On "Int’l Joint Ventures and Internal vs. External Technology Transfer: Evidence from China"
by Jiang, Keller, Qiu, and Ridley

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International Joint Venture in China

- IJV: a subset of FDI: who and what’s the impact
- Carefully matched firm-level observations from 1998-2007: a rich source of information
- LOTS of result, with broadly robust findings
- Impressive work: push trade/FDI literature beyond country- and industry-level analyses
Main Questions

- Partner selection: what firm characteristics make them "domestic partner" in IJV?
- Internal, external, and "intergenerational" spillovers from IJV firms to others
- Heterogeneity in firm responses? by partner country, industry, WTO accession, regulatory policy
General Approach

- Main regression setup: by firm $i$, year $t$:

$$y_{it} = \alpha + \beta_1""$it"" + X_{it}' \gamma + \lambda_j + \lambda_t + + (\lambda_r) + (\lambda_i) + \varepsilon_{it}$$

- $y_{it} \in \{\text{TFP, Patents, New Prod, Sales, Export Ratio}\}$

- $""$it"" \in \{\text{JV}_i, \text{Partner}_it, \text{SPILL}_{jt}\}$

- where $\text{SPILL}^{JV}_{jt}$ and $\text{SPILL}^{PT}_{jt}$: sales share of JV or Partner firms, by industry $j$
Main Findings

- "Sensible" partners are chosen (large, young, productive, subsidized, Export Ratio...)

\[ y_{it} = \alpha + \beta_1 \"s_{it}\" + X'_{it} \gamma + \lambda_j + \lambda_t + + (\lambda_r) + (\lambda_i) + \varepsilon_{it} \]

- Controlling for size, age, foreign share, FE’s,...:
- Newborn (IJV) firms: \( \beta_1 > 0 \) ⇒ internal technology transfer
- Partner firms, with IPWs: \( \beta_1 > 0 \) ⇒ inter-generational transfer
- SPILL: \( \beta_1 > 0 \) ⇒ external transfer
- Various robustness checks: do observe heterogeneity
Questions/Clarifications

- Modes of FDI has changed "drastically"

| Table 1: Mode of FDI in China (Realized FDI value in current billion USD) |
|-----------------------------|------|------|------|------|
| Equity joint venture        | 19.5 | 15.0 | 15.6 | 21.7 |
| % of total FDI flows        | 43.1 | 28.4 | 20.9 | 19.4 |
| Contractual joint venture   | 8.9  | 5.1  | 1.4  | 2.3  |
| % of total FDI flows        | 19.7 | 9.6  | 1.9  | 2.1  |
| Wholly foreign-owned enterprise | 16.2 | 31.7 | 57.3 | 86.1 |
| % of total FDI flows        | 35.8 | 60.2 | 76.6 | 77.1 |
| Share company with foreign investment | 0.3 | 0.5 | 0.7 | 1.6 |
| % of total FDI flows        | 0.6  | 0.9  | 0.9  | 1.4  |
| Total FDI                   | 45.3 | 52.7 | 74.8 | 111.7 |

Data Source: China Statistical Yearbook
Time-Varying "Compliments"

- Drastic decline in IJV, from over 60% of FDI in 1997, 40% in 2002, to around 20% by 2007
- Serous trend here!
Correlated WFOE and JV?

- Data: universe of firms divided into:
  - 1) JV firms: 24% (ave foreign equity shares)
  - 2) JV Partner firms: 12%
  - 3) Other Chinese firms: 1%

- i.e. the compliment (untreated) of $SPILL_{jt}^{JV}$ are 2 and 3

- The universe seems incomplete:
  - where do WFOEs fit in?
  - where does the other 80% of FDI go?

- Omitted variables? Inducing bias via some $\varepsilon_{jt}$?

- If industries with high JV also have high FDI, the spillover measured may not be "spillover" but effect of other forms of FDI
Selection on Unobservables?

- Results generally robust, but less convinced it’s through "technology transfer">
- Interpretations of causality not unreasonable, but mostly assumed
- Is "controlling for observables" enough for identification?
- Alternatives to "technology transfer" story?
  - selection on high expected performance?
  - Heterogeneity/composition effect: as demonstrated in 3.4.
  - How much does trend play a role? include lagged $y_{it-1}$?
  - DiD? Synthetic cohort analysis?
Relate back to Trade/FDI Literature

- What have we learned from this Chinese firm-level analysis?
  - SPILL effect appears larger than Keller and Yeaple (2009)
  - Chinese data? at industry or regional level?
- FDI: horizontal vs. vertical?
- control for trade by industry? e.g. Export Ratio: characteristics or endogenous?
- **SPILL**: share of IJV-involved firms.
  - By itself capture "competition"? 2 firms and 2000 firms, both can be 50%.
  - Why dropping regional FE?
Summary

- Very nice work, convincing and robust evidence of firm level differences
  - more dynamics: trends, lagged dep var; add’l controls $X_{jt}$ (omitted variables?)
- Not as convinced that IJV is the cause of the observed differences
  - selection problem somewhat addressed, e.g. IPW, firm fixed effect
  - but more can be done, esp Selection on Unobservables
- Paper well-written and carefully executed, but does read a bit too "pushy" on a fixed interpretive lens
  - stories tend to pop up with each results (absorptive capacity, ..etc.), could use more focus