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CHAPTER 19

Profitability of Joint Ventures Abroad

Explaining a New Empirical Puzzle

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We explore empirical patterns in the profitability of foreign affiliates of US multinational companies (MNCs). Historically, affiliates that were organized as 50/50 or minority-owned joint ventures (JVs) have been less profitable than their majority- and wholly owned ventures. The latter had roughly a 6 percent return on assets from the 1970s to the 1990s, compared to 4 percent for the joint ventures. This pattern held across most industries and regions, though the size of this "profitability gap" varied. In the 2000s, this profitability gap narrowed and even reversed itself in some years, regions, and sectors.

To explain these patterns, we propose a simple model based on economics of project finance, classic FDI theory, and a combination of the resource-based and transaction-cost theories of the firm. We argue that both the ownership structure and the profitability of a foreign venture are determined by the resources of the MNCs and of potential host-country partners. The profitability gap then shows the revealed competitive advantage of US MNCs vis-à-vis local firms. We consider alternative explanations, which we do not think explain the full pattern observed.

The data and the simple model we build have important implications for further research. In particular, we call for researchers to revisit the logic of asset bundling in creating value (Hennart, 2009; Gomes-Casseres, 2015), and for them to link this logic more explicitly than has been done so far with the organizational theories that shape governance structures. The schools of thought based on the works of Edith Penrose and of Ronald Coase must be seen to represent two sides of a coin, not competing theories (Teece, 2014). A proper synthesis of these views will help in explaining foreign-market entry strategies, effects of government FDI policies, and the distribution of gains between foreign investors and local economies.

The research presented in this chapter is preliminary in that we are continuing to refine our empirical strategy. We do not yet have sufficiently detailed data to support multivariate regression analysis, and so rely here on basic statistics and trends.

1 Patterns of Profitability in Foreign Affiliates

Several previous studies have examined the determinants of profits of MNCs' foreign affiliates, but none discovered the empirical pattern that we find (e.g., Leftwich, 1974; Lupo et al., 1978; Connor and Mueller, 1982; Lecraw, 1984; Fairchild and Sosin, 1986; Kumar, 1991 and 1994; and Landefeld et al., 1992). Axarloglou and Meanor (2006) find that various types of taxes have different effects on US FDI flows to majority-owned subsidiaries versus minority-owned subsidiaries abroad, but they do not analyze the determinants of profitability. Using the same source of data that we use, Desai et al. (2004) find a declining propensity over the last two decades of American firms to organize their foreign operations as joint ventures but focus on the determinants of ownership structure, not profitability.

We focus on the profitability of each affiliate of a US MNC, not on the returns to the parent companies. We understand this profitability to be

a function of the resources bundled in the venture, combined with the way the venture is governed. Furthermore, we seek an explanation for patterns that we find across industries and countries, as well as across time. In particular, the explanation we seek must explain both the persistent profitability gap of the 1970s–1990s, as well as the narrowing of that gap in the 2000s. We also consider several alternative explanations, including possible effects of subsidiary size, subsidiary growth rate, host country tax rates, host country policies toward FDI, and nondividend payments. Our initial tests suggest that none of these factors explains the profitability gap, though they may contribute to the pattern.

1.1 Source of Data

Our measures of profitability are calculated from the Annual and Benchmark Surveys of US Foreign Direct Investment Abroad published by the Bureau of Economic Analysis (BEA). Every five years, the Benchmark Surveys of the BEA reports, in aggregated form, financial data of the entire universe of US foreign affiliates. In addition, the BEA publishes data for a sample of this universe in its Annual Surveys. Under US law, every person or company having more than 10 percent of voting ownership in a foreign business is required to complete the BEA surveys. Only data for nonbank affiliates of nonbank parents are used in this chapter.

A limitation of our analysis is that we do not have access to the line-of-business data at the BEA itself, which would allow for multivariate analysis. Instead, we work with the published tables, which are aggregated by major industry categories and major countries or regions. Unfortunately, these tables do not provide detailed cross-tabulations of industry and country. An added complication is that the industry classification used by the BEA changed in 1999 from SIC-1987 to NAIC-1998. We constructed a concordance to translate the later numbers into the earlier categories used in the analysis here.

1.2 Measuring Profitability by Ownership Structure

The published BEA tables group foreign affiliates into two broad categories: "All" affiliates and "Majority-Owned" affiliates. Majority-owned affiliates are those in which the voting ownership is higher than 50 percent, including wholly owned subsidiaries. The bulk of the affiliates that fall into the majority-owned category are in fact wholly owned subsidiaries (Mataloni and Fahim-Nader, 1996); in our theoretical discussion, we term these cases *wholly owned ventures*. Affiliates not classified as majority-owned by the BEA we will usually call *minority-owned ventures* in this chapter, even though half of the affiliates this group are 50/50 joint ventures (Mataloni and Fahim-Nader, 1996). Sometimes we refer to these ventures as *jointly owned* ventures. Each financial or operating variable that we use for these jointly owned ventures is calculated as the difference between the number that the BEA reports for "All" Affiliates and the number reported for "Majority-Owned" Affiliates. In this chapter, we present and examine these variables of profitability and ownership for manufacturing sectors only – the pattern in oil and gas and in services is slightly different from what we show here, though those patterns too can be explained by our model.

