

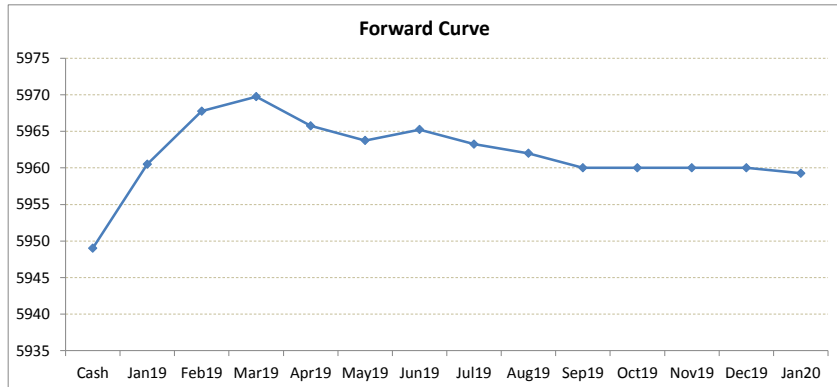
LME Valuation - Copper

Cash - 3M: 16.00c

Date: 2018-12-31

Cash 5949.00
3M 5965.00
 Jan19 5960.50
 Feb19 5967.75
 Mar19 5969.75
 Apr19 5965.75
 May19 5963.75
 Jun19 5965.25
 Jul19 5963.25
 Aug19 5962.00
 Sep19 5960.00
 Oct19 5960.00
 Nov19 5960.00
 Dec19 5960.00
 Jan20 5959.25

	Cash-Jan19	Cash-Feb19	Cash-Mar19	Cash-Apr19	Cash-May19	Cash-Jun19	Cash-Jul19	Cash-Aug19	Cash-Sep19	Cash-Oct19	Cash-Nov19	Cash-Dec19
Cash	11.50c	18.75c	20.75c	16.75c	14.75c	16.25c	14.25c	13.00c	11.00c	11.00c	11.00c	11.00c
	Jan19-3M	Feb19-3M	Mar19-3M	3M-Apr19	3M-May19	3M-Jun19	3M-Jul19	3M-Aug19	3M-Sep19	3M-Oct19	3M-Nov19	3M-Dec19
3M	4.50c	2.75b	4.75b	0.75c	1.25b	0.25c	1.75b	3.00b	5.00b	5.00b	5.00b	5.00b
	Jan19-Feb19	Feb19-Mar19	Mar19-Apr19	Apr19-May19	May19-Jun19	Jun19-Jul19	Jul19-Aug19	Aug19-Sep19	Sep19-Oct19	Oct19-Nov19	Nov19-Dec19	Dec19-Jan20
3rd wed	7.25c	2.00c	4.00b	2.00b	1.50c	2.00b	1.25b	2.00b	0.00b	0.00b	0.00b	0.75b
	Feb19	Mar19	Apr19	May19	Jun19	Jul19	Aug19	Sep19	Oct19	Nov19	Dec19	Jan20
Jan19	7.25c	9.25c	5.25c	3.25c	4.75c	2.75c	1.50c	0.50b	0.50b	0.50b	0.50b	1.25b
	Feb19	2.00c	2.00b	4.00b	2.50b	4.50b	5.75b	7.75b	7.75b	7.75b	7.75b	8.50b
		Mar19	4.00b	6.00b	4.50b	6.50b	7.75b	9.75b	9.75b	9.75b	9.75b	10.50b
			Apr19	2.00b	0.50b	2.50b	3.75b	5.75b	5.75b	5.75b	5.75b	6.50b
				May19	1.50c	0.50b	1.75b	3.75b	3.75b	3.75b	3.75b	4.50b
					Jun19	2.00b	3.25b	5.25b	5.25b	5.25b	5.25b	6.00b
						Jul19	1.25b	3.25b	3.25b	3.25b	3.25b	4.00b
							Aug19	2.00b	2.00b	2.00b	2.00b	2.75b
								Sep19	0.00b	0.00b	0.00b	0.75b
									Oct19	0.00b	0.00b	0.75b
										Nov19	0.00b	0.75b
											Dec19	0.75b
												Jan20



