

FX / XCCY Swap market overview



BNP PARIBAS
CORPORATE & INVESTMENT BANKING

| The bank for a changing world

Frankfurt, 9th of September 2014
Patrick Chauvet, BNPParibas Fixed Income

Introduction

- ❑ 3 products allow market players to trade “Forex swaps”, or in fact Cross currency basis
- FX swaps: one borrows currency A to lend currency B (or buys and sells EUR to sell and buy USD)
- FX outright: one buys or sells currency A against currency B on a forward date, but we know that it means that, between now and the forward date, he lends (sells and buys) A and borrows (buys and sells) B (for an A outright forward buy)
 - In fact, it is a combination of an FX spot and an FX swap
- Cross currency swaps, or basis, where one bets on the difference between the FX swap implied 3 months rate spread of the 2 currencies and the spread of the respective IBOR 3 month fixings, every 3 months, over the length of the swap. When one buys and sells EUR against USD in an FX swap, it is the same than paying the basis EURUSD
- ❑ What is interesting is that basis tells us something about the difference in liquidity price between 2 currencies, or the preference for liquidity expressed by the users of these products
- ❑ Normally we look at 3 month liquidity price as the spread of cash over OIS swap, and we can look at basis swaps against OIS. This allows to get rid of IBOR curves inefficiencies/specificities (see Annex)
- ❑ These three products suit different users with different needs and different behaviours, which influence the shape of the cross currency basis curve.



The FX Swap market

- The FX swap market is a liquidity/treasury management tool. The most significant users by order of importance, are:
 - Asset managers who want to invest in non domestic markets without taking the Forex spot risk
 - These are classical funds managing all kind of assets, equity, bonds, credit...
 - These are pension funds, life insurers
 - Their classical maturity is 1 month to 3 months in EUR/USD or GBP/USD and can go up to 6 months in USD/JPY
 - They are logical lenders of the domestic currency against the foreign currency they need to fund
 - Bank treasurers
 - Their work is to arbitrage between the pricing of their own funding/CD per currency and the FX swaps markets, according to their needs in order to lower their overall cost of liquidity across currencies
 - Their maximum maturity is one year
 - Central banks who manage their reserves liquidity profiles, or act on behalf of other central banks
 - Their classical maturity is 1 to 3 months and they go up to 1 year. They tend to be lenders of USD (pay the basis)
 - Corporate treasurers
 - Of course the big difference is between importers and exporters, and what matters is their respective treasury ladder per currency and the overall trade balance of each country
 - They both act like banks for their short term funding, and to manage natural cash-flows in the different currencies, i.e. their treasury position in the different currencies
 - The bulk of their flow is below 1 month, but they can go to 1 year and small amount go beyond up to 5 y



The FX Outright market

- This market is dominated by corporates and especially by exporters
- The big bulk of the activity is done below 1 year
- The amount done between 1 and 5 y is way more significant than in FX swaps, but it stays very far below what is traded in XCCY swaps on the same maturities
- European exporters, by buying EUR forward, lend EUR / borrow USD in between (they receive the basis, pushing it more negative). US ones do the opposite
- FX spot trend influences corporates' behaviour, a strong one can create moves in the basis, as well as important moves in rates



The XCCY swap market

- This market is dominated by debt issuers on the 2y and above maturities
 - Supra-nationals and Agencies (SSA)
 - Large Corporates for issuance and merger and acquisition funding
 - Banks (ALM-Treasury, IRS desks)
 - HF

- SSA
 - Supras / Agencies are natural multi-currency issuers. They really maintain a diversification. Depending on their location (Europe, US, Asia) they have a different bias: Europeans are the biggest players by far for now, and swap back their USD issuance into EUR (pay the basis), Americans (smaller) swap back EUR into USD, while Asians mainly issue in USD but start to use EUR too

- Corporates
 - Corporates behave differently depending on their size and rating/credit, and “prime” corporates act like Supras. There are also a lot of non-Europeans using EUR as a funding currency and swapping back into USD, so that market is more balanced in terms of USD/EUR lenders through XCCY

- Banks
 - ALM-Treasuries behave like corporates. Their bias depends on their location, and how global they are, i.e. on how much USD lending they do to Multinational corporates.
 - Interesting case to mention is Australian banks who use EUR issuance to fund USD (receive the basis)
 - Banks’ market-makers use the below 2 y market to hedge their FX swap/outright exposure, and manage their market-making books of the longer maturities