We use return on assets (ROA) as the primary measure of profitability; it is calculated as net income over book assets. It is important to note that this return is measured at the level of the affiliate – it is not the return that is repatriated to the MNC, but the actual ratio of net income to assets for the subsidiary's business. Even so, the use of accounting profit ratios to assess performance of companies has been criticized by, for example, Bresnahan (1989) and Schmalensee (1989). According to these critiques, accounting measures may not adequately reflect real economic returns. The discrepancy comes from the fact that accounting measures are generally not adjusted for inflation and that costs such as depreciation, research and development, and personnel training are accounted for as current-period expenses (in order to minimize tax liabilities). As a consequence, total assets may not reflect the real economic value of a firm's investment at a particular point in time. Adjusting accounting data for these potential biases requires detailed firm-level data. Since the BEA data we use here do not provide any firm-specific information, for

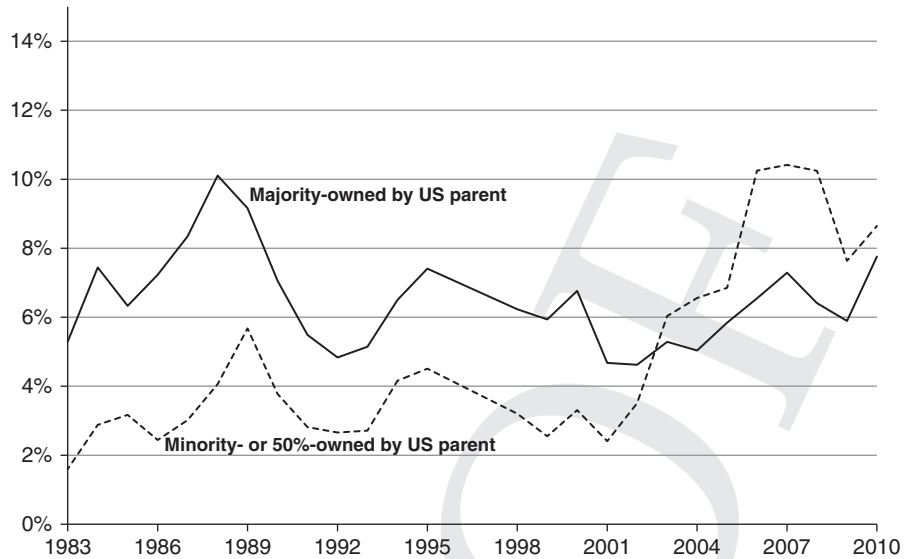

Figure 19.1 ROA of foreign affiliates of US nonbank parents in manufacturing, by ownership.

Notes: Majority owned means greater than 50 percent US MNC ownership; minority owned means 50 percent or less US MNC ownership. "Majority owned" and "minority or 50% owned" are the returns on assets of each ownership category. The JV profitability gap discussed in the text is the difference between these two. Data source and profitability measures are explained in the text. Data for 1970s are not shown, but 1977 data suggest the gap was even larger then. Data after 2010 are not shown, but suggest that joint ventures remained more profitable than majority-owned ventures.

the rest of the chapter we are forced to assume that most of these biases does not affect majority- and minority-owned foreign affiliates asymmetrically.

1.3 The Profitability Gap across Time

We calculate the ROA for majority-owned and minority-owned affiliates in manufacturing sectors and plot them in Figure 19.1. The pattern shows a robust profitability gap higher than 2 percentage points in all years until about 2004, after which the gap reversed. The fragmentary data we have for earlier years, in the mid-1970s, suggest that a gap on the order of 2 percent or higher was present then too.

Around in the early 2000s, however, the gap narrows and then seems to reverse itself, meaning that joint ventures become more profitable than majority-owned ventures. Preliminary data (not shown here) suggest that the gap remained reversed after that. We do not know the variance of these average ROAs from the data we have, and so cannot be sure that the gap is as wide as it is in all years. It does seem, however, that the gap is persistent and robust before the 2000s, and that it narrows and perhaps reverses after that.

1.4 The Profitability Gap across Industries

Within this aggregate picture, there are important differences in the profitability gap across industries. Table 19.1 shows the average size of the profitability gap for the period 1983–2010. (In this table, petroleum sectors are also shown.) These industry averages suggest where to look for underlying causes of the empirical patterns. The ROA gap appears to be positive and high in industries traditionally associated with high firm-specific advantages for US MNCs, and negative or low in those industries traditionally perceived as lacking such advantages.

Table 19.1 ROA gap by industry sector, all regions, average for 1983–2010

ALL INDUSTRIES	**0.8%**
PETR0LEUM	**–0.4%**
Oil and Gas Extraction	–5.5%
Other Petroleum	0.3%
MANUFACTURING	**1.7%**
Food and Kindred Products	**1.9%**
Grain Mill and Bakery Products	1.6%
Other Food Products	2.0%
Chemicals and Allied Products	**1.2%**
Industrial Chemicals and Synthetics	–2.3%
Drugs	3.0%
Soap, Cleaners, and Toilet Goods	–5.5%
Primary and Fabricated Metals	**1.0%**
Fabricated Metal Products	1.3%
Industrial Machinery and Equipment	**4.0%**
Computer and Office Equipment	6.4%
Special Industry Machinery	1.9%
Electronic and Other Electric Equipment	**3.2%**
Household Appliances	–0.2%
Electronic Components and Accessories	5.5%
Transportation Equipment	**2.0%**
Other Manufacturing	**–1.4%**
Tobacco Products	–3.5%
Paper and Allied Products	–2.4%
Printing and Publishing	–2.3%
Glass Products	–4.3%
Instruments and Related Products	3.7%

Notes: "ROA Gap" is the ROA of majority affiliates minus that of minority and 50/50 affiliates. Late-year data in some three-digit categories were converted from NAIC-1998 to SIC-1987.

For example, comparing just the subsectors within Chemical and Allied Products, the gap is strongly positive for specialties such as Drugs, but negative for commodities such as Industrial Chemicals and Soaps and Toiletries. Similarly, in Electronics, the gap is positive for high-tech sectors such as Electronic Components and zero for lower-tech sectors such as Household Appliances. We examined industries with two- and three-digit SEC and NAIC codes too: in most cases, the ROA of majority-owned ventures was higher than that of jointly owned ventures in those industry segments where US MNCs are known to have strong competitive advantages over local firms, whether based on technology (R&D) or marketing (brands). Space limitations preclude us showing all these other graphs. We will pursue this point further in the theory section.

1.5 The Profitability Gap across Countries

The data at the country or regional level confirm the basic results at the industry level. Unfortunately, the BEA tables do not allow detailed analysis of country patterns, as many cells are suppressed for confidentiality. But, in no geographic segment that we examined did minority-owned affiliates earn consistently higher ROAs than majority-owned affiliates. The ROA gaps closed gradually over the period in many regions and countries, most notably in the Asia-Pacific region and specifically in Japan. In some regions – e.g., Latin America and Middle East – the gaps remained roughly constant at close to zero. The ROA data for Asia-Pacific are shown in Figure 19.2. We will return to the issue of the closing gaps in certain regions in our discussion below.