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 ** Source: Reuters

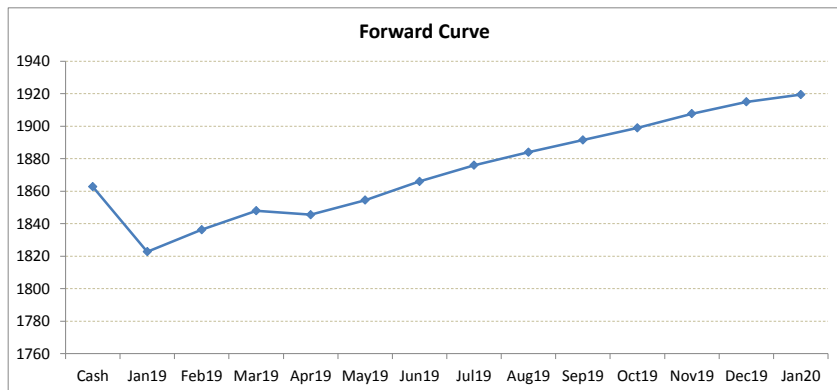
LME Valuation - Aluminium

Cash - 3M: **16.75b**

Date: **2018-12-31**

Cash 1862.75
3M 1846.00
 Jan19 **1822.75**
 Feb19 **1836.25**
 Mar19 **1848.00**
 Apr19 **1845.50**
 May19 **1854.50**
 Jun19 **1866.00**
 Jul19 **1876.00**
 Aug19 **1884.00**
 Sep19 **1891.50**
 Oct19 **1899.00**
 Nov19 **1907.75**
 Dec19 **1915.00**
 Jan20 **1919.50**

	Cash-Jan19	Cash-Feb19	Cash-Mar19	Cash-Apr19	Cash-May19	Cash-Jun19	Cash-Jul19	Cash-Aug19	Cash-Sep19	Cash-Oct19	Cash-Nov19	Cash-Dec19
Cash	40.00b	26.50b	14.75b	17.25b	8.25b	3.25c	13.25c	21.25c	28.75c	36.25c	45.00c	52.25c
	Jan19-3M	Feb19-3M	Mar19-3M	3M-Apr19	3M-May19	3M-Jun19	3M-Jul19	3M-Aug19	3M-Sep19	3M-Oct19	3M-Nov19	3M-Dec19
3M	23.25c	9.75c	2.00b	0.50b	8.50c	20.00c	30.00c	38.00c	45.50c	53.00c	61.75c	69.00c
	Jan19-Feb19	Feb19-Mar19	Mar19-Apr19	Apr19-May19	May19-Jun19	Jun19-Jul19	Jul19-Aug19	Aug19-Sep19	Sep19-Oct19	Oct19-Nov19	Nov19-Dec19	Dec19-Jan20
3rd wed	13.50c	11.75c	2.50b	9.00c	11.50c	10.00c	8.00c	7.50c	7.50c	8.75c	7.25c	4.50c
	Feb19	Mar19	Apr19	May19	Jun19	Jul19	Aug19	Sep19	Oct19	Nov19	Dec19	Jan20
Jan19	13.50c	25.25c	22.75c	31.75c	43.25c	53.25c	61.25c	68.75c	76.25c	85.00c	92.25c	96.75c
	Feb19	Mar19	Apr19	May19	Jun19	Jul19	Aug19	Sep19	Oct19	Nov19	Dec19	Jan20
Feb19		11.75c	9.25c	18.25c	29.75c	39.75c	47.75c	55.25c	62.75c	71.50c	78.75c	83.25c
	Mar19	Apr19	May19	Jun19	Jul19	Aug19	Sep19	Oct19	Nov19	Dec19	Jan20	
Mar19			2.50b	6.50c	18.00c	28.00c	36.00c	43.50c	51.00c	59.75c	67.00c	71.50c
	Apr19	May19	Jun19	Jul19	Aug19	Sep19	Oct19	Nov19	Dec19	Jan20		
Apr19				9.00c	20.50c	30.50c	38.50c	46.00c	53.50c	62.25c	69.50c	74.00c
	May19	Jun19	Jul19	Aug19	Sep19	Oct19	Nov19	Dec19	Jan20			
May19					11.50c	21.50c	29.50c	37.00c	44.50c	53.25c	60.50c	65.00c
	Jun19	Jul19	Aug19	Sep19	Oct19	Nov19	Dec19	Jan20				
Jun19						10.00c	18.00c	25.50c	33.00c	41.75c	49.00c	53.50c
	Jul19	Aug19	Sep19	Oct19	Nov19	Dec19	Jan20					
Jul19							8.00c	15.50c	23.00c	31.75c	39.00c	43.50c
	Aug19	Sep19	Oct19	Nov19	Dec19	Jan20						
Aug19								7.50c	15.00c	23.75c	31.00c	35.50c
	Sep19	Oct19	Nov19	Dec19	Jan20							
Sep19									7.50c	16.25c	23.50c	28.00c
	Oct19	Nov19	Dec19	Jan20								
Oct19										8.75c	16.00c	20.50c
	Nov19	Dec19	Jan20									
Nov19											7.25c	11.75c
	Dec19	Jan20										
Dec19												4.50c
	Jan20											
Jan20												



