

Theses of doctoral (PhD) dissertation

**USEFULNESS OF FINANCIAL STATEMENTS AND THE
TRANSFORMATION OF ACCOUNTING CONCEPTS THROUGH
THE EXAMINATION OF THE EFFECTS OF SECURITIES AND
DERIVATIVES ON BANK RISKS**

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1. Introduction

The accounting systems of business entities usually handle and manage a great amount of data, which are presented in a consolidated form in the companies' financial statements. In today's fast changing economic environment these data have to provide relevant information about the income and financial conditions of firms in order to show a faithful picture.

Over the past few decades global markets have gone through significant changes, nevertheless social and economic transformation, the development of information technology, and the expanding variety of financial transactions have created new challenges in financial reporting. Because of these quick changes in the economic environment and the more unpredictable and uncertain competition in the case of some balance sheet items, fair valuation of these items has arisen beside the historical cost-based measurement – especially in the case of financial instruments.

Growing international trade has resulted in increased import and export activities, and the horizons of investors and borrowers have become global, which has increased the level of their risks. Practices and markets have developed which help firms manage the added risks of doing business abroad. Changes in global financial markets and related financial innovations have led to the increasing use of derivative instruments (such as forwards, futures, swaps, and options) to hedge risk exposure resulting from changes in both exchange rates and interest rates. A derivative can be defined as a financial instrument whose value depends on the value of other underlying variables. In general, the variables underlying derivatives are the prices of the traded assets. Derivatives are basically designed to achieve an economic result when the price of an underlying security, index, interest rate or commodity moves. The importance of financial instruments, and especially derivatives, has increased considerably in line with the dynamic development of capital markets. Financial instruments used by not only financial institutions but other organizations as well have become more and more sophisticated, thus enhancing the role of related regulation (*Hull [2009], ISDA [2014]*).

The main purpose of holding derivative instruments might be speculation or arbitrage, i.e. making riskless profit through hedging. Controlling various risks, especially those of financial nature is essential for a business entity. It is the interest of

investors to receive useful financial information about the value of derivative financial instruments, and about their benefits and risks as well. In connection with the financial instruments it can be concluded that accounting has not been able to keep pace with their evolution. Under historical cost assumption some derivatives could not be recognized in the balance sheet, since when the right or liability is recorded only a small amount of expenditures occur, thus relevant and material changes in their values stay invisible.

Financial instruments can be found in every business entity's balance sheet, but in the case of some corporations (for example: banks and investment companies) the business activities might be presented faithfully only through these items. Nevertheless, the recognition based on the traditional accounting concepts and framework cannot be faithfully represented. Loss of information is basically concerned with the over the counter transactions, as these deals are exposed to higher level of risk. Measuring derivatives at historical cost decreases the usefulness of the reported information, since the requirement of relevance is biased because of the increased level of uncertainty affecting negatively the decisions made by investors. For this reason it is very important to develop a uniformised accounting regulation system, but according to *Crawford et al.* [1997] in the case of these types of financial instruments it is a fundamental problem for the main standard setter bodies (FASB, IASB)¹ to develop standards by which they are faithfully measured and represented.

As it has been mentioned earlier, financial instruments play an important role in analysing the financial position of business entities. The main purpose of regulation is to help increase their understandability by setting rules regarding the disclosures and measurement of financial instruments. It is also important to present the effects on profit related with financial instruments properly (*Baricz* [2008], *Balázs et al.* [2006]). According to *Irvine* [2008] and *King* [2006] the effect of globalization could be experienced in accounting and in accounting standard setting as well confirmed by factors such as the increased use of derivatives, restructuring the existing accounting concepts and frameworks, and the expansion of value-based accounting. These alterations are clear evidence of the changes in accounting thought and paradigm shift, the main purpose is to adjust the accounting concepts and measurement methods to the needs of the business environment.

¹ Financial Accounting Standards Board, International Accounting Standards Board.

