

## Appendix A

### **1) Non Deliverable Forwards**

#### **Non Deliverable Forward**

An NDF is a foreign exchange forward contract on a notional amount where no physical settlement of the two currencies takes place at maturity. Instead a net cash settlement is made by one party to another based on the difference of the two FX rates. The settlement is done using a pre-determined currency, typically USD, and is determined at an agreed fixing date, typically 1 or 2 days prior to settlement, using spot fixing rates. There is no exchange of principle or upfront payments on these contracts.

#### **NDF Convention Definitions**

NDF contracts follow the Emerging Market Trade Association (EMTA) conventions: (<http://www.emta.org/template.aspx?id=2275>), and 2006 ISDA Definitions

#### **Available Currencies**

CNY Chinese Renminbi  
IDR Indonesian Rupiah  
INR Indian Rupee  
KRW South Korean Won  
MYR Malaysian Ringgit  
PHP Philippine Peso  
TWD Taiwan Dollar  
VND Vietnamese dong  
EGP Egyptian pound  
RUB Russian ruble  
KZT Kazakh tenge  
ARS Argentine Peso  
BRL Brazilian Real  
CLP Chilean Peso  
COP Colombian Peso  
GTQ Guatemalan quetzal  
PEN Peruvian nuevo sol  
UYU Uruguayan peso  
VEB Venezuelan bolívar  
UAH Ukrainianhryvnia  
AZN Azeri manta

#### **Notional**

The notional amount of the contract, which is not exchanged. No minimum or maximum contract size.

#### **Notional Currency**

The currency in which the contract size is expressed.

**Settlement Currency**

The currency used to settle the NDF.

**List of Settlement Currencies:**

USD US Dollar  
AUD Australian Dollar  
CAD Canadian Dollar  
CHF Swiss Franc  
EUR Euro  
GBP British Pound  
JPY Japanese Yen

**Quoting Convention and Minimum Increments****Outright forward rate:**

The number of currency units as valued per unit of base currency

**Spread:**

The difference between the Spot FX for the currency pair and the outright forward rate (as above)

**Notional amount and minimum increments:**

As agreed by Participants

**Trade Date**

The date on which the Participants enter into the contract

**Fixing Date**

The time, date, and location at which the Spot FX is compared to the traded NDF rate, using a particular fixing source as agreed between Participants

**Holiday Calendar**

Dependent upon Currencies as defined by the Emerging Market Trade Association, or as agreed between Participants

**Settlement Date**

Date on which the difference between the Spot FX and the traded NDF rate is paid, usually one or two business days after the Fixing Date depending on the currency, as agreed between Participants.

**Settlement Procedure**

As agreed between Participants for non-cleared trades  
As dictated by the Clearinghouse for trades subsequently novated for clearing.

**Contract Types:**

Outrights  
Curve (Tenor)  
Spreads, Butterflies, Condors

## **Tenors**

Listed benchmark tenors are 1d 2d 3d 1w 2w 3w 1m 2m 3m 6m 9m 12m 15m 18m 2y 2½y 3y 4y 5y.

Off the run NDF contract tenors may be between one day and 10 years, as agreed between Participants.

## **Non-Deliverable FX Options**

A Non-Deliverable FX option (NDO) offers the right but not the obligation to buy or sell an agreed amount of one currency in exchange for an agreed amount of another currency at a specified future exchange rate (the strike price), but using a net cash settlement made by one party to another based on the difference of the two FX rates (strike price rate and fixing expiry rate). NDOs are generally "European Style", whereby the right to exercise may occur only on a single date (the expiry date) but may also be "American Style," whereby the right to exercise may occur on any date up to and including the expiration date as determined by the option buyer if agreed between Participants. Settlement of an "in-the-money" option is 1 or 2 days following the agreed expiry date, using the spot FX Fixing rate of expiry date. Settlement is cash, where participants exchange the net cash difference between the prevailing spot rate and the strike price of an exercised NDO.

