



GLOBAL PROJECT BONDS MARKET OVERVIEW

Recently closed transactions

ENERGY

- **Niles Energy Center:** \$150MM in 7.5-year senior secured notes to finance the construction of a 1,085MW merchant CCGT plant located in Michigan as part of a \$635MM hybrid transaction. The notes were exclusively distributed in the Korean market and priced at a 6.750% coupon. (Sponsors: Kospo, Daelim and Indeck Energy)
- **Shady Hills Energy Center (BBB Kroll):** \$422MM in 32.7-year senior secured notes to finance the construction of a 573MW CCGT plant in Florida, which benefits from a 30-year offtake with Seminole Electric. The project is expected to be completed by the end of 2021. The notes have a 25-year average life and priced in the 195bps area. (Sponsor: GE Energy Financial Services)
- **Andali Energia:** €30MM in senior secured notes issued to finance the construction of a 36MW onshore wind farm in Calabria, Italy. The transaction was structured in two tranches that were listed on Vienna Stock Exchange. One of them was a 2-year €20MM tranche which priced at a 8.000% coupon. (Sponsor: Estra)
- **APLNG:** \$600MM in senior secured notes to refinance the Australia Pacific LNG project in Queensland, Australia. The transaction was structured in three tranches with maturities of 6 years, 14 years and 19 years. (Sponsors: Origin, ConocoPhillips and Sinopec)
- **Springbok 3:** Senior secured notes were issued to finance the construction of the 121MW Springbok 3 solar plant as well as a 1.5MW battery system in what appeared to be a transaction with a unique investor. The output will be sold to Southern California Public Power Authority under a 27-year contract, which has a 3-year extension option. (Sponsor: Capital Dynamics)
- **ERG S.P.A.:** €500MM in 6-year unsecured notes raised to finance and/or refinance renewable energy projects priced at a coupon of 1.875%. (Sponsor: ERG S.P.A.) **Crédit Agricole CIB acted as Joint Bookrunner and Green Structuring Advisor.**

INFRASTRUCTURE

- **Axione Infrastructures:** €250MM in 23-year senior secured notes to refinance a public bond raised by Axione Infrastructures five years ago and to fund new broadband PPP projects across France. (Sponsors: Mirova, Caisse des Dépôts, Bouygues and Axione)
- **Attero Waste NAIC-2 (BBB):** €321MM senior secured notes raised by Attero NV, the largest waste treatment and disposal company in the Netherlands. The transaction entails three maturities of 10, 12 and 15 years which respectively priced at spreads of 193bps, 195bps and 205bps over mid swap. (Sponsor: Attero NV)
- **GMR Hyderabad International Airport (Ba1 / BB+ / BB+):** \$300MM in 5-year senior secured notes to finance the expansion of the Hyderabad international airport in India which will increase its capacity from 18.3 to 34 million passengers per year. The 144A issuance priced at 5.375%. (Sponsors: GMR Group, Airports Authority of India, Government of Telangana and Malaysia Airports Holdings).

EMEA TRANSACTION SPOTLIGHT:

ERG S.P.A

- **The Issuer:** ERG S.P.A is an Italy-based independent power producer active in the renewable energy sector, which generates energy mostly from wind, solar, hydroelectric and thermoelectric sources.
- **The Transaction:**
 - ✓ ERG sees the issuance of Green Bonds as an ideal tool to finance its sustainability commitments and the transition to a low carbon economy, consistently with its strategy. The net proceeds of the transaction will be used to finance and/or refinance renewable energy projects (wind and solar), intended to contribute to climate change mitigation. The transaction benefits from a Second Party Opinion by VigeoEiris, who expressed a Reasonable Level of Assurance (the highest on their scale) on ERG's commitments and on the bond's contribution to sustainability
 - ✓ On 4th April, leveraging on constructive feedbacks received from investors and stable market conditions, the company announced a new 6-year €500MM "no grow" transaction. The orderbook built up quickly and had reached €2.4BN, when official guidance was released of MS +190bps area. Final terms were announced with the Leads setting the spread at MS +180bps on the back of total orders grown to ca. €3.4BN. **Crédit Agricole CIB acted as Joint Bookrunner and Green Structuring Advisor.**

