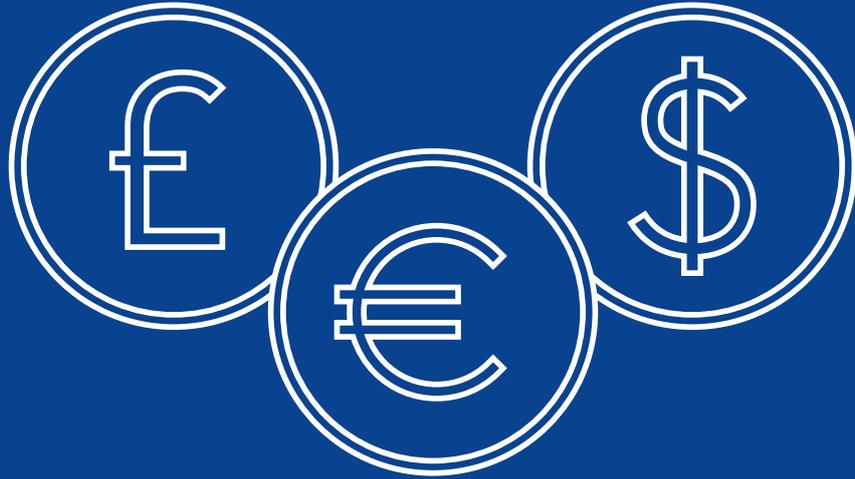


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Foreign Currency Risk Management



Bank of
Ireland

Introduction

One of the key challenges for those engaged in international trade and overseas investment is managing foreign currency exposure.

This document has been prepared by Bank of Ireland as an information/marketing communication. The purpose of this document is to provide an introduction to foreign currency risk and present some of the key risks associated if you or your company wishes to engage in currency hedging activities.

Currency exposure can materialise through international trade and investment in a number of ways:

- ▶ **Transaction exposure:** arises as a result of a mismatch or time lag between the dates when a contracted foreign currency denominated price is agreed and the contract's settlement date.
- ▶ **Translation exposure:** occurs when a change in the exchange rate impacts the value of foreign currency denominated investments, or assets/liabilities on a company's balance sheet.
- ▶ **Indirect currency exposure:** can arise even if you have no direct foreign currency position or need to complete a currency conversion. For example, as your home currency appreciates in value, this increases the buying power on imported goods from economies with weaker currencies. This improves the affordability and competitiveness of imported goods competing with domestic producers.
- ▶ **Contingent risk:** will arise when it is not certain that a business transaction (that would create the currency exposure) will be completed e.g. a company bidding on an overseas project or acquisition may have a contingent currency risk from the date a foreign currency denominated price is submitted to the date a contract is eventually signed.

When looking to proactively manage currency risk, it is essential to have an understanding of the risks and obligations associated with currency hedging contracts and their impact on your business. The purpose and objective of any currency hedging strategy should always be to understand and manage the impact of exchange rate volatility.

Managing Foreign Exchange Exposure

The Governor and Company of the Bank of Ireland acting through its business unit Global Markets (hereafter “Bank of Ireland”) provides a range of tools for managing Foreign Exchange rate exposure. This booklet discusses two of the most commonly used products; FX Forwards and FX Options.

In this booklet, an overview of each of the aforementioned products is presented with an example to assist you in your understanding of the basic principles of the products. In addition, the key benefits and risks of each product are outlined together with an explanation of Early Termination and an example of potential Early Termination costs in order to help you understand and assess your potential risk in entering into such arrangement.

Bank of Ireland doesn't provide products for speculative purposes. Products are provided to manage a known exposure e.g. exposure arises as a result of a mismatch or time lag between the dates when a contracted foreign currency denominated price is agreed and the contract's settlement date.

If you would like to discuss these products in more detail, please contact your Bank of Ireland Relationship Manager or your Bank of Ireland Global Markets contact. For ease of understanding a glossary can be found at the end of this document. This defines some of the more technical terms used in this booklet. Other mechanisms/products for managing Foreign Exchange exposures are available in addition to those presented in this booklet. Should you require any other product (e.g. Zero Cost option structures) to manage your Foreign Exchange exposure please contact your Bank of Ireland Relationship Manager. We may be in a position to provide a bespoke solution dependent on your requirements and experience.

PLEASE NOTE: Bank of Ireland Global Markets does not provide investment advice and provides risk management solutions on a strictly non-advised basis only.

You should consider seeking your own independent advice on the financial and legal aspects before entering into any derivative transaction.

All Derivative products are governed by rules and requirements set out by European Union (Markets in Financial Instruments) Regulations 2017 and the Financial Conduct Authority. Bank of Ireland is obliged to assess in advance of any transaction whether it is appropriate for the customer to enter into any of the products. In order to comply with this requirement Bank of Ireland has to obtain information on the knowledge and experience relevant to the product from each customer. The products outlined in this booklet are intended for both retail and professional clients taking account of the identified target market in accordance with Appendix 1 of this document.

Price Formation

The price at which we transact in a particular instrument with you, is called the “Final Instrument Price”. Formation of a Final Instrument Price in the Macro businesses (consists of Foreign Exchange, Rates and e-Trading of Macro products) generally takes the following approach:

- ▶ A basic instrument price is determined which, for vanilla OTC financial instruments, is based on the mid-price of the relevant instrument.
- ▶ This basic instrument price is adjusted to take account of other factors including observable market prices, liquidity, executed transactions, volatility data, other market data, internal models and observable trade flows.
- ▶ Internal hedging costs are applied to create an instrument price.
- ▶ Additional costs and charges, taking into account factors including credit and trade margin related to the financial instrument, are then applied on top of the instrument price to form the Final Instrument Price.

In order to provide full transparency we will provide you with disclosure of costs and charges post trade based, where possible, on the mid price of the financial instrument. In some cases we may base the post trade disclosure on the actual price at which we have transacted in the external market.

FX Forward

Product Overview

An FX Forward is a tool for managing Foreign Exchange exposure.

An FX Forward is a binding contract between two parties to exchange an amount of one currency for another, at a fixed exchange rate, on a date in the future. Their key objective is to deliver certainty of cost and therefore protecting your operating margins from adverse currency movement.

The Forward Exchange Rate is purely a mathematical calculation. A construct of today's Spot Exchange Rate adjusted to reflect the difference in interest rates or yield between the two currencies to maturity of the contract.

Once agreed, a forward contract FX Rate is binding. Therefore a potential opportunity cost arises as you lose the ability to participate in or benefit from any subsequent favourable market movement. This could leave you with an uncompetitive FX Rate relative to your peers who may have chosen an alternative path.

Key Benefits

Certainty

- ▶ Guaranteed rate of exchange
- ▶ Easier to budget as cash flow is known
- ▶ Provides protection against adverse moves in currency pair

No Upfront Premium

There is typically no upfront cash Premium payable by any party to the FX Forward Contract.

Key Risks

- ▶ If your requirements change over the term of the forward contract, you are still obliged to settle your FX Forward contract.
- ▶ There may be a cost to cancel the contract, depending on the FX Rates prevailing at that time.
- ▶ You forgo the potential to benefit from favourable movements in FX Exchange Rate.
- ▶ Foreign Exchange rates are unpredictable and can go in either direction.
- ▶ Counterparty risk: by entering into a Derivative or Forward contract with Bank of Ireland you have an exposure to Bank of Ireland in the event of insolvency or related events such as bail in.

How does an FX Forward Contract work?