## **Non-Deliverable FX Option (NDO)**

### **Contract Overview**

**An option to enter into a non-deliverable forward (NDF) foreign exchange contract at pre-defined time(s), with its exchange rate equal to the Strike Price.**

### **Convention Definitions**

2006 ISDA Definitions as updated (<http://www.emta.org/template.aspx?id=2275>)

Underlying NDFs: Emerging Market Trade Association (<http://www.emta.org/ndfft.aspx>)

### **Available Currencies**

CNY Chinese Renminbi

IDR Indonesian Rupiah

INR Indian Rupee

KRW South Korean Won

MYR Malaysian Ringgit

PHP Philippine Peso

TWD Taiwan Dollar

VND Vietnamese ng

EGP Egyptian pound

RUB Russian ruble

KZT Kazakh tenge

ARS Argentine Peso

BRL Brazilian Real

CLP Chilean Peso  
COP Colombian Peso  
GTQ Guatemalan quetzal  
PEN Peruvian nuevo sol  
UYU Uruguayan peso  
VEB Venezuelan bolívar  
UAH Ukrainianhryvnia  
AZN Azeri manta

**Notional**

The notional amount of the NDF underlying the NDO

**Notional Currency**

The currency in which the option contract size is expressed, as agreed by Participants

**Settlement Currency**

The currency used to settle the NDO, as agreed by Participants.

USD US Dollar  
EUR Euro  
GBP British Pound  
JPY Japanese Yen  
CAD Canadian Dollar  
CHF Swiss Franc  
AUD Australian Dollar

**Notional Amount**

The notional amount of the settlement currency of the NDF pair underlying the option

**Notional Currency**

The base currency in which the option contract size is expressed, as agreed by Participants

**OptionType**

Put = Option buyer has the right to sell the NDF exchange rate (e.g. selling USD, buying a non-deliverable currency)

Call = Option buyer has the right to buy the NDF exchange rate (e.g. buying USD, selling a nondeliverable currency)

**Quoting Convention**

Implied Volatility: the value of volatility for the underlying instrument which returns a theoretical value equal to the current market price of the option using a Black-Scholes based pricing model. Non-Deliverable Options Contracts may be traded with an underlying delta hedge NDF or may be traded with no hedge. Bids and offers are expressed as percentage of notional (the premium payable), as agreed between Participants. Where traded as an implied volatility, NDO premiums are subsequently calculated and agreed between Participants before execution

**Minimum Increments** Dependent on currency pair and tenor and as agreed between participants

**Strike**

Rate that will be used for the underlying currency exchange at expiry.

**Exercise Type**

European: (options can only be exercised at expiration).

American: (any time during the life of the option) and Bermudan style options (agreed dates during the life of the option) may also be traded as agreed between participants.

**Premium**

The payment made by the buyer of the option and calculated based on the relationship between: Implied Volatility, Notional, the prevailing spot FX rate, Non-Deliverable Forward FX rate, Strike(s), delta and the interbank deposit rates used for each of the currencies at time of trade. Premium may be paid spot or forward upon option expiry, as agreed between Participants

**Trade Date**

The date on which the Participants enter into the option contract.

**Expiry Date (NDO Fixing date)**

The last day upon which the option may be exercised and as agreed between participants, the time, date, and location at which the Spot FX is compared to the strike price of the NDO for the purposes of ascertaining if the option expires via settlement of an underlying NDF trade at expiry, using a specific fixing source as agreed between Participants

**Minimum Size**

Dependent on currency pair and tenor or as agreed between participants

**Holiday Calendar**

Dependent upon Currencies as defined by the Emerging Market Trade Association (viewed at <http://www.emta.org/template.aspx?id=2275>), or as agreed between Participants

**Settlement Procedure**

As agreed between participants

**Settlement Date**

Date on which the spot FX trade resulting from delivery is settled or the difference between the spot FX and the strike price of the option is paid where cash settled, one or two business days after the expiry date depending on the currency, as agreed between Participants

**Expiration cut-off Times:**

Dependent upon Currencies as defined by the Emerging Market Trade Association (viewed at <http://www.emta.org/template.aspx?id=2275>), or as agreed between Participants.

