In the mood for loans

Indexation coming to infrastructure investment market

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- This report discusses two topics: first, what we see as a major achievement for the infrastructure market with the June publication by EDHECinfra research institute of its first set of indices on infrastructure equity and private debt in Europe. These detailed indices should significantly improve the transparency of the asset class, confirming that project finance is an asset class of its own.

- Second, we look at the key drivers of the development of alternative lending and the originate-to-distribute (OTD) model of banks. For our bank equity colleagues, the next outperformers within their coverage will likely be the banking groups with the highest potential for volume growth. Indeed, banks' efforts to recapitalise in order to achieve regulatory thresholds have been successful overall and, for now at least, are less critical. With new firepower, the better banks should be able to increase loan production and profitability.

- Given the better situation for a number of banks and the substantial liquidity that still needs to be put to work, we believe that infrastructure project finance/alternative lending will remain attractive. Thus, margins will likely stay under pressure.

Euribor benchmark remains at very low levels and the outlook for rate hikes remains grim.

Changes in the funding of banks should support securitisation as long as the regulatory framework is stabilised but it is now clear that on both STS and synthetic securitisation, a pragmatic marketable framework did emerge.

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This document, published on 26-Sep-2017 at 11:30 AM CET, is being provided for the exclusive use of JEAN DAVID CIROTTEAU (SGCIB)

Overview – key ideas

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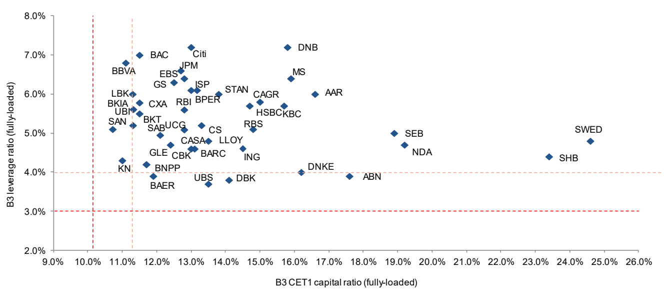
Introduction

This report discusses two topics: first, what we see as a major achievement for the infrastructure market with the June **publication by EDHECinfra research institute of its first set of indices on infrastructure equity and private debt in Europe**. These detailed indices should significantly improve the transparency of the asset class, confirming that project finance is an asset class of its own.

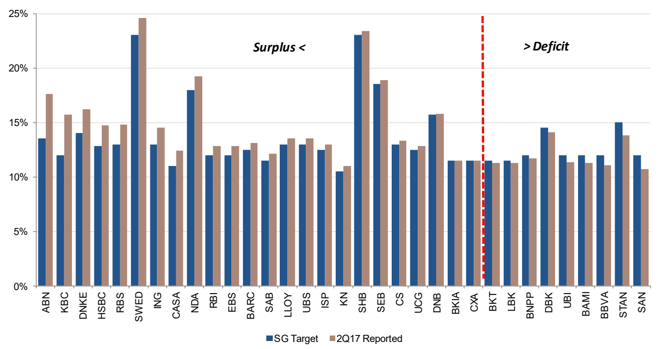
In the section on EDHECinfra indices, we show that despite the overall supportive outlook for leveraged loans – for example with expected loss (EL) remaining historically low – the probability of first default (PD) in the overall portfolio has increased significantly compared with last year.

Second, we look at the key drivers of the development of alternative lending and the originate-to-distribute (OTD) model of banks. For our bank equity colleagues, the next outperformers within their coverage will likely be the banking groups with the highest potential for volume growth. Indeed, banks' efforts to recapitalise in order to achieve regulatory thresholds have been successful overall and, for now at least, are less critical. With new firepower, the better banks should be able to increase loan production and profitability.

G1. CET1 x leverage ratio (Basel 3, fully loaded)



G2. 2Q17 banks capital balance: surplus/deficit



Source: SG Cross Asset Research/Bank Equity

The product mix of each bank determines the profitability it derives from volume growth, thus the products with the highest ROE need to be identified. Interestingly, their results show that returns are higher from lending to SMEs versus lending to large corporates. The latter lag the former owing to particularly low margins, as the competition for these clients has been fierce between banks. Moreover, corporates have access to alternative funding sources, including the capital markets, where they can refinance inexpensively. The next chart below (G3.) shows the impact on revenue of 5% volume growth on selected market/product categories.

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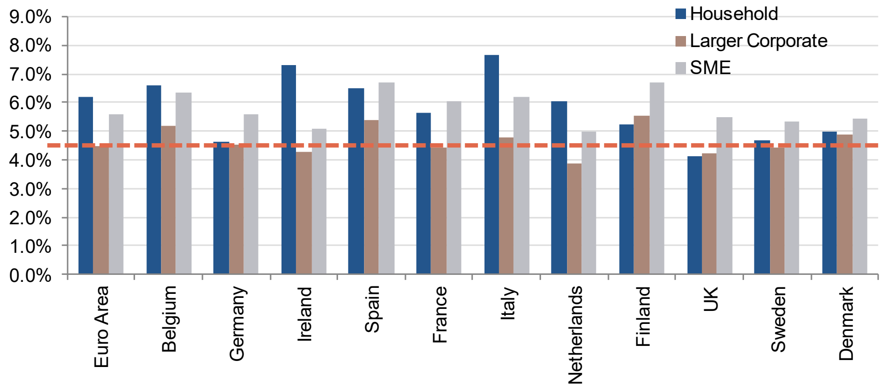
G3. Revenue impact: very good "elasticity" in SME sector



Source: SG Cross Asset Research/Bank Equity

Given the better situation for a number of banks and the substantial liquidity that still needs to be put to work, we believe that infrastructure project finance/alternative lending will remain attractive. Thus, margins will likely stay under pressure.

Euribor benchmark remains low, and the outlook for rate hikes remains grim

We also note the low interest rates, particularly in Europe, that continue to be a concern for lenders, as the **Euribor benchmark remains at very low levels and the outlook for rate hikes remains grim**. Our short-term rates specialists have reported on the current discussions to replace both US Libor and EU Euribor here. The matter is certainly not fully clarified at this stage but a recent announcement to establish a new overnight benchmark implies that the path to first rate hikes before 2019 is now more complicated. Indeed, at this stage, forward expectations are for only a 10bp hike in January 2019 and another 30bp in December 2019.

Changes in the funding of banks should support securitisation as long as the regulatory framework is stabilised

We expect interest rates to remain low for a long period, i.e. on an average historical basis. Clearly, the ECB has no specific interest rate target levels, as this is not within the definition of its mandate; however, it certainly considers that interest rates should not impair potential economic growth in the future. This means that rates should not move too far up from the current levels all else being equal. Nevertheless, **the market has to learn to behave without being flush with liquidity**, and banks have started to consider how to fund themselves when the TLTRO II finishes between June 2020 and March 2021. Such change implies potentially more securitised deals backed by non-eligible assets as well as covered bonds for example. In order to further develop, securitisation will no doubt require a clear and stabilised regulatory framework, on which we saw some substantial progress early this summer, in particular regarding the publication of the final STS securitisation draft to be voted on before the end of the year.

So far, we have seen no clear trend in investors' positioning, as they remain split about the direction of markets

The combined effect of low interest rates and margin pressure has prompted clients to continue to adapt their lending approach over the past few months. In 2Q17, certain clients believed that interest rates were on the rise and that as a result margins on future deals would be higher going forward. Therefore, they decided to avoid trades with tighter spreads and invested in more junior debt, which still offered the absolute level of margins they were looking for. Conversely, other clients continued to invest in more senior tranches but were forced to accept lower yields compared with previous deals. As the ECB has put its decision to taper on hold until October, we will have to wait until the next council at least to see which approach was right.

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The asset management industry continues to adapt to alternative lending. Overall activity includes the restructuring of various teams and the expansion of coverage to new asset classes, such as airline lending, a sector that experienced two remarkable years in 2016 and 2017.

Can market expect or fear more from regulation?

The difficulties to unlock the NPL markets

Regarding the developments in regulation, particularly in Europe, we see renewed efforts by the ECB to unlock the non-performing loan (NPL) market, where volumes have been very disappointing up to now, at least on a public/semi-public basis. Closing a deal remains complex for many reasons, in particular in terms of legal issues regarding confidential data. We believe today's situation can be compared in a way to that of private infrastructure deals and their lack of transparency before the release of the EDHECinfra indices. The problem can be tackled by increasing the size of the market and bringing in new clients/investors. The ECB certainly has this in mind as it works actively with the European Securities and Markets Authority (ESMA) to develop a template or standardisation process that would improve transparency. However, while the improvement of transparency has been very successful for the infrastructure market, with EDHECinfra publishing new state-of-the-art indices for example, this was in large part thanks to the funding of the government of Singapore. Indeed, the government decided to finance this research to provide benchmarks to encourage its pension fund industry to invest in the sector. Conversely, the ECB has made no commitment to fund research on the NPL market in Europe.

When regulation can be done in a positive manner

Nordea in the process of reallocating its headquarters to Finland

Meanwhile, the ECB has received what could be seen as strong backing from Nordic bank, Nordea. The group, whose historical headquarters are in Sweden, announced in early September that it would ask its shareholders to vote for moving its headquarters to Finland in order to fall under the ECB's supervision. This move would put Nordea on a level playing field with its large European peers and consolidate its European business focus. This means the group would be supervised by the ECB and no longer primarily by the Swedish Central Bank.

Synthetic securitisation was a factor for the past two years thanks to a pragmatic approach from regulators

The question of banking regulator specificities remains pertinent. As mentioned above, a majority of European banks have resolved the issue of regulatory capital. However, the framework continues to evolve and there could be more constraints in the future, such as the new Basel IV regulations, which have not yet been finalised. Although it is difficult to assess the size of the synthetic regulatory capital market, the past 12 to 18 months saw a number of large private deals. Many large banks have used **synthetic securitisation** as a balance sheet management tool[1] to achieve today's results and possibly in anticipation of tougher rules. None of this is new, but the increase in the number of synthetic deals registered over the past 24 months may be the result of a more securitisation-friendly approach from regulators. This may come as a surprise, as there was great uncertainty as to the outcome of STS securitisation until it was finally released, in June this year, and until the final version of the tripartite agreement was published. Parliamentary work is not yet complete and a vote will take place soon, **but it is now clear that on both points, STS and synthetic securitisation, a pragmatic marketable framework did emerge**. In early 2016, the ECB provided its Systemically Important Financial Institutions (SIFIs) with guidance on recognising significant risk transfer (SRT) through securitisation[2]. Some transactions are outlined in the following table:

[1] Other smaller banks may have done the same, but as most of these transactions are bilateral they are highly private, and the smallest deals are indeed much more difficult to identify.

[2] Article 244 of EU Regulation 575/2013 defines synthetic securitisation

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Regulatory capital relief transactions: synthetic securitisation

Issuer	Deal transaction	Series / size	Underlying assets	Date
Nordea	Synthetic CDO	€8.4bn	Corporate & SME loans, 3000 borrowers, Sweden & Denmark	Aug-16
CaixaBank	Gaudi Synthetic DAC	Series 2015-1 / €2bn	SME loans	Feb-16
Commerzbank AG	CosMO Finance	Series III-1	SME	2015
	CoCo Finance	Series II-2		2015
	Private deal (with EIF guarantee on Mezzanine)	/ €2bn		April 2016
Credit Suisse	Elvetia Finance BV	Series 2016-2 / €5bn		June 2016
		Series 2016-1 / €		May 2016
		Series 2015-1		June 2015
		Series 2014-1 /		Dec-14
CACIB	Premium Green Plc	Series 2015-8 /	$923m, 100 large or global corporate	Dec-15
		Series 2015-7 /.		Dec-15
	Premium Green Plc (Mariner)	2017-2 / $3bn	200 obligors within power, oil & gas, RE, infra, aviation shipping and rail sectors	Mar-17
HSBC	Metrix Portfolio Distribution	$5bn	135 reference corporate	Dec-15
DBAG	CRAFT CLN	Series 2017-1	US Corporate	
		Series 2016-1		
		Series 2015-2, series 2015-1		
	Gate SME CLO	Series 2016-1 / €1bn	SME loans	
		Series 2015-1		
	Darts Credit-Linked notes	Series 2015-1		Jun-15
	TRAFIN	Series 2015-1 / $3.5bn	Trade finance	Nov-15
SALISBURY	Salisbury securities Ltd	Series I / £789.5m	UK RE SME loans	Feb-16
	Salisbury securities II Ltd	Series II /		Dec-16
SANTANDER	Victoria SME	Series 2015		Dec-15

Source: SG Cross Asset Research/Global Asset Allocation, Bloomberg, Global Capital

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Liquidity premium: updates and methodology

Liquidity premia (LP) – September 2017

	Spread (bp)	Default rate (%)	Recovery rate	Average duration (years)	Adjusted spread (bp)	Liquidity Premium
Euro CRE Loans	214	1.08%	66%	7	177	
Comm. mortgage-covered bonds	-16	0.05%	45%	6.6	-17	
CRE liquidity premium						**194bp**
Transport Project Finance Bonds	295	6.5%	81%	6	273	
Transport Muni Bonds	105	0.21%	56%	6	104	
Transport PF liquidity premium						**169bp**
Power Project Finance Loans	233	6.50%	81%	9	220	
Utilities Bonds	127	6.35%	48%	7	82	
Energy PF liquidity premium						**138bp**
French SME Loans	616	1.25%	76%	3.4	585	
EUR HY Bonds	259	6.82%	58%	3.22	322	
French SME liquidity premium						**416bp**
Shipping loans	213	31%	50%	7	-6	
Shipping covered bonds	37	0.30%	45%	2	-6	
Shipping liquidity premium						**1bp**
Aircraft loans	205	15.40%	67%	9	146	
Aircraft covered bonds	11	0.15%	45%	1	5	
Aircraft liquidity premium						**140bp**
EUR Leveraged Loans	419	5.57%	76%	5.52	284	
EUR HY Bonds	405	8.34%	58%	3.68	309	
EUR Lev Loans liquidity premium						**-25bp**

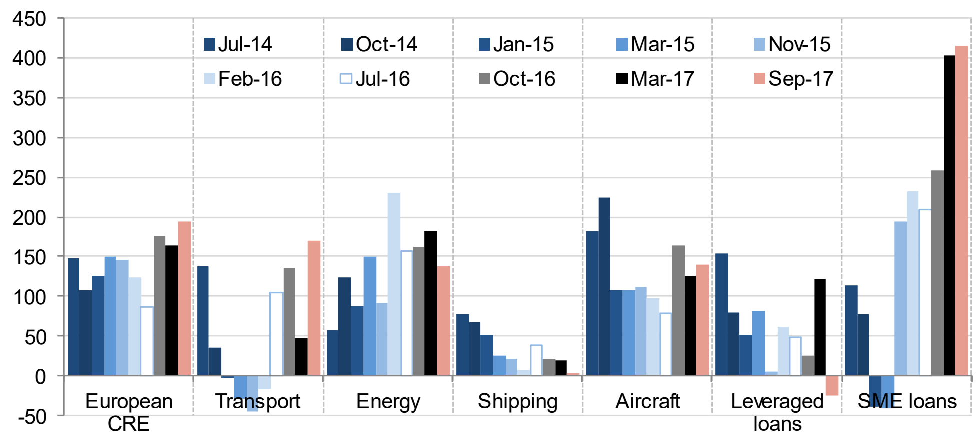
Source: SG Cross Asset Research/Global Asset Allocation

LP since April 2013 (bp)

Adjusted Spread	Sep-17	Mar-17	Oct-16	Jun-16	Feb-16	Nov-15	Mar-15	Jan-15	Oct-14	Jul-14	Apr-13
European CRE liquidity premium	194	163	176	86	123	146	150	126	107	147	NA
Transport liquidity premium	169	48	135	105	-18	-46	-30	-4	35	137	150
Energy liquidity premium	138	181	162	157	231	92	150	87	123	58	40
Shipping liquidity premium	1	18	16	39	6	20	24	52	67	77	NA
Aircraft liquidity premium	140	126	159	79	97	112	107	107	225	182	NA
Leveraged loans	-25	122	26	50	62	4	81	51	80	154	NA
SME loans*	416	404	259	210	233	194	*-42*	*-39*	*77*	*114*	*100*

Source: SG Cross Asset Research/Global Asset Allocation *: New methodology in November 2015, based on crowd funding data – please refer to the French SME section

LP from July 2014 to September 2017 – bar chart per period using data in table above (bp)



Source: SG Cross Asset Research/Global Asset Allocation

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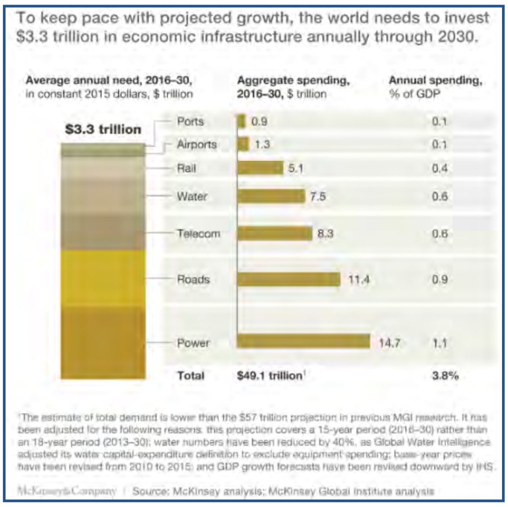
EDHECinfra releases first European infrastructure indices

The publication in June of the EDHECinfra indices (on both infrastructure private debt and equity) is a major advance for the industry in our view. Indeed, there have been many articles and discussions so far about the conundrum that is infrastructure investment: a balance needs to be struck between the growing need for new infrastructure in less developed countries and the refurbishment and modernisation of existing infrastructure in developed countries using the amount of real money investment waiting to be put to work.



Figures from the McKinsey report on "Bridging Global Infrastructure gaps" speak for themselves (see chart). How will the demand-supply disequilibrium be restored? Very likely by making the market more transparent in order to enable a larger number of investors to become comfortable with the asset class and consider investing as a result. A recent investor survey by EDHECinfra showed that only 48% of investors in the infrastructure asset class were confident in the valuations of their funds and 94% of investors said there was no current benchmark to understand the risk-adjusted performance of the sector.

A systematic, gradual approach starting with the identification of infrastructure as an asset class…

EDHEC business school published the new EDHECinfra indices following a series of highly-rated articles on the industry. Its first article, published in September 2016, discussed the specificities of infrastructure as an asset class. Based on an exhaustive sample of 331 infrastructure firms in the UK between 2000 and 2015, the paper validates the various empirical attributes characterising infrastructure as an asset class. The criteria include low volatility income, low correlation with the various business cycles, steady and substantial cash flows for holders.

… and followed by the development of appropriate models.

In April 2017, another article published by the same group discussed the modelling of private project finance (PF) deals which would make it possible to assign valuations for both equity and debt liabilities for such structures. The models capture the specificities, such as non-recourse payments, and determine the restructuring based on debt covenants. The aim of their research is to establish an appropriate valuation model, while helping investors to understand infrastructure risk in general and, in particular, to clarify the definition of the asset class. While the first article demonstrated the specific behaviour of the asset class, there were still questions about infrastructure bonds from listed specialised corporates in the sector, i.e. the listed infra sector. However, it only partly answered the question while distinguishing between the behaviours. Because private infrastructure deals are mostly non-recourse and structures are only dedicated to completing a project, there is no diversion (or very little in any event) from the economics initially planned, barring unforeseen circumstances or accidents. On a much smaller scale, such reasoning applies to a securitisation, which is structured such that the underlying portfolio performances are self sustainable. It also has an impact on regulations. By clarifying the asset class, the research makes it possible for regulators to implement a more favourable regulatory treatment.

