



Interest Rate Swaps Conventions

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1. Description

The swaps market is an integral part of the capital markets. It drives and is driven by international bond issuance by both government and nongovernment entities. Swaps enable borrowers and investors to alter the cash flow characteristics of instruments they use to better suit their individual circumstances. They can also take advantage of any market misalignments to achieve better results than would be possible without the swaps market.

2. Products

A swap, as the name implies, is an exchange of financial obligations. It involves two parties contracting to swap their respective interest payment flows or their foreign exchange obligations.

A swap works by the dealer being able to value all the cash flows involved in the deal. In a swap the obligations exchanged can be in the same or different currencies and can be at fixed or floating rates of interest. There are many variations on this theme as per [Appendix 1](#).

An overnight index swap (OIS) is a fixed for floating interest rate swap having a term of usually between one week and two years. The floating rate is tied to a daily Interbank Overnight Cash reference rate (RBA30)

These conventions are specific to Australian Dollar swap products traded between AFMA members, although they are applicable to all counterparties that trade or enter into AUD swap products. Swaps denominated in other currencies would be subject to the specific conventions/rules governing those markets.

A set of self contained CPI linked swap conventions are detailed in [Section 3.7](#). For CPI linked swaps conventions not covered conventions are the same as those for other interest rate swaps contained within this set of conventions.

3. Dealing

3.1. Methods of Dealing

Direct via telephone or via brokers.

3.2. Electronic Dealing

Not applicable.

3.3. Business Days

A good business day is defined as any day on which banks in the state of New South Wales (NSW) are generally open for business, or a day other than one on which banks in NSW are obliged or permitted to close, excluding Saturday and Sunday.

Essentially, NSW business days are weekdays (Monday to Friday) other than NSW public holidays as gazetted under the NSW State Government's Banks and Bank Holidays Act 1912.

That said Australian OTC Markets generally tend to operate in a reduced capacity on gazetted NSW public holidays that are not similarly gazetted in Victoria.

3.4. Standard Transaction Size (market parcel)

Unless specified otherwise the following dealing parcels will apply to Australian dollar swaps:

Interest Rate Swaps		
<i>Maturity</i>	<i>Notional Principal for Swaps on an EFP basis</i>	<i>Notional Principal for Swaps on an Outright basis</i>
1 to 2 years	\$ 100 million	\$ 100 million
3 to 5 years	\$ 50 million	\$ 50 million
6 to 10 years	\$ 25 million	\$ 25 million
>10 years	\$ 25 million 10 year equivalent	\$ 25 million 10 year equivalent

Short Dated Interest Rate Swaps	
<i>Maturity</i>	<i>Notional Principal</i>
1 to 3 months fixed against 1 month floating	\$ 500 million
4 to 6 months fixed against 1 month floating	\$ 200 million
7 to 12 months fixed against 1 month floating	\$ 100 million

BAB(Bills)/LIBOR Swaps	
<i>Maturity</i>	<i>Notional Principal</i>
1 to 2 years	\$ 100 million
3 to 5 years	\$ 50 million
6 to 10 years	\$ 25 million
>10 years	\$ 25 million

BAB(Bills)/Cash (RBA cash rate) Swaps	
<i>Maturity</i>	<i>Notional Principal</i>
1 to 2 years	\$ 100 million
3 to 5 years	\$ 50 million
6 years and beyond.	\$ 25 million

Single Currency Basis Swaps	
<i>Maturity</i>	<i>Notional Principal</i>
1 to 10 years	\$ 100 million

- The minimum market parcel for all swaps in a fly is double the notional of the standard market parcel in the belly of the fly. This also applies to Bills/ Libor and Domestic Basis swaps
- The minimum market parcel for any spread trade is the “minimum of the minimum”, i.e. in the case of a 3y/6y swap, parcel is \$25 million

Overnight Index Swaps	
<i>Maturity</i>	<i>Notional Principal</i>
1 to 3 months	\$ 500 million
4 to 6 months	\$ 200 million
>6 months to 2 years	\$ 100 million
3 to 5 years	\$ 50 million
6 years and beyond.	\$ 25 million

For CPI linked swap standard transaction size (market parcel) refer to [Section 3.7](#).