A company has a requirement to buy GBP 100,000 with EUR in 3 months' time to settle an invoice from a supplier. The company wants certainty in future cash flow and decides to enter into an FX Forward Contract. The forward rate agreed with the Bank is 0.90. In 3 months' time, the company will pay to the Bank EUR 111,111.11 and the Bank will deliver GBP 100,000 to the company which is then used to pay the supplier. The rate will be calculated using the formula below:

$$F = S \frac{(1 + i_f)}{(1 + i_d)}$$

where

F is the Forward Exchange Rate

S is the current Spot Exchange Rate

id is the interest rate in domestic currency (base currency)

if is the interest rate in foreign currency (quoted currency)

Example of an Early Termination

What happens if the company no longer has the requirement to buy GBP 100,000?

The contract will have to be cancelled and the agreed forward rate of 0.90 would be compared to the FX Rate prevailing at the time of cancellation.

Scenarios

The prevailing FX Rate at 0.95 : Cost to the company of EUR 5,848 (EUR 111,111.11 – EUR 105,263.16) which is due to the Bank

The Prevailing FX Rate at 0.85 : Gain to the company of EUR 6,536 (EUR 111,111.11 – EUR 117,647.06) which the Bank pays

Should you choose to enter an FX Forward

Please follow the steps below to enter into an FX Forward:

- ▶ Talk to your Bank of Ireland Relationship Manager who will refer you to the relevant contact in our Global Markets unit.
- ▶ Ensure you have read and understood this document.
- ▶ You may be required to sign an ISDA Master Agreement.
- ▶ Talk to your Bank of Ireland Global Markets contact about the particular parameters of the FX Product that you require.

PLEASE NOTE: We will provide details of all your transactions, which we are required to report to national competent authorities or make public in accordance with the rules and requirements applicable to your transaction. You agree to provide us with all information we may reasonably require for the purposes of complying with our obligations and acknowledge that we reserve the right to enter into any transactions with you until we are in receipt of such information. You agree to inform us if you are aware or become aware of any change to the information you provided us. Our decision to report or not report your transaction will be based on the information and evidence you have provided in relation to your transaction.

In accordance with the rules and requirements set out by the European Union (Markets in Financial Instruments) Regulations 2017 and the Financial Conduct Authority the Bank of Ireland is required to categorise each client either as eligible counterparty, professional client or retail client. Bank of Ireland also has to assess the appropriateness of the product for each customer. Therefore, you may be required to supply supporting documents in order to establish the client category and the appropriateness of the transaction. Before your first transaction, you should receive a categorisation letter and associated Terms of Business. If you do not receive these before the proposed transaction, please contact your Bank of Ireland Global Markets contact.

Your Bank of Ireland Global Markets contact will give you an indicative quote based on the details of your required FX Forward. Once you have decided you would like to enter into an FX Forward, you will be required to provide the necessary documentation, such as:

- ▶ Mandate and other account opening requirements
- ▶ Confirmation of capacity as detailed in your Memorandum and Articles of Association (if applicable)
- ▶ Any other relevant documents

All conversations such as telephone conversations and electronic communications will be recorded (even where they do not lead to the conclusion of an agreement). Transactions are also executed on recorded lines.

As the prevailing market rates are constantly changing, the rate quoted is only valid for immediate acceptance. This rate may differ from the indicative quote given previously.

Any person authorised in your mandate to trade the relevant product may engage and conclude transactions with Bank of Ireland.

Confirmations

Post transaction, Bank of Ireland will send you a Confirmation outlining the relevant commercial terms of the transaction. It is important you check the Confirmation to make sure that it matches your understanding of the trade. If so, please sign and return the Confirmation as directed. In the case of a discrepancy, you will need to raise the matter with your Bank of Ireland Global Markets contact as a matter of urgency.

What are the Fees and Charges?

Typically there are no upfront fees other than the rate agreed. However, the rate agreed will incorporate Bank of Ireland's risk, administration costs and revenue margin.

Any relevant fees and charges will be disclosed to you via pre-trade information in generic format by means of a costs and charges disclosure maintained on our website www.bankofireland.com/treasurylibrary. Should you choose to accept Bank of Ireland's rate/price offer and enter into a MiFID II transaction with Bank of Ireland, we will provide you with a post trade confirmation disclosing and confirming your actual incurred cost and charges. An itemised break down of costs will be provided on request.

FX Option

Product Overview

An FX Option is a tool for managing Foreign Exchange exposure.

A European Foreign Exchange Option is a hedging solution which provides protection against adverse exchange rate movements.

In exchange for an upfront premium a worst case Foreign Exchange (FX) rate is secured for a future FX transaction. At expiry of the option the purchaser has the right but not the obligation to transact at this FX rate ('strike rate').

If the market FX rate at expiry is more favourable than the strike rate, the option purchaser is free to transact in the market and let the contract expire unutilised.

It is an appropriate hedge where a customer is concerned about adverse FX movements but wants to retain the ability to benefit from favourable FX moves.

Key Benefits

- ▶ Provides protection against adverse currency rate movements
- ▶ Known worst case FX level for future FX exposures
- ▶ Potential to take advantage of favourable exchange rate movements
- ▶ Possible to sell on the option or profit from its value if FX transaction no longer required
- ▶ All variables can be tailored to individual customer requirements
- ▶ These options can be dealt in batches to hedge a range of future expected cashflows

Key Risks

- ▶ The value of the option may fall prior to maturity, so early breakage (from selling on the option) may not result in full or any recovery of initial premium.
- ▶ Counterparty risk: by entering into a Derivative contract with Bank of Ireland you have an exposure to Bank of Ireland in the event of insolvency or related events such as bail in.
- ▶ The effective exchange rate achieved with an FXO may not be as favourable as the rate you could have achieved with a forward Foreign Exchange contract or if you had not entered into any contract at all.

How does an FX Option work?

A customer whose books are denominated in EUR needs to buy one million USD for a known obligation due in 6 months' time. The current EUR/USD Spot Exchange Rate is 1.29 and the 6 month outright Forward Exchange Rate is 1.30.

The customer wishes to secure a budget rate of 1.28 but believes that USD may weaken.

A EUR Put/USD Call option is purchased with a strike rate of 1.28 at an upfront cost of 1.5% * USD 1,000,000 - i.e. cost of USD 15,000.

This gives the customer the right, but not the obligation, to trade USD 1 million at an FX rate of 1.28 USD per 1 EUR in 6 months time. This option guarantees a worst case exchange rate of 1.28 while allowing the customer to benefit from a weaker USD at expiry.