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The research should help investors determine their exposure to the asset class and how to optimise it when they discuss it with their bank and/or asset manager. It should also bring more clarity to the sector, increasing the appetite of real money investors for this asset class. As a result, this should help support the enormous needs of both new infrastructure development and the refurbishment of existing infrastructure. Increased knowledge of the asset class should benefit the entire industry.

A second set of models were implemented to capture infrastructure specificities to include technical restructuring and potential workouts

How does it work? In order to calculate the indices, most of the time EDHECinfra had to infer the valuations of the underlying assets, as public valuations, if they existed at all, were unavailable most of the time. The valuations were thus performed using a modelling based on cash flow analysis specifically developed by the group. In this report, we focus essentially on private debt indices.

The key component modelled is the Debt Service Coverage Ratio (DSCR) over the remaining maturity of the private debt. This applies to all three types of infrastructure deals: merchant, regulated and contracted projects. The second and third types are structured on a base case scenario with a constant DSCR profile through time. Merchant projects usually have a base case scenario with an increasing DSCR.

In the absence of individual valuations and in order to validate the valuations performed, available "public" data were essentially extracted from fiscal reports, which are published on an annual basis. Hence the periodicity of the indices is annual. The risk-adjusted performance of the senior debt of each firm in the index sample is derived by forecasting cash flows to debt holders, taking into account future scenarios of potential default and restructuring, and discounting them on the basis of the volatility of future payouts and available price information (including the initial value of the investment and comparable transactions taking place each year). The base case scenario is reassessed the following year when new tax reports are available and new accounting figures are disclosed.

Some valuations may be available but most of the time they are calculated on self-developed credit models, which capture the specificities of infrastructure private debt, such as the possibility of performing workout plans in the event of "technical defaults". The models were presented in a number of academic articles and are very helpful in understanding the underlying risks of the asset class.

In an article of the spring 2017 edition of *The Journal of Fixed Income*, the authors explain the importance of debt rescheduling based on either technical or hard defaults and how they are captured in the model. Monitoring the various outputs from the model provide interesting results. Indeed, the PD profiles of these models over time are similar to the empirical results presented by Moody's in their study on "Default and recovery rates for Project Finance Bank Loans, 1983-2014" published in 2015. The models also confirm the high level of recovery rates, on average 80-85% (for both merchant and contracted infrastructure deals), compared with corporate debt recoveries (around 40%). Additionally, the model results give further indications on the process of rescheduling debt in order to maximise this recovery.

The first set of new infrastructure debt and equity indices represents an enormous amount of work. They are built on a proprietary database of private debt and equity collected since 2000. The first indices, released in June, are calculated on European transactions. We understand that EDHECinfra is already working on indices for South East Asia, including the Philippines, Australia and New Zealand. After this, a further set of indices should be released for the

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LATAM region. The last indices to be released will be those for the North American region and they should be published in 2019.

This research should have a considerable impact from now on. Our focus is debt instruments, not equity infrastructure results, and infrastructure debt was already popular in the current low interest rate environment. A number of investors have increased their exposure to the sector, either directly or indirectly through mandates provided to asset managers. The results of this study should support this development and possibly accelerate the trend as the indices create more transparency, which will help more investors become comfortable with the sector. Importantly, the study revealed that not all infrastructure assets are created equal. In particular, it clearly states that there is no listed infrastructure asset class. Listed infrastructure deals, which currently provide higher returns than corporates but with higher credit risk/higher volatility, should be considered as a subpart of the corporate sector, but it is not de-correlated.

On the contrary, private infrastructure debt provides a true alternative to corporate debt exposure; it achieved a higher return with a better Sharpe ratio than the corporate sector. This is very good news, demonstrating that the clarification of the definition of infrastructure exposure is crucial and provides transparency. Investors should be encouraged to either open or increase their allocations. It should also prompt reallocations when investors give asset managers mandates to make sure the exposure is well adjusted to this clarified definition.

It also reveals that the asset class in general is coping well with information asymmetry. We quote one remark from the institute on this topic: "*thanks to these indices and the transparent techniques and data reporting standards put forward... asset owners will not be obliged to do away with delegated investment management altogether, but can hope to be better able to find type-A asset managers and to expect them to achieve what the type-B simply cannot deliver*".

The attractiveness of the asset class is further boosted by the finding that risk on portfolios with a large number of infrastructure constituents, typically 50+, would be significantly lower if well managed. One of the aims of EDHECinfra is to clarify whether a portfolio of exposure to PF deals could be optimised to some extent.

These investments are private, which means only a limited number of experts are knowledgeable in the underlying risks within the asset class. This should not be overlooked and is why picking the right partner is crucial if it is not an investor's core activity. Lending money is in banks' DNA. With this clarified information, they should be able to share their knowledge and bring in more co-investors in order to raise the funds needed.

Long-term high-yield seekers like insurance companies should be further comforted on the reasons to be active by the results of this research. Moreover, in regard to the questions of risk and rewards, private infrastructure debt provides very attractive diversification.

Therefore, accessing equity or private debt on infrastructure projects is critical. Such findings should strengthen the OTD model of banks, which remain the most knowledgeable lenders.

Components and weightings

The details of the debt indices can be found by clicking on the following link: https://benchmarks.infrastructure.institute/debt/.

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As noted above, the indices published in June comprise only Europe, which can be split between several buckets. EDHECinfra provides details on 192 debt indices, the same number as provided for EDHECinfra infrastructure equity indices, depending on the combination of criteria applied. The first split was made around the type of infrastructure structures. The distinction here is between infrastructure investments in "project finance" and echoes the June 2016 EIOPA recommendation on qualifying infrastructure for the purpose of the Solvency-II directive. The second bucket defines infrastructure investment on a broader basis again according to a regulatory consultation. This definition comprises "infrastructure corporate", which is qualified as companies operating in industrial sectors corresponding to real-world infrastructure. The indices described here are available on Bloomberg under the tickers EIPDEPF and EIPDEC and the aggregated index is EIPDE (see chart below). The EIPDEC index corresponding to the infra corporate universe must not be confused with the corporate index used to benchmark the performances, which is the traditional iBoxx corporate performance.

Below, we show some of the results based on a regional split. Indeed, the details below split the infrastructure universe between continental Europe and the UK.

EDHECInfra European private debt infrastructure indices

		Continental EUROPE		United Kingdom	
		Value W	Equal W	Value W	Equal W
# of deals		118		78	
Total Value	€ bn	66.247		35.74	
RETURN	1Y	3.78%	4.53%	3.94%	3.97%
	3Y	5.24%	6.01%	4.33%	4.43%
	5Y	7.15%	7.72%	5.92%	5.95%
	10Y	7.26%	7.47%	6.06%	6.10%
	HIST	9.26%	9.23%	7.48%	7.17%
VOLATILITY	1Y	4.10%	3.60%	7.56%	4.60%
	3Y	4.10%	3.53%	6.96%	4.43%
	5Y	4.08%	3.47%	6.76%	4.40%
	10Y	4.18%	3.50%	6.58%	4.28%
	HIST	5.29%	3.52%	8.30%	4.51%
SHARPE RATIO	1Y	1.37	1.77	0.53	0.88
	3Y	1.66	2.15	0.59	0.95
	5Y	2.09	2.62	0.83	1.26
	10Y	1.87	2.29	0.65	0.99
	HIST	1.83	2.63	0.58	0.95

Source: SG Cross Asset Research/Global Asset Allocation, EDHECinfra

The breakdown of both European indices shows significant differences between both regions. Almost two-thirds of the continental Europe index is comprised of the transport sector and another 20% of the energy sector (excluding oil and gas which is a separate sub-sector). The largest sector in the UK index comprises government services and the second largest is again energy for almost the same share at 19%. Merchant projects are just above the contracted projects in continental Europe, while the contracted projects account for two-thirds in the UK.

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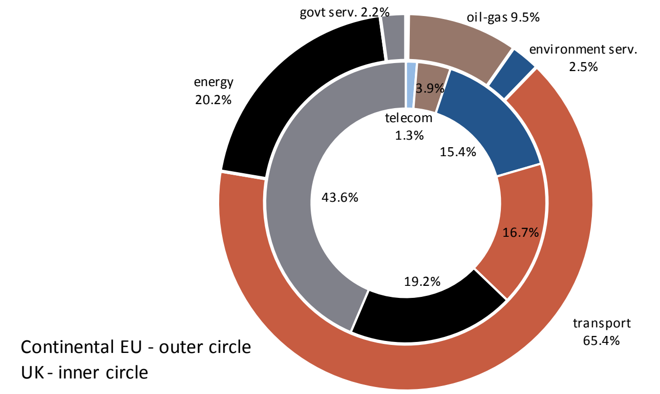
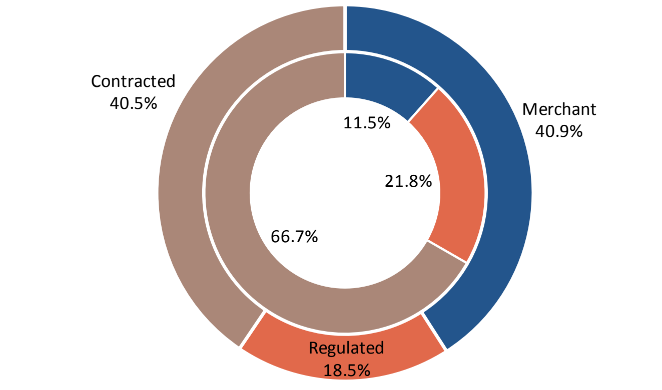
European indices: breakdown by sector



Breakdown by business model

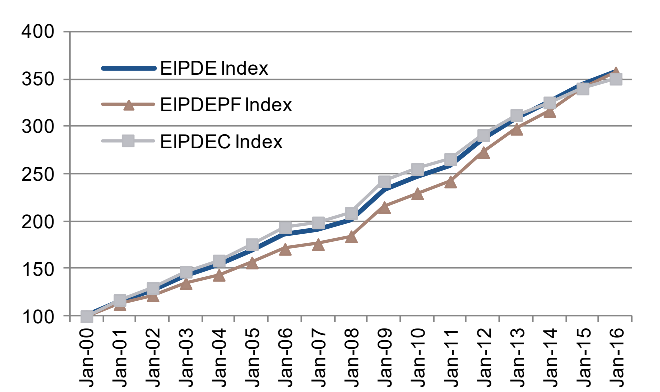


Source: SG Cross Asset Research/Global Asset Allocation, EDHEC

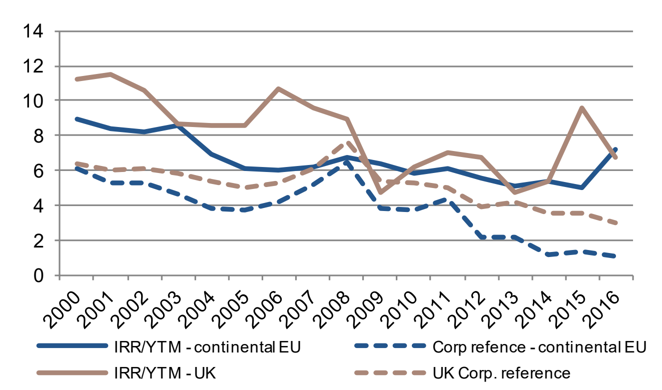
Performances vary significantly between the two regions. Importantly, EU infrastructure performances are very different from those of EU corporates (the reference is the iBoxx index), while UK infrastructure performances are better than the UK corporate index, i.e. the UK iBoxx index; however, both profiles are very similar.

We will not comment the numerous results, which are publicly disclosed on the website. Instead, we have selected two sets of indicators. The first is for pricing, i.e. the internal rate of return and the yield to maturity. Indeed, corporate bond yields have been declining since the 2007 financial crisis; however, infrastructure IRRs have been stable since then and recently have started to increase. This is attributable to the bargaining power of lenders who have been able to protect their margins, and the result should strongly contribute to the popularity of the asset class.

Annual performance indices: Aggregated (Cont. EU+UK), Project finance (PF) and Corporate Infrastructure (CI)



Private debt and corp indices: annual IRR/YTM



Source: SG Cross Asset Research/Global Asset Allocation, Bloomberg

The second set of indicators is for risk. The left-hand chart below shows the probability of first default in the portfolio. The probability of default (PD) for both regional indices has been rising systematically since 2014, which could hit the headlines at some point. The right-hand chart shows the expected loss (EL) indicators, which are also on the rise, although the absolute level remains minimal.

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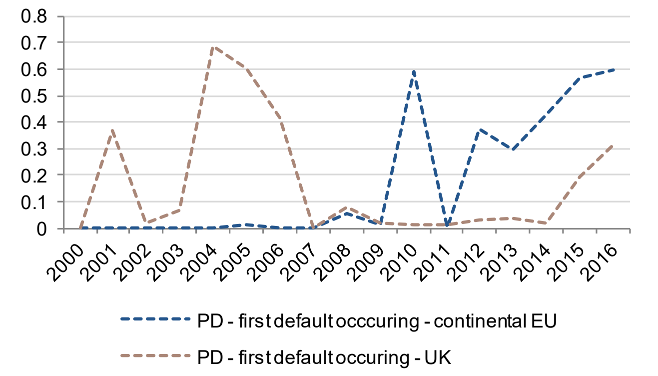
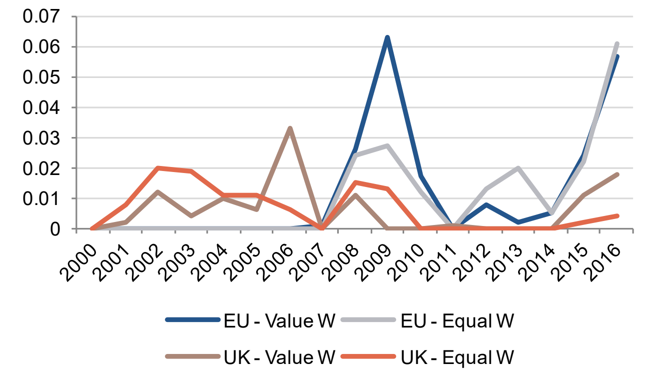
Probability of default – first default occurrence (PD1)



Expected loss: minimal but rising by index and weightings



Source: SG Cross Asset Research/Global Asset Allocation

The publication of these indices will do much for the understanding and monitoring of the asset class. The main results follow below.

- The indices clarify the definition of the infrastructure debt asset class. Based on the evolution of the indices, investors and more generally market participants can see that infrastructure is indeed an asset class of its own. It is now clearly identified and so far has delivered a very strong performance compared with other debt asset classes, in particular corporate debt.

- On average, infra debt delivered a higher yield spread than the European corporate bonds index over the 2000-2016 period thanks to a significant yield spread.

- The performances of the value-weighted broad index is somewhat skewed because of the significant concentration of the underlying portfolio. As a result, the Sharpe ratio and risk-adjusted performance may not be very different from corporates. However, on an equally-adjusted basis, the risk-adjusted performance is significantly higher. This highlights the importance of cherry picking and of having an active portfolio mix. It is also demonstrated by the evolution of the PD1 (probability of a first default occurring in the portfolio), which can help avoid subsectors or some specific transactions, which are more at risk.

The evolution of the indices points to an important fact. Based on the yield to maturity since the Global Financial Crisis in 2007, the yield on infrastructure project debt has been higher than the yield on infrastructure corporate debt. This can be explained by the bargaining power of banks in their lending relationships regarding project finance for infrastructure. Corporate debt could provide some protection on financial markets. Since 2014, indices have shown a strong improvement in yields, particularly corporate debt, which can be explained by the positive impact of TLTRO measures.

European database characteristics 2000-2016

	Private infrastructure index – broad market	Private infrastructure project debt index	Infrastructure corporate debt
	14 European countries		
	6 industry sector groups		
Live borrowers (highest number over the period)	216 (298)	106 (219)	56 (79)
Senior debt instruments	867	415 (544)	447 (545)
Total amount	€106.1bn	48.7bn	57.4

Source: SG Cross Asset Research/Global Asset Allocation, EDHECinfra

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We believe that the results will contribute to the development of the industry, which is the mission assigned to EDHECinfra by the Singaporean authorities and the G20 mandate through the GI Hub.

EDHECinfra's assessment of the infrastructure sector market will allow participants to better understand the key drivers, risks and the potential of the sector. Indeed, the indices have started to produce very robust statistics on the infrastructure market in Europe, strongly contributing to the better understanding, categorisation and benchmarking of the asset class. EDHECinfra's ambition is to move beyond Europe and develop similar indices for other areas in the world. We wish them the best of luck and congratulate them on the greater work they have already achieved.

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Newsflow

Institutional Limited Partners Association publishes guidance on a subscription line of credit used by private equity funds – 27 July

ILPA warns private equity funds regarding better governance in reporting as money pours into the industry

As we discussed in our previous issue of *In the Mood for Loans* regarding the strong development of the Mid-Market Lending (MML) market, its funding is dominated by private equity companies, which have strongly developed their lending business. However, the story in a low growth environment may not be that simple, and a warning from Washington-based Institutional Limited Partners association (ILPA) in late July drew the market's attention to less avowable practises by certain market participants. These practices use the calculation of the internal rate of return, which is based on the date an investor's cash is put to work. The calculation artificially raises the fund's apparent performance but does nothing to increase the actual returns earned by investors. ILPA has asked the industry to go back to previous practises. Preqin, the data provider, estimates that private equity managers raised around $194bn in the first half of 2017, running ahead of the record annual total of $338bn in 2007.

Bank of England published working paper entitled "The impact of Solvency II regulations on life insurers' investment behaviour" – July 2017.

We quote: "(The study)... finds that, while Solvency II may partly protect insurers' solvency positions from falls in risky asset prices, the new regulations might encourage certain types of UK life insurers to de-risk — that is, move to holding safe assets in place of risky ones — following falls in risk-free interest rates. This behaviour is driven by changes in the 'risk margin', which, under its current design within the Solvency II framework, reduces insurers' solvency positions following falls in risk-free interest rates, thereby encouraging them to sell risky assets to reduce their probability of regulatory insolvency. The model also suggests that, once Solvency II is fully implemented by 2032, UK life insurers may have markedly reduced their holdings of long-term, risky assets. In the model, this behaviour is also driven by the risk margin, which, by increasing the volatility of insurers' solvency, encourages them to de-risk to reduce the variance of their asset portfolios".

S&P releases report on US infrastructure challenge – June 2017

Based on the findings of the American Society of Civil Engineers[3], infrastructure funding needs fall short by at least 20% in all sub-sectors of the asset class. Details by sub-sector are as follows:

Infrastructure needs and funded share

	Energy	Airports	Shipping	Road/transport	Water
Sub-sector needs ($bn)	934	157	37	2041	150
Funded amount	81%	73%	59%	46%	30%

Source: SG Cross Asset Research/Global Asset Allocation

The report details the structure of the investor base and the existing tax incentive framework, which, importantly, has contributed to the development of investment in the sector. The report does not provide a pertinent conclusion on the subject. It acknowledges that the partnerships between public and private funding have been crucial in the past and that they should continue to develop in order to address the challenges ahead.