1.6 The Stylized Patterns

The BEA data reveal the following stylized facts, which we will begin to explain in the rest of this chapter:

1. *Historically, the overall profitability (ROA) of majority-owned ventures has been higher than that of other ventures in manufacturing industries; we call this the profitability gap.*
2. *This profitability gap is especially pronounced in those industries in which US MNCs have strong firm-specific advantages.*
3. *By 2001, the profitability gap narrowed in several manufacturing subsectors and some regions, and after 2004 it was reversed from the historical pattern, i.e., jointly owned ventures had higher ROA than majority-owned ones.*

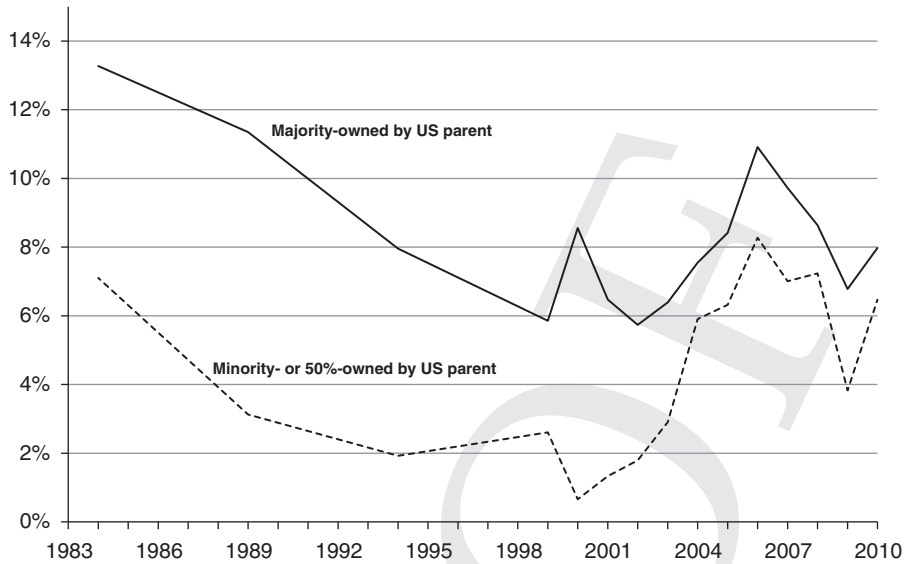

Figure 19.2 ROA of US MNC affiliates in Asia/Pacific, by ownership.

Notes: ROA variables are defined as in Figure 19.1. Data are for affiliates in Asia-Pacific. Due to data availability, some data points are annual, others skip a year or two.

2 A Theory of Foreign Affiliate Profitability

We develop below a theory of profitability, ownership structure, and competitiveness of foreign affiliates that we believe can explain the empirical patterns discussed so far. Our explanation combines elements from three strands of the literature that have developed separately: (1) economics of project investment, (2) FDI theory, (3) the resource-based view of the firm, and (4) the transaction-cost explanation of affiliate governance structures. As noted already, the theory we seek to develop from these strands must help to explain the historical profitability gap, the changes in this gap over time, and the differences observed across industries and countries.

2.1 The Marginal Return to Capital in FDI

We begin by assuming that at any time a firm has a choice among many investment projects. It will choose to invest in those projects that yield a return exceeding its cost of capital. A plot of the returns to these projects, arranged in descending order, describes the marginal return to capital (MRC) for the firm. This simple model is consistent with traditional project finance and does not reflect any special conditions in FDI.

This simple project-finance model also holds for investments across borders. In other words, a firm will face multiple investment projects in a given host country, which, if arranged by descending order of return, will describe its MRC in that host country. Returns abroad may be lower than in the home market because of the additional costs that foreign firms face because of their unfamiliarity with and lack of roots in a foreign environment (Hymer, 1960; Caves, 1971), what Zaheer (1995) named the "liability of foreignness." But whether or not these foreign returns are higher or lower than returns in the home country is not material to our argument.

According to classical FDI theory, the anticipated returns to the MNC must exceed the returns to local firms, because the former must overcome the liability of foreignness. In other words, the bare returns on the project in the host location must be higher for an MNC project than for a project undertaken by a local firm, because the MNC has added

costs of transferring technology, communicating at a distance, and overcoming the lack of knowledge and contacts in the host economy. As a result, FDI theory predicts that if we see an investment by a foreign firm, it must be because that firm has some sort of competitive advantage over local firms.

A corollary argument is that the MNC must have firm-specific resources that produce advantages over the local firms. Traditionally, the FDI literature has identified resources such as proprietary technology, brand name, management skills, and access to export markets as the kinds of firm-specific resources that could grant an MNC advantages over local firms. In our model, the MNC can be said to have firm-specific advantages that are transferable to the host country through ownership and expected to yield a return higher to the MNC in the foreign environment than what local firms could earn on their own resources. We'll show this graphically below.

2.2 Profitability and Ownership Structure

The discussion so far has assumed implicitly that the foreign firm and local firm exploit their competitive advantages through wholly owned ventures. The model can also suggest when a joint venture between the two firms would be attractive. Assume, for the moment, that there are no host-country ownership restrictions. In essence, the firm will then invest in wholly owned ventures as long as the MRC to a wholly owned project is greater than what could be achieved with a joint venture with a local firm. The returns to a joint venture are a combination of the MRC that the foreign and local firms would get if they invested alone, plus an added amount for the value-creation effect of the joint venture. This means that foreign firms will tend to invest in joint ventures mostly when they identify local firms possessing sufficient advantages that the combination would yield a return higher than the next-available wholly owned project available to the foreign firm.

As a result of this investment pattern, we expect to find that the foreign firm will select wholly owned ventures where it has a strong advantage of its own and thus does not need the local firm. Strong advantages of the MNC imply a higher MRC compared to the locals. The JVs are likely to have lower average returns, because they are the next-best project for this foreign firm.

