Has Gravity lost its pull: Why Augmented Gravity Trade Model fails to predict Intra-industry trade exchanges?

Gravity trade model (GTM), the workhorse model of international trade, has widely been used in the analysis of international trade flow since it was proposed by Tinbergen (1962). The GTM captures bilateral trade flows based on GDP size of trading partners and some sort of trade frictions to signify the distance (trade costs) for realizing such interactions. However, the problem arises when Intra-industry trade (IIT) is modelled as the dependent variable in the gravity equation. IIT signifies the most astonishing aspect of international trade - the phenomenon of the simultaneous exchange of export and import of goods and services among countries. The growth of the IIT which represents almost fifty per cent of the contemporary trade is attributed to the fact that trade in parts and components have risen in volume than trade in finished products. The research paper will empirically demonstrate fact that Augmented Gravity Trade Model fails to predict the intra-industry trade exchanges between North to North (USA-EU, USA-Japan) and North- South countries (USA, Japan, China and ASEAN 5 economies) and will also highlight the reason for the failure of GTM under the fragmentation of production.