Foreign Direct Investment Commitments in East Asia

Abigail S. Hornstein, Wesleyan University, ahornstein@wesleyan.edu
Kanda Naknoi, University of Connecticut, kanda.naknoi@uconn.edu

Motivation
- Information frictions and uncertainty can cause planned investments to be modified
- We examine this investment gap in the context of foreign direct investment (FDI)
- FDI is associated with economic growth
  - in presence of local financial market development and technology absorption capacity
  - due to labor market spillovers and resultant higher productivity

Approach
- Compare disclosed values of approved FDI (ex ante) with actual inflows of FDI (ex post)
- Test impact of uncertainty on FDI plan implementation; real options theory
- Commitment ratio
  - Measure deviations of actual investment from planned investment
  - \( CR_{ijt} = \frac{U_{ijt}}{0.5(C_{ijt} + C_{ijt-1})} \)
  - \( U_{ijt} \): Utilized FDI = Total value of cross-border FDI inflows from source country \( i \) to host country \( j \)
  - \( C_{ijt} \): Approved FDI = Total value of FDI projects approved by host country \( j \) for investors from source country \( i \) = Non-binding contracted target of FDI
  - Varies across host countries, source countries, and time.
  - Hornstein (2011, 2017) works with this measure for China

Panel data
- 4 middle-income host countries: China, Indonesia, Philippines, and Thailand
- 25 high-income source countries
- Period: 1996-2013 (varies by host country)
  - More variation in sources & hosts than prior literature

Approved FDI
- Rarely disclosed by firms or governments on systematic basis
- However, some governments disclose data routinely on source country basis or industry basis
- Imperfect, noisy signal of expected value of actual FDI inflows, which may occur in same or future year

Regulation of FDI Inflows
1. National security considerations
2. Valuation – machinery, taxes
3. Pro forma financial plans
4. Sensitive industries; threshold levels (monetary value, employment)

Ex ante vs. ex post
- Approved FDI explains 66% of actual FDI in the same year; circularity

Commitment Ratio
Average estimated commitment ratio is 1.90

<table>
<thead>
<tr>
<th>Range</th>
<th>Pct of Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 0</td>
<td>17%</td>
</tr>
<tr>
<td>0-1</td>
<td>42%</td>
</tr>
<tr>
<td>~ 1</td>
<td>2%</td>
</tr>
<tr>
<td>&gt; 1</td>
<td>41%</td>
</tr>
</tbody>
</table>

Inflows from Selected Sources

Commitment Ratio from Selected Sources
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Commitment Ratio: Summary Statistics

<table>
<thead>
<tr>
<th>Country</th>
<th>Average</th>
<th>Std. Dev.</th>
<th>No. Obs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>2.793</td>
<td>0.155</td>
<td>180</td>
</tr>
<tr>
<td>Indonesia</td>
<td>4.307</td>
<td>0.548</td>
<td>59</td>
</tr>
<tr>
<td>Philippines</td>
<td>0.843</td>
<td>0.972</td>
<td>55</td>
</tr>
<tr>
<td>Thailand</td>
<td>0.074</td>
<td>0.048</td>
<td>153</td>
</tr>
</tbody>
</table>

Baseline Specification

\[ CR_{ijt} = \alpha + \beta W_{ijt} + \gamma X_{ijt} + \theta Z_{jt} + \tau_t + \epsilon_{ijt} \]

- \( i \): source country,
- \( j \): host country,
- \( t \): year

CR: commitment ratio

W: bilateral time-varying characteristics (e.g., uncertainty) – exchange rate volatility, depreciation

X: bilateral fixed characteristics – bilateral distance

Y: source’s time-varying characteristics – population, government stability

Z: host’s time-varying characteristics – population, government stability, financial openness

Motivations

- Gravity model (W, X, Y, Z) – trade theory (e.g., Blonigen and Piger, 2014)
- Uncertainty/real options (W) – finance and economics (e.g., Baker et al. (many); Block, 2007)
- Financial development (Y, Z) – Chinn and Ito (2016)

Data Sources

- Approved (Contracted) FDI: Government agencies in China, Indonesia, Philippines, and Thailand; retrieved from CEIC database
- Utilized (Actual) FDI: FDI outflows from OECD FDI database
- Financial openness: Chinn and Ito (2016)
- Government stability: WGI Database
- Macroeconomic data: World Bank
- Independent Investment Agreements (IIA) & Preferential Trade Accords (PTA): UNCTAD Database, Bergstrand’s Database
- Economic expectations: World Economic Outlook
- Events: multiple sources
- Cultural characteristics: CEPIL, Hofstede et al. (2006), Schwartz (2010)

Baseline Results: Ex Ante Uncertainty

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exchange rate</td>
<td>1.875</td>
<td>1.875</td>
<td>1.875</td>
</tr>
<tr>
<td>Sources’ FDI</td>
<td>0.102</td>
<td>0.102</td>
<td>0.102</td>
</tr>
<tr>
<td>Host’s FDI</td>
<td>0.102</td>
<td>0.102</td>
<td>0.102</td>
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<tr>
<td>Sources’ pop</td>
<td>0.155</td>
<td>0.155</td>
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<td>0.155</td>
<td>0.155</td>
</tr>
<tr>
<td>Distance</td>
<td>0.155</td>
<td>0.155</td>
<td>0.155</td>
</tr>
<tr>
<td>Sources’ open</td>
<td>0.155</td>
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<td>0.155</td>
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Baseline Results: Ex Post Uncertainty

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<th>(4)</th>
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<tr>
<td>Depreciation</td>
<td>0.038</td>
<td>0.038</td>
<td>0.038</td>
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<td>Host’s FDI</td>
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Extensions and Robustness Tests

- International investment agreements (IIA) and preferential trade agreements (PTA)
- Inflation and output growth surprises
- Past experience – FDI, trade
- Events
- Cultural frictions
- Sub-Sample

Conclusions

- Persistent variation in the FDI commitment ratio, and it consistently differs from 1
- Reconcile with FDI theory: Commitment ratio captures longer-term trends. Results consistent with prior work on utilized FDI (e.g., Siegel et al., 2011, 2012) and on the commitment ratio in China (Hornstein, 2017)
- Sheds light on how commitments are modified to reflect newly available information after controlling for uncertainty