AMERICAS TRANSACTION SPOTLIGHT:

Niles Energy Center

- **The Issuer:** Niles Energy Center will be a 619MW combined cycle gas project located in Niles, Michigan.
 - ✓ Overall project costs are expected to be approx. US\$1.1BN and total funded costs to commercial operation are projected at approximately \$935/kW
 - ✓ The expected commercial operation date is March 2022
 - ✓ The plant will use GE H-class CCGT technology, including two combustion turbine generators, two heat recovery steam generators, and one steam turbine generator
 - ✓ EPC will be performed under a fixed-price date certain contract with Kiewit
 - ✓ Tenaska is responsible for fuel supply and energy management and PIC will provide O&M services
 - ✓ GE Energy Financial Services is the sponsor of the project
- **The Transaction:** The project was financed with \$635MM in debt consisting of a \$435MM construction-plus-five-years term loan, a \$150MM construction-plus-five-years senior secured tranche and a \$50MM letter of credit. The notes were placed exclusively with Korean investors and priced at a 6.750% coupon.

* Source: Crédit Agricole Corporate & Investment Bank, Bloomberg, PFI, IJGlobal,



GLOBAL PROJECT BONDS MARKET OVERVIEW (cont'd)

Primary Issuances

ENERGY										
Issuer	Geography	Currency	Size (MM)	Date	Tenor	WAL	Pricing	Spread at Issuance	Ratings (Moody's / S&P / Fitch)	
Niles Energy Center	NAm	USD	150	Apr-19	8	--	6.750%	--	--	
Shady Hills Energy Center	NAm	USD	422	Apr-19	33	25	--	195bps	--	
Andali Energia	EMEA	EUR	20	Apr-19	2	--	8.000%	--	--	
			10		--	--	--	--	--	
APLNG	APac	USD	600	Apr-19	6,14,19	--	--	--	--	
Springbok 3	NAm	USD	--	Apr-19	--	--	--	--	--	
ERG S.P.A.	EMEA	EUR	500	Apr-19	6	6	1.875%	190bps	- / - / BBB-	
Hilltop CCGT	NAm	USD	350	Mar-19	11	9	5.830%	325bps	BBB- (Kroll)	
Skinansfjellet and Gravdal Wind Farms	EMEA	EUR	350	Mar-19	--	--	--	--	--	
Northwest Hydro Facilities	NAm	CAD	546	Mar-19	18	--	4.290%	--	A low (DBRS)	
			538		20	--	4.342%	--		
			650		4	--	3.625%	--		
Dakota Access Pipeline	NAm	USD	1,000	Mar-19	6	--	3.900%	--	NAIC-2	
			850		10	--	4.625%	--		
Noboribetsu Solar Project	APac	YEN	8,900	Feb-19	22	--	--	150bps	BBB (Japan's rating)	
Brooklyn Navy Yard Cogeneration Partners (BNYCP)	NAm	USD	323	Feb-19	--	--	--	--	B2 / -- / --	
Australia Pacific LNG Processing Pty Ltd	APac	USD	600	Feb-19	12	10	4.850%	220bps	Baa2 / -- / --	

