

## Obituary, Marcel Boiteux

By Jean-Charles Rochet

Marcel Boiteux, President of the Econometric Society in 1959, passed away on September 6<sup>th</sup> 2023. He was born in 1922 in Croissy sur Seine (France). He studied mathematics at Ecole Normale Supérieure in Paris during the German occupation but escaped to Spain to join the Free French forces in 1943 where he participated in the campaigns of Italy and France.

At the end of the Second World War he started studying economics under the supervision of Maurice Allais (Nobel laureate in economics in 1988) at the Ecole des Mines in Paris, where he was his assistant from 1946 to 1949. He started his economist career at Electricité de France (EDF), the French public monopoly electricity producer, while continuing in parallel an academic career as a professor and a researcher.

In the 1950s he completely redesigned the tarification of electricity at EDF, based on his own research on what is now known as the Ramsey-Boiteux pricing problem. Frank P. Ramsey had studied the optimal taxation of commodities and derived the rule that tax rates should be inversely proportional to the elasticities of demand for the different commodities. In his most famous article, published in French in *Econometrica* (1956) "Sur la Tarification des Monopoles Publics Astreints à l'Equilibre Budgétaire", Marcel Boiteux applied the Ramsey rule to derive the optimal pricing for a natural monopoly (an industry where average costs are above marginal costs) subject to a budget constraint. Without this constraint, optimal prices would equal marginal costs, but this pricing rule would generate losses for a natural monopoly. By adapting Ramsey pricing to this context, Boiteux showed that the optimal mark-up over marginal cost should be inversely proportional to the inverse elasticity of demand. Boiteux put his principle into practice at EDF, and was very influential in the design of the tarification in other network industries.

He was also behind the adoption of "peak hour pricing". He pursued a successful career at EDF, where he was General Director from 1967 to 1979 and President from 1979 to 1987. He was at the core of the development of the French nuclear plants after the first oil shock of 1973. More recently, he became a strong advocate of the carbon tax.

Boiteux was the schoolmate of Gérard Debreu (Nobel laureate in Economics in 1983) and his colleague at the French Centre National de la Recherche Scientifique (CNRS), where they were both researchers in 1947-48. Until this date their careers had been remarkably similar: both had studied mathematics at Ecole Normale Supérieure in Paris, had joined the Free French army to fight in Italy and France (in 1943 for Boiteux and 1944 for Debreu) and made a transition to economics after the war ended. The story goes that both were very interested in pursuing their studies in economics in the United States on a Rockefeller Fellowship in 1948. Alas, there was only one fellowship and Debreu got it, which decided Boiteux to join EDF. Who knows what would have happened if Marcel Boiteux had got the fellowship instead of Debreu?