3 "2017 Infrastructure Report Card: A comprehensive assessment of America's infrastructure", American Society of Engineers, link here

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European commercial real estate – liquidity premium

Liquidity premium table

	Spread	Duration	Average Default Rate Estimate	Recovery Rate	Adjusted Spread
European CRE Loans	2.14%	7.00	1.08%	66%	1.77%
Commercial Mortgage Covered Bonds	-0.16%	6.6	0.054% (*)	45%	-0.17%
				Liquidity Premium	1.94%

Source: SG Cross Asset Research/Global Asset Allocation, Moody's, Bloomberg (*) Moody's Idealised Cumulative Default Loss

Loans adjusted spread = CRE loans spread - average default rate *(1-recovery rate)

Loan spread: We looked at a number of spread data for European loans from various jurisdictions since March 2017. In particular, we report six levels based on Bloomberg's loan database ranging from 170bp to 315bp and maturities between five to ten years. We compare these with the data reported by real estate broker Cushman & Wakefield in their quarterly report on European lending trends. The table below shows the results for spring 2017.

European loan margin trends – spring 2017

Location (City)	Lisbon	Madrid	Paris	Milan	Brussels	Amsterdam	London	Frankfurt	Stockholm	Prague	Warsaw
Trend (↑ up, ↓ down)	↑	↑	↑	↑	↑	↑	↑	↑	↑	Unch.	↑
Margin (bp)	281	258	196	226	214	221	220	226	228	243	239

Source: Cushman and Wakefield research

Loan default rate: There are no public statistics available. We estimate the average default using commercial real estate corporate CDS.

Average default rate = Corporate CDS spread / (1-corporate recovery rate)

Unibail-Rodamco is one of Europe's leading listed commercial property companies. Its 7y CDS is quoted at c.65 (as of 9 September), and we estimate the corporate recovery rate at 40%. Hence, the implied average default rate estimate should be 1.08%.

Recovery rate: Estimated using first-lien loans information from Moody's report, "Default and Recovery Rates of European Financial and Non-Financial Corporate Issuers, 1985-2016 Q3".

Bonds adjusted spread = Covered bond spread – ((Cumulative default rate * (1-recovery rate)/duration))

Commercial mortgage-covered bonds are used due to the limited level of activity of the European CMBS market.

Covered bond spread: Based on Deutsche Hypothekenbank EUR750m 0.25% 2024.

Cumulative probability of default: Based on Moody's idealised cumulative probability of default (Moody's approach to rating covered bonds, December 2016).

Recovery rate: Derived using Moody's idealised cumulative expected loss provided in the above-mentioned publication.

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Transport infrastructure – liquidity premium

Liquidity premium table

	Spread	Average Duration	Cumulative Default Rate	Recovery Rate	Adjusted Spread
Transport Project Finance Loans	2.95%	6	6.5%	81%	2.73%
Transport Muni Bonds*	1.05%	6	0.21%	56%	1.04%
				Liquidity Premium	1.69%

Source: SG Cross Asset Research/Global Asset Allocation

Loan-adjusted spread = Transport project finance loans spread - infrastructure project finance cumulative default rate * ((1- infrastructure project finance recovery rate)/duration).

Loan spread: We estimate the global 295bp transport infrastructure spread based on four projects signed between March and mid-September 2017. Three of the new loans are refinancing of existing loans. The projects are based in Spain and Malaysia, and one loan is to an company based in Luxembourg.

Cumulative loan default rate: c.6.5% based on Moody's updated study, "Default and Recovery Rates for Project Finance Bank Loans, 1983-2016, February 2017" (exhibit 37). This estimate is based on the Basel II definition of default. According to Moody's, the Basel II definition of default not only captures the events included in Moody's definition of default but also a wider range of defaults, including circumstances in which the reporting bank considers that the obligor is unlikely to pay its credit obligations in full.

Recovery rate: 81%, average based on the same document by Moody's 1983-2016 study.

Bonds-adjusted spread = Transport bonds spread - transport bond cumulative default rate * ((1- bonds recovery rate)/duration).

Bond spread: The bond spread is estimated from the average between iBoxx ASW EUR margins and USD margins. The ratings are between A/Baa.

Cumulative bond default rate: Estimated using Moody's US Municipal Bond defaults and recoveries, 1920-2016, June 2017 (exhibit 23). We also extract the recovery rate from the document from the average recoveries for municipal utilities.

Recovery rate: 48% from Moody's empirical study 1920-2016, Feb 2017.

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Energy project finance loans – liquidity premium

Liquidity premium table

	Spread	Cumulative Default Rate	Recovery Rate	Duration	Adjusted Spread
Power Project Finance Loans	2.33%	6.50%	81%	9	2.26%
Utilities Bonds (iBoxx $ Utilities 7-10 YR)	1.27%	6.35%	48%	7	0.82%
				Liquidity Premium	1.38%

Source: SG Cross Asset Research/Global Asset Allocation, Moody's, Dealogic, Bloomberg

Loans adjusted spread = energy project finance loans spread - energy project finance cumulative default rate * ((1- energy project finance recovery rate)/duration).

Loan spread: The energy project finance spread above is based on six loans (c.€3.6bn total) signed in 2Q17. Four out of these six projects are refinancing transactions.

Cumulative default rate: c.6.5% based on Moody's recent study "Default and Recovery Rates for Project Finance Bank Loans, 1983-2015", March 2017 (exhibit 27). This estimate is based on the Basel II definition of default. According to Moody's, the Basel II definition of default not only captures the events included in Moody's definition of default but also a wider range of defaults, including circumstances in which the reporting bank considers that the obligor is unlikely to pay its credit obligations in full. Moody's annual study also highlights the fact that the US power sector has experienced on average higher defaults, averaging 8% compared with 7.2% for the rest of the sample. However, the 8% is lower than the 9.3% average of the previous year's study.

Recovery rate: 90% average for power finance sector, also based on Moody's 1983-2015 study mentioned above.

Bonds adjusted spread = utilities bonds spread - utilities bonds cumulative default rate * ((1-bonds recovery rate)/duration).

Bond spread: Uses Markit iBoxx USD Utilities 7-10y index.

Cumulative default rate: Based on the Moody's study "Annual Corporate Default and Recovery Rates, 1920-2016". We take the average for the utilities and energy sectors.

Recovery rate: 33.1% average senior unsecured in the same Moody's study.

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Shipping loans – liquidity premium

Liquidity premium table

	Spread	Duration	Cumulative Default Rate	Recovery Rate	Adjusted Spread
Shipping Loans	2.13%	7	31%	50%	-0.06%
Shipping Covered Bond	0.37%	2	0.3%	45%	-0.06%
				Liquidity Premium	0.01%

Source: SG Cross Asset Research/Global Asset Allocation

Loans adjusted spread = shipping loans spread - cumulative default rate *(1-recovery rate)/duration).

Loan spread: The spread is based on three loan transactions in 2Q17 totalling c.USD350m.

Probability of default: 31% and **recovery rate:** 50%, based on Moody's report "German Shipping Lenders: Rising Problem Loans May Prompt Net Losses at Some Banks", December 2013.

Covered bonds adjusted spread = Covered bond spread – (cumulative default rate *(1-recovery rate)/duration)

Covered bond spread: Based on five bonds, DZ Bank and HSH Nordbank' Schiffspfandbriefe.

Cumulative probability of default: Based on Moody's idealised cumulative probability of default for covered bonds (Moody's approach to rating covered bonds, Dec 2016). Three of the covered bonds mentioned above are not rated so we assume that it has the issuer rating of Baa1.

Recovery rate: Derived using Moody's idealised cumulative expected loss provided in the above-mentioned publication.

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Aircraft loans – liquidity premium

Liquidity premium table

	Spread	Duration	Cumulative Default Rate	Recovery Rate	Adjusted Spread
Aircraft Loans	2.05%	9	15.4%	67%	1.46%
Aircraft Covered Bond	0.11%	1	0.15%	45%	0.05%
				Liquidity Premium	1.40%

Source: SG Cross Asset Research/Global Asset Allocation

Loans adjusted spread = aircraft loans spread - cumulative default rate *(1-recovery rate)/duration).

Loan spread: The aircraft liquidity premium is wider compared with the last publication. The 205bp loan spread in 2Q17 is based on two transactions with margins ranging between 185bp and 225bp.

For aircraft loans, as there is no historical default data available, we use the **cumulative default rate** for the corporate transportation sector, which we extract from Moody's study, "Annual Corporate Default and Recovery rates, 1920-2016", published in July 2017. We take the average for the cargo and consumer transportation subsectors.

Recovery rates: Average volume weighted recoveries 1983-2016 for 1st lien bank loans in the same study.

Bonds Adjusted spread = covered bond spread – ((Cumulative Default rate *(1-recovery rate)/duration)

Covered bond spread: Based on Nord LB Aircraft Pfandbriefe 1.125% 2019.

Cumulative probability of default: Based on Moody's idealised cumulative probability of default for covered bonds (Moody's approach to rating covered bonds, December 2016).

Recovery rate: Derived using Moody's idealised cumulative expected loss provided in the above-mentioned publication.

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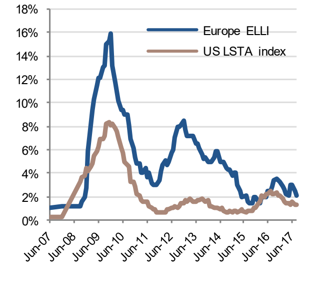
European leveraged loans – liquidity premium

Liquidity premium table

	Spread	Default Rate*	Recovery Rate	Duration (years)	Adjusted Spread
EUR Leveraged Loans	419	5.40%	76%	5.52	288
EUR HY Bonds	405	8.60%	58%	3.68	309
				Liquidity Premium	-21

Source: SG Cross Asset Research/Global Asset Allocation

S&P default rates – hist. series



Source: SG Cross Asset Research/Global Asset Allocation

Loan adjusted spread = leveraged loans spread - average default rate *(1-recovery rate).

European leveraged **loan spreads**: Using S&P European Leveraged Loan Index (ELLI) four-year discount spreads as of 15 September 2017.

Default rate: ELLI average from June 2007 to September 2017. The default rates over the past ten years show some volatility and more recently (the past two years for example) exhibit much lower levels of default. For example, if calculated on a five-year history, the European default rate would be 4.09%, and over the past 24 months, only 2.41%. As a result, the liquidity premia would change to +11bp and +51bp, respectively, which shows how sensitive this indicator is to a single change of convention.

Recovery rate: 76%, a first lien loans average for 2006-2014 period calculated using information from the S&P report, "2014 European Empirical and Recovery Rating Performance Update Shows Continued Strong First-Lien Recoveries", May 2015.

High yield bonds adjusted spread = High yield bonds spread - cumulative default rate *(1-recovery rate) /duration)

European high yield bond spreads: Based on Markit's iBoxx EUR high yield core Non-Financials ex crossover 5-10 LC.

Default rate: Based on S&P 2015 Annual European Corporate Default Study and Rating Transitions information. Weighted average of four-year cumulative default rates for BB, B and CCC/C. The weights mirror the rating of the constituents of the iBoxx EUR High Yield core Non-Financials ex crossover 5-7 LC. We note the cumulative four-year default rate for BB is 2.03%, 12.65% for B and 49.42% for CCC/C.

Recovery rate: 58%, speculative grade senior unsecured bonds average for the 2006-2014 period calculated using information in the S&P report, "2014 European Empirical and Recovery Rating Performance Update Shows Continued Strong First-Lien Recoveries", May 2015.

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SME loans – liquidity premium

Liquidity premium table

	Spread	Default Rate*	Recovery Rate	Average Duration (years)	Adjusted Spread
French SME Loans	616	0.91%	76%	3.44	594
EUR HY Bonds	259	6.82%	58%	3.22	169
				Liquidity Premium	425

Source: SG Cross Asset Research/Global Asset Allocation, Markit, S&P, S&P LCD, Lendix, Banque de France, as of 15 September 2017
* For loans we use average default rate, for bonds we use cumulative default rate

Loans adjusted spread = SME loans spread - average default rate *(1-recovery rate)

We estimate **SME loan spreads** using crowd funding data.

Default rate: Twelve-month moving average based on the Banque de France “taux de defaillance” or company failure over the July 2016 to June 2017 period. We note that for the Banque de France, “failure” corresponds to the initiation of legal proceedings (reorganisation procedure or judicial winding up). Default on the other hand corresponds to significant payment incidents declared by one or more credit institutions.

Recovery rate: 76%, first lien loans average for 2006-2014 period calculated using information in the S&P report, “2014 European Empirical and Recovery Rating Performance Update Shows Continued Strong First-Lien Recoveries”, May 2015.

High yield bonds adjusted spread = High yield bonds spread - cumulative default rate *(1-recovery rate) /duration)

European high yield bond spreads: Based on Markit’s iBoxx EUR high yield core non-financials ex crossover 5-7 LC.

Default rate: Based on S&P 2016 Annual European Corporate Default Study and Rating Transitions information. Weighted average of three-year cumulative default rates for BB, B and CCC/C. The weights mirror the rating of the constituents of the iBoxx EUR High Yield core Non-Financials ex crossover 5-7LC. We note the cumulative four-year default rate for BB is 2.32%, 9.4% for B and 41.03% for CCC/C.

Recovery rate: 58%, speculative grade senior unsecured bonds average for the 2006-2014 period calculated using information in the S&P report, “2014 European Empirical and Recovery Rating Performance Update Shows Continued Strong First-Lien Recoveries”, May 2015.

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Loan markets – macro view

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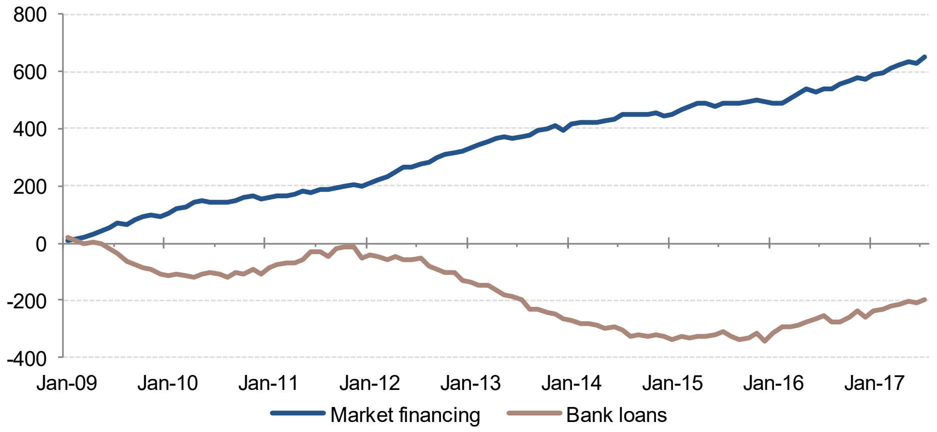
Debt and loan markets continue to be well oriented in terms of volumes, with both seeing a strong trend since January 2016.

The picture however varies widely among jurisdictions. The loan market is consistent in France and Germany; it is stable in Spain; while the July figure in Italy clearly shows a further decline.

Interestingly, the new loan flows in Germany have entirely caught up with those of the debt market, and given the current pace, loans flows could surpass debt in the near future.

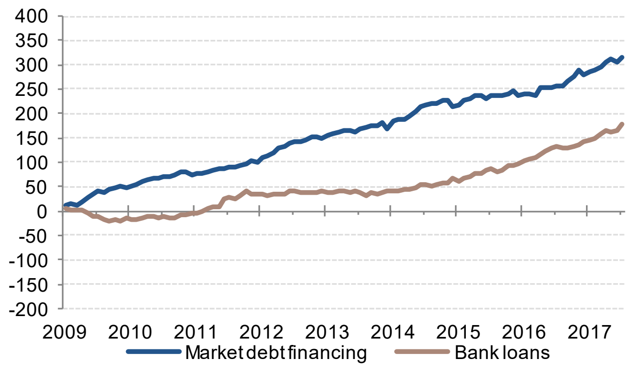
Disintermediation in Europe

Eurozone: cumulative net flows to non-financial companies (loans & debt) since 2009 (€bn)



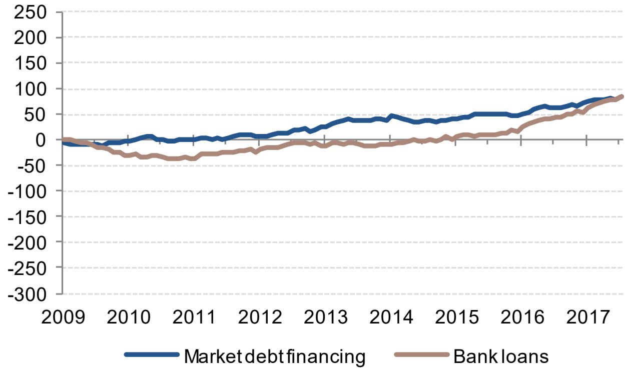
Source: SG Cross Asset Research/Global Asset Allocation, ECB

France – cumulative (loans & debt) net flows * (€bn)



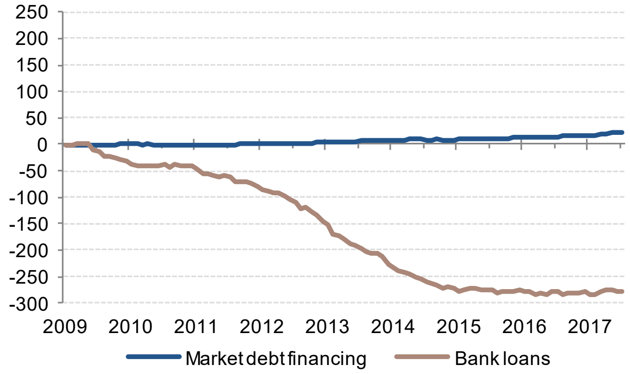
Source: SG Cross Asset Research/Global Asset Allocation, ECB

GER – cumulative (loans & debt) net flows, * (€bn)



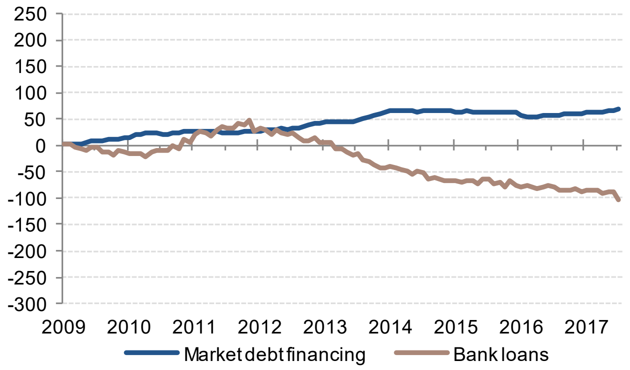
* Volume basis is 100 as at January-2009

Spain – cumulative (loans & debt) net flows, * (€bn)



Source: SG Cross Asset Research/Global Asset Allocation, ECB

Italy – cumulative (loans & debt) net flows, * (€bn)