The XCCY swap market

- IRS / Option desks: most banks who have big IRS activities now manage the XCCY risk linked to their exposure to their different counterparty CSAs. These positions have dynamics linked to the level of rates notably, and to the FX. These players can now be significant actors, notably on the above 10y sector
- Hedge funds do have speculative activities on the product, but they are small to the market, even if their activity on the 0-3 year sector is more significant. They tend to have positions where the curve offer opportunities, like in JPY, or when the market becomes particularly volatile, ie during crisis times
- Important feature of that market is that Asset Managers very scarcely use it. This is a problem because they do not contribute to arbitraging the market or to give liquidity
- Some insurance companies, pension funds are active in certain countries, to hedge a part of their exposure, but this remains small. As a remark in some EMK countries they are very significant players like in Taiwan for example
- Last, there are still important technical issues constraining that market and preventing it to be a highly liquid market
 - The product is not accepted in CCPs. Therefore it can be more costly in RWAs
 - It is trading on a resettable form at 90% in inter-bank but only at 20% in the customer business. This is creating large exposures on the client side which are costly in CVA and LVA. Clients needs make it very difficult to change
 - In the EURUSD market CSAs in EUR and USD are still co-existing. USD only would make sense



Synthesis

	Bank treasuries/ALM		Corporates		Supras/Agencies		Pension funds		Bank IRS desks		CB		Asset managers		HF	
	Market share	Product	Market share	Product	Market share	Product	Market share	Product	Market share	Product	Market share	Product	Market share	Product	Market share	Product
0-3 mth	++	Fx Sw	+	Fx SW+ Out	+	Fx Sw	+++	Fx Sw			++	Fx Sw	+++	Fx Sw		
3mth-1y	+++	Fx Sw	+	Fx Out			+	Fx Sw			++	Fx Sw	++	Fx Sw	++	XCCY
1y1y	++	Fx Sw, XCCY	+	Fx Out											++	XCCY
2y10y	+++	XCCY	+++	Fx Out<5, XCCY>5	++++	XCCY	+	XCCY	+	XCCY					+	XCCY
>10y	+++	XCCY	+++	XCCY	++++	XCCY			+++	XCCY						



A few examples of XCCY basis curves on the 5th of September

		EUR BASIS
3M		-19.3
6M		-18.7
1Y		-18.1
2Y		-17.8
5Y		-15.3
7Y		-13.3
10Y		-10.0
15Y		-6.8
20Y		-5.3
30Y		-4.8
0M	3M	-19.3
3M	12M	-17.7
1Y	2Y	-17.4
2Y	3Y	-16.3
3Y	4Y	-14.2
4Y	5Y	-10.2
5Y	6Y	-8.8
6Y	7Y	-7.5
7Y	8Y	-4.6
8Y	9Y	-1.7
9Y	10Y	0.2
10Y	15Y	0.5
15Y	20Y	0.2
20Y	25Y	-2.1
25Y	30Y	-4.9

		JPY BASIS
3M		-17.3
6M		-23.7
1Y		-23.8
2Y		-29.9
5Y		-47.8
7Y		-54.3
10Y		-57.3
15Y		-55.6
20Y		-48.1
30Y		-37.6
0M	3M	-17.3
3M	12M	-26.0
1Y	2Y	-35.9
2Y	3Y	-48.9
3Y	4Y	-60.7
4Y	5Y	-69.0
5Y	6Y	-70.8
6Y	7Y	-69.6
7Y	8Y	-66.6
8Y	9Y	-63.9
9Y	10Y	-61.9
10Y	12Y	-58.9
12Y	15Y	-47.8
15Y	20Y	-23.5
20Y	25Y	-12.9
25Y	30Y	-10.4

		GBP BASIS
3M		-1.7
6M		-1.3
1Y		-0.1
2Y		0.0
5Y		-2.2
7Y		-3.7
10Y		-6.5
15Y		-10.2
20Y		-11.0
30Y		-7.1
0M	3M	-1.7
3M	12M	0.4
1Y	2Y	0.2
2Y	3Y	-2.2
3Y	4Y	-3.9
4Y	5Y	-5.4
5Y	6Y	-7.8
6Y	7Y	-7.7
7Y	8Y	-13.7
8Y	9Y	-13.7
9Y	10Y	-13.6
10Y	15Y	-19.3
15Y	20Y	-14.1
20Y	25Y	2.3
25Y	30Y	8.2