In 6 months time:

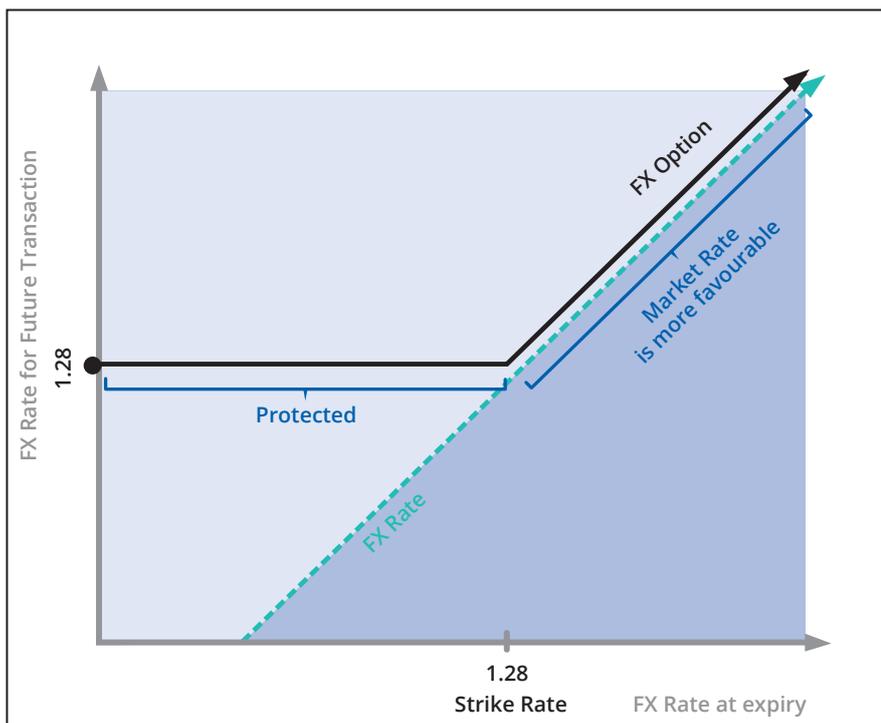
Scenario	EUR/USD after 6 months	Is EUR/USD higher than the 1.28 Strike?	Customer Exercises Option?	FX Rate for the future transaction
1	1.25	No	Yes	1.28
2	1.35	Yes	No	1.35

Warning: These figures are estimates only. They are not a reliable guide to the future performance of your investment. This product may be affected by changes in currency exchange rates.

Scenario 1: The option has value and so should be exercised even if the transaction is no longer required; the position can be closed out for a profit if not required. The customer achieves the budgeted rate less option cost of USD 15,000, giving a benefit of USD 15,000.

Scenario 2: The market rate is more favourable so the purchaser should let the option expire worthless and trade at the market rate of 1.35. The customer can beat the budget rate by c.0.07 less option cost of USD 15,000, giving a benefit of USD 55,000.

What does an FX Option Payoff profile look like?



Should you choose to enter an FX Option?

Please follow the steps below to enter into an FX Option:

- ▶ Talk to your Bank of Ireland Relationship Manager who will refer you to the relevant contact in our Global Markets unit.
- ▶ Ensure you have read and understood this document.
- ▶ You may be required to sign an ISDA Master Agreement.
- ▶ Talk to your Bank of Ireland Global Markets contact about the particular parameters of the option that you require.

In accordance with the rules and requirements set out by the European Union (Markets in Financial Instruments) Regulations 2017 and the Financial Conduct Authority the Bank of Ireland is required to categorise each client either as eligible counterparty, professional client or retail client. Bank of Ireland also has to assess the appropriateness of the product for each customer. Therefore, you may be required to supply supporting documents in order to establish the client category and appropriateness of the transaction. Before your first transaction, you should receive a categorisation letter and associated Terms of Business. If you do not receive these before the proposed transaction, please contact your Bank of Ireland Global Markets contact.

Your Bank of Ireland Global Markets contact will give you an indicative quote based on the details of the option you require. Once you have decided you would like to enter into an option, you will be required to provide the necessary documentation, such as:

- ▶ Mandate and other account opening requirements
- ▶ Confirmation of capacity as detailed in your Memorandum and Articles of Association (if applicable)
- ▶ Any other relevant documents

All conversations such as telephone conversations and electronic communications will be recorded (even where they do not lead to the conclusion of an agreement). Transactions are also executed on recorded lines.

As the prevailing market rates are constantly changing, the Premium quoted is only valid for immediate acceptance. This Premium may differ from the indicative quote given previously.

Any person authorised in your mandate to trade the relevant product may engage and conclude transactions with Bank of Ireland.

Confirmations

Post transaction, Bank of Ireland will send you a Confirmation outlining the relevant commercial terms of the transaction. It is important you check the Confirmation to make sure that it matches your understanding of the trade. If so, please sign and return the Confirmation as directed. In the case of a discrepancy, you will need to raise the matter with your Bank of Ireland Global Markets contact as a matter of urgency.

What are the Fees and Charges?

Typically there are no upfront fees other than the Premium specified. However the Premium agreed will incorporate Bank of Ireland's risk, administration costs and revenue margin.

A disclosure of expected Aggregated Costs and Charges and expected Total Consideration is available on our website at www.bankofireland.com/treasurylibrary. We will also provide this information on a post trade term sheet confirming actual Aggregated Costs and Charges and actual Total Consideration following execution of any derivative trade. An itemised break down of costs will be provided on request.

FX Collar

Product Overview

An FX Collar is a tool for managing Foreign Exchange exposure.

An FX Collar ('Collar') is a Foreign Exchange hedging solution which provides protection against adverse FX movements. A Collar consists of the simultaneous purchase of a Call option and the sale of a Put option on the same currency pair on a specific expiry date and principal amount.

This purchase and sale creates a Collar, or FX range, defining a maximum and minimum FX rate for a transaction.

On the expiry date, if the FX Rate sets inside the range defined by the Collar, then the transaction is dealt at the market rate. If the FX Rate sets above the upper boundary of the range, then the transaction is dealt at the maximum rate and if the FX Rate sets below the lower boundary of the range then the minimum rate is the FX Rate used for the transaction.

An FX Collar can be priced and provided separately by its component parts if required e.g. an FX Put or/and a FX Call can be transacted separately.

It is an appropriate hedge where a customer is concerned about FX movements, but does not want to pay the entire premium associated with a single FX Option.

Key Benefits

- ▶ Provides protection against adverse FX movements
- ▶ Known worst case rate for the specified FX transaction
- ▶ Potential to take advantage of favourable FX movements within the range
- ▶ Possible to cancel the product at prevailing market rates
- ▶ All variables can be tailored to individual customer requirements
- ▶ Premiums can be incorporated in order to further improve the risk/reward profile
- ▶ These options can be dealt in strips to hedge a stream of future expected cash flows.

Key Risks

- ▶ No potential to benefit from favourable FX movements beyond the range
- ▶ Breakage costs may apply should early deal termination be required
- ▶ Counterparty risk; by entering into a Derivative contract with Bank of Ireland you have an exposure to Bank of Ireland in the event of insolvency or related events such as bail in.
- ▶ A premium, where payable, is non-refundable.

How does an FX Collar work?

A Eurozone based customer needs to buy one million GBP for a known obligation due in 6 months' time. The current Spot Exchange Rate is 0.805 and the 6 month Forward Rate is 0.80. The customer wishes to secure a worst case FX rate of 0.78 but believes that GBP may weaken.

An FX Collar is entered into with a minimum FX Rate of 0.78 and a maximum rate of 0.83. At expiry BOI will compensate the customer if the FX Rate has fallen below 0.78 and the customer must compensate BOI if the FX Rate has risen above 0.83.

If the spot FX Rate is between the two rates defined by the Collar at expiry then the customer is free to transact at the current market rate.

