



# CAPITAL MARKETS PRODUCT RISK BOOK



**BNP PARIBAS**  
**FORTIS**

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# Introduction

This Product Risk Book is addressed to the Corporate & Public Bank, Belgium (CPBB), Corporate & Investment Banking (CIB) and Retail & Private Banking (RPB) clients of BNP Paribas Fortis or any of its subsidiaries, affiliates or branches which are "Professional Clients" or "Retail Clients" in the sense of Directive 2004/39/EC on markets in Financial instruments ("MiFID") ("our clients").

The purpose of this Product Risk Book is to provide our clients with appropriate information on the nature, advantages (disadvantages) and risks of the financial instruments covered therein (the "Capital Markets Products") so as to enable them to make investment decisions on an informed basis.

Part A of this Product Risk Book contains the basic principles related to the Capital Markets Products (cash and derivative instruments, description of risks, difference between investment and hedging) and summarises the existing MiFID asset classes. Part B describes the Capital Markets Products and their respective characteristics.

This Product Risk Book does not constitute investment advice (nor any other advice of whatever nature) and is not intended as a personal recommendation to invest in the Capital Markets Products. Before making an investment decision, any client should consider whether such investment is suitable for it in light of its knowledge and experience in the Capital Markets Products, financial situation and investment objectives and, if necessary, seek appropriate professional advice.

For further general information, please contact your relationship manager or any relevant BNP Paribas Fortis product specialist.

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## A. Basic principles

### A.1. Cash vs. Derivatives

#### A.1.1. Cash Instruments

Cash instruments are financial instruments that imply cash (or cash alike) transfer of a notional amount. Typical examples are spot transactions in currencies, loans, deposits, stocks and bonds.

#### A.1.2. Derivative Instruments

##### Description

A derivative is a financial instrument whose price is dependent upon or derived from one (or more) underlying assets. The derivative itself is merely a contract between two or more parties. Its value is determined by fluctuations in the underlying asset. The most common underlying assets include stocks, bonds, commodities, currencies, interest rates and market indices.

In the case of Over-The-Counter (OTC) derivatives, your counterparty will be the bank, whereas listed derivatives are traded on an exchange with the latter as your counterparty (and the bank as your broker).

Some derivatives are optional instruments (call, put, cap and floor) and in this case, it is worth mentioning that the seller of options is exposed to unlimited losses as he/she has an obligation towards the buyer. The seller receives a premium for that from the buyer. The buyer of options pays a premium to obtain a right and his/her loss is limited to the premium.

##### Basic components

Some of the most common basic components are:

##### a. Call

An option contract giving the owner the right (but not the obligation) to buy a specified amount of an underlying at a specified price during/at a predetermined period or moment. To obtain this right, the buyer needs to pay a premium to the seller.

##### b. Put

An option contract giving the owner the right (but not the obligation) to sell a specified amount of an underlying at a specified price during/at a predetermined period or moment. To obtain this right, the buyer needs to pay a premium to the seller.

##### c. Swap

A swap is a contract between two parties to exchange cash flows related to the underlying financial assets during a predetermined period.

##### d. Cap

An option contract giving the owner the right (but not the obligation) to benefit from a maximum interest rate or price level against payment of a premium. To obtain this right, the buyer needs to pay a premium to the seller.

##### e. Floor

An option contract giving the owner the right (but not the obligation) to benefit from a minimum interest rate or price level against payment of a premium. To obtain this right, the buyer needs to pay a premium to the seller.

#### f. Forwards/Outright

A contract between two parties to buy or sell a financial instrument e.g. a stock, commodity, currency ... at a specific future date and at a specific price or level.

A non-deliverable forward (NDF) is a special type of forward where there is only cash settlement of the difference between the NDF forward price and the fixing of the reference price.

#### g. Futures

A standardized, transferable, exchange-traded contract that requires delivery of a commodity, bond, currency, or stock index, ... at a specified price, on a specified future date. Futures convey an obligation to buy or sell. Futures contracts are forward contracts, meaning they represent a pledge to make a certain transaction at a future date. The exchange of assets occurs on the date specified in the contract. Futures are distinguished from generic forward contracts in that they contain standardized terms, are guaranteed by clearinghouses, are regulated by overseeing agencies, and trade on an exchange.

#### h. Warrant

A warrant is an option (call or put) that is usually issued by a company or a financial institution and in some case traded on an exchange. The underlying is usually a company's stock, an index or a commodity.

### Features and triggers

Options with features or triggers are often referred to as exotic options. Some of the most common features and triggers are:

#### a. Knock Out/Reverse Knock Out

A knock-out option contract ceases to function as a normal option ("knocks out") once a certain price level is reached during a certain period or on expiry.

Reverse Knock Out: Option is in the money when the event occurs.

#### b. Knock In/Reverse Knock In

A latent option contract that begins to function as a normal option ("knocks in") only once a certain price level is reached during a certain period or on expiry.

Reverse Knock In: Option is in the money when the event occurs.

#### c. Asian Option

An Asian option is an option whose payoff is based on the average value of an underlying during a specific period.

#### d. Switch

A Switch feature gives to the holder of an option the right to switch one contract for another having identical details, but with longer expiry.

#### e. Options exercise style

Options are exercised on banking days, never on holidays or weekends.

There are 3 ways or 'styles' to exercise an option:

European style: the holder/buyer of the option can exercise the option on one specific date in the future (=the exercise date).

American style: the holder/buyer of the option can exercise the option on any date during the life time of the option (= until expiry date).

Bermudan style: the holder/buyer of the option can exercise the option on a number of specific dates in the future.

### **Specific characteristics of derivatives**

Derivatives have characteristics, which can be different from the underlying instruments. Dealing in derivatives therefore needs special attention.

- Derivatives have a maturity date and especially the optional instruments could become worthless.
- The value of a derivative can move exponentially vis-à-vis the value of the underlying. This is called the leverage effect. A price movement of 3% of the underlying could mean for example a 30% value increase/ decrease of the derivative instrument.
- A derivative construction is a combination of basic components, features and triggers in order to create a certain pay-off pattern. The value of this construction could therefore move a) with a higher exponential leverage and b) in the opposite direction vis-à-vis the underlying.



## A.2. Definition of different types of risks

Below you can find a list of the most common risks related to financial transactions:

### a. Market or Price related Risks

The risk that a change in the market price of a financial instrument will negatively affect the client's financial performance.

- **Foreign Exchange Risk:** the risk that the change of the value of one currency versus (an)other currenc(y)ies will negatively affect the client's financial performance.
- **Interest Rate Risk:** the risk that interest rate movements will negatively affect the client's financial performance.
- **Commodity & Energy Price Risk:** the risk that the change of the value of the commodity or energy related financial instrument will negatively affect the client's financial performance.
- **Equity price Risk:** the risk that the change of the value of (a) stock(s) will negatively affect the client's financial performance.

### b. Liquidity Risk

The risk from the lack of marketability of a financial instrument that cannot be bought or sold in due time.

### c. Counterparty Risk:

The risk that the counterparty or issuer cannot/will not fulfil its obligations. For example:

- **Settlement Default:** the risk that one party will fail to deliver the terms of a contract with another party at the time of settlement. Settlement risk can be the risk associated with default at settlement and any timing differences in settlement between the two parties.
- **Credit Default:** the risk that an issuer of debt cannot meet its future debt obligations.

### Other types of risks to be considered

#### a. Political Risk:

The risk of a negative financial impact related to changes in a country's political structure or policies, such as tax laws (e.g. gross up), tariffs, expropriation of assets, or restriction in repatriation of profits.

#### b. Force Majeure:

These are risks or circumstances beyond one's control.

#### c. Operational Risk:

The risk associated with the potential for systems, human or procedure failure.

#### d. Reinvestment Risk:

The risk that the rate of return of a reinvestment in a financial asset at current market conditions is lower than the one of the preceding investment. (Also applicable for hedging)

#### e. Inflation Risk:

The risk that inflation has a negative financial impact on the client's financial performance.

#### f. Regulatory / Legal Risk:

The risk the changes in laws and regulations have a negative financial impact on the client's financial performance.

#### g. Fraud:

The risk that misrepresentation or concealment of information with the intention to mislead or deceive leads to a negative financial impact on the client's financial performance.

## A.3. Investments vs. Hedging

Although the financial products used for investments or hedging might be the same, it is essential to understand the difference between their uses as it is directly linked to your risk as a client.

### A.3.1. Investments

#### Description

An investment in a financial product is the purchase of a financial asset with an expectation to obtain a positive future return. This usually implies a transfer of capital (money or cash alike) in order to obtain the asset.

As the value of a financial asset varies over time, the risk of a partial or complete loss of the initial capital or not obtaining a positive return is possible. To make a proper assessment of this risk it is essential to understand its components and other types of risk.

#### Types of risks related to Investments

Most common types of risk related to investments are:

##### a. Market or Price related Risks:

- Foreign Exchange Risk
- Interest Rate Risk
- Commodity & Energy Price Risk
- Equity price Risk

Each financial instrument has its own price sensitivity and this is often expressed in terms of volatility. Volatility is the relative rate at which the price of a financial instrument moves up and down and it is found by calculating the annualized standard deviation of daily changes in price. Higher volatility means substantial and/or in shorter time interval changes in the market price, whereas lower volatility would mean that the market price does not change dramatically and the changes happen in a stable pace over a period.

##### b. Liquidity Risk

##### c. Counterparty Risk

- Settlement Risk
- Credit Risk

#### Other risk related issues

It is also possible to obtain a positive future return by short selling a financial asset. Short selling means selling a financial asset that the client does not own in the hope to buy it back in the future at a lower price, which among others implies price risk and liquidity risk.

### A.3.2. Hedging

#### Description

Hedging is a technique used to mitigate or offset financial risks that might arise from the financial or commercial activities of clients. These financial risks may be present both on the liability as on the asset side and can affect the financial performance of clients. This technique makes use of a broad range of financial products, especially derivative financial instruments. The so-called hedged item can be an asset, liability, a firm commitment, a highly probable forecast transaction, a net investment in a (foreign) operation, etc...

The most common types of risk that are hedged are foreign exchange risk, interest rate risk, commodity and energy price risk, equity price risk and credit risk.

The client has the possibility of fully, partially or proxy hedging the identified financial risks; or not hedging at all and be fully exposed. The decision whether or not to hedge financial risks is up to the client (although sometimes the bank requires that a certain portion of the position is hedged in order to obtain the underlying) and related to the client's risk profile.

Only the client is fully aware of his/her financial situation and risks, therefore the bank will rely upon the instructions of the client regarding the purpose of the financial transaction (hedging or investment). In order to advise the client correctly, the client is kindly requested to notify the bank explicitly if a transaction is meant for investment purposes; in all other cases the bank will, given the nature of the relationship, assume the transaction will be done for hedging purposes.

#### Legal

Without wanting to explain how or when to use hedge accounting, reference is made to the IAS 39 International Financial Reporting Standards and its application, as it is a good benchmark to have a better understanding of hedging and its effectiveness.

Some major criteria for obtaining hedge accounting are mentioned here below (International Financial Reporting Standards, IAS 39 – Achieving hedge accounting in practice, p13, December 2005, PriceWaterhouseCooper):

*“The specific requirements are:*

- *The hedging relationship must be formally designated and documented at the inception of the hedge. This must include identifying and documenting the risk management objective, the hedged item, the hedging instrument, the nature of the risk being hedged and how the effectiveness of the hedge will be assessed;*
- *The hedge must be expected to be highly effective at the inception of the hedge;*
- *The effectiveness of the hedge must be tested regularly throughout its life. Effectiveness must fall within a range of 80%-125% over the life of the hedge. This leaves some scope for small amounts of ineffectiveness, provided that overall effectiveness falls within this range; and*
- *In the case of a hedge of a forecast transaction, the forecast transaction must be 'highly probable'.*
- *use different underlying interest or equity indices;*
- *use commodity prices in different markets;*
- *are subject to different counter-party risks; or*
- *where the hedging instrument has a fair value other than zero at inception.*

*Hedge effectiveness can often be improved by careful designation of the hedge relationship. In a hedge relationship of a financial asset or financial liability, designating the hedged item as a portion of the asset or liability can improve effectiveness. Excluding the forward points or time value respectively from a hedge relationship using a forward contract or an option can improve effectiveness.”*

## Possibilities of hedging

### a. Via Underlying

Hedging uses mainly derivative financial instruments but it is also possible to use non-derivative financial instruments. As these non-derivative financial instruments involve most of the time, immediate cash movements and transfer of capital, they are used less frequently.

Examples of hedging via cash underlying are the spot purchase of foreign currency to hedge the foreign exchange risk of a scheduled purchase of imported goods or the hedging of the interest and foreign exchange risk of a foreign investment through a borrowing in this foreign currency.

### b. Via derivatives on the underlying

Most important derivative products constructions used in hedging are:

- With the client's payment of a net premium
- With the client's payment of a reduced net premium
- No net premium paid by the client (so-called "Zero-cost construction")

## Types of Risks related to Hedging

Hedging is used to mitigate or offset financial risks and the hedging degree will relate to the clients risk profile.

In hedging with financial derivatives, these are the main risks to be considered:

### a. Market or Price related Risks

Although derivatives in hedging are used to offset or reduce the market or price related risks, note that cancelling or unwinding a hedge before the expiry is done at market conditions. This means there might be a risk that the marked-to-market of the value of the derivative(s) has moved unfavourably for the client.

### b. Liquidity risk

This also might cause higher price volatility.

### c. Counterparty risk

When dealing OTC derivatives against BNP Paribas Fortis, the client relies on the solid credit base of BNP Paribas Fortis. In case of listed derivatives, the counterparty would be the exchange.

- Settlement Risk
- Credit Risk

## Other risk related issues

An over-the-counter (OTC) contract is a contract negotiated between two parties and closed outside of an exchange. They are often tailored to the client's specific needs. This notion goes for derivative contracts between the bank and the client, as opposed to those traded on an exchange. OTC financial products are considered to have a higher degree of risk than those traded on an exchange.

A financial derivatives construction could minimize as well as add risks; the latter case will be an important factor to determine the risk profile of the product concerned vis-à-vis the hedging perspective. Elements that could add risks are e.g.

- A combination of financial derivatives resulting in a net sold option or right. A net sold option leads to unlimited price or market risk.
- Barrier options with the possibility of reducing the effectiveness of the initial hedge (e.g. to construct "zero-cost constructions").
- When a construction results in the fact that the client does not know in advance the maximum or minimum price, interest rate and other variables.

## A.4. Types of Asset Classes under MiFID

Products and/or financial assets can be categorized into the MiFID asset classes. Part B mentions the asset class for each product if applicable.

