

## DEFINITION AND CLASSIFICATION OF STRUCTURED FINANCIAL PRODUCTS

© 2009 V.V. Omelchenko\*

**Keywords:** financial products, structured product, deposit, security, derivatives, hedging, investor.

The article is dedicated to Structured Financial products, which have been widely spread in the world over the last 20 years. The essence, features, basic goals and purposes of products are described. The implementation of united and recognized system of classification is proved to be the integral factor of market development.

### The Essence of Structured products

According to the definition given by Roberto Knop - "a Structured product is a financial instrument and its return depends on the composition of other, simpler products. It consists of a loan, and one or more derivative products. The special feature here will be the conversion of the original risks of each of its components".

Sajit Das insists that Structured Products represent a special class of fixed income instruments, and their principal appeal is the capacity of these instruments to generate highly customized exposures for investors consistent with their nominated investment objectives with predetermined risk-return parameters .

Many other sources are similar in their definitions of Structured Financial Products. They in turn focus special attention that instrument's basis is the combination of a security (or a monetary asset) and one or several derivatives.

However we cannot fully claim, that Structured Product is a "security packaged together with derivative(s)". The concept of Structured Product is so wide, that all the components of the instrument are not always clear. The usage of derivatives is not necessary. Thus, the Finnish Association of Structured Products asserts, that bank "... does not include a derivative component and banks are not necessarily using derivatives to hedge the underlying risk, even though there are features in structured products that resemble derivative like behavior".

The usage of the following definition of Structured Product seems to be the most appropriate for understanding of its essence: *the Structured product is a complex financial instrument with predetermined conditions of payoff and initial capital return, linked to a certain underlying asset. Product payoff de-*

*pends on underlying asset's dynamics, type of payoff and periodicity are defined by components of the structured product - securities (mainly fixed income instruments) and derivative instruments.*

### The goals and purposes of Structured Products

◆ *Arbitrage.* Both investors and issuers can carry out arbitrage trades with derivatives and underlying assets by means of structured products.

◆ *Investment restrictions.* Such groups of investors as pension and mutual funds, insurance companies can access derivatives transaction via structured products

◆ *Taxation and accounting.* Structured products are easy from the perspective of accounting and taxation as they are considered as a separate security and the value of derivatives is already included in the product price.

◆ *Creation of products "a la carte".* The freedom of products' creation is pretty unbounded. They are customized to fit the unique requirements of investors.

◆ *Hedging.* The structured products can be used not only for investments, but also as hedge of positions against market risks.

◆ *Access to new markets.* With the help of structured products investors can access exotic instruments and new markets, for example the assets and instrument of developing markets, that would otherwise be difficult for investors to access directly.

◆ *Cheap funding source.* Part of funds, intended for fixed income investment, can be used by the issuer for its own financing cheaper than the market rates

### Classification of Structured Products

The goals and purposes of the structured products creation define their classification. In

\* Vladimir V. Omelchenko, post-graduate student of Sate University - Higher School of Economics.  
E-mail: vomelchenko@rambler.ru.

modern practice there is a lack of uniform system of products classification accepted by all the market members. There is no system due to a number of reasons: it is *a youth of the market and access restriction among private investors, constant creation of new instrument, proper interpretation of products by investment banks.*

The lack of structured product classification leads to tough implications for all the market members. The consequences are: *Difficulties due to the lack of definition from the legal perspective, Issue and information disclosure problems, Complex risk and yield calculations, The placement of restrictions and limits on transactions with products, Difficult product distribution, Low Liquidity.*

Of course, in order to solve the problem of classification the general coordination among the whole market of structured products is required. Only then the clear and uniform categories that define the types and classes of assets should be determined.

#### **Classification of Structured Products**

After the products presented currently in the market have been studied the following classification was prepared. They can be classified as per below (see figure):

##### **Depending on goals and purposes:**

The given criterion has been considered earlier, and its repeated description is not necessary.

##### **By levels of principal protection:**

On degree of protection of the capital the following products can be divided:

◆ *Principal-protected products* - those products provide full protection of the initial capital, not depending on the underlying asset's price move;

◆ *Partially protected products* - in this case the return of initial capital is guaranteed only at certain level in the form of percent against originally invested sum.

