Profitability and Ownership Structure of US Foreign Ventures

Why US Joint Ventures Abroad Are Less Profitable Than Wholly Owned Ventures

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Mauricio Jenkins
Peter Zámborský
Low profitability of US JVs abroad

- US manufacturing joint ventures abroad earned an average 3% return on assets in 1977-2003

- Wholly-owned manufacturing affiliates earned 6.4% ROA
Profitability Gap, 1977-2003

Manufacturing

- Majority
- Minority
- Gap
Possible explanations for gap

We tested for:

- Size
- Age
- Tax rates
- Non-dividend payments
- MNC’s ownership-specific capabilities
Stylized facts emerging from data

1. There is a positive gap on average
2. It is largest in sectors where US MNCs are most competitive abroad
3. The gap shrinks over time on average
Related academic literature

- Desai, Foley and Hines (2004) found sharply declining propensity of US MNEs to form JVs abroad.

- They focus on the determinants of ownership structure to explain this.
Declining use of JVs by US MNEs

Share of JVs on Total No. of US Foreign Ventures
Does globalization reduce rationale for international alliances and JVs?

- Globalization reduces trade barriers and communications costs, making international alliances more attractive.

- On the other hand, it also increases the return to coordinating operations within multinational firms.
Profitability Determinants Neglected

- Desai finds return on assets (ROA) is decreasing function of foreign tax rates
- Controls: affiliate leverage, sales, country GDP and GDP per capita
- They don’t perform any further analysis of ROA determinants
Desai et al did not uncover the profitability gap between wholly and partially owned ventures.

Neither did other researchers.
Profitability Gap Defined

- Profitability—Net Income/Net Assets
- Wholly-owned—majority-owned ventures, 90% of them are 100% owned
- Joint Ventures—
  All affiliates minus majority-owned
  Includes 50-50 JVs, which account for about 54% of JV affiliates
Preview of data

- Source: US Bureau of Economic Analysis
- 1977 and 1982-2003
- Non-bank affiliates of non-bank parents
- Industry level, 25 three-digit sectors
- 2 & 1 digit sectors, countries, regions
- Avg. no. of wholly owned foreign ventures in manufacturing: 6,349
- No. of foreign manufacturing JVs: 856
Profitability Gap, 1977-2003

Manufacturing

- Majority
- Minority
- Gap
Questions about ROA Gap

☐ Where and when is it positive?
☐ In which sectors, countries, regions?
☐ Where and when is it negative?
☐ Why is it positive/negative?
☐ Is it shrinking? Growing? Where?
## Top and Bottom 3 Sectors by Gap

<table>
<thead>
<tr>
<th>Sector (3-digit classification)</th>
<th>ROA Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office machines, computers</td>
<td>8.7</td>
</tr>
<tr>
<td>Electronic components etc</td>
<td>5.8</td>
</tr>
<tr>
<td>Beverages</td>
<td>5.4</td>
</tr>
<tr>
<td>Paper and allied products</td>
<td>-2.1</td>
</tr>
<tr>
<td>Lumber, wood and furniture</td>
<td>-3.0</td>
</tr>
<tr>
<td>Soap, cleaners and toilet goods</td>
<td>-4.9</td>
</tr>
<tr>
<td>SECTOR (3-DIGIT)</td>
<td>ROA MAJ. OWNED</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Office and computing machines</td>
<td>9.7%</td>
</tr>
<tr>
<td>Electronic components &amp; accessories</td>
<td>7.4%</td>
</tr>
<tr>
<td>Beverages</td>
<td>11.0%</td>
</tr>
<tr>
<td>Instruments and related products</td>
<td>7.5%</td>
</tr>
<tr>
<td>Radio, TV and telecom equipment</td>
<td>6.3%</td>
</tr>
<tr>
<td>Agricultural chemicals</td>
<td>6.1%</td>
</tr>
<tr>
<td>Motor vehicles and equipment</td>
<td>4.1%</td>
</tr>
<tr>
<td>Drugs</td>
<td>11.4%</td>
</tr>
<tr>
<td>Rubber products</td>
<td>5.4%</td>
</tr>
<tr>
<td>Fabricated metal products</td>
<td>5.0%</td>
</tr>
<tr>
<td>Grain mill and bakery products</td>
<td>7.2%</td>
</tr>
<tr>
<td>Construction and mining machinery</td>
<td>2.4%</td>
</tr>
<tr>
<td>Stone, clay, nonmetallic mineral goods</td>
<td>5.6%</td>
</tr>
<tr>
<td>Industrial chemicals and synthetics</td>
<td>5.4%</td>
</tr>
<tr>
<td>Printing and publishing</td>
<td>5.9%</td>
</tr>
<tr>
<td>Nonferrous</td>
<td>3.0%</td>
</tr>
<tr>
<td>Ferrous</td>
<td>4.4%</td>
</tr>
<tr>
<td>Household appliances</td>
<td>4.1%</td>
</tr>
<tr>
<td>Miscellaneous plastics products</td>
<td>6.3%</td>
</tr>
<tr>
<td>Textile products and apparel</td>
<td>4.2%</td>
</tr>
<tr>
<td>Glass products</td>
<td>5.3%</td>
</tr>
<tr>
<td>Tobacco products</td>
<td>11.3%</td>
</tr>
<tr>
<td>Paper and allied products</td>
<td>4.7%</td>
</tr>
<tr>
<td>Lumber, wood, furniture and fixtures</td>
<td>3.3%</td>
</tr>
<tr>
<td>Soap, cleaners and toilet goods</td>
<td>7.2%</td>
</tr>
</tbody>
</table>
Gap positive, falling in most sectors

