ASYMMETRIC INFORMATION AND JOINT VENTURE PERFORMANCE

JEFFREY J. REUER

Strategy and Management Department
INSEAD
Boulevard de Constance
77305 Fontainebleau Cedex, France
Tel.: (33) 1 60 72 44 73
Fax: (33) 1 60 74 55 00
E-mail: jeffrey.reuer@insead.fr

MITCHELL P. KOZA

Strategy and Management Department
INSEAD
Boulevard de Constance
77305 Fontainebleau Cedex, France
Tel.: (33) 1 60 72 42 69
Fax: (33) 1 60 74 55 00
E-mail: mitchell.koza@insead.fr

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In a recent study of Japanese firms’ manufacturing entries into the U.S., Hennart and Reddy (1997) conclude that joint ventures are useful when the ‘digestibility’ of targeted assets is low, viz. when target firms are large and non-divisionalized. They reject the ‘competing’ view that JVs are attractive when asymmetric information exists between parent firms combining resources (Balakrishnan & Koza, 1993). In this paper, we revisit their theoretical arguments and findings, and we present an analysis of the shareholder wealth effects of forming domestic and international JVs. The empirical evidence lends support to the view that JVs are attractive when parent firms face difficulties in valuing complementary assets \textit{ex ante}. 
INTRODUCTION

Within the context of an increasing number of perspectives on interfirm collaboration, Hennart and Reddy (1997) contrast and test two specific explanations of joint ventures (JVs). First, they posit that a JV is attractive when a firm would face substantial costs of integrating targeted assets through an acquisition (see also Hennart, 1988; Kogut, 1988). Such *ex post* transaction costs are expected to be larger when desired assets are commingled with nondesired assets, which is likely to be the case when the target firm is large and non-divisionalized. They point to this issue of ‘digestibility’ as the fundamental post-acquisition integration problem. Joint ventures, by contrast, enable the firm to link into targeted assets without the need of disentangling these resources from others, a task which would be easier if the target firm were small or if desired assets were to a large degree isolated within a quasi-independent division.

Second, they consider Balakrishnan and Koza’s (1993) ‘competing’ view, which portrays JVs as tools for reducing the uncertainty and costs of valuing complementary assets. Balakrishnan and Koza argue that when firms operate in different industries, JVs enable firms to combine resources in a piecemeal fashion, which in turn mitigates the adverse selection problem that arises from valuation uncertainties (Akerlof, 1970). However, in their empirical analysis of Japanese firms’ manufacturing entries into the U.S., Hennart and Reddy reject this second, ‘asymmetric information,’ perspective in favor of the ‘digestibility’ view above. In fact, they find that Japanese firms are *less* apt to use JVs when parent firms do not manufacture any of the same products and information asymmetries are likely problematic. They conjecture that JVs are unattractive as vehicles for diversification
and are more suitable for obtaining scale economies when target firms have a dominant position.

In light of these findings and the importance of these two views to current and future JV research, this paper revisits their theoretical arguments and conclusions. We propose that the two perspectives are complementary rather than competing, and the interpretation of their findings hinges on several conceptual and empirical issues. We also present new evidence on the shareholder wealth effects of JV formation in domestic and international contexts. The results show that the stock market generally reacts favorably to JV formation announcements when asymmetric information exists between parent firms. This finding lends support to the view that domestic as well as international JVs are attractive when firms face difficulties in valuing complementary assets \emph{ex ante}.

**RESOURCE ASSEMBLY THROUGH JOINT VENTURES**

\emph{Ex Ante and Ex Post Challenges}

For Hennart and Reddy, the ‘digestibility’ and ‘asymmetric information’ views represent competing theories of joint ventures. The former deals with the “costs of integrating the target firm’s labor force (what has been called the postacquisition integration problem),” while the latter is “concerned with transaction costs in the market for firms” (p. 1). In the former case, resource indivisibilities and management costs are key sources of transaction costs. Indivisibilities arise when it is difficult to readily extract desired assets from undesired assets, and management costs derive from the integration of two sets of employees, each with its own culture and organizational routines. In the latter perspective, transaction costs arise from information uncertainties and costs owing to resource valuation problems from asymmetric information between transacting firms.
In our view, the two explanations are complementary rather than competing. Firms combining resources need to contend with both *ex ante* valuation and *ex post* integration challenges, and both factors can affect the attractiveness of a joint venture. Balakrishnan and Koza take up the case when assets are completely alienable. Their view suggests that a market failure can still occur when ‘digestibility’ problems do not exist. Under conditions of asymmetric information, a joint venture mitigates the firm’s need to engage in costly efforts to reduce uncertainties as well as the risks of either offering too little (and failing to complete the transaction) or overpaying for the targeted assets. Conversely, when problems of asymmetric information are minimal, a joint venture may be attractive due to the ‘digestibility’ problems that Hennart and Reddy highlight. While their focus is on the assets targeted by entrants into foreign markets, for other combinations the issue of resource indivisibility can be important on both sides of the dyad. For example, if Firm A would face difficulties acquiring Firm B’s resources, the firms could enter a joint venture or Firm B might acquire Firm A’s assets if they are alienable instead. The same logic holds if the identities of A and B are swapped, which suggests that resource indivisibilities for one firm need not be a necessary or sufficient condition for JVs in general.

