

## **Is there entropy in an economy? Revisiting an early concept of sustainability introduced by Nicholas Georgescu-Roegen**

Topic: Sustainability in Economics

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Utz-Peter Reich, born in 1938 at Bremerhaven, Germany, took his first academic degree in high energy physics from the University of Hamburg. Having lived through the Cuba Crisis he decided to change fields and joined the Federation of German Scientists for a project on “Consequences of nuclear war in Germany”. Enrolling in economics and political science, he completed his Ph.D. with a thesis on “The European Security Conference: a game theoretical experiment” from the University of Constance.

When in the 1970s the new Max-Planck-Institute for Social Sciences was founded Utz joined the project “Sustainable growth” and was involved in developing a system of “Labour-consumption accounts”. After staying with the German Federal Statistical Office for five years he served as Professor of Economics and Statistics at Mainz University of Applied Sciences until retirement. He is now second trombonist of the Big Band Kameleons at Berlin.

Theories of an unequal exchange ruling within the global economic system have been voiced by Raoul Prebish and Hans Singer, as falling terms of trade, and by Arghiri Emmanuel and Samir Amin, as transfer of surplus value. One reason why neither have found a place in standard economic textbooks may have been, - other reasons notwithstanding, – a certain deficiency in making the theories statistically operable. The paper suggests that the newly established statistics of international purchasing power parities when connected to input-output methodology allows to remedy this failure, and to measure inequality in international trade in a well-defined way, a result which may lead to a new discussion of these early theories in respect to equality and efficiency of the present world economic system.