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Measuring and valuation in accounting – theoretical basis and contemporary dilemmas

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ABSTRACT

Accounting is a science of measuring the economic system. It is an applied science, measuring and evidencing activities in a company. The accounting system takes valuable expression of measurement results. The aim of this article is to show the essence and the importance of measurement and valuation in the accounting system of the company and to draw attention to the problems of measurement and valuation in practice. Talk about the measurement and valuation was fought in ancient times and is the subject of discussion of contemporary scientists. The terms "measure" and "evaluation" are not synonymous. Enterprises currently use different methods and measurement techniques, both financial and non-financial, and apply a mixed valuation methods.

***Keywords*:** measurement; valuation; accounting

1. INTRODUCTION

Accounting is the science of measurement. It is treated as an enterprise information system, which primary task is the measurement and valuation. Measurement precedes valuation and is associated with the process of collecting the various figures and descriptive information in the process of accounting.

The main aim of this article is to show the essence and the importance of measurement and valuation in the accounting system of the company and to draw attention to the problems

of measurement and valuation in practice. Auxiliary targets are related with the main objective:

1. Presentation of the historical context of measurement and valuation in accounting.
2. Identification of contemporary dilemmas related to the measurement and valuation.

To accomplish the research task, the analysis of Polish and foreign literature was used. This article can be a contribution to a broader discussion in the scientific community.

2. ACCOUNTING, AS A SCIENCE AND PRACTICAL ACTIVITY

Scientific knowledge is created in the course of solving cognitive and decision-making problems that occur in practice [1]. The purpose of science, including the science of accounting is to understand the reality, practices, by describing the phenomena, explanations, measurement, valuation analysis. This is a search for answers to the practice of economic questions. Questions that science through knowledge is trying to answer.

Accounting is a core discipline, without which it is difficult to imagine the functioning of the economy. Accounting does not necessarily stand in a subordinate relation to economics [2]. It reflects the reality, transposing processes to the financial dimension. Accounting is an applied science, measuring and evidencing actions in the organizational unit [3]. It is a science, because it features a subject, object and research methods [4]. Already known accounting theorist Y. Ijirii pointed out the most important tasks of the accounting theory (science), as shown in Figure 1 [5].

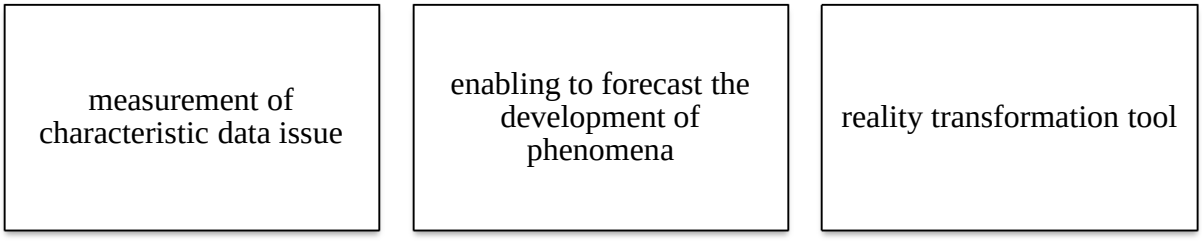

Figure 1. The main task of accounting theory
Source: Y. Ijiri, The Cost Principle and the Labor Theory of Value in Relation to the Role of Accounting Theories and Their Septh. The Japanese Style of Business Accounting, Quorum Books, Westport.

With high intensity, both internationally as well as in Poland, it is being discussed whether accounting is only practice or also a scientific discipline[1]. A significant role in building the scientific and social accounting shape play her own normative and positive theories [6]. You have to remember that accounting theorists develop theories and models, which are proposals, that can be used by politicians and practitioners. However, it should be emphasized, that for centuries accounting was seen as an purely practical activity, more craft

[1] For example: J. S. Demski, J. C. Fellingham, P. Wójtowicz, A. Szychta. In Poland, accounting is known as social science.

than science, but today is based on the principles already described in the fifteenth century[2] [7].

Today accounting, as science has clearly defined paradigms, which constitute its theoretical basis, and accounting, as a practical activity manifests itself by conducting sub-systems of accounting (financial and management accounting, cost accounting, controlling), in the business units. As a practical activity, accounting adapts to the needs of business practice, and its primary tasks are: measurement and valuation, allowing to reflect the financial situation of the organization. Accounting is both a field of knowledge and a profession [8].