We would also emphasize that the two perspectives’ underlying explanatory mechanisms are overlapping to a degree that it may be difficult to isolate them in practice. In particular, *ex ante* valuation problems are also apt to exist when *ex post* integration challenges would be significant. For instance, valuing targeted assets will be difficult when these resources are located in a ‘foreign’ organizational context with different routines and a unique culture. Further, to the extent that desired resources are embedded and shared among related units, the *ex ante* valuation problem can also become more complicated, particularly if the most important shared assets are
intangibles (Nanda & Williamson, 1995). As such, we suggest that Hennart and Reddy’s finding that Japanese firms tend to prefer JVs when ‘digestibility’ concerns arise does not permit rejection of the ‘asymmetric information’ perspective in favor of the ‘digestibility’ view. The two perspectives are complementary with their emphases on \textit{ex ante} and \textit{ex post} resource combination challenges, and \textit{ex post} integration problems occur in settings that are likely to give rise to \textit{ex ante} valuation difficulties.

\textbf{Governance Choices and Outcomes}

Potentially more problematic for the ‘asymmetric information’ view of joint ventures is Hennart and Reddy’s finding that Japanese firms tend to enter the U.S. with acquisitions rather than JVs when parent firms produce different products and asymmetric information likely exists between the parties. This result, which seems to directly contradict Balakrishnan and Koza (1993), raises two important issues: (1) whether the findings might reflect institutional or other factors limiting generalizability, and (2) whether results from governance choice models should be carried over to draw conclusions for firm performance.

Prior studies in financial economics and strategic management speak to both of these issues. Harris and Ravenscraft (1991), for example, examine foreign acquisitions of U.S. firms using a sample of firms from a more diverse set of home countries. They report that in almost three-fourths of the international takeovers, the buyer already had operations in lines of business closely related to those of the U.S. target. Harris and Ravenscraft (1991) therefore conclude that cross-border acquisitions predominate in areas where the buyer has business expertise. This evidence would suggest that the findings for Japanese firms might not be broadly generalizable.
Even if firms choose acquisitions rather than joint ventures when information asymmetries exist due to firms operating in different industries, it does not necessarily follow that performance is enhanced as a consequence. In fact, prior studies on the acquisition relatedness-performance relationship have produced mixed findings (Barney, 1988). While some work reports a negative effect (e.g., Doukas & Travlos, 1988; Eun, Kolodny, & Scheraga, 1996), other studies find a positive or insignificant effect (c.f., Chatterjee, 1986; Lubatkin, 1987; Markides & Ittner, 1994; Seth, 1990; Singh & Montgomery, 1987). In fact, some of the worst performing acquisitions involved firms investing free cash flows to diversify into unrelated industries (Shleifer & Vishny, 1990).

In light of the theoretical issues raised above, possible generalizability concerns, and these mixed findings on firm performance in prior work on acquisitions, it is difficult based on Hennart and Reddy’s evidence alone to reject the ‘asymmetric information’ view of joint ventures in favor of the ‘digestibility’ perspective. In the remainder of the paper, we present an empirical analysis of the shareholder wealth effects of JV formation using event study methodology to evaluate domestic and international JVs.

METHODS

Sample and Data

The dataset comprises two-parent JVs that terminated during the 1985 to 1995 time horizon by a firm buying out the JV, selling out to a partner or outsider, or liquidating the JV. Predicast’s Funk and Scott (F&S) Index and Lexis-Nexis’ company news library were used to identify a broad cross-section of domestic and international JVs. For the purpose of collecting stock returns data, at least one parent firm had to be a publicly-traded, U.S. firm with daily stock returns data obtainable
from the Center for Research in Security Prices (CRSP) data files. When the venture had one U.S. parent firm with available stock returns data, this firm served as the “focal” firm for the analysis. When both firms were U.S. parent firms with available stock returns data, one firm was randomly chosen to be the focal firm to avoid repeat sampling on the venture (McConnell & Nantell, 1985). Governance structures other than equity joint ventures (e.g., toe-hold investments, non-equity alliances, etc.) were not considered due to their different characteristics (e.g., Chi, 1994; Kogut, 1988). Ventures were eliminated from the sample if other announcements were made that might confound the results.