		AUD BASIS
3M		16.8
6M		17.3
1Y		18.3
2Y		19.7
5Y		27.5
7Y		31.0
10Y		33.5
15Y		34.0
20Y		27.5
30Y		7.0
0M	3M	16.8
3M	12M	18.8
1Y	2Y	21.2
2Y	3Y	27.4
3Y	4Y	33.9
4Y	5Y	38.4
5Y	6Y	40.7
6Y	7Y	41.3
7Y	8Y	40.8
8Y	9Y	40.5
9Y	10Y	40.7
10Y	12Y	40.5
12Y	15Y	31.6
15Y	20Y	-4.0
20Y	25Y	-63.2
25Y	30Y	-86.4

Source: BNP Paribas



Market positioning and trends

- Several factors are influencing the price of liquidity
 - They impact the balance between borrowers and lenders on a given maturity in a given currency
 - The JPY example
 - In Japan, due to excess of savings and ageing population, LT investors are very significant and need to diversify their credit exposure, while staying invested in JPY
 - Therefore, they like to buy Foreign risk denominated in JPY, i.e. Samurai bonds. A lot of these borrowers do not need JPY, and swap it back in USD. Hence, LT (5y) liquidity is cheap in JPY through XCCY.
 - Japanese asset managers also need to diversify their investment and invest abroad without wanting the FX risk, hence they finance their assets through FX Swaps, pushing liquidity JPY lower (they receive the JPY basis).
 - Furthermore banks are also payers of USD through XCCY and FX Swaps
 - Still a lot of foreign investors / CB like to use JPY Government bills to invest their short term liquidity (1M-12M). They provide USD liquidity to the USDJPY market on that segment, explaining the “steepness” of the curve. HF also play the carry trade paying the basis in the 3-5y area
 - The AUD example
 - In Australia: banks need to fund abroad their long term needs as the base of investors lending LT is small. They borrow in USD or EUR and swap it back in AUD. AUD long term liquidity tends to be expensive in XCCY (they pay the AUD basis, and implicitly receive the EUR basis)