* Volume basis is 100 as at January-2009

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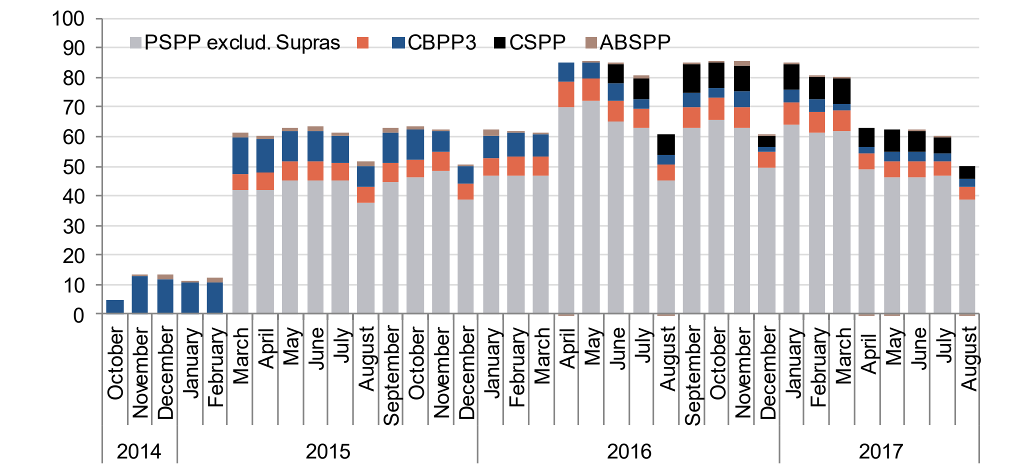
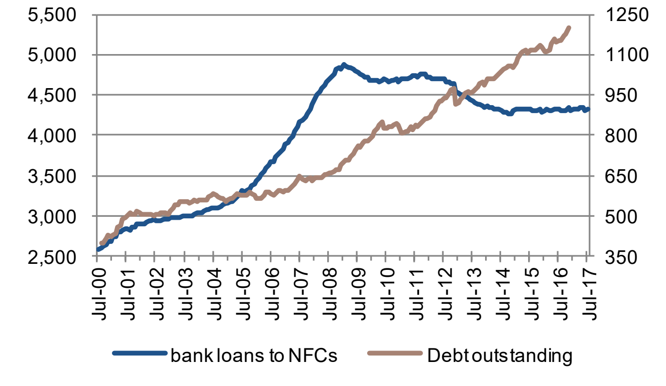
ECB QE purchases: massive impact continues; no tapering before 2018 (€bn)



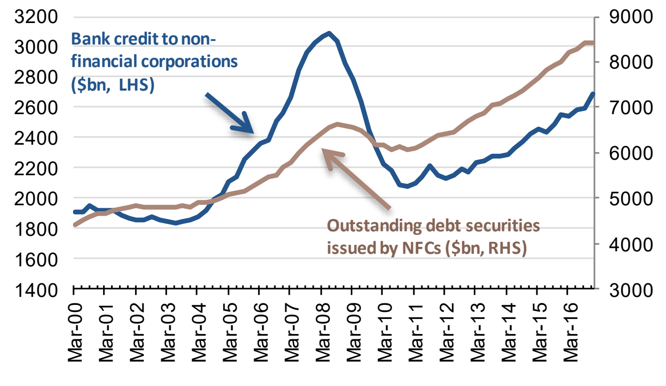
Source: SG Cross Asset Research/Global Asset Allocation

EU corporate funding (€bn)



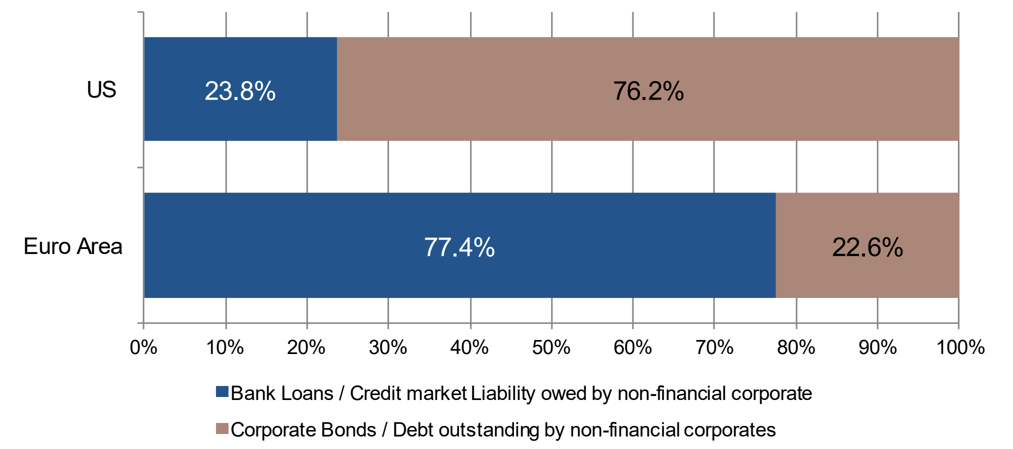
Source: SG Cross Asset Research/Global Asset Allocation, ECB SDW

US corporate funding ($bn SA)



Source: SG Cross Asset Research/Global Asset Allocation, St Louis FED - FRED

NFCs financing – loan vs debt, US and eurozone (1Q17, July 2017 resp)



Source: SG Cross Asset Research/Global Asset Allocation, FRED St Louis FED, ECB SDW

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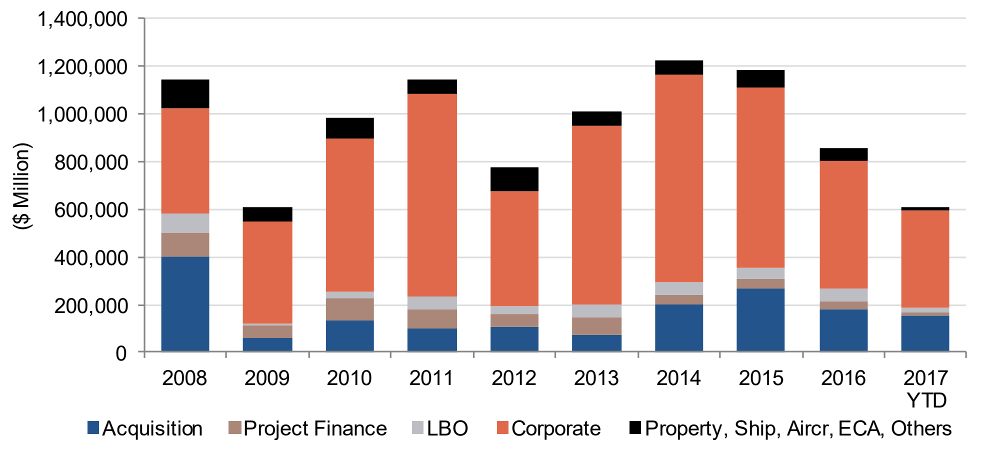
Loan market typology – Europe

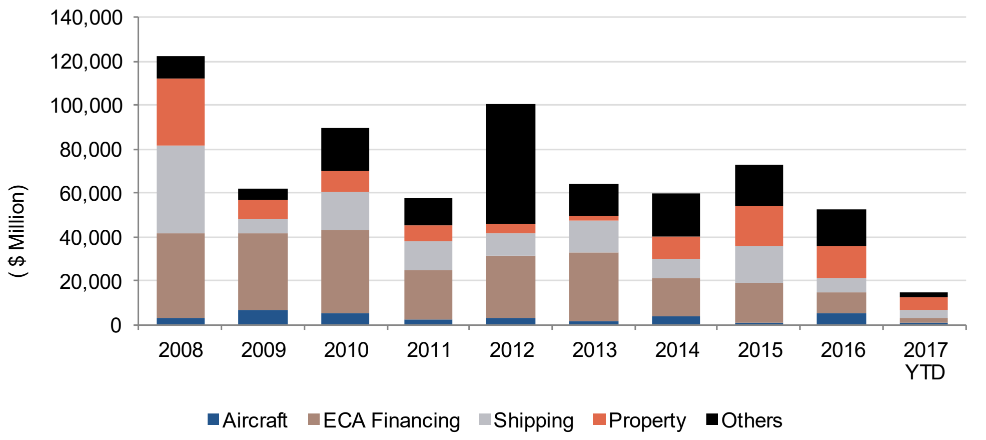
EMEA volumes by use of proceeds – all loans ytd ($m)



Source: SG Cross Asset Research/Global Asset Allocation, dealogic

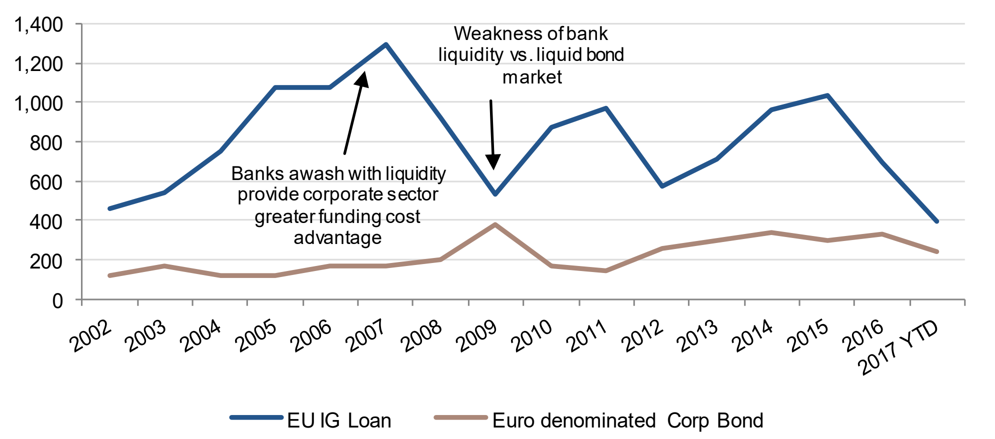
EMEA volumes by use of proceeds – RE, shipping, aircraft, ECA, other

Although the figures ytd may be tricky to comment on, as there are still four months to go in the year, overall loan volumes are lower compared with previous years, which we understand as being driven by growing risk.



Source: SG Cross Asset Research/Global Asset Allocation, dealogic

Corporate euro bond market vs IG syndicated ($bn equivalent)



Source: SG Cross Asset Research/Global Asset Allocation

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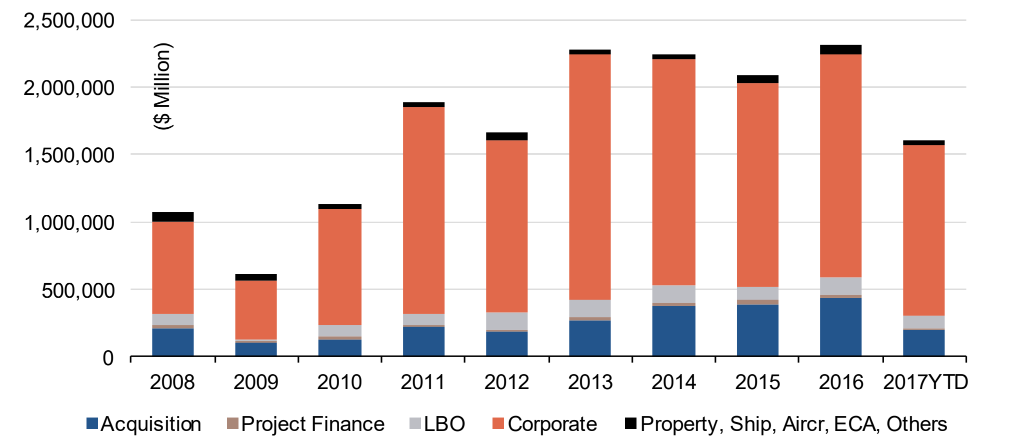
Loan market typology – US

US volumes by use of proceeds – all loans ytd ($m)

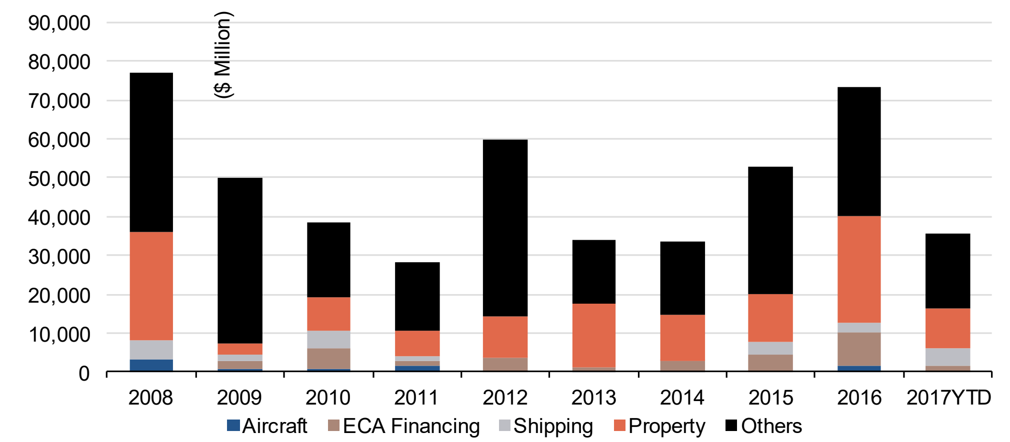
Acquisition volumes have been lagging 2016 so far this year. FY could end up just below $300bn vs c.$440bn last year. PF looks set to be two-thirds of last year's figure. The big frontrunner is corporate lending, which should end the year at around $1.9trn.



Source: SG Cross Asset Research/Global Asset Allocation, dealogic

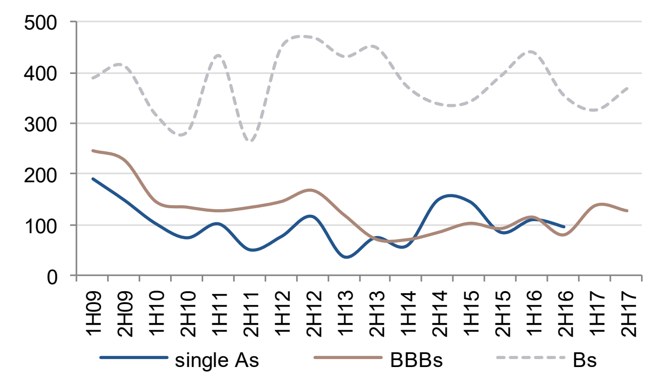
US volumes by use of proceeds – RE, shipping, aircraft, ECA, other

All volumes are significantly down, by at least 25%. The only exception is shipping, which could end the year at around $6.8bn, i.e. 2.8x last year's figure.

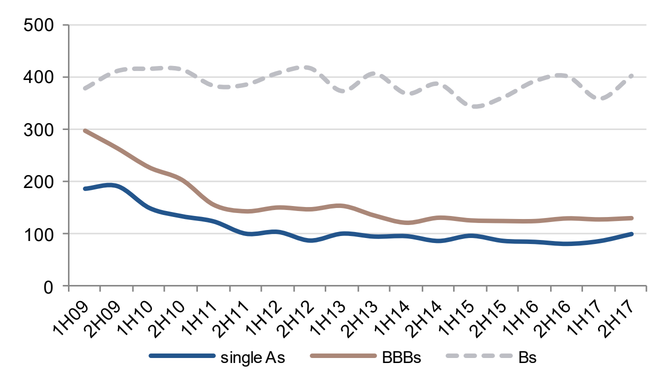


Source: SG Cross Asset Research/Global Asset Allocation, dealogic

Spread trend by rating, median, EMEA (bp)



Spread trend by rating, US (bp)



Source: SG Cross Asset Research/Global Asset Allocation, dealogic

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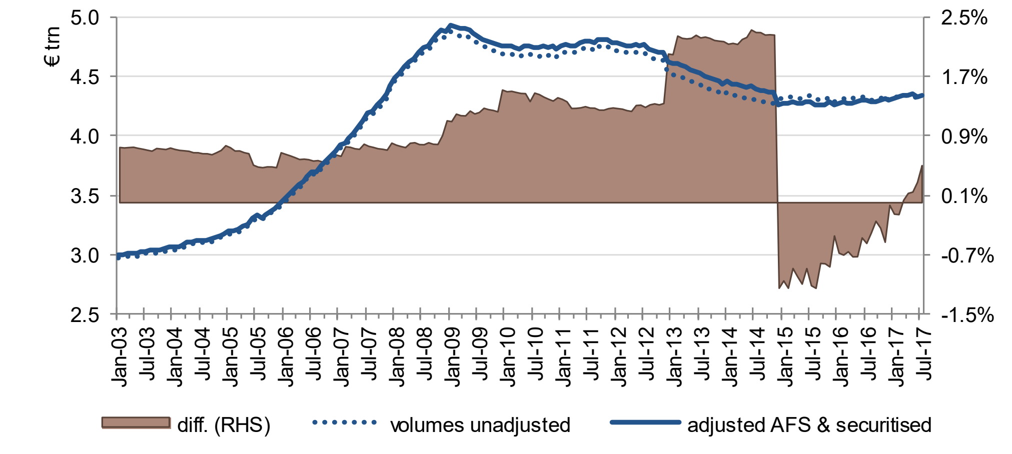
A clear upward trend is in place, reflecting an increase in the amounts being securitised and/or sold.

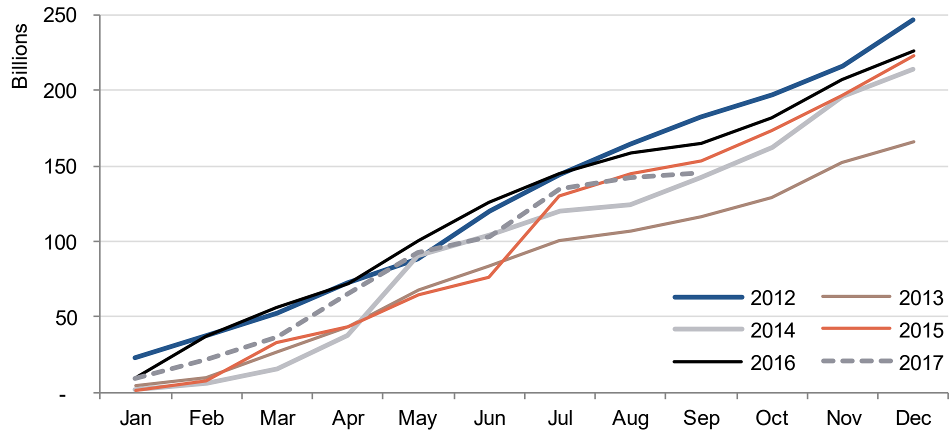
Europe: loans to NFCs, gross and adjusted for sales & securitisation (€trn)



Source: SG Cross Asset Research/Global Asset Allocation, ECB SDW adjusted for loan sales and securitisation (resulting in derecognition in the MFI statistical balance sheet) as well as for positions arising from notional cash pooling services provided by MFIs

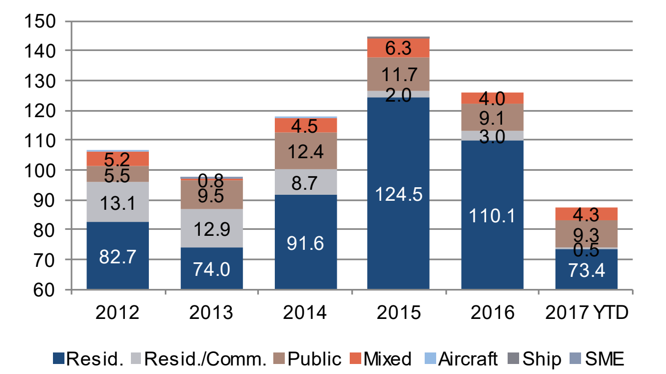
European cumulative volumes per year (€bn equivalent)

Annual cumulative volumes combine EUR and GBP markets for EMEA securitisation. Volumes comprise both public and retained deals. The start of the year was weak as there was a lot of uncertainty regarding the outcome of the STS securitisation trilogue discussions. The pace has caught up, and volumes look on track with the last three years. Nevertheless, the pause over the summer was very notable.