There are currently no standard dealing parcels for cross currency swaps.

3.5. Two Way Pricing

No specific convention.

3.6. Quotation and Dealing

- The margin on term basis swaps across all underlying tenor combinations is applied to the shorter leg.

3.7. Other Instrument Conventions

3.7.1. CPI Linked Swap Conventions (self contained)

Most conventions for CPI linked swaps are the same as those for standard interest rate swaps contained in these conventions.

The transactions can be dealt under an ISDA master agreement (the preferred dealing method) with all additional definitions required to be contained in the bilateral confirmations exchanged by the deal counterparties.

3.7.2. Standard Interbank CPI Swap Structures

Capital Indexed Swap (CIS) – Capital Indexed Bond (CIB) style swap vs nominal floating.

- The real leg follows the Commonwealth CIB profile.

- The nominal leg follows the standard nominal swap profile, but always quarterly.
- The quotation is on the basis of the fixed real rate that applies to the real leg calculations.

The quarterly payments are calculated as follows:

	CPI Leg	Floating Leg
<i>Initial Exchange</i>	<i>Notional</i>	<i>Notional</i>
<i>Quarterly Payment</i>	$\text{Notional} \times \frac{r}{4} \times \frac{K_{(n)}}{100}$	$\text{Notional} \times \text{BBSW}(3\text{month}) \times \frac{\text{days}}{365}$
<i>Final Exchange</i>	$\text{Notional} \times \frac{K_{(\text{last})}}{100}$	<i>Notional</i> (standard final principal exchange)

r = the dealing fixed real rate expressed as a percentage per annum

n = the number of full coupon periods since the start date

days count basis is actual days/365 fixed

$K_{(0)}$ factor is set at 100 at deal time and applies to swap start date. From then on $K_{(n)}$ is calculated as:

$$K_{(n)} = K_{(n-1)} \times \left(1 + \frac{P_{(n)}}{100} \right)$$

$$P_{(n)} = \left(\frac{CPI_{(n-1)}}{CPI_{(n-3)}} - 1 \right) \frac{100}{2}$$

K is rounded to 2 decimal places

P is rounded to 2 decimal places

$CPI_{(n)}$ is the most recently available CPI at the time the n^{th} payment would be due

BBSW (3month) days defined as per standard swap

Index Annuity Swap (IAS) - CPI Indexing flow vs fixed indexing flow.

- The real leg is annuity style following the standard IAB profile (eg. TCV 15/12/21 IAB).
- The nominal leg is an escalating nominal annuity at a fixed escalation rate.
- The quotation is on the basis of the fixed escalation rate for the nominal side.

The quarterly payments are calculated as follows:

	CPI Leg	Floating Leg
<i>Quarterly Payment</i>	$\text{NotionalBasePayment} \times \frac{CPI_{(n)}}{CPI_{(0)}}$	$\text{NotionalBasePayment} \times \left(1 + \frac{\text{IndexFactor}}{4} \right)$

n = the number of full coupon periods since the start date

$CPI_{(n)}$ = the most recently available CPI index at the time the n^{th} payment is due

$CPI_{(0)}$ = the most recently available CPI index at the start date (base CPI)

Index Factor = the fixed escalation rate on which the swap is quoted

Notional Base Payment = the dealing notional payment size

Zero Coupon Swap (ZCS) - zero coupon CPI versus zero coupon fixed (ZCS).

- The CPI leg is notional increasing with CPI.

- The floating leg is notional increasing at an agreed fixed rate.
- Both legs have no interim interest payments and are netted upon exchange at maturity.
- The quotation is on the basis of the price for inflation quoted on the fixed leg for the term.