2. Motivation and Research Questions of the Dissertation

The continuous and growing changes in the world economy affect every area of business activities. Because of the recent financial crisis the level of confidence of many participants in various markets has decreased, and in order to maintain the stability of the financial system, the harmonization of financial reporting is needed. Due to various problems of global capital markets, the trading volume of certain financial instruments has decreased, and the markets of several financial instruments have turned inactive, thus the suitability of accounting regulations has become questionable. When the financial crisis broke out, fair valuation of new financial products became a major issue due to losing confidence in them. Fair values of many financial instruments were available immediately, but as a consequence of the crisis quite often these markets did not exist anymore, which ceased the availability of fair values.² All these factors revealed that in order to enhance security before decision-making by the actors of the economy it is essential to verify information accurately, to monitor financial reports, to ensure their transparency, to reduce asymmetric information, and to share and manage risks (*Boros–Rakó* [2009], *Fekete* [2009], *Deventer* [2008]).³ *Nour et al.* [2013] examining the role of derivative instruments in the financial crisis, highlight the lack of control and poor transparency.

Because of the strengthening level of globalization, its consequences and effects cannot be evaded, and this has been greatly affected by the financial crisis of 2007-2008, thus a harmonized accounting system is a need of globalization (*Barlev–Haddad* [2007]). According to *Beke* [2009] a unified and harmonized accounting system helps increase transparency, overtness, predictability in valuation and decision-making.

One of the central questions in accounting is how to identify the stakeholders of financial reporting. The identified groups of stakeholders modify and expand together with social and economic changes (*Lakatos* [2013]). According to *Sztanó* [2006] the communication at corporate level becomes more intense as globalization is fastening and international economic relations are growing.

² Examples are CDOs (Collateralized Debt Obligations) and corporate bonds. The issues of fair valuation, CDOs and the financial crisis of 2007 and 2008 are described by *Deventer* [2008].

³ Insights in auditing related to the financial crisis are presented by *Barabás–Pankucsi* [2009], *Lukács* [2009] and *Sikka* [2009].

Financial instruments, especially derivatives, are the most dynamic and the most uncertain elements in the ever-changing world economy. These are the instruments that affect financial stability the most (*Vigvári [2008]*). The fall of financial stability and the accumulated risks drew attention to the importance of information obtained from financial reports (*Ratku [2012]*, *Apostolou–Apostolou [2008]*).

The financial crisis has also raised the question of whether the current accounting concepts brought about the crisis or not. Answering this question is difficult, since the crisis encouraged the re-thinking of several accounting issues, among which two areas are emphasised: fair valuation and loan loss reserves (*Tardos [2009]*, *Wallace [2009]*).

In the case of prevailing relevance many authors argue one disadvantage of fair value, i.e. it is not immediately realizable, and it only provides useful information when the business entity manages its portfolio based on fair value. Concerning reliability it can be problematic that market information is not always available, and thus it does not reflect the risks associated with cash flows (*Kovács [2012]*, *Balázs et al. [2006]*). *Benston [2008]* underlines the costs of producing fair value information and the possibility of manipulating them. The analyses of *Cantrell et al. [2014]* indicated that the predictive ability of loans measured at historical cost is better than when they are measured at fair value. Consequently, in this case relevance, faithful representation, and the usefulness of information could prevail at a limited level.

Since fair valuation is mainly associated with accounting for financial instruments, it is essential to examine and understand the background to this research area, in which I was motivated by the verification of value-relevance of financial instrument, especially the value-relevance of securities and derivatives in the related literature. This is proved by authors such as *Petroni–Wahlen [1995]*, *Barth et al. [1999]*, *Eccher et al. [1996]*, *Nelson [1996]*, *Venkatachalam [1996]*, *Park et al. [1999]*, *Beaver–Venkatachalam [2000]*, *Barth–Clinch [1998]* and *Power [2010]*. In the last decade the growing use of derivative financial instruments and the increasing instability of the global financial system have intensified and sharpened debates about whether various securities and derivative instruments increase or decrease the risk of banks, affecting faithful representation based on their financial statements and decision usefulness, relevance and faithfulness of the reported information.

The research question of the dissertation is whether **the advantages of fair value accounting** exceed the disadvantages, especially in the case of **financial instruments**, in **reducing the uncertainty and risk** associated with financial reporting.

The empirical research assesses the level of various risks measured by accounting data in the examined banking industries of particular OECD countries and what these banks face when using certain financial instruments (securities, derivatives). The main purpose is to investigate how and to what extent these instruments **affect** the levels of risks of the observed banks. A further purpose of the research is to attest that more and more current practice of fair valuation does not decrease the **usefulness of the information in the financial statements** of the scrutinized business entities. In order to answer the research question I have developed the following **hypotheses**:

Hypothesis 1: Measuring certain financial instruments at their fair values corresponds to the concepts of the accounting paradigm of the information economy, emphasizing a principle-based view, shifting towards fair valuation, and focusing on economic events in financial reporting.