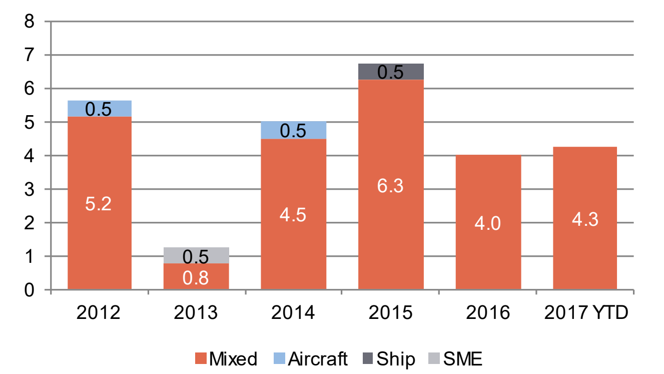


Source: SG Cross Asset Research/Global Asset Allocation

Annual volumes of covered bonds by type (Europe, €bn)



CB new issuances: four smallest sub-types only (€bn)



Source: SG Cross Asset Research/Global Asset Allocation

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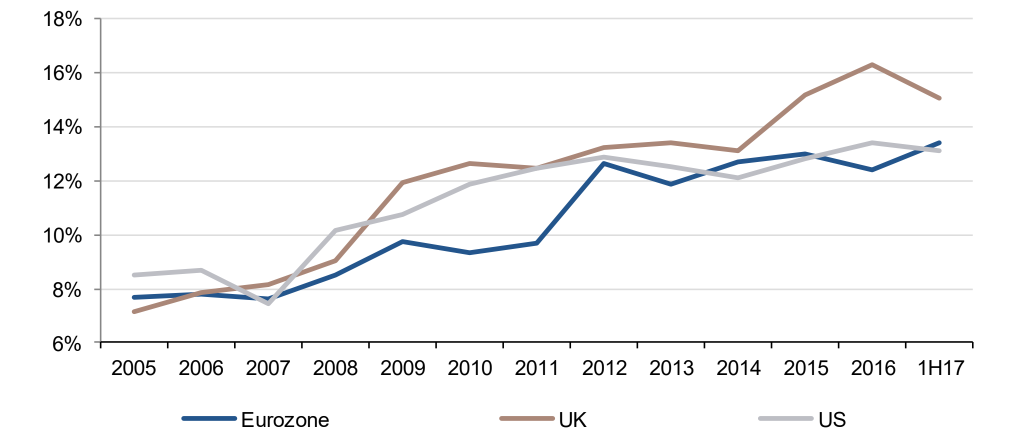
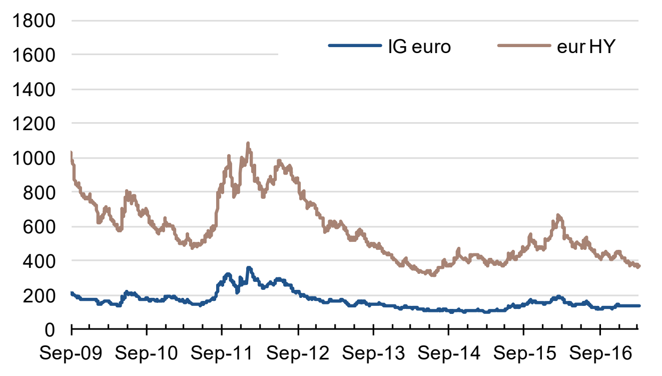
Determinants of loan offering

Banks: core Tier 1 ratio – Europe and US (from reports 4 September 2017)

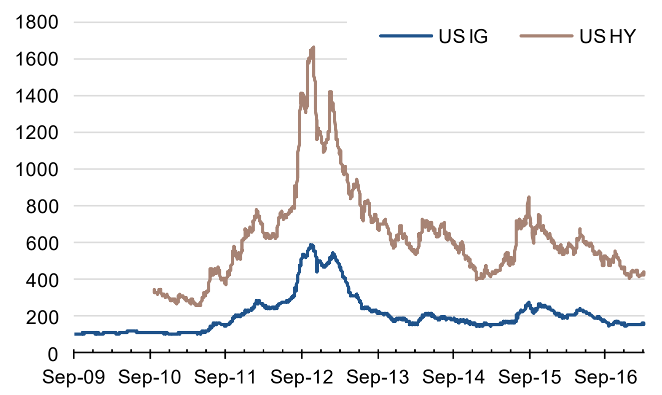


Source: SG Cross Asset Research/Global Asset Allocation, Bloomberg (FA screen)

iBoxx spreads: IG vs HU – Europe (bp)

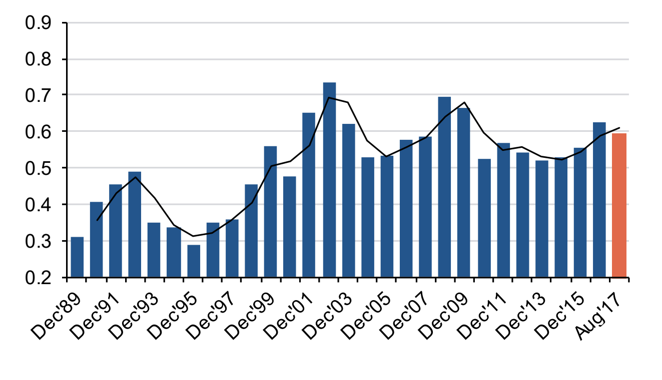


iBoxx spreads: IG vs HU – US (bp)

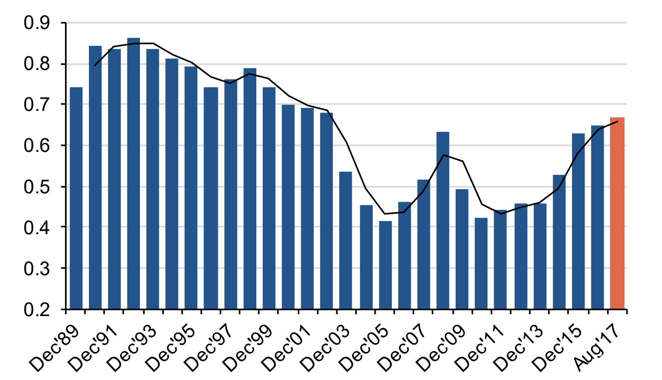


Source: SG Cross Asset Research/Global Asset Allocation

Net debt/share shareholders' equity – EU (excluding financials)



Net debt/share shareholders' equity – US (excluding financials)



Source: SG Cross Asset Research/Equity Strategy, Datastream, Worldscope

indexes excluding financials based on current constituent lists.

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Liquidity premia

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Liquidity premia (LP) – September 2017

	Spread (bp)	Default rate (%)	Recovery rate	Average duration (years)	Adjusted spread (bp)	Liquidity Premium
Euro CRE Loans	214	1.08%	66%	7	177	
Comm. mortgage-covered bonds	-16	0.05%	45%	6.6	-17	
CRE liquidity premium						**194bp**
Transport Project Finance Bonds	295	6.50%	81%	6	273	
Transport Muni Bonds	105	0.21%	56%	6	104	
Transport PF liquidity premium						**169bp**
Power Project Finance Loans	233	6.50%	81%	10	226	
Utilities Bonds	127	6.35%	48%	7	69	
Energy PF liquidity premium						**158bp**
French SME Loans	616	1.25%	76%	3.4	585	
EUR HY Bonds	259	6.82%	58%	3.22	322	
French SME liquidity premium						**416bp**
Shipping loans	213	31%	50%	7	-6	
Shipping covered bonds	37	0.30%	45%	2	-6	
Shipping liquidity premium						**1bp**
Aircraft loans	205	15.40%	67%	9	146	
Aircraft covered bonds	11	0.15%	45%	1	5	
Aircraft liquidity premium						**140bp**
EUR Leveraged Loans	419	5.57%	76%	5.52	284	
EUR HY Bonds	405	8.34%	58%	3.68	309	
EUR Lev Loans liquidity premium						**-25bp**

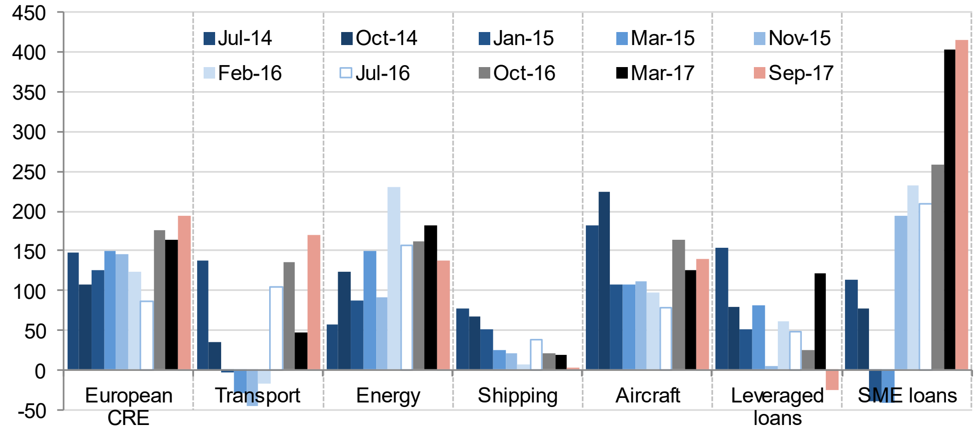
Source: SG Cross Asset Research/Global Asset Allocation

LP since April 2013 (bp)

Adjusted Spread	Sep-17	Mar-17	Oct-16	Jun-16	Feb-16	Nov-15	Mar-15	Jan-15	Oct-14	Jul-14	Apr-13
European CRE liquidity premium	194	163	176	86	123	146	150	126	107	147	NA
Transport liquidity premium	169	48	135	105	-18	-46	-30	-4	35	137	150
Energy liquidity premium	138	181	162	157	231	92	150	87	123	58	40
Shipping liquidity premium	1	18	16	39	6	20	24	52	67	77	NA
Aircraft liquidity premium	140	126	159	79	97	112	107	107	225	182	NA
Leveraged loans	-25	122	26	50	62	4	81	51	80	154	NA
SME loans*	416	404	259	210	233	194	*-42*	*-39*	*77*	*114*	*100*

Source: SG Cross Asset Research/Global Asset Allocation *: New methodology in Nov-15, based on crowd funding data – Please refer to the French SME section

LP from July 2014 to September 2017 – bar chart per period using data in table above (bp)



Source: SG Cross Asset Research/Global Asset Allocation

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Focus: US private placement, Schuldscheindarlehen and euro private placement markets

US private placement market

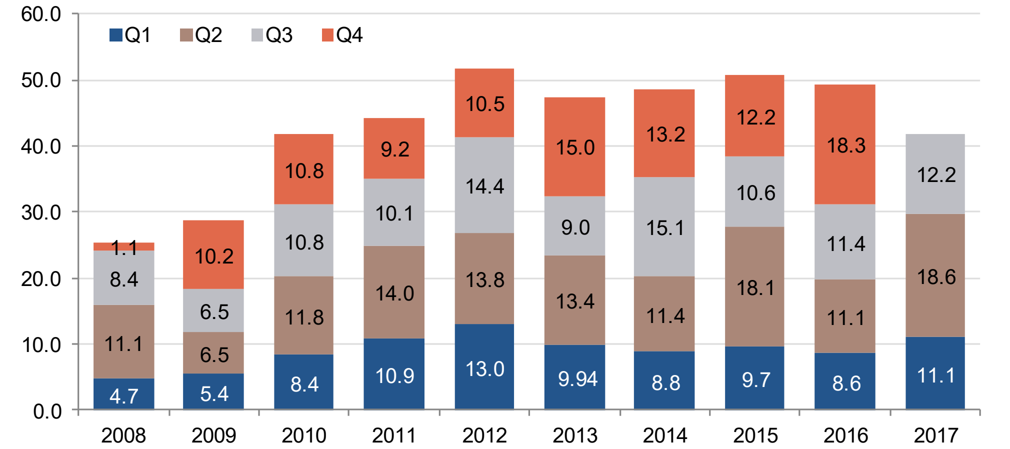
The USPP market showed no sign of a summer slowdown. We are on pace for record-setting volumes and are currently more than 60% ahead of volumes at this time last year. The total year-to-date deal flow is close to US$42bn.

Although volumes are up, the total number of deals is about the same, with average deal size at $285m.

Deals continue to be well oversubscribed, and a number of deals have been upsized.

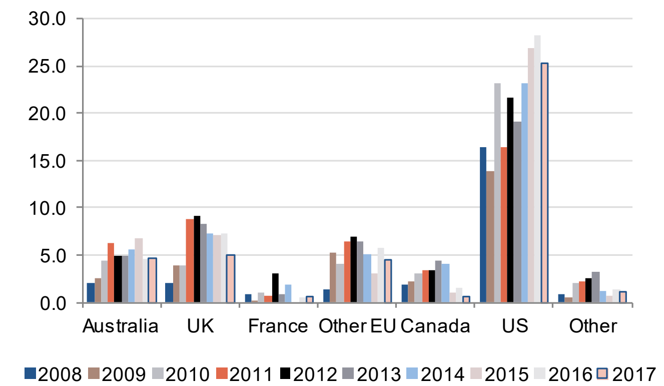
We expect 2H volumes to remain strong with a robust pipeline of project and infrastructure refinancings.

Historical volumes of US private placement market (USDbn)

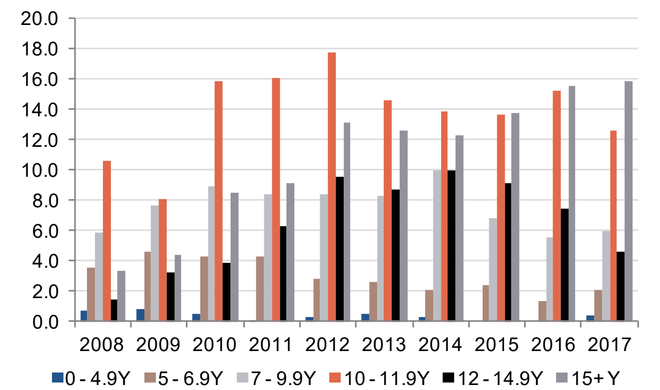


Source: SG Cross Asset Research/Global Asset Allocation

Overview of USPP volumes by country (USDbn)



Annual USPP volumes by maturity (USDbn)



Source: SG Cross Asset Research/Global Asset Allocation

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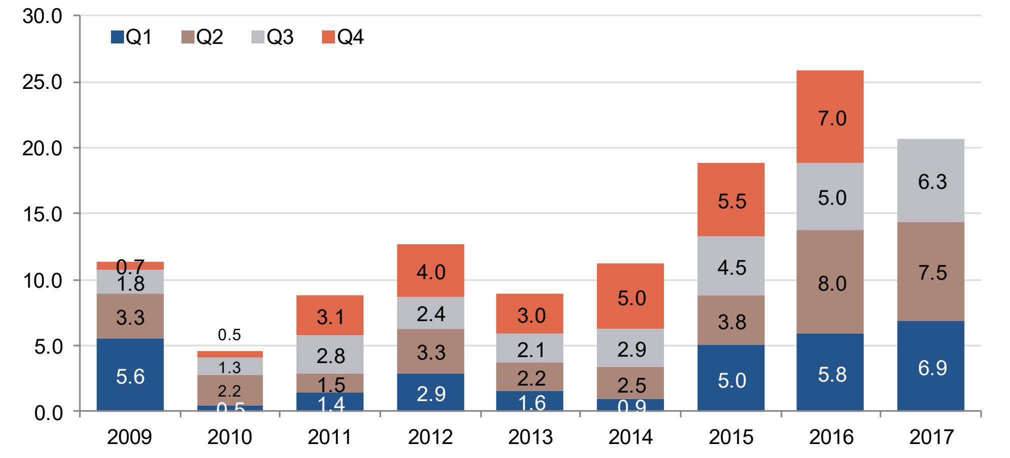
EUR: SSD and euro PP markets

Since 2012, the continuous acquisition of new regions and issuers as well as a popularity surge has caused the SSD market to expand significantly. So far, 2017 has been very strong: €20.6bn was raised in the first half, which corresponds to almost 55% of the entire 2016 supply.

As a result, investors are more selective in their credit approval processes, but transactions are still well subscribed. We saw a decrease in pace of new issues in 3Q given the summer break. Nevertheless, we predict another strong 4Q for 2017 in terms of volume and deal count, in line with the seasonal SSD market pattern.

Quarterly volumes in SSD market (EURbn)



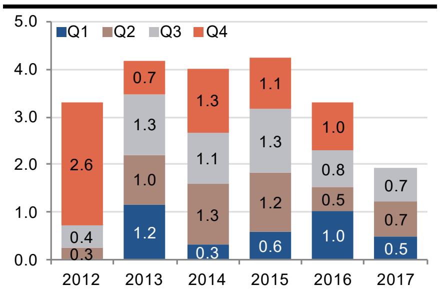
Source: SG Cross Asset Research/Global Asset Allocation

Since the beginning of 2017, €1.8bn has been issued on the French euro PP market (versus €2.0bn in 2016 over same period) with an increased average size of €57.7bn (excluding taps) compared to last year's €45.6bn (excluding taps).

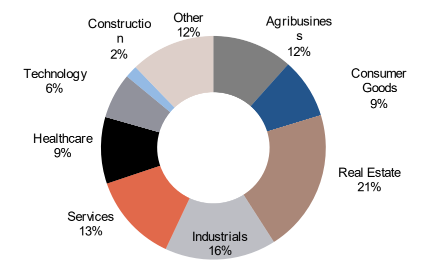
1Q17 saw weak volume growth despite the number of transactions being in line with the previous years' levels. Since 2Q, post the French elections, the market dynamics have significantly improved, with several sizeable transactions.

The momentum remains good, and investors' liquidity is high. We expect new issuers to come to the French Euro PP market to seize good opportunities.

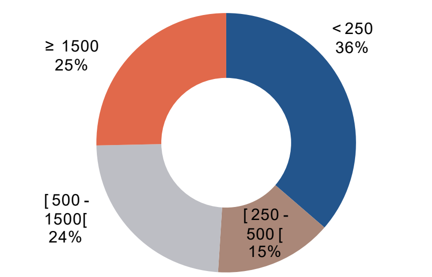
Quarterly volumes French euro PP (€bn)



Issuers by sector (%)



Issuers by revenue bucket (%, €m)



Source: SG Cross Asset Research/Global Asset Allocation, Projectware

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Seven loan asset classes in brief

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EUROPEAN COMMERCIAL REAL ESTATE

■ The real estate (RE) market has been very sensitive to the outstanding geopolitical context in general with differentiated impacts on the biggest European markets, particularly the UK, France and Germany. With the French elections well over, investment and lending activities in French RE have picked up significantly over the past few months. Germany, which is becoming the biggest market in Europe in terms of investment volumes and now in direct competition with the UK, is strengthening its role as a safe haven and is seeing massive investment inflows into commercial RE from international and national investors.

■ In Italy and Spain, RE investments are set to hit a new record in 2017 following the record year of 2016, and lending activities are very strong across all asset classes in these countries.

■ As a result, in continental Europe, prime asset prices have increased sharply, with prime yields close to 3% in large cities for office and retail assets. In this context, we saw two types of client behaviour. One type of client did not adjust return requirements and therefore had to move on to riskier transactions (secondary assets, secondary locations, more value-add strategies, etc.) in order to get the expected reward. The second type did adjust return targets and is ready to pay expensive prices to acquire prime assets; this is especially the case for some very large institutional investors (e.g. sovereign funds).

■ The demand for financing has been high and the considerable liquidity has kept strong downward pressure on the margins for the most prime transactions (we report margin levels in prime RE in the most important European cities, mainly France and Germany, for maximum leverage up to 60% significantly below 100bp). However, margins for secondary and riskier financings have remained fairly high in spite of some margin compression, with a more limited number of banks active in this segment and replaced by alternative/opportunistic lenders.

