



## Modern methods for hedging the market risk

*Metode moderne de acoperire  
a riscului de piață*

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### **Abstract**

*The 2008 financial crisis is affecting millions of companies (from small ones up to big corporations) and is one of the hottest topics in all TV deadlines and step by step it starts to be part of our daily reality. The daily reality can be called as “Market instability”: The recent market instability was caused by many factors, chief among them a dramatic change in the ability to create new lines of credit, which dried up the flow of money and slowed new economic growth and the buying and selling of assets. The weapon against market instability is only one and can be defined in generic terms as “Hedge”. In finance, a hedge is a position established in one market in an attempt to offset exposure to the price risk of an equal but opposite obligation or position in another market — usually, but not always, in the context of one's commercial activity. The study presents a set of innovative hedging products that can be built based on the instruments traded by commercial banks allowing the customers to hedge efficiently the underlying risks of adverse movements of market parameters (especially FX rate and interest rates). These structures are also more accessible for customers in relationship with the commercial banks than the instruments traded across different stock exchanges.*

**Keywords:** market risk, hedging, financial crisis, bank, options

### **Rezumat**

*Criza financiară din 2008 afectează milioane de companii (începând cu cele mici până la cele mari) și este cea mai de actualitate știre TV care încetul cu încetul devine parte a activității noastre cotidiene. Realitatea zilnică poate fi numită “Instabilitatea piețelor”. Această instabilitate a fost cauzată de foarte mulți factori, începând cu abilitatea de a genera noi linii de credit, care au dus la alterarea circuitului banilor și au încetinit creșterea economică împreună cu tranzacționarea activelor. Arma împotriva instabilității este cea care în termeni generici se numește: “acoperirea activelor”. În lumea finanțelor, o poziție de acoperire este o poziție în piață în încercarea de a anula expunerile la risc generate de o poziție similară dar de semn contrar – în general, dar nu în mod obligatoriu,*

*în contextul unei activități economice. Studiul prezintă un set de produse inovative pentru acoperirea riscului, ce pot fi construite pe baza instrumentelor oferite de băncile comerciale. Aceste instrumente permit clienților să acopere în mod eficient riscurile generate de mișcarea parametrilor de piață (rate de schimb și rate de dobândă) fiind în același timp mai accesibile decât instrumentele tranzacționate pe diverse burse.*

**Cuvinte-cheie:** risc de piață, acoperire a riscului, criză financiară, bancă, opțiuni

**JEL Classification:** : G21, G11, G32

### **Definition of hedge within the new context**

The 2008 financial crisis is affecting millions of companies (from small ones up to big corporations) and is one of the hottest topics in all TV deadlines and step by step it starts to be part of our daily reality. In order to witness this reality, stands the fact that in the last few months we have seen several major financial institutions being absorbed by other financial institutions, receive government bailouts, or outright crash.

There is clearly for everybody that this is actually the perfect storm which has been brewing for years now and finally reached its breaking point. Let's look at it step by step on one hand isolating the daily effects but on the other hand try to find a way to move forward:

- The daily reality can be called as “Market instability”: The recent market instability was caused by many factors, chief among them a dramatic change in the ability to create new lines of credit, which dried up the flow of money and slowed new economic growth and the buying and selling of assets. This hurt individuals, businesses, and financial institutions hard, and many financial institutions were left holding mortgage backed assets that had dropped precipitously in value and weren't bringing in the amount of money needed to pay for the loans. This dried up their reserve cash and restricted their credit and ability to make new loans and induced a huge volatility in the world-wide banking/financial system for all market parameters (FX rates, IR curves, bonds prices.);

- The weapon against market instability is only one and can be defined in generic terms as “Hedge”: In finance, a hedge is a position established in one market in an attempt to offset exposure to the price risk of an equal but opposite obligation or position in another market — usually, but not always, in the context of one's commercial activity. Hedging is a strategy designed to minimize exposure to such business risks as a sharp contraction in value for one's market parameter factor, while still allowing the business to profit from producing and maintaining that exposure

Some form of risk taking is inherent to any business activity. Some risks are considered to be "natural" to specific businesses, such as the risk of oil prices increasing or decreasing is natural to oil drilling and refining firms. Other forms of risk are not wanted, but cannot be avoided without hedging. Someone who has a shop, for example, expects to face natural risks such as the risk of competition, of poor or unpopular products, and so on. The risk of the shopkeeper's inventory being destroyed by fire is unwanted, however, and can be hedged via a fire insurance contract. Not all hedges are financial instruments: a

producer that exports to another country, for example, may hedge its currency risk when selling by linking its expenses to the desired currency. Banks and other financial institutions use hedging to control their asset-liability mismatches, such as the maturity matches between long, fixed-rate loans and short-term (implicitly variable-rate) deposits. A hedger (such as a manufacturing company) is thus distinguished from an arbitrageur or speculator (such as a bank or brokerage firm) in derivative purchase behaviour.

### **Categories of hedgeable risks**

The main categories of the risk, for exporters/importers, that the value of their accounting currency profit will fall in the value due to the adverse movements is also known as volatility risk.

