Kantorovich, Leonid (Vitalyevich) (Jan 19, 1912 - Apr 7, 1986)

Summary Article: Kantorovich, Leonid Vitaliyevich from The Hutchinson Unabridged Encyclopedia with Atlas and Weather Guide

Soviet mathematical economist who shared the Nobel Prize for Economics in 1975 with Dutch-born US economist Tjalling Koopmans for the independent development of linear programming. Linear programming is a method for finding the maximum and minimum of a function of variables that can be represented as linear relations.

A wide range of optimization problems in economics can be cast through linear programming, and computation methods exist for finding practical solutions to such problems even when they are of a very large size in terms of variables and conditions. Their real significance for economics, however, lies in the fact that the values that enter into the solution can be interpreted as 'shadow prices', so that a decentralized economy has striking analogues to a computer solving a highly complicated linear programming model.

Kantorovich graduated in mathematics from the University of Leningrad in 1930, receiving his doctorate in 1935. He taught at the same university all through the 1930s. From 1958 to 1969 he was a corresponding member of the Academy of Sciences of the USSR and from 1964 a full member in the mathematics section. In 1969 he was awarded the Lenin Prize for works in economic science, jointly with V S Menchinov and V V Novozhilov, who also helped to keep alive the applications of mathematical methods to economic research and planning whilst Stalin was in power.

Although his work was largely confined to solving transportation planning problems, the very use of the technique of linear programming leads naturally to the notion of something like 'market socialism'. Kantorovich himself soon drew attention to the general problem of the optimum use of resources under socialism with the aid of computational algorithms. Linear programming was first discovered by a group of mathematicians and economists working for the US Air Force during World War II and Kantorovich's earlier work dating from 1939 only later became known to colleagues in the West.

His publications (in English) include Management Science (1960), The Best Use of Economic Resources (1965), and Functional Analysis (1981; with G Akiloff).

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