ASX Packs and Bundles

Strip Leg Allocation Process

November 2017

ASX

What are Packs and Bundles?

- Packs and Bundles on 90 Day Bank Accepted Bill futures provide users with the ability to trade multiple periods of short term interest rate exposure in a single transaction.
- Participants can trade segments of the yield curve.
- Provide end users with products that enable trading of 1, 2 or 3 year OTC interest rate swap exposure.
- Each product represents a strip of underlying 90 Day Bank Accepted Bill futures
- Another avenue to gain access to the most actively traded short term interest rate derivatives product in the Asian region.

List of Packs and Bundles

As at November 2017

White Pack (WP)	Red Pack (RP)	Green Pack (GP)	2nd Year Bundle (RB)	3rd Year Bundle (GB)
Jun-17			Jun-17	Jun-17
Sep-17			Sep-17	Sep-17
Dec-17			Dec-17	Dec-17
Mar-18			Mar-18	Mar-18
	Jun-18		Jun-18	Jun-18
	Sep-18		Sep-18	Sep-18
	Dec-18		Dec-18	Dec-18
	Mar-19		Mar-19	Mar-19
		Jun-19		Jun-19
		Sep-19		Sep-19
		Dec-19		Dec-19
		Mar-20		Mar-20

Leg Price Allocation

Individual leg prices will be calculated by the following methodology:

- Take either the previous days official daily settlement prices (for night session trading) or adjusted daily settlement prices, i.e. night session close prices (for day session trading) of the underlying futures as a starting point (“ODSPs”)
- Calculate adjustment factor using the following expression: (Traded price – average price using ODSP) / average price using ODSP, rounded to 6 decimal places.
- Adjust each bank bill futures leg by the adjustment factor calculated in (2)
- Round each futures leg to the nearest 0.005
- Ensure the average of the allocated legs equals the traded Pack or Bundle price.
- If not, adjust the final leg price by increments of 0.005 until (5) is satisfied.
- Allocated legs are cleared through Genium Clearing

To verify leg prices, participants can also refer to the Packs and Bundles Leg Allocation calculator available at asx.com.au/prices/calculators

Leg Price Allocation – Australian Packs

Leg Price Allocation

White Pack

IR contract months	Previous sessions closing price
Jun-17	97.330
Sep-17	97.310
Dec-17	97.280
Mar-18	97.240
Jun-18	97.190
Sep-18	97.110
Dec-18	97.020
Mar-19	96.940
Jun-19	96.860
Sep-19	96.760
Dec-19	96.670
Mar-20	96.580

(1) Take the previous sessions official daily settlement prices ("ODSPs") of the underlying futures as a starting point

Leg Price Allocation

White Pack

IR contract months	Previous sessions closing price
Jun-17	97.330
Sep-17	97.310
Dec-17	97.280
Mar-18	97.240
Jun-18	97.190
Sep-18	97.110
Dec-18	97.020
Mar-19	96.940
Jun-19	96.860
Sep-19	96.760
Dec-19	96.670
Mar-20	96.580

(2) Calculate adjustment factor using the following expression: (Traded price – average price using ODSP) / average price using ODSP

Let's assume that WPM7 is executed at 97.285

Adj. factor = (97.285 – 97.290) / 97.290

= -0.000051

Leg Price Allocation

White Pack

IR contract months	Previous sessions closing price	Allocated futures price
Jun-17	97.330	97.325
Sep-17	97.310	97.305
Dec-17	97.280	97.275
Mar-18	97.240	97.235
Jun-18	97.190	
Sep-18	97.110	
Dec-18	97.020	
Mar-19	96.940	
Jun-19	96.860	
Sep-19	96.760	
Dec-19	96.670	
Mar-20	96.580	

(3) Adjust each bank bill futures leg by the adjustment factor calculated in (2)

Leg prices are calculated as 97.300 + (97.330 x -0.000051) = 97.325 (Leg 1)

Leg prices are calculated to the closest 0.005, so there is no need for rounding.

