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Foreign Exchange

What is a Cross Rate & How To Derive One

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The US dollar (USD) is the currency against which all other currencies are priced. Any exchange rate (AUDCAD for instance) that does not involve the USD is considered a "cross rate". Currency cross rates are not usually quoted outside of a few significant market pairs: EURGBP, EURJPY, EURCHF and AUDNZD.

If you are trying to derive the rate at which you would change your base currency and it does not involve USD you may need to find the cross rate.

In order to do this you have to find two currency pairs: one that contains your home currency and the other must contain the foreign currency that you want to exchange it with. Next, determine what type of quote each of your two selected currency pairs is and apply the corresponding rule for deriving a cross rate.

- Direct Quote: 1 foreign currency unit = x home currency units
- Indirect Quote: 1 home currency unit = x foreign currency units

How to Derive a Cross Rate from a Direct Quote & Direct Quote:
Rule: Divide the terms currency by the base currency on the opposite side.

EXAMPLE:

Derive the rate for JPYAUD

	Bid	Ask	
USDJPY	119.25	119.65	USD is base, JPY is term
USDAUD	1.0485	1.0535	USD is base, AUD is term

The JPYAUD **Bid** rate   = divide the term currency bid by the base currency ask
= 1.0485 / 119.65 = 0.008763
*this is the rate at which the market *buys* JPY and *sells* AUD*

The JPYAUD **Ask** rate   = divide the term currency ask by the base currency bid
= 1.0535 / 119.25 = 0.008834
*this is the rate at which the market *sells* JPY and *buys* AUD*

How to Derive a Cross Rate from a Direct Quote & Indirect Quote:
Rule: multiply on the same side

EXAMPLE:

Derive the rate for EURAUD

	Bid	Ask
EURUSD	1.3798	1.3858
USDAUD	1.0432	1.0502

The EURAUD **Bid** rate   = Multiply the term currency bid by the base currency ask
= 1.3798 x 1.0432 = 1.4394
this is the rate at which the market *buys* EUR and *sells* AUD

The EUAUD **Ask** rate   = Multiply the term currency ask by the base currency bid
= 1.3858 x 1.0502 = 1.4553
this is the rate at which the market *sells* EUR and *buys* AUD

How to Derive a Cross Rate for an Indirect Quote & Indirect Quote:
Rule: divide the base currency by the terms currency on opposite sides of the spread.

EXAMPLE:

Derive the rate for GBPEUR

	Bid	Ask	
GBPUSD	1.9850	1.9950	GBP is base, USD is terms
EURUSD	1.3460	1.3520	EUR is base, USD is terms

The GBPEUR **Bid** rate = divide the base currency bid by the terms currency ask
= 1.9850 / 1.3520 = 1.4682
this is the rate at which the market *buys* GBP and *sells* EUR
at 1.4682 EUR per GBP.

The GBPEUR **Ask** rate = divide the base currency ask by the terms currency bid
= 1.9950 / 1.3460 = 1.4821
this is the rate at which the market *sells* GBP and *buys* EUR
at 1.4821 EUR per GBP

Foreign Exchange

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