MODELS THAT EVALUATE THE VALUE OF THE FINANCIAL INSTRUMENTS. RECOGNITION AND MEASUREMENT UNDER INTERNATIONAL RULES

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Abstract

As the present financial markets have broadened and deepened, increasing numbers of firms are utilizing innovative financial instruments to accomplish business objectives and enhance shareholder value. It is crucial for the financial managers to keep abreast of available financial instruments, the business settings in which these instruments can create—and destroy—value, and modern analysis techniques for these instruments. A financial manager also should possess a basic understanding of the markets in which these instruments trade. The article provides a brief presentation of these instruments, along with some examples based on the International Accounting Standards 32 Financial instruments: disclosure and presentation and International Accounting Standards 39 Financial instruments: recognition and measurement.

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The significant development of the financial instruments over the past few years has generated the need to develop rules for accounting them. The problem is discussed internationally, the standardization bodies of the different countries are involved with the IASB for this purpose. We are currently witnessing a rapid expansion phenomenon of the use of the financial instruments in the international financial market. These fluctuate from the traditional instruments like bonds, to the various forms of *derivative instruments*, such as futures contracts, forward contracts, options, interest rate swap, etc..

In the recent financial disasters, such as the Barings case, were involved *derivative instruments*, which raised questions about the accounting practices and presenation of the information regarding financial instruments. Thus, until the release of the accounting standards IAS 32 and IAS 39 (which show the issues of the financial instruments in terms of presentation, description and their recognition and evaluation), several instruments were considered off-balance, being neither

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recognized nor presented in the financial statements, although they exposed the shareholders to significant financial risks.

The project to create a set of standards for the financial instruments has been approached by the IASB in two stages, which resulted in two different accounting rules for the financial instruments:

IAS 32 Financial Instruments: Presentation and Description (first issued in 1995), which aims the classification of the financial instruments into debts and equity, the presentation of certain compound instruments (associated interests, dividends, losses and gains) and the publication of the information about the nature and the extent of using the financial instruments by companies, about the associated risks and about strategies to control these risks.

IAS 39 Financial Instruments: Recognition and Evaluation (first issued in 1998), which handles mainly the recognition the derecognition, the evaluation of the financial instruments and the hedge accounting.

The IASB has recently reviewed the two standards in order to improve them and to ease their application in practice, taking into account the international divergences in connection with the two accounting standards.

We consider that it is necessary to present the definition of some terms found in the content of the standards, to facilitate the comprehension of the issues we will discuss below.

A financial instrument is the contract that creates a financial asset for a company and an equity instrument or a financial liability for another company. Financial instruments include both *primary instruments*, such as commercial receivables, securities and *derivative instruments,* such as financial options, swaps, recognized or not in the financial statements.

The financial asset is any asset which may take the form of:

- cash;
- an equity instrument of another enterprise;
- a contractual right to receive cash or another financial asset from another enterprise or to exchange financial instruments on favorable terms;
- a contract which can be included in their own equity instruments, and can be:

- non derivative, and in its exchange the company must receive a variable number of financial equity instruments;

- derivative, which can be settled any other way, except by cash or any another financial asset given in exchange for equity instruments.

The examples of financial assets include commercial receivables, options and shares, when they are used as financial instruments.

The financial debt is defined as:

- A contractual obligation to pay cash or to transfer another financial asset to another company or to exchange financial instruments on potentially unfavorable terms;

- A contract that will be included in their instruments, and is either *not derived*, in

which case the company is forced to provide a variable number of equity instruments, or *derived,* and will be covered any other way, except by cash or other equity instruments.

The financial debt category include the commercial debts, the loans that result from the bonds issue, the redeemable shares, the future contracts that generate losses, etc..

Any contract that shows the residual interest in a company's assets, after the deduction of all debts is an equity instrument. Examples: the ordinary shares held, warrants, unrefundable preferential shares.

The derivative instrument is a financial instrument or other contract with the following characteristics:

- Its value changes in response to the modification of certain interest rates, the price of the financial instruments, the price of goods, the exchange rate, the price indices, etc.. or other variable items, sometimes called "basic";
- It doesn't require an initial net investment or it is smaller than the one required for the other types of contracts with the same response to the market changes;
- It is established to settle at a future date.

The most common types of derivative instruments include:

- Forward contracts, which are agreements to buy or sell an asset at a fixed price at a future date;
- Futures contracts, which are similar to the forward contracts, but are standardized and traded on a secondary market;
- Options, which are rights, but not obligations for the option holder to show it at a predetermined price, set by the stock market. The option issuer takes a commitment only if the option is exercised;
- Swaps, representing the agreement to exchange an amount of cash with another (usually currency exchange).