■ More question marks have been raised about UK Brexit developments, which have affected the RE market. SG RE research publishes regular updates on the matter, and the latest available report "What dies Brexit means (IV) – Resist the siren's call and fear complacency" is here. The findings show that the slump could be quite severe, particularly in London, where office rents could decline by 20% year-on-year in 4Q17 based on the sharp decline in immigration flow. This could result in office prices falling by 30% but with the hardest hit being the residential sector. However, the evidence from the UK points to a very resilient occupational market and renewed interest from foreign investors fuelled by the impact of the currency depreciation and, more recently, by the outcome of the general election, which has raised some doubt on the likelihood of a hard Brexit vs a softer version. In spite of the uncertainty in the UK, debt liquidity has remained very strong, with a focus on Central London.

General characteristics of loans

Loans	Main risks	Market size (yearly production)	Main countries of risk	Main currencies	Years to maturity	Drawdown periods*	Commitment fees**	Amortising***
European Commercial Real Estate	Rental residual value	c.€1000bn	UK, Germany, France	GBP/EUR	5 to 10 years	No	n.a.	Yes but limited

* Under a loan or credit agreement, the drawdown period is the period during which funds may be drawn. **A commitment fee is a fee charged by a lender to a borrower for an unused credit line or undisbursed loan. *** Amortisation is the paying off of debt in regular instalments over a period of time. Source: SG Cross Asset Research/ Global Asset Allocation.

Risk/returns for investors of the various loan asset classes

Loans	Equivalent rating	Coupon structure	Margins (Euribor/ Libor +)	Prepayment risk	Prepayment mitigants	Spread of loans versus comparable bonds (liquidity premium)
European Commercial Real Estate (senior debt)	BBB- to A	Floating or fixed	60 – 225bp	High	Yes	150bp

For CRE, the potential rating is an expert view regarding senior debt at current market standards (maximum 60-65% loan to value, prime assets in prime locations). Source: SG Cross Asset Research/Global Asset Allocation

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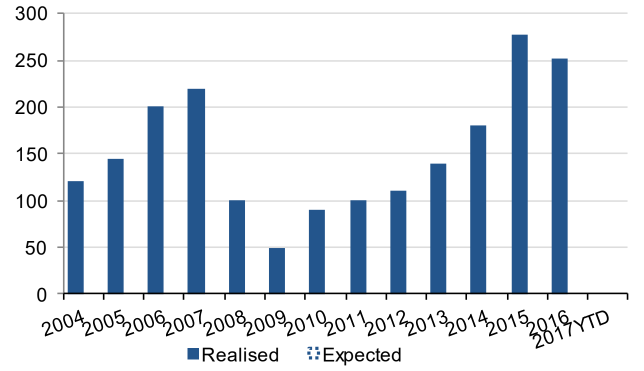
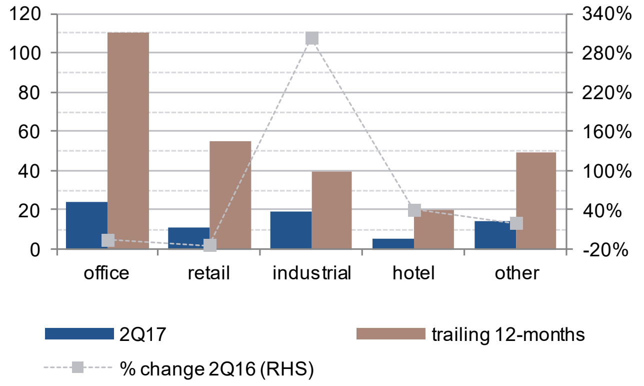
Volumes – trends and breakdown

European CRE investment volumes (€bn)



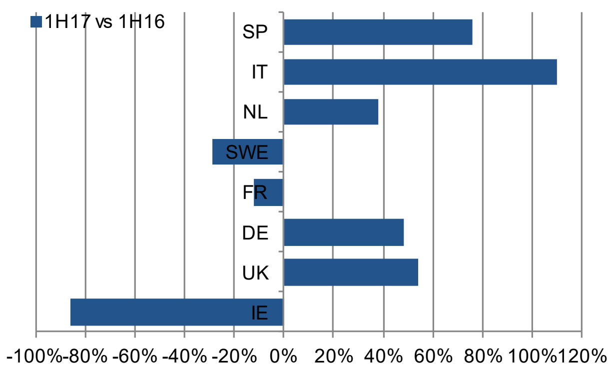
Source: SG Cross Asset Research/Global Asset Allocation, CBRE activity Report

Investment activity by property type (€bn & yoy change – RHS)

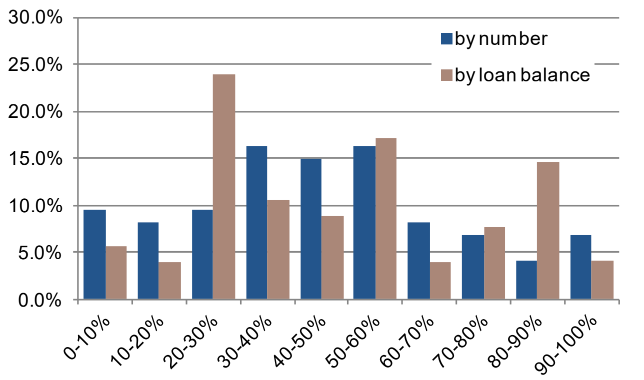


... strong Q416 manage to catch up in particular in industrial and hotels

2Q17 CRE 12-month investment activity, yoy change (%)

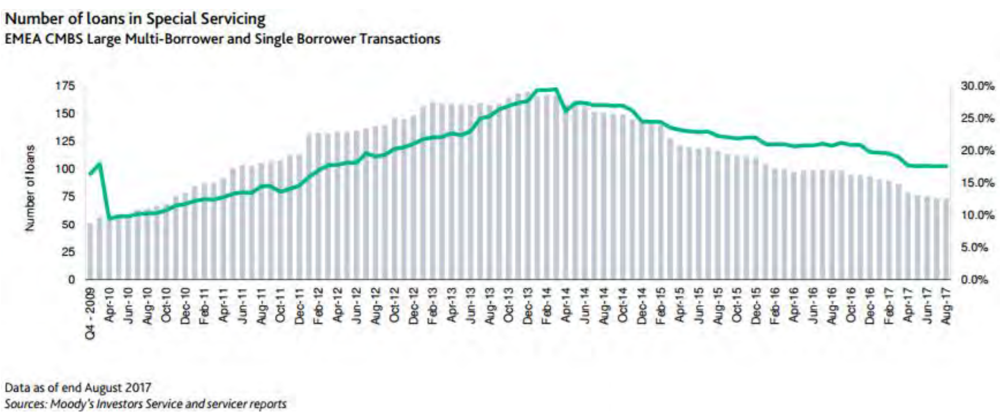


Loss severity in CMBS underlying loans in special servicing (August 2017)



Source: SG Cross Asset Research/Global Asset Allocation, CBRE, Moody's

Loan in special servicing – EMEA CMBS large multi-borrower & single borrower transactions



Source: SG Cross Asset Research/Global Asset Allocation, Moody's

CRE loans: Liquidity premium table

	Spread	Duration	Av. Default Rate Estimate	Recovery Rate	Adjusted Spread
European CRE Loans	2.14%	7.00	1.08%	66%	1.77%
Commercial Mortgage Covered Bonds	-0.16%	6.6	0.054% (*)	45%	-0.17%
				Liquidity Premium	1.94%

Source: SG Cross Asset Research/Global Asset Allocation, Moody's, Bloomberg (*) Moody's Idealised Cumulative Default Loss

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TRANSPORTATION PROJECT FINANCING

- Another tranche of the French national optic fibre (OF) development plan was signed on 4 August. The project covers the Grand-Est region, which comprises Alsace, Champagne Ardenne and Lorraine. The project amounts to €1.3bn over five years, of which €900m is privately funded, 15% is from subsidies and the rest is self-financed from revenues from the subscriptions as the network starts to operate. The concession is for 35 years and funding ranges from 26 to 30 years.

- The debt amounts to €620m and was subscribed to by a group of nine lenders, including non-banks, such as SCOR, which also participated in similar projects in the rest of the country. Margins are understood to be between 225bp and 325bp. Another OF project in the Drome-Ardeche region was signed at the end of July for €100m of funding and comprised only banks. Within the next four months, two projects in southwest France, Gironde and Herault, should be mandated. Debt amounts to c.€200m each. All projects covering the whole country should be signed before the end of 2018.

- When the Grand-Est project was attributed, French telecom company SFR announced that it would build a second competitive network as an alternative to the official one. Despite the many headlines, no details have been disclosed so far. The market remains convinced that whatever the SFR project, it is highly unlikely that it will cover all of France, particularly the less populated rural areas.

- The project for a high-speed train between CDG airport and the centre of Paris (Gare de Paris Est) got a boost when Paris was chosen to host the 2024 Olympic games. The cost of the project is estimated at €1.6bn. Part of the funds will come from a consortium comprised of Aeroport de Paris (ADP), Caisse des depots et consignations (CDC) and SNCF Reseau. Based on information at our disposal, the risk linked to passenger traffic will be covered.

General loan characteristics

Loans	Main risks	Market size (yearly production)	Main currencies	Years to maturity	Drawdown periods *	Commitment fee*	Amortising**
Project Finance Transport Infrastructure	Construction Operational risk Volume risk Political risk	c.€70bn per year	EUR / USD	3-25 years	3-6 years	Yes	Yes

*A commitment fee is a fee charged by a lender to a borrower for an unused credit line or undisbursed loan. ** Amortisation is the paying off of debt in regular instalments over a period of time.

Risk/return for investors

Loans	Rating range	Margins (Euribor / Libor +)	Coupon structure	Prepayment risk	Prepayment mitigants
Project Finance Transport Infrastructure	A to BB	185-200bps	Floating	medium	No

Source: SG Cross Asset Research/Global Asset Allocation

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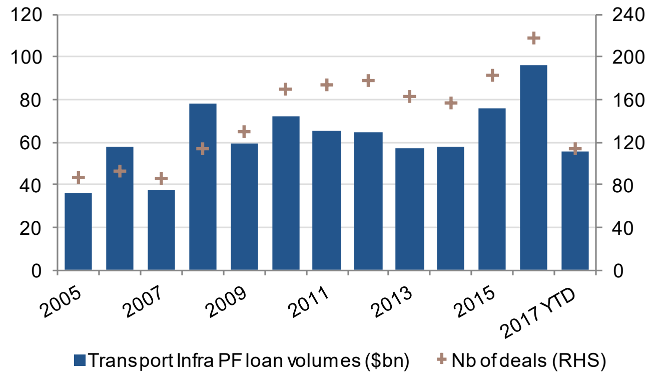
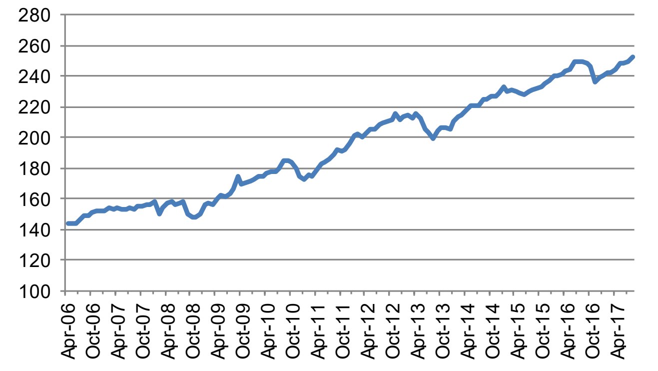
Volumes – trends and breakdown

Transportation PF deals ($bn and by deal number)

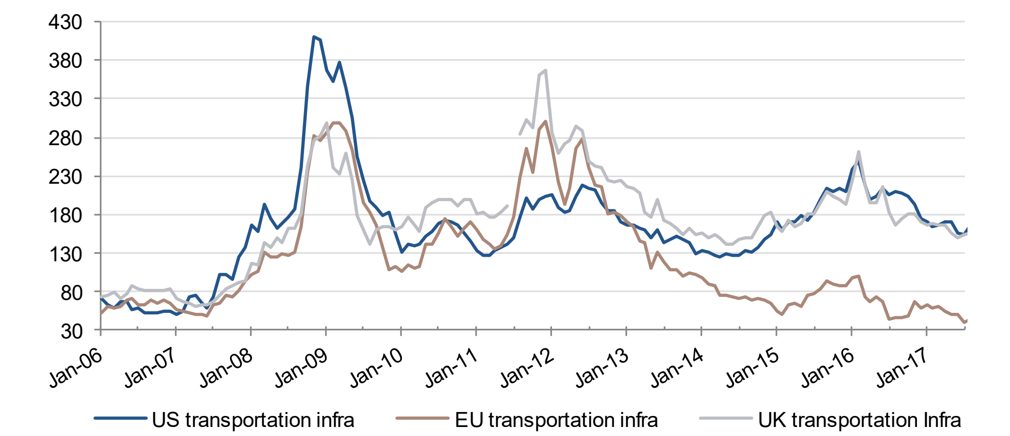


S&P Municipal Bond Transportation index (base 100, Dec 1998)



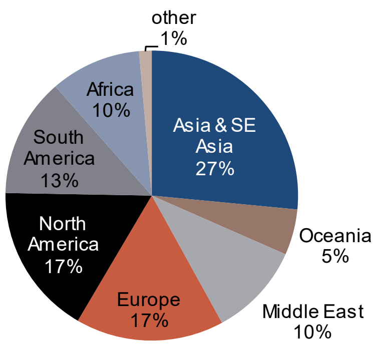
Source: SG Cross Asset Research/Global Asset Allocation, Projectware, Bloomberg

Markit transportation indices: ASW margin – USD, EUR, GBP

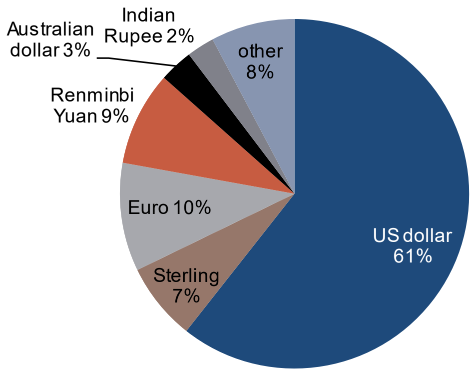


Source: SG Cross Asset Research/Global Asset Allocation, Markit

Transportation PF volumes by region (2015-2017 ytd)



Transportation PF volumes by currency (2015-2017 ytd)



Source: SG Cross Asset Research/Global Asset Allocation, projectware

Liquidity premium table

	Spread	Average Duration	Cumulative Default Rate	Recovery Rate	Adjusted Spread
Transport Project Finance Loans	2.95 %	6	6.5%	81%	2.73%
Transport Muni Bonds*	1.05%	6	0.21%	56%	1.04%
				Liquidity Premium	1.69%

Source: SG Cross Asset Research/Global Asset Allocation

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ENERGY PROJECT FINANCING

- Competition between lenders continues to be strong in most of the sectors comprising energy project finance. This is partly explained by the better funding levels for banks in general, which has improved their margins, and also applies to project finance. However, the cost of funding here looks more like a floor and could bottom out in the future, potentially with an impact on new lending levels.
- Despite the improvement in bank lending capacity, most deals in the sector continue to be club deals, and we see very few being underwritten and syndicated. There is room for risk sharing and co-lending.
- Renewable energy projects continue to be the most dynamic market, particularly in Europe, where the pipeline for offshore wind farms projects is well furnished. We see the pace of activity remaining as high at least until the end of 2018. In Europe, the most active region for offshore wind is the North Sea. The first French projects are expected to reach closing next year.
- Outside Europe, Asia is another very large market, with China overwhelming all the others, but lending there is very much concentrated within the domestic banks. The second most promising market for offshore wind farms in Asia is Taiwan. The island has a number of new projects, which are attracting a lot of international developers and lenders as Taiwan has decided to launch a vast offshore wind investment plan. Moreover, US company Tesla recently announced an ambitious project to equip an onshore wind project with a battery energy storage project in Australia.
- Closer to Europe, the Middle East is also particularly active in solar projects. So far, the geopolitical crisis between Qatar and some other GCC countries has had little impact on the market for renewable energy. Abu Dhabi and Dubai are at the forefront in renewable energy projects. Saudi Arabia has revealed its ambitious vision 2030 strategic plan and has just launched the first tranche of the Sakaka project. Qatar's renewable plans are less advanced.
- The US market is on hold, awaiting clarifications on tax incentives applicable to renewable energy. There is a new type of project consisting of two gas-based generation facilities associated with the construction of two battery energy storage solutions located in California and Arizona.
- No new large-scale O&G project was financed over the last quarter. However, there has been a continuous flow of assets from the majors (reshuffling their portfolios) to private equity.

General loan characteristics

Loans	Main risks	Market size (yearly production)	Main currencies	Years to maturity	Drawdown periods *	Commitment fee**	Amortising***
Project finance energy	Construction risk Reserve assessment	$100-150bn per year	USD/EUR	Power: 20yrs+ Oil & Gas upstream: 5-7yrs Oil & gas Mid- & downstream: 12-18yrs	2-4 yrs	Yes	Yes

Source: SG Cross Asset Research/Global Asset Allocation

*Under a loan or credit agreement, the drawdown period is the period during which funds may be drawn. **A commitment fee is a fee charged by a lender to a borrower for an unused credit line or undisbursed loan. *** Amortisation is the paying off of debt in regular instalments over a period of time.

Risk/return for investors

Loans	Rating range	Margins (Euribor / Libor +)	Coupon structure	Prepayment risk	Prepayment mitigants
Project finance energy	A to BB	Oil & Gas Upstream: 200-350bp Offshore Wind: 250- 350bp	Floating	medium	No

Source: SG Cross Asset Research/Global Asset Allocation

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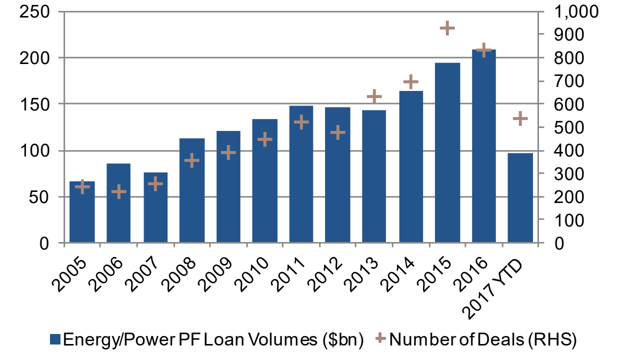
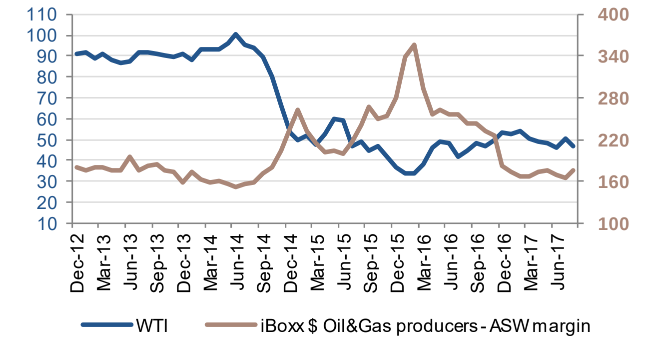
Volumes – trends and breakdown

Energy project finance deals ($bn and number of deals)

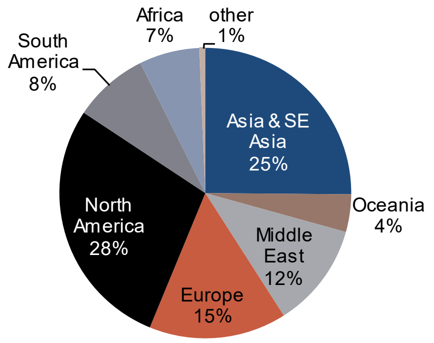


Oil & Gas corp. spreads and WTI

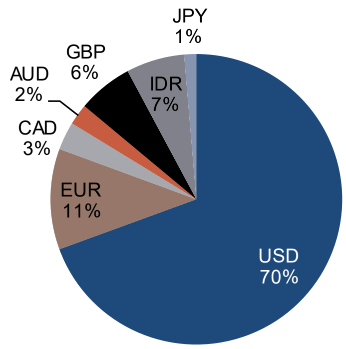


Source: SG Cross Asset Research/Global Asset Allocation, Bloomberg

Energy PF volumes by region (2015-2017 ytd)...