- Money Market Instruments
- Bonds
- Securitized Debt
- Equities
- UCITS
- Complex Products
  - Treasury Derivatives
  - Equity Derivatives
  - Derivative Products for the transfer of credit risk
  - Derivatives on commodities, energy
  - Structured Products (Combination of 2 or more different asset classes)

## B. Products (description, advantages, disadvantages and risks)

### B.1. Foreign Exchange Market Instruments

#### B.1.1. Foreign Exchange Spot

**MiFID Asset Class: Not applicable**

##### Description

A foreign exchange spot transaction is a contract between two parties that agree to exchange an amount in one currency against another currency at a certain exchange rate. The settlement takes place two working days after the trade date.

##### Advantages, disadvantages and risks

###### Advantages

- The foreign exchange market is a very liquid and transparent market.
- Many currencies are possible.
- It is appropriate to hedge the exchange rate risk from the moment it occurs.
- The foreign exchange spot transaction is frequently used in different trading activities.

###### Disadvantages

- The foreign exchange spot transaction is less appropriate to hedge future cash flows, taking into account that the settlement takes place just two working days after the transaction and therefore prompt cash funding would be needed. For that reason forwards are more appropriate.

###### Risks

- **Market risk:** The foreign exchange risk is mainly dependant on the volatility of the currency pair.
- **Liquidity risk:** The liquidity risk is limited for the most important currencies (the "majors") such as EUR, USD, JPY, GBP etc... but can be higher for currencies of emerging markets.
- **Counterparty risk:** For foreign exchange spot transactions there is mainly a settlement risk, meaning that the counterparty cannot/will not meet its obligations.

## B.1.2. Foreign Exchange Forward/ Outright

### MiFID Asset Class: Treasury Derivatives

#### Description

A foreign exchange forward/outright is a binding contract between two parties which agree to exchange an amount in one currency for an amount in another currency at a predetermined exchange rate. The settlement takes place on a later date (more than two working days after the trade date).

Most common periods are: 1, 2, 3, 6 and 12 months, but periods exceeding one year or broken dates are also possible. Foreign Exchange forwards are tailor-made agreements between the bank and another party.

They are not traded on an exchange and therefore are considered as Over-The-Counter (OTC) products.

#### Advantages, disadvantages and risks

##### Advantages

- The foreign exchange market is a very liquid and transparent market.
- Many currencies are possible.
- Foreign exchange forwards fix an exchange rate on a later, but known date.
- It is a simple and commonly used product.
- It is a tailor-made product.

##### Disadvantages

- The most important disadvantage can be the fact that the exchange rate is fixed and that one can therefore not step back and benefit from positive exchange rate movements.
- The due date and the amount are fixed which makes the transaction less flexible.
- It is an Over-The-Counter (OTC) product that can not be traded on an exchange.

##### Risks

- **Market risks:** The foreign exchange risk is mainly dependant on the volatility of the currency pair.
- **Liquidity risk:** The liquidity risk is limited for the most important currencies (the "majors") such as EUR, USD, JPY, GBP etc... but can be higher for currencies of emerging markets.
- **Counterparty risk:** For the foreign exchange forward, the risk is that the counterparty cannot/will not meet its obligations (settlement risk and credit risk).

### B.1.3. Foreign exchange derivatives

Derivatives are financial instruments whose characteristics and value are derived from another financial product on the market (the “underlying value”). That underlying value can be a stock, commodity, or in this context a currency pair. Derivatives can be traded on an exchange or not, in which case it is an ‘Over-The-Counter’ transaction.

Currency options provide the possibility to hedge against unfavourable movements of exchange rates with the opportunity to benefit from favourable movements. It is a right to buy a certain currency (call option) or to sell (put option) against the exchange rate fixed with the contract (strike price). The buyer can exercise this right for a certain period (American Option) or on the date of expiry (European Option). The price of an option is a premium and depends on volatility, strike price versus market price, interest rates, time periods, currency...

Options are financial instruments that can be used for different purposes e.g. to hedge against a risk, earning a return or to speculate on the ups and downs of different assets’ rates, commodity prices (crude, wheat, metals, gold, ...), interest rates, exchange rates, stocks or indices. An option is a contract between a buyer (the holder) and a seller (the issuer).

European options can be exercised (redeemed) only on the expiry date. American options can be redeemed at anytime before the expiry.

Depending on the strike price in comparison to the price of the underlying asset an option can be:

- At the money: if the strike price is equal to the price of the underlying asset or very close to it.
- Out of the money: if the strike price is higher than the price of the underlying asset in the case of a call or lower than the price of the underlying asset in the case of a put.
- In the money: if the strike price is lower than the price of the underlying asset in the case of a call or higher than the price of the underlying asset in the case of a put.

#### Leverage effect

By buying an option e.g. a call option, one can gain the same profit as by buying the underlying itself, but by investing much less money since the value of the derivative is only a fraction of the value of the underlying.

For better understanding let’s simplify: suppose that a buyer has a right to buy an underlying for a price of 100. In case the underlying quotes at 120 then the obtained right is worth minimum 20 and if the underlying quotes 130 the right is worth at least 30. When the underlying rises from 120 to 130 that is a growth of 8.3%. But, if the price of the option rises from 20 to 30 that is a growth of 50%. This is a leverage effect. Naturally this mechanism functions in both directions.

#### Fixed duration

Another essential characteristic of derivatives is that they have an expiry date. That means that when the expected evolution of the underlying asset does not take place before the expiry the derivative loses its full value.



### B.1.3.1. Foreign Exchange Call and Put

#### MiFID Asset Class: Treasury Derivatives

##### Description

A foreign exchange call option gives the holder the right (and not the obligation) during a certain period or on an expiration date to buy a certain amount in one currency against another currency at a predetermined exchange rate (strike price). The counterparty, the seller of the call, is obliged to deliver the agreed amount against the strike price if the holder wants to exercise his/her right. The buyer of the call pays to the seller a premium for the acquired right.

A foreign exchange put option gives the holder or the buyer the right (and not the obligation) during a certain period or on an expiry date to sell a certain amount in one currency against another at a predetermined exchange rate (strike price). The counterparty, the seller of the put, is obliged to deliver the agreed amount against the strike price if the holder of the put option wants to exercise his/her right. The buyer of the put pays a premium to the seller for acquiring this right.

#### Advantages, disadvantages and risks

##### Advantages

- It is used to hedge against an exchange rate risk.
- It is more flexible than a forward because since one buys a right, he/she can decide to exercise the right or not. In case of a positive rate evolution one can have unlimited benefit.
- It allows very dynamic management.
- Due to the leverage effect the buyer can with a reasonably small amount benefit in abundance from:
  - Rising rates of the underlying asset (when buying a call)
  - Dropping rates of the underlying (when buying a put)
- The potential profit is in principle unlimited for the buyer of a call as well as for the buyer of a put.
- The potential loss is limited to the fully paid premium for the buyer of a call as well as for the buyer of a put.

##### Disadvantages

- A premium has to be paid by the buyer of an option, but can prove to be a burden for clients wanting to hedge
- The seller of a foreign exchange option (call or put) receives a premium and becomes obliged to sell if the call is to be exercised and to buy if the put is to be exercised.
- This is an Over-The-Counter product that cannot be traded on an exchange.

##### Risks

- **Market risk:** The foreign exchange risk mainly is dependent on the volatility of the currency pair.
- **Liquidity risk** is limited for the most important currencies ('the majors') like EUR, USD, JPY, GBP etc ... but can be higher for currencies of emerging markets.
- **Counterparty risk:** The risk that the counterparty cannot/will not meet its obligations.

#### Other risk related issues

- The buyer of an option (call or put) can maximum lose the paid premium.
- The seller of an option has to fulfil his/her obligations if the holder of the option wants to exercise his/her right. The seller's loss is in principle unlimited.

### B.1.3.2. Foreign exchange swap

#### MiFID Asset Class: Treasury Derivatives

##### Description

The English term swap means to exchange. A foreign exchange swap is a combination of a foreign exchange spot and a forward in the opposite direction. These two transactions are simultaneously concluded with the same counterparty and the same reference exchange rate. It is an agreement between the bank and the client whereby the interest and the notional amount in different currencies are exchanged. This is typically an Over-The-Counter product.

##### Advantages, disadvantages and risks

###### Advantages

- The exchange market is very liquid and transparent.
- Many currencies are possible. Swaps are possible among any exchangeable currencies.
- No premium has to be paid.
- Foreign exchange swaps are used to manage treasuries in different currencies. A temporarily treasury surplus in one currency can be exchanged for a currency for which there is a shortage. In this way one avoids concluding a loan in a currency for which there is a temporarily shortage.
- Foreign exchange swaps can be used to prolong or advance an earlier concluded forward. One has to take into account the modified interest and exchange rate circumstances and its influence on the cash flows.

###### Disadvantages

- It is a fixed and definitive obligation concluded between two parties and does not have an optional character.
- It is an Over-The-Counter product that cannot be traded on an exchange.

###### Risks

- **Market risk:** The foreign exchange risk is mainly dependent on the volatility of the currency pair. The interest rate risk should be also taken into consideration.
- **Liquidity risk** is limited for the most important currencies ('the majors') like EUR, USD, JPY, GBP etc ... but can be higher for currencies of emerging markets.
- **Counterparty risk:** In the case of a currency swap it is the risk that the counterparty cannot/will not fulfil its obligations on expiry (settlement risk and credit risk).

### B.1.3.3. Futures

#### MiFID Asset Class: Treasury Derivatives

##### Description

Futures are standardized contracts that are traded on an exchange. It is an obligatory contract for buying/delivering a precisely defined amount in foreign currency against a fixed exchange rate on a predetermined future date. The payment occurs only at the delivery of the underlying asset. The futures can be considered as standardised forwards.

As opposed to options that give the right to buy or sell, futures are obligatory (to buy or to sell at a certain point in time). A Future contract is not about the right to buy or sell a given quantity of an asset, but about buying or selling the asset itself. When the contract expires an actual delivery must take place. In practice, however, it seldom takes place (cash settlement).

Originally this contract was only associated to goods (commodity futures) like wheat, coffee, cotton, crude oil etc. It was used by traders to protect themselves against possible unfavourable price swings.

The liquidity of a Future is steered by strict rules (the scope of the contract, duration, settlement procedures). A margin system on contracts is imposed to the buyers and the sellers serving as a guarantee against potential loss.

For every transaction (buying or selling) each party has to pay an amount as a guarantee, in cash or in securities, expressed as a percentage of the value of the bought or sold contracts. At the end of every transaction day contracts are re-evaluated and the account of the investor becomes debited or credited.

Positions could be closed in three manners:

- By taking an opposite position, but with same size before the due date (buying if you have sold and selling if you have bought). Most of the Futures are closed like this.
- By a cash settlement or on the due date.
- By rolling the position before the due date: this means e.g. that the buyer of a certain index future sells it before the due date and at the same time against a predetermined price buys a new position with an upcoming due date (calendar spread).

#### Advantages, disadvantages and risks

##### Advantages

- The fact that Futures are traded on an organized market means that there is greater liquidity than in the case of forwards.
- Futures can be simple instruments to protect the value of an underlying asset.
- Can be used by every investor that wishes to gain profit from his/her expectations of the movements of the underlying value.

##### Disadvantages

- The underlying asset does not always entirely correspond to the amount, dates, etc ... that one wants to hedge. Therefore it is a less flexible and less tailor-made contract.
- The daily adjusted margin scheme causes a heavy administrative burden.

##### Risks

- Market risk: the foreign exchange risks are mainly dependent on the volatility of the currency pair.
- The liquidity risk is very limited because futures are traded on an organized market.
- The counterparty risk is low since the counterparty is an exchange. The insolvency risk is limited due to the margin scheme.

- In principle, the loss can be unlimited for an investor mistaken in his/her expectations.

#### B.1.3.4. Currency structures

##### MiFID Asset Class: Treasury Derivatives

###### Description

A currency option structure is a combination of currency options, “triggers” and “features” that aim to generate a particular return pattern or to create a tailor-made hedge structure.

Triggers and features imply certain (non exhaustive) characteristics of options.

###### Knock Out/Reverse Knock Out

A knock-out option contract ceases to function as a normal option (“knocks out”) once a certain price level is reached during a certain period or on expiry.

Reverse KO: Option is in the money when the event occurs.

###### Knock In/Reverse Knock In

A latent option contract that begins to function as a normal option (“knocks in”) only once a certain price level is reached during a certain period or on expiry.

Reverse KI: Option is in the money when the event occurs.

##### Advantages, disadvantages and risks

###### Advantages

- Can create a tailor-made solution for a specific problem or goal.
- Provides the possibility of protection against a foreign exchange risk.
- Greater flexibility than a forward contract and allows very dynamic managing.
- These structures in certain cases generate better pay-off than a forward contract.
- The exchange market is very liquid and transparent.
- Many currencies are possible.
- There are structures where the client does not pay a net premium.

###### Disadvantages

- Due to the specific structure, the value of the option structure does not necessary follow the same evolution as the one of the underlying currency pair.
- In certain market circumstances a lack of liquidity can occur.
- These are Over-The-Counter products that can not be traded on an exchange.
- Very often these structures can be very complex.

###### Risks

- **Market risk:** The foreign exchange risk is mainly dependant on the volatility of the currency pair. The value of a currency option structure can move in another direction than the one of the underlying currency pair. That means that the value can sometimes exponentially decrease or increase in respect to the evolution of the underlying currency pair or it can even move in the opposite direction of the value of the underlying.
- **Liquidity risk:** There is no organized secondary market to trade these products. They are Over-The-Counter products. The liquidity risk is limited for the most important currencies (the ‘majors’) like EUR, USD, JPY, GBP etc..., but can be higher for currencies of emerging markets.
- **Counterparty risk:** The risk that the counterparty cannot/will not meet its obligations (settlement risk and credit risk).

### Other risk related issues

- The risk of a lack of return which depends on the characteristics of each construction. If there is a return or a pay-off foreseen the effective payment is depending on the evolution of the currency pair.
- Structures that result in a situation where the client has sold (a) net option(s) can lead to indefinite loss.
- Features that occur in a currency option structures should be very carefully assessed not to create, under certain circumstances, additional risks.
- The maximum loss of a buyer of an option (call or put) is limited to the paid premium.
- The seller of an option has to meet his/her obligations if the holder of an option wants to exercise his/her right. The loss is in principle unlimited.
- The risks related to these currency structures enclose the risks of each separate component.

### Most common currency option structures

- Double Average Options
- Average Rate Cylinder
- Holiday Forward
- Average Rate
- Average Strike
- Asian Option
- Knock-In Forward
- Asymmetric Forward
- Participating Forward
- Seagull
- Barrier Options
- Knock-In Cylinder
- Cylinder or Tunnel
- Bonus Forward
- Bi Forward
- Podium
- Cancelable Forward
- Windows Conditional Forward
- Resetable Forward

## B.2. Money Market Instruments

### B.2.1. Term Deposit

#### MiFID Asset Class: Not Applicable

#### Description

A term deposit is a short-term investment where the client lends funds (a cash amount) to the bank for a predetermined period in exchange for a certain remuneration (interest). All modalities are agreed on the moment the deal is closed. Term deposits are possible in Euro or in other currencies.

