

Long-Term Modal Changes in International Traffic - Modelling Exercise

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Abstract : The primary aim of the presentation is to try to model border traffic and, at the same time to explain on which economic variables the intensity of border traffic depended in the long term. For this purpose, long series of traffic data on the Polish borders were used. Models were estimated for three variants of explanatory variables: a) for total arrivals and departures (total movement of Poles and foreigners), b) for arrivals and departures of Poles, and c) for arrivals and departures of foreigners. Each of the defined explanatory variables in the models appeared as the logarithm of the natural number of persons. Data from 1994-2017 were used for modeling (for internal Schengen borders for the years 1994-2007). Information on the number of people arriving in and leaving Poland was collected for a total of 303 border crossings. On the basis of the analyses carried out, it was found that one of the main factors determining border traffic is generally differences in the level of economic development (GDP) and the condition of the economy (level of unemployment) and the degree of border permeability. Also statistically significant for border traffic are differences in the prices of goods (fuels, tobacco, and alcohol products) and services (mainly basic ones, e.g., hairdressing services). Such a relationship exists mainly on the eastern border (border traffic determined largely by differences in the prices of goods) and on the border with Germany (in the first analysed period, border traffic was determined mainly by the prices of goods, later - after Poland's accession to the EU and the Schengen area - also by the prices of services). The models also confirmed differences in the set of factors shaping the volume and structure of border traffic on the Polish borders resulting from general geopolitical conditions, with the year 2007 being an important caesura, after which the classical population mobility factors became visible. The results obtained were additionally related to changes in traffic that occurred as a result of the CPOVID-19 pandemic and as a result of the Russian aggression against Ukraine.

Keywords : border, modal structure, transport, Ukraine

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