**Settlement Procedure**

As agreed between Participants for non-cleared trades.

### **Contract Types**

Each NDO traded is bespoke and agreed between Participants. All option strategies result in Call options and/or Put options executed with the following strategies commonly traded:

#### **Vanilla:**

Outright Call / Put, Straddle, Strangle, Butterfly, Risk Reversal, Calendar (tenor) spread, Cross Currency Spread, Condor, Call Spreads, Put Spreads, Delta Neutral volatility strategies, Live strategies with no delta hedge

#### **Exotic:**

Baskets, Knock ins, Knock outs, Double Knock outs, Reverse Knock ins / Knock outs, One touch, No Touch, Double No Touch, Volatility Swaps, Variance Swaps, Worst of Options, Compound Options, Forward Volatility Agreements

#### **Tenors**

As agreed between Participants, NDO contract tenors may be between 1 day and 30 years.

## **2) FX Currency Options – Physically Settled**

An FX option offers the right but not the obligation to buy or sell an agreed amount of one currency in exchange for an agreed amount of another currency at a specified future exchange rate (the strike price). FX options are generally "European Options", whereby the right to exchange may occur only on a single date (the expiry date), although "American Options" whereby the right to exchange may occur on any date up to and including the expiration date as determined by the option buyer may also be negotiated. Settlement of an "in-the-money" option is 1 or 2 days following the agreed expiry date. Settlement is physical where a spot transaction at the strike price is executed at expiration if the option is in-the-money.

### **FX Option Contract**

#### **Overview**

An option to enter into a foreign exchange contract at pre-defined time(s), with its exchange rate equal to the Strike.

#### **Convention Definitions**

1998 ISDA FX and Currency Option Definitions as updated

(<http://www.emta.org/WorkArea/DownloadAsset.aspx?id=7743>)

Emerging Market Trade Association (<http://www.emta.org/template.aspx?id=2275>)

#### **Available Currency Pairs:**

AUD/CAD, AUD/CHF, AUD/HKD, AUD/JPY, AUD/KRW, AUD/NZD, AUD/SGD, AUD/USD, AUDUSD/NZDUSD, BRL/JPY, CAD/JPY, CAD/SGD, CHF/HUF, CHF/JPY, CHF/TRY, EUR/AUD, EUR/BRL, EUR/CAD, EUR/CHF, EUR/CLP, EUR/CNY, EUR/CZK, EUR/GBP, EURGBP/GBPCHF, EUR/HKD, EUR/HUF, EUR/ILS, EUR/JPY, EUR/KRW, EUR/MXN, EUR/MYR, EUR/NOK, EUR/NZD, EUR/PLN, EUR/RON, EUR/RUB, EUR/SEK, EUR/SGD, EUR/TRY, EUR/USD, EURUSD/USDCHF, EURUSD/USDNOK, EURUSD/USDSEK, EUR/ZAR, GBP/AUD, GBP/CAD, GBP/CHF, GBP/JPY, GBP/MXN, GBP/SGD, GBP/USD, JPY/INR, JPY/KRW, MXN/JPY, NOK/JPY, NOK/SEK, NZD/CAD, NZD/JPY, NZD/SGD, NZD/USD, SEK/JPY, SGD/JPY, TRY/JPY, TRY/ZAR, USD/AED, USD/ARS, USD/BHD, USD/BRL, USDBRL/EURBRL, USD/CAD, USD/CHF, USD/CLP, USD/CNH, USD/CNY, USDCNY/USDCNH, USD/COP, USD/CZK, USD/HKD, USD/HUF, USD/IDR, USD/ILS, USD/INR, USD/JPY, USD/KRW, USD/KWD, USD/KZT, USD/MXN, USDMXN/EURMXN, USD/MYR, USD/NOK, USD/OMR, USD/PHP, USD/PLN, USDPLN/EURPLN, USD/QAR, USD/RUB, USDRUB/EURRUB, USD/SAR, USD/SEK, USD/SGD, USD/THB, USD/TRY, USDTRY/EURTRY, USDTWD and USDZAR.