Periods generally range from 1 day to 12 months, but longer periods are also possible. The interest rate is based on actual market conditions and varies according to the currency, period and base. The agreed interest rate remains applicable until expiry, also in case of interest rate changes during the life span of the investment.

Upon earlier agreement, term deposits can be automatically rolled over on the expiry date. The same modalities (period, currency, (capitalized) amount, base) will then apply, except for the interest rate.

#### Advantages, disadvantages and risks

##### Advantages

- The return of a term deposit is certain and known in advance (expressed in the original currency).
- There is a high flexibility in possible periods; the client can invest his/her money for exactly the desired period.

##### Disadvantages

- In principle, it is not allowed to withdraw a term deposit before its maturity date.
- The investor does not benefit from a rise in interest rates during the life span of his/her term deposit.

##### Risks

- **The market risk** is mainly a short-term interest rate risk. If the client wants to withdraw his/her capital before the maturity date, he/she is exposed to the risk of receiving a lower return. The foreign exchange risk depends on the currency of the investment.
- **Liquidity risk:** Cancellation before expiry is possible but might lead to a reduced return.
- **Counterparty risk:** The insolvency risk of the debtor is quite limited since the term deposit is opened with a credit institution and rigorously supervised by national supervisory authorities. In case of a bankruptcy, most of the countries have an established deposit protection system.

## B.2.2. Commercial Paper

### MiFID Asset Class: Money market instrument

#### Description

Commercial paper is a short-term debt instrument issued by private companies or public institutions for periods ranging from one week to one year (sometimes longer, as in the case of Medium Term Notes). The bank acts as a pure intermediary and “on a best effort basis” without guarantees that the total of the issue will be sold to investors. To provide a certain degree of liquidity, dealers organize on the same basis a secondary market.

Commercial paper is issued in the framework of a program. A financial institution (“the arranger”) develops it and it is offered to investors via financial intermediaries (“the dealers”). An issuer can also be a dealer for his own program.

When the issuer is a financial institution, the instrument is often referred to as a certificate of deposit.

Interest rate calculations are on a discounting base.

#### Advantages, disadvantages and risk

##### Advantages

##### Advantages for the issuer

- Lower funding costs because the issuer can borrow at very competitive conditions.
- High degree of flexibility since the issuer is free to specify the amount, the duration... according to its specific needs.
- Diversification of his/her funding sources.
- Improved market recognition.

##### Advantages for the investor

- The return is generally higher compared to other short term investments, such as deposits, treasury bills, repurchase agreements, ... depending on the issuer.
- Flexibility, because the issuer can take into account the needs of the investor with regard to the required duration and amount.
- Diversification of his/her investments.

##### Disadvantages

- It is possible that not all modalities can be met both for the investor as for the issuer.

##### Risks

- **The market risk** is mainly a short-term interest rate risk. The foreign exchange risk depends on the currency of the investment.
- **Liquidity risk:** The liquidity of commercial paper is lower in comparison to other instruments. To secure a certain degree of liquidity, dealers organize a secondary market, “on a best effort basis”.
- **Counterparty risk:** The risk of insolvency of the issuer depends on its short-term creditworthiness. The bank plays only the role of an intermediary.

### B.2.3. Treasury Bills

#### MiFID Asset Class: Money market instrument

##### Description

A Treasury bill is a short-term debt instrument issued by a government with a maturity of less than 1 year. Treasury bills are usually issued for 3, 6 and 12 months intended for professional investors, but individuals can also buy them on a secondary market. The Primary Dealers and Recognized Dealers, who are allowed to participate in the auction, insure the liquidity and market making.

##### Advantages, disadvantages and risks

##### Advantages

- Treasury bills are liquid instruments. Primary dealers are providing the market making.
- Treasury bills are considered to be risk-free investments because of the quality of the issuer.

##### Disadvantages

- Treasury bills have relatively low returns compared to other money market instruments since there is a low credit risk involved.

##### Risks

- **The market risk** is mainly a short-term interest rate risk. The foreign exchange risk depends on the currency of the investment.
- **The liquidity risk** for treasury bills is very low. However, certain issuances can be very illiquid ("the specials").
- **Counterparty risk:** There is low risk of insolvency because of the quality of the issuer.



## B.2.4. Repurchase Agreement (Repo)

### MiFID Asset Class: Treasury Derivative

#### Description

A repurchase agreement is a cash sale of a security (mostly government bonds, but also ordinary shares or bonds of certain quality) with the agreement to buy it back on a future date. Economically it can be considered as secured loan or cash placement, with the buyer of the security (i.e. lender of cash or investor) receiving securities as a collateral to protect against default. The reverse transaction is called a reverse repo. The investor receives an interest: the repo rate.

The cash and the security do not necessarily have to be expressed in the same currency but could also be cross-currency. Repo transactions are usually bilateral but could also be concluded between three parties. The third party takes care of the settlement and can be a custodian bank as well as an international clearing-house. Repo's are often used by central banks to steer monetary policy.

#### Advantages, disadvantages and risks

##### Advantages

- For the cash borrower (security seller) it means:
  - Lower funding costs since the loan has a collateral
  - Can be used to temporary "create" cash while not having to sell the security
- For the lender of cash (security buyer) there is less risk due to the collateral.

##### Disadvantages

- The return is usually lower than in the case of a term deposit or commercial paper because of the lower risk.

##### Risks

- **Market risk** is only a short-term interest rate risk. The foreign exchange risk depends on the currency of the investment.
- **Liquidity risk**
- **The counterparty risk** is very low because of the collateral.

### B.2.5. Money Market Derivatives

Derivatives are financial instruments whose characteristics and value are derived from another financial product on the market (the “underlying value”). That underlying value can be a stock, commodity, or in this context a reference interest rate. Derivatives can be traded on an exchange or between two parties, in latter case it is an ‘Over-The-Counter’ transaction.

Interest rate options provide the possibility to hedge against unfavourable movements of interest rates and the possibility to benefit from favourable movements. A Cap is the right on a maximum interest rate during a certain period. On the other hand, a Floor is the right on a minimum interest rate during a certain period. These options have a price: the premium and depends on volatility, strike price versus market price, interest rates, time periods, currency, ...

Interest rate options are financial instruments that can be used for different purposes e.g. to hedge against an interest rate risk, for yield enhancement or to speculate on the ups and downs of interest rates. An option is a contract between a buyer (the holder) and a seller (the writer).

#### **Leverage effect**

See part a.

#### **Fixed duration**

See part a.

### B.2.5.1. Forward Rate Agreement

#### MiFID Asset Class: Treasury Derivatives

##### Description

A Forward Rate Agreement is a contract between two parties to fix an interest rate for a certain period in the future on a predetermined notional amount. There is no exchange of the notional amount. Only the discounted interest rate differential between the fixed rate of the FRA and the reference interest rate (mostly IBOR) is paid or received on the settlement date. The underlying periods of a FRA are standard to 1, 3, 6 or 12 months and the latest start date can be maximum one year in the future.

FRA's are used to hedge the interest rate risk of financial assets and liabilities with a floating interest rate. It is typical Over-The-Counter (OTC) product.

##### Advantages, disadvantages and risks

##### Advantages

- Fixing the base interest rate today for a period in the future.
- No premium is to be paid to engage in an FRA.
- Hedging of a floating interest rate risk.
- There is no exchange of the notional amount.

##### Disadvantages

- The interest rate is irrevocably fixed, you cannot profit from a favourable interest rate movement.
- It is less appropriate to hedge against a floating interest rate risk for a longer period.

##### Risks

- **The market risk** is mainly a short term interest rate risk. If an FRA is expressed in a foreign currency, there is also a foreign exchange risk. Cancelling the contract is possible at the market conditions at that moment and with a possible negative financial impact.
- **Liquidity risk:** The liquidity risk is higher for OTC products than for short-term interest futures traded on an exchange.
- **Counterparty risk**

### B.2.5.2. Cap and Floor

#### MiFID Asset Class: Treasury Derivatives

##### Description

Caps and floors are interest rate options, which give the buyer the right to a maximum interest rate (Cap) or to a minimum interest rate (Floor) during a certain predetermined period. The underlying amount can be fixed over the period or change according to a predetermined repayment schedule. The buyer pays a premium to the seller for this right. The risk for the buyer is limited to the premium, but unlimited for the seller. Caps and floors are used mainly as hedging instruments against floating interest rates.

##### Advantages, disadvantages and risk

##### Advantages

- Hedging of a floating interest rate risk.
- Flexibility. The buyer decides whether to exercise the right or not. If the interest rate evolves positively then one can benefit from this evolution.
- Allowing a dynamic interest rate management.
- Due to the leverage effect (see part a) the buyer can benefit from:
  - Rising interest rates (when buying a Cap)
  - Dropping interest rates (when buying a Floor)
- The potential profit is theoretically unlimited for the buyer of a Cap as well as for the buyer of a Floor.
- The potential loss is limited to the premium for the buyer of Cap as well as for the buyer of a Floor.

##### Disadvantages

- A premium has to be paid by the buyer of an option, but can prove to be a burden for clients wanting to hedge.
- The seller of an option (Cap or Floor) receives a premium and becomes obliged to fulfil its obligations should the buyer wants to exercise his/her right.
- Over-The-Counter products that cannot be traded on an exchange.

##### Risks

- **Market risk:** The interest rate risk is dependant on the volatility of the short-term interest rates during the lifetime of the option. If the option is expressed in a foreign currency, there is also a foreign exchange risk. Cancelling the contract is possible at the market conditions at that moment and with a possible negative financial impact.
- **Liquidity risk:** The liquidity risk is higher for Over-The-Counter (OTC) products than for short term interest futures traded on an exchange.
- **Counterparty risk**

##### Other risk related issues

- The buyer of the option (Cap and Floor) can at the most lose the paid premium.
- The seller of the option must meet his/her obligations if the holder of the option wants to exercise his/her rights. His/her loss is in principle unlimited.

### B.2.5.3. Interest Rate Swap (IRS)

#### MiFID Asset Class: Treasury Derivatives

##### Description

An Interest Rate Swap is an agreement between two parties to exchange interest rate payments over an agreed period of time, based on a notional amount. Standard periods are from 1 to 10 years (longer terms are also possible). Possibilities to swap are floating/floating, floating/fixed and fixed/fixed interest payments. Only the interest rate payments are swapped, the notional amount does not change hands. The floating periods range from one day to one year and have EURIBOR, LIBOR or another IBOR (Interbank Offered Rate) as a reference interest rate. The IRS is a typical Over-The-Counter (OTC) product.

A cross currency swap is a type of IRS where the cash flows are expressed in different currencies and where an exchange of the nominal amounts take place on the value date and the maturity date.

##### Advantages, disadvantages and risks

##### Advantages

- Possibility to swap from a fixed to a floating interest rate, according to the needs.
- Possibility to adjust the interest payment modalities of a loan to changed market circumstances.
- Possibility to adjust the duration of assets and liabilities in the balance sheet.
- No premium needs to be paid to engage in an IRS.
- Flexible start dates and duration.
- Available in the most important currencies.

##### Disadvantages

- In case of swapping a floating interest rate for a fixed interest rate one cannot benefit from a potential fall of interest rates, and vice versa.

##### Risks

- **Market risk:** The interest rate risk is dependant on the volatility of the short-term interest rates during the lifetime of the IRS. If the IRS is expressed in a foreign currency, there is also a foreign exchange risk. Cancelling the contract is possible at market conditions at that moment and with a possible negative financial impact.
- **Liquidity risk:** The liquidity risk is higher for Over-The-Counter (OTC) products than for short-term interest futures traded on an exchange.
- **Counterparty risk**

### B.2.5.3.1. Swaption

#### MiFID Asset Class: Treasury Derivatives

##### Description

Coinciding with the development of the swap market, derivative instruments that combined the features of swaps and options emerged. One such instrument is the “swaption” (contraction of the words “swap” and “option”).

Swaptions are flexible instruments used to manage interest rate risk. They grant their owner the right but not the obligation to enter into an Interest Rate Swap (IRS) in the future. Features of the swap are predetermined in the contract. The buyer of a swaption pays a premium.

There are two types of swaptions contracts:

- A payer swaption gives the owner of the swaption the right to enter into a swap where he pays the fixed leg and receives the floating leg.
- A receiver swaption gives the owner of the swaption the right to enter into a swap where he receives the fixed leg and pays the floating leg.

To some extent, swaptions are similar to forward swaps except that the swaption buyer has the option to enter into the swap on the effective date and not the obligation.

#### Advantages, disadvantages and risks

##### Advantages

- The buyer decides whether to exercise the right or not. If the interest rate evolves positively then he/she can benefit from this evolution.
- The potential profit is theoretically unlimited for the buyer of a swaption.
- The potential loss is limited to the premium for the buyer of a swaption.
- Hedging of a interest rate risk in a dynamic way.
- Available in the most important currencies.

##### Disadvantages

- A premium has to be paid by the buyer of a swaption, but can prove to be a burden for clients wanting to hedge. Like any other option, if the swaption is not exercised by maturity it expires worthless.
- The seller of a swaption receives a premium and becomes obliged to fulfill its obligations should the buyer want to exercise his right. The loss of the seller is in principle unlimited.
- Over-The-Counter (OTC) product that cannot be traded on an exchange.

##### Risks

- **Market risk:** The interest rate risk is dependant on the volatility of the short-term interest rates during the lifetime of the swaption. If the swaption is expressed in a foreign currency, there is also a foreign exchange risk. Cancelling the contract is possible at the market conditions at that moment and with a possible negative financial impact.
- **Liquidity risk:** The liquidity risk is higher for Over-The-Counter (OTC) products than for short term interest futures traded on an exchange.
- **Counterparty risk**

### B.2.5.3.2. Inflation Swap

#### MiFID Asset Class: Treasury Derivatives

##### Description

An inflation swap is an over-the-counter contract between two counterparties, who agree to exchange inflation related cash flows over a certain period of time and based on a nominal amount.

In the majority of the cases, the cash flows of one party (“the fixed rate payer”) are known in advance and the cash flows of the second party (“the floating rate payer”) are unknown in the beginning of the contract. These unknown cash flows are function of the evolution of a specific reference inflation index or consumer price index (e.g. HICP, CPI, Health Index, etc). The reference inflation rate represents the real observed variable inflation rate.

Inflation is the quantification of the general rise in the price of goods and services acquired by households. The inflation swap can either be used as a hedge against the fluctuation of inflation-linked liabilities or to fix today future inflation-linked revenues.

The value of a swap at inception is usually zero. This means that the present value of the cash flows in both legs of the inflation swap is equal.

#### Advantages, disadvantages and risks

##### Advantages

- Possibility to swap from floating inflation rate to a fixed inflation rate or vice versa, according to the needs.
- No premium needs to be paid to engage in an inflation swap.
- Flexible start dates and duration.

