

INFORMATION MEASURE OF THE CORPORATE FINANCIAL INDICATORS

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This paper presents an economic model of the corporate financial system as a complex system with function relations between super-systems as well as sub-systems. The corporate financial system consists of structured elements subsets of financial coefficients. The financial system division into two subsystems is defined. The first subsystem consists of the main financial coefficients that characterize the company's efficiency from the corporate point of view. The second subsystem is formed by the company's market attractiveness indicators.

The elements and connections of the system define the space of system states. The space of system states is a d – dimensional set of financial coefficients values (locally equivalent R^d). The initial state of subsets is defined and the status change procedure through the change of the subset elements is described. The thermodynamical measure is compared to the structured subsets probability measure.

The financial indicators subsets are connected with the random values that form the probability spaces of the related financial coefficients. The probability measures and the related information measures are defined for each of the subsets. For the subset of the corporate financial coefficients a discreet information measure well known as the Shannon entropy for the multivariate random vector is used. The financial coefficients subset is connected with the enterprise evaluation. That is why for the share yield model a random continuous value has been used. In this case the information measure has been defined as a differential entropy. As normal and log-normal distributions are commonly used in financial analysis the differential entropy formulas for the normal and log-normal distributions are defined.

References

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