##### **By quantity (periodicity) of payments:**

◆ *Coupon products* - throughout all the period of product life those instruments provide more than one payment like usual bonds;

◆ *Non-coupon products* - those products provide only one payment at the maturity date, which includes both the return of initial capital and profit-and-loss amount.

##### **By the type of underlying asset:**

Among underlying assets to which the product can be linked to, the following assets can be mentioned: *Security, Interest rate, Currency, In-*

*dex, Basket of assets (currencies, securities, commodities etc.), Commodities, Credit quality, Volatility, Spread, Consumer Price Index and other macroeconomic indicators, Property price index.*

##### **By the form of a structured product:**

Structured products can be issued in the following forms: *Security, Deposit, Fund, Private Banking Service.*

##### **By the type of investor:**

Each structured product is prepared for its own predetermined group of investors and customers. It is possible to outline three basic groups of investors:

◆ *Retail group* - group of the mass consumer;

◆ *Group of institutional investors* - among them are large Investment Banks, mutual and pension funds, state funds;

◆ *"Individual investors"*, group of wealthy consumers.

##### **By Behavior of underlying asset**

Structured products' payoffs depend on dynamics of the underlying asset they are linked to. The following behavior models can be defined:

◆ Growth/Falling;

◆ Lateral movement;

◆ Occurrence/non-occurrence of an event;

◆ High/Low Volatility.

##### **By degree the payoff depends on the price path of the underlying asset:**

Payoffs of structured products can be either defined by the value of a variable at the maturity date or the value of a variable throughout all the life time of a product. Thus the payoff can be *independent* and *dependent* upon the price path of the underlying.

##### **By the payoff functions:**

As has been noted earlier, the basic peculiarity of structured products is their core element - derivative financial instruments. Almost all the derivatives can be used for creation of structured products. The type of derivatives and their combinations do certainly define the payoffs' functions that differ one product from another. The given criterion is the most complex for definition. Having investigated the products offered on the market, the following types of payoff functions can be detached:

◆ *Tracking functions* - their payoffs are fully defined by the movement of the underlying asset and its change on 1 percent provides 1 percent change in price of the product. Product example: Protected Tracker;

