

January 4, 2019 03:30 PM GMT

Government Bond Auction Pipeline | Global

The Month Ahead

We review the supply and redemption picture for US, UK, euro, AUS, NZ, CAN and JPY government bond markets over the next month. Next week, we expect ~€34bn issuance against no coupons and redemptions; 10y UKT tap for £2.25bn; 3y, 10y and 30y USTs for \$78bn; 30y JGB for ¥700bn, 10y, ¥2200bn.

The Week Ahead

In the euro area, we expect €33.8bn issuance against no coupons and redemptions. Average gross supply for the same week of the past three years has been €12.4bn.

In the UK, UKT 1.625% 2028 will be re-opened for £2.25bn, against no coupons and redemptions.

In the US, new 3y UST will be issued and 10y, 30y will be re-opened, all for a total of \$78bn; these will settle in the week after next when \$4.2bn coupons and \$38.7bn redemptions will be paid.

In Japan, 30y JGB will be issued for ¥700bn and 10y JGB for ¥2200bn, against no coupons and redemptions.

In Australia, there will be no issuance or cash flow coming into the market.

In New Zealand, there will be no issuance or cash flow coming into the market.

In Canada, 2y CAGB 2.25% Feb-21 will be issued for \$3bn, against no coupons and redemptions.

The Coming Five Weeks

In the eurozone, we expect about €97.3bn of supply in the coming five weeks against €15bn of coupons and €56.2bn redemptions. This results in a cash deficit of €26.1bn.

MORGAN STANLEY & CO. LLC

Matthew Hornbach

STRATEGIST

Matthew.Hornbach@morganstanley.com

+1 212 761-1837

Due to the nature of the fixed income market, the issuers or bonds of the issuers recommended or discussed in this report may not be continuously followed. Accordingly, investors must regard this report as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers or bonds of the issuers.

Morgan Stanley does and seeks to do business with companies covered in Morgan Stanley Research. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of Morgan Stanley Research. Investors should consider Morgan Stanley Research as only a single factor in making their investment decision.

For analyst certification and other important disclosures, refer to the Disclosure Section, located at the end of this report.

Bond Supply Overview

Exhibit 1: Bond Supply Overview

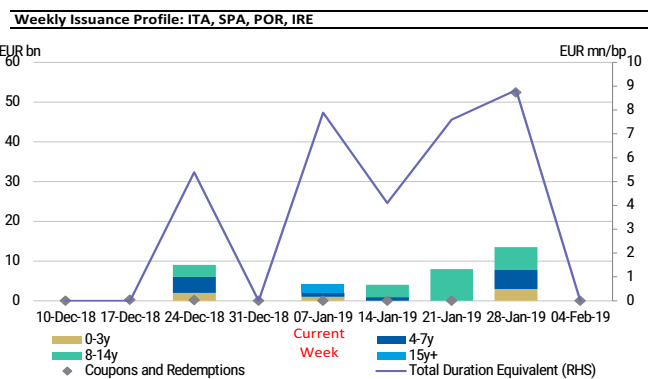
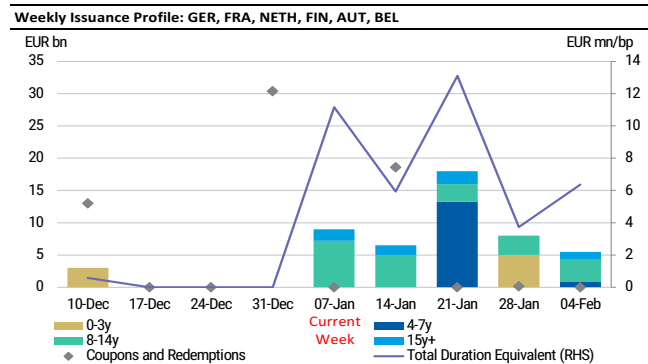
Monday 7-Jan	Tuesday 8-Jan	Wednesday 9-Jan	Thursday 10-Jan	Friday 11-Jan
***BEL: Possible New 10y Syndication, €5bn* ***IRE: Possible New 10y Syndication, €4bn* ***POR: Possible New 10y Syndication, €3bn*	GER: DBR 0.5% Apr-30 Tap, €0.5bn NETH: DSL 1.75% Jul-23 Tap, €1.25-1.75bn AUT: RAGB Auction, Total €1.265bn RAGB: 0.75% Feb-28 Tap, RAGB 1.5% Feb-47 Tap UK: UKT 1.625% 2028, £2.25bn US: New 3y UST Jan-22, \$38bn JPN: 10y JGB Dec-28, ¥2200bn	GER: New DBR Feb-2029, €4bn US: 10y UST Nov-28 Re-opening, \$24bn	US: 30y UST Nov-48 Re-opening, \$16bn JPN: 30y JGB Dec-48, ¥700bn CAN: 2y CAGB 2.25% Feb-21 Tap, \$3bn FRA: Long Term Auction, Total €8-9bn OAT: 0.75% Nov-28 Tap, OAT 1.25% May-34 Tap & OAT 2% May-48 Tap	ITA: BTP Auction, €6bn*
14-Jan	15-Jan	16-Jan	17-Jan	18-Jan
***AUT: Possible New 10y Syndication, €5bn*		GER: DBR 1.25% Aug-2048 Tap, €1.5bn JPN: 5y JGB Auction, ¥2000bn* AUS: ACGB Auction, \$800mn* CAN: 5y CAGB Auction, \$2bn*	SPA: SPGB Auction, €4bn* UK: UKT 1% 2024, £2.75bn* US: New 10y TIPS, \$13bn* NZ: NZGB 3% Apr-29 Tap, \$250mn CAN: 30y CAGB Auction, \$1bn*	JPN: Auction for Enhanced Liquidity, ¥400bn* AUS: ACGB Auction, \$800mn*
21-Jan	22-Jan	23-Jan	24-Jan	25-Jan
***SPA: Possible New 10y Syndication, €8bn* BEL: OLO Auction, €4bn*	UK: UKT 1.75% 2037, £2.25bn* JPN: Auction for Enhanced Liquidity, ¥400bn*	GER: New OBL Apr-2024, €4bn CAN: 10y CAGB Auction, \$1bn* AUS: ACGB Auction, \$800mn*	FRA: Medium Term Auction, €8-9bn* FRA: Linker Auction, €2bn* JPN: 20y JGB Auction, ¥1000bn* NZ: NZGB 2.75% Apr-37 Tap, \$200mn	AUS: ACGB Auction, \$800mn*
28-Jan	29-Jan	30-Jan	31-Jan	1-Feb
ITA: CTZ Auction, €3bn* ITA: BTPei Auction, €1.5bn* US: New 2y UST, \$40bn* US: New 5y UST, \$41bn*	GER: BKO Dec-2020 Tap, €5bn US: New 2y FRN, \$18bn* US: New 7y UST, \$32bn* JPN: 40y JGB Auction, ¥400bn*	GER: DBR Feb-2029 Tap, €3bn ITA: BTP Auction, €7bn* ITA: CCTeu Auction, €2bn* AUS: ACGB Auction, \$800mn*	JPN: 2y JGB Auction, ¥2100bn* NZ: NZGB 2.75% Apr-25 Tap, \$200mn	AUS: ACGB Auction, \$800mn*
4-Feb	5-Feb	6-Feb	7-Feb	8-Feb
	AUT: RAGB Auction, €1.5bn* US: New 3y UST, \$38bn* JPN: 10y JGB Auction, ¥2200bn*	US: New 10y UST, \$24bn* US: ACGB Auction, \$800mn*	FRA: Long Term Auction, €8-9bn* US: New 30y UST, \$16bn* CAN: 2y CAGB Auction, \$3bn* AUS: ACGB Auction, \$800mn*	AUS: ACGB Auction, \$800mn*