INFRASTRUCTURE										
Issuer	Geography	Currency	Size (MM)	Date	Tenor	WAL	Pricing	Spread at Issuance	Ratings (Moody's / S&P / Fitch)	
Axione Infrastructures	EMEA	EUR	250	Apr-19	23	--	--	--	--	
			52		9	--	--	MS+193bps		
Attero Waste	EMEA	EUR	198	Apr-19	10	--	--	MS+195bps	NAIC-2 (BBB)	
			113		15	--	--	MS+205bps		
GMR Hyderabad International Airport	APac	USD	300	Apr-19	5	--	5.375%	--	Ba1 / BB+ / BB+	
			144		10	--	3.960%	160bps		
		USD	245		12	--	4.060%	170bps		
Queensland Motorways	APac		180	Mar-19	15	--	4.160%	180bps	NAIC-2 (BBB)	
			30		10	--	3.940%	--		
		AUD	40		15	--	--	3M BBSW+215bps		
Rodovias do Tiete Toll Road Refurbishment PPP	LatAm	BRL	90	Mar-19	12	--	--	--	--	
South East Water	EMEA	GBP	175	Mar-19	12 and 23	--	--	--	--	
Mariscal Sucre International Airport in Quito	LatAm	USD	400	Mar-19	14	--	12.000%	--	B2	
Line 1 Peru Metro Expansion Company Ltd	LatAm	USD	273	Jan-19	14	8	4.737%	215bps	NAIC-2 (BBB)	
			117	Mar-19	14	8	4.373%	215bps	NAIC-2 (BBB)	
Autopistas Metropolitanas de Puerto Rico	NAm	USD	181	Feb-19	20	15	7.500%	--	-- / BBB- / --	
Carlsbad Desalination Plant	NAm	USD	183	Feb-19	1 and 5	--	5.000%	--	Baa3 / -- / --	
Airport Authority Hong Kong (HKIA)	APac	USD	500	Feb-19	10	--	3.450%	78bps	-- / AA+ / --	
Liege tram PPP	EMEA	EUR	136	Feb-19	30	--	0.000%	100-150bps	--	
Flinders Ports Pty Ltd	APac	USD	91	Feb-19	10	10	4.080%	140bps	Baa2 / -- / --	
		AUD	50	Feb-19	20	20	4.720%	175bps	Baa2 / -- / --	

FY 2018 Global Project Bond League Tables
(Source: PFI)

#	Lead Manager	(\$MM)	# deals
1	Citigroup	7,882	28
2	MUFG	3,681	17
3	Bank of America	2,868	14
4	JP Morgan	2,544	12
5	Crédit Agricole	2,171	14
6	SMBC	1,973	16
7	HSBC	1,741	10
8	Societe Generale	1,656	8
9	BNP Paribas	1,547	10
10	RBC Capital Markets	1,393	9

FY 2018 Global Project Bond League Tables
(Source: IJGlobal)

#	Lead Manager	(\$MM)	# deals
1	Citigroup	4,705	18
2	JP Morgan	2,776	11
3	MUFG	2,463	14
4	HSBC	2,007	13
5	Crédit Agricole	1,917	15
6	Societe Generale	1,831	10
7	RBC	1,811	10
8	Bank of America	1,636	5
9	Sumitomo	1,494	16
10	Santander	1,441	17

* Source: Crédit Agricole Corporate & Investment Bank, Bloomberg, PFI, IJGlobal.



GLOBAL BOND MARKET OVERVIEW

Market update April 2019

EUR Bond Corporate Market

- The IG corporate market has continued to perform strongly during April. This month 30 deals closed. Activity has been muted over the past few weeks because of the Easter period and companies are just starting to exit their black-out periods. The volatility has decreased and investors remained active. The average oversubscription at 3.8x YTD allowed the issuers to tighten their prices vs. IPTs by c. 25bps in average since March. Monthly volumes were down to €17.6BN in April (from € 34.1BN in March) and average transaction size reached €610MM in April (vs. €810MM in March). The volume YTD has reached €116.3BN (ie +16% vs 2018 YTD).
- Still, for the month to come pipeline is heavy with many issuers on the side-line waiting for a favorable window to come to the market. And the average NIP is around 3.5 bps in April 2019 (12.9bps in April 2018) and the average maturity is around 6.4 years.
- However mounting concerns regarding global growth and inflation expectations are keeping rates under pressure. Rates remain at very low levels offering support and attractiveness to the market.

GBP Market

- Brexit headlines have died down slightly as the Brexit deadline has been pushed back to October 31st 2019. That is not to say headline risk is absent as the UK has yet to decide a unified strategy going forward. The next important date will be May 23rd, when the UK is likely to take part in European Union Parliament elections – three years after it agreed to leave the bloc.
- As long as investors' base case remains that a hard Brexit will be avoided, contagion into wider financial market is expected to be limited. UK domestic issuers, unsurprisingly continue to account for the largest portion of volume, but continental European issuers and even US based issuers have taken advantage of a strong sterling primary market.
- Monthly volumes were up to £2.4BN in April 2019 (vs. £1.1BN in April 2018) and £3.7BN in March 2019 (vs. £1.8BN in March 2018). This month 6 deals closed. GBP continues to offer a good complimentary liquidity pool, historically most attractive in terms of relative value as a longer duration play or at the very short-end. With BoE QE (£10BN corporate purchase scheme) we saw not only rising volumes but also an increasing maturity mix with good supply in the intermediate 7-12yr maturities.

