## СЕКЦІЯ 3

## ПРОБЛЕМИ І ПЕРСПЕКТИВИ РОЗВИТКУ СТАТИСТИКИ ТА ЕКОНОМІЧНОГО АНАЛІЗУ

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### CONNECTION BETWEEN ACCOUNTING AND STATISTICS

Many business disciplines use statistics at least to some degree. Some, such as econometrics and forecasting, are branches of statistics. Others may not even be thought of as having anything in common with statistics. Accounting is one of those areas that at first glance appears to have little in common with statistics. Exploring what these two fields may have or may not have in common is meant to clarify the nature of accounting and statistics.

As mentioned by Othmar W. Winkler (2009), both business accounting and national accounting aim at summarizing the financial situation of an organization during a specific time period. Their concepts and principles, coping with similar problems, are analogous. The main difference lies in the labels of these activities. At the level of the business firm they are called «financial» or «cost accounting». At the national level they are called macroeconomics, and occasionally as well as «economic statistics». This indicates that the differences between accounting and statistics cannot be as great as is generally assumed.

It may come as a surprise that the definitions of statistics and accounting at the microeconomic (business) level do not suggest great differences between them. One definition of accounting reads as follows: «It is a systematic process of identifying, recording, measuring, classifying, verifying, summarizing, interpreting and communicating financial information». On the other hand, statistics is defined as «a branch of mathematics dealing with the collection, analysis, interpretation, presentation, and organization of data». If the words ‘accounting’ and ‘statistics’ were omitted and one were not told the source of the definition, it would be difficult to tell which definition describes business statistics and which accounting. From this,

it becomes evident that the disciplines of statistics and accounting, in principle, must have a lot in common.

Many scientists have argued that statistics is important to the field of accounting. The tools of statistics can assist accountants with more effectively performing their job. In addition, «there is definite evidence in accounting periodicals of an increasing interest in the use of statistics, especially statistical sampling techniques, in accounting» (McGurr, 1960). Many scholars have recognized that the two fields can yield creative results when they are combined. As a result, there was considerable interest in relating statistical methods to accounting, auditing, and management control.

According to Rorem, C. R. (1927) accounting and statistics are similar in their use, for both are tools of control. They are also similar in their methods, bearing, so to speak, a family resemblance, for accounting and statistics may be regarded as offspring of the single parent, quantitative method of analysis.

Robert K. Mautz (1945) found that accounting and statistics are much alike. Both are methods for collection, classification, summarization and presentation of numerical data. Each has as its goal the presentation of information in such a way that the information is clear and usable. Accounting and statistics do not recommend actions they are merely service mechanisms to provide information that can be useful in the making of decisions which do lead to action.

In a practical sense, statistics is becoming a more and more powerful tool for accountants. Accountants who perform audits benefit greatly from understanding and using statistical analysis. Auditors know that the easiest way to do this is by looking at a portion of the whole, rather than gathering every bit of data available. Statistically representative samples are preferred in this area as they help auditors work more efficiently and objectively.

Controllers typically work for a single company, overseeing all of its finances including cost analyses, budget reports and forecasting, as well as giving financial analysis and advice to the head of the organization. Having a thorough understanding of the statistical principles used in creating analyses and forecasts, controllers ensure that their organization operates profitably and efficiently.

Accountants use statistics to estimate consumption, earnings, cash flow and book value. Simply put as accounting for the future, forecasting involves an amount of guesswork about the future – and when people guess, they frequently make errors. Having a thorough understanding of the distribution and metrics for evaluating that error, accountants are better able to more efficiently make predictions about the future.

Forensic accountants use accounting and legal principles to search out financial fraud and deceit. With modern complicated financial instruments forensic

accountants need to understand how statistical principles were used to value and anticipate risk in those securitization products.

Accountants are frequently required to specify a premium that reflects the risk, or range of error, with any given forecast. Known as the discount rate, accountants often use statistical principles, such as correlation and distribution, to anticipate this risk and account for it when setting a valuation. More recently, accountants are using more sophisticated statistical techniques, such as co-variance and beta models, to limit valuation error.

The difference between statistics and financial accounting is in large part the difference between a general view and a particular one. Accounting is meant to discover the particular financial situation of either an individual or an organization. Statistics, on the other hand, are used to discover any number of facts about the world. Sometimes statistical facts will be used in financial accounting, but it's rare for an expert in one field to specialize in the other. A modern firm will usually find a place for both outlooks in the way it conducts its business.

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