Source: Treasuries, Morgan Stanley Research. AEL: Auction for Enhanced Liquidity. * Morgan Stanley Estimate. ** Possible Auction, dates are not announced yet. *** The syndication is not announced yet, it may be conducted in the week commencing

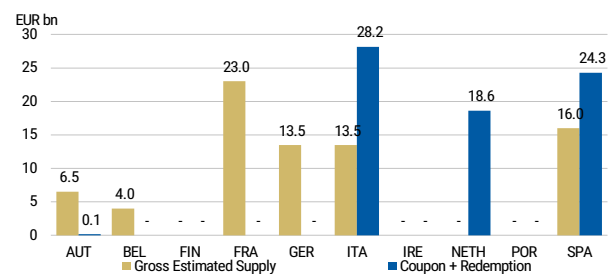
EUR Total Cash Flow (€bn)

Exhibit 2: EUR Total Cash Flow (€bn)

w/o	Day	Country	Supply	Coupons	Redemption	Net CashFlow	10y Futures
7-Jan	Mon	BEL	5.0			-5.0	32k
		IRE	4.0			-4.0	24k
		POR	3.0			-3.0	18k
8-Jan	Tue	GER	0.5			-0.5	2k
		NETH	1.5			-1.5	22k
		AUT	1.3			-1.3	14k
9-Jan	Wed	GER	4.0			-4.0	25k
10-Jan	Thu	FRA	8.5			-8.5	68k
11-Jan	Fri	ITA	6.0			-6.0	29k
Sub Total			33.8	0.0	0.0	-33.8	
w/o	Day	Country	Supply	Coupons	Redemption	Net CashFlow	10y Futures
14-Jan	Mon	AUT	5.0			-5.0	30k
15-Jan	Tue	NETH		3.7	14.9	18.6	
16-Jan	Wed	GER	1.5			-1.5	9k
17-Jan	Thu	SPA	4.0			-4.0	25k
18-Jan	Fri						
Sub Total			10.5	3.7	14.9	8.1	
w/o	Day	Country	Supply	Coupons	Redemption	Net CashFlow	10y Futures
21-Jan	Mon	SPA	8.0			-8.0	49k
		BEL	4.0			-4.0	33k
22-Jan	Tue						
23-Jan	Wed	GER	4.0			-4.0	13k
24-Jan	Thu	FRA	10.0			-10.0	31k
25-Jan	Fri						
Sub Total			26.0	0.0	0.0	-26.0	
w/o	Day	Country	Supply	Coupons	Redemption	Net Cash Flow	10y Futures
28-Jan	Mon	ITA	4.5			-4.5	7k
		AUT		0.1		0.1	
29-Jan	Tue	GER	5.0			-5.0	7k
30-Jan	Wed	GER	3.0			-3.0	19k
		ITA	9.0			-9.0	35k
31-Jan	Thu	SPA		6.1	18.1	24.3	
1-Feb	Fri	ITA		5.1	23.1	28.2	
Sub Total			21.5	11.3	41.2	31.1	
w/o	Day	Country	Supply	Coupons	Redemption	Net Cash Flow	10y Futures
4-Feb	Mon						
5-Feb	Tue	AUT	1.5			-1.5	7k
6-Feb	Wed						
7-Feb	Thu	FRA	4.0			-4.0	31k
8-Feb	Fri						
Sub Total			5.5	0.0	0.0	-5.5	
Total			97.3	15.0	56.2	-26.1	



Euroland Supply, Coupons & Redemptions by Country, for the coming five weeks.