##### Disadvantages

- In case of swapping a floating inflation rate to a fixed inflation rate, one cannot benefit from a potential fall of inflation rates, and vice versa.
- Inflation swaps refer to reference inflation rates or consumer price indices that can be revised afterwards. These revisions are not taken into account, which makes the reference inflation rates or consumer prices indices more like a good proxy of the real observed variable inflation rate.

##### Risks

- **Market risk:** The inflation rate risk is dependant on the economic conditions in a country, supply and demand, monetary policy, foreign exchange rate evolutions, etc. If the inflation swap is expressed in a foreign currency, there is also a foreign exchange risk. Cancelling the contract is possible at market conditions at that moment and with a possible negative financial impact. underlying asset does usually not correspond to the amount, dates, etc that one wants to hedge. Therefore it is a less flexible and less tailor-made contract.
- **Liquidity risk:** The liquidity risk is higher for Over-The-Counter (OTC) products than for futures traded on an exchange
- **Counterparty risk**

### B.2.5.4. Money Market Futures

#### MiFID Asset Class: Treasury Derivatives

##### Description

Money market futures are standardized forward contracts traded on an exchange where an interest rate is fixed for a certain period in the future and on a fixed amount per contract. The settlement occurs at the start of this period but in practice, there is usually a cash settlement against an IBOR.

The liquidity of futures dealing is enhanced by strict rules (the scope of the contract, duration, settlement procedures). A margin system is imposed by the exchange to the buyers and the sellers serving as a guarantee against potential loss.

For every transaction (buying or selling) each party has to pay an amount as a guarantee (initial margin), in cash or in securities, expressed as a percentage of the value of the bought or sold contracts. At the end of every transaction day, contracts are revaluated and the account of the investor becomes debited or credited (variation margin).

Positions can be closed in three manners:

- By taking the opposite position before the due date (buying what you have sold and selling what you have bought). Most of the futures are closed in this way.
- By a cash settlement on the due date.
- By rolling the position: this means e.g. that the buyer of a future sells it before the due date and at the same time buys a new position with an upcoming due date (calendar spread).

#### Advantages, disadvantages and risks

##### Advantages

- The fact that futures are traded on an exchange means that there is a greater liquidity than in the case of a FRA.
- Futures can be simple instruments to hedge the value of an underlying asset.

##### Disadvantages

- The underlying asset does usually not correspond to the amount, dates, etc that one wants to hedge. Therefore it is a less flexible and less tailor-made contract.
- The margin scheme that is daily adjusted causes heavy administrative burden.
- It is not an instrument with the characteristics of an option. The interest rate is irrevocably fixed.
- It is less appropriate to hedge against a floating interest rate risk for a longer period.

##### Risks

- **Market risk:** The interest rate risk is mainly a short-term interest rate risk. The further you go in the future the higher the risk is. If the Future is expressed in a foreign currency, there is also a foreign exchange risk.
- **The liquidity risk** is very limited since Futures are traded on an organized market. This risk is higher for products traded Over-The-Counter (OTC).
- **The counterparty risk** is low because the counterparty is an exchange. The insolvency risk is limited due to the margin scheme.

#### Other risk related issues

- The loss in principle can be unlimited for investors in Futures, mistaken in their expectations.



### B.2.5.5. Interest rate structures

#### MiFID Asset Class: Treasury Derivatives

##### Description

An interest rate structure is a combination of interest rate options, swaps, “triggers” and “features” that have the purpose to generate a particular return pattern or to create a tailor-made hedging structure.

Triggers and features imply certain (non exhaustive) characteristics of options.

**Knock Out/Reverse Knock Out:** A knock out option contract ceases to function as a normal option (“knocks out”) once a certain price level is reached during a certain period or on expiry. The underlying periods mentioned are interest rate periods.

Reverse KO: Option is in the money when the event occurs.

**Knock In/Reverse Knock In:** A latent option contract that begins to function as a normal option (“knocks in”) only once a certain price level is reached during a certain period or on expiry. The underlying periods mentioned are interest rate periods.

Reverse KI: Option is in the money when the event occurs.

**Callable/putable:** An interest rate structure or a part of it that is callable/putable. That means that the counterparty can revoke/enforce the interest rate structure during a certain period or at a certain moment during the lifetime of the entire structure.

#### Advantages, disadvantages and risks

##### Advantages

- Can create a tailor-made solution for a specific problem or goal.
- Provides the possibility of protection against interest rate risk.
- Great flexibility and very dynamic management.
- These structures in certain cases generate better pay-off.
- Many currencies are possible.
- There are structures where the client does not pay a net premium.

##### Disadvantages

- The value of the option structure does not necessary follow the same evolution as the one of the underlying.
- In certain market circumstances a lack of liquidity can occur.
- These are Over-The-Counter products that can not be traded on an exchange.
- Very often these structures can be very complex.

##### Risks

- **The market risk** is mainly the interest rate risk: The value of an interest rate structure can move in another direction than the one of the underlying (the interest rate). That means that the value can sometimes exponentially decrease or increase in respect to the evolution of the underlying or it can even move in the opposite direction of the value of the underlying. If the structure is expressed in a foreign currency there is also a foreign exchange risk.
- **Liquidity risk:** There is no organized secondary market to trade these products. These are Over-The-Counter products.
- **Counterparty risk**

**Other risk related issues**

- The risk of a lack of return depends on the characteristics of each construction. If there is a return or a pay-off foreseen the effective payment is depending on the evolution of the currency pair.
- Structures that result in a situation where the client has sold (a) net option(s) can lead to indefinite loss.
- Features that occur in a currency option structures should be very carefully assessed not to create, under certain circumstances, additional risks.
- The buyer of an option can maximum lose the paid premium.
- The seller of an option has to meet his/her obligations if the holder of an option wants to exercise his/her right. The loss is in principle unlimited.
- The risks related to these structures enclose the risks of each separate component.

**Most common interest rate structures**

- Conditional Collar
- Zero-Cost Time Collar
- 50/50
- Double Fixed Floor
- Triple Fixed Floor
- Multi Product Hedge
- Callable Swap
- Extendable Swap
- Toboggan Swap
- Capped CMS
- Capped IRS in Arrears
- Callable Funding Swap
- Callable Range Accrual Swap
- Bonus Range Accrual
- Time Swap Hedge
- Time Swap CMS Hedge

## B.3. Capital Market Instruments

### B.3.1. Equities

#### MiFID Asset Class: Equities

##### Description

When a corporation wishes to raise capital, it might issue shares in exchange for cash.

Shares are securities representing each a unit of ownership interest in the corporation.

A person who legally owns one or more shares is a shareholder (or stockholder). It does not entitle the owner to have direct control over the business's day-to-day operations but entitle him to an equal distribution of any profits (if any), in the form of a dividend.

The two main types of shares are common shares (ordinary shares) and preferred shares. Shareholders are granted privileges depending on the class of stock. Rights include:

- Right to get a portion of the company's income in the form of a dividend.
- Right to purchase new shares of the company.
- Right to vote in corporate decision matters.
- Right to information about the company's present situation and future plans.
- Right to a portion of the company's assets in case of liquidation.

Common stocks typically have voting rights different than those granted to preferred shares (special voting rights). Moreover, preferred stocks have priority over common stocks in the distribution of dividends.

The aggregate value of a corporation's issued shares is its market capitalisation.

#### Advantages, disadvantages and risks

##### Advantages

- Buying a stock is the obvious solution to fine-tune an investor's market exposure by creating the exact portfolio desired.
- Stockholders are entitled to collect dividends.
- Buying stocks is suitable for long-term investors, since equities have no maturity date.
- Stocks do not mature at a pre-determined date unlike single stock futures (Unlike options they do not experience time decay).

##### Disadvantages

- Stockholders are the last in order of priority in case of liquidation of the company.
- Future income cash flows (dividends) are uncertain.

##### Risks

- **Market risk:** Mainly equity price risk. The price of a stock fluctuates according to the law of supply and demand. However, there are many factors on the basis of which the demand for a particular stock may increase or decrease. These factors are studied using various methods of fundamental analysis or technical analysis to predict the changes in the stock price. Stock price is particularly sensible to forecasts regarding the company (whether profits are expected to increase or decrease). If denominated in foreign currency, a foreign exchange risk needs to be considered as well.

- **Liquidity risk:** Liquidity depends on the interest the company generates on market participants, market capitalisation and free float.
- **Counterparty risk:** Unlike listed derivatives (individual equity options, single stock futures) counterparty risk is directly related to the issuer's rating.

### B.3.1.1. Financial instruments related to equities

#### B.3.1.1.1. Stock option

#### MiFID Asset Class: Equity Derivatives

##### Description

An equity or stock option gives the buyer the right to buy (call) or to sell (put) a certain quantity (usually 100) of underlying stocks at the exercise price of the option until maturity date (American style) or at maturity date (European style).

At maturity, if the option is not exercised or has become worthless, it ceases to exist.

Can be an OTC product as well as traded on an exchange.

##### Advantages, disadvantages and risks

##### Advantages

- Individual equity options can be used to fine-tune an investor's market exposure by creating the exact portfolio desired.
- Higher leverage compared to direct investment in stocks.
- They are considered a cost efficient method to invest in stocks compared to purchasing stocks on margin: purchasing stocks on margin triggers the payment of interest on the sum borrowed to the broker to purchase the stocks.

##### Disadvantages

- Like all options, individual equity options suffer from time decay: if the price of the underlying stock does not reach the level expected by the investor before expiry (or reached it but without the knowledge of the investor), the option will expire worthless.
- Holders of individual equity options are not entitled to collect dividends.

##### Risks

- **Market risk:** Mainly an equity price risk. If denominated in foreign currency, a foreign exchange risk needs to be considered as well.
- **Liquidity risk:** Liquidity is generally good but also depends on the liquidity of the underlying stock. Moreover, unusual market circumstances, such as when trading on cash market of underlying stock stops, might disturb the option market, too.
- **Counterparty risk**

##### Other risk related issues

- **Double witching:** Exceptional calendar situation that creates high volatility every time when two classes of option contracts and futures contracts all expire on the same day.
- **Triple witching:** Exceptional calendar situation that creates high volatility every time when three classes of stock index options, stock index futures and stock options all expire on the same day.
- **Quadruple witching:** Exceptional calendar situation that creates high volatility every time when four classes of stock

index options, stock index futures, stock options and stock futures all expire on the same day.

- The buyer of an option (call or put) can maximum lose the paid premium.
- The seller of an option has to fulfil his/her obligations if the holder of the option wants to exercise his/her right. The seller's loss is in principle unlimited.

#### B.3.1.1.2. Stock index option/Equity index option

### MiFID Asset Class: Equity Derivatives

#### Description

Stock index options (Equity index options) are option contracts used to replicate the performance of an underlying stock index.

A stock index option gives the buyer the right to buy (call) or to sell (put) the portfolio of stocks included in the underlying index at the exercise price of the option until maturity date (American style) or at maturity date (European style).

The cash value of the underlying index equivalent to one contract equals the option price times a certain multiplier in the currency of the contract.

At maturity, unlike equity options, they trigger a cash settlement which calculation is based on a multiple of the underlying index on which they are based.

#### Advantages, disadvantages and risks

##### Advantages

- They can be used for (proxy) hedging against an existing equity position or an equity index future position, or for speculating on future movements of the index.
- They provide a convenient tool for gaining rapid exposure to a market, a sector or a country without having to actually purchase a representative basket of shares.
- Underlying stock indices for options include well-established benchmarks offering broad or sectorial exposure.
- Like all options, stock index options have a leverage effect compared to direct investment in stocks.

##### Disadvantages

- It is unlikely that one of the equity indices available will exactly reflect the portfolio to hedge: equity index options cannot be used to fine-tune an investor's market exposure by creating the exact portfolio desired.
- Unlike equity index futures, investors in equity index options pay a volatility premium for the right to buy or sell the option.
- Unlike equity index futures, equity index options experience time decay: options can expire worthless.

##### Risks

- **Market risk:** Mainly an equity price risk. If denominated in foreign currency, a foreign exchange risk needs to be considered as well.
- **Liquidity risk:** Liquidity is generally very high, in particular for short maturities and on condition that the underlying index is liquid. Exceptions are when unusual market circumstances happen on the underlying market (e.g. when trading on cash market of underlying stocks composing the stock index stops).
- **Counterparty risk**

##### Other risk related issues

- **Double witching:** Exceptional calendar situation that creates high volatility every time when two classes of option contracts and futures contracts all expire on the same day.

- **Triple witching:** Exceptional calendar situation that creates high volatility every time when three classes of stock index options, stock index futures and stock options all expire on the same day.
- **Quadruple witching:** Exceptional calendar situation that creates high volatility every time when four classes of stock index options, stock index futures, stock options and stock futures all expire on the same day.
- The buyer of an option (call or put) can maximum lose the paid premium.
- The seller of an option has to fulfil his/her obligations if the holder of the option wants to exercise his/her right. The seller's loss is in principle unlimited.

### B.3.1.1.3. Single stock future/Single equity future

#### MiFID Asset Class: Equity Derivatives

##### Description

Single stock future is a derivative contract to deliver/accept a certain number of shares (usually 100) of a specific stock at a designated date in the future.

Except delivery, which is physical, single stock futures have similar characteristics than those of other futures contracts.

##### Advantages, disadvantages and risks

##### Advantages

- Single stock futures are considered a cost efficient method to invest in stocks because they have the cost of carry built into their price. This interest rate is locked when the trade is made and is determined by multiple market participants in a competitive open market.
- Single stock futures are also a more efficient way of short selling a specific stock.
- Higher leverage compared to direct investment in the underlying stock.
- Unlike single equity options, investors in single equity futures do not pay a volatility premium for the right to buy or sell the future and contracts do not experience time decay: contracts settle to physical delivery and never expire worthless.
- Single stock futures can be used to fine-tune an investor's market exposure by creating the exact portfolio desired.

##### Disadvantages

- Since holders of single stock futures are not entitled to collect dividends (and sellers) are not required to pay a dividend), the contract must be adjusted downward by the amount of the expected dividends before expiration.
- Like with all futures contracts, daily margining has the disadvantage of potentially requiring a margin call in order for the investor not to see his position liquidated.

##### Risks

- **Market risk:** Mainly an equity price risk. If denominated in foreign currency, a foreign exchange risk needs to be considered as well.
- **Liquidity risk:** Liquidity is generally good but very much depends on the liquidity of the underlying stock. Moreover, unusual market circumstances, such as when trading on cash market of underlying stock stops, might disturb the futures market too.
- **Counterparty risk:** Virtually inexistent since at the end of the day the Clearing House becomes the counterpart of each buyer and each seller (novation principle).

##### Other risk related issues

- **Double witching:** Exceptional calendar situation that creates high volatility every time when two classes of option contracts and futures contracts all expire on the same day.

- **Triple witching:** Exceptional calendar situation that creates high volatility every time when three classes of stock index options, stock index futures and stock options all expire on the same day.
- **Quadruple witching:** Exceptional calendar situation that creates high volatility every time when four classes of stock index options, stock index futures, stock options and stock futures all expire on the same day.