In 6 months time:

Scenario	Spot EUR/GBP FX rate at maturity	Is EUR/GBP lower than the 0.78 Strike?	Is EUR/GBP higher than the 0.83 Strike?	FX Rate for the transaction
1	0.77	Yes	No	0.78
2	0.82	No	No	0.82
3	0.85	No	Yes	0.83

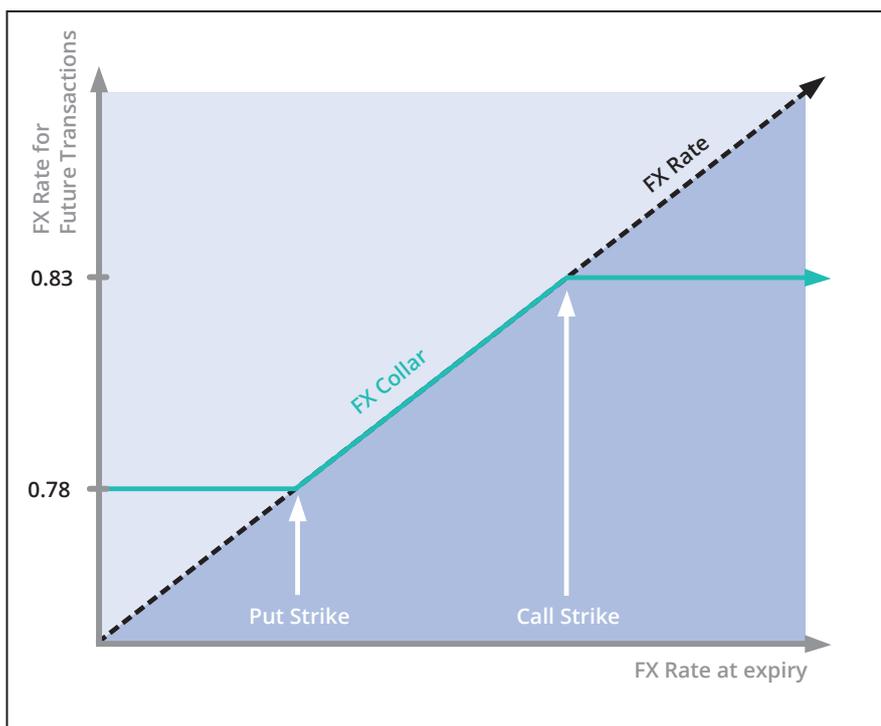
Scenario 1: The customer has bought protection at 0.78 and so is compensated for any FX rate move below that rate at maturity

Scenario 2: The customer is free to trade in the market at 0.82

Scenario 3: The customer has limited their upside at 0.83 so must compensate the bank for any FX rate above that rate at maturity

Warning: These figures are estimates only. They are not a reliable guide to the future performance of your investment.

What does an FX Collar Payoff profile look like?



Should you choose to enter an FX Collar

Please follow the steps below to enter into an FX Collar:

- ▶ Talk to your Bank of Ireland Relationship Manager who will refer you to the relevant contact in our Global Markets unit.
- ▶ Ensure you have read and understood this document.
- ▶ You may be required to sign an ISDA Master Agreement.
- ▶ Talk to your Bank of Ireland Global Markets contact about the particular parameters of the FX Collar that you require.

In accordance with the rules and requirements set out by the European Union (Markets in Financial Instruments) Regulations 2017 and the Financial Conduct Authority the Bank of Ireland is required to categorise each client either as eligible counterparty, professional client or retail client. Bank of Ireland also has to assess the appropriateness of the product for each customer. Therefore, you may be required to supply supporting documents in order to establish the client category and appropriateness of the transaction. Before your first transaction, you should receive a categorisation letter and associated Terms of Business. If you do not receive these before the proposed transaction, please contact your Bank of Ireland Global Markets contact.

Your Bank of Ireland Global Markets contact will give you an indicative quote based on the details of your FX Collar. Once you have decided you would like to enter into an FX Collar, you will be required to provide the necessary documentation, such as:

- ▶ Mandate and other account opening requirements
- ▶ Confirmation of capacity as detailed in your Memorandum and Articles of Association (if applicable)
- ▶ Any other relevant documents

All conversations such as telephone conversations and electronic communications will be recorded (even where they do not lead to the conclusion of an agreement). Transactions are also executed on recorded lines.

As the prevailing market rates are constantly changing, the Premium quoted is only valid for immediate acceptance. This Premium may differ from the indicative quote given previously.

Any person authorised in your mandate to trade the relevant product may engage and conclude transactions with Bank of Ireland.

Confirmations

Post transaction, Bank of Ireland will send you a Confirmation outlining the relevant commercial terms of the transaction. It is important you check the Confirmation to make sure that it matches your understanding of the trade. If so, please sign and return the Confirmation as directed. In the case of a discrepancy, you will need to raise the matter with your Bank of Ireland Global Markets contact as a matter of urgency.

What are the Fees and Charges?

Typically there are no upfront fees other than the Premium specified. However the agreed Premium will incorporate Bank of Ireland's risk, administration costs and revenue margin.

A disclosure of expected Aggregated Costs and Charges is available on our website at www.bankofireland.com/treasurylibrary. We will also provide this information on a post trade term sheet confirming actual Aggregated Costs and Charges and actual Total Consideration following execution of any derivative trade. An itemised break down of costs will be provided on request.

Forward Extra

Product Overview

A Forward Extra is a tool for managing Foreign Exchange exposure.

A Forward Extra is a Foreign Exchange (FX) hedging solution which provides a customised solution for hedging a future FX exposure.

A Forward Extra secures a worst case FX rate ('strike rate') for a future Foreign Exchange transaction while allowing the treasury manager to take advantage of favourable FX moves so long as a specified FX Rate ('barrier') has never been breached.

The purchaser has the right, but not the obligation, to transact at the strike rate, but may take advantage of a favourable exchange rate at the option expiry date, provided that the barrier has not been breached. If the barrier has been breached however, the purchaser is locked into a forward transaction at the strike rate.

It is an appropriate hedge where a customer does not wish to pay an upfront premium for FX protection and is comfortable with becoming locked into the strike rate if the barrier is breached.

Key Benefits

- ▶ Provides a worst case exchange rate for agreed future FX exposures
- ▶ Potential to take advantage of favourable exchange rate movements once the barrier is not breached
- ▶ All variables can be tailored to individual customer requirements
- ▶ These options can be dealt in strips to hedge a stream of future expected cash flows

Key Risks

- ▶ If the barrier is breached then the company is locked into a forward at the strike rate.
- ▶ Breakage costs may apply should early termination be required.
- ▶ Counterparty risk: by entering into a Derivative contract with Bank of Ireland you have an exposure to Bank of Ireland in the event of insolvency or related events such as bail in.
- ▶ The protected rate will generally be less favourable than the forward rate.

How does a Forward Extra work?

A EUR based customer needs to buy one million USD for a known obligation due in 6 months time. The current Spot Exchange Rate is 1.29 and the 6 month forward rate is 1.30.

The Treasury Manager wishes to secure a budget rate at 1.28 but believes that USD may weaken.

The customer enters into a Forward Extra with a strike rate of 1.28 and a barrier level of 1.40.

This gives the customer the right, but not the obligation, to buy 1.28 USD for every 1 EUR on the option expiry date so long as the barrier of 1.40 has never been exceeded.

If the barrier rate of 1.40 trades at any time over the life of the trade then the customer is locked into a forward at 1.28.