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 ** Source: Reuters

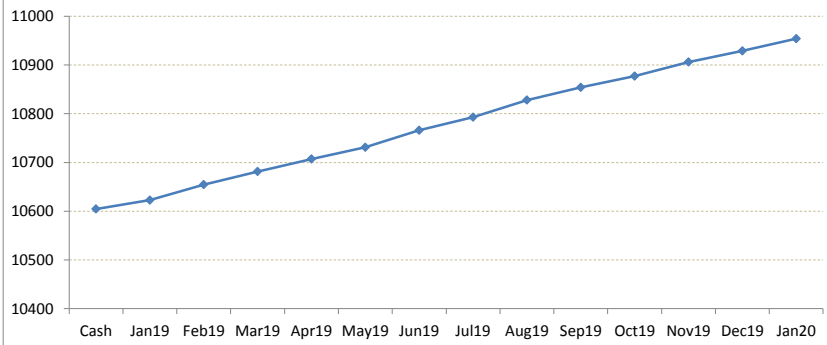
LME Valuation - Nickel

Cash - 3M: 85.50c

Date: 2018-12-31

	Cash-Jan19	Cash-Feb19	Cash-Mar19	Cash-Apr19	Cash-May19	Cash-Jun19	Cash-Jul19	Cash-Aug19	Cash-Sep19	Cash-Oct19	Cash-Nov19	Cash-Dec19
Cash	10604.50											
3M	10690.00											
Jan19	10622.50											
Feb19	10654.50											
Mar19	10681.50											
Apr19	10707.00											
May19	10731.00											
Jun19	10766.00											
Jul19	10793.00											
Aug19	10828.00											
Sep19	10854.00											
Oct19	10877.00											
Nov19	10906.00											
Dec19	10929.00											
Jan20	10954.00											
Cash	18.00c	50.00c	77.00c	102.50c	126.50c	161.50c	188.50c	223.50c	249.50c	272.50c	301.50c	324.50c
3M	67.50c	35.50c	8.50c	17.00c	41.00c	76.00c	103.00c	138.00c	164.00c	187.00c	216.00c	239.00c
3rd wed	32.00c	27.00c	25.50c	24.00c	35.00c	27.00c	35.00c	26.00c	23.00c	29.00c	23.00c	25.00c
Jan19	32.00c	59.00c	84.50c	108.50c	143.50c	170.50c	205.50c	231.50c	254.50c	283.50c	306.50c	331.50c
Feb19		27.00c	52.50c	76.50c	111.50c	138.50c	173.50c	199.50c	222.50c	251.50c	274.50c	299.50c
Mar19			25.50c	49.50c	84.50c	111.50c	146.50c	172.50c	195.50c	224.50c	247.50c	272.50c
Apr19				24.00c	59.00c	86.00c	121.00c	147.00c	170.00c	199.00c	222.00c	247.00c
May19					35.00c	62.00c	97.00c	123.00c	146.00c	175.00c	198.00c	223.00c
Jun19						27.00c	62.00c	88.00c	111.00c	140.00c	163.00c	188.00c
Jul19							35.00c	61.00c	84.00c	113.00c	136.00c	161.00c
Aug19								26.00c	49.00c	78.00c	101.00c	126.00c
Sep19									23.00c	52.00c	75.00c	100.00c
Oct19										29.00c	52.00c	77.00c
Nov19											23.00c	48.00c
Dec19												25.00c
Jan20												

