

# Disentangling country fixed effects in the structural gravity model for foreign direct investment: A machine learning approach

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## Abstract

This study disentangles the time-varying country-specific fixed effects in the structural gravity model for foreign direct investment (FDI) employing a machine learning (ML) method, namely, Lasso. Using a sample of 37 Organization for Economic Co-operation and Development (OECD) host countries and 63 source countries over the period 1999–2019 and a large set of potential determinants of FDI on each of the source and host economy sides, we find that characteristics related to the categories of “business legislation” and “finance” may be important in explaining how host countries attract inward FDI. Interestingly, the Lasso selection also emphasizes variables in the categories of “tax policy”, “societal framework”, “labor market”, and “attitudes and values” for source countries to invest in other countries, implying that a stable and open domestic condition may be an important determinant for source countries. Furthermore, in terms of the prediction accuracy Lasso approaches outperform traditional selections for host countries.

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