#### B.3.1.1.4. Stock index future

### MiFID Asset Class: Equity Derivatives

#### Description

Stock index futures (Equity index futures) are future contracts used to replicate the performance of an underlying stock index.

A stock index future contract represents the obligation to buy or to sell the portfolio of stocks included in the underlying index.

The cash value of the underlying index equivalent to one contract equals the futures price time a certain multiplier in the currency of the contract.

At maturity, like equity options, they trigger a cash settlement which calculation is based on a multiple of the underlying index on which they are based.

#### Advantages, disadvantages and risks

##### Advantages

- They can be used for hedging against an existing equity position or an equity index option position, or for speculating on future movements of the index.
- They provide a convenient tool for gaining rapid exposure to a market, a sector or a country without having to actually purchase a representative basket of shares.
- Underlying stock indices for futures include well-established benchmarks offering broad or sector exposure. These underlying stock indices are in liquid markets and are mainly used for short terms (close to delivery maturities).
- Like all futures, stock index futures are purchased using margin, providing leverage compared to direct investment in stocks. Moreover, it is more cost effective to buy an index futures contract than purchasing individually all stocks forming the underlying equity index.
- Unlike equity index options, investors in equity index futures do not pay a volatility premium for the right to buy or sell the future and contracts do not experience time decay: contracts never expire worthless.

##### Disadvantages

- It is unlikely that one of the equity indices available will exactly reflect the portfolio to hedge: equity index futures cannot be used to fine-tune an investor's market exposure by creating the exact portfolio desired.
- Far maturities (longer terms) are usually less liquid and are the territory of OTC products, which offer more flexibility.

##### Risks

- **Market risk:** Mainly an equity price risk. If denominated in foreign currency, a foreign exchange risk needs to be considered as well.
- **Liquidity risk:** Liquidity is generally very high, in particular for short maturities and if underlying index is liquid. Exceptions are when unusual market circumstances happen on the underlying market (e.g. when trading on cash market of underlying stocks composing the stock index stops).
- **Counterparty risk:** Virtually inexistent since at the end of the day the Clearing House becomes the counterparty of each buyer and each seller (novation principle).

## Other risk related issues

- **Double witching:** Exceptional calendar situation that creates high volatility every time when two classes of option contracts and futures contracts all expire on the same day.
- **Triple witching:** Exceptional calendar situation that creates high volatility every time when three classes of stock index options, stock index futures and stock options all expire on the same day.
- **Quadruple witching:** Exceptional calendar situation that creates high volatility every time when four classes of stock index options, stock index futures, stock options and stock futures all expire on the same day.

### B.3.1.1.5. Option on stock index future

## MiFID Asset Class: Equity Derivatives

### Description

Options on stock index futures (Options on equity index futures/Stock index futures options/Equity index futures options) are options the underlying of which is another derivative.

Unlike stock index futures or stock index options, these futures are not settled in cash but by delivering the underlying stock index futures contracts.

### Advantages, disadvantages and risks

#### Advantages

- Before exercise or maturity, options on stock index futures bring investors the same advantages as options on stock index, in particular:
  - Convenient, fast and cost efficient tool for gaining global exposure to an equity market.
  - Leverage effect of derivatives with limited risk for bought options.
- After exercise, options on stock index futures bring investors the same advantages as futures on stock index.
- In futures trading, the risks can be higher than some investors can bear and losses can be important. With options on futures, investors can limit risks substantially. Investors who do not want to commit themselves to buying or selling futures contracts but wish nevertheless to be positioned on the market have the opportunity to buy options on futures contracts with the following result:
  - Buying a call option on an equity index futures contract is equivalent to buying a futures contract on the equity index.
  - Buying a put option on an equity index futures contract is equivalent to selling a futures contract on the equity index.

#### Disadvantages

- Before exercise or maturity, options on stock index futures bring investors the same disadvantages as options on stock index, in particular:
  - Time decay (options can become worthless if market expectations do not realise before or at maturity).
  - Imperfect specific portfolio coverage.
  - Constant position monitoring is required to avoid losing timely exercise opportunity or letting the option expire worthless.
- After exercise, options on stock index futures bring investors the same disadvantages as futures on stock index, in particular:
  - Imperfect specific portfolio coverage.
  - Constant position monitoring is required.



## Risks

- **Market risk:** Mainly an equity price risk. The value of an option on stock index futures can even drop to zero. If denominated in foreign currency; a foreign exchange risk needs to be considered as well.
- **Liquidity risk:** Liquidity is generally very high, in particular for near terms and if underlying future market and cash market are liquid. Exceptions are when unusual market circumstances happen on the underlying market (e.g. when trading on cash market of underlying stocks composing the stock index stops).
- **Counterparty risk:** Virtually inexistent since at the end of the day the Clearing House becomes the counterpart of each buyer and each seller (novation principle).

## Other risk related issues

- **Double witching:** Exceptional calendar situation that creates high volatility every time when two classes of option contracts and futures contracts all expire on the same day.
- **Triple witching:** Exceptional calendar situation that creates high volatility every time when three classes of stock index options, stock index futures and stock options all expire on the same day.
- **Quadruple witching:** Exceptional calendar situation that creates high volatility every time when four classes of stock index options, stock index futures, stock options and stock futures all expire on the same day.

### B.3.1.1.6. Equity Warrant

## MiFID Asset Class: Equity Derivatives

### Description

An equity warrant (stock warrant/warrant on stock/warrant on equity) is a security that entitles the holder to buy stock of the company that issued it at a specific price, generally much higher than at the time of issue.

Equity warrants are very similar to equity options (stock options) but maturity dates are usually much longer than those of listed options. However, unlike an option, a warrant is issued by a company.

Companies often include warrants as part of a new issue offering to entice investors into buying the new security. Warrants can also increase a shareholder's confidence in a stock and they are usually attached to preferred stocks as a bonus, allowing the issuer to pay lower dividends. Frequently, these warrants are detachable and can be sold independently of the bond or stock.

### Advantages, disadvantages and risks

#### Advantages

- Warrants are transferable, quoted certificates, and they tend to be more attractive for medium-term to long-term investment schemes.
- Market is transparent.
- Due to their gearing effect, warrants need a small initial investment in comparison to the larger amount of underlying equity.

#### Disadvantages

- A holder of a warrant does not have any voting, shareholding or dividend rights, although he is directly affected by any decision made.
- An important difference between options and warrants is that when a warrant issued by a company is exercised, the company actually issues new shares, thus increasing the number of outstanding shares (dilution). When a call option is exercised, the owner of the call option receives existing shares from an assigned call writer.
- As opposed to listed options, warrants cannot be short sold.

## Risks

- **Market risk:** Mainly an equity price risk. The value of a warrant could even drop to zero. If denominated in foreign currency, a foreign exchange risk needs to be considered as well.
- **Liquidity risk:** Liquidity is generally good, in particular when the issuer tries to establish a market for the warrant and registers it with a listed exchange. It is, however, not comparable to that of listed options. Since liquidity of the derivative also depends on the liquidity of the underlying asset, equity index warrants tend to enjoy more liquidity than equity warrants.
- **Counterparty risk:** Counterparty risk is directly related to the issuer's rating, even when traded on an exchange, the performance of issuer is never guaranteed by the exchange.

### B.3.1.1.7. Warrant on indices

#### MiFID Asset Class: Equity Derivatives

##### Description

A warrant on index (or a stock index warrant) is a (derivative) security linked to the performance of an equity index.

An important difference between equity warrants and warrants on indices is that there is no physical delivery if exercised. Stock index warrants trigger a cash payment on exercise or at expiry, depending on the level of the underlying index at that time. The index multiplier determines the cash value per index point

Equity index warrants are very similar to equity index options (stock index options) but have generally longer maturity dates than those of listed options.

#### Advantages, disadvantages and risks

##### Advantages

- Index warrants enable investors to benefit from moves in the overall market or a market sector, rather than from the price movement of an individual share.
- They allow investors to achieve many objectives at limited cost: obtain leveraged return, diversify into a market or sector, protect the value of an underlying equity portfolio or earn extra income.
- Warrants are transferable, quoted certificates, and they tend to be more attractive for medium-term to long-term investment schemes.

##### Disadvantages

- As opposed to listed options, warrants cannot be short sold.

##### Risks

- **Market risk:** Mainly an equity price risk. The value of a warrant can even drop to zero. If denominated in foreign currency, a foreign exchange risk needs to be considered as well.
- **Liquidity risk:** Liquidity is generally good, in particular when the issuer tries to establish a market for the warrant and registers it with a listed exchange. It is, however, not comparable to that of listed options. Since liquidity of the derivative also depends on the liquidity of the underlying asset, equity index warrants tend to enjoy more liquidity than equity warrants.
- **Counterparty risk:** Counterparty risk is directly related to the issuer's rating, for even when traded on an exchange, performance of issuer is never guaranteed by the exchange.

### B.3.1.1.8. Reverse convertible bonds

#### MiFID Asset Class: Structured Products

##### Description

A reverse convertible bond (RCB) is a bond that can be converted to equity or cash at the discretion of the issuer at a set date.

The difference between a regular convertible bond (see section B.3.2.2.6 below ) and a reverse convertible bond is the option attached to the bond. The bond contains an embedded derivative that allows the issuer to put the bond to bondholders at a set date prior to the bond's maturity for existing debt or shares of an underlying company. The underlying company need not be related in any way to the issuer's business. For instance, a European bank would redeem its bond in shares of a given blue ship by the maturity date.

While a convertible bond gives the bondholder the right to convert the asset to equity, a reverse convertible bond gives the issuer the right to convert the security issued to equity or cash.

##### Advantages, disadvantages and risks

###### Advantages

- Reverse convertible bonds usually have shorter maturities and higher yields (around 15-20%) than most other bonds because of the risk involved for investors.
- They provide regular, high payouts and allow for profit even if the equity markets remain stable or rise moderately: in such situations, reverse convertible bonds provide for a higher return than a direct investment in equity.

###### Disadvantages

- They are neither plain debt nor plain equities.
- Return is less predictable than that of a common bond investment: investors may see their principal redeemed for securities in a company that have, or are expected to, decrease substantially in value.

###### Risks

- **Market risk:** Reverse convertible bond price is tied to the underlying's stock price. They tend to be less volatile than regular shares. As the stock price goes up, so does the value of the convertible bond. However, as a bond, they react to interest rate changes, too. Redeemed value of reverse convertible bonds fully depends on the market value of the underlying stock market that might be delivered. In theory, there is a risk of total loss of initial investment if the deliverable stock price falls to zero.
- **Liquidity risk:** Reverse convertible bond markets are generally liquid but less than stock markets.
- **Counterparty risk:** Counterparty risk is higher because investors bear two kinds of credit risks: (i) the risk of default of the issuer – the financial institution structuring the bond – and (ii) the risk of default of the company whose shares are underlying the reverse convertible bond.

### B.3.1.1.9. Indexed bonds with an equity or pool of equities as underlying value (Equity Linked Notes)

#### MiFID Asset Class: Structured Products

##### Description

Indexed bonds with an equity or pool of equities as underlying value are known as Equity-linked notes.

These debt instruments differ from standard fixed-income products as the final payout is based on the return of an underlying equity, which can be a single stock, a basket of stocks or an equity index.

They usually are principal protected which means that the investor is guaranteed to receive 100% of the original amount invested at maturity and offer a participation rate in the increase of the underlying. Some notes, however, might promise to pay a certain level of income for the life time of the product but do not always guarantee that the invested capital will be returned in adverse market conditions.

Since equity-linked notes are a combination of zero-coupon bond and an equity (or equity-index) option, they should be considered as structured products. When either initial capital is guaranteed or initial capital and minimum return are guaranteed, these notes have embedded options with more or less complex exotic features.

##### Advantages, disadvantages and risks

###### Advantages

- Depending on their features, equity-linked notes provide either a secure investment or a minimum return even if the equity markets rise moderately, remain stable or decline: in such situations, they provide a higher return than a direct investment in equity.
- Could provide a desired or tailor-made pay-out pattern.

###### Disadvantages

- In case the investor sells the note before maturity, there is a real risk of capital loss.

###### Risks

- **Market risk:** The return of an equity-linked note depends on its specific features and on the price of the reference underlying.
- **Liquidity risk:** Most equity-linked notes trade OTC. They are not actively traded on the secondary market and are designed to be kept to maturity. However, the issuer usually offers to buy back the notes at market rate, with the risk that the price might be below the amount invested.
- **Counterparty risk:** Counterparty risk is directly related to the issuer's rating.

## B.3.2. Bonds

### B.3.2.1. Bonds (Fixed income)

#### MiFID Asset Class: Bonds

##### Description

A bond is a certificate of debt issued by a government (government bond), supranational- or financial institution or corporation, guaranteeing payment of the original investment plus interest by a specified future date.

The interest to be paid generally depends on the quality of the borrower, expressed by its rating, the maturity, the currency and the liquidity.

#### Advantages, disadvantages, risks

##### Advantages

- Bonds are considered safer than stocks due to the certainty of an income payment. Bond investments are historically more stable than their stock counterparts.
- Bondholders also enjoy higher legal protection than stockholders if the company issuing the bonds goes bankrupt.
- Investing in bonds allows investors to:
  - Diversify their investment portfolio.
  - Plan cash flows or interest streams in a more predictable way.
  - Keep their investment liquid and accessible: bonds are tradable securities and therefore offer good liquidity.
- Capital appreciation is possible during the life time of the bond.
- If an investor has a preference in receiving income as opposed to capital appreciation, then investing in bond is a good choice.

##### Disadvantages

- Bond coupon payments of fixed income bonds are fixed by nature which means that one could miss out the opportunity to invest at more favourable rates.
- If an investor is more interested in capital appreciation than receiving a steady income, then investing in bond is not the optimal investment vehicle.
- Capital is only guaranteed at maturity when the principal amount is repaid at par.

##### Risks

- **Market risk:** Mainly an interest rate risk combined with the credit risk on the issuer. Foreign exchange risk is to be considered if the bond is denominated in a foreign currency.
- **Liquidity risk:** Bond markets are usually liquid but it depends also on the size and type of the issue.
- **Counterparty risk:** Counterparty risk is directly related to the issuer's rating. For instance, government bonds are considered risk-free investments. In bond investing, credit risk is the issuer risk.

#### Other risk related issues

- **Sensitivity:** The longer the maturity of a bond, the higher the risk. This relationship can be measured by the duration, the weighted average maturity of a bond's cash-flows. It measures the sensitivity of a bond's price to interest rate movements.
- **Reinvestment risk:** The risk resulting from the fact that interest earned from investment in a bond (coupon payments) are reinvested at less than the yield to maturity at the time of purchase of the bond that generated them.
- **Inflation risk:** The risk that a bond's total return will not outpace inflation. In cases where the coupon is fixed until maturity, an inflationary environment will cause these payments to lose value relative to other investments.