Defining accounting as a scientific field is not self-evident to everyone [9]. According to the definition of the American Accounting Association, accounting, as a science represents an economic discipline, that deals with the economic measuring theory and the analysis of economic values theory, that characterize a business activity of an entity in retrospective and prospective terms [10]. The practice of accounting, which source is located in the scientific theory of accounting and centuries-old tradition[3], always refers to a specific, single economic entity, eg. Manufacturing, commercial or service enterprise - and is implemented through the accounting system [11]. The role and responsibilities of the accounting system is shown in Figure 2.

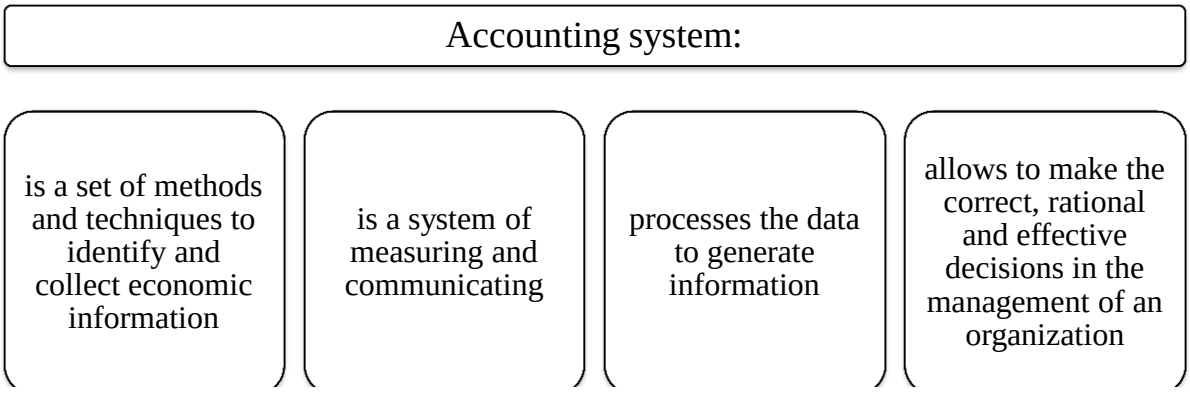

Figure 2. The role and responsibilities of the accounting system
Source: Own study based on: T. Szot-Gabryś, Metodologiczne podstawy projektowania systemów pomiaru ekonomicznego w rachunkowości, Zeszyty Naukowe Uniwersytetu Przyrodniczo-Humanistycznego w Siedlcach Nr 87. Seria: Administracja i Zarządzanie. Wydawnictwo Uniwersytetu Przyrodniczo - Humanistycznego w Siedlcach, Siedlce 2010, s. 181.

Today, accounting is a science because of the subject, object and methodology, as well as the field used in practice due to the orientation of accounting for a specific purpose. Accounting is the science of measuring economic values that are created in the business units.

[2] For example the accounting policies have been developed by L. Pacioli. His study - *Summa de arithmetica, geometria. Proportioni et proportionalita*, released in 1494 r., presented in a scientific way the accounting model based on the principle of equilibrium, which became the basis of the balance method.
[3] More about the history of accounting, S. Rogozina, *Niestandardowy podręcznik do rachunkowości*, CeDeWu 2014, s. 17. Widely known first entries of economic records were conducted in ancient times in Babylon and Egypt.

3. MEASUREMENT AND VALUATION, AS ATTRIBUTES OF SCIENCE

Measurement and evaluation processes are closely related to the accounting and accompanied at every stage. In economics, measurement and evaluation are essential elements of the cognitive process. The approach to accounting, as a science and as a system of measurement and valuation is reflected in the work of many scientists. A. Jaruga and A. Szychta in the preface to the Polish edition of Theory of Accounting written by E. A. Hendriksen and M. F. Van Breda wrote: "accounting (as a system) reflects the objects caught by the economic environment, social and natural environment. The essence of this reflection is the measurement of creation, transfer and sharing of value (valuation). " E. Burzym defines accounting as a measurement of economic theory (value measurement, valuation) [12].