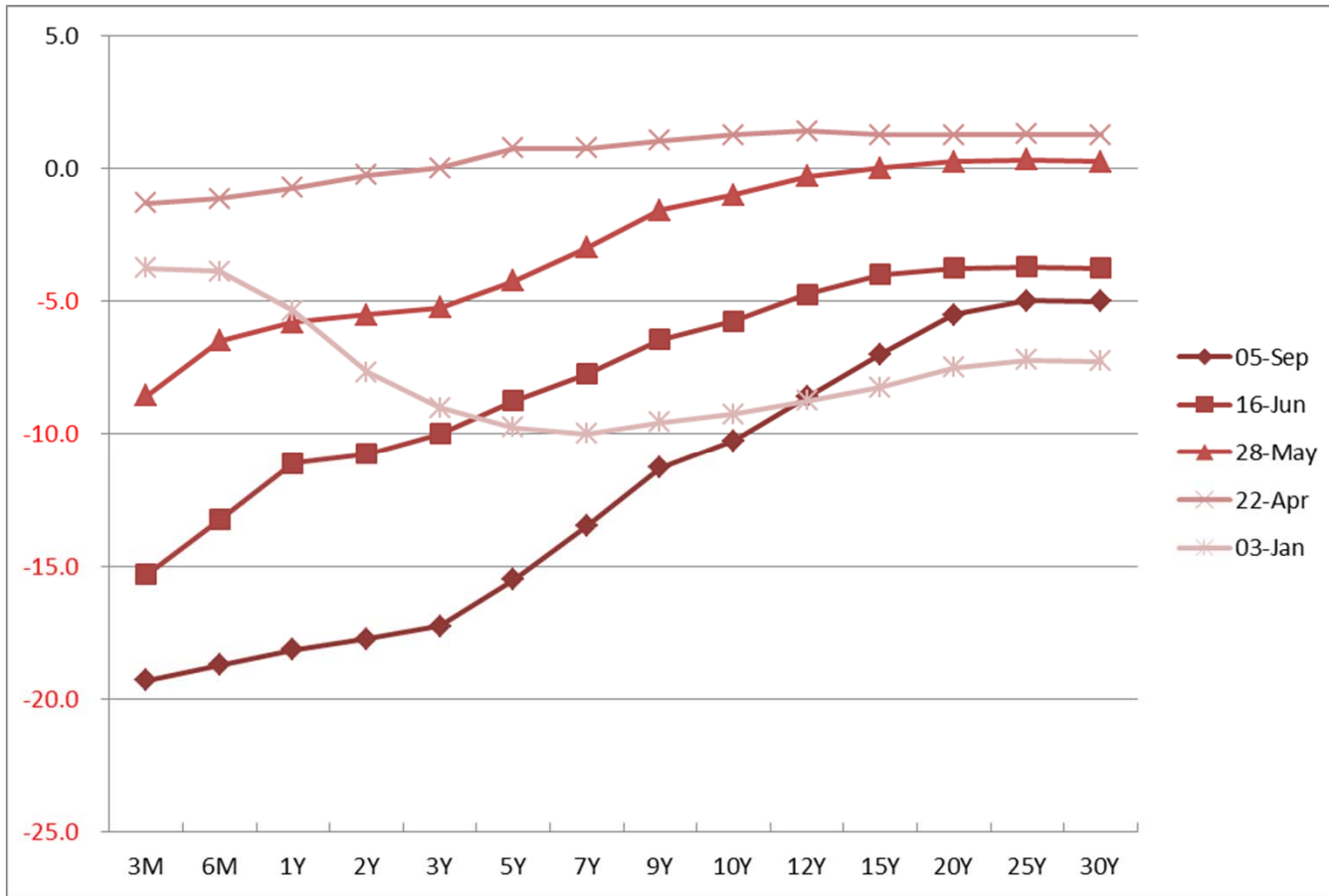


Market positioning and trends

- Other examples
 - SEK vs CHF: in crisis times investors look for safe heavens. They like to buy Sweden risk but in EUR (therefore SEK liquidity is expensive as Sweden swaps it back into SEK), while they like to buy CHF denominated paper but want to keep it in CHF. This has attracted a lot of issuers who can find attractive levels of funding and swap it back into EUR or USD
 - Hungarian banks have (had) lent in Euros to their customers, so they are payers of EUR in the XCCY (20 Bio EUR ECB facility)
 - On the FX swap market, we know that European exporters buy EUR through FX Outright. When EURUSD moves fast to the downside, exporters buy more and push the FX swaps market, giving back the Euro liquidity, and pushing the USD liquidity higher (they receive the basis)
 - We know about the structural need for USD of the global European banks, who lend to their global clients in USD and have no retail deposits in USD (only private banking and corporates)



Market positioning and trends – EUR USD basis



Source: BNP Paribas



Market positioning and trends

□ Recent market developments on EURUSD basis

- Since 2010-2011, European banks increased significantly their USD longer term funding through XCCY, issuance, and also reduced their USD balance sheet
- As the crisis kept on receding, US banks used more and more their lines on XCCY to lend their excess USD
- Result was a correction of crisis levels, as Europeans became more often short EUR in the FX Sw market (ie they have an excess of USD ST liquidity. Which they can give to asset managers.)
- During the first 4 months of the year the market was dominated by USD issuance of European names who swapped back in EUR, as investors had appetite for European names and their attractive credit spreads
- Market capitulated on the Numericable take-over and the Portuguese USD issuance. At that time we briefly saw flat levels from 1y to 10y on EURUSD basis. This meant that the premium for European USD issuers had disappeared. People who structurally need USD received the basis
- Then Mr Draghi announced TLTROs, and talked the EUR down, while US confirmed its way out of QE, inverting the dynamics of liquidity. Some people also think that in the US, LCR introduction in 2015, and the MMF reform, will tighten liquidity
- Why did the short term basis(0-2y) widen more than the longer (5-10y), while banks dynamics have changed(funded LT)?
- Reflection of TLTRO excess liquidity reduction throughout time
- US regulation impact on ST liquidity and balance sheet usage (LCR, leverage ratio, MMF)
- Issuance in USD was mainly above 3y, so street positioning in ST was lower
- If EUR rates are expected to move lower, the limited liquidity of the Fx swap product can allow a move of the market which go further than futures market imply, moving the basis
- European Exporters may have been very active in hedging their EUR shorts, and we know they are active on the 0-1y segment
- European Real Money managers are still dominating the market and they need USD ST