Forward Curve



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** Source: Reuters

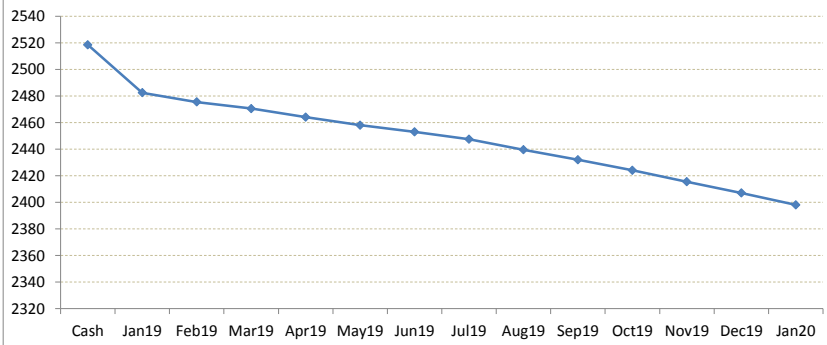
LME Valuation - Zinc

Cash - 3M: **51.50b**

Date: **2018-12-31**

Cash	2518.50	Cash-Jan19	Cash-Feb19	Cash-Mar19	Cash-Apr19	Cash-May19	Cash-Jun19	Cash-Jul19	Cash-Aug19	Cash-Sep19	Cash-Oct19	Cash-Nov19	Cash-Dec19
3M	2467.00	36.00b	43.00b	48.00b	54.50b	60.50b	65.50b	71.00b	79.00b	86.50b	94.50b	103.00b	111.50b
Jan19	2482.50												
Feb19	2475.50	Jan19-3M	Feb19-3M	Mar19-3M	3M-Apr19	3M-May19	3M-Jun19	3M-Jul19	3M-Aug19	3M-Sep19	3M-Oct19	3M-Nov19	3M-Dec19
Mar19	2470.50	15.50b	8.50b	3.50b	3.00b	9.00b	14.00b	19.50b	27.50b	35.00b	43.00b	51.50b	60.00b
Apr19	2464.00												
May19	2458.00	Jan19-Feb19	Feb19-Mar19	Mar19-Apr19	Apr19-May19	May19-Jun19	Jun19-Jul19	Jul19-Aug19	Aug19-Sep19	Sep19-Oct19	Oct19-Nov19	Nov19-Dec19	Dec19-Jan20
Jun19	2453.00	7.00b	5.00b	6.50b	6.00b	5.00b	5.50b	8.00b	7.50b	8.00b	8.50b	8.50b	9.00b
Jul19	2447.50												
Aug19	2439.50	Feb19	Mar19	Apr19	May19	Jun19	Jul19	Aug19	Sep19	Oct19	Nov19	Dec19	Jan20
Sep19	2432.00	7.00b	12.00b	18.50b	24.50b	29.50b	35.00b	43.00b	50.50b	58.50b	67.00b	75.50b	84.50b
Oct19	2424.00	Feb19	5.00b	11.50b	17.50b	22.50b	28.00b	36.00b	43.50b	51.50b	60.00b	68.50b	77.50b
Nov19	2415.50		Mar19	6.50b	12.50b	17.50b	23.00b	31.00b	38.50b	46.50b	55.00b	63.50b	72.50b
Dec19	2407.00			Apr19	6.00b	11.00b	16.50b	24.50b	32.00b	40.00b	48.50b	57.00b	66.00b
Jan20	2398.00				May19	5.00b	10.50b	18.50b	26.00b	34.00b	42.50b	51.00b	60.00b
						Jun19	5.50b	13.50b	21.00b	29.00b	37.50b	46.00b	55.00b
							Jul19	8.00b	15.50b	23.50b	32.00b	40.50b	49.50b
								Aug19	7.50b	15.50b	24.00b	32.50b	41.50b
									Sep19	8.00b	16.50b	25.00b	34.00b
										Oct19	8.50b	17.00b	26.00b
											Nov19	8.50b	17.50b
												Dec19	9.00b
													Jan20