The payments are calculated as follows:

	CPI Leg	Fixed Leg
<i>Initial Exchange</i>	<i>Notional</i>	<i>Notional</i>
<i>Final Exchange</i>	$\text{Notional} \times \frac{CPI_{(n)}}{CPI_{(0)}}$	$\text{Notional} \times (1 + x)^n$

All payments are netted, hence there is no initial payments exchanged

In all cases $CPI_{(n)}$ and $CPI_{(0)}$ are agreed between the two transacting counterparties

Rounding on CPI leg is to 8 decimal places

$CPI_{(n)}$ usually = the most recently available CPI index at maturity

$CPI_{(0)}$ = the most recently available CPI index at the start date (base CPI)

x = the dealing price for inflation quoted as an effective percentage per annum

n = the number of years between the start date and the end date

3.7.3. Definition of CPI

The definition and contingencies for non publication, revisions, etc will come under the ISDA 2006 guidelines.

3.7.4. Standard Transaction Size (market parcel)

ZCS (notional face value)	
3 months	\$ 50 million
Between 1 and 10 years	\$ 25 million
Greater than 10 years	\$ 10 million

3.7.5. Standard Terms

Standard swaps are based on terms of 3 months, 1, 2, 3, 4, 5, 7, 10, 12, 15, 20, 25 and 30 years.

Unless otherwise stated, scheduled maturities will be rolled to the next quarterly date, being the 15th of March, June, September and December, upon release of the quarterly CPI figure. Thus a five year trade on 10 October 2008 will terminate on 15 September 2013, and a five year trade on 30 October 2008 will terminate on 15 December 2013.

3.7.6. Right to Break Clauses

Bilateral arrangements between counterparties are to be organised for longer transactions, if necessary.

3.8. Basis

- Swaps are quoted on a quarterly basis for maturities out to 3 years and on a semi-annual basis for maturities 4 years and greater. Swaps falling between the 3 and 4 year maturity will be negotiated between the two counterparties.

Swaps can be quoted on any other basis if the terms are agreed to by both parties.

All rates are quoted on an actual/365 day fixed basis. The standard convention denominator doesn't adjust for leap years unless otherwise stated.

- Bills/LIBOR trades are quoted on a quarterly/quarterly basis.
- For overnight index swaps less than 12 months to maturity interest is payable and settled at maturity.
- For overnight index swaps greater than 12 months to maturity net interest is payable at the end of the front end stub period (if any) and annually in arrears thereafter until maturity. Dealing Prices can be obtained on many different bases (e.g. "back end stub") and to avoid confusion the matter of settlement of the "broken" interest period or "stub period" should be clarified at the time of inquiry or quotation.
- The ISDA recommendation for early termination defaults for AUD to 5 exercise business days prior to cash settlement payment date valued at 11am Sydney time.

3.9. Maturity Conventions

In general AFMA recommends that transactions should not be negotiated for settlement or price fixing (rollover) on a non business day.

3.10. Settlement Rate or Index

Most AUD interest rate swaps are settled against BBSW. AUD Overnight Index Swaps settle against the interbank overnight cash rate calculated by the RBA and displayed on Reuters Screen **RBA30**.

3.11. Premium Payment Date(s)

Not applicable.

3.12. Expiry Conventions

Not applicable.

3.13. Broker Conventions

The following conventions should be followed when dealing through brokers:

- If a dealer provides a firm order with a broker and is hit on such an order the dealer must deal at the level specified for the minimum market parcel. If the dealer reneges on such a quote (i.e. drops the broker) the counterparty wishing to deal at the quoted price may request that the name of the other party be provided. After the broker informs the party who has reneged the broker is obliged to pass the party's name.

If such a dispute cannot be resolved bilaterally between the 2 parties the party with the grievance may refer to AFMA for assistance in resolving the matter.

- If an order is placed with a broker under reference then the broker should refer to the dealer before dealing at the specified price.
- When providing quotes to brokers, dealers should attempt to specify the basis on which they are prepared to deal, e.g. the curve must be trading at or within half a point from a specified price. If the curve moves more than half a point against the dealer the quote is no longer firm.
- When a dealer has a price with a broker it is expected that the dealer will deal at least the minimum market parcel if they have not specified a particular amount to the broker. It is then the responsibility of the broker to promulgate that information.

3.14. Confidentiality

- Names of counterparties should not be passed by brokers prior to dealing unless both parties agree to the passing of names.
- Brokers should not pass counterparty names or the size of deals to other market participants.
- When dealers are trading directly or through a broker neither of the parties should disclose the name of the counterparty or the size of the transaction dealt to other market participants.