The financial instruments category do not include the following:

- *the assets in physical form*, such as stocks, lands, fixed assets and the *intangible assets*, because, athough they create cash or other assets input opportunities, they do not give the right to receive cash or financial assets;
- *the in advance expenses*, where the future economic benefit consists of receiving goods or services and not the right to receive cash or other financial assets;
- *the deferred revenue, warranties*, because probable output of economic benefits consists of delivering goods or services rather than cash or other financial assets.
- *the contractual rights or obligations,* which do not involve the transfer of a financial asset, such as forward contracts for goods, operating leases.

The diverse nature of the derivative instruments often raise particular problems. The value of a derivative and the amount at which it will settle depend on the movement of a basic element, such as the exchange rate. This means that the payment of the derivative can lead to very different result from the original one.

Thus, a company that has derivatives is exposed to uncertainty and risk, and can appear significant material effect in the financial performance, financial position and in its cash flows.

As a derivative contract has no initial cost or a minimal cost, it may not be recognized in the traditional accounting or the recognition may be done at an unrelated value to the current one. This is misleading and makes the users of the financial statements unaware of the risks the company is facing.

Another issue to be presented is that some financial instruments may contain both a debt and an assets component, which must be presented separately under the substance of the contractual agreement and the definitions of the financial debt and the equity instrument.

In order to illustrate such a composed financial instrument we use a convertible debt (eg bonds convertible into shares). It creates a primary financial liability to the issuer and recognizes an instrument holder's option, which converts it into an equity instrument, usually common shares. This is done at the equivalent value of conventional debt plus a guarantee for the future acquisition of the shares. The method recommended by the accounting standard IAS 32 is called *the residual value of the equity components method* and it evaluates first the obligations component, and then the difference between the income from the issuance of bonds and fair value of the obligation is transferred to the equity component .

We take for example the following situation:

A company issues 200 bonds with the nominal value of 200 RON / bond for a period of 3 years. The nominal interest rate is 6% and is paid annually. Each bond is convertible at any time into 2,5 common shares (ordinary). On the bond issue, the market interest for a similar debt without a conversion option is 9%. On the issue, the market value for an ordinary share is 6 RON. The dividends expected throughout the maturity period of the bonds are 28 RON / share at end of each year. The annual risk-free interest rate is 5%.

In order to solve this example we will turn to some actuarial mathematics knowledge, to obtain the total value of the obligations component, which consists of: the present value (current) of the principal (of the obligation) at the end of the three years and, the present value of the interest, payable after three years.

Thus, the current value of the financial payment instrument at the end of the 3 years is obtained by updating the nominal value of the bond loan (which is the present value of the loan, that should be repaid after three years).

We will use for the nominal value of the income from the issuance of bonds (200 bonds x 200 RON/bond = 40.000 RON) and the 9% interest discount rate and we will obtain the following result: $40.000 \times (1 / 1,09^{3}) = 30.887,34$ RON.

To update the interest, we will start from the nominal value of the interest payable annually for a three years period (40.000RON x 6% = 2.400 RON) and the 9% interest discount rate and we will obtain the following result:

$$2.400 : \sum_{1}^{3} 1/(1+9\%) = 6.075{,}1$$

The total of the debt component is: 30.888,34 + 6.075,1 = 36.962,44 RON

Through the difference we will obtain, as well, the capital component: 40.000 – 36.962,44 = 3.037,56 RON.

Another aspect worth mentioning is the influence of the financial instruments on the profit and loss statement and on the changes in the equity. Thus, the interest, the dividends, losses and gains from a financial instrument classified as a financial liability should be recognized as income or expense in the income statement. Also, the distributions to the owners, of the financial instruments considered equity instruments should be charged directly in equity by the issuer and the transaction costs with an equity instrument should be accounted as a capital decrease.

As a result of the transactions with financial instruments, a company can take or give to another firm one or more types of financial risk, such as:

The market risk: it refers to both a possible loss and to a potential gain and may take the following forms:

- *The currency risk* which arises due to the exchange rate fluctuations;
- *The interest rate risk*;
- *The price risk*.

The credit risk: it arises when one party can not pay the obligation and causes a loss to the other party.

The liquidity risk: it arises as a result of a difficulty that a firm may encounter in obtaining the necessary funds to cover obligations related to the financial instruments. It may also result from the impossibility to quickly sell a financial asset at a fair value.

The interest rate risk for the cash flow: it is caused by the possibility that the future cash flows will fluctuate because of the changes of the interest rates on the market.

Accounting standards make it compulsory for companies to recognize all derivatives on the balance sheet. Normally, the recognition of an element is made if an input or an outflow of resources is possible and if its value or its cost can be evaluated in a reliable manner.