The measurement is one of the basic conditions for rational action. According to P. Caws, measurement is closely related to the scientific defining and "consists of determining the substantive order between the various manifestations of individual property and granting to scientific events the usefulness of mathematical description," while defining is an arrangement of information about the phenomenon and the nature of the dependencies that exist between various facts [13]. The concept of measurement is not clear, for example, R. L. Ackoff indicates that "there is no universal compatibility of scholars views and philosophers of what exactly is the measurement and how it should be carried out [14]. According to K. Ajdukiewicz, measurement is the second (next to numbering) counting type of quantitative observations [15]. The measurement can be described as an information system, in which records, processing and communicating of information on the results and achievements of the entity are done.

Moving to valuation, it is considered to be the most difficult area of the theory, science and practice of accounting. As indicated by S. Hońko, "abstract nature of valuation in accounting has its roots in the philosophy and history of economic thought. Accounting is, however pragmatic and needs to translate abstract approach to the specific entries in the books. Accounting must also reconcile the abstract nature of the valuation expectations of users of financial information [16]. Valuation is a complex and controversial issue, both economists and philosophers argue about the nature of the values and methods of measurement.

Value has become a concept of philosophy in the second half of the nineteenth century. Earlier, the word “good” was used instead of the term “value”. The first mention of the value can be found in the writings of Heraclitus of Ephesus from the sixth and fifth centuries before Christ, who distinguished the value of relating it to people, goods and services. The value was measured using their morals, and the value of goods and services expressed their utility [17]. The nature of value and its measurement have been a source of interest of Plato and Aristotle. Plato was a supporter of the objective and spontaneous value, which stemmed from the quality and characteristics of the evaluated units. Aristotle believed that the value is a result of human needs, which justifies the statement that changed things should be comparable with the standard reckoning [18]. A contribution to science concerning the value, measurement and valuation also brought Protagoras, who lived in the fifth century BC. He made a statement: "man is the measure of all things" that led to the assertion that the values are the result of subjective experience and are dependent on the relationship to someone or something. [19] Aristotle also dealt with the theory of measurement, starting from the premise that the best

results are achieved when the measurement on impairment is made or the growth of a phenomenon is examined.

The measurement has become a subject of research in the late nineteenth century and early twentieth century, and the unit of measurement have been known since antiquity. Measurement in accounting is multidimensional. As indicated by S. Szejna, trying to describe the economic operations of measurement scales, it should be remembered that this process distinguishes four dimensions, as shown in Figure 3 [20].