This reasoning leverages the idea of endogeneity in strategic choices and strategic performance (Shaver, 1998; Martin, 2013). We do not claim a causal link between strategy choice variables (majority-owned versus non-majority-owned) and performance measures (e.g., ROA), which we know are endogenous. Instead, we argue that this endogeneity stems from both factors being determined by the underlying competitive advantage of the firms involved.

When assets are bundled in a JV, we assume that the resulting ROA is a weighted average of the ROA that each firm could achieve on its own. Thus, when the MNC holds an advantage over local firms, the ROA for its wholly owned ventures would be systematically higher than the ROA on any JVs with weaker local partners. That, of course, is exactly the historical pattern we observe. There are important variations in this pattern based on the extent of the MNC competitive advantages, which also support this line of reasoning. This model is shown graphically in Figure 19.3.

2.3 The Relative Advantages of MNC and Local Firms

One implication of the model outlined above is that the profitability gap between the wholly owned and jointly owned ventures will increase with the relative advantage of the foreign firm – precisely what we see in the data, most strikingly in the industry sectors shown in Table 19.1. It is also easy to see why the profitability gap might be reversed, that is, why the average return on wholly owned projects might sometimes be lower than that on joint ventures. This happens when the local firm has competitive advantages over the foreign firm – not the usual assumption in the FDI literature, but one logically consistent with our model. In this situation, the returns to a joint venture that draws on strong local capabilities may in fact be higher than the returns to the wholly owned venture.

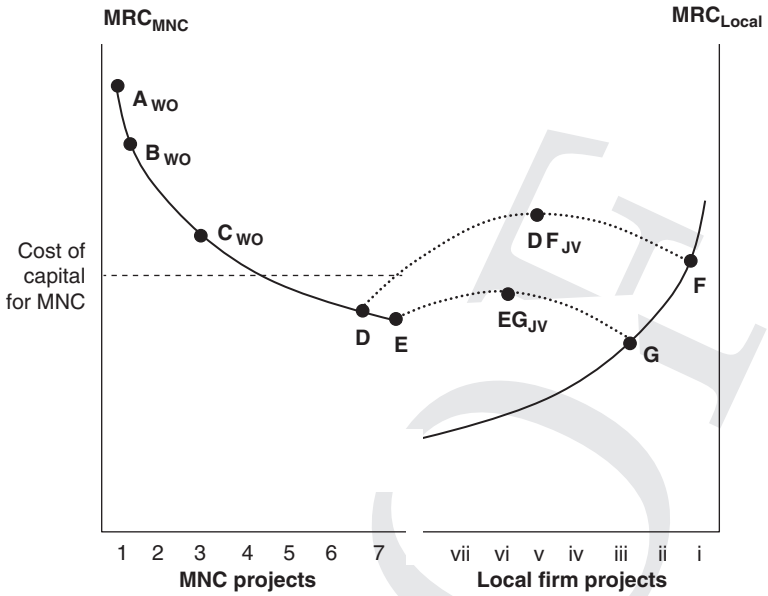

Figure 19.3 A simple model of returns on investment by ownership structure of MNC affiliate.

Notes: The chart shows the marginal return to capital (MRC) of an MNC and the MRC of a local firm. Each curve shows projects that are successively less profitable – they are numbered 1 through 6 for the MNC and i through vi for the local firm. The MNC is assumed to have a competitive advantage over the local firm, shown by its higher MRC curve. Projects A, B, and C will be done by the MNC as wholly owned ventures, because their return exceeds the hurdle rate (dashed line labeled Cost of Capital for MNC). Projects D and E are below the MNC's cost of capital, and so will not be done by the MNC. But the resources for project D can be combined with those of project F of the local firm to yield a JV with returns that exceed the hurdle rate. The EG joint venture does not exceed the hurdle rate and will not be done. As a result of these investment choices, the average return of the wholly owned projects A, B, and C will be higher than the return of the jointly owned project DF.

When might a situation like this arise? Two conditions must apply. First, the local firm must have all the resources needed to compete successfully and could keep the foreign firm out of the market, particularly considering the liability of foreignness. However, the foreign firm might have some resources that, by themselves, are not sufficient to sustain a wholly owned investment, but could add value to a local venture. Examples might be the very industries in which we observe "negative" profitability gaps – industrial chemicals, household appliances, soap, toiletries, textiles, and so on. The local firm might be able to do fine by itself, but an MNC might add value with a brand name or chemical formula.

By varying the relative levels of competitive advantage of the local and foreign firms, we can generate the full range of profitability gaps shown in the data. Large positive gaps stem from strong MNC advantages; negligible gaps suggest parity; and large negative gaps stem from weak MNC advantages (or high disadvantages).

An added feature of this model is that one can interpret the profitability gap in a particular industry and/or country as the "revealed" competitive advantage of US firms compared to local firms. The BEA data discussed above correspond roughly with such an interpretation. For example, as noted already, it is reasonable to argue that the competitive advantage of US firms is strongest in computers and semiconductors and lowest in soaps and

commodity chemicals. In addition, we see that the profitability gap widened over time in some industries and countries and narrowed in others.

These trends suggest gradual changes in the revealed advantages of US firms compared to local firms. In this interpretation, the recent narrowing of the profitability gap in motor vehicles, or across all industries in the Asia-Pacific region, reflect a decline in the relative advantages of US firms compared to local firms. This may be due to the rising competitiveness of local firms or a decline in that of US firms. Recent studies suggest that emerging markets have gained shares of global value added not just in low-wage segments, but also in capital-intensive and skilled segments (Timmer et al., 2014).

2.4 The Effect of Host Country Ownership Policies

The argument so far assumes that the firm is free to invest in whatever projects it wishes. What if there are restrictions on foreign investment, especially ownership restrictions? The investment calculus in countries with host-government restrictions is systematically different from that in countries without such restrictions. In such cases, the restrictions placed on the foreign firm may have several effects, each of which reduces the profitability gap between wholly owned and jointly owned ventures.

