

THE DETERMINANTS OF THE G7 COUNTRIES INTRA TRADE: A GRAVITY MODEL APPROACH

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ABSTRACT

The aim of this paper is to evaluate the bilateral trade between G7 countries (Canada, France, Germany, Italy, Japan, United Kingdom, United States) in the period 2005-2020.

The methodology is based on gravity model, using panel data and Ordinary Least Squares Method in EViews. The Pearson Correlation, the Unit Root Test and the Hausman test were performed. Three different gravity models were performed, with the exports, the imports and the bilateral trade flows as the dependent variables.

The findings are: GDP of the exporters, GDP per capita of the importers, the export openness and the export market penetration are major predictors with a positive impact on the bilateral trade, while the distance between countries, the tariff costs and the non-tariff costs have a negative impact.

There were some unexpected results too. The distance and the dummies are not statistically significant. The market penetration had an unexpected negative sign for export flows and the similarity distance had a negative sign too for import flows.

The originality is replacing the distance with tariff trade costs and non tariff trade costs, as well as replacing trade openness with export openness and non trade openness, which are all better predictors. Further research should be conducted using a different estimator, like PPML.

Keywords: bilateral trade flows, export flows, import flows, gravity model, G7 countries, trade determinants

INTRODUCTION

In the 1950's, the gravity model was brought into economic research in an empirical form, but the intuitive gravity model was first introduced in 1962 by a most influential Dutch economist of the XXth century, Jan Tinbergen [13]. The gravity model adapted the Newton's gravity law into the economics, basically the bilateral trade flows between two countries are positively influenced by the size of the two economies and negatively influenced by their distance. Like other models, the gravity model was developed and extended by many researchers either on theoretical background or on practical applications. The initial variables were over the time extended and refined and other explanatory variables were added. Among the most proponent theoreticians of the gravity model are Anderson and Van Wincoop (2003) [1], Deardorff (1995) [5], Rose and Spiegel (2004) [11], Head et al. (2010) [7], who introduced CEPII's gravity datasets, Baltagi, Egger and Phaffermayr (2007) [2], introducing the panel data gravity models. For empirical researchers, some useful guides on gravity model are available,