

Proximity as a source of comparative  
advantage

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# What the paper does

Explains Bilateral Industrial Sectorial EXPORTS

**From** around 200 countries (indexed by  $i$ )

**To** 15 European Union Countries (indexed by  $j$ )

**In** 13 industrial sectors (indexed by  $k$ ) excluding energy and tobacco sectors

**During** 15 years (1995-2009, indexed by  $t$ ).

By:

Fixed effects country destination/year (j,t)

Fixed effect country origin/year (i,t)

Fixed effects origin/destination/year (i,j,t)

RD, Stock of capital, Wages per 13 sectors

Distance for each sector of each country of origin to its varieties (weights?) of non-labor (?) inputs suppliers around the world using a time invariant (?) geographical distance measure per 13 sectors (indexed by i and k ?).

# Minor point on distance measure

Substitute a time varying mismeasured distance by an “instrument” (or a proxy, as an explicit two-stage, least square estimate is not used) which is time invariant

Suggests that the time variation of the first indicator is 100% noise (perhaps...).

# Details

Put the sectorial index as another index as  $ijt$  and not as an exponent: panel with  $ijkt$  dimensions.

Clarify early the number of observations in each dimension  $N, M, T, K$ , and to what extent the panel is unbalanced.

# Main Question

Three-step estimations using residuals of each step for the next step; plus instrumented (other steps or proxies?).

Problem: Generated regressors perhaps, very likely inconsistencies between the econometric assumptions at each step.

Step 1 and step 3: fixed effects.

Step 2: Generalized Method of Moments (First differences or system?)

# Detail

## **May be omitting:**

Fixed effects country destination/year (j,t)

Fixed effect country origin/year (i,t)

## **When including:**

Fixed effects origin/destination/year (i,j,t)

Does not change the residuals used for step 2.

## Why not a single GMM step or at most two step?

At least as a robustness check, step 1 and 2 may be pooled by a GMM estimation in a single step

And residuals  $\lambda(itk)$  could be obtained by averaging  $\lambda(ijtk)$  over countries of origin.



# Beware (step 2)

GMM on multiple indices (panel) data is designed for  $T < 10$

Here:  $T = 15$

The number of lagged instruments may be too large.

What is the number of instruments with respect to the number of observations?

# Omitted variable to include in GMM

In a pooled one + two step,

including an **auto-regressive term: last year's exports**

may be a robustness check.

## 3rd step

If the suppliers distance key indicator depends only on (ik) and if it is time invariant:

First Differences GMM eliminates time invariant variables.

(1+2+3) step System GMM (systems of levels and first differences) may estimate it.

# Gravity estimates

## main underscored issues

GMM system properties of estimation of time invariant variables not studied.

Mundlak estimator = Random effect model, when one adds the **average over time of all time varying (all endogenous) regressors** it greatly changes the distance estimates in FDI and Export gravity equations.

Hausman Taylor estimator designed for endogeneity of time invariant variables, if ever the weights of the distribution of suppliers for suppliers distance are endogenous.