First, the restrictions may simply impose a tax or added cost on wholly owned investments, resulting in a lower ROA for these ventures, when compared to joint ventures that escape these added costs. Second, to encourage JVs, the firm may receive incentives that will increase the return to that joint venture. Third, the foreign firm may be "forced" into a joint venture; subsequently, the joint venture ROA will benefit from resources that might otherwise have been invested in wholly owned ventures; this would yield a JV ROA that is higher than an "unforced" JV. The result of these effects will be a smaller profitability gap in countries with host-government restrictions compared to the country-year observations without restrictions on whole ownership. Our early and limited exploration of this idea suggests that it may explain the negative gap in natural resource-based industries, such as oil and gas.

At the same time, we know that firms forced into JVs will tend to withhold their most valuable resources from the venture, in contrast to if they were investing in a wholly owned affiliate. At the extreme, the firms with strong competitive advantages may be deterred from investing altogether (Gomes-Casseres, 1990); in this case, foreign firms with lesser competitive advantages may fill the gap and accept the JV structure for their investment. These conditions lay the groundwork for a widening of the profitability gap if the ownership restrictions were lifted or eased, consistent with the observations of Chang and Moon (2013). In that study, some JVs in China were converted to wholly owned ventures when ownership restrictions were eased. And, importantly, when these JVs became wholly owned ventures, their profitability rose, as measured in terms of ROA. The authors argue that this result is due to the foreign firm adding more and better resources to the converted ventures. This interpretation is fully consistent with our model.

2.5 Selection Effects in our Model

Our model describes project choices by a single firm. From this perspective, projects along the MRC curve in Figure 19.3 represent successively less attractive ways of using the firm's proprietary advantages. The MRC is then the investment frontier for a given firm and the resulting wholly owned and jointly owned ventures are then different projects in the firm's portfolio.

A different formulation of the model would see the MRC curve as representing the investment frontier for an industry or collection of firms. The projects underlying this curve might then be investments by rivals in the industry. In this view, the model tells which firms are self-selected to participate in which ventures. The leading firms would have the highest returns on their assets in a given industry, followed by second-tier rivals with lower returns.

In this interpretation of Figure 19.3, it would be the second-tier firms that would form joint ventures and the leading firms that form wholly owned ventures in the industry. Indeed, there is some

evidence that small firms in an industry are often compelled by competition to follow their larger rivals abroad and that they then often need joint ventures to enter markets in which they could not succeed alone (Gomes-Casseres, 1989).

The aggregate data and stylized facts discussed above are equally consistent with this second formulation, and we have as yet no way to discriminate between the explanations. Because the data we have are at the industry level (or country level), we do not observe single firms and cannot disentangle average returns for the industry from average returns for firms in the industry. One implication of the industry-MRC model may be that the steepness of the MRC curve depends on industrial organization variables, such as the distribution of firms in the industry.

3 Alternative Explanations

We have done preliminary tests of alternative explanations for the patterns observed. For these early tests, we focused on variables that other researchers have found important to MNC profitability. Due to the lack of firm-level data, we limit our analysis to the effects of affiliate size, affiliate growth, foreign income tax rate, host country policies toward FDI, and nondividend payments. None of these factors show a significant association with the profitability gap in our early, limited tests. Furthermore, none of these explanations is comprehensive like the theory just offered – they may contribute to one aspect of the patterns observed, but not to another.

3.1 Effects of Affiliate Size

One explanation for the profitability gap may be that majority-owned affiliates are larger than minority-owned ones and thus benefit from economies of scale. But our tests using affiliate assets as well as sales as measures of size indicate that majority-owned affiliates, in fact, are not systematically larger than minority-owned affiliates; on the contrary, the latter are on average larger. In terms of assets, the average gap between majority- and minority-owned affiliates was $25.1 million for 1983–2000 (about 41 percent of the average assets of majority-owned). In terms of sales, majority-owned affiliates had 23 percent lower average sales than minority-owned in 1983–2000, which is the period in which we observe a large and persistent profitability gap. So, affiliate size probably does not provide an explanation of this pattern.

3.2 Effects of Affiliate Growth

Another potential explanation for the profitability gap is that majority-owned affiliates are older than minority-owned ones, and so benefit from economies of experience or depreciated assets. Since we do not have access to information regarding the average age of affiliates, we cannot test directly whether the difference in profitability is caused by difference in age. However, based on an examination of how assets and sales of both affiliate types have grown over time, we conclude that this explanation is highly implausible. In 1991–2000, assets of majority-owned affiliates grew much faster (8 percent per year) than assets of minority-owned affiliates (2.2 percent per year), suggesting that the average age of assets in majority-owned affiliates should be lower. Similarly, the average sales per affiliate of majority-owned affiliates grew faster (5.8 percent per year) than the average sales of minority-owned affiliates (3.9 percent per year). So, minority-owned affiliates are on average older and thus more experienced than majority-owned ventures – the reverse of what they'd need to be if age were positively associated with higher ROAs.

3.3 Effects of Foreign Tax Rates

Another possible explanation for the profitability gap is that regulations in host countries influence accounting practices of MNCs and thus the accounting measures of profitability that we use. In particular, it may be easier to shift profits from wholly or majority-owned subsidiaries to locations with lower tax rates, which would then show higher profitability than otherwise. (Here it is important to remember that most majority-owned affiliates in BEA data are in fact wholly owned

subsidiaries.) This can be done through transfer-price policies, or by managing financial structures.

Desai et al. (2004) offer tax rates and transfer pricing as one major determinant of affiliate profitability. Their results suggest that the reported profitability of partially owned affiliates is considerably less sensitive to local tax rates than is the reported profitability of wholly owned affiliates. Axarloglou and Meanor (2006) find that taxes have different effects on US FDI flows to majority-owned subsidiaries versus minority-owned subsidiaries abroad, but they do not analyze the effects of tax rates on profitability. In principle, it is therefore possible that MNCs will shift profits to majority-owned affiliates more than they do to joint ventures; this may contribute to the profitability gap.

To test for such effects, we have plotted the profitability gap against the statutory maximum tax rate from the Michigan World Tax Database for 57 countries from our sample for 1977–2003 (although some observations were missing). There appears to be a tendency for the difference in profitability to decline as the foreign tax rate increases. This is consistent with the hypothesis that MNCs are able to shift profits of wholly owned ventures from high- to low-rate countries. But, we believe that this effect is insufficient to account for the full extent of the gap we observe, and it does not address the gap reversal or the industry patterns at all.