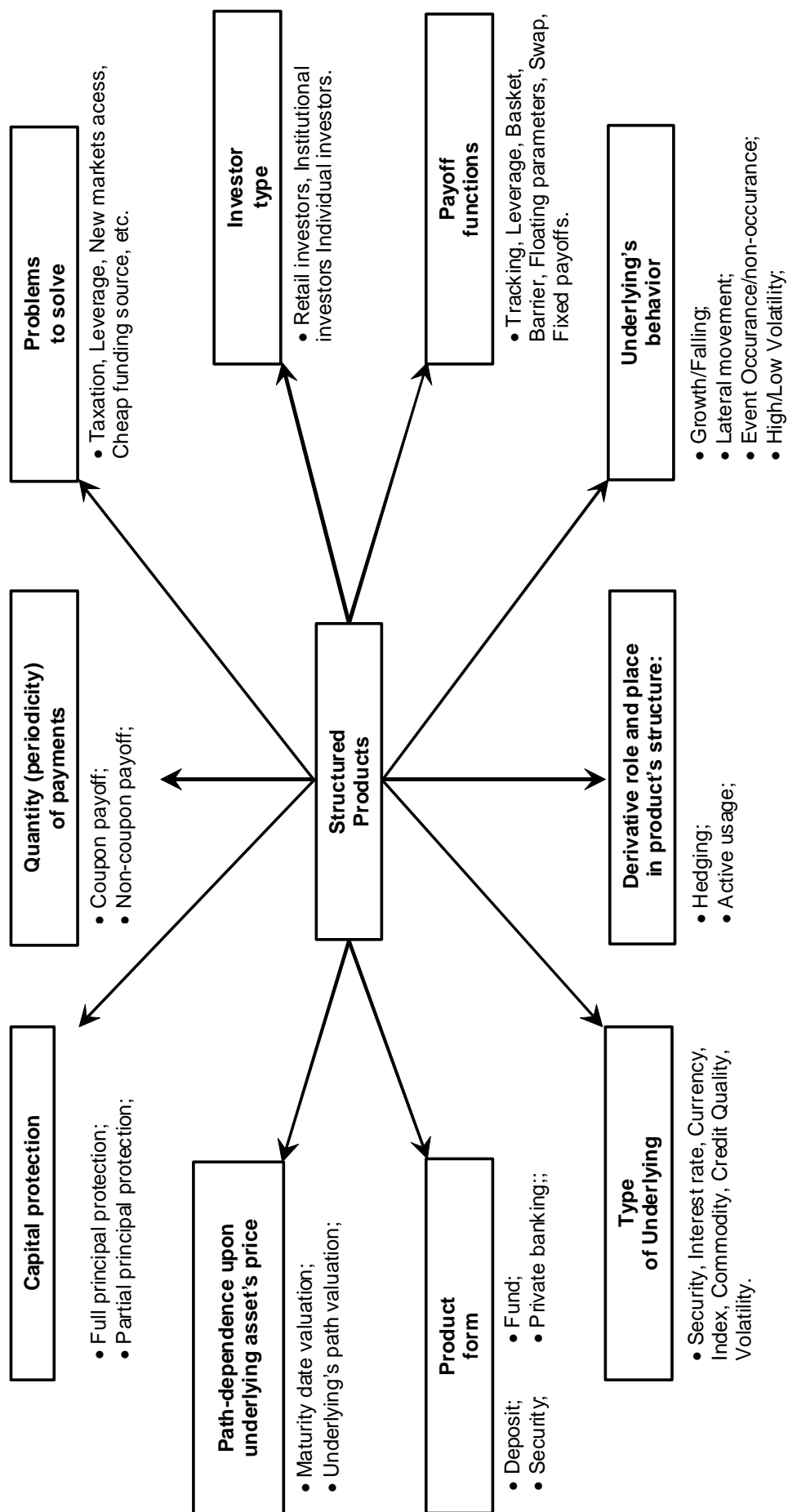


Fig. Classification of Structured Products

◆ *Leveraged functions* - financial leverage is used. Those products bear a risk of a partial loss of the initial capital. Product example: Leverage long with Sop loss note;

◆ *Basket functions* - payoffs are defined here by the dynamics of one asset versus a basket of underlying assets. Product example: Altiplano note;

◆ *Barrier functions* - the payoffs is based on reaching or non-reaching by the underlying of a certain barrier levels. Product example: Knock-in, Knock-out note;

◆ *Functions with floating parameters* - in this case the main parameters of options can be changed (for example, a strike) when the underlying asset has overcome a certain level. Product example: Clquet note;

◆ *Fixed payoff functions* - payments in this case are fixed. Product example: Reverse Convertible;

◆ *Swap functions* - within those functions the payoffs are defined by spreads between prices (values) of certain underlying assets or by their volatility. Product example: Dispersion note.

The disclosure of mentioned indicators and their detailed description will allow all market participants to outline more accurately the borders and possibilities of market's functioning and further development. It is worth mentioning at least three fields where the disclosure of information mentioned above is highly necessary:

◆ Creation of investment memorandum at the stage of product launching;

◆ Placement of restrictions and limits on structured products by the regulating authorities. This thresholding can be used in relation to institutional investors, mutual and pension funds. Market members need a similar thresholding criteria as well;

◆ Ranking of structured products by independent associations and organizations including rating of products.

In respect to Russia, it is important to mention that the structured product market in Russia is not developed and any implantation of common classification carries currently only theoretical meaning. Forms of products existing today in Russia are only deposits and private banking services. They don't require any presence of precise ranking criteria. Nevertheless, the further development of the market, and issue of new products in the form of securities will force participants to approve a uniform classification that will create the methodological basis of market functioning.

---

*Knop R.* Structure Products. A complete toolkit to Face Changing Financial Markets. 2002. John Wiley AND Sons.

*Das S.* Structured products and hybrid securities. 2001. John Wiley and Sons. P. 1.

<http://www.structuredretailproducts.com>; <http://www.structuredproductsonline.com>

Finnish Structured Products Association - Should structured products be complex or non-complex? 19.07.2007.

*Received for publication on 16.04.2009*