

Which Foreigners Are Worth Wooing?

A Meta-Analysis of Vertical Spillovers from FDI

T. Havránek¹ Z. Iršová²

¹Economic Research Department
Czech National Bank

²Institute of Economic Studies
Charles University

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- 1 Motivation
- 2 Methods
- 3 Results
- 4 Summary

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FDI and Productivity Growth

Hypothesis: vertical spillovers

Local firms benefit from supplying foreign investors.

- Crucial for productivity catch-up.
- The rationale for FDI subsidies.
- Examined by over 100 researchers.
- × Different results across countries and methods.
No consensus exists.

How to Make Sense of All These Papers?



Need for Research Synthesis

We collect all estimates of spillovers and ask:

- 1 How large, on average, is the spillover to suppliers?
- 2 What makes host countries benefit from FDI?
- 3 Which investors generate the highest spillovers?

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Estimation of Spillovers

Researchers regress firm productivity on foreign presence:

$$\log(\text{productivity})_{ijt} = \alpha_i + e \cdot (\text{foreign presence in } \%)_{jt} + \text{controls}_{ijt} + \epsilon_{ijt}.$$

Boost to local productivity due to FDI

→ $e \approx \% \Delta (\text{productivity}) / \Delta (\text{foreign presence in } \%)$.

- e is directly comparable across studies → ideal conditions for a meta-analysis.

Meta-Analysis: More than a Literature Survey

Meta-Analysis

The quantitative method of research synthesis.

- Developed in medicine to aggregate clinical trials.
- This is the first meta-analysis of vertical spillovers.
- The largest meta-analysis in economics so far (3,626 observations).

Spillover Estimates Data Set

Quarter million cells in Excel manually filled

- All available studies were used: 57, including 1 in Spanish and 1 in Portuguese.
- Often some information was missing → need to ask the authors for clarifications.
- The sample includes evidence on 47 countries produced by 107 researchers.

Meta-Regression Analysis

If there is no heterogeneity, estimates should be randomly distributed around the true spillover:

$$\hat{e}_i = \underbrace{e}_{\text{true spillover}} + \underbrace{\sum_k \beta_k X_{kij}}_{\text{heterogeneity}} + \underbrace{\beta_0 SE_i}_{\text{publication bias}} + \mu_i.$$

- X_k include method dummies, publication characteristics, and country-level variables.
- Estimator: multilevel mixed-effects weighted least squares.

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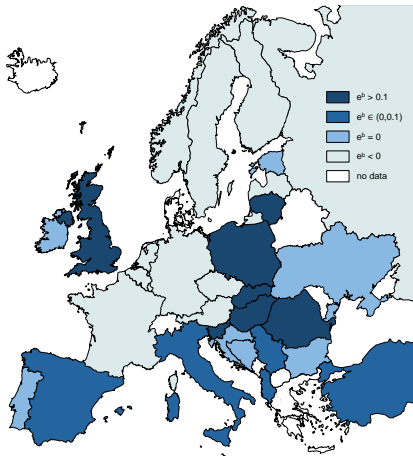
How Large Is the Average Spillover?

Best-practice estimate

We construct a synthetic study with ideal methodology, huge data set, and maximum number of citations.

- Plugging the values to the estimated meta-regression yields spillover coefficient 1.1.
- On average, FDI robustly increases the productivity of local suppliers.

Spillovers Differ Across Countries.



- Let's do meta-analysis for each country.
- Central-Eastern European countries seem to benefit more from FDI.
- But the picture is not clear.
- What explains the differences?

What Makes Countries Benefit More?

- 1 Higher **trade openness** → larger spillovers.
 - Firms used to foreign competition adopt technology more easily.
- 2 Lower **financial development** → larger spillovers.
 - If foreign investors help to improve their local suppliers' access to financing. . .
 - . . . then benefits from FDI are higher in countries with underdeveloped financial sector.

Which Foreigners to Woo?

- 1 FDI comes from **distant countries** → larger spillovers.
 - For such investors it is expensive to import inputs from their home countries.
- 2 FDI comes from countries with **modest technology edge** → larger spillovers.
 - If local firms can produce goods of sufficient quality for foreign investors. . .
 - . . . then investors will buy more local inputs.

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Conclusion




Main Findings

- 1 Spillovers are, on average, positive and large.
- 2 High trade openness and low financial development
→ even more spillovers.
- 3 Most beneficial investors: from distant countries with modest technology edge.

Project Website

www.meta-analysis.cz/spillovers

Interested in Meta-Analysis?

-  Borenstein, M., L. V. Hedges, J. P. T. Higgins & H. R. Rothstein (2009): Introduction to Meta-Analysis. Wiley, 1st. edition.
-  Disdier, A.-C. & K. Head (2008): The Puzzling Persistence of the Distance Effect on Bilateral Trade. *The Review of Economics and Statistics* **90(1)**: pp. 37–48.
-  Card, D., J. Kluve, & A. Weber (2010): Active Labour Market Policy Evaluations: A Meta-Analysis. *The Economic Journal* **120(548)**: pp. F452–F477.

Reading list on RePEc: ideas.repec.org/k/metaana.html