In 6 months time:

Scenario	EUR/USD	Has the barrier level of 1.40 traded over the life?	Is EUR/USD higher than the 1.28 Strike?	FX Rate for the transaction
1	1.25	No	No	1.28
2	1.35	No	Yes	1.35
3	1.42	Yes	Yes	1.28

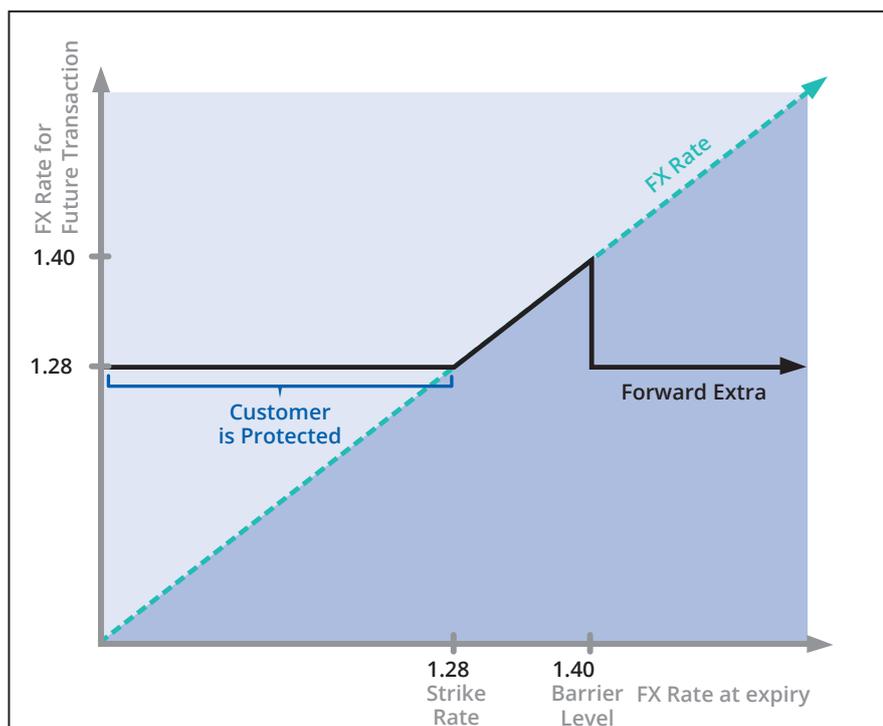
Scenario 1: The purchaser can use their option to trade at 1.28

Scenario 2: The purchaser is free to trade in the market at the more favourable rate of 1.35

Scenario 3: The barrier has been breached so the purchaser is locked into the 1.28 forward rate

Warning: These figures are estimates only. They are not a reliable guide to the future performance of your investment. This product may be affected by changes in currency exchange rates.

What does a Forward Extra Payoff profile look like?



Should you choose to enter a Forward Extra

Please follow the steps below to enter into a Forward Extra:

- ▶ Talk to your Bank of Ireland Relationship Manager who will refer you to the relevant contact in our Global Markets unit.
- ▶ Ensure you have read and understood this document.
- ▶ You may be required to sign an ISDA Master Agreement.
- ▶ Talk to your Bank of Ireland Global Markets contact about the particular parameters of the Forward Extra that you require.

In accordance with the rules and requirements set out by the European Union (Markets in Financial Instruments) Regulation 2017 the Bank of Ireland is required to categorise each client either as eligible counterparty, professional client or retail client. Bank of Ireland also has to assess the appropriateness of the product for each customer. Therefore, you may be required to supply supporting documents in order to establish the client category and appropriateness of the transactions. Before your first transaction, you should receive a categorisation letter and associated Terms of Business. If you do not receive these before the proposed transaction, please contact your Bank of Ireland Global Markets contact.

Your Bank of Ireland Global Markets contact will give you an indicative quote based on the details of your product. Once you have decided you would like to enter into a Forward Extra, you will be required to provide the necessary documentation, such as:

- ▶ Mandate and other account opening requirements
- ▶ Confirmation of capacity as detailed in your Memorandum and Articles of Association (if applicable)
- ▶ Any other relevant documents

All conversations such as telephone conversations and electronic communications will be recorded (even where they do not lead to the conclusion of an agreement). Transactions are also executed on recorded lines.

As the prevailing market rates are constantly changing, the Premium quoted is only valid for immediate acceptance. This Premium may differ from the indicative quote given previously.

Any person authorised in your mandate to trade the relevant product may engage and conclude transactions with Bank of Ireland.

Confirmations

Post transaction, Bank of Ireland will send you a Confirmation outlining the relevant commercial terms of the transaction. It is important you check the Confirmation to make sure that it matches your understanding of the trade. If so, please sign and return the Confirmation as directed. In the case of a discrepancy, you will need to raise the matter with your Bank of Ireland Global Markets contact as a matter of urgency.

What are the Fees and Charges?

Typically there are no upfront fees other than the rate agreed. However the Premium agreed will incorporate Bank of Ireland's risk, administration costs and revenue margin.

Any relevant fees and charges will be disclosed to you via pre-trade information in generic format maintained on our website www.bankofireland.com/treasurylibrary. Should you choose to accept Bank of Ireland's rate/price offer and enter into a MiFID II transaction with Bank of Ireland, we will provide you with a post trade confirmation disclosing and confirming your actual incurred cost and charges. An itemised break down of costs will be provided on request.

Participating Forward

Product Overview

A Participating Forward is a tool for managing Foreign Exchange exposure.

A Participating Forward is a Foreign Exchange (FX) hedging solution which provides a customised solution for hedging a future FX exposure.

A Participating Forward secures a worst-case FX rate ('strike rate') for a future Foreign Exchange transaction while allowing the customer to take advantage of favourable FX moves on a portion of the amount they wish to hedge. The remaining portion must be traded at the agreed strike rate.

It is an appropriate hedge where a customer does not wish to pay an upfront premium for FX protection and is comfortable with only being able to take advantage of favourable moves on a portion of their exposure..

Key Benefits

- ▶ Provides a worst case exchange rate for agreed future FX exposures
- ▶ Potential to take advantage of favourable exchange rate movements on a portion of exposure
- ▶ All variables can be tailored to individual customer requirements
- ▶ These options can be dealt in batches to hedge a range of future expected cash flows

Key Risks

- ▶ If the FX Rate moves favourably, the customer can only avail of current market rates on the specified portion of the traded amount.
- ▶ Breakage costs may apply should early termination be required.
- ▶ Counterparty risk: by entering into a Derivative contract with Bank of Ireland you have an exposure to Bank of Ireland in the event of insolvency or related events such as bail in.
- ▶ The effective exchange rate achieved with a PCF may not be as favourable as the rate you could have achieved with a forward Foreign Exchange contract or if you had not entered into any contract at all.

How does a Participating Forward work?

A customer whose books are denominated in EUR needs to buy one million USD for a known obligation due in 6 months' time. The current spot exchange rate is 1.29 and the 6 month forward rate is 1.30.

The customer wishes to secure a budget rate at 1.28 but believes that USD may weaken.

The customer enters into a participating Forward at 1.28 with a participation rate of 40%.

