

Monetary Evaluation of External Costs Caused by Road Transport, Support for a Correct Sizing of Investments in Transport Plans*

Frantz Daniel FISTUNG, Cornelia NEAGU, Marius BULEARCĂ And Cristian SIMA

Centre for Industry and Services' Economics, Romanian Academy, Bucharest, Romania

Correspondence should be addressed to: Frantz Daniel FISTUNG, dfistung@yahoo.com

* Presented at the 45th IBIMA International Conference, 25-26 June 2025, Cordoba, Spain

Abstract

The current paper aims to present a model of integrated calculation of external costs caused by road transport, with a modular, flexible structure. The model is based on the development of several modules for calculating the level of the main negative externalities caused by road transport: chemical and noise pollution, agglomerations and accidents. These models have in view the dimensioning and monetarization of the listed external costs, finally their summation resulting in the total value of the external costs. The approach is based on the analysis of many of the current models used for this purpose at international level, updated and supplemented on the basis of requirements highlighted by the authors and considered necessary for a more correct sizing of the monetary values of the envisaged external costs. Based on the presented modules, a brief analysis was made of the evolution of external costs caused by road transport, for a period of two decades, between 1995 and 2016 in some of the EU member countries, chosen randomly by the authors. Among the general conclusions we highlight the general trend towards an increase in the value of external costs caused by road transport, the main factors that led to this development being the increase in the degree of motorisation and implicitly in the mobility offer (by increasing transport capacities), which together with the permanent increase in GDP/inhabitant made it possible to increase the demand for mobility. All these developments made the overall level of external costs relative to GDP significant, ranging from 3.3% to 13.7% in the countries under review and with an EU average of 5.5%.

Keywords: External costs Road transport, Air pollution, Noise pollution, Agglomerations, Accidents