US Investment Grade Public Corporate Bond Market

- A combination of Easter/school holidays and earnings season have contributed to a quieter month in the primary market which closed with \$75BN in issuances vs. \$100BN in March. YTD now stands at ~\$420.7BN, trailing ~6% behind 2018's pace.
- For the week ended April 24, 2019, Lipper reported a net inflow of \$5.9BN, the thirteenth consecutive weekly inflow. This brought YTD net fund flows to \$33.3BN.
- The CDX is consistently grinding tighter towards its YTD lows.
- While focus on corporate earnings remains, market participants are looking at the FOMC meeting. As expected, the committee kept the Fed Funds rate unchanged at 2.25-2.50%. On policy stance, Chairman Powell noted that the economy is on a 'healthy path', that the weak inflation may be transitory and 'we don't see a strong case for moving in either direction'.
- In reaction to the Fed's hawkish comments, equities reversed its upward march.
- Credit spreads continue to grind tighter amidst the supportive backdrop. The ICE BAML Corporate Index closed at +116bps, representing 42bps tighter YTD. Credit spreads have retrenched to levels last seen in fall of 2018.

	Statistics (LTM)				
	Min	Max	Average	Current	Δ 01/01/19
IG Index	110 bps	161 bps	126 bps	115 bps	-43 bps
A Index	87 bps	126 bps	98 bps	88 bps	-35 bps
BBB Index	139 bps	205 bps	160 bps	148 bps	-53 bps

USPP Market Highlight

- The volume of private placements reached \$5.4BN in April vs. \$5.2BN in March. April volume consisted in 38 issues by 19 issuers vs. 34 issues by 13 issuers last month. About \$18.1BN of USPP have been issued YTD.
- \$2.5BN of cross-border USPP have been issued in April vs. \$3.9BN in March. About \$11.8BN of cross-border USPP have been issued YTD vs. \$6.4BN of domestic USPP.
- Energy and Infrastructure (including transportation) issuances have been accounting for 61% of the total issuance YTD.



EMEA BOND MARKET OVERVIEW

EMEA market – Public secondary levels

Sources: Crédit Agricole CIB, Bloomberg

ENERGY									
Pricing date	Issuer	Country	Moody's	S&P	Maturity	Size	Coupon	Bid I Spread	Bid YTM
21/02/2017	2i Rete Gas	Italy	Baa2	BBB	2026	435	1.750%	131	1.53
24/10/2017	2i Rete Gas	Italy	Baa2	BBB	2027	550	1.608%	127	1.63
04/09/2018	2i Rete Gas	Italy	Baa2	BBB	2025	500	2.195%	117	1.30
09/03/2017	A2A	Italy	Baa3	BBB	2024	300	1.250%	69	0.70
10/12/2013	Elenia Finance	Finland	NR	BBB	2020	500	2.875%	15	-0.06
31/03/2017	Elia	Belgium	NR	BBB+	2027	250	1.375%	69	0.98
20/11/2014	Fluxys Belgium	Belgium	NR	NR	2034	100	3.250%	116	2.02
20/11/2014	Fluxys Belgium	Belgium	NR	NR	2029	250	2.750%	139	1.92
28/09/2017	Fluxys Belgium	Belgium	NR	NR	2032	50	2.375%	126	2.00
28/09/2017	Fluxys Belgium	Belgium	NR	NR	2027	300	1.750%	115	1.48
22/11/2013	Madrilena Red de Gas Finance	Spain	NR	BBB	2023	275	4.500%	38	0.37
05/04/2017	Madrilena Red de Gas Finance	Spain	NR	BBB	2029	300	2.250%	99	1.47
05/04/2017	Madrilena Red de Gas Finance	Spain	NR	BBB	2025	300	1.375%	70	0.80
05/07/2017	National Grid	UK	Baa1	BBB+	2024	500	1.000%	38	0.43
21/09/2017	NorteGas	Spain	NR	BBB-	2027	750	2.065%	124	1.57
21/09/2017	NorteGas	Spain	NR	BBB-	2022	550	0.919%	45	0.33
24/03/2014	Redexis Gas	Spain	Baa3	BBB	2021	650	2.750%	56	0.34
20/09/2018	RTE	France	NR	A	2038	500	2.125%	52	1.52
20/09/2018	RTE	France	NR	A	2030	500	1.500%	32	0.92
30/08/2017	SSE	UK	A3	A-	2025	600	0.875%	56	0.69
28/08/2018	SSE	UK	A3	A-	2027	650	1.375%	69	1.02
13/03/2017	Statkraft	Norway	Baa1	A-	2025	500	1.125%	25	0.34
19/07/2017	Terna	Italy	Baa1	BBB	2027	1000	1.375%	51	0.85
03/06/2013	Vier Gas Transport	Germany	NR	BBB+	2025	750	2.875%	15	0.29
03/06/2013	Vier Gas Transport	Germany	NR	A-	2020	750	2.000%	-1	-0.23
01/07/2013	Vier Gas Transport	Germany	NR	A-	2023	750	3.125%	5	0.01
17/09/2018	Vier Gas Transport	Germany	NR	A-	2028	500	1.500%	34	0.76
20/11/2015	Viesgo (IE2 Holdco)	Spain	NR	BBB-	2023	500	2.375%	50	0.46
23/05/2016	Viesgo (IE2 Holdco)	Spain	NR	BBB-	2026	550	2.875%	107	1.28