Example:

A company has signed two contracts: an order for a purchase of raw materials and a forward contract to purchase raw materials at a price and a date established by contract. In the first case, the enterprise has a standard commercial contract, the debt is not recognized until the delivery of the goods. The second contract is a financial instrument, the company recognizes a financial liability or an obligation of making a payment at the time the commitment is made and not when the transaction is made.

The derecognition consists in removing from the balance sheet of a financial instrument. The financial assets should be derecognized when *all the rights to receive cash*

from the asset ownership expire or when *all the risks and advantages are transferred to another party*. In terms of financial liabilities, they are derecognized when they are extinguished.

The financial instruments are initially measured at *the fair value* of the given reward (if it is an asset) or of the received (if it is a debt) plus *the transaction costs* which are directly tunable to their acquisition or to their issue.

The IAS 39 standard classifies the financial assets into four categories, in order to evaluate a financial asset after its initial recognition:

- Loans and debts created by the enterprise, which are not held for trading;
- Investments kept until maturity;
- Financial assets available for sale;
- Financial assets held for trading.

After the initial recognition, all the financial assets should be revalued at their fair value, without deducting the transaction costs that may arise following the sale or the exit, except these:

- *The loans and the debts*, which are not derived instruments with fixed or determinable payments and which are not quoted on an active market;
- *Investments kept until maturity*, which are not derived instruments with fixed or determinable payments and are kept until maturity;
- *Investments in equity instruments* which are not quoted on an active market and whose fair value can not be measured with confidence, as its related derivatives. They are evalued at cost.

The loans, the receivables and the investments kept until maturity should be measured at the amortized cost using, for this purpose, the effective interest method.

The amortized cost is the amount at which the assets and the financial debts are measured at the first recognition plus / minus the accumulated depreciation and any other difference between the original amount and the maturity one. Any provision for depreciation and non-charge will be dropped.

The effective interest method consists in calculating the amortized cost and the income allocation or the expenditure from interest for the afferent period. The effective interest rate is the one that takes into account the estimated future flows of receipts and payments during the life of the financial instrument.

For example, we start from the following situation:

A company purchases on January the 1th the N exercise, a financial instrument with a fair value of 1.000 RON, with a 5 year maturity period. The instrument has a basic value (the principal) of 1.250 RON and a 4,72% fixed annual interest. The actual interest is 10%.

Each year, the financial asset's accounting value is *increased* by the interest income (calculated at the actual 10% rate) and *reduced* by the interest received during the year (calculated at the fixed 4,72% rate).

We will initially calculate the annual interest received at a 4,72% fixed rate.

The interest received annually: 1.250 RON x 4,72% = 59 RON.

It should be assigned the 250 lei discount and the interest received for 5 years at a constant rate applied to the input value of the debt. For this, we must apply the 10% actual interest rate.

Year	Amortized cost at the begining of the year	Interest income (10%) (the results account)	Interest received during the year (cash increase)	Amortized cost at the end of the year
0	1	2	3	4 = 1 +2 – 3
1	1.000	100	(59)	1.041
2	1.041	104	(59)	1.086
3	1.086	109	(59)	1.136
4	1.136	113	(59)	1.190
5	1.190	119	(59 + 1.250)	-

The last thing that we want to present is the **financial instruments' depreciation**. On the balance sheet, the company should know whether there is a clear evidence that the financial asset is depreciated and in this case the value of the loss should be determined.

For the financial assets registered at the amortized cost, *depreciation loss* is the difference between the input value and the recoverable amount. *The recoverable amount* is the present value of future cash flows, calculated by applying the initial actual interest rate. The loss is registered in the results account. If the loss is subsequently reduced, it will be resumed.

The unquoted instruments are registered under cost, if the fair value can not be measured reliably. In this case the depreciation loss is the difference between *the input value* and *the present value of future cash flows*, based on the income current market rate for a similar asset. In this case the loss can not be resumed.

The financial assets available for sale are registered at the fair value, and the gains and the losses are registered directly in the equity. Any depreciation loss should be removed from the equity and put on the results account.

For the equity instruments the depreciation loss is the difference between *the acquisition cost*, from which we remove any reimbursed amount and the depreciation, and *the current fair value.*

For the debt instruments the depreciation loss is the difference between *the acquisition cost*, from which we remove any reimbursed amount and the depreciation, and *the recoverable amount*, except for the depreciation loss previously recognized in the results account.

The depreciation loss of the equity instruments can not be resumed, while for debt instruments, it can be resumed if, in the future period, the fair value increases

and the most of it can be related objectively to an event which occurred after the recognition of the loss.

Conclusion. Within this article we tried to capture the most significant aspects related to the existence in the companies' life of the financial instruments, both primary and derivatives, without, however, intending to exhaust this subject, which, causes, on a worldwide level, fierce disputes between European and U.S. regulators.

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