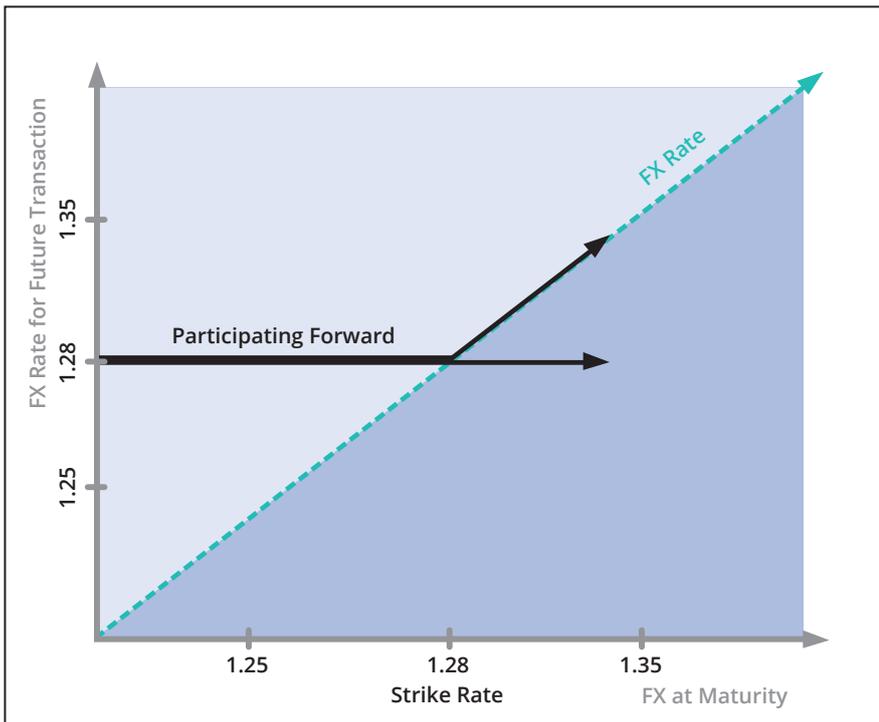
This gives the customer the right, but not the obligation, to trade USD 1m at an FX Rate of 1.28 USD per 1 EUR on the option expiry date. If the FX Rate at expiry is above 1.28 the customer can transact at the market rate on 40% of the notional (USD 400,000) but must buy the remaining 60% (USD 600,000) at 1.28.

In 6 months time:

Scenario	EUR/USD	Has the barrier level of 1.40 traded over the life?	Is EUR/USD higher than the 1.28 Strike?	FX Rate for the transaction
1	1.25	No	USD 1,000,000	0
2	1.35	Yes	USD 600,000	USD 400,000

Warning: These figures are estimates only. They are not a reliable guide to the future performance of your investment. This product may be affected by changes in currency exchange rates.

What does a Participating Forward Payoff profile look like?



Should you choose to enter a Participating Forward?

Please follow the steps below to enter into a Participating Forward:

- ▶ Talk to your Bank of Ireland Relationship Manager who will refer you to the relevant derivative contact in our Global Markets unit.
- ▶ Ensure you have read and understood this document.
- ▶ You may be required to sign an ISDA Master Agreement.
- ▶ Talk to your Bank of Ireland Global Markets contact about the particular parameters of the product that you require.

In accordance with the rules and requirements set out by the European Union (Markets in Financial Instruments) Regulations 2017 and the Financial Conduct Authority the Bank of Ireland is required to categorise each client either as eligible counterparty, professional client or retail client. Bank of Ireland has to assess the appropriateness of the product for each customer. Therefore, you may be required to supply supporting documents to establish the client category and appropriateness of the transaction. Before your first transaction, you should receive a categorisation letter and associated Terms of Business. If you do not receive these before the proposed transaction, please contact your Bank of Ireland Global Markets contact.

Your Bank of Ireland Global Markets contact will give you an indicative quote based on the details of your participating forward. Once you have decided you would like to enter into a participating forward, you will be required to provide the necessary documentation, such as:

- ▶ Mandate and other account opening requirements
- ▶ Confirmation of capacity as detailed in your Memorandum and Articles of Association (if applicable)
- ▶ Any other relevant documents

All conversations such as telephone conversations and electronic communications will be recorded (even where they do not lead to the conclusion of an agreement). Transactions are also executed on recorded lines.

As the prevailing market rates are constantly changing, the rate quoted is only valid for immediate acceptance. This rate may differ from the indicative quote given previously.

Any person authorised in your mandate to trade the relevant product may engage and conclude transactions with Bank of Ireland.

Confirmations

Post transaction, Bank of Ireland will send you a Confirmation outlining the relevant commercial terms of the transaction. It is important you check the Confirmation to make sure that it matches your understanding of the trade. If so, please sign and return the Confirmation as directed. In the case of a discrepancy, you will need to raise the matter with your Bank of Ireland Global Markets contact as a matter of urgency.

What are the Fees and Charges?

Typically there are no upfront fees. However the rate agreed will incorporate Bank of Ireland's risk, administration costs and revenue margin.

Any relevant fees and charges will be disclosed to you via pre-trade information in generic format maintained on our website www.bankofireland.com/treasurylibrary. Should you choose to accept Bank of Ireland's rate/price offer and enter into a MiFID II transaction with Bank of Ireland, we will provide you with a post trade confirmation disclosing and confirming your actual incurred cost and charges. An itemised break down of costs will be provided on request.

Non-Deliverable Forward

Product Overview

A Non-Deliverable Forward is a tool for managing Foreign Exchange exposure.

A Non-Deliverable Forward (NDF) is a cash-settled, short-term forward contract in a thinly traded or nonconvertible foreign currency against a freely traded currency, where the profit or loss at the settlement date is calculated by taking the difference between the agreed upon exchange rate and the spot rate at the time of settlement, for an agreed upon notional amount of funds. The gain or loss is then settled in the freely traded currency. NDFs are commonly quoted for time periods from one month up to one year and are most frequently quoted and settled in U.S. dollars.

It is an appropriate hedge where a customer wishes to hedge exposure to foreign currencies that are not internationally traded or whose trade is limited or legally restricted in the domestic market.

Key Benefits

- ▶ An NDF provides you with protection against unfavourable exchange rate movements.
- ▶ NDFs are available for a wide range of currencies.
- ▶ Where exchange restrictions do not allow physical delivery of currency, NDFs provide a means of negating Foreign Exchange risk.
- ▶ The maturity date and the contract amount can be tailored to meet your particular needs.
- ▶ There is no bid/offer spread on maturity as the contracts are normally settled against a fixing rate.
- ▶ The contract date can be amended to an earlier or later date.

Key Risks

- ▶ If your requirements change over the term of the forward contract, you are still obliged to settle your Non-deliverable forward contract.
- ▶ There may be a cost to cancel the contract, depending on the FX and Interest rates prevailing at that time.
- ▶ You forgo the potential to benefit from favourable movements in FX exchange rate.
- ▶ Foreign Exchange rates are unpredictable and can go in either direction.
- ▶ Counterparty risk: by entering into a Derivative contract with Bank of Ireland you have an exposure to Bank of Ireland in the event of insolvency or related events such as bail in.

How does a Non-Deliverable Forward work?

NDF is a short-term, cash-settled currency forward between two counterparties. On the contracted settlement date, the profit or loss is adjusted between the two counterparties based on the difference between the contracted NDF rate and the prevailing spot FX rates on an agreed notional amount. NDF consists of:

- ▶ **Notional amount:** This is the “face value/ principal amount” of the NDF, which is agreed between the two counterparties.
- ▶ **Fixing date:** The day and time whereby the comparison between the NDF rate and the prevailing spot rate is made.
- ▶ **Settlement date / Delivery date:** The day when the difference is paid or received. It is usually one or two business days after the fixing date.
- ▶ **Contracted NDF rate:** The rate agreed on the transaction date, and is essentially the outright forward rate of the currencies dealt.
- ▶ **Prevailing spot rate / Fixing spot rate:** The rate on the fixing date usually provided by the Central Bank, and commonly calculated by calling a number of dealers in the market for a quote at a specified time of day, and taking the average.

As, NDF is a cash-settled instrument, the notional amount is never exchanged. There is only an exchange of cash flows which is actually, the difference between the NDF rate and the prevailing spot market rate, that is determined on the fixing date and exchanged on the settlement date, applied to the notional, i.e. cash flow = (NDF rate – spot rate) × notional.