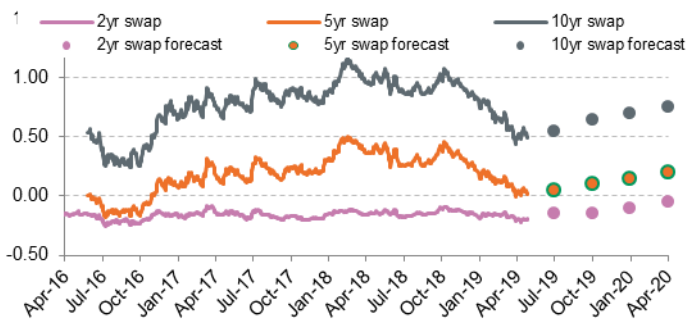
INFRASTRUCTURE AND TRANSPORTATION									
Pricing date	Issuer	Country	Moody's	S&P	Maturity	Size	Coupon	Bid I Spread	Bid YTM
10/05/2016	Abertis	Spain	NR	BBB	2026	1150	1.375%	101	1.24
02/11/2016	Abertis	Spain	NR	BBB	2027	500	1.000%	113	1.43
05/12/2013	Aeroporti Di Roma	Italy	Baa1	BBB+	2021	600	3.250%	36	0.15
01/06/2017	Aeroporti Di Roma	Italy	Baa1	BBB+	2027	500	1.625%	119	1.50
28/05/2013	Aeroports de Paris	France	NR	A+	2028	600	2.750%	32	0.74
01/10/2014	Aeroports de Paris	France	NR	A+	2025	500	1.500%	21	0.30
15/07/2015	Aeroports de Paris	France	NR	A+	2023	500	1.500%	2	-0.04
06/12/2017	Aeroports de Paris	France	NR	A+	2027	500	1.000%	23	0.58
04/10/2018	Aeroports de Paris	France	NR	A+	2038	500	2.125%	45	1.45
18/03/2015	Alpha Trains	Luxembourg	Baa2	NR	2025	350	2.064%	104	1.18
01/06/2016	APRR	France	Baa2	A-	2026	700	1.125%	22	0.39
16/11/2016	APRR	France	Baa2	A-	2031	500	1.875%	38	1.00
16/11/2016	APRR	France	Baa2	A-	2027	500	1.250%	21	0.47
31/05/2017	APRR	France	Baa2	A-	2032	500	1.625%	40	1.09
06/11/2017	APRR	France	NR	A-	2033	700	1.500%	41	1.16
04/05/2016	ASF	France	A3	A-	2026	500	1.000%	18	0.38
05/01/2017	ASF	France	A3	A-	2027	1000	1.250%	18	0.44
05/04/2017	ASF	France	A3	A-	2026	500	1.125%	15	0.34
10/01/2018	ASF	France	A3	A-	2030	1000	1.375%	36	0.91
21/06/2018	ASF	France	A3	A-	2028	700	1.375%	24	0.65
26/01/2017	Atlantia	Italy	Baa2	BBB	2025	750	1.625%	162	1.72
06/07/2017	Atlantia	Italy	Baa2	BBB	2027	1000	1.875%	170	2.03
18/09/2017	Autostrade	Italy	Baa1	BBB+	2029	700	1.875%	181	2.35
03/05/2017	Brisa	Portugal	Baa3	NR	2027	300	2.375%	75	1.07
25/06/2013	Brussels Airport	Belgium	Baa1	NR	2020	500	3.250%	3	-0.19
26/04/2017	Brussels Airport	Belgium	Aa1	NR	2024	300	1.000%	30	0.33
03/02/2014	Heathrow Funding	UK	NR	A-	2030	750	1.500%	61	1.18
13/05/2014	Heathrow Funding	UK	NR	A-	2022	600	1.875%	18	0.05
28/06/2017	Heathrow Funding	UK	NR	A-	2032	500	1.875%	59	1.33
17/11/2017	HIT	France	Baa3	NR	2027	500	1.625%	10	1.45
17/11/2017	HIT	France	Baa3	NR	2023	500	0.625%	70	0.63
09/10/2014	Infra Park (Indigo)	France	NR	BBB	2025	650	2.125%	55	0.65
12/07/2017	Infra Park (Indigo)	France	NR	BBB	2037	125	2.951%	132	2.28
19/07/2013	SANEF	France	Baa1	NR	2019	300	2.500%	-7	-0.40
06/11/2015	SANEF	France	Baa1	NR	2026	600	1.875%	63	0.82
11/10/2016	SANEF	France	Baa1	NR	2028	300	0.950%	73	1.18
17/04/2018	Sydney Airport	Australia	Baa1	BBB+	2028	500	1.750%	71	1.10
01/12/2017	Tank & Rast	Germany	Baa3	BBB-	2027	300	2.375%	192	2.30
01/12/2017	Tank & Rast	Germany	Baa3	BBB-	2024	300	1.625%	169	1.77
06/09/2017	Transurban	Australia	Baa1	BBB+	2028	500	1.750%	76	1.14
20/01/2015	VTG Finance	Luxembourg	NR	NR	Perp	250	5.000%	74	0.51