### B.3.2.2. Other types of bonds

#### B.3.2.2.1. Zero-coupon bonds

##### MiFID Asset Class: Bonds

##### Description

Zero-coupon bonds are bonds that pay no interest during their life time. They are issued at discount (interest income is deducted from their purchase price) and are redeemed at par (face value of the bond) at maturity. The difference between the two amounts is the investor's return over the life time of the bond.

##### Advantages, disadvantages, risks

##### Advantages

- Elimination of reinvestment risk for the coupons: Investors who take the view that interest rates will fall have an excellent opportunity to lock in a yield rather than rely on reinvestment opportunities for later cash flows (such as interest payments).
- If interest rates drop, it will generate a more positive effect on the price of the zero-coupon bond because the duration is longer than that of a similar classical bond.

##### Disadvantages

- There is no income generated during the life time of the zero-coupon bond.
- Many zero-coupon bonds have call provisions which allow issuers to redeem bonds before maturity when market interest rates drop. This affects the return expected by the investor.

##### Risks

- **Market risk:** Zero-coupon bonds are more sensitive to interest rate changes than conventional bonds. Market value of zero-coupon bonds can be highly volatile. When the market's interest rates rise, zero-coupon bond prices drop significantly, resulting in a great loss of capital when the investor sells bonds before maturity. For zero-coupon bondholders there is no benefit in a raise in interest rates because there is no coupon interest to reinvest. Foreign exchange risk is to be considered if the bond is denominated in a foreign currency.
- **Liquidity risk:** Bond markets are usually liquid but it depends also on the size and type of the issue.
- **Counterparty risk:** Counterparty risk is higher than with conventional bonds. If an issuer of zero-coupon defaults, investors suffer consequences that would not have happened if they had bought conventional bonds because conventional bonds would have paid to investors some interest that could have been reinvested before default. Conversely, since the interest payments and principal repayment of zero-coupon bonds happens once (at maturity) through a single payment and if the issuer is not able to make this single payment, bondholders might receive nothing.

##### Other risk related issues

- **Sensitivity:** Zero-coupon bonds are very sensitive to changes in interest rate, since there are no coupon payments to reduce the impact of interest rate changes.

### B.3.2.2.2. Stripped bonds

#### MiFID Asset Class: Bonds

##### Description

A stripped bond is a bond that has its main components broken up into a zero-coupon bond and a series of coupons.

Stripped bonds are not issued directly like linear bonds. They are created on the basis of existing debts (underlying bonds) chosen among well-traded benchmark issues with a large outstanding amount. For example, a bank strips the coupon payments of a conventional bond from its principal capital sum and repackages both the coupon payments and the principal as a series of zero-coupon bonds.

Strips stands for Separate Trading of Registered Interest and Principal Securities. It means that trading and ownership of each coupon and of the principal of the underlying bond are autonomous dematerialised zero-coupon bonds.

##### Advantages, disadvantages, risks

##### Advantages

- Stripped bonds are zero-coupon bonds and, therefore, offer the same advantages as those offered by zero-coupon bonds.
- Strips are ideal instrument for Asset & Liability Management (ALM) because all types of maturities are available: for instance money managers buy short-term strips while the longest maturities are held by pension funds and insurance companies attracted by the long duration of these instruments.
- High flexibility to fine tune cash flow and duration.

##### Risks

- **Market risk:** Market risk is equivalent to that of zero-coupon bonds. Foreign exchange risk is to be considered if the bond is denominated in a foreign currency.
- **Liquidity risk:** Liquidity is ensured by market-makers. Since underlying bonds subject of stripping are chosen among well-traded benchmarks with a large outstanding amount, liquidity is generally high.
- **Counterparty risk:** Counterparty risk is directly related to the issuer's rating. If an issuer defaults, investors suffer consequences that would not have happened if they had bought conventional bonds. Conventional bonds would have paid some interest to investors that could have been reinvested before default. Since the repayment of stripped bonds and strips happens only through a single payment at maturity and if the issuer is not able to make this single payment, bondholders might receive nothing.



### B.3.2.2.3. Inflation-linked bonds

#### MiFID Asset Class: Bonds

##### Description

Inflation-linked bonds are bonds of which the principal amount is indexed to inflation.

They are designed to protect both the principal and the income (interest) stream against erosion from inflation by an indexation to an inflation reference based on a consumer price index (e.g. US-CPI, French CPA, ...).

There are three main types of inflation-linked bonds:

- **Capital indexed bonds:** They pay a fixed coupon on a principal that is linked to inflation and therefore, simply offer a final principal payment that is indexed to inflation.
- **Interest indexed bonds:** At each coupon payment, these bonds pay a fixed coupon + inflation rate calculated for the period. At maturity, bonds are redeemed at face value.
- **Indexed annuity bonds:** Annuity payment is indexed to inflation.

#### Advantages, disadvantages, risks

##### Advantages

- Inflation-linked bonds enjoy, by nature, a protection against inflation risk: their principal amount grows with inflation, therefore generating an increase in coupon payments.
- In most inflation-linked bonds there is a floor designed to prevent negative effect of deflation.

##### Disadvantages

- As with inflation itself, the exact income cash flow cannot exactly be predicted.
- In times of deflation or low inflation they might have a lower return than classical bonds.

##### Risks

- **Market risk:** Inflation-linked bonds are less exposed to interest rate changes than conventional bonds. Foreign exchange risk is to be considered if the bond is denominated in a foreign currency.
- **Liquidity risk:** Inflation-linked bonds might be less liquid than conventional bonds in markets where they are still a new type of product.
- **Counterparty risk:** Counterparty risk is directly related to the issuer's rating.

#### Other risk related issues

- **Indexation lag:** Income streams are generally indexed to a consumer price calculated 2 or 3 months before. Indexation lag is therefore not a relevant risk for long-term bondholders but should be considered as an actual risk for holding periods of less than six months.

#### B.3.2.2.4. FRN – Floating Rate Note

##### MiFID Asset Class: Bonds

##### Description

Floating rate notes are bonds of which the coupon is linked to a reference rate, such as the LIBOR or the Euribor, plus a spread.

At the time of issuance, there is no fixed coupon for the entire term of the bond. The coupon is paid and reset periodically, for example every 3 months.

Some FRNs have special features, such as maximum coupon (capped FRNs), minimum coupon (floored FRNs) or both (collared FRNs).

FRNs can be obtained synthetically through the combination of a fixed rate bond and an IRS. This combination is known as an Asset Swap.

##### Advantages, disadvantages, risks

##### Advantages

- FRNs have only short-term interest rate risk. They display very low sensitivity to changes in market rates compared to fixed-rate, conventional bonds, therefore protecting investors against a rise in interest rates which have an inverse relationship with bond prices.
- FRNs have a duration shorter than 1 year.
- As a result of its floating structure, the market value of a FRN will not diverge greatly from its par value.
- Since they are generally denominated in relatively small minimum amounts, floating-rate bonds offer small to medium-size investors an attractive alternative to direct investment in money markets.

##### Disadvantages

- FRNs carry usually lower yields than fixed notes of the same maturity.

##### Risks

- **Market risk:** Very low compared to fixed-rate bonds. Foreign exchange risk is to be considered if the note is denominated in a foreign currency.
- **Liquidity risk:** Liquidity very much depends on market participants and for which purpose they use FRNs: in Europe where FRNs are mostly used by big investors and not held until maturity, market is liquid. In the USA, where FRNs are mostly held to maturity, the market is less liquid.
- **Counterparty risk:** Counterparty risk is directly related to the issuer's rating.

### B.3.2.2.5. Perpetual bonds

#### MiFID Asset Class: Bonds

##### Description

Also often called “perpetuities” or “consol” (for consolidated annuities), perpetual bonds are bonds with no set maturity date. However there are many perpetual bonds that are callable by the issuer.

They are not redeemable but pay a steady stream of interest for ever.

Since perpetual bond payments are similar to stock dividend payments, they are priced the same way: the fixed interest payment is divided by a constant discount rate representing the speed at which money loses its value over time.

The discount rate denominator reduces the real value of the nominally fixed coupon amounts over time, eventually making this value equal to zero. Because of the time value of money, each payment (although constant in nominal terms) represents a fraction of the last (in real terms).

Since the principal is never repaid, there is no present value for the principal and, therefore, the value of a perpetual bond is finite because income streams that are anticipated in the future have a lower present value. It is equal to the coupon amount over the discount rate.

##### Advantages, disadvantages, risks

##### Advantages

- The historic rate of return is usually more attractive than the one of traditional bonds.

##### Disadvantages

- Nothing special to mention.

##### Risks

- **Market risk:** Market risk is equivalent to conventional bonds, although there might be a higher price sensitivity and volatility due to longer duration. Foreign exchange risk is to be considered if the bond is denominated in a foreign currency.
- **Liquidity risk:** Bond markets are usually liquid but it depends also on the size and type of the issue.
- **Counterparty risk:** Counterparty risk is directly related to the issuer’s rating.

### B.3.2.2.6. Convertible bonds

#### MiFID Asset Class: Structured Product

##### Description

Convertible bonds are bonds that can be converted into a pre-determined amount of the issuing company's equity (in general common shares) at a stated price, within a specified timeframe, usually at the discretion of the bondholder.

It is a hybrid security with both debt- and equity-like features. From a valuation's perspective a convertible bond is a combination of a bond and a warrant on equity.

If the bondholder makes use of his conversion right, he will relinquish his bonds, thus becoming a shareholder instead of remaining a creditor of the issuing company.

##### Advantages, disadvantages, risks

##### Advantages

- Convertible bonds have a value-added component: a bond with an embedded stock option.
- The conversion of the bond into common stocks is usually at a premium to the stock's market value, thus offering a higher yield than that obtainable directly on the shares into which the bond converts.
- Convertible bonds are safer than preferred or common shares. They provide asset protection because their value will only fall to the value of the bond floor, while still being able to provide the possibility of high equity-like returns: if the underlying equity does not perform up to expectations, the investor can simply keep the bonds.
- Since they are debt securities, convertible bonds rank senior to all of the issuer's preferred and common equity.
- Convertible bonds benefit from the price increase of the underlying equity without having to actually purchase the inherently riskier share or participation certificate.
- An anti-dilution provision is generally included. It provides protection against dilution in the form of a reduction in the conversion price in case the company issuing the convertible bonds increases its equity capital at some point during the life time of the bond.

##### Disadvantages

- Convertible bonds tend to offer a lower rate of return than conventional bonds in exchange for the value of the option to exchange the bond into stocks.
- Convertible bonds typically convert to fewer shares of common stock than could be purchased with the bond value.
- In order to convert, the price of the underlying stock should achieve a particular level, which is often high.
- Most convertible bonds include a callable feature that involves an additional risk to investors. This affects the return expected by the investor.
- Investors must constantly follow the price of the underlying equity in order not to miss the most favourable point for conversion.

##### Risks

- **Market risk:** Convertible bond price is tied to the underlying' stock price. They tend to be less volatile than regular shares. As stock price goes up, so does the value of the convertible bond. As a bond, they react also to interest rate changes. Rising interest rates typically lead to falling value of stocks. Since convertible bonds are hybrid securities with characteristics of both stocks and bonds, net result is uncertain. Foreign exchange risk is to be considered if the bond is denominated in a foreign currency.
- **Liquidity risk:** Liquidity is generally good.
- **Counterparty risk:** Counterparty risk is directly related to the issuer's rating. Rating is generally high in all developed countries. European convertible bonds tend to be of high credit quality. Generally, the convertible bond will be unsecured and rank subordinate to the company's senior and secured debt, thus bearing a greater risk than secured debt.

### B.3.2.2.7. Bonds cum warrant

#### MiFID Asset Class: Bond

##### Description

Bonds cum warrant (bonds with warrants) are bonds that have a warrant attached as a bonus, allowing the issuer to pay lower interest rates. The warrants attached usually entitle bond holders to acquire shares or other securities during a certain period of time at a pre-determined price. They are generally used to enhance the yield of a bond.

Frequently, warrants are detachable and can be sold independently of the bond.

#### Advantages, disadvantages, risks

##### Advantages

- The warrants allow investors to benefit from future price appreciation in the underlying equity securities. The conversion of the bond into common stocks is usually at a premium to the stock's market value, thus offering a higher yield than that obtainable directly on the shares into which the bond converts.
- Bonds cum warrant benefit from the price increase of the underlying equity without having to actually purchase the inherently riskier share or participation certificate.
- Bonds cum warrant are safer than preferred or common shares. They provide asset protection because their value will only fall to the value of the bond floor, while still being able to provide the possibility of high equity-like returns: if the underlying equity does not perform up to expectations, the investor can simply keep the bonds.
- A big advantage compared to convertible bonds is that only the warrants attached to the bond must be relinquished, not the bond itself if the underlying securities are acquired.
- An anti-dilution provision is generally included to protect the investor from being disadvantaged if the company were to increase its equity capital or split its stock during the life of the warrant.
- Bonds cum warrant usually trade separately on an exchange, thus providing investors with the opportunity to buy or sell warrants that are no longer attached to the bond.

##### Disadvantages

- The price bondholders of bonds cum warrants have to pay for this growth potential is the lower coupon rate that they will receive on the bond itself.
- They convert to fewer shares of common stock than could be purchased with the bond value.
- Investors must constantly follow the price of the underlying equity in order not to miss the most favourable point for conversion.
- In order to convert, the price of the underlying stock should achieve a particular level, which is often high.

##### Risks

- **Market risk:** The price of bonds cum warrant is tied to the underlying' stock price. Bonds cum warrant tend to be less volatile than shares but more than regular bonds. However, as every bond, bonds cum warrant also react to interest rate changes. The net result is therefore to predict. Foreign exchange risk is to be considered if the bond is denominated in a foreign currency.
- **Liquidity risk:** Liquidity of bonds cum warrant tends to be lower than regular bonds.
- **Counterparty risk:** Counterparty risk is directly related to the issuer's rating.

##### Other risk related issues

- **Inflation risk:** As the coupon of bonds cum warrants tend to be lower than regular bonds there is a higher chance of money erosion.

### B.3.2.2.8. Asset-Backed Security (ABS) & Mortgage-Backed Security (MBS)

#### MiFID Asset Class: Securitized Debt

##### Description

An Asset-Backed Security (ABS) is a security (bond or note) backed by different assets such as loans, lease, royalties, receivables etc. Asset-Backed Securities bring together a pool of financial assets that in their original form are quite illiquid. Financial institutions turn their “loans” into marketable securities (securitization) via a special purpose vehicle (SPV).

The securities are usually sold to investors via an underwriter (an investment bank).

#### Mortgage-backed Security (MBS)

##### Description

A Mortgage-Backed Security (MBS) is a form of ABS where the cash flow is based on the principal and interest payments of a mortgage or collection (pool) of mortgages. In the case of MBS the bank acts as an intermediary between an investor and a mortgager.