- Interest rate risk – is the risk that the relative value of an interest-bearing asset, such as a loan or a bond, will worsen due to an interest rate increase. Interest rate risks can be hedged using fixed income instruments or interest rate swaps or additional structures in combination with options.
- Equity – the risk, or sometimes reward, for those whose assets are equity holdings, that the value of the equity falls
- FX hedge also known as currency hedge – is used by financial investors/exporters and importers to parse out the risks they encounter when investing trading in relationship with abroad activities;

Futures contracts and forward contracts are a means of hedging against the risk of adverse market movements. These originally developed out of commodity markets in the nineteenth century, but over the last fifty years a huge global market developed in products to hedge financial market risk.

### **Popular products that can be used in hedging the risks**

The below section tries to present a set of products that can be built based on the instruments traded by commercial banks allowing the customers to hedge efficiently the underlying risks of adverse movements of market parameters (especially FX rate and interest rates). The below chapter does not present the basis products that can be used (i.e. FX Forward contracts, Interest rate Swaps, Forward Rate Agreement, Put/Call Options) but the combination of these in different structures that can lead to much more efficient hedging instruments. In addition, these structures are also more accessible for customers in relationship with the commercial banks than the instruments traded across different stock exchanges.

#### *A. FX Hedging strategies*

##### *Cylinder strategy (low risk, 100% Hedge, limited upside participation)*

A cylinder is a zero cost strategy, and provides a maximum and a minimum exchange rate. It provides full protection against the depreciation of the spot and can be split in the purchase of a Put option and sale of a Call option for the same amount. The premium raised by the sale of the Call matches the cost of the purchase of the Put option making this strategy a zero-cost strategy.

Advantage of the strategy:

1. Provides full protection against the depreciation of a currency;
2. Net zero premium strategy;
3. Compared to an FX Forward contract, customer is able to sell the currency at an higher rate if the spot rate at expiry is above the forward rate at the moment of concluding the contract;

Disadvantage of the strategy:

1. Customer is unable to benefit from the appreciation of the exchange rate above a certain level;
2. Customer is hedged at a guaranteed rate which is lower than the Forward;

*Participating Forward* (low risk, 100% Hedge, 50% upside participation)

A Participating Forward is a zero-cost strategy and provides full protection against the depreciation of the spot rate while allowing the customer to partially benefit from an unlimited appreciation of the underlying spot rate.

It involves buying a Put option on certain currency for 100% of the hedge amount and selling a Call option on the same currency for 50% of the hedge amount. Consequently if the exchange rate appreciates, customer may secure a better rate for the open part of the hedge amount (50%) by selling EUR at the spot market. On the other hand, within this structure the customer is guaranteed a minimum rate for the whole hedge amount.

Advantage of the strategy:

1. Provides full protection against the depreciation of a currency;
2. Net zero premium strategy;
3. Compared to an FX Forward contract, customer is able to sell the currency at an higher rate if the spot rate at expiry is above the forward rate at the moment of concluding the contract;
4. 50% participation in unlimited appreciation of the spot.

Disadvantage of the strategy:

1. Customer is hedged at a guaranteed rate which is lower than the Forward;

*Forward Plus* (low risk, 100%hedge, limited upside participation)

A Forward Plus is a zero-cost strategy and provides full protection against a depreciation of a currency pair, while at the same time allowing the customer to benefit from the appreciation of the spot rate up to a predefined barrier level. As a result, the customer is guaranteed a minimum rate and on top of this he can benefit from the appreciation of the currency pair 100% but only up to an level. If the barrier is hit, meaning that the spot rate will trade at/above their barrier level, at any time during the tenor, customer will be required to sell EUR at the forward rate established at the time of the contract.

Advantage of the strategy:

1. Provides full protection against the depreciation of a currency;
2. Net zero premium strategy;
3. If the spot appreciate but does not trade above the barrier, customer may sell the EUR at a rate which is higher than the Forward rate of a normal FX Forward contract ;

Disadvantage of the strategy:

1. Customer is hedged at a guaranteed rate which is lower than the Forward;
2. If the barrier is hit the customer will receive the forward rate
3. Barrier is applicable at any time during the life of the contract.

*B. IR Hedging structures*

*FX Range Deposit* (interest Rate risk: Low, Notional risk: No)

An FX range Deposit is short term deposit with the possibility to receive a higher interest rate compared to the regular deposit rate. The high interest rate will be received if the spot rate of the underlying currency pair stays within the pre-determined range during the full tenor of the transaction. As a result taking a view on the range of movements on a currency pair, customer is able to invest excess cash in higher yielding asset.

Advantage of the strategy:

1. If spot remains in the defined range, an yield pick-up from the regular deposit is obtained;

2. At the deposit end date the notional amount will be available again;

3. Short term deposit (max 12 months);

Disadvantage of the strategy:

1. Minimum interest rate is lower than the regular deposit rate;

2. Early redemption is not possible.

*FX Dual Currency Deposit* (interest Rate risk: None, Notional risk: Yes)

The FX Dual Currency Deposit is a short term deposit that provides a higher interest rate than the regular deposit in exchange for the bank's right to repay the deposit notional amount in a second currency. Interest is always paid in the deposit currency. An exchange rate between the currency pair is established at the contract inception. Repayment of the deposit notional amount in the second currency will occur if the spot exchange rate at expiry is less attractive for the bank than the pre-determined exchange rate.

Advantage of the strategy:

1. Yield pick-up compared to a standard deposit;

2. At the deposit end date the notional amount will be available again in either currency;

3. Short term deposit (max 12 months);

Disadvantage of the strategy:

1. Deposit notional in the original currency is not guaranteed;

2. Exposure to FX risk;

3. Early redemption is not possible.

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