Each of the ventures was classified into one of four groups based on the parent firms’ and the JV’s industry at the three-digit SIC level (e.g., see Table 1). In Group I, the JV’s industry of operation matches both parent firms’ primary industries. Information asymmetries should be lowest for this group since all three entities operate in the same industry. Group II represents collaborations in which both parent firms operate in the same industry, but the JV operates in a different industry. In Group III, the JV operates in the industry of one parent firm, but the parent firms’ primary industries do not match. Finally, Group IV involves the lowest overlap among the parent firms and the JV as all three entities operate in different industries.

The final sample consisted of 297 domestic and international joint ventures. 8.4 percent of the JVs were in Group I, 6.1 percent were in Group II, 34.7 percent were in Group III, and 50.8 percent were in Group IV. Based on a sample of 64 domestic JVs formed during the mid-1970s, Balakrishnan and Koza (1993) reported that 11 ventures (or 17.2 percent) involved parent firms in the same 3- or 4-digit SIC. As such, despite the fact that the present sample includes more recent ventures as well as international JVs, the proportion of ventures between parent firms in the same
industry is comparable (i.e., 14.5 percent in Groups I and II vs. 17.2 percent in Balakrishnan & Koza, 1993). Roughly half (i.e., 45.1 percent) of the ventures were based outside of the U.S., and 60.3 percent of the JVs operated in manufacturing industries.

**Analytical Technique**

The firm valuation effects of JV formation were examined using event study methodology. This approach has been widely employed in strategic management research and focuses on the future cash flow implications of strategic investment decisions. The Sharpe-Lintner market model was used as a benchmark for generating firm-specific forecast returns:

\[
R_{it} = \alpha_i + \beta_i R_{mt} + \epsilon_{it},
\]

where \( R_{it} \) is firm \( i \)'s stock return on day \( t \), \( R_{mt} \) is the value-weighted stock return on day \( t \), and \( \epsilon_{it} \) is the error term assumed to be distributed \( N(0, \sigma^2) \) and independent across firms and time. The trading days used to estimate equation (1) were \( t = -250 \) to \( t = -50 \), where \( t = 0 \) corresponds to the announcement date. When multiple announcements were made for a single venture, the earliest one was taken for \( t = 0 \). For trading days surrounding the announcement date, risk-adjusted abnormal returns were calculated as follows:

\[
AR_{it} = R_{it} - (a_i + b_i R_{mt}),
\]

where \( a_i \) and \( b_i \) are the OLS parameter estimates from equation (1) for firm \( i \). The total valuation effect of a JV formation announcement can be calculated by summing these abnormal returns for days surrounding the announcement date (i.e., \( t \in [\tau, \kappa] \)) to obtain cumulative abnormal returns (CARs) (i.e., \( \text{CAR}_{i, \tau, \kappa} = \sum_{t=\tau}^{\kappa} AR_{it} \)). Abnormal
returns and CARs over days $t = -1$ to $t = 1$ were calculated for domestic and international JVs in each of the four groups.

**RESULTS**

Consistent with prior research reporting a positive average firm valuation effect of JV formation (e.g., Koh & Venkatraman, 1991; McConnell & Nantell, 1985; Park & Kim, 1997; Woolridge & Snow, 1990), the mean CAR for the full sample is 0.439 percent ($p<0.05$), which indicates JV formation announcements are generally received favorably by the stock market. The mean CAR for each of the four groups is -0.497 percent (n.s.) for Group I, 1.361 percent (n.s.) for Group II, 0.635 percent for Group III ($p<0.05$), and 0.350 percent for Group IV ($p<0.15$). The stock market reaction is lowest for collaborations involving parent firms and JVs in the same industry (i.e., Group I, $p<0.15$). The average CAR from domestic JV formation announcements is 0.655 percent ($p<0.05$), and the mean abnormal return on trading day $t = 1$ is 0.500 ($p<0.01$). For JVs based outside the U.S., the mean CAR is 0.177 percent (n.s.), and the mean abnormal return on the announcement date is 0.357 percent ($p<0.05$). As such, there is evidence that both domestic and international JVs enhance firm value in general (c.f., Chung, Koford, & Lee, 1993; Finnerty, Owers, & Rogers, 1986; Lee & Wyatt, 1990). The mean duration of ventures does not differ across the four groups (i.e., $F = 0.659$; 3, 293 d.f.), but JVs based outside of the U.S. were on average longer-lived than domestic JVs (i.e., 7.21 vs. 5.60 years, $p<0.01$) (Park & Ungson, 1997).