Please note that these products are mainly intended for institutional investors.

#### Advantages, disadvantages and risks

##### Advantages

For investors:

- Portfolio diversification.
- Usually monthly payments of capital and interest.
- Tend to pay higher return than securities of similar quality.

##### Risks

- **Market risk:** The market risk is mainly an interest rate risk. If the interest rate rises the value of the MBS on the secondary market will fall down.
- **Liquidity risk**
- **Counterparty risk:** This is mainly credit risk related to the on time payments by the borrowers and to the credit rating of the issuer.

#### Other risk related issues

- **Prepayment risk:** That is a risk of early redemption which usually occurs when the interest rates are falling down creating refinancing possibilities for the mortgager with lower interest rates.
- **Extension risk:** The risk of rising interest rate leading to extension of the MBS maturity and creating higher holding-period risk.

## B.4. Credit Market Instruments

A credit derivative is a financial instrument whose price and value derives from the creditworthiness of the obligations of a third party (= the reference entity). Credit derivatives are bilateral contracts between a buyer and a seller where the seller sells protection against certain pre-agreed events which affect the creditworthiness of that reference entity (usually a corporate or sovereign). The reference entity will usually not be a party to the credit derivatives contract and unaware of the contract's existence.

Credit protection bought and sold between bilateral counterparties, where each party is responsible for making its payments under the contract itself (i.e. payments of premiums and any cash or cash alike without recourse to other assets) is known as an unfunded credit derivative. Most commonly known unfunded credit derivatives are the Total Return Swap, Credit Default Swap and CDS Options.

If the credit derivative is entered into by a financial institution or a special purpose vehicle and payments under the credit derivative are funded using securitization techniques, such as a debt obligation that is issued by the financial institution or SPV to support these obligations, this is known as a funded credit derivative. In funded credit derivatives, transactions are often rated by rating agencies, which allows investors to take different slices of credit risk according to their risk appetite. Most commonly known funded credit derivatives are the Credit Linked Note and the Collateralized Debt Obligation.

Please note that the main market participants to this market are banks, hedge funds, insurance companies, pension funds and corporates.

### B.4.1. Credit default swap (CDS)

#### MiFID Asset Class: Derivative Products for the Transfer of Credit Risk

##### Description

A credit default swap is a bilateral contract between a protection buyer and a protection seller and will reference the creditworthiness of a third party called a reference entity (corporate or sovereign). The credit default swap will relate to the specified debt obligations of the reference entity: perhaps its bonds and loans, which fulfil certain pre-agreed characteristics. The protection buyer will pay a periodic fee to the protection seller in return for a contingent payment by the seller upon a credit event affecting the obligations of the reference entity specified in the transaction.

The relevant credit events specified in a transaction will usually be selected from amongst the following: the failure to pay in relation to debt obligations of the reference entity, the bankruptcy, restructuring of debt, ...

If any of these events occur and the protection buyer serves a credit event notice on the protection seller detailing the credit event as well as (usually) providing some publicly available information validating this claim, then the transaction will settle (physical or cash settlement).

It is a typical Over-The-Counter product.

##### Advantages, Disadvantages and Risks

##### Advantages

- With a CDS an investor in a financial asset can “isolate” and transfer the credit risk.
- Can lead to an improvement of the credit quality when the correlation between the reference asset and the protection seller is low and the protection seller himself represents a low risk.
- The protection buyer does not need to own an underlying obligation of the reference entity, nor does the protection seller.
- Tailor-made.
- Investor can also gain leveraged exposure.

##### Disadvantages

- The protection seller has no recourse to and no right to sue the reference entity for recovery.
- The market has yet to be fully tested, whilst the size of the market has exploded recently.

##### Risks

- **Market risk**
- **Liquidity risk**
- **Counterparty risk:** For the protection seller it means also the credit risk of the reference entity. Reference entity may no longer exist leading to “orphan CDS”.



## B.4.2. Total Return Swap (TRS)

### MiFID Asset Class: Derivative Products for the Transfer of Credit Risk

#### Description

A total return swap is a contract between two counterparties whereby they swap periodic payments for the period of the contract. One party (the protection seller) receives the total return (interest payments plus any capital gains or losses) from a specified reference asset, while the other (the protection buyer) receives a specified fixed or floating cash flow that is not related to the creditworthiness of the reference asset. The payments are based upon the same notional amount. The reference asset may be any asset, index or basket of assets.

The essential difference between a total return swap and a credit default swap (qv) is that the credit default swap provides protection against specific credit events. The total return swap protects against the loss of value irrespective of cause, whether default, widening of credit spreads or anything else i.e. it isolates both credit risk and market risk.

It is a typical Over-The-Counter product.

#### Advantages, Disadvantages and Risks

##### Advantages

- Protection for the protection buyer which is usually broader than in the case of a CDS, ie default, widening of credit spread or anything else.
- Can lead to an improvement of the credit quality when the correlation between the reference asset and the protection seller is low and the protection seller himself represents a low risk.
- The protection buyer does not need to own an underlying obligation of the reference entity, nor does the protection seller
- The total return receiver (= the protection seller) does not need to buy the reference asset (he/ she is of course exposed to the underlying).
- To hedge an exposure without having to sell the underlying.
- Can lead to cheaper funding cost for the total return receiver (= the protection seller).
- Tailor-made.

##### Disadvantages

- The protection seller has no recourse to and no right to sue the reference entity for recovery.

##### Risks

- **Market risk:** clear distinction should be made between the market risk for the parties of the TRS and the market risk of the reference entity. The market risk of the parties of the TRS is always present, while the market risk of the reference entity is only present for the protection seller.
- **Liquidity risk**
- **Counterparty risk:** For the protection seller it means also the credit risk of the reference entity.

### B.4.3. Credit Options

#### MiFID Asset Class: Derivative Products for the Transfer of Credit Risk

##### Description

A credit option represents the right but not the obligation to buy or sell protection on an underlying asset or “reference credit” at a specified strike (or spread) at a specified date in the future.

There are two types of options that can be bought or sold:

- The right to buy credit protection (payer option).
- The right to sell credit protection (receiver option).

The underlying is usually a floating rate security and this means that any changes in the market price of the security will be primarily due to changes in the credit spread of that security.

It is a typical Over-The-Counter product.

##### Advantages, Disadvantages and Risks

###### Advantages

- The option buyer holds a right but has not an obligation.
- Tailor-made.
- Both buyer and seller can take their option on the volatility of credit spreads according to their needs.

###### Disadvantages

- The protection buyer needs to pay a premium.

###### Risks

- **Market risk**
- **Liquidity risk**
- **Counterparty risk:** For the protection seller it means also the credit risk of the reference entity.

#### B.4.4. Credit linked notes (CLN)

##### MiFID Asset Class: Structured Product

###### Description

A credit linked note is a note whose cash flow depends upon a credit event, which can be a default, a credit spread or a rating change. As with the Credit Default Swap, the definition of the relevant credit events must be negotiated by the parties to the note. A CLN is a security issued with an embedded credit default swap and therefore it is an on-balance asset.

It is a typical Over-The-Counter product.

###### Advantages, Disadvantages and Risks

###### Advantages

- An investor can take on different risks and earn a higher return than a straight forward note.
- Usually no ISDA documentation required, so limited burden with regard to derivatives documentation and administration.

###### Disadvantages

- Complex product.

###### Risks

- **Market risk**
- **Liquidity risk**
- **Counterparty risk:** For the protection seller it means also the credit risk of the reference entity.

### B.4.5. Collateralized Debt Obligation (CDO)

#### MiFID Asset Class: Structured Product

##### Description

Collateralized debt obligations or CDO's are a form of credit derivative offering exposure to a large number of companies in a single instrument. This exposure is sold in slices of varying risk or subordination - each slice is known as a tranche.

A cash CDO is an asset-backed security backed by a portfolio of loans or other debt obligations and with the cash CDO structure, assets are transferred to an Special Purpose Vehicle that issue the CDO.

In a synthetic CDO the Special Purpose Vehicle is acquiring primarily synthetic assets by selling protection rather than purchasing assets for cash and the reference assets are typically a portfolio of CDS's on various entities. A synthetic CDO is also referred to as CSO.

##### Advantages, Disadvantages and Risks

##### Advantages

- Yield enhancement for a given rating.

##### Disadvantages

- The exposure to the underlying credit portfolio is leveraged.

##### Risks

- **Market Risk:** Final return on investment will be a function of the level of leverage, the number of default in the underlying portfolio and the level of recoveries in case of default.
- **Liquidity Risk**
- **Counterparty risk**

## B.5. Commodity Market Instruments

### B.5.1. Commodities

#### B.5.1.1. Non-Ferrous Metals

Commodities markets are often very specific and the main participants are traders, brokers, miners and industrial companies having an interest in metals. This section describes the non-ferrous or base metals market. The London Metal Exchange (LME) is considered to be the world's premier non-ferrous metals exchange, and its official prices and fixings are the main reference in this particular market.

Trading on the LME is taking place through an inter-office telephone market and an electronic trading platform, but the open-outcry trading between ring dealing members, which takes place on the market floor, is the most important trading channel.

The LME has three main services to offer: transparent pricing, hedging tools and delivery as a market of last resort.

The LME offers futures and options contracts for aluminium, copper, nickel, tin, zinc and lead plus two regional aluminium alloy contracts and the LME index, next to LME minis which are small-size, cash settled, monthly futures contracts, traded electronically or by telephone initially for copper, aluminium and zinc. Every futures and options contract relates to a physical delivery but in 99 percent of the cases, there is a cash settlement at maturity.

The bank can, under certain conditions, be your broker at the LME. In that case you will have the exchange as your counterparty and to comply with the LME rules. For more information on futures and options traded on the LME please refer to [www.LME.com](http://www.LME.com).

The bank can also be your counterparty in over-the-counter transactions. The main products, advantages, disadvantages and risks are described below.

### B.5.1.1.1. Forwards

#### MiFID Asset Class: Derivatives on Commodities

##### Description

An OTC forward contract with the bank in base metals has some particularities as its pricing and maturities are related to the LME.

##### Maturities:

Until 3 months: every working day is possible as a maturity or "Prompt".

Exceeding 3 months: only every third Wednesday of each month.

##### Pricing:

Forward prices are not calculated using interest rates as in foreign exchange but reflect more the market expectations.

Backwardation means that the forward price will be lower than the cash price, whereas Contango means that the forward price will be higher than the cash price.

Forwards are cash settled at maturity against the LME cash price.

#### Advantages, Disadvantages and Risks

##### Advantages

- Forwards are expressed in USD (standard), GBP, EUR, CHF, AUD and JPY per tonne.
- Lower administrative burden compared to LME transactions.

##### Disadvantages

- See forwards.

##### Risks

- **Market risk:** A commodity price has its own specific volatility as there is a close link with the physical market; there is also a foreign exchange risk to be considered. Cancelling the contract is possible at the market conditions at that moment and with a possible negative financial impact.
- **Liquidity risk:** A forward has a lower degree of liquidity than an LME future and therefore a higher liquidity risk.
- **Counterparty risk**

### B.5.1.1.2. Options – Call and Put

#### MiFID Asset Class: Derivatives on Commodities

##### Description

The underlying of the OTC option, call or put, is in this case a forward contract and the premium is only expressed in USD per tonne. Other specific features are the prompt and the settlement. The only prompt (or maturity date) available for the underlying forward is the one on each third Wednesday of each month. However the expiry of the options takes place on each first Wednesday of each month. Exercising an option means entering into a forward contract with a maturity two weeks later on the above described prompt.

Maximum periods for the underlying forwards are limited to 27 months for options on aluminium, copper, nickel and zinc and 15 months in the case of lead, tin and aluminium alloys.

A type of options that is used frequently is Asian options, which are basically average rate options. The strike price of these options is then compared to an monthly average of the LME fixing prices.

##### Advantages, Disadvantages and Risks

###### Advantages

- Lower administrative burden compared to LME transactions.

###### Disadvantages

- Less flexible maturities than a forward.

###### Risks

- **Market risk:** A commodity price has its own specific volatility as there is a close link with the physical market; there is also a foreign exchange risk to be considered. Cancelling the contract is possible at the market conditions at that moment and with a possible negative financial impact.
- **Liquidity risk:** An OTC option has a lower degree of liquidity than an LME option and therefore a higher liquidity risk.
- **Counterparty risk**

### B.5.1.1.3. Swaps

#### MiFID Asset Class: Derivatives on Commodities

##### Description

The most common OTC swap is the fixed against average swap, expressed in USD. Cash flows are exchanged monthly and are calculated as the difference between the fixed price of the swap and the monthly average of the LME fixing during the period of the swap.

##### Advantages, Disadvantages and Risks

###### Advantages

- Close to economic reality as a lot of companies use average prices in contracts for their sales/purchases.
- Lower administrative burden compared to LME exchange transactions.
- No premium to be paid to engage in a swap.
- Hedging against market risk.
- Managing your strategy according to changing market conditions at that moment (fixed to floating or vice versa).
- It's a financial product, separated from your business needs in the underlying.

###### Disadvantages

- If you agree to pay a fixed price in the swap, you cannot profit from a decrease in the price.

###### Risks

- **Market risk:** A commodity price has its own specific volatility as there is a close link with the physical market; there is also a foreign exchange risk to be considered. Cancelling the contract is possible at the market conditions at that moment and with a possible negative financial impact.
- **Liquidity risk:** A OTC swap has a lower degree of liquidity than a LME future and therefore a higher liquidity risk.
- **Counterparty risk**



### B.5.1.2. Precious Metals

#### MiFID Asset Class: Derivatives on Commodities (except spot delivery)

Precious metals are gold, silver, palladium and platinum and are traded on different markets. These markets can be OTC markets or exchanges. The bank has, as a member of the London Bullion Market Association (LBMA) (gold en silver) and the London Platinum & Palladium Market (LPPM), access to these markets. The LBMA and the LPPM are OTC markets where the members are trading these precious metals for spot delivery. They have their own daily settlement system, standard documentation and regulation.

The New York Mercantile Exchange is the reference exchange for futures and options contracts on precious metals. Trading is conducted through two divisions, the NYMEX Division, platinum, and palladium markets; and the COMEX Division, on which gold and silver is trading.

In precious metals following products are available: Depo and leases, swaps, FRA's, forwards, spot European and Asian options which are mainly OTC products where the bank is your counterparty and exchange traded options and futures on NYMEX and COMEX.

The bank can, under certain conditions, be your broker at the NYMEX and COMEX. In that case you will have the exchange as your counterparty and to comply with the NYMEX and COMEX rules.

#### Advantages, Disadvantages and Risks

##### Advantages

- Hedging against precious metals price exposure.
- Precious metals, as an investment, have the reputation to be a safe haven in turmoil and instability. They are considered as an asset for diversification and protection against inflation.
- The precious metals markets are fairly liquid.

##### Disadvantages

- Precious metals, as an investment, yield no income, on the contrary storing physical metal will cost.