Leg Price Allocation

White Pack

IR contract months	Previous sessions closing price	Allocated futures price
Jun-17	97.330	97.325
Sep-17	97.310	97.305
Dec-17	97.280	97.275
Mar-18	97.240	97.235
Jun-18	97.190	
Sep-18	97.110	
Dec-18	97.020	
Mar-19	96.940	
Jun-19	96.860	
Sep-19	96.760	
Dec-19	96.670	
Mar-20	96.580	

(5) Ensure the average of the allocated legs equals the traded Pack or Bundle price.

Average of allocated legs = (97.325 + 97.305 + 97.275 + 97.235) / 4 = 97.285

This corresponds with the traded WPM7 price of 97.285

No need for any further adjustment

Leg Price Allocation

Red Pack

IR contract months	Previous sessions closing price
Jun-17	97.330
Sep-17	97.310
Dec-17	97.280
Mar-18	97.240
Jun-18	97.190
Sep-18	97.110
Dec-18	97.020
Mar-19	96.940
Jun-19	96.860
Sep-19	96.760
Dec-19	96.670
Mar-20	96.580

(1) Take previous days official daily settlement prices ("ODSPs") of the underlying futures as a starting point

Leg Price Allocation

Red Pack

IR contract months	Previous sessions closing price
Jun-17	97.330
Sep-17	97.310
Dec-17	97.280
Mar-18	97.240
Jun-18	97.190
Sep-18	97.110
Dec-18	97.020
Mar-19	96.940
Jun-19	96.860
Sep-19	96.760
Dec-19	96.670
Mar-20	96.580

(2) Calculate adjustment factor using the following expression: (Traded price – average price using ODSP) / average price using ODSP

Let's assume that a RPM8 is executed at 97.060

Adj. factor = (97.060 – 97.065) / 97.065

= -0.000052

Leg Price Allocation

Red Pack

IR contract months	Previous sessions closing price	Allocated futures price
Jun-17	97.330	
Sep-17	97.310	
Dec-17	97.280	
Mar-18	97.240	
Jun-18	97.190	97.185
Sep-18	97.110	97.105
Dec-18	97.020	97.015
Mar-19	96.940	96.935
Jun-19	96.860	
Sep-19	96.760	
Dec-19	96.670	
Mar-20	96.580	

(3) Adjust each bank bill futures leg by the adjustment factor calculated in (2)

Leg prices are calculated as 97.190 + (97.190 x -0.000052) = 97.185 (Leg 1)

Leg prices are calculated to the closest 0.005, so there is no need for rounding

Leg Price Allocation

Red Pack

IR contract months	Previous sessions closing price	Allocated futures price
Jun-17	97.330	
Sep-17	97.310	
Dec-17	97.280	
Mar-18	97.240	
Jun-18	97.190	97.185
Sep-18	97.110	97.105
Dec-18	97.020	97.015
Mar-19	96.940	96.935
Jun-19	96.860	
Sep-19	96.760	
Dec-19	96.670	
Mar-20	96.580	

(5) Ensure the average of the allocated legs equals the traded Pack or Bundle price

Average of allocated legs = (97.185 + 97.105 + 97.015 + 96.935) / 4 = 97.060

This corresponds with the traded RPM8 price of 97.060

No need for any further adjustment

Leg Price Allocation

Green Pack

IR contract months	Previous sessions closing price
Jun-17	97.330
Sep-17	97.310
Dec-17	97.280
Mar-18	97.240
Jun-18	97.190
Sep-18	97.110
Dec-18	97.020
Mar-19	96.940
Jun-19	96.860
Sep-19	96.760
Dec-19	96.670
Mar-20	96.580

(1) Take the previous days official daily settlement prices ("ODSPs") of the underlying futures as a starting point