Hypothesis 2: Considering the banking industries of the examined OECD countries, the changes in the ratio of securities and short term securities to total assets in the balance sheet affect the risks of the banks measured by accounting data, and also affect the use of financial assets and liabilities, and the exchange of financial instruments during the examined period.

Hypothesis 3: The use of derivative financial instruments in the examined banks in Hungary differently affects bank risks measured by accounting data during the examined period, recognizing them in financial statements provides useful information to the stakeholders.

3. Structure and Methodology of the Dissertation

My research is mainly based on the International Financial Reporting Standards, and, to a lesser extent, on the Hungarian Act on Accounting, and it analyses the related Hungarian and international literature (secondary research). On the other hand, it uses aggregated balance sheet and income statement figures from OECD Banking Statistics database concerning the banking industries of 13 OECD countries (that are also members of the European Monetary Union) to investigate the relationships between securities, bank size and various bank risks using linear regression model during the period between 2000 and 2009 (primary research). Furthermore, the dissertation examines the measurement and the effect of financial instruments, especially derivatives on various bank risks calculated from the consolidated financial statements (from 2003 to 2012) of major banks in Hungary prepared under International Financial Reporting Standards using multiple linear and random effect panel regression models in the form of primary research. The dissertation also uses the datasets of the National Bank of Hungary, the Budapest Stock Exchange and the New York Stock Exchange London International Financial Futures and Options Exchange.

The structure of the dissertation is as follows. First, I present the various valuation methods and the related accounting concepts. Then I describe the theoretical background and the regulation of fair valuation. The next chapter illustrates changes in accounting thoughts in the globalizing world economy, and this part also draws up the paradigm shift in accounting as a consequence. In the following section I highlight the issues of uncertainty and risk associated with accounting. After this I describe the main features and the valuation principles of financial instruments, and I review the results of former research related to them and the background of the special accounting treatment of these balance sheet items as well. In the following chapter I expound the types, characteristics, as well as the valuation and disclosure of derivative financial instruments under the International Financial Reporting Standards. In the following empirical chapter I examine the relationship between the changes of holdings of securities in the balance sheets of the banking industries in the examined OECD countries and the scrutinised bank risks, and after this I present the international and Hungarian tendencies and development of the market of derivative financial instruments, and I empirically analyse and summarize how they affect bank risks in the

case of banks operating in Hungary. In this empirical analysis I also indicate the extent to which the recognition and disclosure of derivative financial instruments comply with the qualitative characteristics of useful financial information. At the end of the dissertation I draw up the conclusions, then I illustrate possible further directions of my research, and I summarize my novel results.

Scopes of the research are as follows:

- it focuses on various accounting measurement systems and the related accounting concepts,
- the dissertation utilizes the accounting data of the banking industries in 13 OECD countries from the OECD Banking Statistics database to analyse the relationships between bank size, securities and bank risks during the period from 2000 to 2009,
- the dissertation uses data from the consolidated financial statements prepared under IFRS (International Financial Reporting Standards) of 9 banks in Hungary (from 2003 to 2012) to investigate the effects of the use of derivative financial instruments on certain bank risks
- it concentrates on the financial reporting practices in line with the International Financial Reporting Standards.

The main purpose of the empirical research is to investigate the relationships between the ratio of securities to total assets, bank size and the leverage, liquidity, credit and overall risks during the period from 2000 to 2009 in 13 OECD countries. In order to enhance the comparability of the data I examine only the banking industry of those OECD countries that are members of the European Monetary Union.⁴ In the case of Austria and Luxemburg data are available only between 2000 and 2008. In the case of Portugal and Greece data are available only from the commercial bank sector. To calculate Return on Assets (ROA) I use data covering the period from 1997 to 2009 from the banking industries of sample countries. The aggregated accounting data the banking industries used are as follows: total assets, capital and reserves (equity), loans, cash and balance with central bank, interbank deposits, securities, short-term securities and income before tax.

⁴ The countries in the sample are Austria, Belgium, Spain, Finland, France, Germany, Ireland, Italy, Luxemburg, Netherlands, Slovakia, Portugal and Greece.

