868

Hong Kong / Taiwan / SE Asia
FIMHK@commerzbank.com
+852 3988 0868

Korea / Japan
FIMNEAsia@commerzbank.com
+65 6311 0191

US

Institutional US
FIMUSA@commerzbank.com
+1 212 895 1745

Private Bank Sales

London
PrivateBanksSaleslonib@commerzbank.com
+44 (0)20 7653 7777

Paris
PBSFrance@commerzbank.com
+33 1 4494 7726

Frankfurt
PBSGerman@commerzbank.com
+49 69 136 83600

Corporates
PBSCorporates@commerzbank.com
+44 (0)20 7475 1100

Sales Support

FIMContributions@commerzbank.com
+44 (0)20 7475 1582

Banks Relationship Management Financial Institutions

fi.banking-products@commerzbank.com
+49 69 136 24016 / +49 69 136 45393
http://www.fi.commerzbank.com

Insurance Relationship Management

insurance@commerzbank.com
CM-CRMInsurance@commerzbank.com
CM-CRMVersicherungen@commerzbank.com

General +49 69 136 82700
Germany +49 69 136 22620
Austria / Switzerland +49 69 136 42779
UK / US / Bermuda +49 69 136 43805
Spain / Italy +49 69 136 46649
UK / Scandinavia / France / Asia
+49 69 136 22759

Magazine support

ThinkingAhead@commerzbank.com
Thinking-ahead-magazine.com

Publisher
Commerzbank
30 Gresham Street, London EC2V 7PG
ThinkingAhead@commerzbank.com
+44 (0)20 7623 8000

Editorial team
Editor-in-Chief: Jaime Uribe
Managing Editor: Kelly Harper

Design, layout & print
ACM Unternehmensgruppe
65205 Wiesbaden-Nordenstadt, Germany
www.acmedien.de, Art Direction: Michaela Laux

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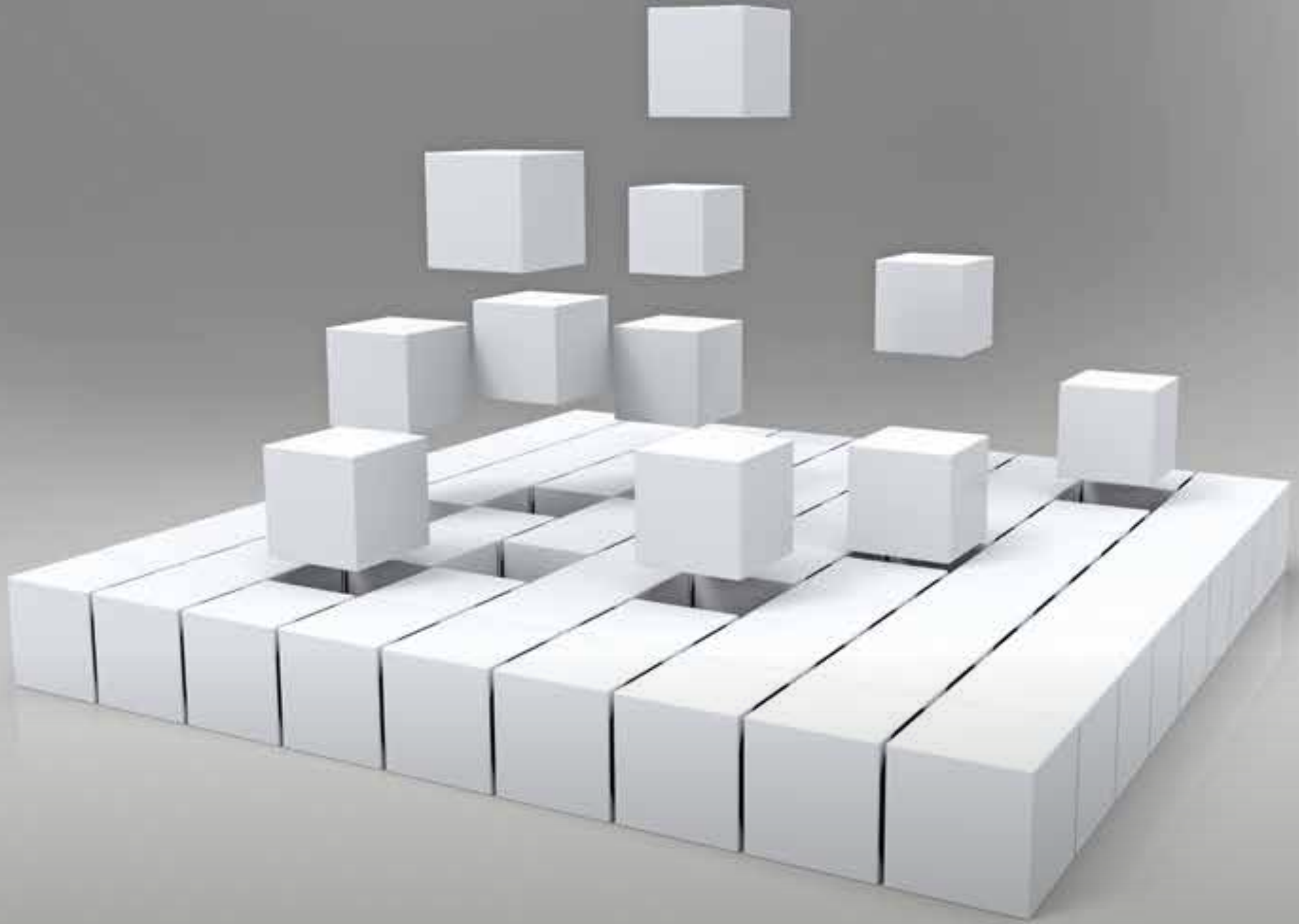

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