Leg Price Allocation

Green Pack

IR contract months	Previous sessions closing price
Jun-17	97.330
Sep-17	97.310
Dec-17	97.280
Mar-18	97.240
Jun-18	97.190
Sep-18	97.110
Dec-18	97.020
Mar-19	96.940
Jun-19	96.860
Sep-19	96.760
Dec-19	96.670
Mar-20	96.580

(2) Calculate adjustment factor using the following expression: (Traded price – average price using ODSP) / average price using ODSP

Let's assume that a GPM9 is executed at 96.725

Adj. factor = (96.725 – 96.7175) / 96.7175

= 0.000078

Leg Price Allocation

Green Pack

IR contract months	Previous sessions closing price	Allocated futures price
Jun-17	97.330	
Sep-17	97.310	
Dec-17	97.280	
Mar-18	97.240	
Jun-18	97.190	
Sep-18	97.110	
Dec-18	97.020	
Mar-19	96.940	
Jun-19	96.860	96.870
Sep-19	96.760	96.770
Dec-19	96.670	96.680
Mar-20	96.580	96.590

(3) Adjust each bank bill futures leg by the adjustment factor calculated in (2)

Leg prices are calculated as 96.860 + (96.860 x 0.000078) = 96.870 (Leg 1)

Leg Price Allocation

Green Pack

IR contract months	Previous sessions closing price	Allocated futures price	Final Allocated futures price
Jun-17	97.330		
Sep-17	97.310		
Dec-17	97.280		
Mar-18	97.240		
Jun-18	97.190		
Sep-18	97.110		
Dec-18	97.020		
Mar-19	96.940		
Jun-19	96.860	96.870	96.870
Sep-19	96.760	96.770	96.770
Dec-19	96.670	96.680	96.680
Mar-20	96.580	96.590	96.590

(4) Round each futures leg to the nearest 0.005

Leg Price Allocation

Green Pack

IR contract months	Previous sessions closing price	Allocated futures price
Jun-17	97.330	
Sep-17	97.310	
Dec-17	97.280	
Mar-18	97.240	
Jun-18	97.190	
Sep-18	97.110	
Dec-18	97.020	
Mar-19	96.940	
Jun-19	96.860	96.870
Sep-19	96.760	96.770
Dec-19	96.670	96.680
Mar-20	96.580	96.590

(5) Ensure the average of the allocated legs equals the traded Pack or Bundle price

Average of allocated legs = (96.870 + 96.770 + 96.680 + 96.590) / 4 = 96.7275

This does not correspond with the traded GBM7 price of 96.725

A further adjustment is needed.

Leg Price Allocation

Green Pack

IR contract months	Previous sessions closing price	Allocated futures price
Jun-17	97.330	
Sep-17	97.310	
Dec-17	97.280	
Mar-18	97.240	
Jun-18	97.190	
Sep-18	97.110	
Dec-18	97.020	
Mar-19	96.940	
Jun-19	96.860	96.870
Sep-19	96.760	96.770
Dec-19	96.670	96.680
Mar-20	96.580	96.580

(6) Adjust the final leg price by increments of 0.005 until condition that average of the allocated legs equals the traded Pack or Bundle price.

Final allocated leg price has been adjustment down by 0.01, from 96.590 to 96.580 in order for the average of allocated legs to equate to 96.725

Leg Price Allocation – Australian Bundles

Leg Price Allocation

2nd Year Bundle

IR contract months	Previous sessions closing price
Jun-17	97.330
Sep-17	97.310
Dec-17	97.280
Mar-18	97.240
Jun-18	97.190
Sep-18	97.110
Dec-18	97.020
Mar-19	96.940
Jun-19	96.860
Sep-19	96.760
Dec-19	96.670
Mar-20	96.580

(1) Take the previous days official daily settlement prices ("ODSPs") of the underlying futures as a starting point

Leg Price Allocation

2nd Year Bundle

IR contract months	Previous sessions closing price
Jun-17	97.330
Sep-17	97.310
Dec-17	97.280
Mar-18	97.240
Jun-18	97.190
Sep-18	97.110
Dec-18	97.020
Mar-19	96.940
Jun-19	96.860
Sep-19	96.760
Dec-19	96.670
Mar-20	96.580