Table 1 presents mean abnormal returns for domestic JVs for each of the four groups. None of the average abnormal returns or CARs are significantly different from zero for ventures in Group I. For cases in which the parent firms are based in the same industry but the JV operates in a different industry (i.e., Group II), the mean
CAR is not significant and the average abnormal return on day \( t = -2 \) is -1.034 percent (\( p<0.05 \)). Given the small sample sizes of Groups I and II, we also examined the stock market reactions for these two groups together. This analysis similarly produced an insignificant CAR and a negative mean abnormal return on day \( t = -2 \) (i.e., -0.496 percent, \( p<0.15 \)).

Positive mean abnormal returns are evident for Groups III and IV involving asymmetric information between parent firms. The average abnormal return is 0.717 percent (\( p<0.15 \)) for Group III on day \( t = 1 \), though the CAR of 0.661 percent does not reach significance. For Group IV comprising collaborations in which all three entities are in different industries, a negative mean abnormal return is present on trading day \( t = 2 \) (\( p<0.10 \)), but the average abnormal return for the day after the JV formation announcement is 0.418 percent (\( p<0.05 \)), and the mean CAR is 0.653 percent (\( p<0.05 \)). When Groups III and IV are combined to create a subsample of collaborations for which information asymmetries exist between parent firms, the mean abnormal return is 0.513 percent on the day after the JV formation announcement, and the mean CAR is 0.655 percent (both \( p<0.05 \)).

Table 2 provides average abnormal returns for international JVs for each of the four groups. As earlier, no positive average abnormal returns or CARs are evident for Groups I or II involving parent firms in the same industry. For Group I, the mean abnormal return is -0.948 percent (\( p<0.05 \)) on the day after the JV formation announcement, and the mean CAR is insignificant. For Group II, all of the average abnormal returns and the mean CAR are insignificant. When Groups I and II are pooled, all of the average abnormal returns and the mean CAR are likewise not
significant. Hence, the stock market reacts negatively or insignificantly to domestic as well as international JV formation announcements in the absence of asymmetric information between parent firms.

| Insert Table 2 About Here |

The average abnormal returns for Groups III and IV are positive and larger than for Groups I and II (i.e., t = 1.53 on day t = 0). For Group III, the mean abnormal return is 0.637 percent (p<0.01) on the announcement date, and the mean CAR is 0.617 percent (p<0.10). No significant mean abnormal returns are evident for Group IV, however. When the two groups are pooled together, the average abnormal return is 0.412 percent (p<0.01) on the announcement date. As before for the sample of domestic JVs, there is some evidence that the stock market responds favorably to international JV formations when there are information asymmetries between parents.

Taken together, the results presented in Tables 1 and 2 therefore indicate that the shareholder wealth effects of JV formation are not generally more favorable when the parent firms operate in the same industry and information asymmetries are not problematic. The only positive average stock market reactions observed are for collaborations involving parent firms subject to asymmetric information.

CONCLUSION

This paper reconsidered Hennart and Reddy’s theoretical arguments and conclusions on the relative merits of the ‘asymmetric information’ and ‘digestibility’ views of JVs. On a theoretical level, we submitted that the perspectives are complementary, suggesting that both asymmetric information and resource digestibility influence the attractiveness of combining resources with joint ventures. We also proposed that ex ante valuation challenges are likely to be significant under
the same conditions posing *ex post* integration difficulties – when targeted resources are indivisible and embedded in a ‘foreign’ organizational context.

In addition to these theoretical points, we noted that the broader implications of Hennart and Reddy’s findings on Japanese firms’ manufacturing entries into the U.S. hinge on generalizability issues as well as possible limitations when drawing inferences from firms’ governance preferences. These considerations also lead us to believe that the ‘asymmetric information’ view cannot be rejected in favor of the ‘digestibility’ view based solely on their evidence.

In the empirical portion of the present paper, we examined the firm valuation effects of JV formation using a new database containing more recent ventures as well as international JVs. Like Balakrishnan and Koza (1993), we found that the stock market generally judges favorably those JVs formed under conditions of asymmetric information between transacting parties. Conversely, the market is more apt to respond negatively to JV formation when no asymmetric information is present.