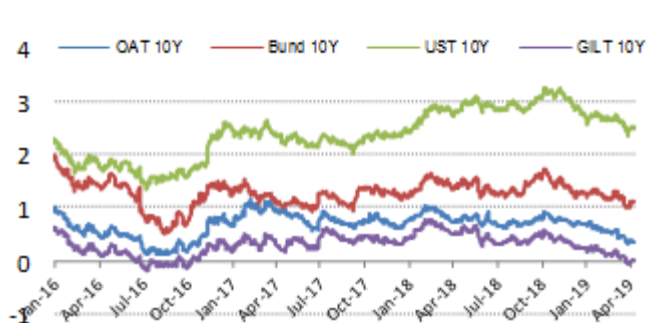
MACROECONOMIC ENVIRONMENT

- The last ECB Meeting was held the 10th of April. Mario Draghi's tone was still particularly dovish. Assessing that Europe's economy could be facing recession, he confirmed that an "ample degree of monetary accommodation remains necessary to safeguard favorable financing conditions and support the economic expansion". As expected, the key interest rates remained unchanged and the central bank continues to see them remaining at their present levels "at least through the end of 2019". The economic analysis of Draghi was quite pessimistic, confirming that the possibility of a recession (though with very low probability) due to persistence of uncertainties, geopolitical risks, protectionism and vulnerability of emerging markets. He thus confirmed that an "ample degree of monetary accommodation remains necessary to safeguard favorable financing conditions and support the economic expansion".
- On the other side of the Atlantic, the Fed held its meeting on the May 1st. FOMC maintained its current policy target range repeating it will remain "patient" in light of the "global economic and financial developments and muted inflation pressures". The Fed stated that if inflation were to persistently remain below 2%, it could influence its policy. In the US, Q1 real GDP growth advanced at a 3.2% annual rate following a 2.2% advance in Q4 while the Bloomberg consensus estimate centered on a 2.3% pace. The acceleration in Q1 growth reflected positive contributions to growth from improved net exports (+1.03 percentage points) and inventory building by businesses (+0.65 points). However, final sales to domestic purchasers showed signs of weakening as they advanced 1.45% vs 2.09% in Q4. This gives the Fed some more arguments to continue to be in no hurry to decide further rate adjustments.