(2) Calculate adjustment factor using the following expression: (Traded price – average price using ODSP) / average price using ODSP

Let's assume that a RBM7 is executed at 96.170

Adj. factor = (97.170 – 97.178) / 97.178 = -0.010368

Leg Price Allocation

2nd Year Bundle

IR contract months	Previous sessions closing price	Allocated futures price
Jun-17	97.330	97.320
Sep-17	97.310	97.300
Dec-17	97.280	97.270
Mar-18	97.240	97.230
Jun-18	97.190	97.180
Sep-18	97.110	97.105
Dec-18	97.020	97.015
Mar-19	96.940	96.935
Jun-19	96.860	
Sep-19	96.760	
Dec-19	96.670	
Mar-20	96.580	

(3) Adjust each bank bill futures leg by the adjustment factor calculated in (2)

Leg prices are calculated as 97.330 + (96.330 x -0.010368) = 97.320 (Leg 1)

Leg Price Allocation

2nd Year Bundle

IR contract months	Previous sessions closing price	Allocated futures price	Final Allocated futures price
Jun-17	97.330	97.320	97.320
Sep-17	97.310	97.300	97.300
Dec-17	97.280	97.270	97.270
Mar-18	97.240	97.230	97.230
Jun-18	97.190	97.180	97.180
Sep-18	97.110	97.105	97.105
Dec-18	97.020	97.015	97.015
Mar-19	96.940	96.935	96.935
Jun-19	96.860		
Sep-19	96.760		
Dec-19	96.670		
Mar-20	96.580		

(4) Round each futures leg to the nearest 0.005

Leg Price Allocation

2nd Year Bundle

IR contract months	Previous sessions closing price	Allocated futures price
Jun-17	97.330	97.320
Sep-17	97.310	97.300
Dec-17	97.280	97.270
Mar-18	97.240	97.230
Jun-18	97.190	97.180
Sep-18	97.110	97.105
Dec-18	97.020	97.015
Mar-19	96.940	96.935
Jun-19	96.860	
Sep-19	96.760	
Dec-19	96.670	
Mar-20	96.580	

(5) Ensure the average of the allocated legs equals the traded Pack or Bundle price

Average of allocated legs = (97.320 + 97.300 + 97.270 + 97.230 + 97.180 + 97.105 + 97.015 + 96.935) / 8 = 97.169

This does not correspond with the traded RBM7 price of 97.170

A further adjustment is needed

Leg Price Allocation

2nd Year Bundle

IR contract months	Previous sessions closing price	Allocated futures price
Jun-17	97.330	97.320
Sep-17	97.310	97.300
Dec-17	97.280	97.270
Mar-18	97.240	97.230
Jun-18	97.190	97.180
Sep-18	97.110	97.105
Dec-18	97.020	97.015
Mar-19	96.940	96.940
Jun-19	96.860	
Sep-19	96.760	
Dec-19	96.670	
Mar-20	96.580	

(6) Adjust the final leg price by increments of 0.005 until condition that average of the allocated legs equals the traded Pack or Bundle price

Final allocated leg price has been adjusted up by 0.005, from 96.935 to 96.940 in order for the average of allocated legs to equate to 97.170

Leg Price Allocation

3rd Year Bundle

IR contract months	Previous sessions closing price
Jun-17	97.330
Sep-17	97.310
Dec-17	97.280
Mar-18	97.240
Jun-18	97.190
Sep-18	97.110
Dec-18	97.020
Mar-19	96.940
Jun-19	96.860
Sep-19	96.760
Dec-19	96.670
Mar-20	96.580

(1) Take the previous days official daily settlement prices ("ODSPs") of the underlying futures as a starting point