Funding Progress (Eur Bn)				
Country	Bond Planned, € bn	Issued through Jan 04, € bn	Issuance Remaining € bn	Issued through Jan 04, % of Planned
Austria	19.5	0.0	19.5	0%
Belgium	28.0	0.0	28.0	0%
Finland	9.0	0.0	9.0	0%
France	225.0	0.0	225.0	0%
Germany	163.0	0.0	163.0	0%
Ireland	16.0	0.0	16.0	0%
Italy *	248.0	0.0	248.0	0%
Netherlands	21.0	0.0	21.0	0%
Portugal	9.0	0.0	9.0	0%
Spain	116.0	5.0	111.0	4%
EMU 16	854.5	5.0	849.5	1%
EMU 4	752.0	5.0	747.0	1%

* Morgan Stanley Estimate

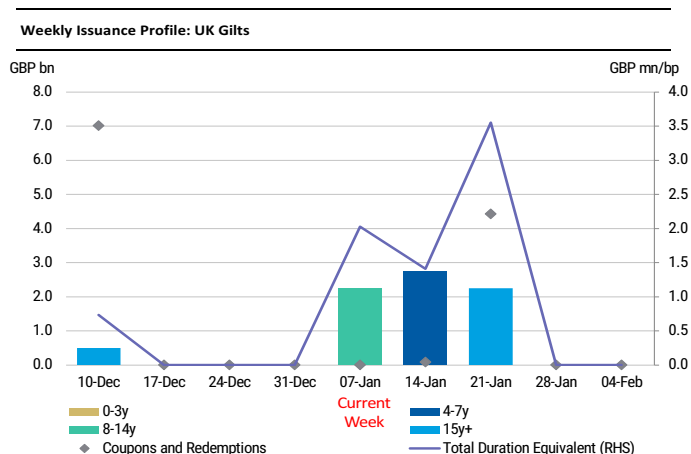
France: €195bn, net of buybacks as announced by the treasury. €225bn is estimated as gross of buybacks. Austria: €17-20bn RAGBs; Belgium: €31bn OLOs + €3bn EMTN

Source: Morgan Stanley, National Treasuries. Numbers may not add exactly due to rounding. Floater's supply and cash flows are not included.

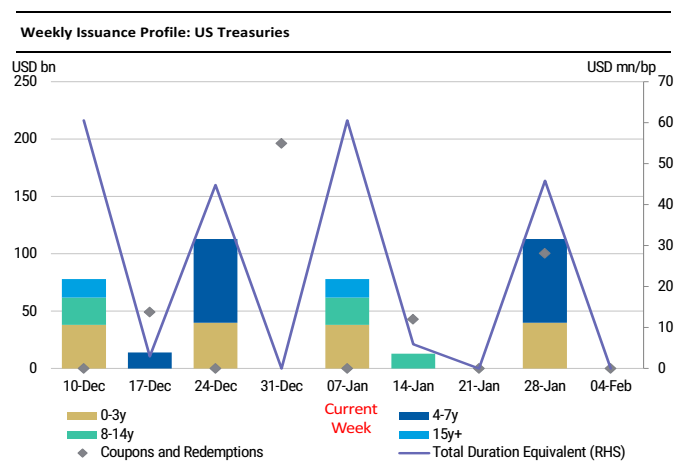
UK, US and Japan Total Cash Flow (Local Currency)

Exhibit 3: UK, US and Japan Total Cash Flow (Local Currency)

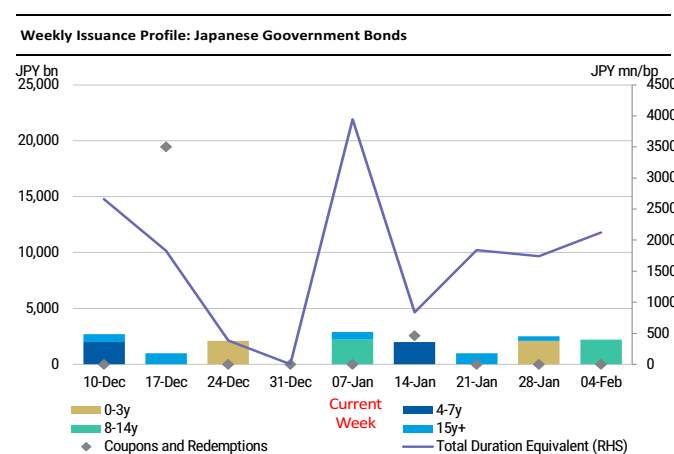
w/c	Country	Maturity	Supply	Coupons	Redemption	Net Cash Flow	10y Futures
7-Jan	UK	10y	2.25			-2.3	20k
14-Jan	UK	5y	2.8	0.1		-2.7	14k
21-Jan	UK	19y	2.3	4.4		2.2	36k
28-Jan	UK						
4-Feb	UK						
Total			7.25	4.5	0.0	-2.7	



w/c	Country	Maturity	Supply	Coupons	Redemption	Net Cash Flow	10y Futures
7-Jan	US	3y	38				138k
		9y	24				260k
		29y	16				410k
14-Jan	US	10y TII	13	4.2	38.7	-48.0	79k
21-Jan	US						
28-Jan	US	2y	40	8.2	92.2	-12.59	98k
		5y	41				248k
		7y	32				265k
4-Feb	US						
Sub Total			204.0	12.4	130.9	-60.6	



w/c	Country	Maturity	Supply	Coupons	Redemption	Net Cash Flow
7-Jan	JPN	10y	2200			-2200.0
		29y	700			-700.0
14-Jan	JPN	4y	2000	2.5	2565.5	568.0
21-Jan	JPN	20y	1000			-1000.0
28-Jan	JPN	39y	400			-400.0
		2y	2100			-2100.0
4-Feb	JPN	10y	2200			-2200.0
Sub Total			10600.0	2.5	2565.5	-8032.0



Source: Morgan Stanley, National Treasuries. Numbers may not add exactly due to rounding. Floater's supply and cash flows are not included