The FED arbitrage

- ❑ The FED IOER rate is 0.25 while Fed funds trade at 0.09
 - Liquidity(LCR) and capital constraints(IRC) push banks to invest in HQLA
 - Central banks deposit facilities are very attractive HQLA (liquidity and counterparty risk)
 - Banks with EUR excess liquidity, have been able to take advantage of the arbitrage offered by the FED, ie to lend their EUR through the FX swap and use the resulting USD to lend at the IOER
 - The ECB's move to negative deposit rate, while the corridor stayed the same, should not explain the move, as the incentive/dis-incentive stayed the same. A psychological factor may have played though
 - But the end of Sterilization had a strong impact. It has moved back excess liquidity to Prime banks who were using the ECB to invest their buffers. 135 bio of HQLA disappeared for these banks . They had to either invest in Euro assets (SSA, covered bonds outperformance) or to use the FED or other CBs, giving back the liquidity EUR through the FX swap (see article on next page)
 - The basis has moved a lot, and now the arbitrage has almost disappeared
 - **The end of ECB sterilization coupled with LCR constraints might be the main factor which pushed the EUR basis lower on the ST segment**



The FED arbitrage

AMSTERDAM—Dutch banks are steering large amounts of cash away from the European Central Bank in response to the ECB's move to adopt negative rates on bank deposits, but they aren't using the money to boost lending and growth.

[The ECB in June](#) became the first major central bank to adopt a negative rate on bank deposits in an extraordinary step to stave off the threat of low inflation in Europe. Hoping to boost lending to a credit-starved economy, the central bank lowered the rate at which banks can borrow, while cutting its deposit rate to minus 0.1%, effectively charging banks to hold their cash at the ECB.

Dutch banks, which account for a large portion of ECB deposits, said in their recent earnings reports that the rate cut prompted them to withdraw large sums of excess cash from the ECB. But instead of boosting lending to businesses, the banks said they parked most of the money at other 'safe havens.'

"The banks from the 'north' of the euro zone were those that still had the biggest amount left in the deposit facility," said Silvia Merler, an associate fellow at the Bruegel think tank in Brussels. "So basically the effectiveness of [the negative deposit rate] has to be assessed against what they do," she added.

Rabobank Group, one of Europe's best-capitalized banks, said it has withdrawn a total of €40 billion (\$53 billion) in recent months and moved it to other large central banks like the Bank of England, the [Swiss National Bank](#) and the Federal Reserve.

"At least there, you don't have to pay to park your money," said Chief Financial Officer Bert Bruggink.

[ING](#) and ABN Amro Group NV said they withdrew billions of euros and that they invested some of the money in government bonds and other financial instruments that are considered safe but still offer some return.

Harald Benink, a professor of banking and finance at Tilburg University in the Netherlands, said Dutch lenders are seeking to strengthen their buffers and that they are wary of increasing lending in light of the weak European economy and the continuing tensions over the Ukraine crisis.

"The financial crisis has showed that buffers can vanish rapidly," Mr. Benink said. "The money can be gone before you know it," he added.