In the analysis leverage risk is the ratio of equity to total assets. Liquidity risk is defined as the ratio of liquid assets to total assets. Credit risks are the ratios of gross loans to total assets and loan loss reserves to total assets. The volatility of return on assets is the standard deviation of return on assets estimated from the figures of the current year and three years before the current year. Liquid assets are cash, amounts due from banks, and balances with central banks (*Baka et al. [2003]*). The return on assets is defined as profit before tax divided by total assets.

The risk measures are the dependent variables in the model defined by EQTA (leverage risk), LIQATA (liquidity risk), LOANSTA (credit risk), and SDROA (volatility of return on assets). Independent variables are, the ratio of securities to total assets (STA), the ratio of short-term securities to total assets (STSTA), and the natural log of total assets (LTA) as a control variable. Since this variable has large integer values, it is reasonable to take the logarithm of this using a linear-logarithm function form.

Using the sample from OECD countries I conducted a multiple linear regression estimation applying the ordinary least square method (*Ramanathan [2003]*, *Chaudhry et al. [2000]*).

$$Risk_{i,t} = \gamma_0 + \gamma_1 STA_{i,t} + \gamma_2 STSTA_{i,t} + \gamma_3 LTA_{i,t} + u_{i,t}$$

The purpose of analysing the accounting data obtained from the consolidated financial reports is to assess the associations between leverage risk, liquidity risk, credit risk, overall risk and the use of derivative financial instruments.

In the model leverage risk is the ratio of equity to total assets. Liquidity risk is defined as the ratio of liquid assets to total assets. Liquid assets are cash, amounts due from banks, and balances with central banks. Credit risks are the ratios of gross loans to total assets and loan loss reserves⁵ to total assets. The volatility of return on assets is the standard deviation of return on assets estimated from the figures of the current year and three years before the current year.

In the case of the derivative financial instruments (assets and liabilities) I used

⁵ In some the Notes to the financial statements use the term ‘provisions’.

the sample data of the observed banks to conduct a multiple linear regression model applying the ordinary least squares method (*Ramanathan* [2003]).

$$Risk_{i,t} = \gamma_0 + \gamma_1 TERMIN_{i,t} + \gamma_2 SWP_{i,t} + \gamma_3 OPT_{i,t} + \gamma_4 OD_{i,t} + \gamma_5 LTA_{i,t} + u_{i,t}$$

The risk measures are the dependent variables in the model defined by EQTA, LIQATA, GLTA, LLRTA and SDROA (*Agusman et al.* [2008], *Keffala–Peretti* [2013]).

I also conducted a random effect panel regression model as follows (*Ramanathan* [2003], *Wooldridge* [2009]).

$$Risk_{i,t} = \gamma_0 + \gamma_1 TERMIN_{i,t} + \gamma_2 SWP_{i,t} + \gamma_3 OPT_{i,t} + \gamma_4 OD_{i,t} + \gamma_5 LTA_{i,t} + u_i + e_{i,t}$$

The control variable is the natural log of total assets (LTA), as the total assets are large positive figures, in the case of the variables concerned I apply a linear-logarithm function form in the model (*Ramanathan* [2003], *Wooldridge* [2009])

Independent variables are totals of derivative assets and liabilities of each type divided by the total assets (TERMIN, SWP, OPT, OD, respectively). In my model the dependent variables are regressed on various derivative instruments and the control variable. The risk measures are the dependent variables in the model defined by the ratio of equity, liquid assets, gross loans,⁶ loan loss reserves to total assets, and the standard deviation of ROA (EQTA, LIQATA, GLTA, LLRTA, and SDROA, respectively).

⁶ Gross loans is the sum of net loans and loan loss reserves (or provisions) for each year. Loans are carried at their net book values in balance sheets of the consolidated financial statements.

4. Theses of the Dissertation

According to the Hypothesis 1, measuring certain financial instruments at their fair values corresponds to the concepts of the accounting paradigm of the information economy, emphasizing principle based view, shift towards fair valuation, and focusing on economic events in financial reporting. Based on the related literature, the following theses could be concluded:

Thesis 1/a.: Measuring held for trading financial instruments, as well as derivatives at their fair value and recognizing them as assets or liabilities in the financial statements – satisfying the information demands of stakeholders – reduces inconsistency and increases transparency and the effectiveness of investments. As a consequence of this, there is an increase in the usefulness of reported information, especially in the case of financial instruments which have an active market.

Thesis 1/b.: In the case of financial instruments developed through financial engineering, especially in the case of derivatives, traditional accounting framework and concepts are not an appropriate method of measuring value and income. An alternative accounting approach is necessary, which is better able to show the real content of the economic event.