... and by currency



Source: SG Cross Asset Research/Global Asset Allocation, Projectware

Liquidity premium table

	Spread	Cumulative Default Rate	Recovery Rate	Duration	Adjusted Spread
Power Project Finance Loans	2.52%	6.50%	90%	10	2.46%
Utilities Bonds (iBoxx $ Utilities 7-10 YR)	1.25%	6.35%	33%	7	0.65%
				Liquidity Premium	1.81%

Source: SG Cross Asset Research/Global Asset Allocation, Moody's, Dealogic, Bloomberg

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SHIPPING

- Moody's changed the outlook for the global sector to stable from negative in June 2017. Drivers include EBITDA growth between flat and -3%, excluding new M&A transactions, and a small imbalance between supply and demand. This is also the case in the dry bulk and containers subsectors. In the tankers sub-sector, the outlook remains negative due to high oversupply.
- The dry bulk index increased as valuations have improved. In the containership sector, the index shows deliveries improved compared with 2016.
- There are still a number of companies in a critical situation. Germany's Rickmers filed for insolvency in June, and a number of firms have filed for Chapter 11 bankruptcy protection, including Singapore's Ezra Holdings Ltd and US-based firms Tidewater, GulfMark Offshore and Montco Offshore. Dutch company Vron is set to announce some restructuring of its debt following the ongoing renegotiation with a number of banks.
- Specialised banks on the lending side, particularly in Germany, are also having major difficulties. There is an estimated $150bn of shipping NPLs on European bank balance sheets. Loan portfolios of banks have slimmed as a result of vessel sales, write offs, loan sales and normal reductions via repayments. A majority of Western banks are still in the process of reducing their lending as a result of capital constraints. Banks in the Far East are showing a slowdown with ship finance down. Financing is taken over by leasing and export finance whose capital ratios are stronger and which have room to expand. US banks which are in a more robust way after several difficult years are seen as more active in ship finance
- Some market experts expect global ship finance to bottom out from here. The departure of the previous big lenders, RBS and Commerzbank and the reduction of HSH Nordbank, plus a lot of retrenchment by others, is close to being completed. On the other hand, new banks with a bigger appetite for shipping are growing their market share. See next charts below.
- JP Morgan Asset Management announced it had closed its second maritime fund at $480m on 22 June 2017. The limited partners of Global Maritime Investment Fund II include pension plans, insurance companies, endowments and healthcare organizations. The pool will invest in vessels in distressed shipping sectors. So far, the fund has deployed $312m of its capital via the acquisition of 14 assets.

General loan characteristics

Loans	Main risks	Market size (yearly production)	Main currencies	Years to maturity	Drawdown periods *	Commitment fee**	Amortising***
Shipping	Oversupply Cyclicality	$40-120bn per year	USD	c.10 yrs	Construction period: 2-3 yrs	40% of the margin or net margin	Yes

Source: SG Cross Asset Research/Global Asset Allocation
*Under a loan or credit agreement, the drawdown period is the period during which funds may be drawn. **A commitment fee is a fee charged by a lender to a borrower for an unused credit line or undisbursed loan. *** Amortisation is the paying off of debt in regular instalments over a period of time.

Risk/return for investors

Loans	Rating range	Margins (Euribor / Libor +)	Coupon structure	Prepayment risk	Prepayment mitigants
Shipping	Often sub-IG	236bp	Floating	Yes	No

Source: SG Cross Asset Research/Global Asset Allocation

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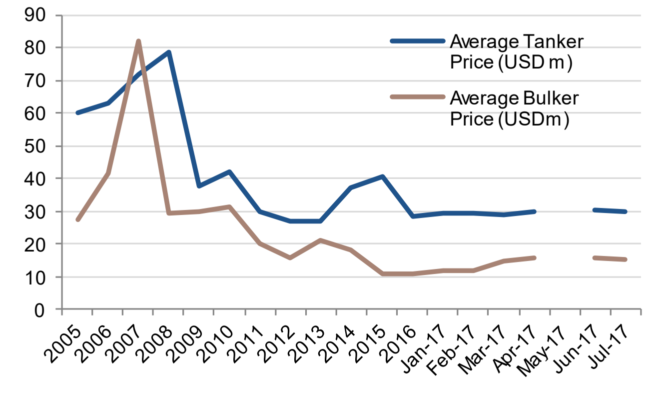
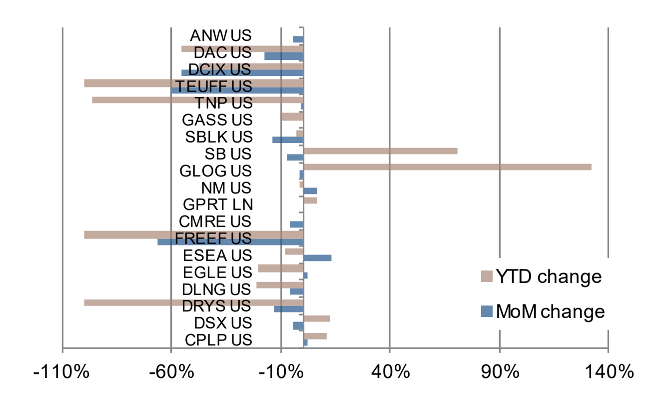
Loan volumes & pricing – trends

Vessel prices ($m)

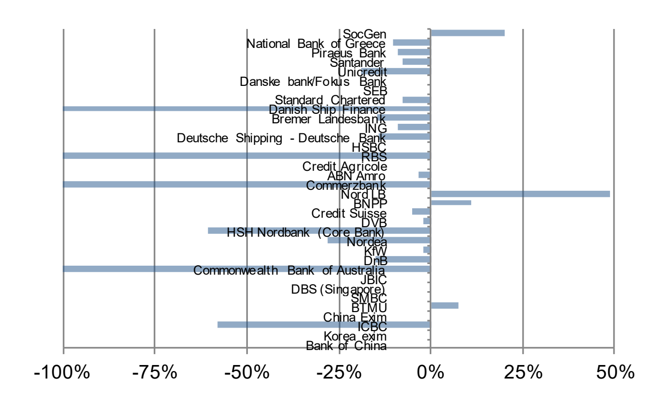


Shipping companies equity change,

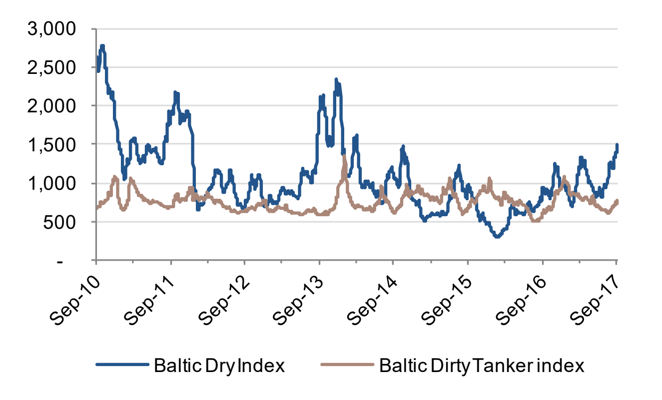


Source: SG Cross Asset Research/Global Asset Allocation, Athenian shipbrokers SA, Bloomberg

Bank lending. % change YOY 2016 vs 2015



Freight indices



Source: SG Cross Asset Research/Global Asset Allocation, Bloomberg, Petrofin research

Liquidity premium

Sep-17	Spread (bp)	Default rate (%)	Recovery rate	Average duration (years)	Adjusted spread (bp)
Shipping loans	213	31%	50%	7	-6
Shipping covered bonds	37	0.30%	45%	2	-6
Shipping liquidity premium					**1bp**

Source: SG Cross Asset Research/Global Asset Allocation

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AIRCRAFT

■ Following an extraordinary 2016, companies should see very solid profits in 2017, particularly compared with the last ten years, when the market bottomed out. Structural changes in airline behaviour, fleet flexibility, fares and route adjustments have helped lift profits and load factors to historically high levels. With airline managers increasingly confident, the positive momentum in the industry's profit cycle should rise further in 2H17 and possibly continue into next year.

■ According to IATA, the slowdown in aggregate industry-wide profits continued into 2Q17, albeit to a lesser extent than in 1Q. The margin compression is the result of higher costs (oil prices in large part) and weaker yields.

■ IATA stated that 1Q17 airline EBIT margins had almost halved to 4.5% of revenues compared with 1Q16. In 2Q17, the latest data available based on almost 60 airline companies, the margin was a robust 9.5% of revenues, slightly lower than the 10.2% in 2Q16 for the same sample of airlines. The figure remains high on a historical basis. The aggregate figure however misses the discrepancies across the three main regions: North American carriers (16.3% in 2Q17), Europe (8.6%) and Asia Pacific (4.3%, down from 7.3% a year ago).

■ There is no doubt that the high concentration of the "Big Four" in the US market was a very positive driver for the industry and created value. Today, they offer both profitable prime services to prime customers and are also able to compete with low-cost companies via a dedicated section of the cabin for low-cost customers. This business mix makes it quite complex to understand an airplane's "attraction" and economic value. Today's Boeing 787, Boeing 737 Max, Airbus A310 and A350 are among the best-rated planes in this context.

■ SKY Aviation Leasing International Limited, a Dublin-based full-service aircraft leasing company, issued $780.8m of secured notes by S-JETS 2017-1 Limited (Bloomberg ticker: SJETS 2017-1). The underlying portfolio comprises 21 Airbus and Boeing on lease aircraft worth approximately $1bn with a weighted average (w.a.) age of 3.4 years and a w.a. remaining lease term of 7.5 years. The portfolio includes eight different aircraft models, and 18 of the 21 aircraft are narrow bodies. SKY will act as servicer for the aircraft portfolio. See price table below.

SJETS 2017-1 offered notes

	Size	Effective yield	Ratings (S&P/KBRA)	WAL/Expected maturity (years)	Initial LTV
Series A	$657.8m	4%	A/A	4.6/8	66.3%
Series B	$81m	5.75%	BBB/BBB	4.6/8	74.5%
Series C	$42m	7.125%	BB/BB	3.4/7.7	78.7%

Source: SG Cross Asset Research/Global Asset Allocation, Bloomberg

General loan characteristics of loans (non-export credit)

Loans	Main risks	Market size (yearly production)	Main currencies	Years to maturity	Drawdown periods *	Commitment fee**	Amortising***
Senior tranche (c.70-75% of aircraft value)	Airline risk Airline value	$28bn	USD, EUR, JPY	10 to 12 yrs	One upon each aircraft delivery	Yes	Yes

Source: SG Cross Asset Research/Global Asset Allocation
*Under a loan or credit agreement, the drawdown period is the period during which funds may be drawn. **A commitment fee is a fee charged by a lender to a borrower for an unused credit line or undisbursed loan. *** Amortisation is the paying off of debt in regular instalments over a period of time.

Risk/return for investors

Loans	Rating range	Margins (Euribor / Libor +)	Coupon structure	Prepayment risk	Prepayment mitigants
Senior tranche (c.70-75% of aircraft value)	Generally IG Airline rating notched up by the collateral	100-200bp	Floating	Limited	Yes

Source: SG Cross Asset Research/Global Asset Allocation

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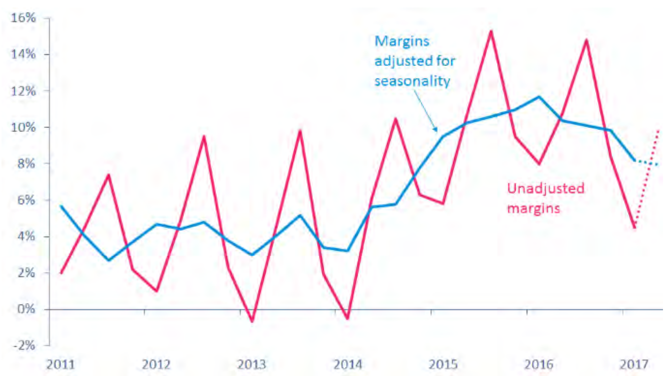
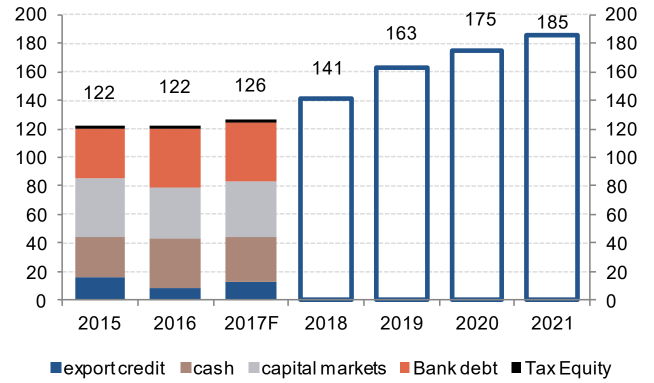
Loan volumes & pricing – trends

Airline industry operating margin (% revenues)



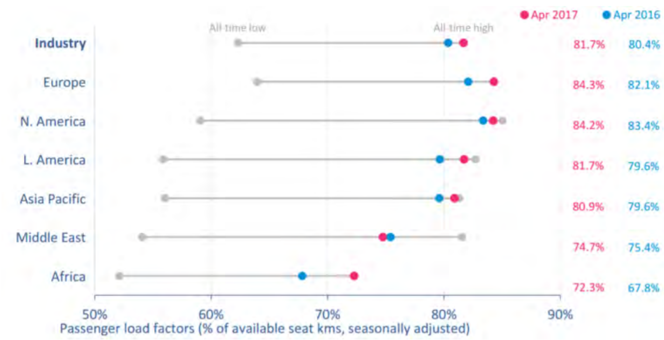
Sources: IATA Economics, The airline analyst, Thomson Reuters Datastream, DIIO

Industry funding expected to rise



Source: Boeing,

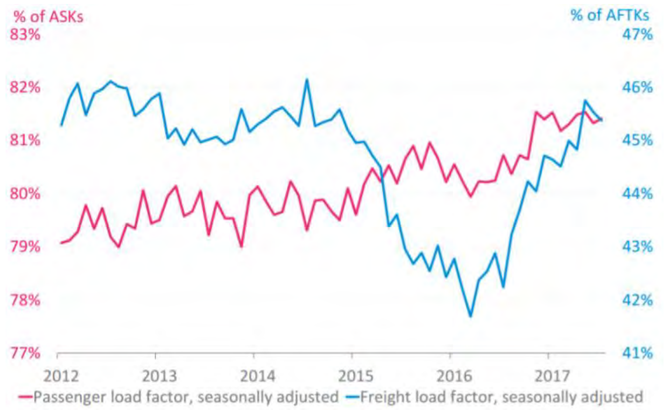
Load factors (mostly) at all-time highs



Source: IATA statistics

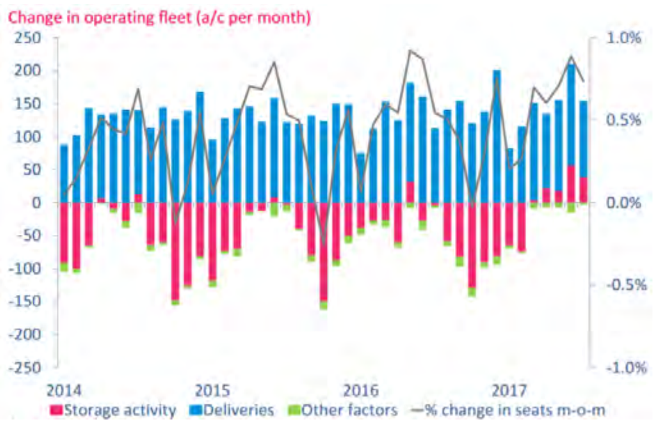
2017 profits revised downwards but still high on historical basis, but the situation differs strongly by region

Load factors: passengers – stable/close to all-time high; freight – down on a SA basis yet high on a two-year basis



Sources: IATA Airlines Financial Monitor Aug.17, Ascend

Airline fleet development – fifth month in a row of positive contribution from storage activity



Liquidity premium table

	Spread	Duration	Cumulative Default Rate	Recovery Rate	Adjusted Spread
Aircraft Loans	2.05%	9	15.4%	67%	1.46%
Aircraft Covered Bond	0.11%	1	0.15%	45%	0.05%
				Liquidity Premium	1.40%

Source: SG Cross Asset Research/Global Asset Allocation

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EUROPEAN LEVERAGED LOANS

- Year-to-date European loan issuance soared to €71.2bn at the end of August, nearly double the €40bn tracked over the same period last year and a post-crisis ytd record. About €32bn of this volume was supported by refinancing activity. Indeed, the first half of the year was tempered by a lack of new money deals, with the majority of issuance being for opportunistic transactions (largely refinancings and repricings), which pushed pricing to record lows and led to a loosening of documentation terms. However, a flow of new money transactions over the summer brought a long-awaited boost in supply, which has helped partially rebalance the portion of deal proceeds towards M&A-related financings.

- The primary loan market wasted little time restarting as soon as summer was over, with an estimated pipeline of c.€8bn as of 1 September and several bank meetings scheduled for the first weeks of the month. Among them was the long-awaited financing needed to back the takeover of Stada by the Bain-Cinven consortium, which is one of the largest European-only TLBs issued this year.

- Following the recent supply surge in the primary market, pricing has started to widen away from the lows seen in 1Q17. The new buyout supply has helped to ease pricing pressure in the European market, and investors are becoming increasingly selective and stepping away from deals considered too aggressive in terms of pricing or leverage. For instance, THOM Europe had to widen its pricing on offer (from guidance of 375-400bp to a 450bp margin and OID of 99 vs 99.5 at launch) and reduce the amount of its dividend recap, and Holland & Barrett had to sweeten the pricing on its £825m (partly €-denominated) TLB, increase the size of the €-denominated tranche, and agree to some documentation changes. However, for some very strong credits, margin levels on some deals remain quite tight (e.g. Memora at 350bp + 0% floor and Synlab at 300bp +0% floor). For typically B/B2 rated LBO transactions, average EUR pricing currently stands at around 375-400bp (0% floor). On the GBP side, current average pricing stands at around 450-475bp (0% floor), as illustrated by, among others, Stada (£-denominated portion of the TLB launched at 450-475bp (0% floor) at PAR) and IVC (add-on TLB priced at 450bp (0% floor) at 99.5 OID).

- On the cross-border side, some borrowers have continued to tap both the US and European markets to raise new financing, especially for large transactions. These include Avantor, which in early September issued a $2.4bn TLB and $599m €-equivalent TLB.