T-Bills Supply Calendar

Exhibit 4: T-Bills Supply Calendar

Date	Country	Details	Tenor (Months)	Maturity	Crncy	Amt
7-Jan	FRA	BTF Auction	3	3-Apr-19	EUR	2.6-3
7-Jan	FRA	BTF Auction	4	8-May-19	EUR	0-0.4
7-Jan	FRA	BTF Auction	5	5-Jun-19	EUR	0.5-0.9
7-Jan	FRA	BTF Auction	12	2-Jan-20	EUR	0.7-1.1
7-Jan	US	B Auction	3	11-Apr-19	USD	39
7-Jan	US	B Auction	6	11-Jul-19	USD	36
7-Jan	NETH	DTB Auction	6	15-Jul-23	EUR	
8-Jan	BEL	BGTB Auction	4	9-May-19	EUR	
8-Jan	BEL	BGTB Auction	6	11-Jul-19	EUR	
10-Jan	ITA	BOTS Auction			EUR	
10-Jan	US	B Auction	1		USD	40*
10-Jan	US	B Auction	2		USD	30*
11-Jan	UK	UKTB Auction	1		GBP	0.5
11-Jan	UK	UKTB Auction	3	15-Apr-19	GBP	2
11-Jan	UK	UKTB Auction	6	15-Jul-19	GBP	1.5
14-Jan	US	B Auction	3		USD	39*
14-Jan	US	B Auction	6		USD	36*
14-Jan	GER	Bubill Auction	5	19-Jun-19	EUR	3
15-Jan	SPA	SGLT Auction	6		EUR	
15-Jan	SPA	SGLT Auction	12		EUR	
15-Jan	BEL	BGTB Auction	4	9-May-19	EUR	
15-Jan	BEL	BGTB Auction	12	16-Jan-20	EUR	
17-Jan	US	B Auction	1		USD	40*
17-Jan	US	B Auction	2		USD	30*
19-Jan	SPA	SGLT Auction	6		EUR	
19-Jan	SPA	SGLT Auction	12		EUR	
18-Jan	UK	UKTB Auction	1,3,6		GBP	Total 5.5*
21-Jan	NETH	DTB Auction	6	27-Jun-19	EUR	
22-Jan	US	B Auction	3		USD	39*
22-Jan	US	B Auction	6		USD	36*
22-Jan	SPA	SGLT Auction	3		EUR	
22-Jan	SPA	SGLT Auction	9		EUR	
24-Jan	US	B Auction	1		USD	40*
24-Jan	US	B Auction	2		USD	30*
25-Jan	UK	UKTB Auction	1,3,6		GBP	Total 5.5*
28-Jan	US	B Auction	3		USD	39*
28-Jan	US	B Auction	6		USD	36*
28-Jan	GER	Bubill Auction	2.4	10-Apr-19	EUR	2
29-Jan	ITA	BOTS Auction			EUR	
29-Jan	US	B Auction	12		USD	26*
31-Jan	US	B Auction	1		USD	40*
31-Jan	US	B Auction	2		USD	30*
1-Feb	UK	UKTB Auction	1,3,6		GBP	Total 5.5*
4-Feb	US	B Auction	1		USD	
4-Feb	US	B Auction	2		USD	
4-Feb	NETH	DSL			EUR	
4-Feb	FRA	BTF Auction	3		EUR	
7-Feb	US	B Auction	3		USD	
7-Feb	US	B Auction	6		USD	
8-Feb	UK	UKTB Auction	1,3,6		GBP	Total 5.5*

Source: Treasuries, Morgan Stanley Research. * Morgan Stanley Estimate; ** Anticipated or delayed auctions (bank holidays etc)

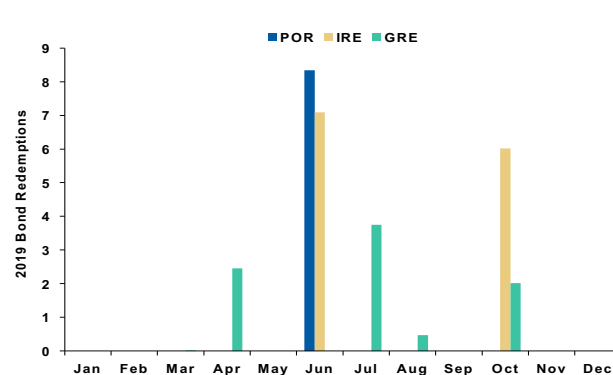
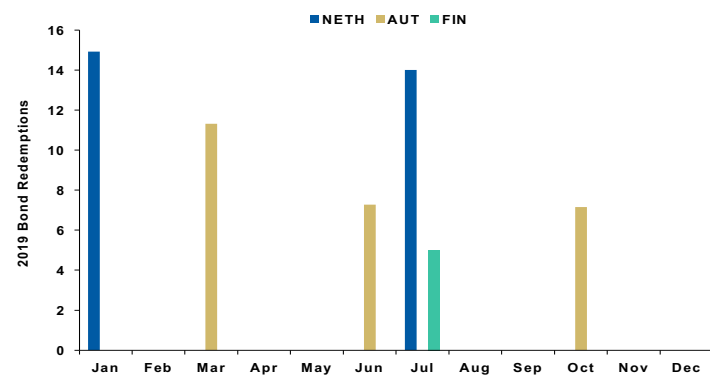
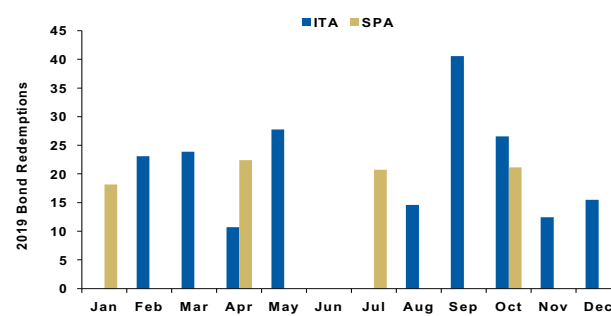
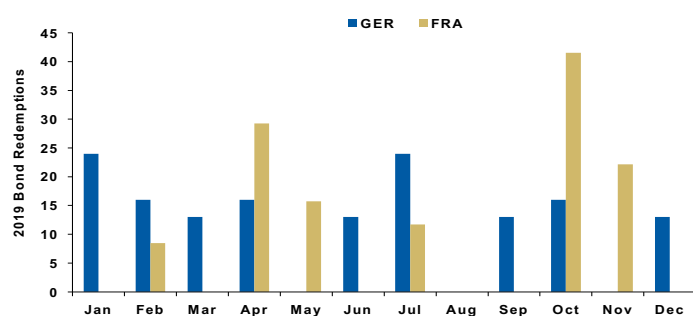
Eurozone Government Redemptions