Nowadays the information economy is characteristic of an increasing number of developed countries; according to *De Long–Summers* [2001] in the information economy technological development and the ease of access to information helps in the globalisation of the business elite. These changes, together with an increased role for the service sector, have resulted in more space being created for intangible assets, and as a consequence the relationship between the book- and market value of the different elements of property owned by owners. On this basis it can be established that the accounting data characteristic of the industrial society do not meet the demands of decision-makers.

One of the main features of the information economy is that it requires resources for business activities other than physical ones, which implies that the information produced by the industrial paradigm in the information economy does not comply with the needs of business entities thus resulting in anomalies and inconsistencies.

Although estimating fair value often encounters difficulties, the use of processes involving consistent estimates can be considered an important advance in departing from historical cost measurement. Change and the acceptance of the new paradigm take time, and additionally certain standards can contradict each other. The overlaps in the temporary transition period can be among the problems encountered, which in part can be solved with the new and old paradigms, although the method used for the solution can be fundamentally different. Since accounting is classified as a social science, the consequent changes are accompanied by a behavioural dimension as well, which also has an effect on the accounting paradigm. Although accounting must react to changes in the economic environment, at the same time it cannot influence the behaviour of those who use accounting. The task of the paradigm is thus to adjust accounting theories and methods of analysis to the continually changing environment (*Shortridge-Smith* [2009]).

Despite the fact that fair value measurement of some financial instruments has become dominant, there is no clear evidence regarding the valuation and disclosure of these items, as they are totally differ from items such as inventory or tangible assets. The losses of derivative financial instruments in 1990s highlighted the importance of measuring these kinds of balance sheet items at fair values, although at that time it was only one of the basic requirements for management information systems, it affected financial reporting systems a decade later. Regarding the financial statements prepared under IFRS it is essential to measure nearly all financial instruments, and all of the derivatives at their fair values. By using this method, the transparency of financial statements can be enhanced, and the investors can also obtain a clearer view on the financial position of the firm (*Balázs et al.* [2006]).

The most relevant economic value of an asset can be defined as the current value of the cash flow income which derives from it, which in itself includes any secondary offer price of the asset for which there is an active market. When an asset has no active market, the income must be defined according to another substitute valuation process. For those assets which have no market, an internal information system is necessary to

support the values presented in the balance sheet. In relation to accounting information systems, it can be stated that their primary focus is responsibility, the effectiveness of decisions, particularly financial risks and profit, and maintaining professional integrity, since the market value and certain asset values can be questioned if they are characterised by uncertainty and by behaviour which lacks integrity. Basically, the intentions of investors and creditors give legitimacy to an economic entity by providing resources for its activities.

The realisation of the principles of prudence can distort market information; this can also mean a return to a kind of natural conservatism and a cash turnover perspective which can maximise utility and minimise financial risk. However, the majority of decisions taken by those using accounting information are related to financial risk. In order to ensure that users receive the necessary information, historical and replacement costs and heterogeneous market valuations are required, although they do not need to show all the possible elements of content. From the point of view of creditability and commonality of accounting concepts, the fine tuning of the content of financial statements is essential in today's changing world economy (*Raar* [2008]).

Working capital is used to produce goods and services, the traditional accounting concepts are connected to these activities, but in the case of financial instruments the value is created by their ultimate user. The valuation of these items must be based on the discounted expected cash-flows related with them. Because of this valuing these instruments the traditional accounting concepts and framework could be problematic, and this explains why an alternative accounting framework is needed in order to achieve usefulness of the reported financial information.

Financial instruments measured at fair value on the basis of relevant information and market prices create the possibility for the management to follow investments on a clearer path and so achieve greater profit with them. The risks of the assets set in operation are basically determined by the predicted costs and the demand of the given market, but given that the yield and risks of financial assets are affected by market expectations and macroeconomic trends, these assets are more susceptible to changes in the environment and to the moral risks of market actors. Consequently, the values must be determined as the expected current value of future cash flow with the use of the appropriate discount rate of the risk. So, within the traditional accounting framework and concepts it can be problematic in many cases to determine the value and income,

and this explains why a new, alternative, accounting approach is necessary. The determination of income based on historical cost and the realisation principle basically serves to measure income from production and the provision of services, and it is not realistic to assume that it can be adapted to measuring the complex nature of the income deriving from the financial markets characteristic of today's economy and from products developed through financial engineering. In the case of measurement of financial instruments such as held for sale shares or derivatives (options, futures, forward and swaps), accounting concepts must be applied which make it is easier to satisfy the fundamental requirement of presenting useful information, and thus showing the real content of the economic activity in a more comprehensive way (*Ishikawa* [2005]).

