



# Advance gravity Modelling

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# Traditional problems

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- **Correlation**

(eg. Most of the papers studying the impact of institutions, democracy and other variables correlated with GDPpc)

- **Endogeneity problems**

(eg. Mode 4 paper)



# Solutions

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- For the correlation: you would require **more information**
- For endogeneity use a system of simultaneous equations/ IV estimation (see Jansen and Piermartini, 2005)

STATA allows to do this through **reg3** or **ivreg** command



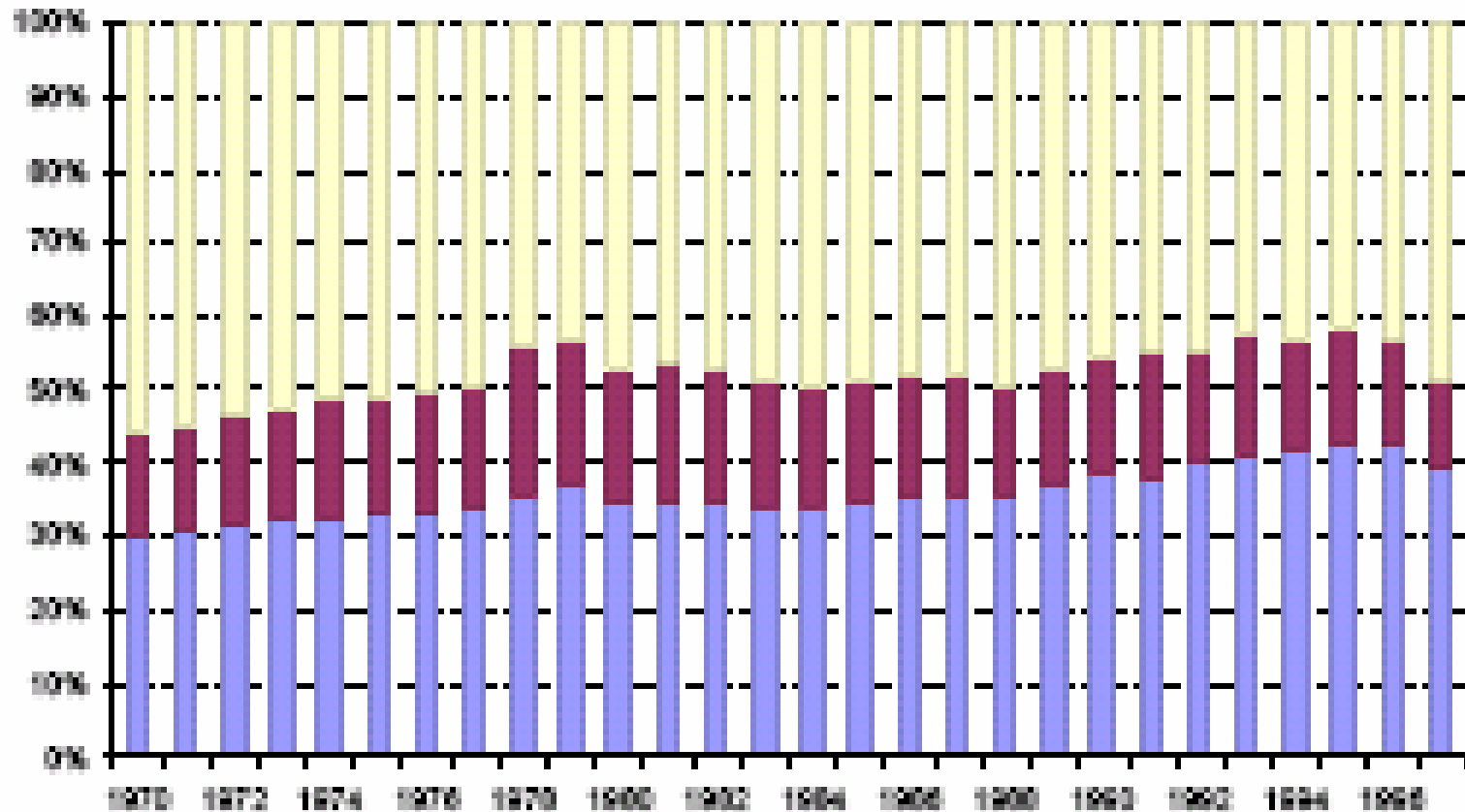