Exhibit 5: Current Amount Outstanding of Domestic Bonds and Bills (€ bn)

2019	GER	FRA	ITA	SPA	NETH	GRE	BEL	IRE	AUT	POR	FIN	Total
Jan	24.0	0.0	0.0	18.1	14.9	0.0	0.0	0.0	0.0	0.0	0.0	57.1
Feb	16.0	8.5	23.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.6
Mar	13.0	0.0	23.9	0.0	0.0	0.0	10.0	0.0	11.3	0.0	0.0	58.2
Apr	16.0	29.3	10.7	22.4	0.0	2.5	0.0	0.0	0.0	0.0	0.0	80.8
May	0.0	15.7	27.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.5
Jun	13.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1	7.3	8.3	0.0	35.7
Jul	24.0	11.7	0.0	20.8	14.0	3.8	0.0	0.0	0.0	0.0	5.0	79.2
Aug	0.0	0.0	14.6	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	15.1
Sep	13.0	0.0	40.6	0.0	0.0	0.0	11.6	0.0	0.0	0.0	0.0	65.2
Oct	16.0	41.5	26.5	21.2	0.0	2.0	0.0	6.0	7.2	0.0	0.0	120.4
Nov	0.0	22.2	12.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.6
Dec	13.0	0.0	15.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.5
Total	148	129	195	82	29	9	22	13	26	8	5	666

2020	GER	FRA	ITA	SPA	NETH	GRE	BEL	IRE	AUT	POR	FIN	Total
Jan	22.0	0.0	0.0	23.1	15.2	0.0	0.0	0.0	0.0	0.0	0.0	60.3
Feb	0.0	23.6	23.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.0
Mar	13.0	0.0	40.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.3
Apr	36.0	37.9	16.8	23.4	0.0	0.0	0.0	10.6	0.0	0.0	6.5	131.1
May	0.0	21.0	16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.0
Jun	12.0	0.0	15.9	0.0	0.0	1.4	0.0	0.0	0.0	9.0	0.0	38.2
Jul	22.0	20.3	0.0	19.1	15.1	0.0	0.0	0.0	14.8	0.0	0.0	91.2
Aug	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sep	28.0	0.0	24.7	0.0	0.0	0.0	19.2	0.0	0.0	0.0	6.0	78.0
Oct	19.0	36.6	22.7	18.4	0.0	0.0	0.0	6.6	0.0	0.0	0.0	103.3
Nov	0.0	24.8	20.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.4
Dec	7.0	0.0	13.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.4
Total	159	164	194	84	30	1	19	17	15	9	13	705

Bond Redemptions by Country (excluding T-Bills, EUR Bn)



Source: Morgan Stanley Research, Bloomberg

Disclosure Section

The information and opinions in Morgan Stanley Research were prepared or are disseminated by Morgan Stanley & Co. LLC and/or Morgan Stanley C.T.V.M. S.A. and/or Morgan Stanley México, Casa de Bolsa, S.A. de C.V. and/or Morgan Stanley Canada Limited and/or Morgan Stanley & Co. International plc and/or RMB Morgan Stanley Proprietary Limited and/or Morgan Stanley MUFG Securities Co., Ltd. and/or Morgan Stanley Capital Group Japan Co., Ltd. and/or Morgan Stanley Asia Limited and/or Morgan Stanley Asia (Singapore) Pte. (Registration number 199206298Z) and/or Morgan Stanley Asia (Singapore) Securities Pte Ltd (Registration number 200008434H), regulated by the Monetary Authority of Singapore (which accepts legal responsibility for its contents and should be contacted with respect to any matters arising from, or in connection with, Morgan Stanley Research) and/or Morgan Stanley Taiwan Limited and/or Morgan Stanley & Co International plc, Seoul Branch, and/or Morgan Stanley Australia Limited (A.B.N. 67 003 734 576, holder of Australian financial services license No. 233742, which accepts responsibility for its contents), and/or Morgan Stanley Wealth Management Australia Pty Ltd (A.B.N. 19 009 145 555, holder of Australian financial services license No. 240813, which accepts responsibility for its contents), and/or Morgan Stanley India Company Private Limited, regulated by the Securities and Exchange Board of India ("SEBI") and holder of licenses as a Research Analyst (SEBI Registration No. INH000001105), Stock Broker (BSE Registration No. INB011054237 and NSE Registration No. INB/INF231054231), Merchant Banker (SEBI Registration No. INM000011203), and depository participant with National Securities Depository Limited (SEBI Registration No. IN-DP-NSDL-372-2014) which accepts the responsibility for its contents and should be contacted with respect to any matters arising from, or in connection with, Morgan Stanley Research, and/or PT. Morgan Stanley Sekuritas Indonesia and their affiliates (collectively, "Morgan Stanley").

For important disclosures, stock price charts and equity rating histories regarding companies that are the subject of this report, please see the Morgan Stanley Research Disclosure Website at www.morganstanley.com/researchdisclosures, or contact your investment representative or Morgan Stanley Research at 1585 Broadway, (Attention: Research Management), New York, NY, 10036 USA.

For valuation methodology and risks associated with any recommendation, rating or price target referenced in this research report, please contact the Client Support Team as follows: US/Canada +1 800 303-2495; Hong Kong +852 2848-5999; Latin America +1 718 754-5444 (U.S.); London +44 (0)20-7425-8169; Singapore +65 6834-6860; Sydney +61 (0)2-9770-1505; Tokyo +81 (0)3-6836-9000. Alternatively you may contact your investment representative or Morgan Stanley Research at 1585 Broadway, (Attention: Research Management), New York, NY 10036 USA.