- China could achieve its growth target of 6.0-6.5% in 2019 and that the government would continue its current macroeconomic policy of fiscal and monetary stimulus, positive data were published over last week. In fact, the Chinese economy grew by 6.4% in Q1 2019 beating the 6.3% consensus forecast and in line with Q4 2018. Industrial data also came in ahead of expectations as it rose by 8.5% against consensus estimates of 5.9%. Two factors have helped stabilize growth: policy stimulus and easing trade tensions, after effects could see growth rebound, rather than just stabilize, in the coming quarters. But while markets are now feeling more confident on the US and Chinese economies, the Eurozone economy continues to cause some concern, which also seems to be reflected in the views of policymakers.

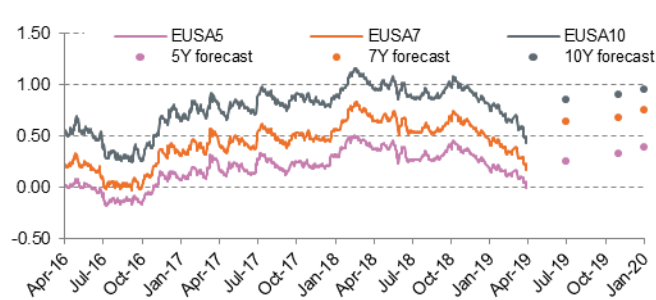
Swap rates (as of April 27th, 2018)



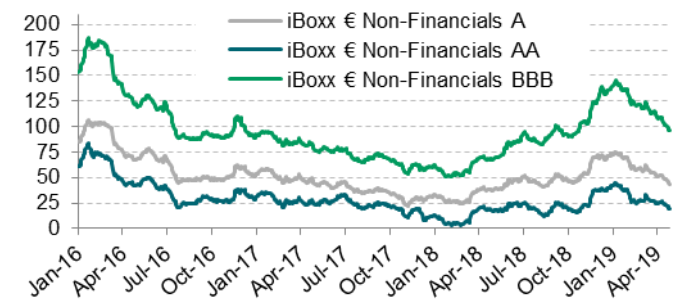
Treasury yields (10Y)



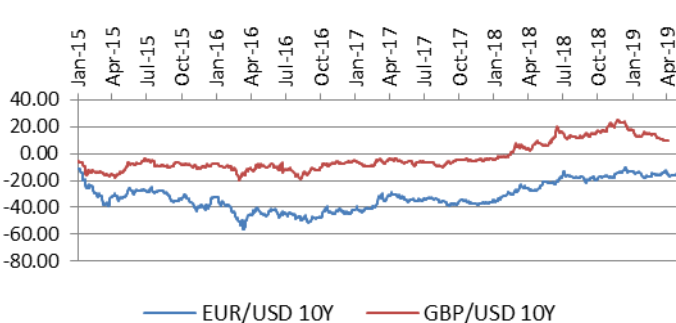
EUR swap rates (historic and forward levels)



Credit spread evolutions (EUR)



10Y basis swap evolution



Main upcoming events

	Events / Data	Expected impact
18-May	Trade War US-EU	Positive EUR and slightly higher long term rates
26-May	EU parliamentary elections	N/A
6-June	ECB meeting + projections update	N/A
19-June	Fed meeting+ 'dot-plot' update	N/A

iBoxx™ bond indices offer broad benchmarking and liquid tradable index solutions that track bond markets globally. Fuelled by multi-source pricing, iBoxx provides transparency to bond market performance.

Sources: Bloomberg, Crédit Agricole CIB



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