3.4 Effects of Host Country Policies

The theoretical discussion suggested that there might be a lower or even negative profitability gap in countries that have FDI restrictions on majority ownership. For example, this may be the reason for the negative and fluctuating profitability gap that persisted until 1990 for Mexico, a country – until recently – well known for strong disincentives for wholly owned foreign investment. Consistent with Chang and Moon (2013), an easing of host-country restrictions may likewise explain the reversal of the profitability gap in services in Mexico, from a negative gap in the 1980s to a positive gap afterwards. It suggests that before the 1990s US firms were either barred from wholly owned investments in such fields, or that those that did enter, did not enjoy much advantage.

To examine more formally for the effect of the host country policies, we test for the relationship between the profitability gap and the index of FDI restrictions developed by Shatz (2000). The index measures openness to FDI on a scale of 1 to 5, with 5 signifying the most open or liberal policies. It takes into account factors such as sectoral restrictions to FDI and approval processes, restrictions on acquisitions, and bans on whole or majority ownership of foreign affiliates. The index is available for 1986–1995. Plotting the gap against the FDI restrictions index reveals a tendency for countries with more liberal regimes to have a higher gap, in line with our theoretical discussion, but the relationship in a simple regression is statistically insignificant.

3.5 Effects of Nondividend Payments

A final possible explanation for the profitability gap is that MNCs receive returns in different forms from majority- and minority-owned ventures so that the MRC curve in our model misstates actual returns. If foreign firms use transfer pricing, royalties, fees, and debt charges more extensively in minority-owned ventures; these costs would then depress the profitability of the ventures as compared to majority affiliates. While an MNC would have an incentive to extract profits in this way in minority-owned ventures, it may not always be able to do so because of limited voting rights in the venture. On balance, therefore, it is an empirical matter whether we observe more nondividend payments in minority or majority MNCs.

One way to test this hypothesis is to analyze the relationship between the ROA gap and propensity to use transfer pricing by industries. Bernard et al. (2006) find that the prices US exporters set for their arm's-length customers are higher than the prices recorded for related parties. The price wedge is 67 percent for differentiated goods and 9 percent for commodities. This sounds high, but note that all the affiliates in our study are "related parties" and all our industries are "differentiated goods" by the definition of this transfer-pricing study. We feel it is unlikely (but still possible) that different transfer

pricing policies could explain variation in the ROA gap across industries. And, again, it is unlikely to explain other aspects of the pattern, such as the narrowing of gaps in certain industries and regions.

3.6 Effects of Improved Governance

At first glance, the rising profitability of JVs might be thought to arise from improving governance of that form of asset bundling – MNCs may be getting better at managing their JVs. Perhaps the scores of studies of alliance management in the last two decades have had an effect on firm behavior. We don't have ways to test this possibility, but we think it highly unlikely. The reason is that in our model (and in most governance models), firms are predicted to choose the "right" ownership structure for the task at hand. In other words, the JVs that were chosen in the 1980s (when their profitability was lower) were the best structure for the task they faced – their level of profitability is presumed to be higher than it would have been were a wholly owned structure used for that task. In terms of Figure 19.3, the ROA of venture DF_{JV} is higher than that for D or F, which are the wholly owned alternatives (respectively, for the foreign and the local firm). So, if there has been an improvement in JV governance, it would be seen in a shifting of governance choices toward more JVs and fewer wholly owned ventures, not a change in relative profitability of the governance forms. And we do not observe such a shift in the BEA data; in fact, the overall trend is toward fewer, not more, JVs over time.

3.7 Effects of Uncertainty

Our model is admittedly a deterministic one focusing on average tendencies, rather than on the variance and uncertainty around these tendencies. We do not mean to deny the role of uncertainty in evaluating the potential for joint gains in asset bundling. Instead, we believe that uncertainty can be incorporated into our model. For example, firms may accept a lower profitability on their joint ventures because these ventures contain an option value beyond the observed ROA. In that sense, the option value is a hidden benefit not reflected in the ROA measure. But, we do not know how large this option value is. And, specifically, we do not know how much greater is the option value of a jointly owned as compared to a wholly owned venture. The latter can, of course, also be dissolved or changed as events unfold, and so have their own option value too, beyond their observed profitability. We doubt that the differential option value of JVs as compared to wholly owned ventures is as large as needed to account for the full ROA gap observed historically. Plus, even if the effect of this factor were large, why would the ROA gap be declining after the early 2000s, a period of time that probably saw a rise in uncertainty in the global investment? In sum, these are all reasonable considerations to include in a full model of FDI, but we do not believe they account for the empirical patterns described in this chapter.

4 Further Research Directions

This chapter uncovers an interesting and important empirical pattern: majority-owned affiliates of US affiliates abroad tended to be more profitable than nonmajority-owned affiliates until about 2000, when the gap between the two began to shrink and then seems to have reversed. Our theoretical framework implies that a firm's choice of the entry mode for its foreign subsidiary (majority- versus nonmajority ownership) is affected by its competitive advantage compared to its foreign rivals. Limitations of our methods and data have already been noted. Foremost among these is the lack of disaggregated firm-level data from the BEA.

Nevertheless, if the general direction of our theoretical arguments holds true, there may be important implications for research in other areas and with other methods. Research on boundaries of the firm – including work on alliances and networks – has seldom dealt directly with the question of profitability. Transaction-cost models and market-entry models are predicated on the relative profitability of different organizational forms, but they seldom attempt to test directly whether and why one form is more profitable than another. The same holds for resource-based models of the firm.

4.1 Rebalancing Coase and Penrose

The academic literature has at times mistakenly pitted the resource-based view of the firm against transaction-cost economics as alternative theories of the firm. Most scholars now realize that the two approaches are complementary and that they address different aspects of one phenomenon; for an application of this synthesis to FDI theory, see Hennart (2009) and Teece (2014); a broader application to strategy is in Gomes-Casseres (2015).