Analyst Certification

The following analysts hereby certify that their views about the companies and their securities discussed in this report are accurately expressed and that they have not received and will not receive direct or indirect compensation in exchange for expressing specific recommendations or views in this report: Matthew Hombach.

Unless otherwise stated, the individuals listed on the cover page of this report are research analysts.

Global Research Conflict Management Policy

Morgan Stanley Research has been published in accordance with our conflict management policy, which is available at www.morganstanley.com/institutional/research/conflictpolicies. A Portuguese version of the policy can be found at www.morganstanley.com.br

Important US Regulatory Disclosures on Subject Companies

The equity research analysts or strategists principally responsible for the preparation of Morgan Stanley Research have received compensation based upon various factors, including quality of research, investor client feedback, stock picking, competitive factors, firm revenues and overall investment banking revenues. Equity Research analysts' or strategists' compensation is not linked to investment banking or capital markets transactions performed by Morgan Stanley or the profitability or revenues of particular trading desks.

Morgan Stanley and its affiliates do business that relates to companies/instruments covered in Morgan Stanley Research, including market making, providing liquidity, fund management, commercial banking, extension of credit, investment services and investment banking. Morgan Stanley sells to and buys from customers the securities/instruments of companies covered in Morgan Stanley Research on a principal basis. Morgan Stanley may have a position in the debt of the Company or instruments discussed in this report. Morgan Stanley trades or may trade as principal in the debt securities (or in related derivatives) that are the subject of the debt research report.

Certain disclosures listed above are also for compliance with applicable regulations in non-US jurisdictions.

STOCK RATINGS

Morgan Stanley uses a relative rating system using terms such as Overweight, Equal-weight, Not-Rated or Underweight (see definitions below). Morgan Stanley does not assign ratings of Buy, Hold or Sell to the stocks we cover. Overweight, Equal-weight, Not-Rated and Underweight are not the equivalent of buy, hold and sell. Investors should carefully read the definitions of all ratings used in Morgan Stanley Research. In addition, since Morgan Stanley Research contains more complete information concerning the analyst's views, investors should carefully read Morgan Stanley Research, in its entirety, and not infer the contents from the rating alone. In any case, ratings (or research) should not be used or relied upon as investment advice. An investor's decision to buy or sell a stock should depend on individual circumstances (such as the investor's existing holdings) and other considerations.

Global Stock Ratings Distribution

(as of December 31, 2018)

The Stock Ratings described below apply to Morgan Stanley's Fundamental Equity Research and do not apply to Debt Research produced by the Firm. For disclosure purposes only (in accordance with NASD and NYSE requirements), we include the category headings of Buy, Hold, and Sell alongside our ratings of Overweight, Equal-weight, Not-Rated and Underweight. Morgan Stanley does not assign ratings of Buy, Hold or Sell to the stocks we cover. Overweight, Equal-weight, Not-Rated and Underweight are not the equivalent of buy, hold, and sell but represent recommended relative weightings (see definitions below). To satisfy regulatory requirements, we correspond Overweight, our most positive stock rating, with a buy recommendation; we correspond Equal-weight and Not-Rated to hold and Underweight to sell recommendations, respectively.

STOCK RATING CATEGORY	COVERAGE UNIVERSE		INVESTMENT BANKING CLIENTS (IBC)			OTHER MATERIAL INVESTMENT SERVICES CLIENTS (MISC)	
	COUNT	% OF TOTAL	COUNT	% OF TOTAL IBC	% OF RATING CATEGORY	COUNT	% OF TOTAL OTHER MSC
Overweight/Buy	1143	36%	282	40%	25%	540	38%
Equal-weight/Hold	1428	45%	336	47%	24%	651	46%
Not-Rated/Hold	46	1%	6	1%	13%	6	0%
Underweight/Sell	566	18%	86	12%	15%	232	16%
TOTAL	3,183		710			1429	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

Analyst Stock Ratings

Overweight (O or Over) - The stock's total return is expected to exceed the total return of the relevant country MSCI Index or the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis over the next 12-18 months.

Equal-weight (E or Equal) - The stock's total return is expected to be in line with the total return of the relevant country MSCI Index or the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis over the next 12-18 months.

Not-Rated (NR) - Currently the analyst does not have adequate conviction about the stock's total return relative to the relevant country MSCI Index or the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Underweight (U or Under) - The stock's total return is expected to be below the total return of the relevant country MSCI Index or the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Unless otherwise specified, the time frame for price targets included in Morgan Stanley Research is 12 to 18 months.

Analyst Industry Views

Attractive (A): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.

In-Line (I): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be in line with the relevant broad market benchmark, as indicated below.

Cautious (C): The analyst views the performance of his or her industry coverage universe over the next 12-18 months with caution vs. the relevant broad market benchmark, as indicated below.

Benchmarks for each region are as follows: North America - S&P 500; Latin America - relevant MSCI country index or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

Important Disclosures for Morgan Stanley Smith Barney LLC Customers

Important disclosures regarding the relationship between the companies that are the subject of Morgan Stanley Research and Morgan Stanley Smith Barney LLC or Morgan Stanley or any of their affiliates, are available on the Morgan Stanley Wealth Management disclosure website at www.morganstanley.com/online/researchdisclosures. For Morgan Stanley specific disclosures, you may refer to www.morganstanley.com/researchdisclosures.

Each Morgan Stanley Equity Research report is reviewed and approved on behalf of Morgan Stanley Smith Barney LLC. This review and approval is conducted by the same person who reviews the Equity Research report on behalf of Morgan Stanley. This could create a conflict of interest.