Forward Curve



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 ** Source: Reuters

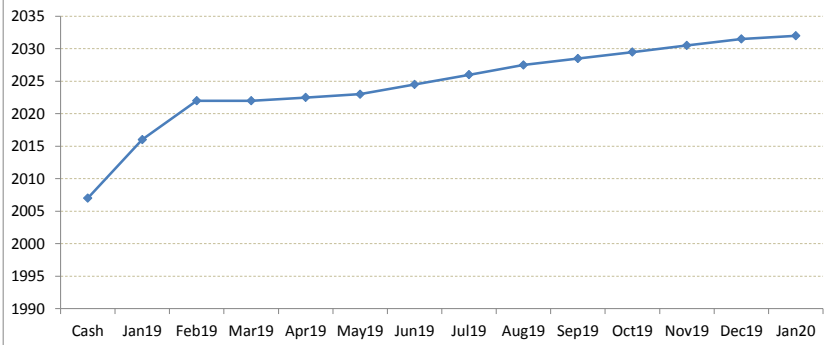
LME Valuation - Lead

Cash - 3M: 14.00c

Date: 2018-12-31

Cash	2007.00	Cash-Jan19	Cash-Feb19	Cash-Mar19	Cash-Apr19	Cash-May19	Cash-Jun19	Cash-Jul19	Cash-Aug19	Cash-Sep19	Cash-Oct19	Cash-Nov19	Cash-Dec19
3M	2021.00	9.00c	15.00c	15.00c	15.50c	16.00c	17.50c	19.00c	20.50c	21.50c	22.50c	23.50c	24.50c
Jan19	2016.00												
Feb19	2022.00	Jan19-3M	Feb19-3M	Mar19-3M	3M-Apr19	3M-May19	3M-Jun19	3M-Jul19	3M-Aug19	3M-Sep19	3M-Oct19	3M-Nov19	3M-Dec19
Mar19	2022.00	5.00c	1.00b	1.00b	1.50c	2.00c	3.50c	5.00c	6.50c	7.50c	8.50c	9.50c	10.50c
Apr19	2022.50												
May19	2023.00	Jan19-Feb19	Feb19-Mar19	Mar19-Apr19	Apr19-May19	May19-Jun19	Jun19-Jul19	Jul19-Aug19	Aug19-Sep19	Sep19-Oct19	Oct19-Nov19	Nov19-Dec19	Dec19-Jan20
Jun19	2024.50	6.00c	0.00b	0.50c	0.50c	1.50c	1.50c	1.50c	1.00c	1.00c	1.00c	1.00c	0.50c
Jul19	2026.00												
Aug19	2027.50	Feb19	Mar19	Apr19	May19	Jun19	Jul19	Aug19	Sep19	Oct19	Nov19	Dec19	Jan20
Sep19	2028.50	6.00c	6.00c	6.50c	7.00c	8.50c	10.00c	11.50c	12.50c	13.50c	14.50c	15.50c	16.00c
Oct19	2029.50	Feb19	0.00b	0.50c	1.00c	2.50c	4.00c	5.50c	6.50c	7.50c	8.50c	9.50c	10.00c
Nov19	2030.50		Mar19	0.50c	1.00c	2.50c	4.00c	5.50c	6.50c	7.50c	8.50c	9.50c	10.00c
Dec19	2031.50			Apr19	0.50c	2.00c	3.50c	5.00c	6.00c	7.00c	8.00c	9.00c	9.50c
Jan20	2032.00				May19	1.50c	3.00c	4.50c	5.50c	6.50c	7.50c	8.50c	9.00c
						Jun19	1.50c	3.00c	4.00c	5.00c	6.00c	7.00c	7.50c
							Jul19	1.50c	2.50c	3.50c	4.50c	5.50c	6.00c
								Aug19	1.00c	2.00c	3.00c	4.00c	4.50c
									Sep19	1.00c	2.00c	3.00c	3.50c
										Oct19	1.00c	2.00c	2.50c
											Nov19	1.00c	1.50c
												Dec19	0.50c
													Jan20

Forward Curve



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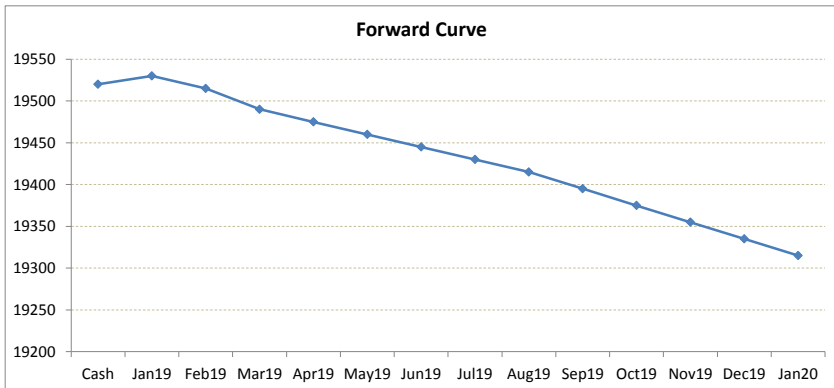
LME Valuation - Tin