Thus, the accounting data have a potential information content; the aim being that they provide represented information that is relevant and faithful for investors, to increase market effectiveness and to help decision-makers. Changes in the accounting regulations can have a market-distorting effect, since the profit structure and the elements that affect the entries in the balance distort the investors' judgements of value. In summary, precision in the analysis of fair value helps to reduce the differences in the analyses of the market value and the fair value, and thus reduce the contradictions of the regulations (*Zékány* [2006], *Krumweide* [2008]).

In hypothesis 2 it is assumed that considering the banking industries of the examined OECD countries the changes in the ratio of securities and short term securities to total assets in the balance sheet affect the risks of the banks measured by accounting data, and also affect the use of financial assets and liabilities, and the exchange of financial instruments during the examined period. This is verified by the following thesis:

Thesis 2: The changes in the holdings of securities and short-term securities within all assets in the banking industry in the OECD countries examined in the period under analysis have an influence on leverage, liquidity and credit risks; a characteristic negative relationship can be shown between the bank risks measured and the balance sheet values of the securities. This instinctively affects

the measurement of the held for trading securities and derivatives at their fair values. The uncertainty associated with the measurement and recognition of financial instruments could be reduced by improving the related regulation.

With reference to the 13 OECD countries I examined for the period between 2000 and 2009, it can be stated that a negative relationship is characteristic between the balance sheet value of securities and leverage risk, and a negative risk is observable in the correlation between liquidity risk and short term securities; at the same time there is a positive relationship between liquidity risk and holdings of securities. Short term securities have a positive effect on credit risks, while total holdings of securities have a negative effect on credit risks. A weak negative relationship can be observed between overall risk and short term securities, as well as between overall risk and the size of the bank.

The greater proportion of the processes occurring in the financial system – similarly to the processes occurring in the rest of the world around us – are characterized by uncertainty and risk. 'Uncertainty (vagueness)' refers to a situation in which an event has more than one possible outcome, and the number of outcomes and their relative probability is unknown. Uncertainties arise from the nature of the techniques and methods applied, or they could derive from market mechanisms, and from information asymmetries. The evolution of markets could result in paradox, since its expansion increases the vulnerability of markets. Financial systems can enhance the efficiency of the market mechanisms, but they can create new factors of uncertainty. The reasons for the uncertainty (vagueness) hidden in the economy can be the dysfunctional and/or informal factors in the operation of the business entity. These can be triggered by conscious or instinctive activities arising from attempts to get round rules which cannot be followed, incompetent behaviour, errors or conscious infringement of rules (fraud). Uncertainty cannot be eliminated from financial processes, but it can be managed by prior assessment of its potential sources and preventative measures (*Penno* [2008]).

According to *Benston et al.* [2007] relevance is too general to be useful to standard setting, while in relation to this, *Penno* [2008] established that relevance has a particular significance in accounting framework and concepts, since multidimensional

vagueness of itself reinforces the need for the relevance criterion. In his opinion the relevance criterion can be well applied in cases characterised by vagueness where there is no generally accepted system of measurement.

In the case of multidimensional vagueness it can be established on a theoretical level that consistency does not operate in a consequent way, and local (case-by-case) consistency can lead to global inconsistency (incoherence of the overall framework). Considering the recognition and measurement of financial instruments the problems and vagueness with accounting for derivatives and hedges stem from the intensive financial engineering that made unexpected products, and the need to assign each product to one of categories that has well-worked out accounting treatments (*Penno* [2008]).

On the basis of *King* [2006], one of the signs of the paradigm shift in accounting is that both the FASB and the IASB are gradually changing from historical cost to measurement made at fair values. In addition the paradigm change is also driven by the fact that the demand for derivative instruments has increased significantly in the past decades, in an attempt to manage the increased risk of transactions related to stocks and foreign currencies. The increased use of financial instruments has given rise to contradictions in terms of what must be shown according to the industrial society paradigm, and what kind of information is necessary in the new information economy (*Shortridge-Smith* [2009]).