Other Important Disclosures

Morgan Stanley Research policy is to update research reports as and when the Research Analyst and Research Management deem appropriate, based on developments with the issuer, the sector, or the market that may have a material impact on the research views or opinions stated therein. In addition, certain Research publications are intended to be updated on a regular periodic basis (weekly/monthly/quarterly/annual) and will ordinarily be updated with that frequency, unless the Research Analyst and Research Management determine that a different publication schedule is appropriate based on current conditions. Morgan Stanley is not acting as a municipal advisor and the opinions or views contained herein are not intended to be, and do not constitute, advice within the meaning of Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act.

Morgan Stanley produces an equity research product called a "Tactical Idea." Views contained in a "Tactical Idea" on a particular stock may be contrary to the recommendations or views expressed in research on the same stock. This may be the result of differing time horizons, methodologies, market events, or other factors. For all research available on a particular stock, please contact your sales representative or go to Matrix at <http://www.morganstanley.com/matrix>.

Morgan Stanley Research is provided to our clients through our proprietary research portal on Matrix and also distributed electronically by Morgan Stanley to clients. Certain, but not all, Morgan Stanley Research products are also made available to clients through third-party vendors or redistributed to clients through alternate electronic means as a convenience. For access to all available Morgan Stanley Research, please contact your sales representative or go to Matrix at <http://www.morganstanley.com/matrix>.

Any access and/or use of Morgan Stanley Research is subject to Morgan Stanley's Terms of Use (<http://www.morganstanley.com/terms.html>). By accessing and/or using Morgan Stanley Research, you are indicating that you have read and agree to be bound by our Terms of Use (<http://www.morganstanley.com/terms.html>). In addition you consent to Morgan Stanley processing your personal data and using cookies in accordance with our Privacy Policy and our Global Cookies Policy (http://www.morganstanley.com/privacy_pledge.html), including for the purposes of setting your preferences and to collect readership data so that we can deliver better and more personalized service and products to you. To find out more information about how Morgan Stanley processes personal data, how we use cookies and how to reject cookies see our Privacy Policy and our Global Cookies Policy (http://www.morganstanley.com/privacy_pledge.html).

If you do not agree to our Terms of Use and/or if you do not wish to provide your consent to Morgan Stanley processing your personal data or using cookies please do not access our research.

Morgan Stanley Research does not provide individually tailored investment advice. Morgan Stanley Research has been prepared without regard to the

circumstances and objectives of those who receive it. Morgan Stanley recommends that investors independently evaluate particular investments and strategies, and encourages investors to seek the advice of a financial adviser. The appropriateness of an investment or strategy will depend on an investor's circumstances and objectives. The securities, instruments, or strategies discussed in Morgan Stanley Research may not be suitable for all investors, and certain investors may not be eligible to purchase or participate in some or all of them. Morgan Stanley Research is not an offer to buy or sell or the solicitation of an offer to buy or sell any security/instrument or to participate in any particular trading strategy. The value of and income from your investments may vary because of changes in interest rates, foreign exchange rates, default rates, prepayment rates, securities/instruments prices, market indexes, operational or financial conditions of companies or other factors. There may be time limitations on the exercise of options or other rights in securities/instruments transactions. Past performance is not necessarily a guide to future performance. Estimates of future performance are based on assumptions that may not be realized. If provided, and unless otherwise stated, the closing price on the cover page is that of the primary exchange for the subject company's securities/instruments.

The fixed income research analysts, strategists or economists principally responsible for the preparation of Morgan Stanley Research have received compensation based upon various factors, including quality, accuracy and value of research, firm profitability or revenues (which include fixed income trading and capital markets profitability or revenues), client feedback and competitive factors. Fixed Income Research analysts', strategists' or economists' compensation is not linked to investment banking or capital markets transactions performed by Morgan Stanley or the profitability or revenues of particular trading desks.

The "Important US Regulatory Disclosures on Subject Companies" section in Morgan Stanley Research lists all companies mentioned where Morgan Stanley owns 1% or more of a class of common equity securities of the companies. For all other companies mentioned in Morgan Stanley Research, Morgan Stanley may have an investment of less than 1% in securities/instruments or derivatives of securities/instruments of companies and may trade them in ways different from those discussed in Morgan Stanley Research. Employees of Morgan Stanley not involved in the preparation of Morgan Stanley Research may have investments in securities/instruments or derivatives of securities/instruments of companies mentioned and may trade them in ways different from those discussed in Morgan Stanley Research. Derivatives may be issued by Morgan Stanley or associated persons.

With the exception of information regarding Morgan Stanley, Morgan Stanley Research is based on public information. Morgan Stanley makes every effort to use reliable, comprehensive information, but we make no representation that it is accurate or complete. We have no obligation to tell you when opinions or information in Morgan Stanley Research change apart from when we intend to discontinue equity research coverage of a subject company. Facts and views presented in Morgan Stanley Research have not been reviewed by, and may not reflect information known to, professionals in other Morgan Stanley business areas, including investment banking personnel.

Morgan Stanley Research personnel may participate in company events such as site visits and are generally prohibited from accepting payment by the company of associated expenses unless pre-approved by authorized members of Research management.

Morgan Stanley may make investment decisions that are inconsistent with the recommendations or views in this report.

To our readers based in Taiwan or trading in Taiwan securities/instruments: Information on securities/instruments that trade in Taiwan is distributed by Morgan Stanley Taiwan Limited ("MSTL"). Such information is for your reference only. The reader should independently evaluate the investment risks and is solely responsible for their investment decisions. Morgan Stanley Research may not be distributed to the public media or quoted or used by the public media without the express written consent of Morgan Stanley. Any non-customer reader within the scope of Article 7-1 of the Taiwan Stock Exchange Recommendation Regulations accessing and/or receiving Morgan Stanley Research is not permitted to provide Morgan Stanley Research to any third party (including but not limited to related parties, affiliated companies and any other third parties) or engage in any activities regarding Morgan Stanley Research which may create or give the appearance of creating a conflict of interest. Information on securities/instruments that do not trade in Taiwan is for informational purposes only and is not to be construed as a recommendation or a solicitation to trade in such securities/instruments. MSTL may not execute transactions for clients in these securities/instruments.