As an example, suppose that company A will receive IDR 10,000,000,000 (Indonesian Rupiah) three months from today as a result of an investment in Indonesia. Upon receipt, company A is planning to convert the payment into EUR at the then available spot rate; Indonesian authorities permit this spot market transaction because of the underlying investment. In contrast, no deliverable forward FX contracts are available for IDR, so in order to hedge the exchange rate risk between IDR and EUR, company A enters into an NDF with a Bank of Ireland. The NDF contract specifies a notional of IDR 10,000,000,000, a maturity of three months, and the agreed upon forward rate of 15,000 which equals the current spot rate (IDR 15,000 = EUR 1). The spot rate for IDR is set by the Associations of Banks in Singapore (“ABS”), which calculates the rate based on data submitted by banks (using a process similar to the one used to calculate LIBOR and other global reference benchmarks). Suppose that three months later, at maturity, this spot rate is 20,000. The close-out payment of the NDF is calculated as:

$$10,000,000/15,000 - 10,000,000/20,000 =$$

$$\text{EUR}666.66 - \text{EUR}500,000 = \text{EUR}166.66 \text{ (Bank of Ireland owes company A)}$$

Suppose that three months later, at maturity, this spot rate is 10,000. The close-out payment of the NDF is calculated as:

$$10,000,000/15,000 - 10,000,000/10,000 =$$

$$\text{EUR}666.66 - \text{EUR}1,000.00 = -\text{EUR}333.33 \text{ (company A owes Bank of Ireland).}$$

Can I terminate an NDF before maturity?

You may ask us to terminate the NDF at any time up to and including the fixing date. We will then provide you with a termination quote. If you accept the termination quote, we will cancel the NDF.

Our termination quote will incorporate the same variables (the contract rate, currencies, term, notional principal amount, fixing rate and maturity date) used when pricing the original NDF. These will be adjusted for the prevailing market rates over the remaining term of the NDF.

In the above example, let us assume that there is one week to settlement left but you chose to cancel the contract. The one week NDF bid rate is now trading at 12,500. The cost to you to settle this contract early would be as follows:

$$10,000,000/15,000 - 10,000,000/12,500 =$$

$$\text{EUR}666.66 - \text{EUR}800.00 = -\text{EUR}133.33 \text{ (Company A owes Bank of Ireland).}$$

Should you choose to enter a Non-Deliverable Forward

Please follow the steps below to enter into a Non-Deliverable Forward:

- ▶ Talk to your Bank of Ireland Relationship Manager who will refer you to the relevant contact in our Global Markets unit.
- ▶ Ensure you have read and understood this document.
- ▶ You may be required to sign an ISDA Master Agreement.
- ▶ Talk to your Bank of Ireland Global Markets contact about the particular parameters of the NDF that you require.

In accordance with the rules and requirements set out by the European Union (Markets in Financial Instruments) Regulations 2017 and the Financial Conduct Authority the Bank of Ireland is required to categorise each client either as eligible counterparty, professional client or retail client. Bank of Ireland also has to assess the appropriateness of the product for each customer. Therefore, you may be required to supply supporting documents in order to establish the client category and appropriateness of the transaction. Before your first transaction, you should receive a categorisation letter and associated Terms of Business. If you do not receive these before the proposed transaction, please contact your Bank of Ireland Global Markets contact.

Your Bank of Ireland Global Markets contact will give you an indicative quote based on the details of your product. Once you have decided you would like to enter into a NDF, you will be required to provide the necessary documentation, such as:

- ▶ Mandate and other account opening requirements
- ▶ Confirmation of capacity as detailed in your Memorandum and Articles of Association (if applicable)
- ▶ Any other relevant documents

All conversations such as telephone conversations and electronic communications will be recorded (even where they do not lead to the conclusion of an agreement). Transactions are also executed on recorded lines.

As the prevailing market rates are constantly changing, the rate quoted is only valid for immediate acceptance. This rate may differ from the indicative quote given previously.

Any person authorised in your mandate to trade the relevant product may engage and conclude transactions with Bank of Ireland.

Confirmations

Post transaction, Bank of Ireland will send you a Confirmation outlining the relevant commercial terms of the transaction. It is important you check the Confirmation to make sure that it matches your understanding of the trade. If so, please sign and return the Confirmation as directed. In the case of a discrepancy, you will need to raise the matter with your Bank of Ireland Global Markets contact as a matter of urgency.

What are the Fees and Charges?

Typically there are no upfront fees other than the rate agreed. However the rate agreed will incorporate Bank of Ireland's risk, administration costs and revenue margin.

Any relevant fees and charges will be disclosed to you via pre-trade information in generic format maintained on our website www.bankofireland.com/treasurylibrary. Should you choose to accept Bank of Ireland's rate/price offer and enter into a MiFID II transaction with Bank of Ireland, we will provide you with a post trade confirmation disclosing and confirming your actual incurred cost and charges. An itemised break down of costs will be provided on request.

Glossary

Aggregated Costs and Charges is the total of all execution, administration, credit margin.

Forward Exchange Rate means the price of one currency in terms of another currency for delivery on a specified date in the future taking into account Bank of Ireland's costs and its profit margin. This is the rate that Bank of Ireland would make available to you at the relevant time.

Bank of Ireland means The Governor and Co of The Bank of Ireland.

Contract Amount means the agreed amount as set out as such in the Confirmation. It is the amount to be exchanged under the Contract.

Call Currency means the currency set out as such in the Confirmation. It is the nominated currency which you have the right to buy under a Call option.

Call Option means an option that provides the holder with the right to buy the nominated Call Currency.

Cash Settlement Amount means the amount, if any, paid under an NDF on the Maturity Date depending on whether the Fixing Rate is lower, equal to or higher than the Strike Rate.

Contract Rate means the agreed exchange rate at which the Currency Pair will be exchanged. The Contract Rate will always be less favourable than the Forward Exchange Rate available to you at the time.

Commencement Date or Start Date means the date on which your FX hedging Product commences. This will be referred to as the 'Effective Date' in your Confirmation.

Confirmation means the document issued to you by Bank of Ireland following the agreement of the Trade.

Counterparty can refer to either entity on the other side of a financial transaction. In all products discussed in this document, Bank of Ireland is the contract writer. Our counterparty is the contract seller.

Currency Pair means the two currencies applying in respect of an FXO. The currency pair must be acceptable to Bank of Ireland.

A Derivative is a financial contract which derives its value from the performance of an underlying asset or value such as an interest rate.

Early Termination refers to bringing a transaction either partially or wholly to an end before the agreed Maturity Date.

Effective Date is the Start Date of your product. This is not necessarily the same as the Trade Date.

European Option means an option where, if exercised, settlement takes place on the pre-agreed Settlement Date. The exercise decision is made at the Expiration Time on the Expiration Date.

Expiration Date means the date set out as such in the Confirmation. It is the date on which the outcome of the FXO will be determined.

Fixing Date means the date the Fixing Rate is determined and the Cash Settlement Amount is calculated. It is the same date as the Expiry Date.

Fixing Rate means the rate displayed on the agreed rate source at an agreed time on the Fixing Date. The Fixing Rate is used to calculate the Cash Settlement Amount.

Forward Exchange Rate means the price of one currency in terms of another currency for delivery on a specified date in the future taking into account Bank of Ireland's costs and its profit margin. This is the rate that Bank of Ireland would make available to you at the relevant time.

Forward Extra means the product described in this document.

FXO and Foreign Exchange Option mean the product described in this document.