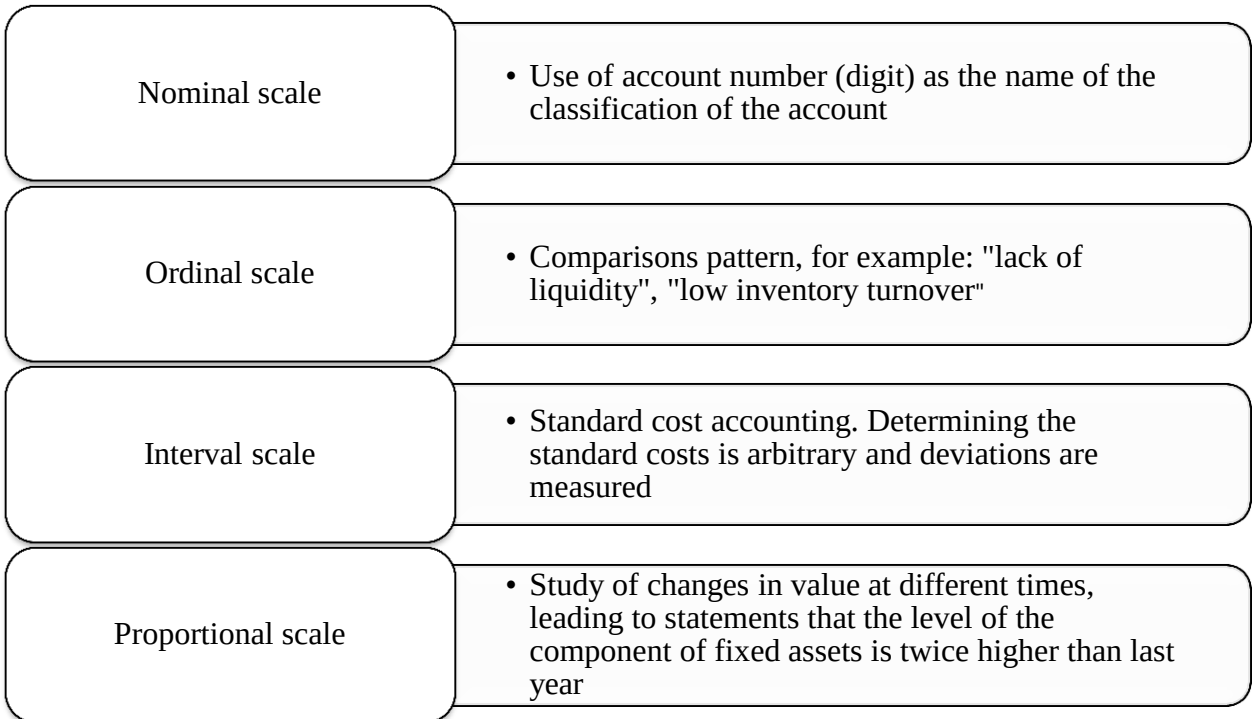

Figure 3. Measuring scales with examples of applications in accounting
Source: own study based on S. Hońko: Wycena w rachunkowości, znaczenie, podstawy, parametry i zasady, Przedsiębiorstwo Produkcyjno-handlowe ZAPOL Dmochowski, Sobczyk Sp. j. Szczecin 2013, s. 53.

Significant contribution to the development of the theory of measurement in the accounting filed Y. Ijiri, claiming that the accounting system is a simplified reality reflection. He saw the measure as a specific language representing the events and phenomena by means of numbers and the relationships between them within a predetermined number system [21]. Measurement in accounting is sometimes mistakenly considered to be absolutely true, honest and accurate. A statement about the assumption of absolutely true measurement in accounting can be misleading to information users and is contrary to the approximate nature of measurement used in the social sciences [22].

Not all accounting theorists recognize that the concept of measurement is of fundamental importance in financial reporting. A discussion of the relationship between the accounting measurement and theory of scientific measurement described S. Weszerai Musvoto. She claimed that "the measurement in the scientific sense plays little or no role in the preparation of financial statements" [23].

In the accounting measurement, value and measurement are differently interpreted and explained. Valuation is contractual in nature, and the amounts recognized in the financial statements are subject to assumptions of an entity. The measurement is a matter of principles, agreements, guidelines and conventions, not something fixed and unambiguous. Both the measurement and valuation were the subject of discussion and research of theorists, scientists, and today there is full compliance, as to the understanding, application and use of these concepts in the accounting systems of enterprises.

4. THE MEASUREMENT AND VALUATION IN ACCOUNTING – CONTEMPORARY VOICE IN THE DISCUSSION

Observation of contemporary theoretical thought of accounting and the accounting system in business practice, leads to the conclusion, that a reflection on the measurement and valuation do not lose their intensity. Still attempts are made to review the historical and contemporary reflections on values, measurement and valuation.

As indicated by A. Cameo-Sowińska "accounting appeared earlier than mathematics, because a man had assets first and needed to protect it and then learned how to count and multiply it. Still we say that accounting is a universal, global business language. Using the numbers, it shows the relationship of the economic world and increasingly also political. Accounting, universal measure of value, meticulous skill, perfect measuring tool" [24]. M. Dobija in "Theory of Accounting" writes about accounting as a discipline of economy, which deals with the measurement and analysis the economic values[4].

Measurement and valuation have a theoretical basis, and today in many debates, conferences and discussions, both in the world of science and practice, the topic of evolution of measurement and valuation and the role and importance of these concepts in an ever changing economic environment, businesses is being discussed.

Scientists should agree with S. Hońko [25] that: "to determine the relationship between the concepts of "measurement" and "valuation" is one of the most difficult issues of contemporary accounting. These terms are often used as synonyms. In the author's opinion, measurement is a broader term, since it involves assigning numbers to each specific object and its characteristics in accordance with specific rules. The numbers used to measure need not be expressed in money, and the valuation without money is not possible. This confirms the definition of E.A. Hendriksen and M.F. Breda, in which the valuation is based on "assignment of monetary objects or events associated with the company. The basis for the measurement is to determine the subject, category, and how to make the measurement. The object of measurement and valuation in accounting are economic events occurring in the enterprise. Assigning the effects of certain economic events to the appropriate category of measurement determines the manner of measuring their value" [26].