Certain information in Morgan Stanley Research was sourced by employees of the Shanghai Representative Office of Morgan Stanley Asia Limited for the use of Morgan Stanley Asia Limited.

Morgan Stanley is not incorporated under PRC law and the research in relation to this report is conducted outside the PRC. Morgan Stanley Research does not constitute an offer to sell or the solicitation of an offer to buy any securities in the PRC. PRC investors shall have the relevant qualifications to invest in such securities and shall be responsible for obtaining all relevant approvals, licenses, verifications and/or registrations from the relevant governmental authorities themselves. Neither this report nor any part of it is intended as, or shall constitute, provision of any consultancy or advisory service of securities investment as defined under PRC law. Such information is provided for your reference only.

Morgan Stanley Research is disseminated in Brazil by Morgan Stanley C.T.V.M. S.A. located at Av. Brigadeiro Faria Lima, 3600, 6th floor, São Paulo - SP, Brazil; and is regulated by the Comissão de Valores Mobiliários; in Mexico by Morgan Stanley México, Casa de Bolsa, S.A. de C.V. which is regulated by Comisión Nacional Bancaria y de Valores. Paseo de los Tamarindos 90, Torre 1, Col. Bosques de las Lomas Floor 29, 05120 Mexico City; in Japan by Morgan Stanley MUFG Securities Co., Ltd. and, for Commodities related research reports only, Morgan Stanley Capital Group Japan Co., Ltd; in Hong Kong by Morgan Stanley Asia Limited (which accepts responsibility for its contents) and by Morgan Stanley Asia International Limited, Hong Kong Branch; in Singapore by Morgan Stanley Asia (Singapore) Pte. (Registration number 199206298Z) and/or Morgan Stanley Asia (Singapore) Securities Pte Ltd (Registration number 200008434H), regulated by the Monetary Authority of Singapore (which accepts legal responsibility for its contents and should be contacted with respect to any matters arising from, or in connection with, Morgan Stanley Research) and by Morgan Stanley Asia International Limited, Singapore Branch (Registration number T11FC0207F); in Australia to "wholesale clients" within the meaning of the Australian Corporations Act by Morgan Stanley Australia Limited A.B.N. 67 003 734 576, holder of Australian financial services license No. 233742, which accepts responsibility for its contents; in Australia to "wholesale clients" and "retail clients" within the meaning of the Australian Corporations Act by Morgan Stanley Wealth Management Australia Pty Ltd (A.B.N. 19 009 145 555, holder of Australian financial services license No. 240813, which accepts responsibility for its contents; in Korea by Morgan Stanley & Co International plc, Seoul Branch; in India by Morgan Stanley India Company Private Limited; in Indonesia by PT. Morgan Stanley Sekuritas Indonesia; in Canada by Morgan Stanley Canada Limited, which has approved of and takes responsibility for its contents in Canada; in Germany by Morgan Stanley Bank AG, Frankfurt am Main and Morgan Stanley Private Wealth Management Limited, Niederlassung Deutschland, regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin); in Spain by Morgan Stanley, S.V., S.A., a Morgan Stanley group company, which is supervised by the Spanish Securities Markets Commission (CNMV) and states that Morgan Stanley Research has been written and distributed in accordance with the rules of conduct applicable to financial research as established under Spanish regulations; in the US by Morgan Stanley & Co. LLC, which accepts responsibility for its contents. Morgan Stanley & Co. International plc, authorized by the Prudential Regulatory Authority and regulated by the Financial Conduct Authority and the Prudential Regulatory Authority, disseminates in the UK research that it has prepared, and approves solely for the purposes of section 21 of the Financial Services and Markets Act 2000, research which has been prepared by any of its affiliates. RMB Morgan Stanley Proprietary Limited is a member of the JSE Limited and regulated by the Financial Services Board in South Africa. RMB Morgan Stanley Proprietary Limited is a joint venture owned equally by Morgan Stanley International Holdings Inc. and RMB Investment Advisory (Proprietary) Limited, which is wholly owned by FirstRand Limited. The information in Morgan Stanley Research is being disseminated by Morgan Stanley Saudi Arabia, regulated by the Capital Market Authority in the Kingdom of Saudi Arabia, and is directed at Sophisticated investors only.

The information in Morgan Stanley Research is being communicated by Morgan Stanley & Co. International plc (DIFC Branch), regulated by the Dubai Financial Services Authority (the DFSA), and is directed at Professional Clients only, as defined by the DFSA. The financial products or financial services to which this research relates will only be made available to a customer who we are satisfied meets the regulatory criteria to be a Professional Client.

The information in Morgan Stanley Research is being communicated by Morgan Stanley & Co. International plc (QFC Branch), regulated by the Qatar Financial Centre Regulatory Authority (the QFCRA), and is directed at business customers and market counterparties only and is not intended for Retail

Customers as defined by the QFCRA.

As required by the Capital Markets Board of Turkey, investment information, comments and recommendations stated here, are not within the scope of investment advisory activity. Investment advisory service is provided exclusively to persons based on their risk and income preferences by the authorized firms. Comments and recommendations stated here are general in nature. These opinions may not fit to your financial status, risk and return preferences. For this reason, to make an investment decision by relying solely to this information stated here may not bring about outcomes that fit your expectations.

The trademarks and service marks contained in Morgan Stanley Research are the property of their respective owners. Third-party data providers make no warranties or representations relating to the accuracy, completeness, or timeliness of the data they provide and shall not have liability for any damages relating to such data. The Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and S&P.

Morgan Stanley Research, or any portion thereof may not be reprinted, sold or redistributed without the written consent of Morgan Stanley.

Indicators and trackers referenced in Morgan Stanley Research may not be used as, or treated as, a benchmark under Regulation EU 2016/1011, or any other similar framework.

© 2019 Morgan Stanley