Taking these factors into account I can conclude that in the further development of the international regulation of both accounting concepts and frameworks, and financial instruments, it is absolutely essential to reduce the uncertainties mentioned above; also in order to allow the balance sheet to show the most current values. Nowadays many areas can be found in IASB Conceptual Framework where there is less guidance on measurement and recognition. In connection with assets and liabilities useful information can be achieved when the flow of economic resource is not probable.⁷

Hypothesis 3 states that the use of derivative financial instruments in the examined banks in Hungary differently affects the bank risks measured by accounting data during the examined period; recognizing them in the financial statements provides

⁷ For more details see *IASB* [2013].

useful information to the stakeholders. It is proved by the following theses:

Thesis 3/a.: There are relationships of different directions and different levels which can be observed between certain types of derivative transactions and the examined bank leverage, credit and liquidity risks; with the ever-wider use of derivative instruments, and their increasing use for hedging and speculative purposes, the activities of the banks examined have not become more risky.

Thesis 3/b.: The practice of measuring and recognizing derivative financial instruments at fair value carried out at the banks examined is in accordance with the qualitative characteristics of useful financial information as formulated in the IASB Framework, helping in the better expression of relevance, reliability, comparability, understandability, verifiability and timeliness.

Thesis 3/c.: With reference to the analyses of the banks operating in Hungary and the banking industries of OECD countries, in the period under examination the increase in the size of the banks was not a significant factor in terms of the examined bank risks.

On the basis of regression analysis, I came to the conclusion that futures and forwards, options and other derivative transactions reduce the leverage risk, while swaps increase it. The liquidity is increased by futures and forwards, while it is reduced by swaps, options, and other transactions. There is a positive relationship between the credit risk and both futures and forwards and swaps, while there is a negative relationship between credit risk and options. On the basis of both the OECD countries' banking industries analysis and the examination of banks operating in Hungary, it can be established as true that the growth in size of banks does not influence or increase the bank risks. On the basis of the model, in terms of the purpose of the use of derivative instruments, it can be concluded that the use of forwards and futures transactions in the banks featured in the sample is first and foremost speculative, while the swaps and options are entered into for primarily hedging purposes.

I implicitly assume in the analysis carried out of the empirical models, that the

changes in the independent variables applied cause changes to the dependent variables (bank risks). The examination of any possible causality existing between the variables can be the subject of future research.

The decision to carry out an empirical regression analysis was made to establish whether in the recent past – primarily the period prior to the financial crisis of 2007/2008 – the banks' increasing use of derivatives measured at fair value, increases or decreases the various bank risks. According to the analyses conducted on the models, no strong correlation could be shown between the derivative financial instruments and the overall risk of the banks included in the analyses. In the recent past the proportion of within-balance derivative instruments and commerce on the stock exchange significantly increased; despite this, the empirical analysis confirms that collectively the risks (liquidity, credit and leverage risks) calculated on the basis of the accounting data of the banks included in the investigation had not grown in the period under investigation; the use of derivatives had, in the majority of cases, reduced the risks. Thus, the activities of the banks under investigation had not become riskier through the use of derivatives. Measuring and recognizing these instruments at their fair values conforms to the IASB's Framework, since they meet the qualitative characteristics of useful financial information.

In my opinion the really significant change which affects financial statements is that earlier reliability appeared as one of the fundamental requirements of useful information, while today its role has been pushed into the background, or rather transformed. This is also supported by *Power's* [2010] study. *Landsman's* [2007] examination of the relationship between valuation and reliability revealed that financial information is useful if it meets certain qualitative requirements, such as understandability, relevance, reliability and comparability.

In this regard I can draw the conclusion that changes in the proportion and content of the qualitative characteristics mentioned can also be observed in the International Financial Reporting Standards (IFRS) Framework. The rules drawn up in this framework cover the qualitative characteristics mentioned above, which ensures the usefulness of the information presented. The essential character of the adjusted framework is that the requirement for reliability has been removed and the related principles have been classified under faithful representation. The reason for this is that it is difficult to define exactly what is meant by reliability, since users group it together

with “confirmability”, “calculability” and “accuracy”, but not in any uniform way (*IASB* [2013], *Lakatos et al.* [2013]).