The resource-based view dates back at least to Penrose (1959) and the transaction-cost view dates to Coase (1937). It should not have taken us so long to realize that Penrose and Coase are not competing theories of the firm, but two sides of the same coin. Future research would do well to redress this imbalance and develop a comprehensive theory.

The roots of both the capabilities and the transaction-cost approaches to MNC ownership structure are evident in the very first studies on the subject. In their pioneering study, Stopford and Wells (1972) found that an MNC's choice between a jointly and a wholly owned venture depended on the balance between the MNC's "need for resources" and its "need for control." After that, as transaction-cost economics gained popularity in our field, many authors focused on the conditions that shaped the need for control, while assuming away or controlling for the need for resources. A few studies addressed both, and reasoned that the governance issue only comes into play when there were resource-based benefits to collaboration between the MNC and a local firm. Gomes-Casseres (1989) is explicit about this condition, and found evidence of the impact of both transaction-cost and resource-based factors. But, at that time, the resource-based view of the firm had not yet gained popularity, and so the Coase side of the coin predominated.

Similarly, the bargaining-power hypothesis of ownership structures (Fagre and Wells, 1982; Gomes-Casseres, 1990) relied on arguments consistent with a resource-based view of entry negotiations. In this model, the balance between the host country's and the MNC's respective needs for resources shaped ownership bargains when the host government attempted to impose FDI restrictions. It also explained that FDI restrictions deterred investment unless the firm had a pressing need to access resources in a country. This strand of the entry-mode literature also receded into the background, perhaps because of the easing of FDI restrictions in the 1980s and 1990s. Today, however, this line of reasoning is newly relevant, as China has become a prime target for FDI, even while maintaining restrictive policies on inward investment. It is not surprising, therefore, to find that studies of FDI in China emphasize the role of resource commitment in JV performance (Isobe et al., 2000). This is in contrast to studies in developed country contexts, where JV performance may be influenced by differential governance structures, precisely because the resource gap between FDI and local firm is less (Child and Yan, 2003).

If the reasons are clear why Coase has somewhat eclipsed Penrose in our literature, the solution is clear too – we must evaluate governance choices in the context of the resource combinations that firms are trying to create. Note that there is a sequence to this logic. First, the firm needs to decide which assets it wants to bundle; second, it needs to decide what form that bundle should take – a wholly owned subsidiary, a joint venture, a nonequity alliance, or something else. This duality between resources and governance permeates all of FDI theory. As Caves (1998) explained, the transaction-cost model of the MNC "predicts that foreign direct investment will be launched to exploit the differential quality of the firm's proprietary assets . . . what matters is generally not the absolute quality of the firm's asset, but its differential advantage over those of other firms" (p. 7).

Rebalancing Coase and Penrose, therefore, requires that we have a better understanding of the relative resources of MNC and local firms. This is exceedingly difficult to do in statistical studies, especially when the parties are in different countries. So, we use proxies like relative R&D spending or GDP per capita, knowing full well that these are aggregate measures that are several steps removed from actual resources or competitive advantage of firms.

This chapter offers a new approach to measuring relative capabilities across countries, akin to the

notion of "revealed comparative advantage" used in the trade literature (Balassa and Noland, 1989). We argue that the profitability gap is a reflection of the different capabilities of MNCs and local firms – e.g., when local firms have more to contribute to the collaboration, JVs tend to be more profitable and so the gap narrower. The profitability gap can be defined by industry or country and can be tracked over time (data permitting, of course), and thus can give an indication of the relative advantages of local and foreign firm in specific contexts.

4.2 Promising Research Questions

For the reasons just discussed, we encourage future research that recognizes and evaluates the interaction between resource-based and transaction-cost views of the firm and of FDI. Elsewhere, we have developed managerial guidelines based on this very interaction (Gomes-Casseres, 2015). A number of questions arise from this view:

- How is value actually created by asset bundling and resource combinations? Is the mechanism a sharing of assets, or a transfer of assets to a new context, the creation of options, or something else? It pays to be explicit about these mechanisms, because they shape the underlying logic of FDI, as well as of asset bundling that does not cross borders. In this research, it is often useful to examine a broad range of asset bundling forms – from M&A to alliances, and from wholly-owned to jointly-owned subsidiaries.
- What impacts do governance structures have on the productivity of the asset bundling? In other words, are different forms of bundling not just "more efficient" in a transaction-cost sense, but can they also be "more effective" in achieving the potential for creating joint value? Different ownership structures lead to different resource commitments and to different mechanisms for integrating assets or coordinating their use. Ownership structures can thus affect revenues and growth, in addition to a more narrowly conceived transaction "cost" of the combination.
- What impacts do the combination of these resource bundling and governance choices have on profitability? Our models often assume that policy choices are made because of their promised effect on profitability, but we seldom measure these. In this chapter, we have focused on profitability of individual affiliates; just as important, however, is to understand the contribution of asset bundling to the overall profitability of the firm.
- How is the profitability of an asset bundle shared by the parties contributing resources? In other words, it's not just the total profits of a bundle that matter, but the returns to each party – especially for bundles in which the parties remain independently owned, as in JVs and alliances. Our models also often assume this sharing is shaped by ownership structure, but this too is a tenuous assumption due to the multiple ways in which firms can extract value from a bundle. In this chapter, we have not addressed this value-split question, but it follows naturally from our model of marginal returns to capital.
- Finally, we welcome further work that incorporates uncertainty and real options analysis in the comprehensive model proposed here. There is always uncertainty in whether an asset bundle will yield the promised benefits; and certain governance structures may be better than others at addressing this risk by enabling greater flexibility in response to post-deal events. How large are these effects compared to the average effects of resource allocation and governance?

Our research suggests that developing an explicit model of profitability of the MNC will yield benefits. We applied such a model here to explain one set of strategic choices faced by an MNC – the conditions under which the firm will invest in majority-owned versus nonmajority-owned ventures. Related models can no doubt be used to explain other strategic choices, including exporting, market entry, diversification, and mergers.

References

Axarloglou, K., and Meanor, F. (2006). Taxation and Ownership Structure in Supplying Foreign Markets. *Eastern Economic Journal*, **38**(4), 685–698.