Annex: EURUSD basis against OIS

		EURUSD		Spread	OIS/BOR SPREAD USD/EUR				
		IBOR XCCY	OIS XCCY			EUR	USD	Spread	
1Y		-16.5	-16.6	0.1	1Y	15.0	15.0	-0.1	
2Y		-16.7	-17.5	0.8	2Y	15.6	16.5	0.8	
3Y		-16.5	-18.0	1.5	3Y	16.3	17.9	1.6	
5Y		-16.0	-18.4	2.4	5Y	17.7	20.1	2.4	
7Y		-14.5	-18.2	3.7	7Y	18.1	21.7	3.5	
9Y		-12.4	-17.0	4.6	9Y	18.1	22.6	4.5	
10Y		-11.3	-16.3	5.1	10Y	18.0	22.9	4.9	
12Y		-9.4	-15.5	6.1	12Y	17.6	23.4	5.8	
15Y		-7.5	-15.0	7.5	15Y	16.6	23.9	7.3	
20Y		-5.5	-15.2	9.7	20Y	14.9	24.4	9.5	
25Y		-4.8	-16.1	11.3	25Y	13.6	24.6	11.1	
30Y		-4.7	-17.3	12.5	30Y	12.5	24.8	12.2	
40Y		-5.0	-18.7	13.7	40Y	11.0	24.5	13.5	
50Y		-5.3	-19.9	14.7	50Y	9.9	24.4	14.5	
6M	18M	-16.8	-18.2	1.5	6M	18M	15.6	16.7	1.1
1Y	2Y	-17.0	-18.5	1.5	1Y	2Y	16.2	18.1	1.8
2Y	3Y	-16.1	-19.1	3.0	2Y	3Y	17.6	20.7	3.1
3Y	4Y	-16.5	-20.0	3.5	3Y	4Y	19.1	22.8	3.6
4Y	5Y	-14.0	-18.1	4.1	4Y	5Y	20.6	24.7	4.2
5Y	6Y	-11.9	-19.5	7.7	5Y	6Y	19.6	25.6	6.0
6Y	7Y	-9.5	-16.1	6.6	6Y	7Y	18.8	26.0	7.2
7Y	8Y	-6.1	-13.5	7.3	7Y	8Y	18.2	26.2	8.0
8Y	9Y	-2.9	-11.7	8.8	8Y	9Y	17.6	26.2	8.6
9Y	10Y	-0.7	-10.0	9.3	9Y	10Y	17.1	26.3	9.1
10Y	11Y	0.4	-10.2	10.7	10Y	11Y	15.9	26.3	10.4
10Y	12Y	0.5	-11.6	12.1	10Y	12Y	15.4	26.4	11.0
5Y	10Y	-6.3	-14.2	7.9	5Y	10Y	18.3	26.1	7.8
10Y	15Y	1.0	-12.4	13.3	10Y	15Y	13.2	26.4	13.1
15Y	20Y	1.8	-16.2	18.0	15Y	20Y	8.6	26.3	17.8
20Y	30Y	-2.7	-23.2	20.5	20Y	30Y	6.0	26.2	20.3

Source: BNP Paribas; prices on the 10th of Sep.

- The OIS XCCY curve is very flat compared to the classical IBOR XCCY
- This is explained by the difference of OIS-IBOR spreads in EUR and USD
- One can wonder if the OIS IBOR market is efficient on the long end, and if the OIS XCCY is not the best way to read the term structure of the EURUSD liquidity



Disclaimer

This presentation is for information and illustration purposes only. It does not, nor is it intended to, constitute an offer to acquire, or solicit an offer to acquire any securities or other financial instruments.

The material in this document was produced by a BNP Paribas Group Company. This is a marketing communication. This document is only directed at (a) professional customers and eligible counterparties as defined by the Markets in Financial Investments Directive, and (b) where relevant, persons who have professional experience in matters relating to investments who fall within Article 19(1) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (together, "Relevant Persons"). Any investment or investment activity to which this document relates is available only to and will be engaged in only with relevant persons. This document is not intended for Retail Customers as defined by the Markets in Financial Investments Directive and should not be passed on to any such persons. Any person who is not a relevant person should not act or rely on this document or any of its contents.

The information contained in this presentation has been obtained from public sources believed to be reliable, and opinions and analysis have been prepared in good faith using BNP Paribas' own calculation methods and models and is supplied for your information only: no representation or warranty, express or implied, is made that such information is accurate or complete nor that any opinion or analysis is reliable and they should not be relied upon as such. Information, analysis and opinions contained in the report are published for the assistance of recipients, but are not to be relied upon as authoritative or taken in substitution for the exercise of judgement by any recipient, and are subject to change without notice. This presentation is not, and should not be construed as, an offer document or an offer or solicitation to buy or sell any investments or to enter into any transaction. No BNP Paribas Group Company accepts any liability whatsoever for any direct or consequential loss arising from any use of material contained in this presentation.

BNP Paribas London Branch (registered office: 10 Harewood Avenue, London NW1 6AA; tel: [44 20] 7595 2000; fax: [44 20] 7595 2555) is authorised by the Autorité de Contrôle Prudenciel et de Résolution and the Prudential Regulation Authority and subject to limited regulation by the Financial Conduct Authority and Prudential Regulation Authority. Details about the extent of our authorisation and regulation by the Prudential Regulation Authority, and regulation by the Financial Conduct Authority are available from us on request. BNP Paribas London Branch is registered in England and Wales under no. FC13447. www.bnpparibas.com