Majority
Minority
% Pt Gap

Office and Computing Machines

But in some stays stable, negative

Soaps and Toiletries

- 1975
- 1980
- 1985
- 1990
- 1995
- 2000
- 2005

Majority
Minority
% Pt Gap
Gap close to zero in some countries

United Kingdom

Maj
Min
Gap

Some regions are closing the gap

Asia and Pacific

-5.0% 0.0% 5.0% 10.0% 15.0%

Maj Min Gap
Theoretical Explanation: Ownership-specific capabilities of MNE

- Ownership-specific capabilities of MNE
- Reflect competitive advantage of MNE compared to local rivals abroad
Determinants of ownership and profitability

☐ If the ownership-specific capabilities are strong, MNE likely to choose whole ownership, profits high

☐ If they are weak, MNE likely to seek additional capabilities from local firm, profits likely to be lower
Return to the firm

Cost of capital

Marginal return to capital (MRC)

Projects done

Projects not done

Investment projects or Capital invested
The graph illustrates the relationship between Capital Invested and MRC. It shows two curves, one labeled $MRC_{MNC}$ and the other $MRC_{Local}$, representing the Extent of competitive advantage of MNC and Local entities, respectively. The distance between these curves indicates the comparative advantage of MNC over Local entities in terms of capital investment.
Measures of ownership-specific capabilities

- Should reflect international competitive advantage of MNE/industry
- Sales of US corporations abroad/ Sales of US corporations in the US
- Sales of US firms abroad/ Sales of all firms in the US
- Sales data from BEA and Census of US Manufacturers
Foreign Sales of US Firms/US Sales in their Sector

- Average
- Ferrous
- Textile products and apparel
- Paper and allied products
- Electronic components and accessories
- Beverages
- Office and computing machines

- 1991-00
- 1983-90
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Office machines, computers</td>
<td>8.6%</td>
<td>89%</td>
<td>31%</td>
<td>34%</td>
</tr>
<tr>
<td>Beverages</td>
<td>6.3%</td>
<td>31%</td>
<td>34%</td>
<td>20%</td>
</tr>
<tr>
<td>Electronic components</td>
<td>4.6%</td>
<td>31%</td>
<td>34%</td>
<td>20%</td>
</tr>
<tr>
<td>Instruments</td>
<td>4.4%</td>
<td>31%</td>
<td>34%</td>
<td>20%</td>
</tr>
<tr>
<td>Radio, TV, communications</td>
<td>4.2%</td>
<td>31%</td>
<td>34%</td>
<td>20%</td>
</tr>
<tr>
<td>Motor vehicles, equipment</td>
<td>3.9%</td>
<td>31%</td>
<td>34%</td>
<td>20%</td>
</tr>
</tbody>
</table>

Sectors with largest gap have largest ratio of foreign/US sales.
### Sectors with lowest gap have lowest ratio of foreign/US sales

<table>
<thead>
<tr>
<th>Industry 3-digit</th>
<th>Paper and allied products</th>
<th>Textiles and apparel</th>
<th>Ferrous</th>
<th>Nonferrous</th>
<th>Rubber and plastics</th>
<th>Stone, clay and glass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg ROA Gap</td>
<td>-1.6%</td>
<td>-0.5%</td>
<td>-0.3%</td>
<td>0.2%</td>
<td>0.7%</td>
<td>1.1%</td>
</tr>
<tr>
<td>1983-2000 US FSales/US Sales</td>
<td>16%</td>
<td>10%</td>
<td>3%</td>
<td>9%</td>
<td>17%</td>
<td>12%</td>
</tr>
</tbody>
</table>
Correlation between the Gap and the sales ratios is 0.30