3.15. Credit

The ability to deal is subject to credit constraints/limits. Dealers should advise the counterparty if they are unable to deal because of credit limits as quickly as possible. The transaction is not finalised until both parties have agreed with the other party that credit is available. Both parties have the right to request a change in price of the deal up until the time that credit limits have been finalised.

3.16. Exercise of Options

Not applicable.

3.17. Data Source

Interest rate swap prices can be found on AFMA *data* page Swaps End of Day Rates.

Overnight index swaps reference index is available on Reuters page RBA30- Interbank Overnight Rate.

3.18. Pricing Formulae

3.18.1 Cash- BBSW Swaps

3m BBSW fixed amount: quarterly payment, simple interest

$$FixA = Notional \times \frac{D \times F}{365 \times 100}$$

FixA = fixed amount

Notional = notional amount

D = day count (between start date & coupon date)

F = fixed rate

Overnight index swaps floating amount, quarterly payment:

$$FA = Notional \times FR$$

$$FR = \left[\left(1 + \frac{RBA_{(1)} \times D_{(1)}}{365 \times 100} \right) \left(1 + \frac{RBA_{(2)} \times D_{(2)}}{365 \times 100} \right) \dots \left(1 + \frac{RBA_{(n)} \times D_{(n)}}{365 \times 100} \right) \right] - 1$$

FA = floating amount

FR = floating rate (rounded to 4 decimal places)

Notional = notional amount

RBA₍₁₎ = the AUD interbank overnight cash rate for the first reset day of the OIS transaction as shown on Reuters RBA30

RBA_(n) = the AUD interbank overnight cash rate for the last reset day of the OIS transaction as shown on Reuters RBA30

D₍₁₎ = the day count on the first reset day of the OIS transaction

D_(n) = the day count on the last reset day of the OIS transaction

Local non business days are included as extra days in the day count of the previous local business day, e.g. the day count for a Friday preceding a normal weekend is 3 days.

Margin is paid as simple interest at the end of the period.

3.18.2 Overnight Index Swaps

Overnight index swaps fixed amount:

$$FixA = Notional \times \frac{D \times F}{365 \times 100}$$

FixA = fixed amount
Notional = notional amount
D = day count (between start date & maturity date)
F = fixed rate

Overnight index swaps floating amount:

$$FA = \text{Notional} \times FR$$

$$FR = \left[\left(1 + \frac{RBA_{(1)} \times D_{(1)}}{365 \times 100} \right) \left(1 + \frac{RBA_{(2)} \times D_{(2)}}{365 \times 100} \right) \dots \left(1 + \frac{RBA_{(n)} \times D_{(n)}}{365 \times 100} \right) \right] - 1$$

FA = floating amount
FR = floating rate (rounded to 4 decimal places)
Notional = notional amount
RBA₍₁₎ = the AUD interbank overnight cash rate for the first reset day of the OIS transaction as shown on Reuters RBA30
RBA_(n) = the AUD interbank overnight cash rate for the last reset day of the OIS transaction as shown on Reuters RBA30
D₍₁₎ = the day count on the first reset day of the OIS transaction
D_(n) = the day count on the last reset day of the OIS transaction

Local non business days are included as extra days in the day count of the previous local business day, e.g. the day count for a Friday preceding a normal weekend is 3 days.

Settlement is calculated as the difference between the fixed amount and the floating amount and is paid on the business day after the maturing date.

For OIS greater than 12 months to maturity, net interest is payable at the end of the “front end stub” period (if any) and annually in arrears thereafter, until maturity (refer to [Sections 3.9, 5.2](#)).

The reference page RBA30 is quoted to 2 decimal places and the floating amount is rounded to the nearest cent.

The final reset day is one good Sydney business day prior to the termination date. Non local business days are included as extra days in the day count of the previous local business day, eg. the day count for a Friday preceding a normal weekend is 3 days.

Reset Day means any Sydney Business Day on which the RBA30 quotes the Interbank Overnight Cash Rate.