In my opinion the appearance and spread of measurement based on fair values brings with it a new interpretation of relevance and faithful representation, and it can be considered the main driving force behind the change in qualitative characteristics. Considering the aims of financial reporting, measurement based on fair values helps to increase the usefulness of financial information, and at the same time there is still a demand for the appearance of historical cost measurement. It is obvious that fair values better reflect the market, and the value judgements of the market, but also bring greater volatility and fluctuations in the various assets, liabilities and profitability. This is particularly true for credit institutions, and investment businesses, who keep a great proportion of their property in financial instruments, and which, according to the IFRS, should be measured on a fair value basis. At the same time, in the context of international regulations, it can be stated that the mixed measurement of financial instruments falls into various categories, although in terms of the economic content varying measures of similar assets or liabilities can make it more difficult to compare economic performance. A further problem may be that the data presented can, as a result of the accounting measurement, show significant differences, while in an economic sense there is no significant difference between them (*Bosnyák* [2004]).

5. Conclusions and Directions for Further Research

The dissertation examined the different aspects of useful information obtained from financial reports mainly based on certain financial instruments measured at fair value both theoretically and empirically. In connection with this, the dissertation described the transformation of accounting measures in the globalizing world economy, and presented an accounting framework that better meets the needs of modern information society and the requirements of decision-makers (stakeholders). The dissertation also studied the international and Hungarian background to fair value measurement, and it highlighted its regulation as well.

From the results of both the descriptive and regression analyses of the dissertation it appears that although the value and stock exchange trade in derivative instruments have significantly increased in recent years, the activities of the banks under examination have not become riskier with the use of these products. The analyses of the dissertation also support the idea that the recognition and measurement of the financial instruments at their fair value are in accordance with the qualitative characteristics of useful financial information. To summarize, based on the analysis of the related literature and the results of the empirical research, I conclude that the regulatory bodies should encourage the usage and the development of derivative instruments.

I plan to continue this research from several perspectives, and also to carry it forward. Firstly, I would like to further develop the model I have created, if I am able to supplement the database with data from reports prepared under the IFRS, not just with Hungarian, but with other countries' banks as well. Further directions for the research include the expansion of the scope of variables employed or restructuring them, and an examination of any causality existing between the variables. The use of accounting data obtained from financial reports prepared under IFRS is explained by the fact that this solution better reflects the requirements of comparability of information, and thus the expansion of the sample used provides the opportunity to verify the developed hypotheses in the dissertation more generally.

The novelty of the research can be summarized as follows:

- it has highlighted the changes in the accounting thoughts and concepts in the globalizing economy, emphasizing the paradigm shift associated with

this,

- it has underlined the importance of the usefulness of information obtained from financial reports
- it has described the features and types of derivative instruments, accounting for derivatives, and their relationships with the accounting framework and concepts,
- it has examined the relationships between securities, derivatives and various bank risks, and their effects on relevance and faithful representation.

The main findings and benefits of the dissertation are that it has clarified that the advantages of fair value accounting exceed its disadvantages, especially in the case of derivatives, in reducing the uncertainty and risk associated with financial reporting, and the fair valuation of these instruments enhances the usefulness of information in financial statements.

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⁸ HVB Bank Hungary Zrt. until 2005.

The Candidate's List of Publications

Articles:

Kornél Tóth [2014]: The Effect of Derivative Financial Instruments on Bank Risks, Relevance and Faithful Representation: Evidence from Banks in Hungary. The Annals of the University of Oradea, Economic Sciences, Vol. 23., No.1., ISSN 1582-5450 (electronic), ISSN 1222-569X (print), accepted by the publisher

Kornél Tóth [2014]: The Effect of Derivative Financial Instruments on Bank Risks, Relevance and Faithful Representation: Evidence from Banks in Hungary. In: Giurgiu Adriana, Catalin-Luciana Zmole (eds.): EINCO 2014 - 10th International Conference on European Integration – New Challenges. Place and date of the conference: Oradea, Romania, 30-31 May 2014, Oradea, pp. 105-106.

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Conference lectures:

Kornél Tóth: The Effect of Derivative Financial Instruments on Bank Risks, Relevance and Faithful Representation: Evidence from Banks in Hungary, “EINCO 2014 – European Integration – New Challenges” 10th International Conference, University of Oradea, Faculty of Economic Sciences, Oradea, Romania, 30-31 May 2014

Kornél Tóth: The Main Aspects of Investment Process, and the Economic and Financial Environment in Hungary, „Central Europe and the English-Speaking World” 2nd International Conference, Partium University, Oradea, Romania, 29 March 2008

Notes:

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