Based on this evidence and our theoretical discussion, we conclude that joint ventures are attractive when parent firms face difficulties in combining complementary assets subject to asymmetric information. Given the theoretical importance of *ex ante* valuation issues and *ex post* integration challenges, as well as the logical connections between the ‘asymmetric information’ and ‘digestibility’ views, we also conclude that both perspectives provide unique insights into the opportunities and challenges firms face in assembling internal and external resources. As collaboration increases in significance for practitioners and the alliance literature continues to develop in a fragmentary fashion, we hope this paper provides an impetus for additional work on core theoretical concepts in the collaborative strategy area.
REFERENCES


TABLE 1
Abnormal Returns from Forming Domestic Joint Ventures$^a$

<table>
<thead>
<tr>
<th>Event Day (t)</th>
<th>Group I</th>
<th>Group II</th>
<th>Group III</th>
<th>Group IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>-2</td>
<td>-0.031</td>
<td>-1.034*</td>
<td>0.330</td>
<td>-0.197</td>
</tr>
<tr>
<td>-1</td>
<td>-0.096</td>
<td>-0.081</td>
<td>0.444</td>
<td>0.150</td>
</tr>
<tr>
<td>0</td>
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<td>1.099</td>
<td>-0.500</td>
<td>0.085</td>
</tr>
<tr>
<td>1</td>
<td>0.184</td>
<td>0.731</td>
<td>0.717‡</td>
<td>0.418*</td>
</tr>
<tr>
<td>2</td>
<td>-0.081</td>
<td>0.783</td>
<td>0.115</td>
<td>-0.415†</td>
</tr>
<tr>
<td>CAR -1,1</td>
<td>-0.301</td>
<td>1.749</td>
<td>0.661</td>
<td>0.653*</td>
</tr>
<tr>
<td>N</td>
<td>15</td>
<td>13</td>
<td>43</td>
<td>92</td>
</tr>
</tbody>
</table>

$^a$ ‡ p < 0.15, † p < 0.10, * p < 0.05, ** p < 0.01.

$^b$ Key to the Four Groups:
I: Both parent firms and the JV are in the same industry.
II: Parent firms are in the same industry, but the JV operates in a different industry.
III: The JV operates in the industry of only one parent firm.
IV: All three entities are in different industries.
TABLE 2
Abnormal Returns from Forming International Joint Ventures\textsuperscript{c}

<table>
<thead>
<tr>
<th>Parent and JV Relations\textsuperscript{d}:</th>
<th>\textit{Group I}</th>
<th>\textit{Group II}</th>
<th>\textit{Group III}</th>
<th>\textit{Group IV}</th>
</tr>
</thead>
<tbody>
<tr>
<td>( P_1 \rightarrow P_2 ) ( \backslash ) ( JV_{12} )</td>
<td>( A \rightarrow A ) ( \backslash A )</td>
<td>( A \rightarrow A ) ( \backslash B )</td>
<td>( A \rightarrow B ) ( \backslash A )</td>
<td>( A \rightarrow B ) ( \backslash C )</td>
</tr>
<tr>
<td>Event Day (t):</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2</td>
<td>0.052</td>
<td>0.435</td>
<td>-0.216</td>
<td>0.228</td>
</tr>
<tr>
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<td>0.152</td>
<td>-0.481</td>
<td>0.142</td>
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</tr>
<tr>
<td>0</td>
<td>0.005</td>
<td>-0.258</td>
<td>0.637\textsuperscript{**}</td>
<td>0.183</td>
</tr>
<tr>
<td>1</td>
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</tr>
<tr>
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<td>0.063</td>
</tr>
<tr>
<td>CAR_{-1,1}</td>
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<td>0.351</td>
<td>0.617\textsuperscript{†}</td>
<td>-0.121</td>
</tr>
<tr>
<td>N</td>
<td>10</td>
<td>5</td>
<td>60</td>
<td>59</td>
</tr>
</tbody>
</table>

\textsuperscript{c} \( \hat{p} < 0.15, \) \( \dagger p < 0.10, \) \( * p < 0.05, \) \( ** p < 0.01. \)

\textsuperscript{d} Key to the Four Groups:

I: Both parent firms and the JV are in the same industry.
II: Parent firms are in the same industry, but the JV operates in a different industry.
III: The JV operates in the industry of only one parent firm.
IV: All three entities are in different industries.