The Interbank Overnight Cash Rate calculated from the RBA survey is published on electronic media services (Reuters RBA30/RBA36; Bloomberg RBAO9/RBAO11) at the conclusion of each trading day and the history of this data series is available in RBA Bulletin Table F1

3.18.2

For CPI linked swap pricing conventions refer to *Section 3.7*. Examples of CPI linked swap cash flow calculation can be found in *Appendix 2*.

4. Confirmations

4.1. Timing

Confirmations are to be provided as soon as possible after the details of the transaction are agreed. Generally, this should take place within one hour of dealing.

4.2. Confirmation Standards

The initial confirmation for this type of product supplements and forms part of the ISDA Master Agreement, and therefore the transaction must be confirmed using the standard form of confirmation.

4.3. Transaction Information

The complete transaction information must be confirmed.

- Trade Date
- Date of ISDA Master Agreement
- Fixed Rate Payer
- Floating Rate Payer
- Notional Amount(s) and Currencies
- Effective Date
- Termination Date
- Reset Date
- Payment Date(s) for each Party
- Business Day Convention
- Day Count Fraction
- Floating Rate Option
- Designated Maturity
- Business Centres for each Party
- Office of each Party

5. Settlements

5.1. Physical Settlements

Not applicable.

5.2. Cash Settlements

In general, AFMA recommends that transactions should not be negotiated for settlement or price fixing (rollover) on a non-business day (see [Section 3.9](#)). Other conventions can be utilised if agreed at the time of dealing.

Adjustment of Settlement Date and Maturity Date - If the Settlement Date or the Maturity Date does not fall on a Business Day (see [Section 3.3](#)), then it is generally to be adjusted on a Modified Following Business Day basis.

Note that settlements on AUD and NZD Overnight Index Swaps are paid the Business Day following maturity.

For OIS greater than 12 months to maturity, net interest is payable at the end of the “front end stub” period (if any) and annually in arrears thereafter, until maturity (refer to [Section 3.9](#)).

Appendix 1 - Glossary

Accreting Swap - A swap whose notional principal increases over time.

Amortising Swap - An interest rate swap with a decreasing principal amount.

Annuity Swap - A swap involving an initial payment or receipt then an exchange of equal coupons during the life of the swap.

Asset Swap - A swap where the fixed payment stream of the swap is generated by an asset, eg. a bond held by a party to the swap.

Basis Swap - An interest rate swap carried out between two floating rates set against two different reference rates.

Coupon Swap - A conventional fixed for floating interest rate swap.

Cross Currency Swap - A swap where counterparties exchange equal principal amounts of 2 currencies at the spot exchange rate. During the life of the swap the counterparties exchange fixed or floating rate interest payments in the swapped currencies and at maturity. The principal amounts are again swapped at a predetermined rate of exchange (usually the initial spot rate).

Discount Swap - A swap with payments made on a discounted basis in advance.

Domestic Swap - An interest rate swap in the domestic currency.

Forward Swap - A swap that takes effect at a future date.

Interest Rate Swap - A basic fixed rate for floating rate swap organised in one currency with interest rate flows paid in arrears and settled on a net cash basis.

Long Dated Forward - A forward contract where settlement date is more than 365 days away.

Non Par Swap - A swap where one or both of the securities underlying the swap sells at a discount or premium.

Overnight Index Swap - A fixed/floating interest rate swap where the floating leg is fixed by reference to an overnight rate.

Both the fixed and floating interest legs are calculated according to Australian money market conventions (act/365 fixed). The floating amount is calculated on a compounding basis using the RBA30 rate fixes. Settlement is 1st day after termination date. For an OIS of term greater than one year, both floating and fixed payments are settled annually.

Plain Vanilla Swap - A par value, generally same currency, swap with standard terms and conditions.

Roller Coaster Swap - A swap where the notional principal fluctuates over time.

Unmatched Swap - A swap not matched by an offsetting swap or asset/liability. The mismatch can be in the principal amount, date structure or both.

Zero Coupon Swap - A swap where the fixed coupon is discounted/accumulated to be paid at commencement/maturity.