Leg Price Allocation

3rd Year Bundle

IR contract months	Previous sessions closing price
Jun-17	97.330
Sep-17	97.310
Dec-17	97.280
Mar-18	97.240
Jun-18	97.190
Sep-18	97.110
Dec-18	97.020
Mar-19	96.940
Jun-19	96.860
Sep-19	96.760
Dec-19	96.670
Mar-20	96.580

(2) Calculate adjustment factor using the following expression: (Traded price – average price using ODSP) / average price using ODSP

Let's assume that a GBM7 is executed at 97.015

Adj. factor = (97.015 – 97.024) / 97.024 = -0.000094

Leg Price Allocation

3rd Year Bundle

IR contract months	Previous sessions closing price	Allocated futures price
Jun-17	97.330	97.320
Sep-17	97.310	97.300
Dec-17	97.280	97.270
Mar-18	97.240	97.230
Jun-18	97.190	97.180
Sep-18	97.110	97.100
Dec-18	97.020	97.010
Mar-19	96.940	96.930
Jun-19	96.860	96.850
Sep-19	96.760	96.750
Dec-19	96.670	96.660
Mar-20	96.580	96.570

(3) Adjust each bank bill futures leg by the adjustment factor calculated in (2)

Leg prices are calculated as 97.330 + (96.330 x -0.000094) = 97.320 (Leg 1)

Leg Price Allocation

3rd Year Bundle

IR contract months	Previous sessions closing price	Allocated futures price	Final Allocated futures price
Jun-17	97.330	97.320	97.320
Sep-17	97.310	97.300	97.300
Dec-17	97.280	97.270	97.270
Mar-18	97.240	97.230	97.230
Jun-18	97.190	97.180	97.180
Sep-18	97.110	97.100	97.100
Dec-18	97.020	97.010	97.010
Mar-19	96.940	96.930	96.930
Jun-19	96.860	96.850	96.850
Sep-19	96.760	96.750	96.750
Dec-19	96.670	96.660	96.660
Mar-20	96.580	96.570	96.570

(4) Round each futures leg to the nearest 0.005

Leg Price Allocation

3rd Year Bundle

IR contract months	Previous sessions closing price	Allocated futures price
Jun-17	97.330	97.320
Sep-17	97.310	97.300
Dec-17	97.280	97.270
Mar-18	97.240	97.230
Jun-18	97.190	97.180
Sep-18	97.110	97.100
Dec-18	97.020	97.010
Mar-19	96.940	96.930
Jun-19	96.860	96.850
Sep-19	96.760	96.750
Dec-19	96.670	96.660
Mar-20	96.580	96.570

(6) Adjust the final leg price by increments of 0.005 until condition that average of the allocated legs equals the traded Pack or Bundle price

Final allocated leg price has been adjustment up by 0.01, from 96.570 to 96.580 in order for the average of allocated legs to equate to 97.015

Leg Price Allocation

3rd Year Bundle

IR contract months	Previous sessions closing price	Allocated futures price
Jun-17	97.330	97.320
Sep-17	97.310	97.300
Dec-17	97.280	97.270
Mar-18	97.240	97.230
Jun-18	97.190	97.180
Sep-18	97.110	97.100
Dec-18	97.020	97.010
Mar-19	96.940	96.930
Jun-19	96.860	96.850
Sep-19	96.760	96.750
Dec-19	96.670	96.660
Mar-20	96.580	96.580

(5) Ensure the average of the allocated legs equals the traded Pack or Bundle price

Average of allocated legs = (97.320 + 97.300 + 97.270 + 97.230 + 97.180 + 97.100 + 97.010 + +96.930 + 96.850 + 96.750 + 96.660 + 96.570) / 12 = 97.014

This does not correspond with the traded GBM7 price of 97.015

A further adjustment is needed

Further Information

For further information on Packs and Bundles, or any ASX Interest Rate Derivatives products, please contact:

T 131 279 or +61 9338 0000
E futures@asx.com.au
W asx.com.au/interest-rate-derivatives

Follow us @ASX
Follow us on LinkedIn