☐ Sales of US firms abroad/
Sales of all firms in the US
... Correlation Coefficient=0.30

☐ Sales of US corporations abroad/
Sales of US corporations in the US
... Correlation Coefficient=0.30
Limitations of sales ratios as measures of ini. comp. adv. advantage
Foreign/domestic sales ratio has been rising in all sectors, while the gap has been shrinking in most sectors. Foreign/domestic asset ratio would perhaps be more appropriate.
Limitations of data

- Small number of observations for JVs, particularly for 3-digit sectors
- Small number of industry-level data points, no access to firm level data
Tests for stat significance of gap

- T-test for stat significance of gap estimates confirms results for most 1 & 2 digit sectors
- Only mining, fabricated metals insignificant
- Many 3-digit sectors have < than 20 JVs
### 1-digit industries, 1977-2003

<table>
<thead>
<tr>
<th>Industry</th>
<th># JVs</th>
<th># Other</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>All industries</td>
<td>1,911</td>
<td>23,201</td>
<td>1.0%**</td>
</tr>
<tr>
<td>Petroleum</td>
<td>320</td>
<td>1,726</td>
<td>42.4%**</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>856</td>
<td>6,349</td>
<td>3.4%**</td>
</tr>
<tr>
<td>Services</td>
<td>76</td>
<td>937</td>
<td>2.0%**</td>
</tr>
<tr>
<td>Mining</td>
<td>15</td>
<td>76</td>
<td>-0.1</td>
</tr>
<tr>
<td>Finance</td>
<td>327</td>
<td>7,192</td>
<td>3.4%**</td>
</tr>
</tbody>
</table>
# 3-digit industries, 2003

<table>
<thead>
<tr>
<th></th>
<th># JVs</th>
<th># Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drugs</td>
<td>12</td>
<td>423</td>
</tr>
<tr>
<td>Soaps, toiletries</td>
<td>16</td>
<td>337</td>
</tr>
<tr>
<td>Office machines, comps</td>
<td>3</td>
<td>117</td>
</tr>
<tr>
<td>Motor vehicles</td>
<td>51</td>
<td>596</td>
</tr>
<tr>
<td>Electronic components</td>
<td>10</td>
<td>353</td>
</tr>
<tr>
<td>Textiles</td>
<td>13</td>
<td>127</td>
</tr>
</tbody>
</table>
Future econometric tests:

Dependent variable: ROA
Explanatory variables:
- Sales ratio
- Partial ownership (JV) dummy
- JV dummy interacted with sales ratio
- Full ownership (FO) dummy
- FO dummy interacted with sales ratio
- Country/industry, year fixed effects
- Controls
Other possible explanations for gap

We tested for:

☐ Size
☐ Age
☐ Tax rates
☐ Non-dividend payments

Other ideas?
☐ Policy changes
Postscript: JVs in India and China

- *Wall Street Journal* reported on the troubles of international JVs in India

- *China Business Online* reports on the declining numbers of JVs in China
Causes of falling JV numbers in India

- Less government restrictions
- Differences between partners
- Clashes over expansion plans
- Competing interests of firms
## Indian foreign-ownership controls

India continues to limit foreign ownership in a range of businesses, but many joint ventures with local partners have proved difficult.

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>CONTROLS</th>
<th>CAP ON FOREIGN OWNERSHIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer banking</td>
<td>Subject to central-bank approval</td>
<td>74%</td>
</tr>
<tr>
<td>Telecom</td>
<td>Limited to civil services</td>
<td>74%</td>
</tr>
<tr>
<td>Retail</td>
<td>Investments allowed only in single-brand retail stores</td>
<td>51%</td>
</tr>
<tr>
<td>Airlines</td>
<td>Foreign investment up to 49%. Investment by expatriate Indians up to 100%. No investment allowed by foreign airlines</td>
<td>49%</td>
</tr>
<tr>
<td>Insurance</td>
<td>Subject to review by industry regulator</td>
<td>26%</td>
</tr>
<tr>
<td>Print media</td>
<td>An Indian partner must have editorial control of newspapers and periodicals dealing with current events</td>
<td>26%</td>
</tr>
<tr>
<td>Defense industries</td>
<td>Subject to licensing and security requirements</td>
<td>20%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>No foreign direct investment permitted, except in tea plantations</td>
<td>0%</td>
</tr>
</tbody>
</table>

Source: Ministry of Commerce, India
Declining use of JVs in China

Share of JVs on FDI flows to China

2000 2001 2002 2003 2004

Other
JVs