Glossary Cont.

FX Collar means the product described in this document.

Key Information Disclosure Document means a stand-alone, standardised document prepared for the investment as set out in Regulation No 1286/2014 of the European Parliament and of the Council of 26 November 2014 on key information documents for packaged retail and insurance-based investment products.

Macro Business

The Macro business consists of Foreign Exchange, Rates and e-Trading of Macro products. MiFID II costs and charges obligations apply to services and activities and transactions in products that are 'financial instruments' (as defined under MiFID II). In the case of the Macro business this includes, but is not limited to, bonds and derivatives but does not include FX spot.

Maturity and Maturity Date means the date on which any cash settlement payable under the NDF will be made.

MiFID II means the Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU.

Participation Ratio means the nominated proportion of the Contract Amount that may participate in favourable exchange rate movements; expressed as a percentage.

PFC and Participating Forward Contract means the product described in this document.

Premium means an amount payable on the Premium Payment Date.

Premium Payment Date means the date set out as such in the confirmation on which the Premium is paid by the buyer of the option. It is generally two business days after the Trade Date, subject to adjustment at Bank of Ireland discretion to account for non-business days.

Put Currency means the currency set out as such in the Confirmation. It is the nominated currency which you have the right to sell under a Put option.

Put Option means an option that provides the holder with the right to sell the nominated Put Currency.

Settlement Date means the date set out as such in the Confirmation. It is the date on which the Currency Pair will be exchanged under a European option where the option is exercised. It may also be the date where the Currency Pair is exchanged for an option if the exercise decision is made on the Expiration Date of the FXO.

Settlement Currency means the currency identified as such by the parties, as evidenced in the Confirmation. This is the currency that the Cash Settlement Amount must be paid in.

Spot Exchange Rate means the price of one currency in terms of another currency for delivery two business days after the Trade Date.

Strike Price means the agreed exchange rate which is used as a reference point when determining whether the option will be exercised. It is the exchange rate at which the Currency Pair will be exchanged when the option is exercised.

Tenor means the length of time until a contract is due to expire. For example, an FX Forward is taken out with a two year tenor. After one year passes, the tenor of the FX Forward is one year.

Trade Date means the date a FXO is entered into.

ISDA stands for International Swaps and Derivatives Association and is also a shorthand reference to the ISDA Master Agreement, 1992 version and 2002 version, which are standard master dealing agreements issued by the Association and used to document your Interest Rate Product(s) with Bank of Ireland.

Non-Deliverable Forward or NDF means the product described in this document.

Appendix 1

GM Product Target Market Matrix.

Product Mapping

MiFID CATEGORISATIONS	RETAIL			RETAIL			RETAIL / PROF		PROFESSIONAL		PROF / ECP	
	PERSONAL			SME			LARGE PRIVATE		LARGE CAP		FINANCIAL INSTITUTION	
Product	PE1	PE2	PE3	SME1	SME2	SME3	LPCO1	LPCO2	LRGC1	LRGC2	FC1	FC2
Interest Rate Swaps			✓		✓	✓	✓	✓	✓	✓	✓	✓
IR Caps		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IR Floors		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IR Options					✓	✓	✓	✓	✓	✓	✓	✓
FX Forwards		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NDFs				✓	✓	✓	✓	✓	✓	✓	✓	✓
Cross CCY Swaps					✓	✓	✓	✓	✓	✓	✓	✓
Emissions*								✓	✓	✓	✓	✓
FX Options					✓	✓	✓	✓	✓	✓	✓	✓
Deposit with embedded Options		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sub Par (<100% Capital Guaranteed) Structured Deposits		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

*Professional/ECP Only

Criteria

FACTORS	The type of clients to whom the product is targeted	Retail	Professional	ECP
	Channel	Non advised. Execution Only.	Non advised. Execution Only.	Non advised. Execution Only.
1	Knowledge and experience	Basic knowledge and experience. Can be supported by education or external advice	Advanced knowledge and experience or external advice	Expert knowledge and experience with Derivative products
2	Financial situation with a focus on the ability to bear losses	No loss or minor loss of capital invested	Partial loss or total loss of capital invested	Expert knowledge and experience with Derivative products
3	Risk tolerance and compatibility of the risk / reward profile of the product with the target market	1 - 4 generally low to medium risk tolerance - however if they require derivatives risk is 7	7 - Very high risk tolerance - Ability to trade Derivatives to hedge risk	7 - Very high risk tolerance - Ability to trade Derivatives to hedge risk
4	Clients' Objectives and Needs	Certainty of price / a pre agreed fixed rate	Risk management / Price certainty / balance sheet hedging	Hedging risk and general Derivative trading

Customer Segments

Segment Reference	Customer Type	Knowledge & Experience Options	MiFID Category	Ability to bear losses	Risk Tolerance	Description
PE1	Personal	Mass Retail	Retail	No loss or minor loss of capital invested	1 - Very low risk tolerance	Individual in course of personal dealings
PE2	Personal	Retail - Educated / Informed / Experienced	Retail	No loss or minor loss of capital invested	4 - Low risk tolerance	Individual in course of personal dealings
PE3	Personal	Retail - Sophisticated - Experienced or External Advisor	Retail	Partial loss or total loss of capital invested	Up to 7 - Very high risk tolerance	Individual in course of personal dealings
SME1	SME	Basic knowledge and experience	Retail	No loss or minor loss of capital invested	4 - Low risk tolerance Low return	Small or Medium Enterprise private companies hedging risk
SME2	SME	Advanced knowledge and experience / Informed / External advisors	Retail	Partial loss or total loss of capital invested	Up to 7 - Very high risk tolerance	Small or Medium Enterprise private companies hedging risk
SME3	SME	Comprehensive knowledge and experience	Retail	Partial loss or total loss of capital invested	Up to 7 - Very high risk tolerance	Small or Medium Enterprise private companies hedging risk
LPCO1	Large Private Company	Comprehensive knowledge and experience	Retail or Professional	Partial loss or total loss of capital invested	Up to 7 - Very high risk tolerance Highest return	Large corporate hedging commercial risk
LPCO2	Large Private Company	Expert knowledge and experience with Derivative products	Retail or Professional	Loss exceeding capital invested	Up to 7 - Very high risk tolerance Highest return	Generally an internal Treasurer or Financial Officer
LRGC1	Large Public Company	Comprehensive knowledge and experience	Professional	Loss exceeding capital invested	Up to 7 - Very high risk tolerance	Above MiFID Professional thresholds hedging commercial risk
LRGC2	Large Public Company	Expert knowledge and experience with Derivative products	Professional	Loss exceeding capital invested	Up to 7 - Very high risk tolerance Highest return.	Above MiFID Professional thresholds hedging commercial risk
FC1	Financial Institution	Expert knowledge and experience with Derivative products	ECP	Loss exceeding capital invested	Up to 7 - Very high risk tolerance Highest return	Regulated Institution whose main business is trading, investments, banking
FC2	Financial Institution	Expert knowledge and experience with Derivative products	Professional or ECP	Loss exceeding capital invested	Up to 7 - Very high risk tolerance	Financial Counterparty such as fund or fund manager, may be regulated

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In the UK, Bank of Ireland is authorised by the Central Bank of Ireland and the Prudential Regulation Authority, and is subject to limited regulation by the Financial Conduct Authority and the Prudential Regulation Authority. Details about the extent of our authorisation and regulation by the Prudential Regulation Authority and our regulation by the Financial Conduct Authority are available from us on request.

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