# Emerging issues

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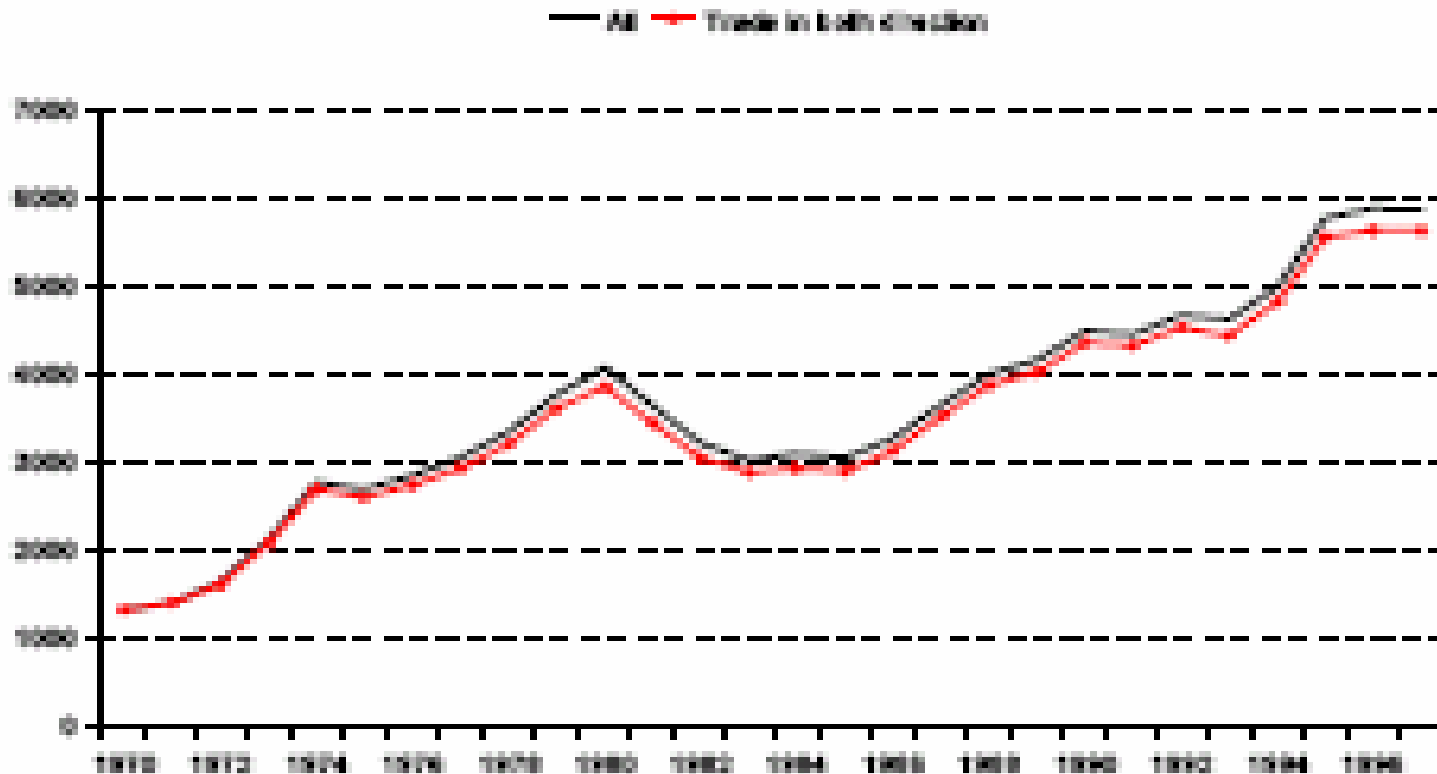
- **Zero** trade flows
- **Asymmetric** trade flows
- The **extensive margin** of trade: more countries trade over time

# The incidence of zero trade

Trade in both directions Trade in one direction only No trade



# Trade growth in the extensive margin





# Problems and solution?

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- Helpman, Melitz and Rubinstein (2006)  
“Trading Partners and Trading Volumes”  
claim: **BIASED** results using the standard approach
- Solutions: **2 stage estimation**
  1. Probit on the likelihood that 2 countries trade
  2. Introduce the estimated Mills Ratio to control for sample selection bias.