**Notional Amount** Denominated in the base currency of the FX pair underlying the option

**Notional Currency** The base currency in which the option contract size is expressed, as agreed by Participants

### **Option Types**

Put = Option buyer has the right to sell the exchange rate (e.g. selling USD, buying a second currency)

Call = Option buyer has the right to buy the exchange rate (e.g. buying USD, selling a second currency)

### **Quoting Convention**

FX Options are generally quoted in Implied Volatility: the value of the volatility of the underlying instrument which returns a theoretical value equal to the current market price of the option using a Black-Scholes based pricing model. Options Contracts may be traded with an underlying FX Trade delta hedge, either spot or forward dated, or may be traded with no hedge where bids and offers are expressed as percentage of notional (the premium payable), as agreed between Participants. Where traded as an implied volatility, option premiums are subsequently calculated and agreed between Participants before execution

### **Minimum Increments**

Dependent on currency pair and tenor and as agreed between participants

### **Strike Price**

Rate that will be used for the underlying currency exchange at expiry.

### **Exercise Types**

European (options can only be exercised at expiration).

American (any time during the life of the option)

**Premium**

The payment made by the buyer of the option and calculated based on the relationship between: Implied Volatility, Notional, the prevailing spot FX rate, Forward FX, Strike(s), delta and the interbank deposit rates used for each of the currencies at time of trade. Premium may be paid spot or forward upon option expiry and is valued before trade execution.

**Trade Date**

The date on which the Participants enter into the option contract

**Expiry Date**

The last day upon which the option may be exercised and as agreed between participants, the time, date, and location at which the Spot FX is compared to the strike price of the Currency option for the purposes of the option buyer ascertaining if the option expires with creation of an underlying FX Spot trade at expiry (or cash settlement using a particular FX fixing source as agreed between Participants).

**Minimum Size**

Dependent on currency pair and tenor or as agreed between participants for Voice trading

**Holiday Calendar**

Dependent upon Currencies as agreed between Participants

**Settlement**

As agreed between participants:

- Physical FX trade settlement
- Cash settlement

**Rebate**

A feature of some exotic options where the premium of the option is refunded if at the time the option expires it has no value.

**Settlement Date**

Date on which the spot FX trade resulting from delivery is settled or the difference between the spot FX and the strike price of the option is paid where cash settled, one or two business days after the expiry date depending on the currency, as agreed between Participants

**Expiration cut-off Times**

Dependent upon Currencies and as agreed between Participants

**Settlement Procedure**

As agreed between Participants for non-cleared trades

**Strategy Types:**

**Vanilla:**



Outright Call / Put, Straddle, Strangle, Butterfly, Risk Reversal, Calendar (tenor) spread, Cross Currency Spread, Condor, Call Spread, Put Spread, Delta neutral packages, Live Trading with no delta hedge

**Exotic:** Baskets, Knock ins, Knock outs, Double Knock outs, Reverse Knock ins / Knock outs, One touch, No Touch, Double No Touch, Volatility Swaps, Variance Swaps, Correlation Swaps, Worst of Options, Compound Options, Window Options, Forward Volatility Agreements

### **Tenors**

As agreed between Participants, Currency Option contract tenors may be between 1 day and 30 years.

### **Block Size**

As set forth in Appendix F to Part 43 of the CFTC Regulations.

### **Trading Hours**

7:00 pm Sunday to 5:30 pm Friday Eastern Prevailing Time

### **Exotic Options Descriptions:**

#### **Binary Options:**

A Binary (or Digital) Option is an option that has a fixed payment at expiration if the option is in the money or nothing at all if the option expires out of the money. Binary options are usually European Style options.

