

A PHYSICAL BASIS OF ECONOMICS

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ABSTRACT

At the beginning of economics, work and cooperation appear, which leads to better efficiency of human activities. Therefore, understanding the work and its measurement as well as scientific sharpening of the concept offered by physics is the first step to the integrity of the foundations of economics with the natural sciences. The basis for the transfer called work is the potential category of work ability, i.e. energy in science and capital in economics. Therefore, work and capital are not opposed as the classics said, but complementary. Further logical reasoning leads to a set of basic economic concepts such as value, money, assets and fair pay.

The second element integrating economics and science is associated with taking into account the forces of nature. Long-term considerations about capital, profits, interest rates and rates of return have not brought the final results so far. Can the explanations given be complete if the effects of sun rays and photosynthesis on economic processes are ignored? It can reasonably be assumed that a natural constant will appear in this field that will allow quantifying the impact of nature on the economic effects of human activity. It will also allow to estimate energy loss in the human body determined by the second law of thermodynamics, which must be compensated by an appropriate remuneration to maintain existence.

The integration of economics and sciences also requires understanding that the scientific categories in physics and economics are abstract and subject to the fundamental principles found by nature researchers. Energy and work are abstract categories, so in economics capital, value and money must be understood in a similar way. Therefore, constructive mathematical concepts are essential to describe these scientific abstract categories.

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