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MODELLING THE IMPACT OF DIGITALIZATION DETERMINANTS ON THE TRANSFORMATION OF MERCHANDISE AND SERVICES TRADE

Digital technologies have become an important driver of international trade, yet empirical evidence on their impact on merchandise and services trade remains limited. This study aims to identify and quantify the effects of key digitalization indicators on international trade using econometric modelling. The analysis is based on cross-country data and ten digitalization indicators defined by the International Telecommunication Union. Four multiple regression models were estimated for merchandise exports, merchandise imports, services exports, and services imports. Descriptive statistics, correlation analysis, multicollinearity diagnostics, and regression validation tests were performed, while the final models were obtained using backward elimination. The results show that digitalization affects merchandise and services trade through different mechanisms. Merchandise exports are primarily driven by household Internet access and active mobile broadband subscriptions, whereas merchandise imports are positively influenced by mobile broadband penetration but negatively affected by higher mobile Internet costs. For services trade, Internet affordability plays a much stronger role. Service exports increase with broader Internet use but decline as mobile Internet costs rise, while service imports are constrained by both mobile and fixed broadband prices. Active mobile broadband subscriptions were identified as the only indicator that remained statistically significant across most estimated models, highlighting their role as a universal driver of international trade. The findings confirm that digital infrastructure is particularly important for merchandise trade, whereas Internet affordability is a key determinant of services trade. The results provide empirical evidence that can support the development of digital policies aimed at enhancing countries' international trade competitiveness and reducing digital barriers.

Keywords: digitalization; international trade; exports of goods; imports of goods; exports of services; imports of services; regression analysis.