##### Risks

- **Market risk:** A commodity price has its own specific volatility as there is a close link with the physical market; there is also a foreign exchange risk to be considered. Cancelling the contract is possible at market conditions at that moment and with a possible negative financial impact.
- **Liquidity risk**
- **Counterparty risk**

### B.5.1.3. Agri-Commodities

#### **MiFID Asset Class: Derivatives on Commodities**

Agri-commodities comprise a variety of commodities traded through options and futures on various exchanges. As the bank is a broker in this activity, your counterparty will be the exchange.

The most important agri-commodities are cocoa, coffee, sugar, corn, potato, rapeseed, feed wheat, milling wheat, cotton, frozen orange juice and soybeans/meal/oil. The first three are being executed on Liffe or on the New York Board of Trade for all futures and options transactions.

### B.5.1.4. Plastics

#### **MiFID Asset Class: Derivatives on Commodities**

BNP Paribas Fortis is a member of LME and therefore offers through brokerage LME futures in Linear Low Density Polyethylene and Polypropylene, next to OTC forwards on above mentioned plastics.

These OTC forward contracts are limited to 6 months because of the lower volume traded beyond 6 months.

## B.5.2. Energy & Environmental Products

The energy markets cover a lot of different types of energy sources and underlying, each with its own characteristics. Basically there are five main blocs of underlying: power, gas, crude oil & oil products, coal and environmental products, and the most used financial instruments are OTC swaps and options.

### Main underlying

#### Crude Oil & Oil products

- Brent Swaps and Brent ICE
- 1% Fuel Oil CIF and FOB Cargoes NWE
- 1% Fuel Oil FOB Barges Rotterdam
- 3.5 % Fuel Oil CIF Cargoes NWE and FOB Barges Rotterdam
- HSFO 180 CST Singapore
- HSFO 380 CST Singapore
- Differential Jet Fuel - Gas Oil ICE
- Differential ULSD 10 - Gas Oil ICE
- Differential ULSD 50 - Gas Oil ICE
- Gasoline 87 NYMEX
- Gas Oil 0.2 CIF Cargoes NWE and FOB Barges Rotterdam
- Gas Oil 0.5 Singapore
- Gas Oil ICE
- Jet Fuel - Jet Baskets
- Jet Fuel CIF Cargoes NEW
- Jet Fuel FOB Barges Rotterdam
- ULSD 10 ppm FOB Barges Rotterdam
- ULSD 50 ppm CIF Cargoes Mediterranean, CIF Cargoes NWE and FOB Barges Rotterdam
- Specific Refinery Baskets

#### Power

EEX, ENDEX and APX

#### Gas

Zeebrugge / NBP

#### Coal

API#2, API#4

#### Emission Rights

EUA / CER / ERU

The bank can also be your broker on futures and options exchanges for the most important underlyings in the energy markets.

### B.5.2.1. Swaps

#### MiFID Asset Class: Derivatives on Commodities, Energy

##### Description

Swaps are frequently used in the energy markets and a wide variety of underlyings are possible. The bank is dealing in swaps in the above mentioned underlying instruments. The most common OTC swap is the fixed against average swap. Cash flows are exchanged periodically and are basically the difference between the fixed price of the swap and the average of the fixings of a reference price over the period of the swap.

Swaps are typical Over-The-Counter products.

##### Advantages, Disadvantages and Risks

###### Advantages

- Close to economic reality as a lot of companies use average prices in contract for their sales/purchases.
- Lower administrative burden compared to exchange transactions.
- No premium to be paid to engage in a swap.
- Hedging against market risk.
- Managing your strategy according to changing market conditions at that moment (fixed to floating or vice versa).
- It's a financial product separate from your commercial activity in the underlying.

###### Disadvantages

- If you agreed to pay a fixed price in the swap you cannot profit from a decrease in the price.
- If you agreed to pay a floating price in the swap you cannot profit from an increase in the price.

###### Risks

- **Market risk:** A commodity price has its own specific volatility as there is a close link with the physical market; there is also a foreign exchange risk to be considered. Cancelling the contract is possible at the market conditions at that moment and with a possible negative financial impact.
- **Liquidity risk:** A swap has a lower degree of liquidity than a future and therefore a higher liquidity risk
- **Counterparty risk**

### B.5.2.2. Forward

#### MiFID Asset Class: Derivatives on Commodities, Energy

##### Description

A forward / outright is a binding contract between two parties which agree to exchange predetermined cash flows or financial assets at a predetermined price or rate in the future. The settlement takes place on a later date (more than two working days after the trade date). Most common periods are: 1, 2, 3, 6 and 12 months, but periods exceeding one year or broken dates are also possible. Forwards are often tailor-made agreements between the bank and another party. They are not traded on an exchange and therefore considered as Over-The-Counter (OTC) products.

#### Advantages, disadvantages and risks

##### Advantages

- Most forward markets are very liquid and transparent.
- Forwards fix a price or a rate today for settlement in the future.
- It is a simple and commonly used product.
- It is a tailor-made product.
- It is often used for hedging the market risk

##### Disadvantages

- The most important disadvantage can be the fact that the price or rate is fixed and that one can therefore not step back and benefit from positive price or rate movements.
- The settlement date and the amount are fixed which makes the transaction less flexible than options.
- It is an Over-The-Counter (OTC) product that can not be traded on an exchange.

##### Risks

- **Market risk:** a commodity price has its own specific volatility as there is a close link with the physical market; there is often also a foreign exchange risk to be considered. Cancelling the contract is possible at the market conditions at that moment and with a possible negative financial impact
- **Liquidity risk:** the liquidity risk is limited for the most important commodities, but can be significant for the less actively traded commodities.
- **Counterparty risk**

### B.5.2.3. Emission Rights

#### MiFID Asset Class: Derivatives on Commodities, Energy

##### Description

The EU Directive 2003/87/EC established a scheme for greenhouse gas Emission Rights trading within the Community (the European Trading Scheme or ETS).

One of the concepts is that of greenhouse gas "Emission Rights" which are allocated by the member states to a number of industrial plants. These Emission Rights or EU Allowances (EUA), are denominated in metric tons of CO<sub>2</sub> equivalent. They entitle the holder to emit a corresponding quantity of greenhouse gases.

Next to the EUA are the CER (Certified Emission Reduction Units) and the ERU (Emission Reduction Units). Most CER and ERU (all representing the equivalent of 1 ton carbon dioxide) can be used, although to a limited extent, to comply with the ETS obligations.

Emission Rights from Europe (EUA) and CER only exist in electronic form. EUA and CER are only transferable by those holding a special account (for EUA this is an account in one of the EU member states' national registries).

Emission Rights are traded on exchanges as well as OTC. Trades are possible for spot deals and forward deals (all settled with delivery on account). Less common are options on Emission Rights.

Legal documentation can be IETA or ISDA with Emission Rights Annex.

*Emission Rights could be subject to VAT. The tax treatment of EUA and CER depends on the individual situation of the investor and may be subject to changes in the future.*

#### Advantages, disadvantages and risk

##### Advantages

- The Emission Rights markets are very liquid and transparent markets.
- Volumes and delivery dates are tailored to the needs of the client.

##### Disadvantages

- Deals are, in general, settled through delivery, not by financial settlement. Meaning that deals are done with an obligation to deliver. Clients should keep this in mind as they can not create a short position on their Registry Account.

##### Risks

- **Market risks:** prices have shown to be very volatile.
- **Liquidity risk:** the liquidity risk is limited as the markets are growing year after year (increasing volumes as well as increasing numbers of participants).
- **Counterparty risk:** normal counter party risk (non-delivery or non-payment in the case of bankruptcy).
- **Penalty risk:** EU governments will penalize all scheme participants that can not surrender in time the necessary number of valid Emission Rights related to their emissions.

### B.5.2.4. Options

#### MiFID Asset Class: Derivatives on Commodities, Energy

##### Description

An option gives the holder the right (and not the obligation) during a certain period or on a expiration date to buy a certain amount of an underlying at a predetermined rate (strike price). The counterparty, the seller of the option, is obliged to deliver or accept the agreed amount against the strike price if the holder wants to exercise his/her right. The buyer of the option pays to the seller a premium for the acquired right.

The reference price will be often a (monthly) average fixing of the underlying.

These are usually Over-The-Counter product that cannot be traded on an exchange.

##### Advantages, disadvantages and risks

##### Advantages

- Hedging against the market risk.
- It is more flexible than a swap because for the holder of the right, he/she can decide to exercise the right or not. In case of a positive rate evolution one can fully benefit.
- It allows a very dynamic management.
- Due to the leverage effect the buyer can with a relatively small amount benefit in abundance from:
  - Rising prices of the underlying asset (when buying a cap).
  - Dropping prices of the underlying (when buying a floor).
- The potential profit is in principle unlimited for the buyer of a cap as well as for the buyer of a floor.
- The potential loss is limited to the fully paid premium for the buyer of a cap as well as for the buyer of a floor.

##### Disadvantages

- A premium has to be paid by the buyer of an option, but can prove to be a burden for clients wanting to hedge.
- The seller of an option (cap or floor) receives a premium and becomes obliged to sell if the cap is to be exercised and to buy if the floor is to be exercised.

##### Risks

- **Market risk:** A commodity price has its own specific volatility as there is a close link with the physical market; there is also a foreign exchange risk to be considered. Cancelling the contract is possible at the market conditions at that moment and with a possible negative financial impact.
- **Liquidity risk:** A swap has a lower degree of liquidity than a future and therefore a higher liquidity risk.
- **Counterparty risk**

##### Other risk related issues

- The buyer of an option (cap or floor) can maximum lose the paid premium.
- The seller of an option has to fulfil his/her obligations if the holder of the option wants to exercise his/her right. The seller's loss is in principle unlimited.

### B.5.2.5. Energy Structures

#### MiFID Asset Class: Derivatives on Commodities, Energy

##### Description

An Energy structure is a combination of options, swaps, “triggers” and “features” that aim to generate a particular return pattern or to create a tailor-made hedge structure.

These are Over-The-Counter products that can not be traded on an exchange.

For triggers and features imply please refer to Part A.

##### Advantages, disadvantages and risks

##### Advantages

- Creates a tailor-made solution for a specific problem or goal.
- Hedging against the market risk.
- Allows a very dynamic management.
- These structures can generate in certain cases a better pay-off.
- There are structures where the client does not pay a net premium.

##### Disadvantages

- Due to the specific structure, the value of the option structure does not necessary follow the same evolution as the one of the underlying.
- In certain market circumstances a lack of liquidity can occur.
- Very often these structures can be complex.

##### Risks

- **Market risk:** A commodity price has its own specific volatility as there is a close link with the physical market; there is also a foreign exchange risk to be considered in some cases. Cancelling the contract is possible at the market conditions at that moment and with a possible negative financial impact.
- **Liquidity risk:** There is no organized secondary market to trade these products. These are Over-The-Counter products.
- **Counterparty risk**

##### Other risk related issues

- The value can sometimes exponentially decrease or increase in respect to the evolution of the underlying or it can even move in the opposite direction of the value of the underlying.
- The risk of a lack of return which depends on the characteristics of each construction. If there is a return or a pay-off foreseen the effective payment is depending on the evolution of the underlying.
- Structures that result in a situation where the client has sold (a) net option(s) can lead to indefinite loss.
- Features that occur in structures should be very carefully assessed not to create, under certain circumstances, additional risks.
- The maximum loss of a buyer of an option (cap or floor) is limited to the paid premium.
- The seller of an option has to meet his/her obligations if the holder of an option wants to exercise his/her right. The loss is in principle unlimited.
- The risks related to these currency structures enclose the risks of each separate component.



## B.6. Structured Products

### MiFID Asset Class: Structured Products

#### Description

A structured product is a synthetic investment instrument which is the combination of financial instruments based on derivatives and usually packaged as 1 product. The underlying components can be funded or non-funded and from different (MiFID) asset classes but the main characteristic is to create an investment instrument which has a return pattern that could not be obtained by the standardised financial instruments available in the markets. It is the result of customized financial engineering that aims to generate a particular return pattern.

MiFID Asset classes:

- Money Market Instruments
- Bonds
- Securitized Debt
- Equities
- UCITS
- Complex Products
  - Treasury Derivatives
  - Equity Derivatives
  - Derivative Products for the transfer of credit risk
  - Derivatives on commodities, energy
  - Structured Products

Structured Products are usually Over-The-Counter products but when securitized become exchangeable. They can be private or public, listed or non-listed.

#### Advantages, disadvantages and risks

##### Advantages

- Flexibility: Structured products are usually products with a high level of client's customization according to the specific risk/return requirements.
- Portfolio diversification.
- Can be used as hedging solution against market and sometimes credit risk.
- Possibility to yield higher returns.

##### Disadvantages

- Structured products can be very complex.

##### Risks

- **The market risk** is especially dependant on the price risk of the underlying components. The value of a structured product can sometimes exponentially decrease or increase in respect to the evolution of the underlying or it can even move in the opposite direction of the value of the underlying(s). Cancelling or reselling a structured product is usually possible at the market conditions at that moment and with a possible negative financial impact.
- **Liquidity risk** is also depending on the underlying components but is usually higher due to the high level of product customization and complexity.
- **Counterparty risk**

### Other risk related issues

- The risk of a lack of return depends on the characteristics of each construction. If there is a return or a pay-off foreseen the effective payment is depending on the evolution of the underlying(s).
- Structured products that result in a situation where the client has sold (a) net option(s) can lead to indefinite loss.
- Features that occur in structured products should be very carefully assessed not to create, under certain circumstances, additional risks.
- The risks related to structured products enclose the risks of each separate component.

### Most common structured products

- Callable Fixed Note
- Callable Step Up Note
- Puttable Note
- Callable Range accrual
- Non callable Quanto Libor range Accrual
- CMS Push Back Digital
- CMS Range Accrual
- CMS Spread Range Accrual
- Dual Range Accrual on a CMS rate and a CMS Spread
- SWITCH Fix to Floater
- Crude oil commodity-linked Note
- Inflation Protected Note
- Knock Out Plus
- Callable Reverse Floater
- Callable capped Floater
- Callable Protected Floater
- Callable Digital Floater
- Callable range Accrual
- Double Range Accrual Note
- Switchable Corridor
- Leveraged Reverse Floater
- Bearish Floater TARN
- Bonus TARN
- CMS Turbo Note (bullet coupon)
- CMS Spread range Accrual
- Floored Zero Coupon Yearly CMS Click Note
- Volatility Note
- Variant Maturity Note
- CMS Recovery Note
- Floater with Coupon indexed on a CMS Spread
- Alternative CMS Note with Capped Coupons
- CMS Spread Steepener
- Callable SnowBall
- SnowBlade
- Floater with Ratchet Cap
- Recovery Note
- Carry Enhancer Note
- Yield Curve Multiple Opportunity Note
- HELP Note
- Hybrid Seagull Note
- Real CMS Note

9th release, January 2013

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