The measurement is done according to predefined rules, according to the expectations of stakeholders. This information needs of a particular group of users (stakeholders) determine the method of measuring accuracy and the time of measurement. Bearing in mind that both accounting measures and evaluates phenomena, the authors of the article agree with

[4] More information about the measurement in accounting - T. Martyniuk, K. Balcer, *Pomiar w rachunkowości na tle regulacji międzynarodowych,* [w:] *Zarządzanie kosztami i dokonaniami*, (red.) E. Nowak, M. Kowalewski, Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu Nr 398, Wrocław 2015, s. 318-319.

S. Pemnanem [27] that "the effects of the measurement can be displayed in different units, while valuation is only in cash. Are this really the only differences between these concepts? Both definitions are far too narrow for accounting purposes. In predictive interpretation, measurement is limited to measuring physical quantities. While the valuation is identified only with the establishment of a price rather than value".

Nowadays measurement in accounting is not only limited to measure physical objects or events. It is also a step in the process of accounting information, preceded by a preliminary valuation of certain phenomena. It can be assumed that resources of the company can be valued and processes inside it are being measured. As pointed out by S. Hońko in the book "Valuation in accounting, meaning, the base, parameters and rules", "balance sheet valuation, however, is nothing more than a value measurement at a particular time."

In the matter of valuation, in scientific books there should be distinguished: initial valuation and balance sheet valuation. Initial valuation is made at the moment of recognition of an asset in the books, and the balance sheet valuation is an adjusted initial valuation [28]. A. Kamela-Sowińska [29] describes valuation as "measurement of the condition and movements of production factors made in monetary units".

Noteworthy is the fact that nowadays it is often emphasized, that the valuation in accounting is continuous and involves periodic measurement of probable economic benefits. On the basis of the literature and observation of economic practice, it should be accepted, that entities currently use different methods and measurement techniques, both financial and non-financial. There are phenomena, processes, resources and achievements of the company measured. But not only the quantity but also the quality or efficiency are being measured. Nowadays there are used mixed methods of measurement, ie. based on historical cost (purchase price, the cost of production), as well as under the current conditions of a market (fair value).

The measurement and valuation in accounting are today an integral part of the discussion of accounting theory, paradigms, spot measurement and valuation. Although the scientific discussions on this issue have already been conducted since the nineteenth century shows no signs of ending. Methods of measurement evolve and valuation of historical economic value tends today toward prospective valuation, which can be regarded as the formation of a new paradigm in accounting.

5. CONCLUSIONS

On the basis of the literature and observation of economic practice, methods and techniques of value measurement, the search for new concepts of measurement and valuation, represent a new paradigm in accounting - modern accounting, which is the quantification of the manifestations of the economic life in the company. Scientist should be aware that the developed solutions for measurement and valuation, both in theoretical and practical dimensions, are not perfect and will be subject to further evolution..

The main aim of this article was to show the essence and the importance of measurement and valuation in the accounting system of a business unit and to draw attention to the problems of measurement and valuation in practice. The main objective was linked to the auxiliary objectives:

- presentation of the historical context of measurement and valuation in accounting,
- identification of contemporary dilemmas related to the measurement and valuation, which is achieved by using an analysis of Polish and foreign literature.

In conclusion:

- talk about the measurement and valuation was fought in the ancient times (Plato, Aristotle),
- there are criteria that define differently the term "measurement", "valuation",
- the terms of "measurement" and "evaluation" are not synonymous,,
- measurement is a part of the process of accounting information, which precedes the valuation,
- enterprises currently use different methods and measurement techniques, both financial and non-financial,
- nowadays, there are used mixed methods of measurement, ie. based on historical cost (purchase price, the cost of production), as well as under the current conditions of a market (fair value),
- talk about the measurement and value and their role and importance in the theory and practice of economic considerations is the subject of modern scientists (A. Kamela-Sowińska, M. Dobija, S. Hońko).

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