**One Touch.** A one touch option is a type of option that gives the holder a payout once the underlying reaches a certain price level, similar to the Barrier Option below. However, with the One Touch Binary Option, once the barrier is reached or surpassed, a predetermined fixed payout is achieved. Whereas, with the Barrier Option, it is the optionality that is triggered by the barrier being reached.

**No Touch/Double No Touch.** The no touch and double no touch options are similar to a one touch and double one touch. With these, the payment is achieved if the underlying does not reach either a single predetermined price level or if the underlying stays within a range that is set by two price points for the underlying (the double no touch).

#### **Barrier Options:**

Barrier Options are options that are either activated or deactivated when the price of the underlying passes through some predefined value referred to as the barrier. (May be put or call options and may be combined).

**Knock Out.** A knock out option has a price barrier for the underlying that, if reached, causes the option to terminate with no value.

**Double Knock Out.** A double knock out option is similar to a knock out option, however with the double knock out two price barriers are set on the underlying. If either barrier is reached, the option is terminated with no value.

**Knock In.** A knock in option is an option contract that is latent until a certain price barrier for the underlying is reached. The price barrier can only be reached if the option is moving out of the money. Until the barrier is reached, the option is not exercisable.

**Double Knock In.** Similar to a knock in, where two price barriers for the underlying are set. If either of these price barriers are reached, the option becomes exercisable.

**Reverse Knock In.** A reverse knock in option is a European style option that becomes exercisable into a Vanilla option once a predetermined price barrier of the underlying is reached. The barrier can only be reached if the option is moving into the money (gaining value). If the price level or barrier is hit the payout is based on the underlying vanilla option.

**Reverse Knock Out.** Similar to the reverse knock in except in this case if the price barrier is hit the option is knocked out and there is no payout. If the price barrier is not reached, the option value is based on the underlying vanilla option.

**Knock in Knock out.** With this type of option the predetermined price barrier of the underlying must be hit to activate the underlying option. Once that first barrier is hit and the option is activated, there is a second price barrier that can cause the option to be knocked out or terminated prior to expiration. If this second barrier is hit before expiration, the option is extinguished. An additional form of this type of option may be written that is based on which price barrier is hit first. If the knock in barrier is hit, the option value is based on the underlying vanilla option and the knock out barrier is no longer valid. If the knock out barrier is hit first, the option is extinguished.

**European Knock out / Knock In.** Similar to the knock out and knock in except the barrier set on this option is only applicable at expiration. If the barrier is hit at expiration the option is either knocked out or becomes exercisable.

**Window Option.** A window option is any type of barrier option where the barrier level(s) are active only for a portion of the life of the option, which may be specified as a period with a start date not before the trade date of the option, and an end date not after the expiry of the option.

### 3) FX Swaps:

#### FX Volatility Swap

A **volatility swap** (vol swap) provides pure exposure to the volatility of an asset. A Vol swap is:

- A contract for difference between the realised volatility of the underlying price and the strike price (Traded Level).

- Quoted in terms of percentage volatility.
- Traded in amounts per 1% of volatility, known as vega face amount.

At the end of the contract, the payout is determined by the difference between the traded level and the realised volatility. Thus, at the end of the contract, if the realised volatility is higher than the traded level, the buyer of the vol swap receives the difference. If the realised vol is lower, the buyer pays the difference.

### **Volatility Swap Specifications:**

#### **Notional Currency**

The base currencies in which the swap contract size is expressed and from which volatility is calculated.