Balassa, B., and Noland, M. (1989). Revealed Comparative Advantage in Japan and the United States. *Journal of International Economic Integration*, **4**(2), 8–22.

Bernard, A., Jensen, B., and Schott, P. (2006). Transfer Pricing by US-Based Multinational Firms. National Bureau of Economic Research (No. w12493).

Bresnahan, T. (1989). Empirical Studies of Industries with Market Power. In R. Schmalensee and R. D. Willig, eds., *The Handbook of Industrial Organization, Vol. II*. Amsterdam: North Holland/ Elsevier, pp. 1011–1057.

Caves, R. (1971). International Corporations: The Industrial Economics of Foreign Investment. *Economica*, **38**(149), 1–27.

Caves, R. E. (1998). Research on International Business: Problems and Prospects. *Journal of International Business Studies*, 5–19.

Chang, S. J., and Moon, J. J. (2013). When Do Wholly Owned Subsidiaries Perform Better Than Joint Ventures? *Strategic Management Journal*, **34**(3), 317–337.

Child, J., and Yan, Y. (2003). Predicting the Performance of International Joint Ventures: An Investigation in China. *Journal of Management Studies*, **40**(2), March 2003.

Coase, R. H. (1937). The Nature of the Firm. *Econometrica*, **4**(16), 386–405.

Connor, J. M., and Mueller, W. F. (1982). Market Structure and Performance of U.S. Multinationals in Brazil and Mexico. *Journal of Development Studies*, **18**(3), 329–353.

Desai, M. A., Foley, C. F., and Hines, Jr., J. R. (2004). The Costs of Shared Ownership: Evidence from International Joint Ventures. *Journal of Financial Economics*, **73**(2), 323–374.

Fagre, N., and Wells, L. T. (1982). Bargaining Power of Multinationals and Host Governments. *Journal of International Business Studies*, **13**(2), 9–23.

Fairchild, L., and Sosin, K. (1986). Evaluating Differences in Technological Activity between Transnational and Domestic Firms in Latin America. *The Journal of Development Studies*, **22** (4), 697–708.

Gomes-Casseres, B. (1989). Ownership Structures of Foreign Subsidiaries: Theory and Evidence. *Journal of Economic Behavior and Organization*, **11**(1), 1–25.

Gomes-Casseres, B. (1990). Firm Ownership Preferences and Host Government Restrictions: An Integrated Approach. *Journal of International Business Studies* **21**(1), 1–22.

Gomes-Casseres, B. (2015). *Remix Strategy: The Three Laws of Business Combinations*. Boston, MA: Harvard Business Review Press.

Hennart, J. (2009). Down with MNE-centric Theories! Market Entry and Expansion as the Bundling of MNE and Local Assets. *Journal of International Business Studies*, **40**(9), 1432–1454.

Hymer, S. (1960). The International Operations of National Firms: A Study of Direct Foreign Investment. Ph.D. Dissertation, MIT (published by MIT Press, 1976).

Isobe, T., Makino, S., and Montgomery, D. B. (2000). Resource Commitment, Entry Timing, and Market Performance of Foreign Direct Investments in Emerging Economies: The Case of Japanese International Joint Ventures in China. *Academy of Management Journal*, **43**(3), 468–484.

Kumar, N. (1991). Mode of Rivalry and Comparative Behavior of Multinational and Local Enterprises: Case of Indian Manufacturing. *Journal of Development Economics*, **35**(2), 381–392.

Kumar, N. (1994). *Multinational Enterprises and Industrial Organization*. New Delhi: Sage Publications.

Landefeld, J. S., Lawson, A. M., and Weinberg, D. B. (1992). Rates of Return on Direct Investment. *Survey of Current Business*, **72**(8), 79–86.

Lecraw, D. J. (1984). Bargaining Power, Ownership, and Profitability of Transnational Corporations in Developing Countries. *Journal of International Business Studies*, **15**(1), 27–43.

Leftwich, R. B. (1974). U.S. Multinational Companies: Profitability, Financial Leverage, and Effective Income Tax Rates. *Survey of Current Business*, **54**(5), 27–36.

Lupo, L. A., Gilbert, A., and Liliestedt, M. (1978). The Relationship between Age and Rate of Return of Foreign Manufacturing Affiliates of U.S. Manufacturing Parent Companies. *Survey of Current Business*, **58**(8), 60–66.

Martin, X. (2013). Solving Theoretical and Empirical Conundrums in International Strategy Research: Linking Foreign Entry Mode Choices and Performance. *Journal of International Business Studies*, **44**(1), 28–41.

Mataloni, R. J., and Fahim-Nader, M. (1996). Operations of U.S. Multinational Companies: Preliminary Results from the 1994 Benchmark Survey. *Survey of Current Business*, **76**(12), 11–37.

Penrose, E. T. (1959). *The Theory of the Growth of the Firm*. New York: Sharpe.

Schmalensee, R. (1989). Inter-Industry Studies of Structure and Performance. In R. Schmalensee and R. D. Willig, eds., *The Handbook of Industrial Organization*, *Vol. II*. Amsterdam: North Holland/Elsevier, pp. 951–1009.

Shatz, H. (2000). The Location of U.S. Multinational Affiliates. Unpublished Ph.D. Dissertation, Harvard University.

Shaver, J. M. (1998). Accounting for Endogeneity when Assessing Strategy Performance: Does Entry Mode Choice Affect FDI Survival? *Management Science*, **44**(4), 571–585.

Stopford, J., and Wells, L. T. (1972). *Managing the Multinational Enterprise: Organization of the Firm and Ownership of the Subsidiary*. New York: Basic Books.

Teece, D. (2014). A Dynamic Capabilities-Based Entrepreneurial Theory of the Multinational Enterprise. *Journal of International Business Studies*, **45**(1), 8–37.

Timmer, M., Erumban, A., Los, B., Stehrer, R., and de Vries, G. (2014). Slicing up Global Value Chains. *The Journal of Economic Perspectives*, **28**(2), 99–118.

Zaheer, S. (1995). Overcoming the Liability of Foreignness. *Academy of Management Journal*, **38**(2), 341–363.