Appendix 2 - Examples of CPI Linked Swap cash flow calculation

Capital Indexed Swap (CIS)

- 100mio 10yr deal
- 3.5% real versus BBSW
- Maturing 26 September 2013
- Start date 26 September 2003
- Termination date 26 September 2013

Sample cash flows:

- 26-Sep-03 (start date) - Nil (100 principal exchanges)
- 29-Dec-03 (first payment date) - Net flow to real payer of AUD\$385,135.66

$$\text{Nominal} = \$1,265,780.82 = \left(100\text{mio} \times \text{BBSW}_{3m_{26-9-30}} \times 4.915\% \times \frac{94}{365} \right)$$

$$\text{Real} = \$880,645.16 = \left(100\text{mio} \times \frac{3.5\%}{4} \times 1.006451613 \right)$$

$$\text{as } P_{(1)} = .0645161291 = \left(\frac{141.3 \times \text{CPI}_{(Jul03)}}{139.5 \times \text{CPI}_{(Dec03)}} - 1 \right) \times \frac{100}{2}$$

$$\text{and } K_{(1)} = 1.006451613 = 100K_{(0)} \left(1 + \frac{0.645161291}{100} \right)$$

Note: the p factor applying to this swap from Sep-03 to Dec-03 is similar to the 0.65 applying to commonwealth CIBs between Aug-03 and Nov-03.

Other payments should be calculated similarly.

Index Annuity swap (IAS)

- 100k 10yr deal
- Real versus 2.5% fixed escalation
- Maturing 26 September 2013

- Start date 26 September 2003
- Termination date 29 December 2013

Sample cash flows:

- 26-Sep-03 (start date) - Nil
- 29-Dec-03 (first payment date) - Net flow to real payer of \$58.83

$$\text{Nominal side} = \$100,625.00 = 100k \times \left(1 + \frac{2.50\%}{4}\right)$$

$$\text{Real side} = \$100,566.17 = 100k \times \frac{142.1 \times CPI_{\text{Sep03}}}{141.3 \times CPI_{\text{Jun03}}}$$

Note: the indexation factor applying to the real side of this swap from Sep-03 to Dec-03 is similar to the indexation of payments on other IABs over that period.

Other payments should be calculated similarly.

- Dec-05 (assuming $CPI_{(\text{Sep05})} = 150$) - Net flow to nominal payer of AUD\$389.41

$$\text{Nominal} = \$105,767.70 = 100k \times \left(1 + \frac{2.50\%}{4}\right)^9$$

$$\text{Real} = \$106,157.11 = 100k \times \left(\frac{150.0 \times CPI_{(\text{Sep05})}}{141.3 \times CPI_{(\text{Jun03})}}\right)$$

Zero Coupon CPI versus Zero Coupon Fixed (ZCS)

- 3 month trade
- 100mio at 2.25%
- Start date 15th September 2003
- Termination date 15th December 2003
- Notional AUD 100mio
- Fixed Rate (x) 2.25% pa
- $CPI_{(0)}$ 141.3 (Jun 03 CPI)
- $CPI_{(n)}$ would now be known to be 142.1

Sample cash flows:

- 1-Nov-03 - Net flow to real payer of \$8,356.05

$$\text{Nominal} = \$100,557,815.25 = 100\text{mio} \times (1 + 2.25\%)^{1/4}$$

$$\text{Real} = \$100,566,171.30 = 100\text{mio} \times \frac{142.1}{141.3}$$

Zero Coupon CPI versus Zero Coupon Fixed (ZCS)

- 5 year trade
- 20mio at 2.40%
- Start date 15 September 2003
- Termination date 15 September 2008
- Notional AUD 20mio
- Fixed Rate (x) 2.40% pa
- $\text{CPI}_{(0)}$ 141.3 (Jun 03 CPI)

Sample cash flows:

- 1-Aug-08 (Assume CPI for Jun 08 =155.8 released late July 2008) - Net flow to real payer of \$465,627.30

$$\text{Nominal} = \$22,517,998.14 = 20\text{mio} \times (1 + 2.40\%)^5$$

$$\text{Real} = \$22,052,370.84 = 20\text{mio} \times \frac{155.8}{141.3}$$