#### **Traded Level**

Agreed upon strike price

#### **Vega Notional Amount**

Quoted in 100k's of Vega

#### **First Fix**

Initial date of fixing, typically Trade Date or Trade Date +1, based on a published fixing source

#### **Last Fix**

Final date of swap calculation

#### **Delivery**

Spot date after expiration

#### **Annualization Factor**

252 or as agreed by counterparts

#### **Total Fixes**

Number of observations

#### **Public Fixing Sources**

G11 currency pairs: 4 pm London WM/Reuters Forward and NDF Rates (WMR fix), or as otherwise agreed by Participants

Non-G11 currency pairs: ECB, EMTA, SAEC, TAIFX, KFTC18, ABSIRFIX01, PDSPEO, RBIB and HKDFIX, or as otherwise agreed by Participants.

#### **FX Correlation Swap**

A **Correlation Swap** (corr swap) provides pure exposure to the correlation between two assets. A corr swap is:

- A contract for difference between the realised correlation between two currency pairs.

At the end of the contract, the payout is determined by the difference between the realised correlation between two currency pairs and the traded level agreed in the swap. Thus, at the end of the contract, if the correlation is higher than the traded level, the buyer of the corr swap receives the difference from the seller. If the correlation is lower, the buyer pays the seller the difference.

### **Correlation Swap Specifications**

#### **Currency Pair 1**

The currency pair from which the correlation with Currency Pair 2 is calculated.

#### **Currency Pair 2**

The currency pair from which correlation is calculated in comparison to Currency Pair 1.

#### **Notional Amount**

USD 100k per %

#### **First Fix**

Initial date of fixing, typically Trade Date or Trade Date +1, based on a published fixing source

#### **Last Fix**

Final date of swap calculation

#### **Delivery**

Spot date following expiration

#### **Traded Level**

Agreed upon trading price

#### **Annualization Factor**

252 or as agreed by counterparts.

#### **Total Fixes**

Number of observations

#### **Public Fixing Sources**

G11 currency pairs: 4 pm London WMR fix, or as otherwise agreed by Participants

Non-G11 currency pairs: ECB, EMTA, SAEC, TAIFX, KFTC18, ABSIRFIX01, PDSPEO, RBIB and HKDFIX, or as otherwise agreed by Participants..

#### **Calculation Agent**

As agreed by participants

## **FX Variance Swap**

An **FX Variance Swap** (var swap) provides pure exposure to the variance (square of realised volatility) of an asset. A var swap is:

- A contract for difference between the realised variance of the underlying price and the strike price (Traded Level) of the swap.
- Quoted in terms of percentage volatility.
- Traded in amounts per 1% of volatility, known as vega face amount.

At the end of the contract, the payout is determined by the difference between the traded level and the realised variance. Thus, at the end of the contract, if the realised variance is higher than the traded level, the buyer of the var swap receives the difference. If the realised var is lower, the buyer pays the difference.

## **Variance Swap Specifications**

**Notional Currency** The base currency in which the swap contract size is expressed and from which variance is calculated.

### **Traded Level**

Agreed upon strike price

### **Vega Notional Amount**

Quoted in 100k's of Vega

### **First Fix**

Initial date of fixing, typically Trade Date or Trade Date +1, based on a published fixing source

### **Last Fix**

Final date of swap calculation

### **Delivery**

Spot date after expiration

### **Annualization Factor**

252 or as agreed by counterparts.

### **Total Fixes**

Number of observations

### **Public Fixing Sources**

G11 currency pairs: 4 pm London WMR fix, or as otherwise agreed by Participants

Non-G11 currency pairs: ECB, EMTA, SAEC, TAIFX, KFTC18, ABSIRFIX01, PDSPEO, RBIB and HKDFIX, or as otherwise agreed by Participants..

### **Forward Volatility Agreement**

A **Forward Volatility Agreement (FVA)** is an agreement to buy an option for a specified tenor at a specified price and time in the future. For example, it may be quoted as a 6M in 3M FVA. This would mean the buyer would, in 3 months' time, buy a 6M option from the seller at a pre-agreed volatility. The options are almost always At-The-Money straddles. In this example, in 3mths time, the participants would agree to trade an At-The –Money straddle, in the agreed amount at the agreed volatility. Market parameters at the time, such as spot and forward rates would be set by the calculation agent.