- Since 2H15, most European second liens have been directly pre-placed by sponsors to avoid market risk and obtain better terms and conditions (e.g. Safety Kleen's £100m and Faerch Plast's €100m 2Ls were both preplaced). However, in 2Q, the $1.245bn 2L from Misys was one of the few to be syndicated and is understood to have been strongly oversubscribed.

- The average senior/total leverage multiples for LBO loans stood in the 4.7x-5.02x range for the 3ME 31-Jul, rising from the FY2016 average of 4.4x-4.9x. Recent years have seen ever-more stretched first-lien multiples in Europe with levels roughly as high as they were in 2006-2007, as well as an increase in second-lien issuance and a greater ability for borrowers to raise incremental debt.

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General European loan characteristics

Loans	Market size (yearly production)	Main currencies	Years to maturity	Security package	Commitment fee*	Amortising**
Leveraged loans	FY16: €71bn YTD Aug-17: c.€71.2bn	EUR / GBP / USD	Term Loan A: 6 years	Senior secured	None	Yes, c.4-year average life
			Term Loan B: 7 years		None	No
			Capex / Acquisition: 6 years		35% of the margin	Both (deal dependent)
			RCF: 6 years		35% of the margin	No
			Second Lien: 8 years	Subordinated secured	None	No

*A commitment fee is a fee charged by a lender to a borrower for an unused credit line or undisbursed loan. ** Amortisation is the paying off of debt in regular instalments over a period of time.

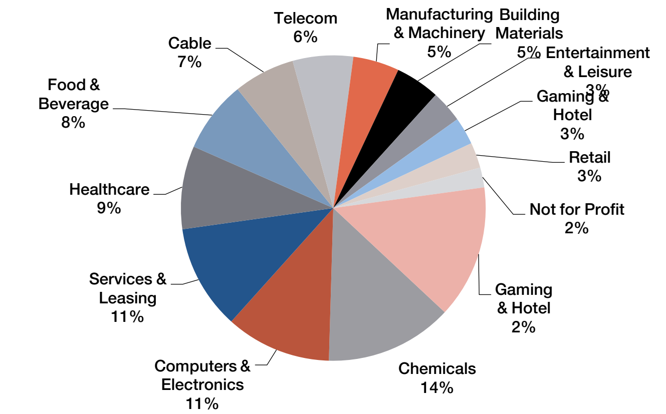
Returns for investors

Loans	Rating range	Margins (+ Euribor)	Coupon structure	Original Issue Discount (OID) / Participation Fee	Prepayment Protection
Leveraged Loans	Single B area	Term Loan A: 300-325bps	Floating	Depending on commitment size	No
		Term Loan B: 375-400bps	Floating	99.5 - PAR	No – soft call in some cases
		Undrawn Facilities: 300-325bps	Floating	Depending on commitment size	No
		Second Lien: 750-775bps + 1% floor	Floating	98 – 98.50	102, 101

Source: SG Cross Asset Research/Global Asset Allocation;

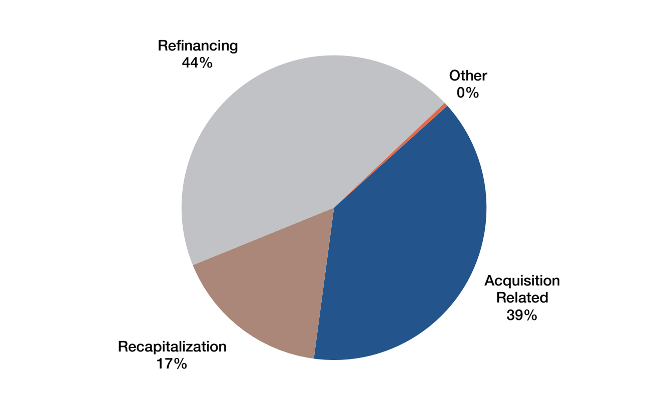
Loan volumes – primary

Leveraged loan volume by sector ytd as of August 2017



Source: S&P LCD

Leveraged loan volume by purpose ytd as of August 2017



Source: S&P LCD

▪ 2017 ytd issuance has been dominated mainly by Chemicals (14% of total issuance), followed by Computers & Electronics (11%), Services & Leasing (11%), Healthcare (9%) and Food & Beverage (8%).

▪ Opportunistic transactions (mainly refinancings and repricings) dominated the first half of 2017. However, since 2Q17, we have seen an increasing number of acquisition-related transactions coming to the market, which has helped rebalance the volume by purpose. M&A-related volume accounted for 39% of total issuance ytd as of August 2017 (vs 54% for the same period in the previous year).

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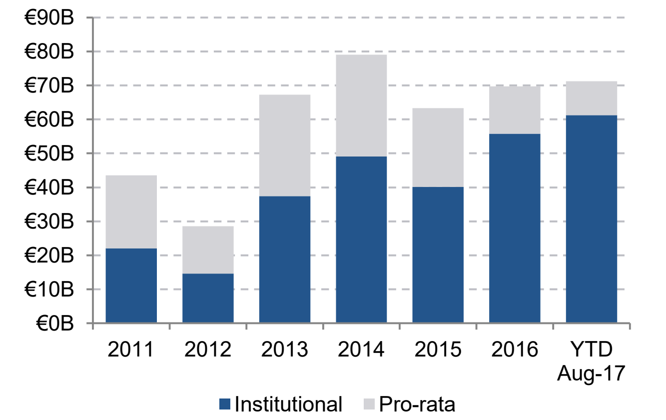
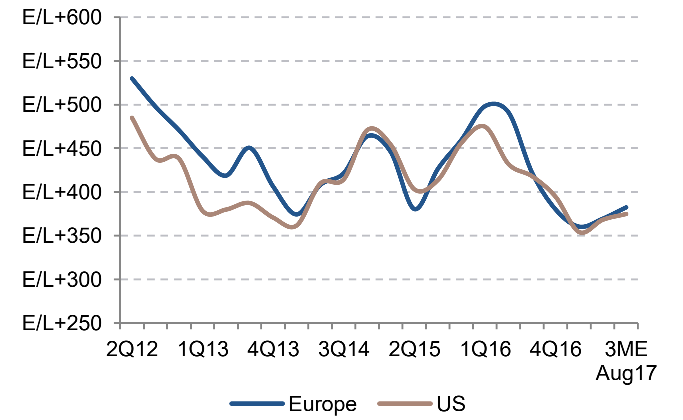
Volumes & pricing – evolution

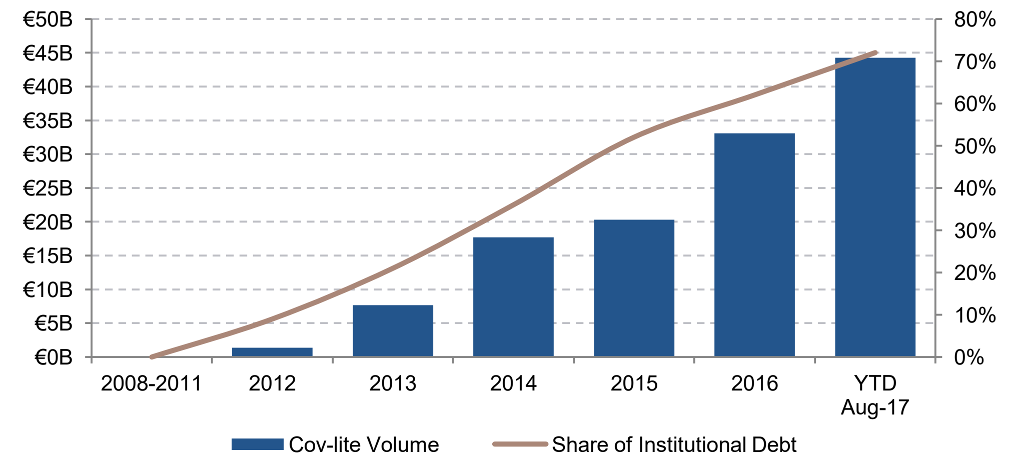
European leveraged loan new-issue volume



Weighted average new-issue institutional spreads



Leveraged loans cov-lite levels in volume



Source: SG Cross Asset research/Global asset Allocation, S&P LCD

- Institutional debt represented 86% of new leveraged loan issuance volumes ytd as of August 2017.
- Spreads on bullet facilities have increased following the wave of new money deals at the beginning of the summer and were averaging 385bp as of August 2017 (vs 360bp at the end of 1Q17) for euro-denominated facilities and 375bp (vs 355bp) for dollar-denominated tranches.
- As of August 2017, cov-lite new issuance ytd totalled €44.3bn (72% of total institutional volume, compared with 62% in FY16). Looking ahead, the European market should continue to see a good flow of new cov-lite deals, with increased pressure during deal structuring to consider cov-lite for smaller companies.

Liquidity premium table

	Spread	Default Rate*	Recovery Rate	Duration (years)	Adjusted Spread
EUR Leveraged Loans	419	5.57%	76%	5.52	284
EUR HY Bonds	405	8.34%	58%	3.68	309
				Liquidity Premium	- 25bp

Source: SG Cross Asset Research/Global Asset Allocation

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LOANS TO FRENCH SMES

- The 2Q17 ECB bank lending survey showed a slight easing in credit conditions (loan approval criteria) and a reduction in the rejection rate of loan applications, both for firms and households. The survey took place between 12 and 27 June 2017.

- Loan demand from firms showed further improvement. More broadly speaking, there was higher credit demand for investment (fixed investment and working capital for firms).

- The results fit well with our view that bank credit to the private sector will accelerate from the current rate (2.8% yoy in May when adjusted for sales and securitisation). We would not be surprised if credit growth were to print at around 4.0% yoy at the turn of the year. Part of the story depends on how the banking sector woes in certain countries (e.g. Italy) will be addressed in a definitive way. Recent newsflow has been encouraging. As a result, we may see some increase in demand for credit (and investment growth), probably more in 1H18 than in 2H17.

- A closer look indicates that the main reason for the overall improvement in bank credit conditions was competition among banks. The lower cost of funds and risk perceptions were also drivers. Margins (measured as the spread over a relevant market reference rate) were lower in 2Q. This is a trend that we expect to continue in the next surveys.

- Net demand for loans to enterprises grew further in the euro area in 2Q17, printing at +15, far above the historical average (-3). As expected, we saw further improvement in Italy, which had been the notable laggard within the euro area. There was net easing in credit conditions for firms in Italy (-10) in 2Q, which probably reflects the positive effects of the banking sector's recapitalisation beginning to materialise. We can now envisage a reversal in the fragmentation trend that has characterised the financial recovery in the euro area and consider that outstanding loans in peripheral countries, which have been declining since 2012, are now close to bottoming out.

- EIB published a working paper on credit guarantee schemes for SME lending on 2 June 2017. The link is here.

General loan characteristics

Loans	Main risks	Market size (yearly production)	Main countries of risk	Main currencies	Years to maturity	Drawdown periods*	Commitment fees**	Amortising***
French SME	Economic cycle coupled with loan documentation standards	c.€15bn per year	France	EUR	3-5 years	Up to 1 year for term loans	Yes	Not systematic

* Under a loan or credit agreement, the drawdown period is the period during which funds may be drawn. **A commitment fee is a fee charged by a lender to a borrower for an unused credit line or undisbursed loan. *** Amortisation is the paying off of debt in regular instalments over a period of time. Source: SG Cross Asset Research/Global Asset Allocation

Risk/return for investors of the various loan asset classes

Loans	Equivalent rating	Coupon structure	Margins * (Euribor/ Libor +)	Prepayment risk	Prepayment mitigants	Spread of loans versus comparable bonds (liquidity premium)
French SME	BB to B+ and investment grade for some larger companies	Floating	600bp	High	No	210bp

Source: SG Cross Asset Research/Global Asset Allocation * estimate using crowd funding data

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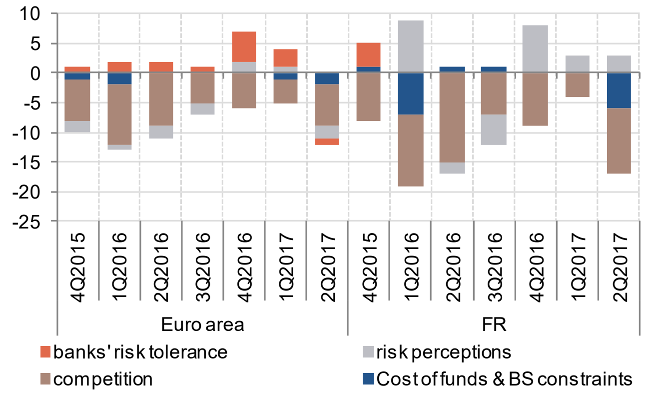
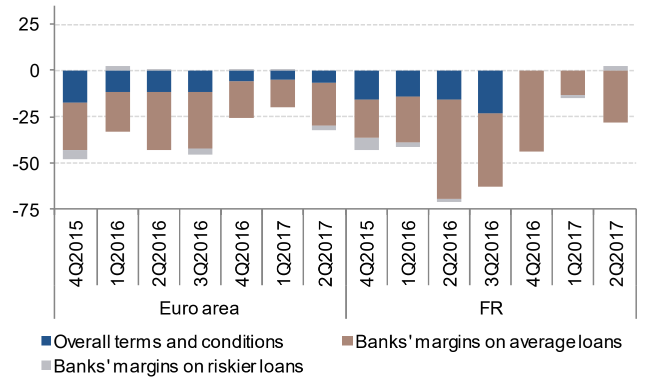
Loan volumes & pricing – trends

A. ECB lending survey – changes in credit standards (net %)



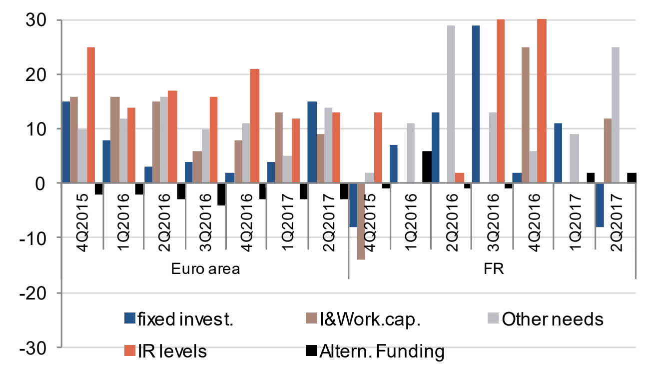
Source: SG Cross Asset Research/Global Asset Allocation, ECB lending survey

B. Change in terms & conditions for loans and credit lines*

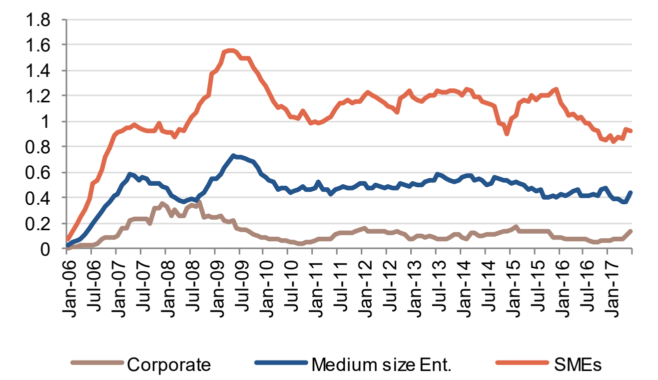


* Net percentage of banks reporting tightening terms & conditions
Indicator is positive if conditions improve / negative if conditions worsen

C. ECB lending survey – loan funding drivers (net %)

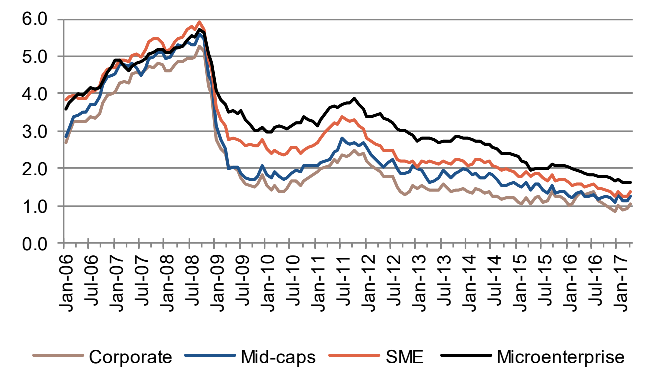


Impact of company failures in terms of drawn loans: by type of legal entities, 12-month cumulative (%)

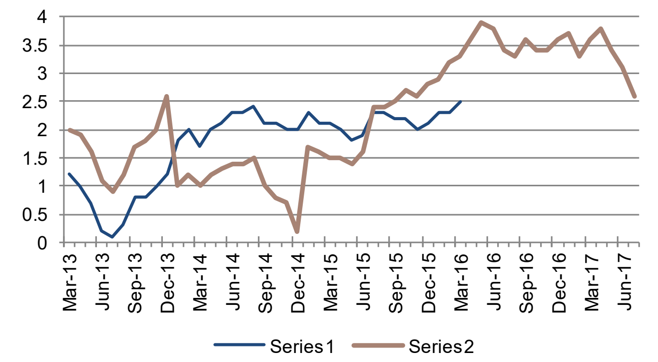


Source: SG Cross Asset Research/Global Asset Allocation, ECB survey, Banque de France

Annual IR by company size (%)



French SME drawn and committed loan volume AGR (%)



Source: SG Cross Asset Research/Global Asset Allocation, Banque de France webstat

French SME loan liquidity premium

	Spread (bps)	Default Rate*	Recovery Rate	Average Duration (years)	Adjusted Spread
French SME Loans	616	0.91%	76%	3.44	594
EUR HY Bonds	259	6.82%	58%	3.22	169
				Liquidity premium	425

Source: SG Cross Asset Research/Global Asset Allocation, Markit, Lendix.com,

*For loans, this is an average default rate, For bonds, this is a cumulative default rate

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Report completed on 25 Sep. 2017 20:08 CET

APPENDIX

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BUY: Indicates likely to outperform its iBoxx subsector by 5% or more
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SG Credit research evaluates its expectation of how the 5 year CDS is going to perform vis-à-vis its sector.
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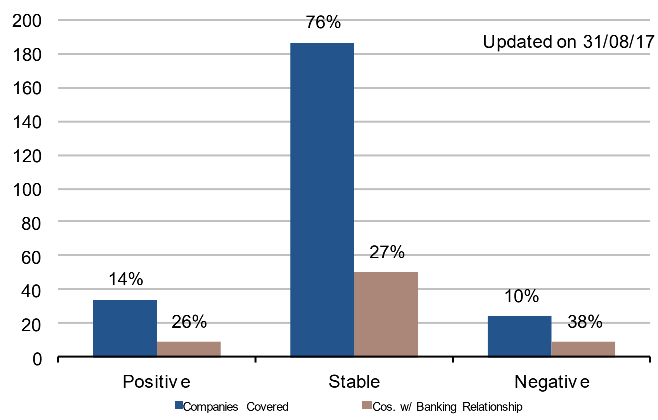
BUY: CDS spreads should underperform its iTraxx sector performance

SECTOR WEIGHTINGS:

OVERWEIGHT: Sector spread should outperform its iBoxx corporate index
NEUTRAL: Sector spread should perform in line with its iBoxx corporate index
UNDERWEIGHT: Sector spread should underperform its iBoxx corporate index

As of June 1, 2016, European Credit Research of the Banks & Financial Services sector will no longer maintain individual bond and/or CDS recommendations for companies in which it has credit opinions. Any previous individual bond and/or CDS recommendations for this sector are no longer in effect and should not be relied upon.

CREDIT OPINION AND DISPERSION RELATIONSHIP



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