How Does WTO/GATT Affect Extensive and Intensive Trade Margins?
-A Panel Gravity Model

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INTRODUCTION
Recent empirical research highlights that the differences in trade flows across countries, products and years are governed by two margins: the intensive margin and the extensive margin.

Intensive Margin: measures rising trade volume from the previous traded products.

Extensive Margin: measures newly created trading products that were not traded before between the two countries.

If the trade between two counties experiences an increase, we can decompose trade volume into the two margins and see whether this increase comes from rising trade volume from the previous traded products (intensive margin) or from newly created trading products that were not traded before between the two countries (extensive margin).

THEORETICAL FRAMEWORK—An Extended Panel Gravity Model

Gravity Variables – GDP & Distance

\[ VOT_i = \alpha \sum_j Y_j \frac{X_{ij}}{d_{ij}^\beta} \]

where \( X_{ij} \) is the scale of exports from country i to country j, \( Y_j \) is the scale of exports from country j, \( d_{ij} \) is the distance between the two countries, \( \alpha \) is a constant, \( \beta \) is a parameter estimated by econometric techniques, and \( VOT_i \) is the bilateral trade volume of country i.

Gravity model first introduced by Tinbergen in 1962.

Other Trade Determinants:
- Rose (2003): Common language, common border, landlocked country, island, area land, and crowded common indicator are all found to have significant impact on trade flow.
- Hemekam (2007): ASEAN creates new trade. While the classic gravity variables remain significant on trade, Foreign Direct Investment (FDI) is also a complementary to trade.
- Coughlin (2011): The impact of the communications infrastructure in the importing country affects the extensive margin positively and the intensive margin negatively.

The Model:

\[ EM_{ij} = \alpha \sum_j Y_j \frac{X_{ij}}{d_{ij}^\beta} \]

\[ IM_{ij} = \alpha \sum_j Y_j \frac{X_{ij}}{d_{ij}^\beta} \]

where \( E_{ij} \) is the extensive margin of exports from country i to country j, \( I_{ij} \) is the intensive margin of exports from country i to country j.

A Mix of Econometric Techniques
- OLS
- Fixed Effect Model
- Random Effect Model

RESULTS

Extensive Margin Equation
- WTO/GATT has a significant positive effect on EM in RE and FE models
- GSP increases EM in OLS and RE models

Intensive Margin Equation
- WTO/GATT has no significant effect on IM in RE and FE models
- GSP increases IM in OLS and RE models

CONCLUSIONS
In this paper, I use an extended Gravity model with a panel dataset. Extensive and intensive margins are calculated from the United Nation Trade Flow data from 1990 to 1999.

WTO/GATT promotes international bilateral trade only through extensive margin, which is by creation of new trading varieties. The WTO/GATT membership increases extensive margin by 0.03, when we consider within variation only. On the other hand, it has no significant impact on intensive margin.

Consistent with Rose (2003), GSP is an important driver of bilateral international trade. When we consider both between and within variations, GSP increases extensive and intensive margins by 0.064 and 0.025, respectively. That is to say, GSP creates both new varieties and higher volume of "old" varieties.