Cash - 3M: **45.00b**

Date: **2018-12-31**

Cash 19520.00
3M 19475.00
 Jan19 **19530.00**
 Feb19 **19515.00**
 Mar19 **19490.00**
 Apr19 **19475.00**
 May19 **19460.00**
 Jun19 **19445.00**
 Jul19 **19430.00**
 Aug19 **19415.00**
 Sep19 **19395.00**
 Oct19 **19375.00**
 Nov19 **19355.00**
 Dec19 **19335.00**
 Jan20 **19315.00**

	Cash-Jan19	Cash-Feb19	Cash-Mar19	Cash-Apr19	Cash-May19	Cash-Jun19	Cash-Jul19	Cash-Aug19	Cash-Sep19	Cash-Oct19	Cash-Nov19	Cash-Dec19	
Cash	10.00c	5.00b	30.00b	45.00b	60.00b	75.00b	90.00b	105.00b	125.00b	145.00b	165.00b	185.00b	
	Jan19-3M	Feb19-3M	Mar19-3M	3M-Apr19	3M-May19	3M-Jun19	3M-Jul19	3M-Aug19	3M-Sep19	3M-Oct19	3M-Nov19	3M-Dec19	
3M	55.00b	40.00b	15.00b	0.00b	15.00b	30.00b	45.00b	60.00b	80.00b	100.00b	120.00b	140.00b	
	Jan19-Feb19	Feb19-Mar19	Mar19-Apr19	Apr19-May19	May19-Jun19	Jun19-Jul19	Jul19-Aug19	Aug19-Sep19	Sep19-Oct19	Oct19-Nov19	Nov19-Dec19	Dec19-Jan20	
3rd wed	15.00b	25.00b	15.00b	15.00b	15.00b	15.00b	15.00b	20.00b	20.00b	20.00b	20.00b	20.00b	
	Feb19	Mar19	Apr19	May19	Jun19	Jul19	Aug19	Sep19	Oct19	Nov19	Dec19	Jan20	
Jan19	15.00b	40.00b	55.00b	70.00b	85.00b	100.00b	115.00b	135.00b	155.00b	175.00b	195.00b	215.00b	
	Feb19	Mar19	Apr19	May19	Jun19	Jul19	Aug19	Sep19	Oct19	Nov19	Dec19	Jan20	
Feb19		25.00b	40.00b	55.00b	70.00b	85.00b	100.00b	120.00b	140.00b	160.00b	180.00b	200.00b	
	Mar19	Apr19	May19	Jun19	Jul19	Aug19	Sep19	Oct19	Nov19	Dec19	Jan20		
Mar19			15.00b	30.00b	45.00b	60.00b	75.00b	95.00b	115.00b	135.00b	155.00b	175.00b	
	Apr19	May19	Jun19	Jul19	Aug19	Sep19	Oct19	Nov19	Dec19	Jan20			
Apr19				15.00b	30.00b	45.00b	60.00b	80.00b	100.00b	120.00b	140.00b	160.00b	
	May19	Jun19	Jul19	Aug19	Sep19	Oct19	Nov19	Dec19	Jan20				
May19					15.00b	30.00b	45.00b	65.00b	85.00b	105.00b	125.00b	145.00b	
	Jun19	Jul19	Aug19	Sep19	Oct19	Nov19	Dec19	Jan20					
Jun19						15.00b	30.00b	50.00b	70.00b	90.00b	110.00b	130.00b	
	Jul19	Aug19	Sep19	Oct19	Nov19	Dec19	Jan20						
Jul19							15.00b	35.00b	55.00b	75.00b	95.00b	115.00b	
	Aug19	Sep19	Oct19	Nov19	Dec19	Jan20							
Aug19								20.00b	40.00b	60.00b	80.00b	100.00b	
	Sep19	Oct19	Nov19	Dec19	Jan20								
Sep19									20.00b	40.00b	60.00b	80.00b	
	Oct19	Nov19	Dec19	Jan20									
Oct19										20.00b	40.00b	60.00b	
	Nov19	Dec19	Jan20										
Nov19											20.00b	40.00b	
	Dec19	Jan20											
Dec19												20.00b	
	Jan20												
Jan20													20.00b



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 ** Source: Reuters